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Vitalija Simonaitytė

Rural Transformation through Servitization

A Qualitative Structure Approach

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Rural Transformation through Servitization

“This book pleasantly surprised me with its original, well-founded and urgent perspective on rural economy. It truly embodies bravery. Instead of simply recognizing the need for new paradigms, the book embraces this notion from the very beginning and puts forward holistic, evolutionary, and collaborative approaches that fit the post-industrial paradigm. It is fascinating how the authors use case studies in small holder agriculture and regional rural development to build a broader perspective and develop new theoretical insights on servitization also with relevance for the manufacturing industry. The diverse and well-developed case studies combine theory and practice and illustrate the concept of the post-industrial service economy as a next phase of social evolution. This book importantly contributes to the development of research methods tailored to the nature of post-industrial economy, and enables us to unlock important potential of servitization for rural transformation.”

—Jorieke I. Potters, *Researcher of Sustainability Transformation in Agriculture and Society, Wageningen University and Research, Applied Plant Research, The Netherlands*

“Rural communities, worldwide, have been transformed in the last decades as they have gone through vast economic and social changes. Indeed, the countryside is, now more than ever before, being bought and sold as an experience, packaged and marketed. This monograph tackles the impact of those changes and offers deep insights into issues relating to servitization in rural communities. Through the application of innovative methodology and rich in-depth case studies this monograph provides the reader with a deep understanding of the processes of servitization in farming and in rural communities at large.

This book is recommended to everyone interested in exploring the paths towards vibrant and thriving rural communities: practitioners, decision makers as well as students and academics. Certainly, an important contribution to both the field of service economics and rural development in general.”

—Guðrún Þóra Gunnarsdóttir, *Director of The Icelandic Tourism Research Centre, University of Akureyri, Iceland*

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Abbreviations

CAP	Common Agricultural Policy
EC	European Commission
EU	European Union
KIBS	Knowledge-Intensive Business Services
LAG	Local Action Group
NGO	Non-Governmental Organization
RDA	Rural Development Assistance
RDP	Rural Development Programme
SME	Small and Medium Enterprises
USA	United States of America

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1

Introduction: Do Only Manufacturers Are Potential Drivers of Servitization?

Dalia Vidickienė

In the last decade of the twentieth century, a tendency to provide services not only in specialized service companies but also in industrial enterprises emerged. Entrepreneurs are realizing that it is no longer enough to make products. They started to focus on not only selling the products but also providing different services wrapped around produced products and their own resources. This new business organization trend was called servitization. The term ‘servitization’ was introduced in 1988 by Vandermerwe and Rada in the article “Business Servitization: Adding Value by Increasing Service Volumes”. Since then, the term has become more widely used in academic and professional business literature, and over the last two decades, it has become one of the most popular new terms in academic and professional business literature. Servitization has been extensively studied as a post-industrial way of planning and doing business in many aspects and has become one of the main subjects of new research in many social science disciplines, especially representing management, entrepreneurship, marketing, and operations management sciences. Since the 1990s, the body of literature on servitization has increased significantly (Baines et al., 2009; Calabrese et al., 2019; Khanra et al., 2021; Kowalkowski et al., 2017; Lightfoot et al., 2013; Rabetino

et al., 2018, 2021; Raddats et al., 2019; Zhang & Banerji, 2017), and this topic seems to have become relevant to all scholars in the economic and social development fields. Recently, the concept of territorial servitization of regions and countries arose (Cuadrado-Roura, 2016; De Propriis & Storai, 2019; Gebauer & Binz, 2019; Gomes et al., 2018; Horváth & Rabetino, 2019; Lafuente et al., 2017). In this context, the term ‘servitization’ takes on a broader meaning and is used as an analogy to the term ‘industrialization’. Industrialization is referred to as the transformation of an economic system by the penetration of machine-based production methods into all sectors of an economy. Servitization can be defined as the penetration of service delivery elements into all areas of the economy by the gradual shift from a product-driven business model to a service-driven business model (Vidickienė, 2017).

The servitization of manufacturing is widely and thoroughly studied in the scientific literature but is still neglected in the context of agriculture and rural development. However, the servitization of farming often happens without theoretical guidance by efforts to progressively think about farmers and other rural entrepreneurs. Several studies on this issue show that innovators think ‘outside the box’ and exploit the potential of services in various areas of rural life beyond agriculture. Grassroots initiatives in the servitization of farming are getting a chance to increase the business sustainability and vitality of rural regions in a fruitful and operative way. However, farmers and rural development policymakers need guidance to make the process of developing a new farming system more efficient and faster. To accelerate the diffusion of this innovation in rural regions, we need to study best practices in farm servitization and theorize them as a new approach.

The monograph contributes to the scarce literature on the role and ways of servitization in farming and rural development through a set of theoretical and empirical findings. First, the monograph aims to change the common opinion that “servitization is typically a manufacturer’s strategy” (Gölgeci et al., 2021, p. 646). Rural development paradigms after the Second World War were based on a set of assumptions relevant to the mass-scale industrialization of the agricultural sector. Currently, most of them are criticized as invalid, but a few suggestions on how to change the situation are provided. However, “few think ‘farmer’ than

they think ‘post-industrial’ (Heller, 2013, p. 5)”. Consequently, policy recommendations for agricultural and rural development are still based on the old industrial paradigm and are not suitable for a post-industrial society. To better understand what drives today’s economic development, the servitization of farming is examined as the key post-industrial paradigm innovation that shows the evolutionary path for rural development policy transformations [“Paradigm innovations are changes in the basic mental models that determine the organization does” (Bessant & Tidd, 2007, p. 13)]. It highlights the differences between industrial and post-industrial ways to create value and provides arguments for why we need a service-driven business model in farming and territorial servitization of rural regions.

It took centuries for rural economies to shift from manual farming to modern mechanized agriculture, but the rise of the services business in farming is occurring more quickly. The building of product-service systems in agriculture is still an innovative business solution, which raises many doubts. Does the servitization of farming have a future? Are services vital to the economic health of rural areas? Our research provides a positive answer to such questions. Farming in a world of increasing complexity and a business landscape characterized by a rapid turnover of farms that are being marginalized by outdated thinking or anachronistic strategies requires new solutions. The basis for new solutions is servitization, which is at the heart of the paradigm of the post-industrial era.

Second, the monograph offers an original approach to servitization research. To create value according to the rules of post-industrial society, we should well understand qualitative changes in economic and social life. We call them paradigm innovations and discuss them in close relation to the service economy era. The research developed theoretical and practical guidelines that suggest a new way of thinking about post-industrial farming system design and building processes. It is based on an innovative theoretical background—the concept of qualitative structure. The concept highlights three major new features of the post-industrial service economy—holistic, evolutionary, and collaborative approaches. It is focused on the relational perspective and reflects a holistic worldview and a cyclical, historical temporal orientation. Moreover, this method

acts as a reconciliation of various methodological views, disciplines, and research streams.

Third, the monograph provides rich empirical material on the servitization of farming. Shifting to a service-oriented business model is an especially big challenge for farmers because several generations of farmers have already lost direct contact with the consumer and lack basic skills in the service business. This research connects new theoretical knowledge with insights gained from practice. The monograph includes 12 case studies that provide a deep analysis of two-level servitization processes: (1) individual initiatives to shift from agricultural product-driven farming to product-service systems and (2) collective efforts of farmers and other rural people to encourage farming servitization processes by creating collaborative networks. Lithuania is a very suitable country for such empirical research, as the half-century of Soviet occupation destroyed farming traditions. Many Lithuanian farmers are newcomers to the agricultural business, as family farms only started to be re-established after Lithuania regained its independence from the Soviet Union in 1990. The process of farming privatization was quite slow and complicated because of the restitution of land. Agricultural reform has led to the formation of two farmer groups. One group focuses on-farm specialization and mechanization, supported by national and EU investment incentives. The other group is made up of small farmers, many of whom have inherited their ancestral land and have a perception of well-being that goes beyond farm income. They started farming without any agricultural background, and farm income is generally considered to be only one aspect of small farmers' livelihoods. However, many of these farmers are relatively highly educated in other fields (business, health care, pedagogy, etc.), can connect fluidly between both rural and urban contexts, and often use these mixed skills in unexpected and innovative ways. They are in fact a new generation of farmers seeking autonomy, quality of life, and psychological satisfaction. This group demonstrates many innovative initiatives in the field of farming servitization and is perfect for research on servitization issues.

The first part of the monograph is devoted to an introduction to qualitative structure theory (Kalinauskas, 1991; Kalinauskas & Reinin, 1995;

Melnikienė & Vidickienė, 2019; Vidickienė, 2013) as a theoretical background to understand servitization phenomena. Chapter 2 introduces the potential of the developed qualitative structure method to be used as a tool for understanding the basic strategies of a producer and its step-by-step evolution to a more complex self-management model. The concept of qualitative structure, presented in the monograph, is a response to the increasing specialization and eclecticism in the organization and management sciences and puts forward new ways of thinking about evolutionary processes in the context of the post-industrial paradigm. The concept of qualitative structure is based on holistic and evolutionary approaches and opens an original and promising method for research and action in the service economy. Moreover, the Qualitative structure approach is a universal tool for any qualitative research. It offers a genuine way to understand the self-management model for any representative species and helps to design guidelines for their evolutionary pathway.

The second part of the monograph explains the servitization phenomenon and designs a theoretical framework for product-oriented farming business model transformation according to the servitization concept. The framework is based on the theory of qualitative structure and case studies of farming servitization with different motivations to support or improve the qualitative structure of a business. Chapter 3 briefly describes the state of the art in servitization research. It introduces key communities of scholars in servitization research, paradoxes of servitization that are confusing industrial economists, and differences between key research areas in manufacturing and farming servitization. Chapter 4 begins with an introduction to the servitization phenomenon and discussions of why servitization should be considered a key paradigm innovation of the business model in the post-industrial stage of societal evolution. Later in the chapter, the focus is on why servitization is important for the development of farming. The literature shows that many previous assumptions on the needs of farmers identified by scholars in the last decades of the twentieth century are not valid. Despite the increase in income for all farms, no one wants to take over their work in the next generation, and many farmers around the world now have no obvious successors. Neither children of farmers nor others find industrial farming an attractive profession (Bednaríková et al., 2016; Chen

et al., 2014; Chiswell, 2018; Leonard et al., 2017; Morais et al., 2018). As noted by Milone and Ventura (2019, p. 43), “attracting people to farming demands a profound understanding of generational renewal”. According to empirical research, a new generation of farmers is emerging who choose farming activities primarily according to their interests and preferred lifestyles. The new farmers go beyond the agricultural sector and want to make their mark on the evolution of rural areas by creating and developing a great variety of innovative land-based rural businesses. Most of them are shifting from a conventional agricultural product-driven farming business model to an innovative service-oriented business model called the ‘Product-Service System’ and are the main proponents and beneficiaries of introducing this innovation in rural communities. Chapter 5 introduces six case studies of farming servitization with different motivations. The multiple case study research was essential for the in-depth examination of participants’ perspectives on the servitization of farming within its natural context. The stories of farm owners and managers and their perceptions of the wider forces at work on their farms and beyond provided valuable information for theoretical insights. Gaining popularity, the innovative farming business model is examined with a focus on its evolution when it is gradually shifting from an agricultural product-driven model to a product-service system. The investigation revealed the ways of servitization in agriculture by analysing farmers’ motivation to switch from product-oriented business logic to service-oriented business logic and by identifying the strategies applied for product-service system building at the farm. In Chapter 6, the conceptual evolutionary framework on constraints to agricultural production strategies as the incentives to servitization of farming is presented. The framework of product-driven business model transformation is based on the theory of qualitative structure and offers an original approach that integrates production-oriented and service-oriented business models, schematically explaining their interrelationships.

The aim of the third part of the monograph is to discuss the territorial servitization of rural regions. Innovative thinking and farmer initiative are not enough to successfully adopt a service-oriented business model, as farmers face many problems in the transition to a service business.

Most of these problems cannot be solved by the efforts of an individual farmer because of the very nature of the service itself. Unlike highly mechanized agricultural production, the provision of services at all stages of the process of this economic activity requires close collaboration. As pointed out by many scholars, collaboration has become not one of the many success factors in all economic processes but a mandatory component of business skills (Botsman, 2015; Botsman & Rogers, 2010; Polova & Thomas, 2020; Wagstaff et al., 2021; Wang et al., 2023). The success of farming servitization depends on the efforts of the farmer to collaborate with the user of the service and other participants in this process who can contribute to the improvement of business processes (resource suppliers, other entrepreneurs, consultants, and scientific institutions), business promoters (public agencies, non-governmental organizations, social movements, etc.), and policymakers. Unfortunately, there is almost no academic or professional literature on collaborative organization models and transformative leadership that stimulate the processes of servitization in farming and other product-oriented businesses in rural regions. Therefore, Chapter 7 introduces the concept of territorial servitization and discusses reasons why rural and regional development research and policy very slowly develop the servitization field. The research findings highlight two new dimensions that are needed in the design of post-industrial rural development policy. The first dimension of the territorial servitization policy relates to the shift from supporting technological innovations to supporting organizational and social innovations. The second dimension of territorial servitization policy concerns the growing role of collaboration. Chapter 8 analyses challenges to territorial servitization in the context of four paradigm innovations related to the changes in the role and nature of collaboration: (1) the pursuit of competitive advantage is shifting to the creation of mutualistic symbiosis between participants of the business ecosystem; (2) institutionalized collaboration is replaced by network relations; (3) the collaboration between actors with similar interests is shifting to multiactor partnerships; and (4) the market economy is replaced by the platform economy. These paradigm innovations are closely interconnected, but each changes a certain dimension of the mental model inherent in the industrial era. Chapter 9 presents case study research

carried out by combining qualitative structure analysis with multiple case study analysis on the activities of rural development networks involved in the servitization of Lithuanian rural regions. Analysing networks as a living and evolving whole, according to the theory of qualitative structure, allows the development of a conceptual evolutionary framework for networking strategies as a scheme to explain how networks emerge and evolve step-by-step and how they can be managed. The framework of networking strategies based on the qualitative structure approach is presented in Chapter 10.

Drawing on cross-disciplinary literature and case studies on the service-driven business model in farming and territorial servitization of rural regions through the efforts of rural development networks, the monograph identifies the principles and logic of post-industrial rural development paradigm building. However, the study is useful and relevant not only for researchers and practitioners interested in the servitization of farming but also for those interested in servitization in the manufacturing industry, as it reveals several new theoretical insights into servitization that are not readily apparent from an analysis of servitization of manufacturing companies alone.

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Part I

Theory of Qualitative Structure



2

Theory of Qualitative Structure as a Conceptual Framework for Understanding Servitization

Dalia Vidickienė

2.1 Perception of Quality as a Barrier to an Interdisciplinary Approach in Organization and Management Sciences

Contemporary management theory offers an abundance of disciplines, concepts, models, and techniques. The literature review on the servitization research in Chapter 3 of the monograph is the best example of the diversity of approaches to the origins, goals, features, drivers, and benefits of servitization. Though many researchers have observed and criticized the differentiation and specialization of academic research and teaching in the organization, management, and governance (e.g., Dunning, 1980; Koontz, 1961; Van Baalen & Karsten, 2012; Whitley, 1988; Willmott, 1994), the process is continuing and extending. “Even the traditional integrative courses like strategy, business policy, and organization have become disciplines in their own right and can be conceived as functional specialisms. They have their own scientific journals, conferences, peer-communities, methodologies, theoretical constructs, etc.” (Van Baalen & Karsten, 2012, p. 232). The literature on management and organizations

is fragmented and does not provide a common perspective and ways to reduce increasing complexity and uncertainty.

As a response to the increasing specialization and eclecticism in the organization and management sciences, the interdisciplinary approach started to be used. A belief in the idea that the field could make progress via the integration of theories and the development of metatheories greatly encouraged the achievements of general systems theory. General systems theory has provided many emerging perspectives, enabling the creation of more complex organizational frameworks (Schweizer et al., 2015; Singer, 2010; Umpleby, 2001). New concepts were proposed by general systems theory into scientific jargon, such as adaptation, learning, regulation, self-management, communication, control, feedback, and information. They rapidly diffused to management and economics studies and complemented the analytical thinking mode with “organismic thinking” (Klein, 1990, p. 29). However, the realization of interdisciplinarity was often thwarted by epistemological, institutional, psychological, and cultural obstacles (Kockelmans, 1979), and most discussions on what interdisciplinarity in management studies means have bogged down in ideological fixations (Van Baalen & Karsten, 2007). In recent decades, the role of the systems approach in management has decreased, and general systems theory is often criticized for its extreme formalism and high degree of abstraction. Management theory failed to develop important concepts of general systems theory, such as self-organization, synergy, and attractor. It seems that at the beginning of the twenty-first century, most intellectuals did not believe in new interdisciplinary organization science.

The literature review shows that there are three key constraints for creating an integrated version of previous theories of management that suggests a solution for how to make different concepts or models comparable and complementary. All the constraints deal with conventional conceptualizations of quality based on the following approaches to its nature: (1) reductionistic, (2) one-dimensional, and (3) natural selection as the major driver of evolution.

Constraint 1. The reductionist approach to quality. Previous efforts to develop quality management lack a holistic approach to the quality of managed phenomena. According to the conventional approach, each

product or business process is analysed and managed as a set of qualitative characteristics. The management theories and frameworks were focused on how to define and evaluate the qualitative characteristics as inherent properties of various products or business operations but not on the quality of the managed phenomenon as a whole. Reductionism, as the mainstream scientific paradigm, developed a narrow understanding of the term 'whole', and many scholars do not discuss how to define a whole or how to ensure that a research object is complete but suggest a 'more holistic approach' (e.g., Lozano, 2018; Sedereviciute & Valentini, 2011; Soomro et al., 2016). They believe that in a complex system, it is impossible to know all the parts at any point in time. The 'more holistic' approach for them means 'more complex', i.e., composed of more different research aspects. Correspondingly, the research based on the 'holistic-complex' approach seeks to present a more comprehensive list of the important qualitative characteristics of the research object. Many management scholars suppose that systems thinking is the best way to shift from a reductionist to a holistic approach. According to systems thinking, system structure consists of elements and interconnections between these elements, but system behaviour is more dependent on the quality of connections rather than on the qualitative characteristics of elements. Actually, the studies suggesting the 'systemic-complex' approach again seek to present an increasingly comprehensive list of the important qualitative characteristics of the research object (Bryman, 2017; Denzin & Lincoln, 2011; Kapoulas & Mitic, 2012; Khankeh et al., 2015; Stenbacka, 2001; Van Maanen, 1998). Since systems thinking aims to explain how relationships between elements give rise to the collective behaviours of a system, it serves as the argument for why a systemic approach is a holistic approach.

The examination of relationships between elements of complex systems made a step forward in understanding the quality of the whole. However, is it sufficient to add to the list of important qualitative characteristics of an object the qualitative characteristics of the relationships between the elements of the system? Is it the same to see things holistically and interconnected? Can we equate a complex system (complex means made up of many interrelated elements) with a whole, seeing that many complex systems can continue to exist even if a structural element

is removed from the system? Whole refers to the complete thing, but academic literature does not provide guidelines on how to test wholeness. Researchers do not provide any evidence that the extended list of qualitative characteristics identified is definitive. Moreover, they do not discuss what happens if the list is shortened because one or more qualitative characteristics are lost. Will the wholeness of the object be damaged in such a case, or will the object of the study remain whole? General systems theory does not provide answers to these questions because of the underdevelopment of the concept of the whole.

Constraint 2. The one-dimensional linear concept of quality. The conventional concept of quality is designed according to linear thinking. (According to the Collins dictionary, a linear process or development is one in which something changes or progresses straight from one stage to another and has a starting point and an ending point.) This concept is based on the traditional Western model of thinking, which resembles a linear scale with minus and plus poles at the ends, representing two opposite aspects of an object's quality, e.g., good-bad, cold-hot, slow-quick, big-small, etc. According to this thinking model, quality is a one-dimensional phenomenon. For instance, a cold object is defined as less hot, slow means less quick, small is not enough big, etc. A linear one-dimensional measurement scale is used to evaluate how close or far the phenomenon is from the 'ideal quality' (see Fig. 2.1).

This approach has been developed with the emergence of the discipline of quality management, which serves the needs of manufacturing

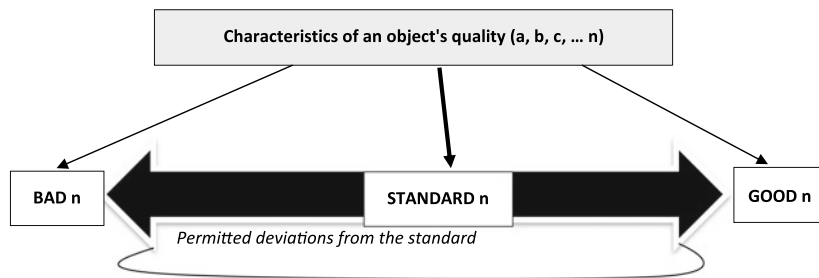


Fig. 2.1 The one-dimensional standard-based concept of quality (Source Created by the author)

companies. Quality management activities have focused on identifying and standardizing measurable characteristics of products, services, and business processes (Jacoby et al., 1971). According to the Japanese philosophy of Total Quality Management, quality was defined as “zero defects – doing it right the first time”. The task of quality management was to prevent nonconformities at all stages of the production process. For instance, Crosby (1979) defined quality as ‘conformance to requirements’. Garvin (1983) measured quality by counting the incidence of ‘internal’ failures (those observed before a product leaves the factory) and ‘external’ failures (those incurred in the field after a unit has been installed).

According to the approach of the industrial era focused on the elimination of failure, quality is the standard of something as measured against other objects of a similar kind, as manufacturers have a standardized way of producing goods. Goods are produced *en masse* in a factory or warehouse-type environment. One finished product is usually the same as another. However, in a service economy, it becomes more difficult, if not impossible, to set a standard. In comparison with manufacturing, the service business is more complex and “presents a different type of complexity than industrial products” (Polaine et al., 2013, p. 85). Service firms generally produce a service tailored to customers’ needs, which is at odds with a standard-oriented understanding of quality. The conceptualization of the term ‘customer delight’ encourages the discussion on the role of such additional elements in the quality definition as ‘attractive quality’ and ‘innovative quality’ (Yang, 2011). The growing trend of servitization in manufacturing and farming calls for revision of the definition of quality, as an ‘innovative quality’ cannot be managed according to the one-dimensional static standard-based concept (Parasuraman et al., 1985). In the service economy, driven by innovations and co-creative behaviour, the quality management concept should be widened as it becomes a serious constraint to the full use of management potential. However, is it possible to describe, evaluate, and improve the quality of complex and dynamic objects using one-dimensional linear models? Several quality management gurus have called for the inclusion of customer value and innovation in the definition of quality (Yang, 2017). However, many questions regarding growing complexity and

dynamism remain to be addressed, and this is an issue for future research to explore.

Constraint 3. Belief in a limited capacity to manage the evolutionary pathways. The standard-oriented perception of quality developed in the industrial era is closely linked with the belief in the market power of natural selection and the inability to manage evolutionary pathways. Although the theory of evolution currently accepted by scientists in biology is no more straightforwardly ‘Darwinian’, as modern physics is not ‘Newtonian’ (Pigliucci & Kaplan, 2006; Richerson et al., 2006), a large part of management scholars equate evolutionary processes and competitive selection. The evolution in management science is still understood as a struggle for survival based on the law of the jungle advocated by Darwinism. According to mainstream evolutionary thinking, it does not matter what strategy the manager puts in place; it is the market that will decide the best (Whittington, 2001). This approach gives a very narrow understanding of the evolution process, where the concept of evolution is based on the Darwinian paradigm, which stresses blind genetic variation and natural selection by the ‘invisible hand’ of the market. The role of strategic management in accelerating the evolutionary process is still very limited, as most business strategy frameworks consider types of strategies as alternatives rather than as evolving from each other. The textbooks teach you to analyse a list of strategy types or schools of thought and choose one of them. Thus, managers consider the happy choice to be central to the strategy formulation process and do not seek to view and manage the organization as an evolving organism.

The frameworks of strategies based on the idea of alternative choices ignore that evolution means a change into a better, more complex, or more advanced state. Belief in a limited capacity to manage the evolution of business entities as pathways from a simple to a more complicated business model prevents managers from applying an evolutionary approach as a powerful management tool in a rapidly changing business environment. The service economy needs to develop a holistic approach to managing the evolutionary pathways of business enterprises. Currently, business success mostly depends on the ability to identify and manage the components of the business, which can be described as an evolving whole, as servitization blurs the boundaries not

only between products and services but also between different product markets. Servitization pushes market power to a level beyond individual product markets to the level of multiple interconnected products within a broader ecosystem (OECD, 2022). As servitization limits market power, it motivates managers to take the lead in managing the evolution of the organization. New rules of the game open more freedom for management actions, and new concepts emerged that are alternatives to market power, such as multisided networks, platforms, vertical integration, conglomerate business models, etc. They offer new ways to increase the overall business quality during its life cycle through a step-by-step development of self-management capacity.

All three constraints discussed demonstrate that humankind in their quest for knowledge and wisdom for a long time sought out only simple explanations of the world structure based on linear dualistic thinking and the belief in an ‘invisible hand’ guiding the evolutionary process. However, this way of thinking is no longer suitable when considering the growing requirements for management skills in a constantly changing environment. “A strategic leader who adopts the mechanical point of view of the past will not be successful in today’s complex and chaotic environmental conditions” (Özmen, 2020, p. 123). Another strategic management paradigm is thus needed, oriented to new representations of post-industrial reality and able to integrate previous knowledge in management (e.g., Botkin, 1999). The qualitative structure approach, presented in the next section of the book, offers such a paradigm. It integrates holistic, evolutionary, actor, system, and analytical methodologies and suggests an original approach for research and action in the service economy by the shift from first-order science to second-order science.

2.2 Origin of the Qualitative Structure Approach

The concept of the qualitative structure was proposed for the academic community in the early 1990s by Igor Kalinauskas as a tool in behavioural psychology. It is based on the assumption that “each object exists through its quality and is viewed as something disconnected from

other objects. At the same time, quality expresses the general features of an object that characterize the entire class of similar subjects (Kalinauskas, 1991, p. 89). Compared to the systemic approach, the qualitative structure approach is a step towards a better understanding of holistic thinking because the concept of qualitative structure highlights the difference between the object-system and the object-whole in particular. Kalinauskas emphasized that most systems can continue to exist even if a structural element is removed. In contrast, the qualitative structure of an object as a whole should be defined in such a way that the removal of any structural element would destroy the object.

In addition, the components of the qualitative structure interact in a special way; they are closely linked and dependent on each other. Kalinauskas proposed examining four aspects of the qualitative structure: (1) communication with the external environment, (2) functioning, (3) organizational construction, and (4) point of coordination. According to this statement, quality is defined as a three-dimensional phenomenon (see Fig. 2.2), as opposed to the conventional one-dimensional standard-based linear concept.

This concept of quality identification and examination was named the method of qualitative structure (Kalinauskas & Reinin, 1995). Kalinauskas applied the method of qualitative structure mainly for purposes of self-management and psychological and mental functional self-improvement of a person. The efforts to validate and develop the theory of qualitative structure by I. Kalinauskas himself were focused on analysing a qualitative structure of very specific components of human behaviour (energetic-informational metabolism, point of coordination,

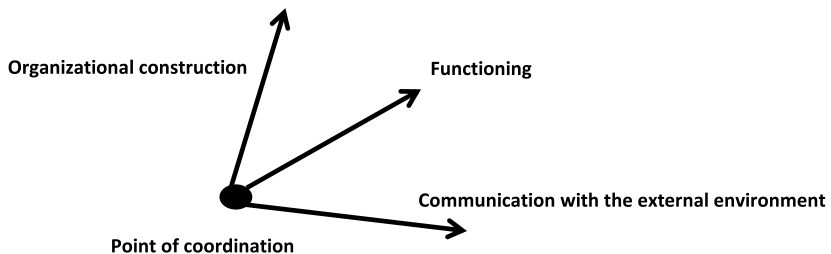


Fig. 2.2 Dimensions of the whole entity (Source Created by the author)

etc.). In his view, the understanding of a qualitative structure provides a practical tool for a conscious process of analysis and improving oneself in various aspects of human life by understanding the integrated self and its structure.

The method of qualitative structure was successfully applied by students of Kalinauskas to analyse various whole entities in different fields of science (psychology, sociology, economics, management, philosophy, etc.). In the field of management the method of qualitative structure has been applied for the management of human resources (Lobanova, 2003), examination of product flow distribution (Shmakov & Egorov, 2007), strategic management of manufacturing (Vidickienė, 2013), valuation of intellectual property and technology fields (Reingand, 2011), development of national or regional economy and rural policy (Vidickienė & Melnikienė, 2014), examination of farming strategies (Melnikienė & Vidickienė, 2019), servitization of farming (Vidickienė et al., 2019), territorial servitization of rural regions (Vidickienė et al., 2021), etc.

Kalinauskas focused his research on the identification of a static picture of the whole. However, any object-whole changes during its lifetime. To apply the method of qualitative structure for analysis of evolutionary pathways, the research of Kalinauskas has been developed. Further investigation of the manifestations and changes in the quality of different economic agents resulted in the outline of the evolutionary framework for strategic management (Melnikienė & Vidickienė, 2019; Vidickienė, 2013). The framework explains how the changes in qualitative structure help to increase the quality of a phenomenon that can be defined as a whole entity. The next sections of this chapter briefly introduce the theory of qualitative structure at the current state of the art.

2.3 Components of Qualitative Structure

The post-industrial reality, with increasing levels of complexity and uncertainty in all spheres of social life, has renewed the intense debate on holism and reductionism. As pointed out by Fang and Casadevall

(2011, p. 1401), “few scientists will voluntarily characterize their work as reductionistic but often the search for a comprehensive approach has led to an unfruitful opposition between ‘reductionist’ and ‘holistic’ science”. Methodological reductionism describes the idea that phenomena can be understood by the analysis of their simpler components. “In contrast, holism, in the form of systems theories, builds on the idea that systemic relations arising at complicated stages of integration may produce new and unpredictable characteristics of the system” (Andersen, 2001, p. 153). The holistic approach does not discount the importance of each individual component but instead suggests that understanding the whole requires looking at how these parts work on different levels as well as how they interact and influence one another. From the holist point of view, reductive methods are bad science because they do not capture the connectedness of complex reality, and from the reductionist point of view, reductive methods ensure the quality of science and other methods are, therefore, not scientific (Alrøe & Kristensen, 2002).

The method of qualitative structure considers how to avoid the dichotomy between the traditional conceptualization of holistic and reductionistic approaches. Similar to the conventional structural analysis of a system according to the reductionist approach, analysis of qualitative structure requires defining key components of the whole. However, the components should be defined in a special way that is based on the holistic approach. The qualitative structure analysis should follow the five principles mentioned below:

Principle 1. The whole entity resides in a three-dimensional continuum. The dimensions are the following: (1) organizational construction, (2) functioning, and (3) communication with the external environment. They are connected by a point of coordination (see Fig. 2.2).

Principle 2. The quality of the whole manifests itself and evolves with the help of three components A, B, and C. The set of three components represents the qualitative structure of the whole entity. A whole has the potential to use each of the mentioned three basic components as self-management tools in any of the three dimensions of the qualitative structure. If any of the three components is lost or no longer matches the others, it destroys the whole. For instance, if we analyse the qualitative

structure of a manufacturer, the toolkit includes Tool A—products, Tool B—resources, and Tool C—production methods. All three components are essential for the emergence and existence of the manufacturer as a whole entity. First, an entity cannot be classified as a manufacturer until the first product is produced. Second, resources that are used to manufacture the products are needed, as manufacturing is the process of turning various types of resources into finished products. Third, the transformation of resources into products is only possible when the manufacturer is aware of the production methods—the techniques of manufacturing and managing the production processes. If the quality of any of the three components-tools becomes unsuitable to continue the production process due to bad self-management decisions or changes in the environment, the wholeness of the manufacturing company is destroyed, and it ceases to be in business.

Principle 3. The toolkit of three components is structured in such a way that each component is used in a different dimension of the whole. One component is used as the tool for changes in an organizational construction, the second component serves functioning purposes, and the third component acts as a tool for communication with the external environment.

Principle 4. Each component can be used in any of the three dimensions of the whole. A simplified three-dimensional relationship of components A, B, and C is presented in Fig. 2.3. Depending on the dimension in which the component is used, it has a different mission in creating and sustaining the quality of the whole. The component that is used in the dimension of organizational construction (in this case, Component A) becomes an active force. The whole can realize the self-management process only through changes in the quality and quantity of this component. Another component (in this case, Component C) is used for the whole's communication with the external environment and plays the role of limiting force. It defines the potential of the whole to evolve as a threshold to generate positive synergy. The synergy between active and limiting forces modifies the third component (in this case, Component B). This component is a passive force. Its quality demonstrates a result of self-management actions.

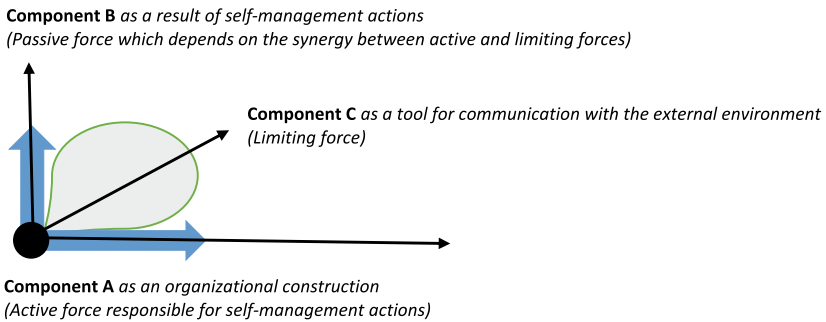


Fig. 2.3 Qualitative structure of the whole entity (Source Created by the author)

As shown in Fig. 2.3, the qualitative structure is presented in terms of an integral triadic pattern—no one component operates alone; they are fundamentally interdependent and mutually enabling. When joined together, the components generate synergy. The linkages between components are the same as those between the dimensions.

The set of 4 described principles offers a new way of thinking about quality. First, according to qualitative structure theory, quality management is a matter of consciousness and creativity, while traditional quality management simply follows standards. Therefore, the components of the qualitative structure should be analysed as forces, which are/could be used by the whole as tools for self-management in a three-dimensional reality. Second, the definition of a qualitative structure suggests a different approach to structural changes. It is emphasized that the quality of the whole varies depending on the role of the component in the dimensional triad. Such an approach highlights the role of the quality dimensions and offers an innovative viewpoint on ways of synergy generation. (The term “synergy” comes from the Greek word *sunergos*, which means working together.) In the context of strategic management, this concept was developed by Ansoff (1965), who described it as a “ $2 + 2 = 5$ ” effect desirable for a business. However, this popular formula oversimplifies the nature of synergy and directs the efforts of managers towards the quantitative aspect of the synergetic effect. Consequently, the synergetic effect is mainly defined as a scale or scope effect only.

The qualitative structure approach reveals the qualitative side of the synergy. By defining the linkages between the components of the qualitative structure as synergistic, the method opens new opportunities to increase synergistic effects through the coordination of business management actions. Third, in contrast to the common approach, qualitative structure analysis requires the identification of structural components that exist during the whole life of the object and are common for representatives of the entire class of similar subjects. This means that the analysis of the qualitative structure of a whole requires a special level of abstraction.

2.4 Dynamics of Qualitative Structure as an Evolutionary Pathway

Borrowing from Latin *ēvolūtiō, ēvolūtiōnis*, the term ‘evolution’ means the act of unrolling or unfolding. The same meaning ‘evolution’ has in Lithuanian language (*raidā*), which is the most archaic Indo-European language still spoken. Today, this interpretation of evolution has lost its original meaning, and with it, there are many opportunities to understand and manage the process of evolution. The theory of qualitative structure can give us back our ancient understanding of the world structure, which explains how evolution takes place as a step-by-step process of unrolling (unfolding). The literature review, multiple case studies, and empirical research of economic history in the context of strategic decisions demonstrate that all possible combinations of the three components and three dimensions of a whole exist and prove the hypothesis that unrolling from one to another component/dimension combination evolves the quality of any whole entity. Figure 2.4 clarifies how the components of a whole entity identified by the method of qualitative structure can roll in a three-dimensional continuum.

The introduced evolutionary framework is based on the idea of an ability of a whole to self-manage by using structural components as self-management tools. The framework of six self-management strategies

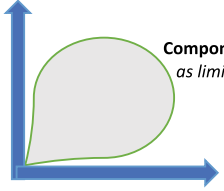
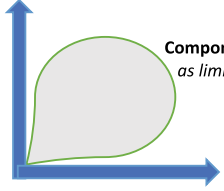
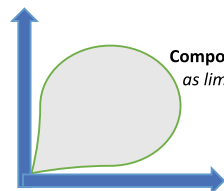
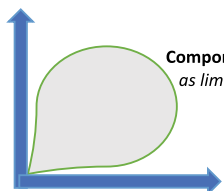
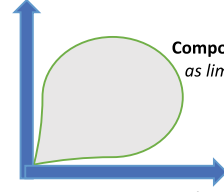
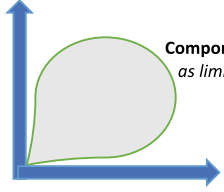
SELF-MANAGEMENT MODELS	
Space (place)-oriented	Time-oriented
<p>Component B as passive force</p>  <p>Component A as active force</p> <p>STAGE 1. Generates scale effect</p>	<p>Component B as passive force</p>  <p>Component C as active force</p> <p>STAGE 2. Generates experience effect</p>
<p>Component C as passive force</p>  <p>Component B as active force</p> <p>STAGE 3. Generates selection effect</p>	<p>Component C as passive force</p>  <p>Component A as active force</p> <p>STAGE 4. Generates complementarity effect</p>
<p>Component A as passive force</p>  <p>Component C as active force</p> <p>STAGE 5. Generates integrity effect</p>	<p>Component A as passive force</p>  <p>Component B as active force</p> <p>STAGE 6. Generates independence effect</p>

Fig. 2.4 Framework of the evolutionary cycle based on the qualitative structure approach (Source Created by the author)

explains the evolutionary pathways of any whole as a logical step-by-step process that is realized through targeted sequential changes in its qualitative structure.

The evolutionary cycle consists of six stages with different self-management models. Each model is the result of moving to a new combination of components and dimensions in the sequence described. At each stage, self-management has become more complex and offers more strategic solutions to improve performance, as the new combination of components and dimensions allows the generation of a new type of synergetic effect. Figuratively speaking, when a whole entity rolls over to the next position, it improves its quality because it learns to create a new type of synergetic effect from the next combination of components and dimensions. Figure 2.4 depicts the framework that provides the algorithm for the step-by-step changes in the qualitative structure of a whole as an evolutionary process.

The evolutionary pathway is interchangeably space (place)-oriented or time-oriented. Space-oriented self-management strategies enable the generation of the following synergetic effects: (1) scale, (2) selection, and (3) integrity. Time-oriented self-management strategies enable the generation of the following synergetic effects: (1) experience, (2) complementarity, and (3) independence.

In the proposed framework, all six self-management strategies are closely linked and compose one cycle of evolution. At the beginning of the evolution cycle, a whole operates one component as an active tool and aims to achieve one type of synergy. In the last stage of the evolutionary cycle, an entity is able to use all three of its components as tools to create six types of synergistic effects as a consequence of combinations of all components and dimensions.

The suggested framework offers a new paradigm for understanding and exploring quality and its evolution. It is especially interesting for qualitative inquiry in any management field. Arbnor and Bjerke (1997) argue that every researcher or practitioner has his or her own methodological approach that influences how he or she understands a given problem area as well as how he or she selects and applies different tools and techniques to that problem area. The methodological approaches can be divided into analytical, systems, and actor views. As noted by Arbnor

and Bjerke (1997), whether the researcher or practitioner is conscious of it or not, their methodological approach reflects their assumptions of reality and, therefore, shapes their outcomes. The qualitative structure approach provides an integrated version of three major methodological approaches in the management field. It requires (1) focusing on the actor, (2) clearly defining to which species the actor under examination belongs, and (3) analysing the qualitative structure by identification of components. The integration of three major methodological approaches reduces the influence of researchers' subjective perceptions. This feature of the qualitative structure approach takes the research to a higher level of abstraction and helps to obtain a deeper and more accurate understanding of any issue.

The definition of the qualitative structure of an object is based on a heuristic approach, but the identification process requires excellent knowledge of origins, nature, and types of phenomena similar to the analysed whole entity as, according to qualitative structure theory, quality expresses the general features of a whole, common for the entire class of similar subjects. Wholes of the same type are similar because they have tools that are similar in nature— A_i , B_i , and C_i . This means that the identification of the qualitative structure of an object requires the ability to classify objects and think at more than one level of abstraction.

Defined once, the qualitative structure can be applied as a theoretical construct for strategic self-management to all members of the same species. The biggest challenge is defining which species the object under study should represent and which three components are the main characteristics of this species throughout its lifetime. It is important to be aware that the type of species to be analysed is the one whose quality is to be improved, as the same person or entity can represent different species at the same time. For example, the garden teacher can be analysed as a representative of (1) teachers and (2) gardeners. This person may be focused on evolving gardening quality or teaching quality or seek to evolve both characteristics equally. However, a teacher and a gardener have different components of qualitative structure and can develop these two qualities independently of each other.

The next section provides an example of how to practically apply the theoretical principles of the developed qualitative structure method in

the servitization field. As servitization means the shift from a product-oriented business model to a service-oriented business model, the most actual is an analysis of the qualitative structure of such a subclass of economic agents as producers. A producer in qualitative structure analysis is identified as any person, company, or country that transforms resources into products for creating utility. An analysis of producers' qualitative structure provides insight into the incentives for moving from a product-driven to a service-driven business model and how best to do so.

2.5 Qualitative Structure of the Producers and Their Evolution

The qualitative structure of the producer should be defined to be appropriate for all representatives of producers. It does not matter what products are produced: crops and livestock, clothes, oil products, machinery, etc. It does not matter whether a producer is a craftsperson, a large company, or a country. They all have the same qualitative structure.

Since the dimensions of the whole are invariant, the biggest challenge in the analysis of qualitative structure is the identification of a set of three components—tools A, B, and C. According to the theory of qualitative structure, the producer as a whole entity consists of three components as tools of self-management:

Component A. Resources. To start and maintain the production process, a producer needs resources that are suitable for this purpose. The availability of resources provides an opportunity to realize the process of production that will result in desired products.

Component B. Products. Nobody can be classified as a producer before the first product is produced. After that, an increasing number of products must be made, and this is an attribute confirming that the economic agent has the ability to produce and can ensure the production process.

Component C. Production methods. Transformation of resources into products is only possible when the producer is aware of the production methods—the different techniques and processes used to make products.

All the components are necessary for the wholeness of a producer. If a producer loses even one component, it ceases to exist as a representative of producers.

The producer has the potential to use each of the mentioned three basic components as self-management tools in any dimension of the qualitative structure. The possible six combinations of the three components—resources, products, and production methods—could be defined as a particular self-management strategy. Each combination of components has a special incentive to maintain or increase achieved self-management quality and generates different synergetic effects. Moving to the next strategy, a producer strives to evolve self-management quality by adding new knowledge and skills.

Producers' self-management models, as different strategies based on the qualitative structure approach, include the following:

1. extensive growth strategy (generates scale effect).
2. intensification strategy (generates experience effect).
3. specialization strategy (generates selection effect).
4. diversification strategy (generates complementarity effect).
5. collaboration strategy (generates integrity effect) and
6. innovation strategy (generates independence effect).

The six mentioned strategies create the evolutionary framework based on the qualitative structure approach (see Fig. 2.5). The framework provides guidelines for any producer on how to increase the quality of self-management.

The first pair of strategies focuses on the technical aspects of the production process and seeks to increase the volume of products. The second pair of strategies focuses on competitive advantage in the market and seeks to find better methods of production that allow producing goods or services better or more cheaply than its rivals. The third pair of strategies focuses on value creation and seeks to ensure resource regeneration. Extensive growth, specialization, and collaboration strategies are space-focused self-management models, while intensification, diversification, and innovation strategies are time-focused management models.

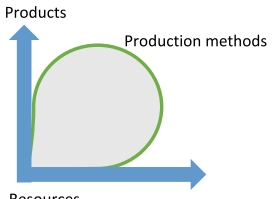
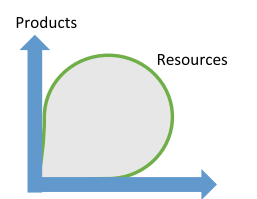
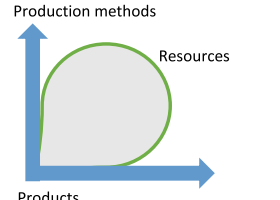
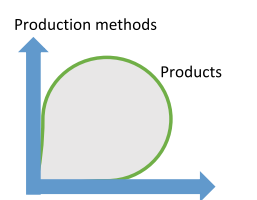
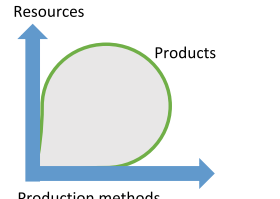
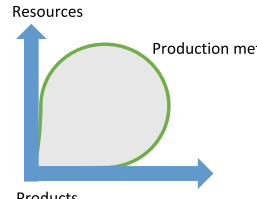
Approach	Place-oriented	Time-oriented
Technology-focused	 <p>STAGE 1. Extensive growth strategy <i>Scale effect</i></p>	 <p>STAGE 2. Intensification strategy <i>Experience effect</i></p>
Market-focused	 <p>STAGE 3. Specialization strategy <i>Selection effect</i></p>	 <p>STAGE 4. Diversification strategy <i>Complementarity effect</i></p>
Value-focused	 <p>STAGE 5. Collaboration strategy <i>Integrity effect</i></p>	 <p>STAGE 6. Innovation strategy <i>Independence effect</i></p>

Fig. 2.5 The desirable sequence of combinations between a producer’s components and quality dimensions (Source Created by the author)

Although the concepts of extensive growth, intensification, specialization, and diversification strategies are fairly well known and appear in many management models and techniques, they are not considered in mainstream management theory as interrelated and based on the same structural components. In the proposed framework, all six strategies are closely linked and compose one cycle of evolution. Moreover, they evolve

step-by-step from the preceding strategy and gain in complexity. This means that producers need to learn how to manage themselves, moving from simpler to more professional strategic thinking. This means that the evolution of the producer according to qualitative structure theory is a path-dependent process. Of course, the speed at which a producer evolves can vary greatly. Figure 2.5 shows the preferred sequence of combinations of the producer's components and quality dimensions. It is important to follow the sequence of changes described, as the six stages of the evolution cycle are designed in such a way that the transition to each next stage of evolution adds skills of operating the components in a more advanced way, and in the last stage of the evolution cycle, the producer can operate all three tools in all three dimensions of the qualitative structure; furthermore, the producer should learn to use the self-management tools in two perspectives: time and place. Therefore, the past of the producer is highly important. The characteristics of a producer achieved at an earlier stage define the producer's possibilities in the following stages, e.g., the small volume of resources accumulated in the first stage will limit the possibilities of the producer using special production methods, entering the market with specialized products, becoming an attractive collaboration partner, etc. For this reason, the producer cannot jump to a higher stage of evolution by skipping the preceding stage(s). However, there are quite a few attempts to ignore the step-by-step evolution in business management practice when producers with a lower strategic thinking quality try to implement a strategy that requires a higher quality of self-management. Qualitative structure analysis shows that most such initiatives have failed due to their inability to generate the simpler synergetic effects that should be learned in earlier stages of evolution.

Understanding how self-management quality evolves step-by-step and why the evolution of the quality structure should follow the sequence described above are important success factors.

Stage 1. Every new producer starts with an extensive growth strategy. This strategy is the simplest self-management pattern, where the producer increases resources and believes that larger quantities of resources can generate more products. Resources represent the active force of the producer, and the task of self-management strategy is to

increase them. The manipulations with resources are based on linear, additive, and one-direction thinking. Producers assess their quality by comparing their current inputs and outputs with their initial ones. In short, the strategy is based on the concept of 'the more the better'.

The strategy of extensive growth aims to generate the *scale effect*. A significant increase in resources usually results in an economy per unit of output. A positive synergetic effect—the economy of accumulated resources per production unit—appears when the resources reach critical mass. For this reason, large producers have an advantage over small producers. However, the interdependence of resources and production does not go in a straight line. The curve of the resource and production dependence takes the form of an inverse U because a limiting tool—production methods—creates the threshold for continuing the evolution through the extensive growth strategy. When resources are increased to a certain level, a negative synergetic effect is observed, and the producer receives a warning that the strategy is no longer worthwhile in terms of quality growth, as production efficiency decreases with the increase in resources. In this situation, the producer must decide how to proceed in the future. There are three alternatives:

1. Continuing to increase resources.
2. Stop the growth and maintain the accumulated volume of resources.
3. Adopt a new self-management strategy.

Many producers choose either the first or the second alternative in the hope that the negative synergetic effects will not last long and that they will be able to continue using this strategy. However, such decisions imply a refusal to evolve.

The third alternative is usually chosen by the producers, who have learned the first lesson of evolution on nonlinear growth. The strategic thinking of a producer who is looking for a new strategy is perfectly logical: organizational activities shift from resources to production methods, as this component is a main obstacle that limits growth. The attempts to change the quality of production methods mean a switch to a new self-management model—the strategy of intensification.

Stage 2. The intensification strategy is a self-management model based on improvements to production methods. The strategy is time-focused and aims to speed up the production process. The idea of comparative analysis and learning from best practices lies at the heart of this strategy. The producer analyses the production process as a repeatable phenomenon and identifies which variances from the routine accelerate or slow down the growth of productivity. Reorganization of the current methods of production depends on the availability and capacity of resources, as resources represent a limiting force in the second stage of evolution. It sometimes happens that the most productive method cannot be used because of a lack of special resources, e.g., human resources.

Usually, producers can find many new opportunities for the reorganization of the production method breaking the production process into smaller and smaller semiautonomous operations. The transition to the next stage of evolution, therefore, does not have as strong and obvious a catalyst as in the first stage and is more complicated. The producer is usually looking for a new strategy in the following situations:

- Large variations in productivity between different types of products become evident.
- High production intensity destroys the accumulated resources, e.g., the practice of continuously farming on the same area of land may cause soil erosion and depletion.

Both situations provide an incentive for the producer to reorganize the structure of the products. To do so intentionally means entering the next stage of evolution.

Stage 3. The specialization strategy directs producers to make critical decisions about their product range. Focusing on a limited scope of products, a producer becomes more efficient as specialization leads to quality work. By specializing in one area, a producer can hone a product and skills. A well-defined focus within the realm of key competencies allows better use of experience and speeds up workflow. The revision of the product portfolio by choosing to produce only a few products allows the producer to gain a competitive advantage over other producers.

Increased specialization requires the revision of decisions made at earlier stages of evolution, as product portfolio restructuring opens new opportunities to apply extensive growth and intensification strategies. If a producer properly executes a specialization strategy, it answers the question of whether to make or buy some of the components of the final product if they are available in the market.

The specialization strategy is useful as long as it helps to increase the producer's quality by achieving a positive selection effect through the reorganization of the product portfolio. In a favourable business environment, the highest level of specialization could be the best solution, and a producer has no incentive to seek a more complex strategy. However, if the business environment changes unexpectedly or very quickly, high specialization becomes a major risk factor. In the event of radical changes in market conditions, high-level specialization has a negative effect, and the producer must launch risk management by shifting to the next stage of evolution.

Stage 4. The diversification strategy helps to reorganize a structure of invested resources with the aim of reducing a producer's dependence on a single product market and spreading the risk across multiple areas. The producer strives to find the best possible balance between two objectives: (1) to alleviate the impact of unsystematic risk events and (2) to maximize profit. The goal of the diversification strategy is to set and maintain a tolerable level of risk over the producer's time horizon. The concept of complementarity lies at the heart of this strategy. The reinvestment portfolio should be arranged with an effect of complementarity by reinvesting in products with different degrees of risk.

There are numerous ways to build and rebuild a reinvestment portfolio. For this reason, most producers tend to procrastinate the transition into the next stage of evolution. However, when the chaotic dynamics of the environment get out of control, the manufacturer starts to look for a completely new strategy that can reduce the number of unsystematic events that undermine business sustainability. An increasing dynamism in the environment and difficulties in managing diverse business activities force the producer to start collaborating with the participants of the business ecosystem.

Stage 5. The collaboration strategy aims to reduce uncertainty by transforming production methods, as they are the active force in this self-management model. However, they should be analysed differently than in the second stage of producer evolution. In this stage, a producer must keep in mind the overall system of the production processes, which includes the circulation of resources and products in the internal and external environment. The strategy focuses the producer on the macro level and encourages a rethinking of the boundaries of the business ecosystem and a restructuring of the interorganizational relationships with its participants. The task is to create more value collectively than the producer could create individually through collaborative activities. The strategy should be based on the principles of mutuality and reciprocity when all stakeholders in a specific partnership benefit from the collaborative activities in a way that is meaningful and beneficial to them as well as to the larger shared goals.

The collaboration strategy can also help reduce the gaps between the desired and the real capacity of the four previous strategies. The task of the producer is to establish reasonable capacity margins for each strategy and to identify strategies with too low or too high capacity. Maintaining a minimal capacity should guarantee vitality while avoiding excess capacity should promote more effective use of resources. If a producer is not able to maintain the desired limits of capacities or wants to extend them, it is essential to start a collaboration with other participants of the business ecosystem. A producer can enter the existing resilient collaborative organization or create a new collaborative group. Through common efforts, the members of a collaborative entity have the possibility to break the constraints to maintain the desired capacity and/or to create a synergy. In the case of a low or excessive capacity of the extensive growth strategy, collective efforts can lead to a positive scale effect resulting from the common acquisition and use of resources. Collaboration provides learning opportunities for collaborators and can accelerate the intensification of the production process through collective work. Collaboration can help increase the capacity of the specialization strategy through collective projects, where each group member concentrates on the most favourable tasks and roles. Joint projects also reduce business risk if the resources of team members complement each other.

The collaboration strategy, however, is not a panacea. A growing number of different collaborative networks and/or their members are continuously transforming business ecosystems. Instead of reducing uncertainty, collaboration agreements start bringing additional dynamism to the producer's environment by creating new links and destroying old links. In an extremely dynamic environment, where the collaboration strategy is insufficient to maintain sustainability, producers look for a new strategy to help them reorganize the limiting force of the collaboration strategy—products. The development of new technologies, changes in lifestyle and consumption practices, new kinds of resources, and many other factors have an impact on the use-value of conventional products and their demand. The traditional model of the product life cycle does not provide an explanation of what happens after the decline phase. The qualitative structure theory offers to apply innovation strategy as the self-management model, which helps producers enter the product rejuvenation stage. When consumers begin searching for alternative products with a better value, the producer should start innovative efforts and offer consumers substitute products.

Stage 6. The innovation strategy aims to implement radical product innovations and is focused on value creation. The main challenges facing innovation strategy building include developing integrative thinking in the context of collective use-value (*the collective use-value is a value that the group of consumers gains from the product when they are using the product as a resource to produce other desired products*). The concept of substitution lies at the heart of this strategy. The producer must propose a new, redesigned, or substantially improved product that is more attractive than the old one to both consumers and producers. The producer's task is to understand the reasons for the loss in the product's value and to develop a new alternative product with more valuable functions and features than the old product. New inventions related to the product itself cannot suffice. A new product can only start a new life cycle if the producer has mastered all previous strategies. Innovation strategy requires efforts to introduce a new product to consumers and build the product ecosystem; otherwise, the strategy will generate a negative effect.

The innovation strategy can be combined with all the previous strategies. The combinations give less radical innovations. For instance, when

the innovation strategy is combined with the extensive growth strategy, the producer looks for alternative resources and aims to replace ineffective resources with new ones. If the innovation strategy is combined with the intensification strategy, the producer may increase the production intensity with the help of process innovation, i.e., by replacing one or several operations with completely new ones.

The producer, who is mastering the sixth strategy and has succeeded in radical product innovation implementation, arrives at the next spiral turn of the life cycle with a more favourable business environment. The producer becomes an important part of a new ecosystem with a large pool of accessible resources and has the possibility to start the 'second cycle of evolution' by entering the stage of extensive growth and enjoying significant obstacle-free resource sourcing from the external environment. According to the Blue Ocean strategy by Kim and Mauborgne (2005), the innovation strategy helps to transfer from the 'Red Ocean' into the 'Blue Ocean' with an ample opportunity for growth that is both profitable and rapid.

Chapter 3 of the monograph designs and explains a theoretical framework of agricultural product-oriented farming business model transformation according to the servitization concept.

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Part II

Servitization of Farming



3

State of the Art in Servitization Research

Rita Lankauskienė

The term ‘servitization’ appeared in the scientific literature at the end of the twentieth century. It was first mentioned in 1988 in an article by Vandermerwe and Rada, entitled “Business servitization: adding value by increasing the volume of services” (1988). The first decade of the twenty-first century started with the surge of foundational articles in the product-service system conceptualization (Brax, 2005; Davies, 2004; Gebauer et al., 2005; Manzini et al., 2001; Mathieu, 2001a, 2001b; Mont, 2002; Mont & Plepys, 2003; Morelli, 2002; Oliva & Kallenberg, 2003; Tukker, 2004; Tukker & Tischner, 2006, etc.). In turn, the terms ‘servitization’, ‘service-oriented business model’ and ‘product-service system’ have become increasingly common in the academic and professional business literature. As noted by Rabetino et al. (2018), the term ‘servitization’ gained momentum after the two constructive reviews of S. Vandermerwe and J. Rada’s work, proposed by Baines et al. (2007, 2009a).

On a general basis, the term ‘servitization’ might be understood as expanding the range of services offered by producers, going beyond their traditional activity of producing goods. In other words, ancillary

services, used to attract customers and to facilitate the sale of physical goods, are transformed into a distinctive function that gives the firm a competitive advantage. In scientific discussions, servitization was used as almost a synonym for companies that shift from selling products and elementary services to creating value through product-service systems. Most examined cases in the field were typical product-service systems, including advanced life cycle services and company business model changes (Durugbo, 2013; Rabetino et al., 2015, 2018). Further developments in the scientific body of knowledge in the field were highly shaped by broadly examined cases of the strategic shifts from commodity traps to services by worldwide known corporate giants, such as IBM, Xerox, Rolls-Royce, DELL, and others (Ahn et al., 2023; Huikkola et al., 2016). Servitization was referred to as the activity of selling the services provided by the product rather than the product itself. For example, a servitization firm prices the usage of a car by each mile driven or each hour of usage while covering gas, maintenance, and insurance costs (Kanatlı & Karaer, 2022).

Throughout the first decades of the twenty-first century, product-service system terms became popular ‘new economy’ buzzwords. Google Scholar finds almost 26 thousand scientific sources, mentioning the term ‘servitization’ in different scientific sources at the beginning of 2023. Different contexts of scientific findings in recent decades have accumulated into particular schools of thought propagated by communities of scholars working in the field (Lightfoot et al., 2013; Rabetino et al., 2018).

3.1 Communities of Scholars in Servitization Research

By the end of the second decade of the twenty-first century, the structure and boundaries of servitization research have been refined, aiming to develop a precise understanding of the term ‘servitization’. There was a need to better integrate and deeply analyse the interactions between adjacent but separate research communities. The qualitative structuring of the servitization-related research content revealed a list of topics

considered important for further developments in servitization research (Rabetino et al., 2018).

A few different perspectives were adopted by communities of scholars in the field of servitization research. There is a distinction in the scientific literature between mainstream communities of scholars in servitization research and other servitization research scholars (Benedettini & Kowalkowski, 2022; Rabetino et al., 2018; Vendrell-Herrero & Wilson, 2017, etc.). The mainstream is composed of two branches: (1) marketing-led and (2) management-led.

The *marketing-led community* mostly addressed design and sustainability issues when building product-service systems. The analysed product-service systems in this branch constituted the needs of the functional economy: eco-design, cleaner production, efficient delivery, remanufacturing, and related areas. These scientific examinations well served newly raised manifestations of the sustainability agenda with a special focus on the environment and economic growth. Most of them concluded on implications for policymakers and societal impacts concerning the contribution of product-service systems to cleaner production and sustainable consumption (Manzini et al., 2001; Mont, 2002; Tukker, 2004). A further integrated engineering approach in this branch of research addressed the observed needs for new design and development issues in building such product-service systems in organizations. Therefore, the questions of operation strategies and a variety of management issues came into research agendas, starting with servitization strategies and organizational structures and finally examining overall organization and performance in the whole value chain (Rabetino et al., 2018).

Different streams are also observed in product-service system design research. Some of them consider the application of engineering methods and computer-aided tools for codesigning the life cycles of such systems. There are separate attempts that focus on the analysis of the technical requirements and engineering methods to be applied in developing such systems and their optimization. Such systems had also been specifically titled industrial product-service systems, or integrated product and service offerings in scientific research, to be sold as functional product value propositions. The overall findings in the marketing-led mainstream

suggest that, despite the extensive terminology in separate branches, the transition from selling products and selling services to selling product-service systems became addressed mostly with the same two terms ‘servitization’ (Baines & Lightfoot, 2013; Dimache & Roche, 2013) and ‘servicification’ (Rabetino et al., 2018; Tomiyama, 2001).

The *management-led community* represents the mainstream with several topical distinctions concerning the solution business. Consumer solutions are addressed by focusing on the challenges of marketing integration into hybrid value propositions. The research in this stream is focused on value cocreation with customers, customer relationship management, and selling processes (Gronroos & Helle, 2010; Tuli et al., 2007). Furthermore, there is a significant branch of researchers concerned with analysing the after-sales and continuum when dealing with particular service portfolios provided by manufacturers for their installed bases (Oliva & Kallenberg, 2003). Thus, the research has expanded to the service package concept to operations and services management fields (Park et al., 2012). The following view on the service transition is based on integrating operations management and strategy, aiming to analyse the organizational and operational subjects concerning organizational design and capability development in long-term solutions (Rabetino et al., 2018). The first concern in the stream is financial sustainability, and the second concerns project integration and management, business networks, and business models (Kujala et al., 2011; Liinamaa & Wikstrom, 2009). Many subjects are of interest in this multidisciplinary community, considering innovations in services and operational management, services strategies and business models, servitization paths, and different challenges overcome in the servitization strategy adoption processes (Rabetino et al., 2018). This mainstream adds to Vandermerwe’s and Rada’s (1988) term ‘servitization’ by proposing more alternative terms (Rabetino et al. systematization, 2018): ‘servicizing’ (Reiskin et al., 1999), ‘servicization’ (Quinn et al., 1990), ‘service transition’ (Fang et al., 2008), ‘tertiarization’ (Leo & Philippe, 2001), ‘service infusion’ (Brax, 2005), and ‘service orientation’ (Martin & Horne, 1992), as well as ‘moving downstream’ (Wise & Baumgartner, 1999), ‘value migration’ (Davies, 2004), ‘service addition’ (Matthyssens & Vandenbempt, 2010), ‘service-driven manufacturing’

(Gebauer et al., 2012), ‘product-service-innovation’ (Bustinza et al. The integration of products and services is described by using the terms ‘solutions’ (Galbraith, 2002; Storbacka, 2011), ‘integrated solutions’ (Davies, 2004; Wise & Baumgartner, 2000), and ‘customer solutions’ (Tuli et al., 2007).

In addition to the above-outlined mainstream communities, the identified intersecting *services science community* examines core servitization-related issues without using the term ‘servitization’ itself (Kamp & Parry, 2017). They focus on studies of new services development and services marketing and find related conceptual frames with service-dominant logic and value cocreation (Vargo & Lusch, 2004). With such a multidisciplinary approach, this intersecting community is referred to by a particular group of researchers in the field (Baines et al., 2009b; Lightfoot et al., 2013), considering the service system as a kind of abstraction in services science, which is still in the transition of its foundational stage and goes through a variety of sciences. It is concerned with people, technologies, information and organizations, and co-resources and co-components of ‘product-plus-service’ business model building (Rabetino et al., 2018). In contrast, some recent findings highlight that servitization is currently an already matured discipline that composes a solid body of scientific literature (Kowalkowski et al., 2017).

Considering the unexisting broad-based consensus on the core concepts and definitions proposed by research communities in servitization research, the terms used and their utilization are still a significant challenge (Geum & Park, 2011; Kowalkowski et al., 2022; Li et al., 2021; Pawar et al., 2009; Rabetino et al., 2018; Shen et al., 2023; Tukker, 2015). A variety of multidisciplinary approaches, methods, and terms cause difficulties and limit the accumulation of knowledge in the field. At the same time, the demand for conceptual developments in servitization research became evident due to observed theoretical pluralism and diversity of research. Greater knowledge accumulation within and across communities of scholars in the field is necessary to move forward. The organizational change process during servitization is considered to be the biggest gap to be filled with fundamental research concerning mezzo-level theories (Baines et al., 2013; Rabetino et al., 2018).

The most recent works concerning the changes in servitization research throughout the last decade observe a sharp rise in a variety of academic activities and outputs: scientific publications, special issues, servitization-focused international conferences, and other events. There is no doubt that this signalizes the overall growing interest in ‘new’ services across industry sectors (Kowalkowski et al., 2022). The above-given overview elucidates that servitization has been studied mainly in the marketing and management communities. Hence, recently, the body of knowledge expanded, and scientific discussions have already taken into account the territorial servitization of national and regional economic systems (Cuadrado-Roura, 2016; De Propriis & Storai, 2019; Lombardi et al., 2022; Vendrell-Herrero & Wilson, 2017; Vidickienė et al., 2019, 2021).

Moreover, in addition to servitization issues in industry, a particular body of knowledge has already started to form in the fields of agriculture and rural development science and is concerned with the servitization of farming (Gallouj, 2021; Vidickienė et al., 2019, 2021). However, research in the field is still very fragmented, despite the existing huge domain to be explained from scientific perspectives.

Since servitization has traditionally been considered an applied and actual problem-accelerated discipline, much of the published research is of high practical relevance (Rabetino et al., 2021). Despite the fact that servitization in farming is strongly practical and evidence-based and that a number of initiatives are in action, the nonexistence of both foundational and empirical evidence-based research in the field seems paradoxical (Vidickienė et al., 2019). In this book, the practice-based collection of scientific evidence serves to add to the rigour of servitization research by proposing a solid qualitative structure theory grounded evolutionary approach (see Chapters 2 and 6).

3.2 Paradoxes of Servitization

The latest scientific literature addresses several servitization paradoxes. Servitization as a process moving from a product-driven business model to a product-service system sometimes produces unexpected outcomes,

confronting the definite consequence of outcome logic in the case of industrialization. Servitization used to be considered a risky decision by scholars of different disciplines (Brax, 2005; Oliva & Kallenberg, 2003; Xing et al., 2022). One side of the risk is a radical change in the organization of company operations (Brax, 2005; Oliva & Kallenberg, 2003; Vidickienė et al., 2019). Another is related to investments in a shift to service-oriented business. The latter, made by manufacturing companies, is not always accompanied by better economic performance, as consequently expected. This is confusing for industrial economists, who follow the paradigmatic assumptions of the industrial era that investment in the mechanization of production automatically increases productivity (Vidickienė et al., 2019, 2021). In the case of industrialization, all investments into the additional mechanization of production lead to a consequent increase in productivity. However, investments in servitization never guarantee such an expected outcome. This, and some other related important aspects, are referred to in the scientific literature as the ‘service paradox’ (Gebauer et al., 2005) or ‘servitization paradox’ (Brax et al., 2021; Xing et al., 2022).

The measurement of servitization and explanation of its dynamics was found helpful in dealing with service paradoxes. The three conceptualizations of the nature of servitization are suggested to be taken into account (Brax et al., 2021):

1. *transition*, related to positioning in the value chain, when a company moves closer to the consumer;
2. *extension*, concerned with the issues of the extended company’s portfolio, and may also transform the product-based value proposition;
3. *transformation*, embodied by a transition in the company’s values shifting from a product-based to a services-oriented business model.

Based on that, the core most threatening paradoxes—financial and organizational—are examined next to the success of servitization in manufacturing. The *financial paradox* is described as the inability of made investments in services to generate returns for higher costs of service provision (Gebauer et al., 2005). The *organizational paradox* occurs due to the increased company portfolio with services provided.

The bigger structure becomes less flexible to fast and critical organizational reforms of capabilities and mindset (Brax, 2005; Zighan & Abualqumboz, 2022). Therefore, the servitization process is not just simply adding services to the production body. Servitization overwhelms changes in the overall organization, starting from a transition in the mindset and management, entering the extension, and continuously experiencing transformation. All of this causes uncertain conditions at any stage of transformation, and logically foreseen expected effects may fail.

Different propositions are found in the recent literature on how to address servitization paradoxes. For instance, a thoroughly arranged framework of financial and nonfinancial indicators of the organization's performance might propose a comprehensive measurement tool that is helpful in forecasting the expected outcomes from the services-oriented business model (Brax et al., 2021). Other findings suggest relying on a processual perspective (Dmitrijeva et al., 2022) since shifting from a product-driven business model to a product-service system may take several years for manufacturers. Understanding the progress of the servitization process makes businesses' navigation throughout the process easier. Thus, the conceptualization of the processual perspective, proposed in recent research, integrates a servitization stage model with established paradox theory to depict the paradoxical tensions that servitization creates. This helps to identify how and when problems occur and what decisions should be taken at a particular servitization stage to drive the process towards the expected results.

The servitization *paradox* is also examined in the literature *from an institutional pressure* perspective, confronting the common state that the servitization of manufacturers is driven by internal economic incentives. Considering the influence of the external institutional environment on a company's servitization and final performance, based on the case in China (Wang et al., 2022), it was found that institutional pressure increases the willingness to adopt servitization strategies, and the adoption of such strategies is not only driven by seeking internal economic benefits but also affected by institutional pressure from external environment stakeholders. It was also found that companies with individualistic identity orientations tend to adopt servitization strategies less when

facing normative and imitative pressures. Finally, it was found that servitization strategy in Chinese manufacturing companies negatively affects financial performance, but this is mainly explained by the later started services-oriented business model transformations.

Recent scientific literature highlights the particular *paradox of digital servitization*. The success of digital servitization relies on at least 3 parameters: data concerning the use of the product, location, and condition. Since customers are often reluctant to grant data access, it becomes unclear which intraorganizational and interorganizational challenges (Eggert et al., 2022; Galvani & Bocconcelli, 2022; Golgeci et al., 2022) emerge within and between service providers and customers. Research, performed across a wide range of industries, identified four paradoxes inhibiting data access and comprising one overarching interorganizational paradox in the form of the need for access versus the need for shielding. The three intraorganizational paradoxes are product-focused identity versus digital-focused identity, data appreciation versus data depreciation, and goodwill perception versus opportunism perception. To address each paradox, the researchers provide a comprehensive set of strategies to address the identified paradoxes. Thus, services providers may address in advance the expected data access paradoxes that they and their customers might face.

Specifically, addressing the state of the art of farming servitization research regarding the outlined servitization paradoxes, an exceptionally modest body of knowledge is found in the field. A few fragmented studies address precision agriculture and overcoming the digital servitization paradox (Smania et al., 2022), which is also addressed in the context of benefits to farmers and their suppliers (Coreynen & Pier van Gosliga, 2023). Hence, there are more relevant issues to be outlined in the context of ongoing research, including digitalization and territorial servitization of farming.

3.3 Digitalization and Territorial Servitization

Due to the ongoing digitalization age, servitization of manufacturing increasingly required the use of digital technologies and related infrastructures. Considering the worldwide trend of shifting from a product-driven business model to a product-service system, a solid body of literature has been recently developed to address the issues of servitization in line with digitalization. A variety of effects are taken into account when examining the transformations that occur in organizations and their internal and external environments, as well as tremendously expanding relations via networks due to the shift to digital servitization (e.g., Favoretto et al., 2022; Raddats et al., 2022; Shen et al., 2023).

Recently, four emerging thematic areas in the digital servitization literature have been distinguished (Shen et al., 2023):

1. aligning digitalization and servitization transformations;
2. value cocreation perspectives on digital servitization;
3. conceptualizing the platform strategy for digital servitization;
4. business model innovation in servitization.

Some recent studies highlight that digitalization causes overall fundamental changes in product-driven companies in their transition towards services-oriented performance (e.g., Favoretto et al., 2022). The developed frameworks for digital servitization suggest that changes in organizations occur in at least nine dimensions where digitalization influences servitization: motivations, strategy, service offering, structure, culture, resources and capabilities, processes, performance, and overall servitized ecosystems.

The recent findings stress the gap in addressing the issues of value cocreation in services digitalization. Lately developed frameworks in the field of digital service innovation (e.g., Raddats et al., 2022) suggest examining the digital service innovation mode (incremental, intermediate, radical) and the impact of innovation (customer, manufacturer, hybrid) only in conjunction.

Conceptualization of the platform strategies for digital servitization is considered important due to the failure to manage the above discussed services paradox (Cenamor et al., 2017). Platforms, for example, serve well in the simultaneous enrichment of value propositions by adding services while maintaining the cost levels.

To understand the digitalization of services from a business model innovation perspective and in the context of ecosystems, particular theories of a firm have been used (Horváth & Rabetino, 2019; Shen et al., 2023): industrial organization, organizational identity, the resource-based view, and the transaction cost approach.

Considering the increasingly important role played by digital servitization in creating multiple benefits for consumers, services providers, society at large, and the environment (Li et al., 2021; Paschou et al., 2020), it should be stated that all these gains have been broadly supported by both empirical evidence from manufacturing companies and fundamental developments in the industrial sector. In manufacturing, servitization is no longer imagined in isolation with expanding digitalization. Thus, hi-tech becomes a precondition for digital servitization in manufacturing. Hence, it has been stressed that “effective territorial servitization requires a value-adding fit between manufacturers and knowledge-intensive business service” (Lafuente et al., 2019, p. 313).

However, at the same time, the emerging research field, increasingly supported by existing evidence and applied practices in the field of digitalization and territorial servitization of farming, is still undiscovered in scientific research. Considering the fact that the vast majority of farmers thus far have adopted a product-driven business model, they are already facing transformations in practice, starting the shift towards a service-oriented model. However, the term ‘servitization’ has been used to describe alternatives to the industrial method of production in farmers’ farms in only a few works thus far (Vidickienė, 2018; Vidickienė & Gedminaitė-Raudonė, 2018a, 2018b; Vidickienė et al., 2019; Vidickienė et al., 2021). Broader in scientific literature, such rare case studies are referred to as ‘new generation’ farming (not the business models!) instead of business model innovations through servitization or instead of servitization practices in farming.

It is important to state that in contrast to servitization in manufacturing, where companies start providing services to other companies, farmers directly face consumer needs and give a much greater focus on value cocreation. Digitalization in manufacturing processes often pushes industrial companies towards servitization, so it has become common to consider the use of high technology as a prerequisite for servitization in manufacturing. However, in those cases of servitization in farming, qualitative restructuring first causes a high demand for new knowledge dealing with the management of service business rather than simply digitalization solutions. Of course, in the upper stages of the product-service system evolution, digital solutions can serve to create a platform for well-functioning interactive multistakeholder collaborative relationships (see Chapter 8), but digitalization itself is usually not the driving force for servitization in farming.

In summary, in the third decade of the twenty-first century, servitization has become one of the most active domains in overall service research (Coreynen et al., 2021; Kowalkowski et al., 2022; Li et al., 2021; Pinillos et al., 2022; Xing et al., 2022). The interest arrived from multiple disciplines: marketing, operations, service management, engineering management, and strategy. Recently, the term has become understood more clearly, referring to a particular entity's transition from a product-driven business model, focused on selling product logic to a more service-oriented business model, focusing on consumer facilitation in value cocreation through advanced services and solutions.

Considering the state of the art in servitization research in the third decade of the twenty-first century, an important claim is to be considered: "The servitization community should build on its strong foundation of investigating managerially relevant business issues and its accumulated empirical evidence to increase its level of rigor through boundary-spanning research. Digitalization is certainly a case in point" (Kowalkowski et al., 2022, p. 59). Thus, a broad context arrives in servitization research considering digital technologies as enablers of opportunities for service-based value creation and revenue generation (Shen et al., 2023). In contrast to servitization in manufacturing industries, sufficient evidence exists that hi-tech is not a precondition for servitization in farming. The shift from agricultural product-driven business

models to product-service systems, as explored elsewhere in this book, mainly happens in small farms, and hi-tech becomes only an additive but not a crucial condition in building service-oriented business models in farming. As empirical studies show, digitalization should be addressed at the regional level. Collaborative networks involved in the process of territorial servitization of rural areas can offer effective solutions to the digitalization of product-service systems by creating digital tools for network platforms. Finally, it is often stated in recent insights that there is a huge gap in servitization research to be filled by scholars from a systemic and interdisciplinary point of view. The research proposed by this book is also an attempt to add to the state of the art in servitization research by offering an innovative theoretical background to understand servitization phenomena—the concept of qualitative structure (Kalinauskas, 1991; Kalinauskas & Reinin, 1995; Melnikienė & Vidickienė, 2019; Vidickienė, 2013; Vidickienė & Melnikienė, 2014; Vidickienė et al., 2019, 2021, 2023). The Quality Structure method is particularly relevant in the current phase of societal development, as it allows us to analyse and develop business models and strategies based on holistic, evolutionary, and collaborative approaches, which are particularly important in the post-industrial service economy. The examination of farming servitization according to the qualitative structure approach reveals a number of new theoretical insights into servitization that are not readily apparent from an analysis of the servitization of manufacturing companies alone and provides a more complete understanding of the motivation to shift from a product-driven business model to various product-service systems. The proposed approach is relevant not only for researchers and practitioners interested in the servitization of farming but also for those interested in the servitization of the manufacturing industry.

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4

Innovative Business Model 'Product Plus Service' as Paradigm Innovation in Farming

Dalia Vidickienė

With the growth of technological progress and economic well-being, radical changes occur in society. One of the most relevant changes observed in the twenty-first century is related to the fact that the evolution of the economic and social systems is changing people's attitudes towards the attractiveness of long-established income sources. Statistical data and empirical research show that this trend is particularly clearly observed when examining the attractiveness of activities in industrialized agriculture. As noted by Milone and Ventura (2019, p. 43), "attracting people to farming demands a profound understanding of generational renewal". Many young people perceive the current farming system as an unattractive activity and see no future in the agricultural sector or in the countryside. The especially clearly negative attitude of young people towards farming is revealed in the works of researchers studying family farm inheritance processes (Bednaríková et al., 2016; Chen et al., 2014; Chiswell, 2018; Leonard et al., 2017; Lobley et al., 2010; Morais et al., 2018). Recent studies show that many farmers worldwide now have no obvious successors. Some of them even claim that farm takeover problems arise not only in struggling farms but also in successful farms, and it is predicted that a family farm takeover crisis is approaching in developed

countries (Burton & Fischer, 2015; Ward, 1996). The younger generation has more opportunities to choose the type and form of activity they want, so the tradition of taking over the family business is disappearing. For example, according to the data of the Eurostat farm structure survey conducted in 2016, the share of farmers under the age of 35 in the European Union averaged only 5.1 percent. Despite all the increases in farm incomes, nobody wants to take over their work in the next generation. Neither the children of the farmers nor others view industrial farming as an attractive profession. Considering that approximately 98 percent of the world's agricultural farms are family farms (Graeub et al., 2016), farm succession issues related to the reduced attractiveness of agricultural activities are becoming increasingly relevant.

In search of the reasons for the declining appeal of farming to the younger generation, various approaches are used. However, the critical literature review shows that efforts to make farming more attractive are lacking (1) holistic and (2) evolutionary approaches. First, most of the research and rural development policy measures suffer from reductionism, as the solutions are designed by breaking down a large problem into smaller, easier problems. Most of the literature is limited to a partial viewpoint, and a big picture of the changes has been a rarity. Rural development scientists and policymakers facing a negative attitude towards farming are tempted to focus on smaller problems of this complex global change and study them in great detail. When reviewing the studies carried out in the twenty-first century, it can be seen that they are based on detail-oriented thinking. Moreover, they are oriented to economic factors only, as the major topic to be investigated in this field is an analysis of one or several specific economic factors that reduce the profitability of farm operations. Most studies are framed in the productivity-oriented development model of the industrial era, taking shape after World War II, and characterized by the exclusive emphasis on production quantity achieved through mechanization, electrification, melioration/irrigation, the use of agrochemicals, plant breeding for high-yielding varieties and genetic engineering, etc. The researchers advocating this model are focused on accelerating the productivity of farmers' work through the continuous improvement of technology. They believe that all negative effects caused by industrial agrotechnology and corporate food

processors and retailers can be eliminated through new technologies of the 4th industrial revolution and declare the achievements of technological sciences that help to increase productivity in agriculture as the main driver of positive changes. The growth of productivity is considered by these researchers to be the main task of the agricultural sector and the guarantor of food security of the state or region.

There are few studies that try to present a more complex picture through the set of main factors that reduce the attractiveness of the industrialized farming system, but they also analyse an economic situation only and emphasize the influence of technological modernization. The most popular big picture of farming problems designs the so-called 'agricultural treadmill' theory, which assumes permanent productivity pressure created by industrial agricultural technology whose influence has been broadly discussed in the academic literature in recent decades (Hansen, 2019; Ward, 1993). First proposed by John Cochrane (1958) in his book "Farm Prices: Myth and Reality" treadmill theory seeks to explain adjustments in agriculture that occur in response to the availability of new technologies. According to treadmill theory, because of mass agricultural industrialization, farmers are trapped in a process in which technological innovations create productivity gains for the benefit of progressive farmers. With increasing external inputs for modernization, the unit costs of production are declining and the productivity per worker is increasing. As an increasing number of farmers use the new technology, production increases, and prices fall. Under these circumstances, farmers lose control over farm inputs, growing debt, increasing concentration of land holdings, declining bargaining power of farmers in the market, and increasing corporate control over the food system. The only farms that can survive are those that remain one step ahead of their competitors by investing in modernization and expansion or those with locational advantages. If others catch up with them, another round begins. The more global the market, the higher the treadmill speed. Although the reasons for treadmill effects are economic in nature, they have caused serious social problems. The relative deprivation of farmers' income has been observed in many regions of the world, as farm income does not grow in parallel with increased productivity (Chen & Ravallion,

2013; Czyżewski & Poczta-Wajda, 2016; Sen & Pal, 2013). The treadmill not only increases inequalities among farmers but also makes the agricultural sector ‘a laggard’ in the national economy (Czyżewski et al., 2019). The negative attitude of the young generation towards farming is mainly explained as a reaction to the effects of the ‘agricultural treadmill’.

The productivist agriculture narrative has been dominating for a long time in rural development. However, the consensus surrounding the high-technology model of agrarian development has broken down, in particular, because of the environmental implications of this development trajectory. Much of the rural development and agri-food literature to date speaks critically to the common experience of agricultural intensification and globalization. Both scholars and policymakers emphasize that the agricultural and food system has experienced a crisis and needs to be improved (e.g., Bello, 2020; Marsden, 2003; Nemes, 2005; Rosin et al., 2013; Van der Ploeg et al., 2010; Vidickienė & Melnikienė, 2014; Weatherell et al., 2003). As a suggested solution, the sufficiency narrative emerged and is becoming popular along with the productivity narrative. The sufficiency narrative’s main assumption is that there are limits to growth imposed by the Earth’s finite resources and finite assimilative capacity and by the vulnerability of its ecosystems that provide essential services to mankind (EC, 2011, p. 27). This calls for agroecological innovations and changes in supply chains to reduce demand. However, a deeper look at the proposals on how to improve agricultural development according to the sufficiency narrative shows that most studies are focused on localized agroecological approaches that emphasize environmental protection. Most advocates of the agroecological approach offer to return to the methods of agricultural development used before the industrialization of agriculture. They represent ‘conformist agroecology’ (Sachet et al., 2021), which is based on agronomic sciences and offers a set of practices that look for adaptation to industrial agriculture by fine-tuning tools, such as conservation agriculture and climate-smart agriculture or ‘ecological’ intensification (Giraldo & Rosset, 2018; Pimbert, 2017). Many such practices can be called ‘retro-innovations’ as they come from local traditional indigenous knowledge (Vidickienė et al., 2023). Conformist agroecology aims to reintroduce ecology in agronomic sciences and

change the organization patterns of the R&D system from a product-focused perspective to a system-concerned perspective. The new look at the global agri-food system perspective is developing so-called 'transformative agroecology'. Transformative agroecology is looking for ways that are alternative not only to industrial agriculture but also to the global food system. It focuses on food sovereignty and security and "is part of the struggle to challenge and transform monoculture, input dependence, and existing power structures" (Sachet et al., 2021, p. 3). Seeking to improve understanding of the socioeconomic complexities associated with the transformation of agri-food systems, they offer to broaden and deepen cooperation between science, practice, and social movements for more careful use of natural resources.

However, the advocates of the sufficiency narrative underestimate social and cultural barriers to a transition towards sufficiency. New trends in socioeconomic development are raising more questions on the reasons for decreasing farming attractiveness outside of agroecology and require enriching research and discussion on agroecology by providing a holistic picture of the social, environmental, and economic aspects of the current agri-food system. The biggest challenge is to do so in the context of paradigm changes, as most of the theories of rural development and food systems are focused on explaining unsolved puzzles in the frame of the productivist paradigm and do not search for new solutions. Only a few studies have tried to develop new ways of thinking about rural development in the service economy, but a number of questions regarding the big picture remain to be addressed. More than twenty years ago, Van der Ploeg et al., (2000, p. 398) claimed that "there is a need for a new rural development paradigm that can help clarify how new resource bases are created, how the irrelevant is turned into a value and how, after combining with other resources, the newly emerging whole orientates to new needs, perspectives and interests", but it is still not clearly defined.

As noted by T. S. Kuhn (1962), science does not evolve gradually but is grounded on a paradigm that remains constant before going through a paradigm shift when current theories cannot explain some phenomenon, and someone proposes a new theory. A paradigm is a basic set of beliefs or worldviews that guides research action and is an area of investigation. Paradigm thinking leads to a new point of view on the research subject

and helps find unique ways to understand reality. According to Kuhn, paradigms influence the roster of collectively shared unsolved puzzles and the evaluation of the importance of each puzzle (1970, pp. 174–191). Such puzzles motivate theoretical and empirical research in determining facts, matching facts to theory, and articulating theory (1970, p. 34). If the new paradigm better explains the observations and offers a model that is closer to the current reality, a scientific revolution occurs.

The growing number of unsolved puzzles shows that a new rural development paradigm should emerge as a set of responses to the old paradigm. However, the concept of paradigm is one that many researchers find elusive to articulate and challenging to apply in their research, as the difference between one paradigm and another is similar to entering into a different world where they feel they have lost their knowledge. First, scientists addressing a new paradigm should forget the rules of their discipline. Second, transitioning from one paradigm to another is based on the search for fundamental concepts and requires abstract thinking, which is considered a higher-order reasoning skill. The task of scientists is to identify the main paradigm innovations leading to the transition into higher quality (According to Bessant and Tidd [2007, p. 13], “paradigm innovations are changes in the underlying mental models which frame what the organization does”).

Seeing the world through a different lens has great advantages, but, as noted by Genter and Stevens (1983), mental models are enduring and resistant to change. For lasting paradigm change to happen, it is very important to question the mental models that may be holding people back. The theory of postindustrialism has the greatest potential to reorganize the current socioeconomic mental model. Postindustrialism offers a holistic evolutionary approach based on socioeconomic paradigm change and helps us to look at the agri-food system and rural development research field situation from a new perspective. According to postindustrialism, the previous stages of global economic evolution can be defined as (1) agrarian and (2) industrial. We live in the era of transition from an industrial to a post-industrial society. According to the evolutionary approach, each stage of evolution incorporates the best characteristics of the previous stages. Consequently, further research requires a clear identification of the differences and similarities in the

organization of socioeconomic activities according to agrarian, industrial, and post-industrial paradigms.

Agrarian society was designed around land and labour. "Industrial society was designed around 'fabrication', such as harnessing energy to create machines" (Bell, 1976, p. 47). In the industrial stage, labour and land continued to contribute to prosperity, but capital has taken the lead, as it was needed to purchase manufacturing equipment and pay for research and development of technological innovations (Gorey & Dobat, 1996). Industrialization of agriculture essentially turned farms into factories, requiring inputs such as synthetic fertilizers, chemical pesticides, large amounts of irrigation water, and fossil fuels to produce crops and livestock by mechanized production means. The farmers began to depend on money, rather than land, to feed themselves. However, how is post-industrial society designed?

The term 'post-industrial society' popularized by sociologist D. Bell (1973) is used very often in the scientific literature, but the fundamental difference between industrial and post-industrial society is still not agreed upon. In the beginning, the academic community tried to define post-industrial society by the end of the dominant characteristic of industrial society. The new stage of evolution has been characterized as a 'post-oil society', 'post-bourgeois society', 'post-capitalist society', 'post-economic society', 'post-modern society', 'post-civilizational society', etc. Later, to understand the essence of the new post-industrial stage, the search for another name that best describes the main paradigm innovation began. Many new names for the new stage of evolution have been proposed: 'informational', 'knowledge', 'organized', 'conventional', 'programmable', 'experience', 'dream society', etc. Scholars have developed special theories to argue their concepts. 'Information society' and 'knowledge society' became the most popular names, and they were widely used not only in academic literature but also in public administration and business management. However, it is now becoming obvious that these popular names do not integrate the key difference between the industrial and post-industrial paradigms, as new concepts are constantly emerging. For instance, in recent decades, names such as 'network society' or 'platform society' have become popular. They identify not only new characteristics of society but also changes in relationships between members of

society. Additional new features find scholars that tend to examine industrial and post-industrial eras as two competing paradigms. According to T. A. Lyson (2004), differences between two competing industrial and non-industrial paradigms can be described in six main dimensions: (1) centralization or decentralization, (2) dependence or independence, (3) competition or communalism, (4) the dominance or harmony of nature with nature, (5) specialization or diversity, (6) exploitation or restrained behaviour.

The growing list of aspects that characterize the transition of society from the industrial to the post-industrial stage testifies that scholars are trying to define the new paradigm according to the reductionist approach. Moreover, they ignore the essential role of services. According to Bell, the post-industrial theory is based on the assumption that services become the main economic activity. The analysis of the structure of the global economy shows that the manufacturing sector has already lost its leading position to the service sector, both in terms of the number of people employed in this activity and in terms of the share of GDP belonging to the service sector. This means that economies around the world have long reached the age of service-driven economic growth. However, most scholars explain this process as a simple quantitative growth of the service sector and remain focused on the further industrialization of the agricultural sector. This situation is largely due to a lack of collaboration between disciplines, especially because economic development and sociology disciplines continue to ignore the radical qualitative change in management. The qualitative change is closely related to the new social and economic roles of services and is called 'servitization'. Servitization is changing the very basics of humanity's organization mode. The servitization phenomenon includes all types of nontechnological innovations (organizational, marketing, and social innovations) and explains how they are working as a unified whole (Rust & Huang, 2014). The concept of a servitized economic system allows for the integration of all the essential differences of the new stage of evolution emphasized in academic studies thus far. At the current state of the art of post-industrialism development, servitization can be defined as "the penetration of service delivery elements into all areas of the economy by the gradual shift from product-driven business model to service-driven

business model” (Vidickienė, 2017, p. 474). This penetration happens similarly to the penetration of industrial technologies at the beginning of the industrialization era, but the current transformation of society is based on the penetration of the new business model, i.e., is driven by nontechnological innovations.

It is especially important to consider that servitization signifies the emergence of a new mode of production, through which the board between services, manufacturing, and agrarian sectors is disappearing. Integration of agricultural, industrial, and service sector activities takes place in two directions: servitization of production and productization of services. In this way, countless business models can be designed. Entrepreneurs can choose the following alternatives:

1. Use the old business model, i.e., manufacturing and agricultural enterprises continue to use a product-driven business model, and service companies continue to use a service-driven business model.
2. Apply a hybrid business model ‘product plus service’, known as ‘Product Service System (PSS)’, that provides for the cohesive delivery of products and services.
3. Manufacturing and agricultural enterprises switch to providing services, while service enterprises start producing products.

As shown in Fig. 4.1, entrepreneurs have an opportunity to improve their business model by combining service-driven and product-driven business models. The design of a business model often changes due to new opportunities and threats or because of new knowledge. Tukker (2004) identifies eight archetypical types of PSSs that can be placed on a continuum from ‘pure product’ to ‘pure service’ (Gebauer et al., 2011; Kowalkowski et al., 2013).

Another essential feature of servitization is its power to switch humanity from a ‘world of things’ to a ‘world of relationships’, as the production of things and their exchange do not dominate in the servitized economy. The innovative service-driven business model allows consumers to use material products through services without the need for ownership (Perren & Kozinets, 2018), and consumption increasingly shifts from mere goods-related transactions towards

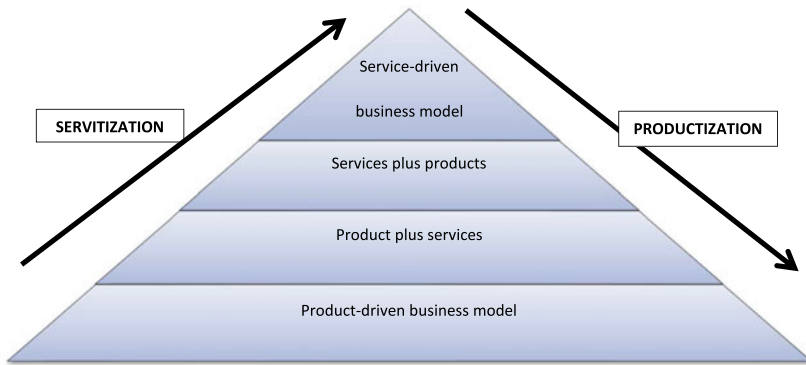


Fig. 4.1 Business model transformations in the context of servitization (*Source* Created by the author)

service-related relationships. The post-industrial world is an intricate network of service relationships of every conceivable type and variety. In contrast to exchange relationships, which create a competitive environment, service relationships create a collaborative environment and offer new ways to cocreate and collaborate. Moreover, the cocreation of value is the continual process of coordination between the consumer and their service providers, not just a one-time activity to agree on the service contract. It is necessary to manage the service relationship during service provisioning and consumption all the time, and the shift to the long-term orientation perspective also changes human attitudes and reorganizes network connections.

Over the last three decades, the term ‘servitization’ has become one of the most popular new terms describing the key paradigm innovation of the ‘new economy’. Servitization has been extensively studied as a post-industrial way of planning and doing business (Baines et al., 2017) and as a key tool for regional development. Research on territorial servitization issues shows that servitization creates new local productive configurations (Bellandi & Santini, 2019) and strengthens territorial competitiveness (Gomes et al., 2019; Vendrell-Herrero & Wilson, 2017). Regions also benefit from servitization processes via the interplay of generating employment opportunities, enabling an efficient allocation of technology and resources, opening up new markets, raising the odds of

securing employment in the consolidation period, and enabling technological leaps (Gebauer & Binz, 2019). As a result of servitization, the socioeconomic system evolved into a more complex phenomenon based on intangible resources, and to manage it, we need a new roadmap for future economic thinking.

Currently, the theory of post-industrial society has become one of the most widespread development theories of recent times, but “few think ‘farmer’ than they think ‘post-industrial’ (Heller, 2013, p. 5)”. Although some authors think that “servitization is typically a manufacturer’s strategy” (Gölgeci et al., 2021, p. 646), servitization is also important for changes in agri-food systems and rural development, as service-driven business models have great potential to generate benefits for rural regions and food consumers. The discussion of the post-industrial paradigm innovation defined as ‘servitization’ is no longer a question of choice but rather of how it can be successfully practised in farming. The key challenge is how to integrate new characteristics of the servitized socioeconomic system into the mental model of entrepreneurs, policymakers, and academics.

Agri-food and rural development studies especially fail to adapt to the changing situation due to deeply embedded ways of seeing the world. Only a few articles can be found on business model innovations in agriculture (Björklund, 2018; Dudin et al., 2015; Mappigau, 2012; Sivertsson & Tell, 2015), but they also do not reveal the specifics of post-industrial farming. The literature does not describe new ways to reorganize rural and agri-food system development according to the needs of the post-industrial society where service relationships dominate in output, employment, and value-added activities. Despite the rapidly growing scientific literature on servitization in manufacturing, the service-driven business model of family farms and agricultural companies has not yet been carefully studied. There are also only a few empirical research papers on servitization in farms and agricultural cooperatives (Devisscher & Mont, 2008; Pereira et al., 2016; Šumylė & Ribašauskienė, 2017; Vidickienė et al., 2019). Such a situation in the academic literature can be described as paradoxical because the scan of the media has shown that the practice of farming is already running ahead of the theoretical foundations of rural socioeconomic

development. To adapt to the evolution of the global economic system and society and to take advantage of newly opened opportunities, an increasing number of farms are shifting from the production of agricultural products to the delivery of services. Servitization is becoming an important domain of value creation and creative resource use. The entrepreneurial farmers are moving towards a hybrid business model called a 'product service system', and some of them are even starting to organize all farm operations as a service business. A literature review, however, shows that farmers' efforts to adopt service-driven business models are still referred to as 'short food supply chains' and 'direct sales'. Based on the industrial linear mental model of 'produce-sell-consume', the researchers fail to notice that some of the direct sales-oriented farmers seek to transform the ground of the traditional business model of an industrialized agricultural producer, and their efforts should be discussed in different terminologies and different interpretations of the phenomenon. Instead of supplying agricultural products to a mass anonymous food market, entrepreneurial farmers are growing their own customers through a combination of the production of agricultural products with the provision of services. In response to growing consumer demands for fresh, locally produced food, farm food delivery to the customer's workplace or home became the usual food supply model. The COVID-19 global pandemic encouraged this process.

Although many farmers take the mentioned simplest version of the servitized farming business model, increasingly complex product-service systems are also being applied. The variety of forms of service-oriented business models in farming is enormous. Farming servitization projects are on the rise when farmers, faced with problems selling agricultural products, begin to rent them. The agricultural products incorporated into a service package encourage new consumers' interest in them. For example, unsold horses are used to provide riding or healing services. The servitization of farming also helps to capture more value. For example, milk or grain can be sold at a much higher price when they are used as a resource to provide educational services at the farm, when visitors are learning how to make cheese, bake bread, etc. Some innovative farmers try to abandon participation in the global supply chain of agricultural products and move to a purely service-oriented business model, building

a group of regular customers and thus creating their own private closed market. They do this by implementing community farming projects, where urban residents finance the production process carried out by farmers or even become involved in economic activities themselves from the very beginning of the production cycle, i.e., use different versions of the so-called 'community-based agriculture' model. Some farmers rent their farmland suitable for gardening or garden trees to city dwellers who want to grow their own vegetables and fruits. The tenants are constantly trained and consulted on how to make gardening operations. Services are also provided for performing some agricultural operations by a farmer if the client does not have time for it. Such agricultural servitization projects create more value for customers because they are allowed not only to obtain the products they want but also to spend their free time in an interesting way and to gain knowledge about gardening for themselves and their children.

The servitization of manufacturing is mainly oriented to business-to-business relationships, but the servitization of agriculture by efforts of farmers focuses on services to households. This is a logical development in the evolution of farming servitization, as it primarily guides the farmer in responding to the new needs of food consumers. The servitization of farming helps farmers and their clients align in mindset and value proposition. It shortens the food supply chain and makes the products produced by farmers immediately available for household consumption, thus increasing food nutrition value and reducing food waste. A made-to-order system diversifies food offers according to the specific needs of customers.

There are also projects providing services to businesses, where small farmers provide services to large ones. For example, (1) the farm made-to-order rare varieties of lettuce, thus helping a large horticultural farm to form a more diverse product basket; (2) the small farm hatches chickens of certain breeds to order and then transfers them to a large farm, which carries out further operations in the production cycle: rearing until ready for sale, slaughtering and selling. Such business-to-business relationship-oriented servitization leads to a diversified assortment and a better quality of the produced agricultural products, to the use of technologies that are more friendly to nature, and to the production of a food product

that is more beneficial to human health. “A growing number of similar initiatives generate the gradual relocalization and ecologization of the global industrial food system” (Vidickienė et al., 2023, p. 13). Often by reconsidering the path of a farm solely as a place of production, farmers increasingly take a path of diversity and multifunctionality in farming (Sutherland et al., 2012).

Despite the rise of the abovementioned and similar farm activity servitization projects, they are not explored in the scientific literature as the servitization of farming. The term ‘servitization of farming’ is used in only a few works thus far (Baluch et al., 2017; Gedminaitė-Raudonė & Vidickienė, 2020; Gedminaitė-Raudonė et al., 2021; Lankauskienė et al., 2022; Vidickienė & Gedminaitė-Raudonė, 2018a, 2018b, 2019; Vidickienė et al., 2019, 2021, 2023; Vidickienė, 2018, 2021).

To explain the nature of changes in farming activities in an integrated way, the literature mainly discusses the emergence of a new generation of innovative farmers who are looking for alternatives to intensive industrial agriculture (Milone & Ventura, 2019). Alongside intergenerational reproduction, there is also an inflow of young people who build and develop new farms (Milone, 2015; Monllor, 2012), and the number of these new entrants is growing (Monllor & Fuller, 2016). Since new entrants have limited availability of capital and limited access to large plots of agricultural land, they must rely more on their own labour, skills, and knowledge and, possibly, on support provided by their family and social networks. This critically resets the balance between internal and young farmers who must be able (more than previous generations) to ‘stand on their own’ (Milone & Ventura, 2019). Empirical research shows that a new generation of farmers is choosing farming activities primarily according to their interests and preferred lifestyles. These farmers, often with nonagricultural backgrounds, go beyond the agricultural sector and want to make their input to the development of rural areas by creating and developing a great variety of innovative land-based rural businesses. However, current farm household development paths and the adoption of alternative farm enterprises are mainly explained as farmers’ responses to the current trade and policy environment.

Such an approach has a rationale, but it is again grounded in dichotomous thinking, which hides the third dimension of reality. The new generation of farmers is presented as an alternative to the generation of farmers formed during the agricultural industrialization phase. This creates an opposition between the innovators and the advocates of the industrial way of production. An evolutionary approach is therefore needed for understanding changing people's attitudes and behaviour as a big picture. Evolution does not create a completely new phenomenon but is manifested in the replenishment of the available qualities and the reconfiguring of connections. Consequently, post-industrial society should integrate, and not exclude, the best qualities acquired at the stages of evolution of the agrarian and industrial socioeconomic systems. Research that adopts an evolutionary approach can help improve existing farming business strategies without conflicting between product- and service-oriented business logic. The evolutionary approach encourages finding new ways to improve the farming business model and increase the attractiveness of agricultural activities by transitioning to a servitized business, i.e., through implementing the main paradigm innovation of the post-industrial stage. Moving the industrial farming system to the next stage of evolution, we suggest innovative solutions for how value may be fashioned and realized via more dynamic and interactive arrangements between food consumers and farmers, as according to the evolutionary point of view, we should look beyond what has worked in the past. For a long time, big picture thinking in development studies was mainly based on insights into what has worked in past situations. To begin to fill the gap in evolutionary-based research, we should focus on the fact that the post-industrial service economy essentially transforms human needs. The empirical research demonstrates that many previous assumptions on the role and needs of farmers and their customers identified by scholars in the last decades of the twentieth century are not valid. The ability to meet new human needs depends on our knowledge of the possible evolutionary pathways of the economic system. The poorly developed theoretical base of the post-industrial approach in rural development studies, however, forces entrepreneurs to explore current economic and social realities and respond to new challenges by the 'error

and test method', which inhibits progress and reduces the attractiveness of farming among young people.

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5

Case Studies of Farming Servitization with Different Motivations

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Notwithstanding, only a limited number of empirical studies have investigated holistically how external and internal factors impact farming servitization (Gedminaitė-Raudonė & Vidickienė, 2020; Lankauskienė et al., 2022; Vidickienė & Gedminaitė-Raudonė, 2018a, 2018b; Vidickienė et al., 2019, 2023). Given that servitization is considered a long-term, often incremental process, there is also a strong need for studies on the implementation process of servitization over time. To address these gaps, in-depth case studies were conducted. Many servitization practices in farming have been developed in Lithuania in the last decade, so it was selected to perform case study research in Lithuania and thus demonstrate farming servitization with different motivations.

A multiple case study approach was chosen to investigate farming servitization in Lithuania, as the research problem and research questions are empirically new and still theoretically undefined. Many experts in scientific methods emphasize the appropriateness of this method when the research problem being analysed is unexplored and original, as case studies allow for an in-depth assessment of the phenomenon under study and the formation of new theoretical assumptions about the phenomenon being evaluated (Eisenhardt, 1989).

In this study, 6 targeted case studies are presented. Purposive sampling is used when cases are selected for a specific purpose rather than randomly selected because a case has some elements of the phenomenon being evaluated (Curtis et al., 2000; Miles & Huberman, 1994).

Since this study aims to investigate farm servitization comprehensively by uncovering the motives, benefits, barriers, and business model, it was selected not to apply only one strategy for selecting cases but to create a cluster of cases that enable a comprehensive assessment of the content of the farm servitization project and the ways of implementing the innovative business model. Four types of purposeful sampling strategies were selected from the 16 most commonly used case selection strategies recommended for researchers using a case study approach (Patton, 1990, pp. 182–183):

1. Criterion—cases are chosen because they meet some predetermined criterion.
2. Intensity—the case is information-rich but not an extreme case.
3. Theoretical—the cases are the manifestation of a theoretical construct and are used to examine and elaborate on it.
4. Maximum variation—cases, despite having diverse variations, elaborate important common patterns that cut across variations.

Using a cluster of case selection strategies, by investigating information in the media about farms with servitization business models, 40 potential candidates were selected with the following characteristics:

Phase 1. Based on the criterion strategy, which is based on cases that share the common characteristic of a service-driven business model, information was gathered on farms with a service-oriented business model for agricultural production (*criterion strategy*). 40 farms were selected at this phase.

Phase 2. Previously selected 40 farms were assessed, and only those farms that turned to the service-oriented business model 5 or more years ago (*intensity strategy* to gather as much information as possible) were selected. 27 farms met this criterion in the second phase of case selection.

Phase 3. The selected cases demonstrate the evolution of the strategic thinking of the farm managers in the implementation of the strategies identified by the qualitative structures approach (*theoretical strategy*). Each group represented at least 3 farms. 18 farms were selected.

Phase 4. In each of the 6 groups, one farm was selected as a case study to illustrate the different motivations for farming servitization, focusing on the barriers to each of the 6 agricultural production management strategies (*maximum variation strategy*). 6 farms were selected for in-depth analysis.

Six following successful farming servitization projects met all these requirements:

1. The 'Fallow deer farm', which started breeding a rare animal in Lithuania, later created a market for its product by providing catering services in the farm's restaurant, where visitors can taste various dishes made from the meat of fallow deer.
2. The family farm 'Šironija', which after encountering problems in cooperating with other farmers, has successfully started to cooperate with other entrepreneurs in the region to provide educational and rural tourism services.
3. The 'Provansalis' farm, which is faced with the problems of managing the risks of agricultural production, has supplemented its crop and livestock farming activities with riding, educational, and accommodation services.
4. The 'Milišiūnai sheep farm', which aims to fully exploit the potential of sheep farming, not only sells sheep for breeding and meat but also provides various educational services related to sheep farming.
5. The 'Moon Farm', which, faced with the barrier of increasing the productivity of organic farming, unconventionally sells its products by offering to buy a basket of vegetables with a harvest-to-order home delivery service or even a made-to-order subscription.
6. The farmstead 'Sun Circle Camping', whose owners decided to finish farming activities and have started to provide tourism and cultural services on their farmland.

Each case study demonstrates a link between the farmers' motivation to move from a purely agricultural product-oriented business model to a 'product plus service' business model with their agricultural production strategies. The analysis of the components of the on-farm business model focused on how business servitization allows farmers to overcome barriers to previously adopted production strategies and to expand their activities to other strategies using the same mental model.

The main research questions were as follows:

1. What strategies has the farmer adopted using an agricultural product-driven business model?
2. What are the barriers to applying a product-driven business model that has led the farmer to complement agricultural production with services?
3. What kind of farm resources, including agricultural products, are used for building revenue streams from services?
4. What strategies were used to design the product-service system?
5. What are the benefits of moving to a business model 'product-service system'?
6. What are the external and internal factors that promote or hinder farming servitization?

Data collection. The process of data collection for the case studies was organized into three stages.

Stage 1. A systematic analysis of the information about agricultural farms with service-driven business models available in the media and the scientific and professional literature.

Stage 2. Qualitative in-depth interviews with the managers of the farms were selected as case studies, allowing a thorough insight into the phenomenon under investigation and answering the research questions. The case studies were carried out between 2019 and 2022, and the duration of the interviews was approximately 3 hours.

Stage 3. Additional consultations with farmers to clarify or complement the information obtained during the interviews took place in November–December 2022.

Summarizing the particularities of the research approach used, this study can be named explanatory, aiming at a comprehensive description of the data and a developed conceptualization of the phenomenon, and based on a comparison of several cases.

5.1 Farmstead ‘Sun Circle Camping’ Case Study: Servitization as a Way to Overcome Barriers of Extensive Growth Strategy

Introduction to the farm. The former Misgiriai village (currently—part of the Judrėnai village elderly, Klaipėda district, Lithuania) was located in the western part of Lithuania, Klaipėda marine district. Currently, the place might be reached via graveled road within 10 minutes of driving distance from the Lithuanian national highway Vilnius-Klaipėda. The village of Misgiriai has been around since the fifteenth century, established by the famous Lithuanian noble family Misgiriai. In the sixteenth century, the village counted 136 inhabitants, most of whom ran agricultural production-oriented activities. However, during the Soviet period, the village was destroyed and disappeared, remaining with some 2 inhabitants, which have been merged into nearby Judrėnai village elderly. Today, only a few farmsteads remain in the former Misgiriai village area. One of them is currently owned by Rimantas Micka, promoter of the Baltic culture, the author of the Misgiriai village revitalization idea, preserver of the original natural and cultural heritage of the Misgiriai nobility, and the founder of a recently known Sun Circle Camping (orig. ‘Saulės rato kempingas’).

The area under examination is over 20 hectares of land. The whole property is divided into sectors where different activities can take place. From 10 to 15 hectares are extensively used for recreational purposes for their own family’s and friends’ needs and the external provision of a range of recreational natural tourism services. Currently, the Sun Circle Camping may provide a space for some two hundred tents; an open event space for approximately 1500–2000 people; overnight accommodation

in different ecological, caravan, pod type, and other holiday houses for approximately 60 people; gazebos, swings, Japanese saunas, a Lithuanian traditional sauna with rituals; the separate hall, a barn-type building titled the ‘Iron Carp’ for the conference or family celebrations; ordinary boats, paddleboards, and water bikes. Wi-Fi works throughout the whole territory, and there is availability to use power inlets, a generator, and an electric car charging station. In addition, there are no inhabitants within 1.5 km, so the feeling of closeness to nature is amazing.

Recreational natural tourism services are provided from April to mid-October due to the specific climate of Lithuania—all 4 seasons hold their original beauty and perform their respective mission in the natural nature recovery cycle. Seasonality impacts the operation of the camping due to the specific founder’s idea regarding the composition of the area. R. Micka created it as a natural harmonious nature heritage ecosystem. This harmony might be experienced only during particular periods in Lithuania because of climate specificity.

All the territory is composed to disclose nature’s harmony with help of a specific owner’s attitude to the natural cycle: natural grass growth is cut only partly by strips, with intervals of 1–2 meters, which makes natural flowering, then land naturally seeds itself to rejuvenate, and uncut grass feed wild animals and birds in wintertime. The territory also includes a pond of 6 hectares and a swamp of over 1 hectare with flooded meadows to keep the wildlife naturally in its cycle. In addition, the farmstead is a completely enclosed area with only one entrance, surrounded by a body of water, streams, and a forest that is difficult to enter, so there is always a sense of security and harmony with nature.

On the 7th of July 2007, the farmstead was officially registered as a ‘Misgiriai campsite’. In 2011, the area’s legal form changed into the rural tourism farmstead ‘Misgiriai’. In turn, the so-called Sun Circle Park, planted by the founders, matured, and in 2022, the farmstead was ready to obtain the initially provisioned status—Sun Circle Camping (<https://www.klaipedosrajonas.lt/en/accommodation/tourist-camp-misgiriai/>).

Farmer’s experience in strategic management obtained through developing the business model. The farmstead is specific to its *extensive growth strategy*, in which separate components and processes are interchanged. The story started when R. Micka was coming close to his 40s.

He was nurturing a desire to create a quite isolated space in harmony with nature and the natural environment, with necessary amenities, for personal and family recreation. He was already experienced in mobilizing people into a joint community project for building a favourable space next to their homeplaces around the spectacular Balsiai lake. He is a founder and establisher of the huge and beautiful ‘Balsiai’ community—an association of private property owners next to the capital of Lithuania, already celebrating its 20th anniversary. Having explored parts of the world and experienced a variety of locals, R. Micka and his family realized that using their knowledge and experience, they could create a cozy space for their spare time in the Lithuanian countryside. In turn, they might share such a space with other same-minded interesting and thoughtful people.

Once R. Micka observed that there was land for sale in the neighbourhood of their relatives in the former Misgiriai village area, and he bought this abandoned, unused, inaccessible, and barren land from neighbours at his own expense. This place was suitable to realize the beforehand ideas and desires. R. Micka envisioned the full escape from agricultural farming in the area and the creation of services-based recreational tourism activity—a campsite that would be comfortable for its visitors, environmentally friendly, and, at the same time, in line with the existing environmental regulations. The creative process of the envisioned Sun Circle Camping began on a blank satellite orthophoto, together with a professional architect, who liked the founder’s ideas, and all of them were put into drawings.

Soon, it was realized that according to the Lithuanian rule of law, camping as a recreational activity is not allowed in the forest. Therefore, they got the idea to plan to plant their own forest—the Sun Circle Park, on an empty area of the land, where the necessary connections to modern communications (electricity, water, parking, and a ring road) might be preestablished.

Sun Circle Park was newly planted at the very beginning in 2007. In 2008, a road was built to provide access to the future camping area, which had a circular geometrical form. This was elaborated using a specific R. Micka’s and his wife’s knowledge and experience on avoiding inconveniences at campsites when dealing with car parking and logistics

issues. They gathered this from various festivals, which they had continuously visited before. They thought it would be more convenient to pitch the tent in the shade of the trees instead of the bare plot. A circular structure was needed to make it easy for a car or campervan to enter, park, and leave without having to turn around in one-way traffic, thus avoiding traffic jams.

The Sun Circle Park was created following the *geoglyph*¹ methodology, imaging the Sun planet with seven rays. In the very centre, there is a huge altar on which a spectacular ritual bonfire uses to be stacked, symbolizing the Sun planet. There are benches around the bonfire place, and further, groups of trees around the bonfire form 7 circles, symbolizing the orbits of the planets around the Sun. The two dominant tree species in the area were chosen for planting: birch (the masculine, youthful symbol) and spruce (the feminine symbol of Spruce, the snake queen, according to Lithuanian mythology). Together, they form a contrasting pattern, as the colour of their wreaths varies considerably throughout the seasons, which was important in highlighting the rays of the Sun in the Park. The nearest ring is planted entirely with birch trees and corresponds to Mercury's masculine element, while the campervan sites are located in the orbit of the largest planet, Jupiter. The ring road corresponds to Saturn's orbit, and the parking lane is similar to Saturn's ring of satellites. The birch and spruce trees, planted in curved rays from the fire pit to the edges of the site, are already grown. They are very contrasting in colour at any time of the year, as if they were painting a huge mandala. The latter is currently already clearly visible not only from the hang glider but also from photographs taken from space. While the trees were growing, another infrastructure was being built.

In 2009, the so-titled 'Fairies' House' was built with frames, pressed straw kitchens, and clay plaster. It has become a family retreat. In turn, the founder observed a demand for larger events, family celebrations or get-together events, festivals, and meetings of companies and organizations. Therefore, after 2 years, a separate barn-type building titled

¹ Geoglyph—large-scale drawing or image made on the ground by arranging lines of stones, scratching the earth, etc., and often only fully visible from a distance or the air.

the 'Iron Carp' was built for conferences or family celebrations for approximately 40 people, including 20 overnight beds upstairs.

In no time at all, time became an ally of the founders. The trees grew, and as the pond was continuously stocked with fish, fascinating carps, grass carps, sturgeons, and pikes had matured, attracting more natural lovers. This was the result of the newly propagated nature-preserving philosophy 'Catch it, take a photo together, and release it'.

In 2015, the first large event, an electronic music festival, took place in the area. The event lasted only a weekend, but 16 bands from abroad and Lithuania had already participated. During this event, for the first time, all the created infrastructure was tested. The Sun was lit in the fire pit, the campsite was set up as a tent city, and catering was provided by Food Trekking. Guests were able to enjoy the boundless space, which was very unexpected and left a deep impression on them. The performers from Jamaica and the Netherlands loved discovering the seeds of a pond with carp basking in the sun and moorlands with cranes, swans, and countless other birds on self-managed ordinary boats, paddleboards, or water bike trips.

Every year, the number of visitors grows, as does the number of events. Currently, Sun Circle Camping hosts festivals that have already become traditional throughout the farmstead's life cycle. Company meetings, family celebrations, christenings, anniversaries, weddings, various seminars, and camps take place in the area. Increasingly, local villagers and the community are involved in providing local cheeses made by local cheesemakers. The locals may also prepare a feast table or an entertaining programme based on local cultural traditions and dialects.

Despite the constantly growing numbers of visitors and various event participants, the original idea, based on the founders' knowledge and experience, has already paid off: the infrastructure of the Sun Circle Camping perfectly caters to events with 1500 participants. The hosts are always available to help and advise the organizers on how and where to organize activities in the area.

Thus, step by step, under the founders' own affordable expenses, knowledge and experiences and their own family's human resource capacity, the range of services expanded and fully replaced the agricultural production mote to recreational tourism services provision. Cozy

recreational spaces were established throughout the territory, strictly keeping the principles of maximal preservation of natural nature treasures and the privacy of the visitors.

It is necessary to state that the main desire of the founders was to treat the natural environment and cultural heritage of the farmstead as the biggest treasure—functioning on a natural ecosystem cycle, with remaining natural untouched areas, only fulfilled with necessary modern amenities. The founders of farmstead set the target to remain uncrowded, to feel all the beauty and energy of natural nature, in contrast to the seaside and the biggest cities of Lithuania. Nature-based recreational tourism services using renewable solar energy to generate electricity and heat water for camping showers are strictly prioritized. Family holiday homes and saunas are made of eco-friendly materials such as straw and clay. Charging stations for electric cars have been set up so that while holidaymakers enjoy nature, their electric cars are recharged with solar energy.

Reasons to shift farming business from products to services. The main reason for shifting from agricultural production-based family farming to services was the economic situation. Before the very beginning of the ‘Misgiriai campsite’, R. Micka and his family used to help their relatives on the traditional agricultural production-oriented (i.e., carp fish aquaculture) farm, situated close to the former Misgiriai village in Judrėnai elderly. The relative’s family, as most remaining in nearby villages, is used to perform traditional agricultural family farming. In turn, it became evident that Lithuanian villagers could no longer live this lifestyle because it was not possible to simply ensure the minimal economic survival of families in this way. R. Micka wanted to help their relative’s family escape the agricultural production lifestyle and create something different, uncommon for the area’s rural lifestyle—a recreational nature-based tourism services business, which would ensure a life of dignity and stability.

The relatives used to keep a carp fish pond, which was formed from a dammed stream and specially stocked for growing so-called ‘commercial’ carp fish (i.e., carp fish aquaculture) for more than a decade before starting the envisioned recreational tourism services in the area (Vėlyvytė, 2008). However, carp fish aquaculture farming experienced production

realization difficulties. This was a reason to change the mode and add recreational fishing services, newly grounded in the nature-preserving philosophy 'Catch it, take a photo together, and release it! Win the Season's Fisherman competition!', which is opposite to the commercial one.

The introduced changes in the area were completely new for both R. Micka's relatives and villagers close to the area. Therefore, it took time to prove to the villagers to follow the new nature-preserving philosophy and services-based lifestyle in the rural area.

Introduction of the system, which helped build revenue streams from services in the farmstead. In some sixteen years, Sun Circle Camping became a fully mature business model, offering many recreational nature-based tourism services, which helped build revenue streams from services.

Recreational fishing services. Fishing was one of the first services provided by the campsite since its establishment. At that time, the pond was still producing so-called 'industrial' carp, which were simply not always caught, and every year, an increasing number of cunning specimens were left behind. This is when the idea of creating own biosphere was conceived, populated by a variety of fish, and their evolution was further monitored. The pond is restocked every year with biennial carp. The temptation to introduce new species is also irresistible. At present, 15 species of fish have already adapted and are thriving in the 6-hectare pond. The founders of the campsite promote responsible recreational fishing and therefore must become familiarized with the Fisherman Code of Conduct (i.e., ethical fishing rules) before arrival to maintain harmony with nature and guests. Photos and a description of the caught fish are invited by email. At the same time, guests are invited to participate in the 'Most successful fisherman of the Month' and 'Most successful fisherman of the Year' competitions that run throughout the season. The final competitions take place every year in September–October at the end of the season. The prize for the winner is a one-night stay in the 'Fairies' House' for the fisherman and his family, with a reservation for a preferred date in the following year's season.

Camping services. Since the establishment of the campsite, the founders have focused on tented camping services. Currently, there is a space for

several hundred tents. Recently, families with children are increasingly choosing the challenge of living in the wilderness, at least for a short time away from civilization, and getting to know nature. The first campfire, the first fish caught, the first dinner by the fire, and the first overnight stay in the open air, listening to the sounds of the night, the hooting of owls and the fish or beavers strengthens the bonds within the family and leaves a lasting impression on the children for a lifetime. The owners of the Sun Circle Camping try to leave the best possible memories of the family's first trip to the countryside by offering a wide range of services: 3 gazebos (all of them have titles), tent pitches, camping pitches, outdoor showers, heating with solar energy, and toilets. For fishermen, there are also fishing sectors and two observation towers in the trees. There is a possibility to cook the cached fish or other products brought by guests next to the 'Iron Carp' gazebo in the brick outdoor stove. There is a basketball court and swings nearby.

Depending on the needs and number of tented campers, campsite hosts always help to choose the best place to settle. One of the most interesting camping spots is the already described Sun Circle Park, where several hundred tents might be set under the shade of trees around a campfire. Water and electricity are available nearby, and in the evening, everyone can enjoy the warmth of the campfire.

The farmstead also accepts caravans with motorhomes or trailers. They can stay at an individual campsite of their choice or collectively at the 'Iron Carp', the 'Fairies' House', the 'Kaukų' gazebo, or the Sun Circle Park. All sites, except for the 'Kaukų' gazebo, have access to water and electricity and wastewater treatment. The area around Misgiriai is full of attractions that are within easy reach by car, so the founders of the Sun Circle Camping offer services for those who want to discover unseen places in the western part of Lithuania.

Events services. Sun Circle Camping has become a magnet not only for holidaymakers looking for a quiet break but also for organizers of larger events. Currently, there is available space for 1500–2000 people. Since its establishment, the owners of the farmstead have organized annual calendar festivals (Saint John's Day, Coronation Day of Mindaugas—the King of Lithuania) and fishing competitions. The farmstead's guests

have also organized individual charter events—seminars, company meetings, children’s camps, music festivals, etc. All this experience has allowed the owners to learn in the process and improve the infrastructure. So today, the farmstead offers several different spaces and amenities for events: space for several hundred tents, accommodation in holiday homes for approximately 60 people in total, 3 gazebos, 3 swings, 2 Japanese saunas, a traditional Lithuanian sauna, 2 boats, 2 paddleboards, water bikes, a 5KW power generator, a 25KW power inlet, and Wi-Fi on the whole territory. There are no inhabitants within 1.5 km of the farmstead, making it feel like an island, which is perfect for events.

Among the most spectacular events, the founder highlighted the ‘PREMA—Tantra and Music Festival’, organized for the 5th time in 2023. It is an educational, healthy lifestyle, and self-discovery event attracting over 500 participants. With a large number of young people, families with young children, all vegan food, no alcohol, lectures, and workshops by more than 30 speakers, for one week, Misgiriai became a utopian city of harmony, joy, mutual understanding, music, and fun in natural surroundings. This is something from the distant hippie era of the 1970s (Šešelgis, 2021).

Holiday home rental services. The challenges facing the tourism sector are changing the needs of holidaymakers. Therefore, the founders expanded the range of holiday home rental services. The resort offers 4 different types of holiday homes for rent, depending on the specific needs of holidaymakers.

‘Numėja Village’ is a mini-holiday house village composed of 5 POD type houses more than 20 meters apart in a 1.6-hectare area. The owners have created this new service for holidaymakers who appreciate privacy, so the site was named after the Lithuanian goddess of the home—Numėja. ‘Numėja Village’ offers a choice of one or more houses for singles, fishermen, couples, seniors, or a family of up to 4 people. POD type houses are ideal for single holidaymakers and are also suitable for larger groups of friends or an organization’s camp, as a tent city can be set up nearby and all facilities can be used. There is a shared outdoor kitchen, shower, WC, a spacious gazebo with outdoor furniture, two beaches, a volleyball court, and a shared fire pit. The boundaries between the comforts of civilization and the harmony of nature are thus blurred.

Guests can also order a hot tub and firewood for the campfire, rent boats, paddleboards, and water bikes. There are five sectors for fishing.

'Family House' is a holiday home rented for smaller groups looking for a cosy and comfortable holiday in the countryside with all amenities. The 'Family House' is a caravan-type house for 6 persons. It has 3 rooms (a bedroom with a double bed, a bedroom with two single beds, and a living room with a double sofa bed), a kitchen, a shower with hot water and a toilet. Tents can also be set up nearby if needed and in agreement with the owners of the site. The spacious terrace of the holiday home has outdoor furniture, a swing, an outdoor barbecue and a beach with a gazebo and a boat. There are also two fishing sectors and opportunities to spend time actively playing beach volleyball or mini-football. For an extra cost, guests can use the Japanese Ofuro sauna, located slightly further away from the holiday home, next to the 'Kauku' gazebo.

The 'Fairies' House is an eco-friendly holiday home, made of a frame structure from compressed straw, plastered with clay, with excellent temperature insulation. The house is designed for a comfortable holiday for up to 10 people and is suitable for families with small children. When it is hot outside, the house is cool, and when it is cooler in the evening, it is pleasantly warm. Even when the weather is quite chilly, there is a possibility to use the sauna, and the stone wall will radiate warmth for several days. The ground floor of the cottage has a living room with a fully equipped kitchen and dining furniture and a spacious terrace with outdoor furniture. There is a sauna, shower, and toilet. On the second floor, there are two separate bedrooms with two double beds. The connecting room has a sofa that folds out into a double bed. The two balconies offer beautiful views of the surroundings, or visitors can simply read a book, which can be found in the mini-library. Outside, there is a children's playground with a swing and sandpit and volleyball court. The lodge has a private beach and two fishing sectors. There is also a mini outdoor kitchen with barbecue facilities, a stove for soup or stew, and a smoker for catching fish. You can listen to the birds chirping in a hammock under the shade of the oak trees and enjoy a Japanese Ofuro sauna in the evening. The hot sauna, the cool water of the pond, and the starry summer sky in a composition leave lasting memories of relaxing in nature.

The 'Iron Carp' is a banquet hall in a barn-like building for family celebrations and corporate events, seminars, and spiritual practices. The venue is also suitable for overnight stays for groups of travellers. The hall can accommodate approximately 40 people and has a fully equipped kitchen, bar, toilet, and shower. There are 3 bedrooms, which can accommodate 21 people. There is a gazebo in the courtyard with an outdoor fireplace with barbecue and furniture, a swing set, and a basketball court nearby. The house is surrounded by a spacious area that can be used creatively for games, dances, recreation areas, etc. For the culmination of events, a special service is offered to make use of the adjacent Sun Circle Park with a fire pit and a playground with benches. For special occasions, a large bonfire can be stacked to replace any fireworks. Fireworks are not allowed in the farmhouse, as it is not desired to traumatize the animals and nesting birds in the adjacent woods and marsh.

The founders cooperate with the neighbouring community of Judrenai, which might provide a banquet service, from serving to dessert. The fun-loving Judrėnai community art group can surprise guests with a lively concert programme or a jovial, dialectally witty performance.

Entertainment services. Taking care of their visitors' leisure time, the founders created a range of entertaining services, both active and passive. The 'Fairies' House' is equipped with a Lithuanian sauna, which helps relax, improve health, or simply warm up the body and recharge the soul, preserving the traditions and rituals of Lithuania. Sauna training is available on request: bathing practice and tub-tying lessons. For those who want to add some exoticism to their lives, a Japanese sauna is available. A Japanese sauna is a wooden barrel with iron wrought iron, with small benches inside, in which the water is heated to 40–50 °C. For the Japanese, the sauna is a kind of meeting place that brings people together for friendly conversation.

An outdoor kitchen is available for the biggest gourmets. Amenities are prepared for trying several different ways to cook freshly caught fish. The barbecue is ideal for those who like traditional outdoor cooking. Those who like the smell of smoke can smoke their catch. In addition, fish soup lovers are invited to cook their fish in a large, heavy pot and enjoy it all. If the weather is not favourable, dinner can be cooked on a stone outdoor stove in one of the campsite's gazebos.

The pond hides an enchanting beauty, which the campsite hosts invite you to explore by choosing one of the available means of water transport: an ordinary boat, a paddleboard, or a water bike.

Visitors of the camping are invited to enjoy one of the oldest traditional Lithuanian activities—gathering mushrooms, berries, flowers, and herbs—treasures of the natural wild nature. A cherry grove has been preserved since the old days of the former Misgiriai village, and every year it feeds the campers with the sweetest berries, for which the campers are invited to repay their love and care.

Playgrounds are for adults and children who are always on the go. Whether it is swinging, skating, football, basketball, volleyball, or even target shooting, there is something for everyone to keep active in the Sun Circle Park and the whole Sun Circle Camping territory.

Strategy used to avoid barriers limiting the continued use of previously adopted agricultural production modes. The founders highlighted that giving meaning to everything that was planned for the envisioned future Sun Circle Camping was the most important for them to overcome all the barriers that occurred. When spectating how the envisioned idea becomes a reality, the difficulties fade away, and motivation increases.

The common extensive growth strategy barrier—the production mode—was overcome by fully shifting from agricultural production-based family farming to recreational nature-based tourism services. The very common agriculture-based farming—carp fish aquaculture—was first transformed by adding recreational fishing services and shifting the fishing philosophy itself.

The further occurring barrier—the shortage of land for developing services-based business—was dealt with by obtaining a nearby situated property under the founder's private expenses. A huge naturally abandoned area perfectly fitted for the envisioned Sun Circle Camping with a range of nature-based recreational tourism services.

The capacity barrier was overcome by involving the family, its own as well as professional knowledge, and experience in business planning and organization. The capacity barrier was foreseen in advance and managed during the business planning process by choosing particular infrastructure and equipment solutions based on the knowledge and experience

of the founders. For example, the extensively used territory is treated by a natural life cycle, applying a particular grass-cutting and growing technique: grown natural grass with wildflowers is cut by strips, with intervals of 1–2 meters, which makes natural meadow-type flowering; thus, no seasonal planted flowers are needed to decorate the area, which is very hand-wok and time-consuming. After the blossom, these grass and wildflower strips naturally seed themselves to rejuvenate further; uncut plots feed wild animals and birds in wintertime and regrow in spring again. Visitors are served by the hosts themselves with the help of a well-designed area's infrastructure and equipment, which help manage the flow of visitors and distribute them into the preplanned recreational areas with necessary amenities and equipment.

It should be stressed that no expansion of the Sun Circle Camping is foreseen due to the chosen philosophical attitude towards the developed nature-based recreational tourism business, as well as due to the existing land treatment and human resource capacity constraints. Maintaining the 10 hectares of extensively used land for recreational tourism services and its holiday homes takes time for the owners since they do everything themselves. Moreover, after major events, time should be given to nature to recover and grass to grow back.

Benefits of moving to the product-service system. The multiple benefits and synergetic effects are listed by the farmstead founders of the developed services-based business model.

The first and most important benefit for the founders is described as the feeling of uniqueness and longevity of the meaningful business created, based on the natural regenerative cycle of nature. The mindfulness of the former Misgiriai village revitalization idea and all carefully selected mindful visitors of the area, as well as the activities carried out, give the feeling of happiness experienced in harmony with nature—complete moral satisfaction of a human being.

Visitors also play an important role in the business. They are carefully selected by the founders as those who care about natural nature heritage preservation, who value cultural heritage, the land of the ancestors, and who want it to remain for future generations. The visitors of the Sun Circle Camping are people and families who want to live in harmony

with nature, who want to give back to nature, and who can grow these values in future generations.

Sun Circle Camping in its current services-based business model became economically viable, and it already pays back. It generates revenue streams, which was impossible in agricultural production-based family farming. Almost nothing is invested in advertising. The number of existing and regular customers and the newcomers who use their recommendations are sufficient. Relatives (former family farmers) are fully equipped to work in various activities. In addition, the neighbouring Judrėnai village community from time to time allows earning from providing catering and local culture-based entertainment services while preserving the cultural heritage of the area.

Sun Circle Camping fulfils the nature-preserving mission. Thanks to the care of the founder of the farmstead, new habitats of rare and protected plants in Lithuania have been registered, and the territory has been included in Natura (2000) protected areas. The nature-tourism-based services with all suggested activities in wild nature (gathering mushrooms, berries, flowers, and herbs—treasures of the natural wild nature) play an educational role as well.

Active leisure time equipment, as well as particular organized events, add to the healthy lifestyle propagation, in harmony with nature, both for farmstead owners and for their guests. International relations and new social capital have been gathered and continue to increase, which adds to personal development as well as to the mindfulness of the performed activity.

Challenges, external and internal factors that promote and hinder farming servitization in the region. On the way from the former Misgiriai village revitalization idea to Sun Circle Camping, the founders faced multiple challenges that are worth stating as serious barriers hindering the servitization of rural regions.

First, the existing land use designations and environmental protection legal requirements acted as significant limiting barriers for servitization in rural areas, especially in naturally untouched and abandoned places, former villages, etc.

The founder of Sun Circle Camping disclosed that among the most hindering factors that limit the proposition of unique services in rural

areas is the understanding of Lithuanian national government institutions, as well as the rule of law, regarding what kind and type of activity can be done in the rural countryside. The land belonging to the purchased farmstead was designated agricultural land. According to the Lithuanian rule of law, only agricultural production might be performed on such land. This contradicts the envisioned recreational nature-based tourism business.

R. Micka, being the owner of the designated agricultural land, had to become a farmer. Only then was he able to register a rural tourism farmstead and start building holiday homes, as well as other farmstead amenities on his land, which were needed to expand the range of services, meeting the increased demand of visitors. Hence, a farmer whose declared permanent living place is other than the farmstead cannot receive any payments, as other farmers receive from the National Paying Agency. Thus, there was no possibility to use external funds for investment in campsite development.

Once the founder acquired the farmer's status, he started continuously receiving warnings and faults for the improper maintenance of the agricultural land. Part of the meadows in the farmstead used to remain uncut, as R. Micka found and wanted to preserve rare Lithuanian species of plants and other live nature. The founder visited various institutions throughout the decade, talking to many officers about the benefits of such a practice to remain in Lithuanian rural areas. It was the main observed reason for foreigners to come and see Lithuania to feel this naturalness, which is already destroyed elsewhere in the world. Finally, this challenge was overcome when R. Micka's land was recognized as part of the most ambitious and large-scale initiative ever to preserve Europe's natural heritage 'Natura, 2000'.² After he proved that there were rare plants of protected species growing on his land, the latter problem of improperly treated designated agricultural land was solved. Finally, the

² Natura (2000) is a network of core breeding and resting sites for rare and threatened species, and some rare natural habitat types which are protected in their own right. It stretches across all 27 EU countries, both on land and at sea. The aim of the network is to ensure the long-term survival of Europe's most valuable and threatened species and habitats, listed under both the Birds Directive and the Habitats Directive (https://ec.europa.eu/environment/nature/natura2000/index_en.htm).

grass may remain, seed the meadows naturally for recovery, and feed wild animals and birds in the wintertime. This naturality became an exceptional competitive advantage of Sun Circle Camping, which helped attract foreign visitors from all over the world.

The other initial obstacle in the planning phase was the impossibility of establishing a campsite in the forest. On the other hand, this accelerated the founder to plan and plant his own forest—Sun Circle Park, which added to the future development scenario of camping. Nevertheless, when the officials saw the plans for the development of recreational nature-based tourism, they did not approve them. The reason was that nobody likes that, and the Klaipėda District General Plan does not foresee such activities on these designated agricultural lands. Therefore, as became usual for R. Micka, the idea was further developed in his own way, working for and waiting for a change of attitude frustrating prospective rural vitality initiatives.

The remaining challenge, which is more of a climate-specific *force majeure*, is seasonality. Unfortunately, in Lithuania, the season is very short, and nature-based recreational tourism services provided by Sun Circle Camping are very dependent on the weather and the grace of the Sun. However, this is understood as a condition precedent to operating in this type of activity in Lithuania. Currently, no decisions are made to overcome this challenge. The founder is happy enough about the current state of the farmstead, quoting, ‘What is happening is now what we created this place for’ (Micka, 2023).

5.2 ‘Moon Farm’ Case Study: Servitization as a Way to Overcome Barriers to Intensification Strategy

Introduction of the farm. The ‘Moon Farm’ (originally, ‘Mėnulės ūkis’, in Lithuanian) was established by Karolina Paulavičienė and her husband Paulius in 2021 in Meilūnai village, situated in a very central part of Lithuania, Ukmergė district. It is a 3-hectare-large farmstead in total, and approximately 0.5–0.7 hectares are intensively used for

natural farming—vegetable growing. The founders titled their natural biodynamic vegetable-growing farm the Moon Farm because of the biorhythms of the universe—all the planets and constellations, including the lunar cycle, are taken into account when growing plants naturally. Sowing and planting are performed at Moon Farm following Maria Thun's very detailed biodynamic calendar. It is very strict about not moving the soil on the wrong days and rushing to do the most important work on the most favourable days. The Moon Farm on the Facebook social network is presented by Karolina with the following quote: 'I'm Karolina and I started a small vegetable farm. I am based on the principles of natural farming. I love the land' (<https://www.facebook.com/menulesukis>).

Karolina fell in love with the land in her early childhood. She used to spend a lot of time with her grandmother in the countryside, in a natural environment, feeling all the beauty and benefits of living in harmony with nature according to its biodynamic cycles. Afterwards, she spent a long twelve years working hard in emigration in the UK. There, she met her husband, and they started sharing a common desire to escape this crazy pace and noise. They started cherishing a dream of living in nature back in Lithuania, swimming in the lake, picking mushrooms in the forest and berries from the bush straight into their mouths, saying hello to their neighbours in their native language, visiting relatives, etc. Karolina's education had nothing related to agriculture. She studied logistics and trained as a hairdresser, but she always felt this was not her way. None of the variety of jobs she was doing in emigration could give her desired satisfaction, except the capital, needed to make their dream true—to buy a farmstead and establish a natural vegetable-growing farm. Therefore, she kept individually accumulating knowledge about nature, biodynamics and plants, reading books, and gaining wisdom from successful gardening professionals and agriculturists from all over the world. She learned a lot via courses on the internet about growing various vegetables and herbs and creating sustainable biodynamic nature-friendly agricultural business models with no harm to nature and zero waste.

Before establishing Moon Farm, Karolina and her husband already had a vision of an agribusiness model product plus services: growing

natural vegetables on the farm and delivering them to consumers' homes in preordered baskets (Lileikienė, 2022). While living in London, they noticed that it is already very popular to order food and fresh naturally grown vegetables from farms. They already knew that approximately 70 percent of vegetables sold in Lithuania are grown in Poland. The demand worldwide for local fresh and naturally grown vegetables is continuously increasing due to society's desire to live healthier, to eat healthy fresh food straight from the farm. Therefore, they were sure they could create workplaces for themselves with their own hands, despite Karolina's grandma not being so sure about her granddaughter's perspectives—working so hard on their farm. They still believed that the envisioned business model would work well in Lithuania: 'We realized we could do it. We can grow and cut at a time as many vegetables as we have orders for, and the rest grows further in the garden and waits for other eaters'. The business idea 'harvest-to-order' was unique, and the service of delivering vegetables to consumers' homeplaces was still very random in Lithuania.

Farmer's experience in strategic management obtained through developing a product-oriented business model. *Extensive growth strategy.* The critical resource for applying the very first extensive growth strategy, i.e., capital, was accumulated by Moon Farm establishers while working abroad in different spheres unrelated to agribusiness. Their private personal savings were accumulated individually and invested in buying the property of 3 hectares of land in the countryside of Lithuania. Less than one-third of the land was devoted to establishing vegetable-growing fields with only initially vitally necessary premises (first year, they bought only 2 small greenhouses) since they experienced the high level of investment required to start their own farm. The rest of the land was intended to create a pleasant environment for living in nature, where they could rest after a busy day's work.

To make the farm profitable, it was necessary to achieve a scale of production, i.e., to grow sufficient amounts of vegetables, form baskets, and deliver them to consumers. Karolina had already accumulated the necessary knowledge on a distanced and theoretical basis regarding natural farming. Moreover, she found a Lithuanian farm doing an alike to her envisioned farming and took part in its training sessions, which

further strengthened her business vision by putting her knowledge into skills.

During the first year of the Moon Farm, Karolina did most of the work by herself, while her husband helped her carry out the vegetable baskets. Their parents also supported them on a farm. However, their human resources remained very limited. It was impossible to find any help in the village nearby, as nobody wanted to go to agricultural work. Therefore, they could not achieve sufficient amounts of vegetables, and the demand was greater than their ability to supply them. Additionally, the selected agricultural production method—growing vegetables in a natural environmentally friendly biodynamic way, without harmful chemical fertilizers, and propagating a zero-waste approach—worked as a limiting factor for increasing the amounts of production of Moon Farm compared to other small vegetable-growing farms. Therefore, they needed to step to the next evolutionary stage—the intensification strategy.

Intensification strategy. Due to the growing demand for Moon Farm's naturally grown fresh vegetables that are delivered to consumers' homes, intensification decisions should be taken into account to guide Moon Farm in the profitability direction. Human resources and the applied production method played a limiting role for Moon Farm. Since the initial desired vision was to propose healthy grown vegetables to consumers, the owners should find ways to increase the amounts of grown vegetables.

Starting from the second year of the farm, Karolina's husband took more and more activities on the farm, and currently, he fully devotes himself to the farm activities. Their parents were also involved more actively in doing the necessary farmwork. In this way, the human resources became more or less equivalent to a small-scale farming activity on 0.5–0.7 hectares. Thus, the increase in production became easier to access.

The young farmers also needed to find solutions to improve their cherished agricultural production methods. The application of agricultural machines could be among the possible solutions. Therefore, they bought a tractor and complementary agricultural machinery only after a year of farming. They also bought a variety of other agricultural tools

to do work quicker and more effectively on the farm. Additionally, they bought cars for transporting vegetables. Finally, year by year, they built two more greenhouses, which were necessary for growing seedlings in a Lithuania-specific climate.

One more classical agricultural possibility to intensify is the use of chemicals and fertilizers. The neighbouring 'old-style' farmers advised Moon Farm to intensify by adding chemicals and fertilizers. For instance, weed eradication with chemicals would work more quickly. However, this was not the case for the farm, since it contradicted their farming values and beliefs. Instead, Karolinas' knowledge was applied by using different natural gardening methods. To maintain the natural biodynamic cycle of nature and the ecological balance, a variety of natural soil caring techniques were applied to gradually improve the quality of the soil and thus intensify vegetable growth. This method of growing vegetables in the long run is more cost-effective than the use of chemicals and the rapid but irreversible negative effects of soil degradation and unacceptable nutrition of plants. Natural and environmentally friendly methods were applied to intensify the growth of vegetables, such as mulching some plants with hay to reduce soil erosion, avoid weeds and at the same time keep the necessary humidity and feed the plants naturally. As some vegetables cannot be grown in this way, they should do some weeding, but it was under their capacities. Other necessary but simple and natural ingredients are used to maintain the expected quality of the soil: digested manure, compost, ash, and charcoal.

Moreover, step by step, the assortment of offered vegetables in the basket is expanding by adding more uncommon species, which are quite rarely used in Lithuania. For instance, the Bastutian family plants (e.g., turnips, swedes, kohlrabis, etc.) are rarely offered to consumers in Lithuania. Every year they try to grow something unusual and less popular in Lithuania, e.g., watermelons, African cucumbers, pak choys, mongolds, kale cabbages, arcades, parsnips, okras. The composition of baskets changes according to the season and what is in the garden/in the seller at a particular time. In this way, the consumer obtains the feeling of being in a natural cycle of the year with nature. To date, all traditional and, from time to time, some uncommon vegetables have been proposed in the composition of baskets. In spring, consumers may also

order seedlings of tomatoes, herbs, and spices in baskets if they want to plant a small garden on their windowsill, balcony or terrace. Currently, there is no need to specialize in a particular type of vegetable growing.

The management methods were also improved. Initially, consumers were basically reached via Facebook page ('Mėnulės ūkis') private messaging and direct orders via mobile phone. Currently, there are regular consumers, so it has become easier to organize the delivery. There are several types of regular consumers. First, 'harvest-to-order', when the vegetables are cut and the basket is formed after receiving the order, then the delivery is organized. Second, 'made-to-order' consumers, who book particular vegetable-growing services in advance and then, during the cycle of the year, regularly ask to form vegetable baskets for them. There are a few types of consumers. Some of them order baskets once a week, others once in two weeks. Additionally, a regular delivery point schedule is organized into the most popular Lithuanian cities: the capital of Lithuania Vilnius (~100 km); on the way—the closest city Ukmergė (~20 km); the second largest city Kaunas (~70 km), and on the way—Jonava (~40 km). There is also a possibility to collect vegetable baskets directly from the farm. However, it is rarely used, as the farm is distanced from the main roads, and human resources on the farm are very limited. Therefore, much work should be done every day, even apart from the farm's customer service directly on the farmstead.

Reasons to shift farming business from products to services. Moon Farm added services to agricultural production for several reasons.

- *Applying the 'zero-waste' approach.* Vegetables can be kept very fresh and of good nutrition quality for a relatively short time, especially leafy vegetables that are picked by cutting. Market trading almost always results in a surplus of goods. To sell the surplus, a price-cutting strategy has to be applied, which ultimately leads to economic losses. The remaining vegetables, if unsold, become unsuitable for further consumption and become waste to be discarded. This goes to the food waste problem, which is increasing worldwide. The zero-waste approach of moving to the product-service system was the core initial reason and guiding principle of Moon Farm.

- *Maintaining the highest quality of fresh agricultural products.* Future farmers already know about the increasing demand for a healthier lifestyle worldwide, of which the necessary components are fresh nutritious natural vegetables. Naturally, grown vegetables, especially leafy vegetables, when they are cut, remain fresh and of the highest quality for a very short time. Therefore, it should be delivered to the consumer in the shortest time. The best way to do this is to receive orders, then collect the baskets, and deliver just collected baskets to the consumers' homes. The Moon Farm founders themselves already saw the success of such a practice in the UK.
- *Saving time.* Small-scale vegetable-growing family farms count every minute of their work. It is very uneconomic for them to stay regularly in markets and wait for the consumer to come and buy. Preordering and delivery systems perfectly solve this challenge, as there are always more orders than the grown vegetables.
- *Fighting competition.* Recently, there have been many sellers of similar common vegetable products in the market, most of whom are not producers. This makes natural products, which are grown in an environmentally friendly way, exclusive and specific to sell. There is a huge supply of imported vegetables, which are cheaper. For example, if a cucumber grown in an environmentally friendly natural way costs 3 euros per kilo and a cucumber from fertilized industrial greenhouses is sold nearby for 1 euro, people still tend to choose the cheaper product. Therefore, expensive natural farming of high-quality agricultural production makes the ordinary market no longer a viable outlet. Thus, a specific consumer should be reached, who cares how food is produced. By telling the story and showing podcasts to people, the farm attracted those specific consumers, who became their clients and friends, happy from spectating how their food is grown and how tasty it is.

Introduction of the product-service system used in the farm. The owners of the farm step-by-step constructed the product-service system, with a final aim to reach stabilization of revenue streams and make it possible to live from the envisioned business model for the family.

The farm first adopted a ‘harvest-to-order’ strategy. The choice of this strategy was based on the founder’s knowledge of the solutions used by farmers in other countries when faced with similar problems: increased consumption of natural products, which are still expensive; competition with suppliers of similar cheap products, and a decline in the traditional method of agricultural production selling at markets. Thus, the social network Facebook was initially used to announce information regarding the newly established farm, even before the vegetable season started its first cycle. The example sets of vegetable and herb baskets were announced, and the information was given on how the orders could be made via private messaging on Facebook or a phone call. There were options provided for delivering the ordered baskets. During the first year, it was more personal agreements aligned with the husband’s working route to Vilnius, the capital of Lithuania. Furthermore, the dates and the collecting points were organized 2 days a week and announced on the Facebook wall. In turn, when the number of consumers increased, another ‘made-to-order’ system was developed. These regular consumers ordered the vegetable-growing service in advance for the whole season. This helped greatly in planning the scale of seeding. Then, they regularly collect their baskets under the agreed schedule with Moon Farm. Baskets up till now can be ordered by sending a private message on Facebook or making a phone call.

Baskets of Moon Farm are collections of fresh, naturally grown vegetables, herbs, spices, fruits, and berries, depending on the availability of the season. The baskets are designed to be as varied as possible: in early spring, the baskets contain a narrower range of products (5–7), while in early and mid-summer, the baskets contain 8–10, sometimes as many as 15 or even more, different products. The baskets may be different from week to week, depending on the range of vegetables available on the farm at the time. However, the vegetables are always fresh in the baskets; they are picked very early in the morning, packed, and shipped to customers the same day. The basket is formed as soon as it has been ordered. Ordinarily, 2 types of baskets are offered: big and smaller.

What strategies were used to design the product-service system? There were several strategies used to fight the limiting barriers of adopted production strategies.

- The *extensive growth strategy* of the farm started with the *capital barrier*. Initially, capital was needed to start the envisioned business model of agricultural production plus services. There was no own suitable property to do this: no land, no inherited place, etc. The founders dealt with this barrier themselves. They accumulated the necessary capital by working abroad in a different area from agriculture. When the necessary initial capital was accumulated, they bought a property and the necessary amenities to start implementing the envisioned business model by exploring an extensive growth strategy.
- The barriers to *intensification* were first related to the selected *production method*—growing vegetables naturally. Natural agricultural production consumed a high workload of handwork, which was in the extensive growth phase and was performed by the farm founder and with the help of their parents. To intensify, the human resource barrier was overcome gradually by shifting from part-time farming activity to full-time farming for most family members.
- Small-scale farming *intensification* was achieved by enrolling agricultural *machinery* (only starting from the second year, due to the high demand for investments in the initial phase) and applying *knowledge* to make the hand work quicker, more effective, and more efficient. The knowledge barrier was initially crossed by continuously gathering knowledge for the envisioned agricultural production plus services business model, concerning nature and plants and the natural agricultural process itself. Furthermore, the necessary *skills* regarding the agricultural production practice on land were acquired by taking part in relevant similar business courses in Lithuania. They also gathered specific knowledge on such a business model organization process while working abroad and being on the consumer side of such a business model.
- The *intensification* was reached by applying *managerial and logistics solutions*. Initially, fragmented orders, in turn, became stable, and the operating system was developed in Moon Farm by founders (knowledge from Karolina's education in logistics was utilized) to organize regular vegetable basket collection and delivery to consumers. This helped to address the limited time of small-scale family farming businesses, production scale planning, and revenue flows.

Benefits of moving to the product-service system. The farm founders disclose several benefits of a product-service system.

1. The development of a 'zero-waste' approach. The initial vision of the product-service business model was based on the founders' willingness to add to the development of zero-waste culture worldwide and add to the ecological sustainability of the planet of the land they are in love; starting from themselves doing small things, sharing, and forming a same-minded community.
2. The developed business model, based on a product-service system, enabled the founders to escape other economic activities, i.e., to make their dream true: live in nature, grow, eat, and share natural vegetables and culture of healthy food, and run their own nature-friendly agribusiness, which becomes their full livelihood. This is what they wanted to escape—the crazy pace and noise—while working in other areas. They could not manage such a transformation remaining with Moon Farm only in agricultural production mode; adding services was a crucial factor to make the envisioned way of life reasonable and, in turn, profitable.
3. The product-service system, based on preorders, helped manage time, workload, scale of production, investments, and revenues at a time. This added to the efficiency and effectiveness of the farm, simultaneously driving it to an economically prospective small-scale family business model.
4. The social network Facebook, which served to establish the product-service system, also helped develop new social capital—connections with same-minded people, followers of a healthy lifestyle, lovers of nature, and preservers of the natural environment. Currently, before the start of the third season, the farm already has more than 1600 followers and received more than 1400 likes. These new Moon Farm followers become a community that mobilizes same-minded people who cherish a new environmentally friendly, no-harm, zero-waste, sustainable lifestyle. The community enlarges and exchanges gathered experiences and knowledge in between, attracting new members, who might become active propagators of natural lifestyles and/or business models. All of this adds to the more prosperous future of the Earth.

Finally, the newly established living mode gives tremendous satisfaction to the farm owners. In addition to the plenty of work that should be done on a farm, at the same time, it is an active and healthy form living in harmony with nature in its natural cycle—a tremendous gift to the body and soul. The farmers stressed that they started being regularly thanked by their consumers for delicious, real-tasting vegetables. This makes them very happy and confirms that they are on the right track. It validates their ‘less is more’ approach: more real, more natural; growing without chemicals; respecting your health and the land you live on.

Challenges to developing integrated product-service offerings.

According to the founders of Moon Farm, the nearest desire is to deal with nonconditional, or as Karolina calls, ‘less beautiful’ vegetables with a not fully ordinary appearance. They are the same natural, healthy, and good nutrition; however, it is not always comfortable to propose them to consumers. Therefore, the nearest plan of the farm is to establish a small processing plant to produce a variety of sauces, condiments, and spices from those ‘less beautiful’ vegetables.

Currently, Moon Farm should address the unmet demand for natural fresh vegetables grown on their farm. They notice that there are always more orders that they can take, according to the current production scale. However, they want to do their business with love and to do as much as they can carry on as their own family business, with their own capacities for investments. There are always challenges in aligning different-minded people into one team. At the same time, it was impossible to find workers willing to perform agricultural activity on a farm from nearby villages. Therefore, they preferred doing less, which would give them and their clients more satisfaction due to the quality they provide.

The overall economic environment in Lithuania and the broader world faces direct economic disruption. As wages rise, so do the prices of many commodities needed for farming, such as seeds, compost, black soil, etc. The prices of certain farm services and energy resources are also rising significantly. Meanwhile, the price of naturally produced organic vegetables should remain affordable.

Moon Farm has never used any state support or other funding mechanisms, aiming to remain an independent farm, both financially and in terms of values. They lived within their own means and approached the

need for development responsibly within existing capacities. They believe that the popularity of natural food will gain momentum. Therefore, they will take further Moon Farm development decisions responsibly once a piece of capital for investment is accumulated from their business activity.

5.3 'Milišiūnai Sheep Farm' Case Study: Servitization as a Way to Overcome Barriers to Specialization Strategy

Introduction of the farm. The farm of Kristina and Juris Milišiūnai has been successfully running for more than 25 years. This is a long time considering that private farming was only restored in Lithuania in 1990 after independence. The farmers took advantage of Lithuania's private farm law, which gave them 50 hectares of land to set up their farm. The farm is located in the farmer's homeland in the municipality of Biržai, close to the Lithuanian-Latvian border. The farm currently owns 150 ha of land, grows cereals, and keeps 800 sheep of various breeds. The owners are professional farmers: Kristina is a livestock specialist, and Juris is an agricultural engineer. At the beginning of the business, the farm only grew cereals. The sheep started as an 'eco-mower'. The farmer's parents had a large garden and bought a few sheep to graze the grass. As the sheep herd grew, the farmers thought about sheep farming. At that time, many farms in Lithuania had given up sheep farming in favour of other, more profitable products. However, the farmers had experience working on a sheep farm and liked the calm animals. Since the garden was no longer sufficient to feed the sheep, the farmers decided to move the sheep to their own farm. The sheep had breed certificates, so the farmers hoped to start breeding sheep. Initially, they planned to raise sheep for breeding, but later, they started selling lamb and mutton and meat products. The farm became organic 15 years ago. The farm is now a crop and sheep farm, providing educational and recreational services for children and adults.

Farmer's experience in strategic management obtained through developing a product-oriented business model. *Extensive growth strategy.* Farmers rented a 50-ha land plot to set up their farms. Over the years, opportunities to increase the size of the land became available as the owners of the neighbouring farms sold or rented out plots of land as they retired and gave up farming. The farm grew to 150 ha. The number of sheep has grown from a few to 1000 or more. Although there was still space to increase the amount of land owned, a lack of financial resources limited the increase in production. The farm invested in buildings and machinery, but the profits were not enough. In turn, the lower profitability of sheep farming compared to other types of farming meant that the farmers were not able to obtain investment support under the Lithuanian RDP, whose priority criteria were linked to the financial performance of the farm. Farmers were able to obtain support from EU regulations for the implementation of livestock manure management requirements. Later, with the introduction of support for small investment projects, they were able to renovate buildings and some machinery.

The intensification strategy. In the absence of the possibility of increasing income through an extensive growth strategy, it was necessary to find solutions to increase the income earned per unit of time. However, the farm was in an area of intense sinkholes, where certain restrictions on farming activities were in place to reduce the pollution of groundwater. Unable to further increase productivity, the farmers decided to switch to organic farming. In an ecologically sensitive area, the state encourages organic farming by making payments based on the loss of income, which makes it economically viable. In the beginning, the farmers converted their cereal production to organic farming. However, the number of sheep on the farm did not meet the requirements for an organic farm, and the number of animals had to be reduced to 800. It took several years for sheep production to be certified as organic.

Specialisation strategy. The farm was developed as a mixed farming system, with arable crops on arable land and sheep grazing on grassland. Some of the cereals were sold to processors, and some were used for the farm's own internal consumption, such as feed. Sheep farming activity was conceived as a sale of breeding animals, but the production process

led to some of the animals being sold for meat. When the farm became organic, the sheep had to be fed on organic feed, so the farm's grain was primarily used for feed. It was therefore not possible to reduce the types of production.

Farmers faced the problem of selling organic meat as a conventional product because there is no possibility of slaughtering the animals in a certified slaughterhouse. Sheep were certified as organic, but sheep meat was not. As a result, they have not been able to obtain a higher price for their products. The farmers tried to process the agricultural raw material into products, making sausages from the sheep meat and cheeses from the sheep milk and selling them to a buyer who visited the farm. Farmers have redesigned the farm-to-fork agricultural supply chain, bringing all stages of production onto the farm. In this way, it was hoped to create more added value on the farm than by selling unprocessed production.

Reasons to shift farming business from products to services. The shift to a product plus service business model has been driven by the following barriers to a product-oriented business model:

- Farmers lacked the financial resources to increase farm income by increasing the land area and the number of sheep, which would have required investment in agricultural machinery and more staff.
- Increasing farm income through intensive technologies was limited by environmental requirements.
- The farm's choice of organic production meant that buyers did not pay farmers a premium price for their animals, and the sheep was sold as conventionally produced meat.

The main reason for introducing services in addition to the product-oriented business model was the farmers' perception of the opportunities to increase income through a specialization strategy.

Introduction of the product-service system used in the farm. Farmers were looking for more profitable ways to sell high-quality organic production. Traditional sales channels (supermarkets, specialized shops) and advertising methods (TV and press advertisements) were not available to the small producer, and alternative options had to be found.

Farmers had to choose between two alternatives: to implement a diversification strategy in agricultural production or to change their business model by developing other activities. The farmers came up with the idea of inviting consumers to visit the farm, have a pleasant time, learn about the traditional crafts related to sheep farming, and taste and buy the farm products. Farmers were soon convinced of the need for this service. The number of visitors began to increase when customers visited the farm and shared their positive experiences with relatives and acquaintances.

This gave the farmers the idea to turn the service into a business, and now farmers say that the income from the service accounts for approximately half of their business income. The farmers needed additional space to provide the services. They found an unconventional, low-cost solution by building sheep wool yurts. The number of yurts increased gradually as the range and volume of services grew. The first yurt was built in 2015 with the support of Lithuania's RDP rural tourism grant. The farm now has five separate spaces, including a sheep museum with a collection of sheep souvenirs, a dry sauna on the wool, a wool-weaving classroom, a room that can be rented out for seminars or family celebrations, and a gourmet lunch prepared by the owners using sheep products.

Educational programmes on the benefits of sheep are another particularly popular service among visitors. The programme for adults, called 'Sheep will clothe and feed you', introduces visitors to sheep breeds and their products, offers lamb and mutton dishes, and offers to buy meat and milk products or wool. The children's programme 'The Wool Road' is different from the adult programme. The farmers emphasized that the two programmes are designed to meet the needs of visitors of different ages. In this programme, children can interact with the sheep, who are very friendly, pet them, and taste the sheep's cheese produced on the farm. Visitors can also learn how to create woollen products. Services are available for individual visitors or families, as well as for groups arriving by bus. For such groups, the farmers ask for advance registration.

The services have also expanded the range of sheep products sold on the farm. In addition to the sheep for breeding and sheep meat that was on the market at the beginning of the farm's activity, sheep's milk products and sheep's wool can also be offered for sale (see Table 5.1). In

parallel with the provision of services to visitors, the production of sheep meat products was expanded: the processing of meat into sausages and sheep's milk into cheese, which visitors were happy to taste and buy. This has led to the development of another business niche: on-farm sales of sheep products. The volume of this activity is not yet large, but farmers are planning to set up a shop in the future.

What strategies were used to design the product-service system? By complementing agricultural production with services, farmers overcame the constraints of a product-oriented business that was hampering the growth of farm income:

- By implementing an extensive growth strategy, farmers faced the problem of a lack of capital for farm development. The introduction of educational and recreational services increased the income of the business. Farmers say that in the future, they would like to expand agricultural production and that the income generated from the services can be reinvested in increasing the area of land or the number of livestock or in buying agricultural machinery.

Table 5.1 Introduction of the product-service system in 'Milišiūnai sheep farm'

Products	Services	Content of integrated product-service offerings
Sheep meat	Educational programmes on the benefits of sheep	Visitors can taste and buy sheep meat sausages Visitors can order a lunch of lamb and mutton dishes Visitors can organize family celebrations on the farm tasting lamb and mutton dishes
Sheep milk	Educational programmes on the benefits of sheep	Visitors can taste and buy sheep's milk and sheep's milk cheese
Sheep wool	Wool felting educational workshops	The wool produced on the farm is used to teach visitors how to feel various wool products Visitors can buy woollen products at the farm
Sheep wool	Services 'Dry sauna on wool'	Visitors can spend time in the sauna, which is equipped with a sheep's wool

Source Created by authors

- The services have enabled them to make better use of their staff during the year, to better organize their farm work, and to increase their income while avoiding the environmental constraints imposed on agricultural activities.
- The service eliminated the limitations farmers faced in not being able to sell their organically produced livestock at a higher price. Visitors to the farm were introduced to environmentally friendly sheep farming techniques and realized that they were buying exceptional products, even though they were not marked as organic. In addition, there was a demand for sheep wool, which had not been marketed on the farm before the service was set up. The services have made the farm profitable without changing its specialization, but the farm is not supplying raw materials to the market but rather products with a higher added value, which has increased the profitability of the business.

Benefits of moving to the product-service system. Farmers consider that the services have created many new economic and social opportunities for family businesses:

- Farm income has increased, with service income now accounting for approximately 50 percent of income, and farmers plan to maintain this balance.
- Services have helped to distribute tasks more evenly among workers during the year, increasing productivity and creating the possibility of division of labour, which has led to an increase in productivity.
- The products produced on the farm are marketed as higher value-added products.

Farmers noted that the services not only strengthened the farm economically but also provided moral and emotional satisfaction. The new activity brought the family together, as the farmers' children were happy to participate in discussions on business strategy. Farmers say that if they wanted to earn more money, they would probably choose another activity. However, interacting with the visitors gives their work a sense of purpose and brings them great joy.

The service has made their business more community-based. Farmers participate in the tourism cluster, coordinate activities, and recommend other tourist attractions to visitors.

Challenges to developing integrated product-service offerings. Farmers identified difficulties in applying for support as the main obstacle they faced in implementing a product-service model. Farmers stressed that their business combining educational services with farming did not fit the definition of beneficiaries under the support measures, but they managed to overcome the bureaucracy and obtain partial funding for their project.

5.4 'Provansalis' Manor and Farm Case Study: Servitization as a Way to Overcome Barriers to Diversification Strategy

Introduction of the farm. After the restoration of Lithuania's independence, the parents of Agnė Vaitkuvienė regained the land and started farming in the village of Babriškiai near Vilnius. However, at the same time, farmers had many other activities and businesses, and farming was not a priority of carried activities. Therefore, A. Vaitkuvienė became a farmer as soon as she turned 18 years old, and later, in 2004, the farmer started farming independently and established an organic farm. The farmer owns 40 ha of fields and 8 ha of forestry (Provansalis, 2023).

Even A. Vaitkuvienė started her life in the capital and obtained a degree in heritage conservation; however, she was deeply motivated by several reasons to start farming. First, the reclaimed land needed to be used for something, and at that time, the support of the European Union was a significant incentive for farming. Second, A. Vaitkuvienė had personal reasons to start active farming, as her parents and her family wanted to settle in the village.

Currently, the farm is of mixed type, and it is engaged in both crop and animal husbandry, thus providing various services related to agriculture and tourism.

Farmer's experience in strategic management obtained through developing a product-oriented business model. The farmer has been carrying on farming activities for almost 20 years and has employed a great variety of strategies in business development. Since the beginning of farming, A. Vaitkuvienė has been making her business decisions based on an *innovation strategy*. She did not want to farm using industrial methods and decided to establish an ecological farm, which was considered a very innovative business in Lithuania almost 20 years ago. In addition, to increase the profitability of the business and the sustainability of the farm, the farmer constantly changes the grown products. She had already tried many types of products rarely grown in Lithuania at that time, such as bristle oat, hemp, flax, feed spelt, and Lithuanian black-headed sheep.

Having started growing grain crops, the farmer soon realized that it was difficult to make the business profitable, as the amount of land was not sufficient. The farmer realized that having approximately 45 ha, it is impractical to survive on the cultivation of grain crops, for which, in her opinion, at least 200 ha of land is needed. However, a *strategy of extensive growth* by acquiring more land was not possible. The development of the organic agricultural farm was limited by the fact that many settlers from Vilnius were settling down around; therefore, the land was too expensive to be used for growing grain.

The geographical area and a low land productivity score determined and pre-empted the possibilities to develop the business using the *intensification strategy*. The soil is not very fertile—it is dry on the hills and peat bogs and loam on the slopes. Therefore, it is not exactly the kind of soil from which one could expect a high yield of grain crops. Having chosen the ecological method of farming, the farmer believed that achieving a higher yield should not be achieved by improving the cultivation technology but by finding the most suitable types of products for the natural conditions of the farm on the one hand and for the Lithuanian market on the other hand.

The farmer was looking for crop production products that bring the greatest economic benefit and can be grown organically. She tried various grains: oat, bristle oat, barley, rye, and later hemp and flax. However,

neither of the tried-to-grow crops yielded enough profit, and they were not suitable for the narrow *specialization strategy* of the farm.

As the strategies of extensive growth, intensification, and specialization were not suitable, the farmer switched to a *diversification strategy*. The owner of the farm decided to supplement the crop production activities with livestock production and started breeding Lithuanian black-headed sheep. There were three main reasons for taking up animal husbandry to reduce farming risks. First, such a field of activity is less dependent on the unexpectedness of nature; second, the production was in demand and profitable; third, the adoption of sheep farming was encouraged by the support of the European Union funds. In addition, when choosing which livestock to choose, the farmer combined a *diversification strategy* with an *innovation strategy*. Sheep breeding in Lithuania was a new and rare field of activity, so the first farmers who engaged in it received a good profit. However, after a few years, when more farmers started sheep businesses, the price of sheep fell, and it was no longer a profitable area of farming, and the farmer ceased this area of farming. Therefore, sheep breeding has been abandoned and replaced by horse breeding.

Horses are not bred as agricultural products for sale on the market but as resources for service provision. Later, the farmer also started ecological Highland cattle breeding. At the current stage of business development, the farmer grows an organic feed spelt and 1 ha of organic briars (however, there are certain difficulties in selling the production of briars), and in 2021, she also started the Provansalis vineyard. Because of the close relationship with other horse breeders, the farmer used to sell all grown ecological production to other horse breeders, but after starting to breed Highland cattle, the grown high-quality production is used as fodder for animals within the farm.

Reasons to shift farming business from products to services. The case analysis of Provansalis farm revealed that there are a few important reasons for shifting the farming business from products to services. At the beginning of the development of the crop farm, the farmer and her family still lived in the city, but when the family started raising sheep, it required constant care, and the family moved to the countryside.

However, the carried crop production activities did not help to overcome the volatility of nature, and in the long run, it still resulted in

losses, and the animal production activities did not help to ensure the sustainability of the farm due to the change in the demand and supply of sheep business in the market. Therefore, the farmer decided to diversify the production of agricultural products and employ services. For a long time, the owner of the Provansalis farm, and later the Provansalis manor, had a dream of establishing a rural tourism homestead. The tourism service business opened new opportunities to develop farm activities in barren soil and create a source of income for all family members. Thus, the incentive of business servitization became the fact that the objective limit of implementing risk management strategies was reached and the manifestations of a subjective limiting force were encountered when implementing the strategy of extensive growth of the business. In addition, the transition to the business model ‘products plus services’ allowed the farmer to realize her entrepreneurial characteristics and once again to try to achieve a breakthrough in business by applying an innovation strategy—providing services and combining them with the production of agricultural products (Vidickienė et al., 2019).

Introduction of the product-service system used in the farm.

The product-service system has been employed gradually, i.e., in four stages in the Provansalis farm, where it finally resulted in four types of services (accommodation, education, training/tastings, and leisure activities (horse riding)) provided in the manor and farm of Provansalis.

First, the farmer engaged in horticulture and produced bristle oat, oat, hemp, barley, rye, flax, feed spelt, and some other crops. At the initial horticulture stage of farm development, the services were not introduced.

The second stage of the farm was established when the farmer started sheep breeding and decided to settle in the countryside and start tourism and rental services. Rental services of Manor Provansalis include various celebrations, training, and various events. Accommodation, meals, and services related to the organization of events are provided to guests of the homestead. This stage also revealed the potential for tastings and training in the Provansalis manor, and the farmer looked back to horticulture again. The owner of the manor and the farm noted that every year, to find a more profitable business niche, she tries new services that are not provided in any other rural tourism homestead. For example, when hemp was grown on the farm, the farmer offered tasting events

presenting hemp products made from the hemp grown on the farm. A few years ago, the farmer held raw food evenings at the homestead and offered an educational program on raw food techniques (soaking, sprouting, etc.). However, these types of services did not work because they could not secure enough customer flow (Vidickienė et al., 2019).

The third stage of products used for building revenue streams from services is related to horse breeding. Having the farm and manor, the farmer realized that there was a need to distinguish her farm and manor from other service providers, and she introduced horses and ponies to the farm. Currently, in the stables of the Manor Provansalis, there is a stud farm that provides horse riding training services. Riding club members participate in competitions of various levels, and stable rental and horse care services are provided. There are currently 18 horses in the stable, and the farmer bought them to offer more entertainment to tourists and to distinguish her rural tourism homestead from others. Providing horse-related services, Provansalis Manor became more than just an ordinary party venue.

At the fourth stage of turning products into services, the farmer realized that current products (crops, briars) and livestock (horses and later Highland cattle) are suitable for further services, and she introduced two educational programmes: 'World of Horses' and 'Healthy Food'. The first programme is intended for both children and adults, during which they are introduced to horses (ponies), their behaviour, care, and training. The second educational program offers information about healthy food grown on the farm and healthy ways to prepare it. Earlier Provansalis Manor also offered the educational programme 'Young Farmer', where visitors learned about the life of a farmer, the farmer's agenda, and daily work; visitors fed animals, inspected crops, and carried out other necessary activities according to the season (see Table 5.2). However, as this educational activity did not attract enough visitors, it was cancelled. Additionally, farmer often lacks time to provide these services in the summer because the most profitable activity, i.e., the customer service of the rural tourism homestead requires high labour costs, and in the winter, the need for such educational services is low (Vidickienė et al., 2019).

Table 5.2 Introduction of the product-service system in the Provansalis farm and manor

Agricultural products	Services	Content of integrated product-service offerings
Bristle oat, oat	Education services	Feed for horses and Highland cattle, education services about ecological and organic food
Hemp	Education services, tastings	Education services about ecological and organic food, tasting events
Barley	Education services	Feed for horses and Highland cattle, education services about ecological and organic food
Rye	Education services	Feed for horses and Highland cattle, education services about ecological and organic food
Flax	Education services	Education services about ecological and organic food
Feed spelt	Education services	Feed for horses and Highland cattle
Lithuanian black-headed sheep	Photoshoot, education services	Photoshoots with sheep (combining with manor rent), visits to the farm, education services about ecological and organic food
Horse and pony breeding	Horse and pony riding, education services	Photoshoots with horses and ponies (combining with manor rent), visits to the farm, horse riding academy
Briars	Education services, tastings	Education services about ecological and organic food

(continued)

Table 5.2 (continued)

Agricultural products	Services	Content of integrated product-service offerings
Highland cattle breeding	Photoshoot, education services	Photoshoots with Highland cattle (combining with manor rent), visits to the farm, education services about ecological and organic food
Vineyard	Education services	Education services about ecological and organic food and vine (in the future)

Source Created by authors

What Strategies Were Used When Constructing the Product-Service System? The transition to the ‘service plus product production’ business model was motivated by the desire to expand the business. The establishment of a rural tourism homestead made it possible to reduce the subjective limitations of the *extensive growth strategy*, which arose from the problems of increasing the available land area since another type of resource (manor instead of land) could be used for the provision of services. After the decision was made to provide accommodation, catering, and leisure services for tourists, much was invested in the development of other material resources of the farm—the construction of ornate manor palaces that correspond to the stylistics of the manors of the Vilnius region. Having such a building, according to the farmer, allowed for attracting more tourists. In the future, to increase the scope of provided tourism services, the farmer intends to improve and expand the building according to the needs of tourists. Additional accommodation places will allow to receive larger groups of guests and increase the competitiveness of the rural tourism homestead compared to the surrounding rural tourism providers.

The provision of services to tourists has opened new opportunities to apply a *diversification strategy* on the farm, diversifying not only the services, the list of which is constantly changing but also the production

of agricultural products. To attract as many tourists as possible, the activities of the farm were supplemented with the breeding of horses, which are used to provide leisure services to tourists. This also determined the *specialization* of rural tourism homestead. Educational activities about horses and educational services about the day of the farmer who raises them created the uniqueness of the rural tourism homestead and allowed more customers to be attracted to the Provansalis manor.

Business servitization also contributed to the evolution of the farm's business model, moving from business risk management and diversifying activities with various innovative products to a more complex *cooperation strategy*. Previously, when the farm was engaged only in the production of agricultural products, the cooperation strategy was not applied. While raising sheep, the farmer was a member of the Lithuanian Sheep Breeders' Association, but real cooperative actions that benefit the business were not taken, as the association lacked the initiative for common actions. However, after starting to provide services on the farm, the farmer found many areas of cooperation with other entrepreneurs. The farmer belongs to the Business Network International (BNI) Lithuania branch, which helps to attract training and event organizers to the rural tourism homestead. A. Vaitkuvienė also actively participates in the activities of the Lithuanian Countryside Tourism Association; previously she was the deputy chairperson of the board, and now she is the president of the organization. The establishment of the stud farm encouraged the farmer to join the informal community of horse breeders. Acquaintances with other Lithuanian horse breeders allowed it to create a niche for the sale of its grain crop production (Vidickienė et al., 2019).

The farmer decided to use the strategy of cooperation in providing services related to horses. The management of the stable is given to the riding club, whose work is organized by two trainers. They train horses, take care of them, conduct riding lessons, and maintain the riding club as an independent business unit from the income they receive. Such cooperation frees the farmer from the need to engage in this specific activity, which requires much knowledge and skills (Provansalis, 2023).

Having felt the benefits of the cooperation strategy, they started to organize all the activities of the Provansalis farm differently. As the farmer pointed out, people have been hired on the farm for almost 15 years,

but there have been no hired workers on the farm for the past 5 years. Currently, other services, such as laundry, cleaning, food supply, tillage, sowing, etc., are outsourced from other companies. This model of work organization is much more acceptable to the farmer because there is no need to look for suitable employees and provide them with the full workload every day, and the quality of services provided by companies is higher than hiring villagers.

The innovation strategy was employed together with the cooperation strategy as the farmer used innovative tools to find clients and joined business clubs of innovative entrepreneurs. Innovations made it possible to achieve a breakthrough in business and to change it from an agricultural products producer to an innovative services provider.

Benefits of moving to the product-service system. The farmer named the three main benefits of servitized farming:

1. For her personally, the provision of tourism and educational services is a more attractive activity than crop production or animal husbandry alone.
2. By combining the production of agricultural products with the provision of services, business profitability has increased.
3. Reduced business risk, as the service business can be more controlled compared to crop production, is highly dependent on factors beyond the farmer's control, such as weather conditions (Vidickienė et al., 2019).

Challenges to developing an integrated product-service system. The farmer identified four of the most important obstacles to complementing farming with rural tourism services:

1. Large and slow-paying investments in buildings and infrastructure, providing accommodation services.
2. The provision of tourism services on the farm changes the way of life, which is not acceptable to all farmers.
3. Lack of suitable employees. The proximity of the city of Vilnius means that motivated, suitably qualified employees are more inclined

to look for work in the city, while those remaining in the countryside often lack the desire to work.

4. Seasonality of services. According to the farmer, the rural tourism season in Lithuania lasts 100 days, during which there is an urge to manage to earn for the whole year. Due to climate change, the seasonality is not as definite at the moment, and the farmer provides tourism services from mid-spring to mid-autumn, but this activity coincides with crop production as well. Therefore, the provision of rural tourism services does not help to mitigate the greatly reduced employment between seasons due to the seasonality of crop production but also the services' provision itself; farmstead rental and educational programmes are most popular at the same time, i.e., in summer (Vidickienė et al., 2019).

In general, the case study of Provansalis revealed that business servitization was used to test another innovation in the farming business and to acquire more tools that help to reduce business risks and maintain the sustainability of the farm, which would also allow all family members to engage in their favourite activities that ensure a sufficient level of income. The decision to start providing rural tourism services fundamentally changed the business model of the farm, as the main activity gradually became not the production of agricultural products but the provision of a great variety of services to tourists.

5.5 'Šironija' Case Study: Servitization as a Way to Overcome Barriers of Collaboration Strategy

Introduction of the farm. Family farm 'Šironija' with its owner Virgilijus Šironas has more than 30 years of experience in agriculture. The farm was restored in 1989 in the small village of Papiškiai in Lithuania when the farmer Virgilijus Šironas regained the land of his grandparents. In the beginning, the main activity of the farm was dairy farming. Additionally, the farmer was also growing grains as part of the

harvest used to feed animals. The creation of new infrastructure on the farm started in 1993, with new buildings and a road to the farm.

Different farming activities since 1989 were initiated by the family farm. All of them were a reaction to (1) the development of the farm, (2) changing situation in the market, (3) reflecting the needs of consumers, and (4) new ideas proposed by the family members, as all members were active in the farming of this family, especially when children had grown up.

Currently, the size of the farm is a total of 80 hectares, of which approximately 20 hectares of land are cultivated on the farm, and cereals and hemp are grown on the farm. Additionally, vegetables are also grown on the farm, following the principles of natural agriculture. Only excess vegetables are sold in the market.

Farmer's experience in strategic management obtained through developing a product-oriented business model. The farmer had applied various business strategies to produce agricultural products with over 30 years of experience before he decided to change the product-oriented business model to the 'product plus service' business model. In the beginning, he tried an extensive growth strategy, then an intensification strategy, followed by a specialization strategy, then diversification, and at the end before changing to the 'product plus service' business model—cooperation strategy.

At the beginning of farming, an extensive growth strategy was used by the farmer in dairy farming. He was aiming to produce a sufficient amount of milk to obtain enough income for the family. The farmer was also growing grains as part of the harvest, which was used to feed animals. Later, Šironas focused on an intensification strategy aiming to use resources most effectively and to use technologies that were available in the market. Later a *specialization strategy* was used by Virgilijus Šironas with the main specialization of the farm to dairy farming activities. The challenges of this specialization in dairy farming started in 2004–2007 as milk prices in the market were constantly decreasing. All the farmers in the neighbourhood were searching for alternatives, aiming to find new activities to generate more income. At this time, the farmer had the opportunity to participate in some projects with exchange visits to Sweden to learn good farming practices in Sweden, where he acquired

many new ideas on how to develop activities of the farm by applying a *diversification strategy*.

He decided to combine a diversification strategy with a cooperation strategy, as he had some concerns that starting to produce other agricultural products on a small farm could be difficult. Therefore, he made a decision not to choose a completely new activity but to implement a diversification strategy together with a *cooperation strategy*. Therefore, the farmer has cooperated with other farmers for dairy farming activities—to have more power in the market, and to use some cooperative ways of logistics, communication, and representation in other institutions. Farms in this region are small, and the land is barren, so all farmers unanimously agreed that it is necessary to try to obtain income not only from the production of traditional agricultural products but also from other activities directly related to the previous activities and the environment surrounding the farm. The transition to the strategy of cooperation was not difficult for him because, since the beginning of the restoration of the farm, Mr. Šironas actively participated in various activities together with activists from the surrounding villages: in the farmers' union, activities of community building, and by initiating various other initiatives in the region. In 2000, the establishment of rural communities started in Lithuania, and this activity also opened new opportunities for the organization of new activities on the farm and the accumulation of new experiences. The farmer was also cooperating with researchers from the Vytautas Magnus University, Academy of Agriculture in Lithuania, and since 2000, researchers have invited him to participate in projects.

The start of use of the diversification strategy was the first step to using the 'product plus service' business strategy as he rethinks the use of an unused building in the farm for new activities. A cooperation strategy on a larger scale was used for a new product—hemp. Šironas with other farmers has established a cooperative to cooperate on the purchase of some equipment, creation of distribution and selling channels, etc.

Reasons to shift farming business from products to services.

Different strategies (extensive growth, intensification, specialization, diversification, and cooperation) applied by the farmer in developing a product-oriented (dairy farming) business strategy have shown that difficulties still exist, and he is not willing to focus on cooperation with other

farmers in dairy farming but to use new opportunities in the provision of other services that could open new opportunities for his farm. New activities from cooperation with other actors in the region have opened bigger opportunities for the farmer to create and offer new services in the market related to previous farming activities. Farm Šironija began successfully cooperating with other companies of the region in providing educational and rural tourism services by using unused resources on the farm (old buildings, free land not used for farming activities, knowledge of family members gained through farming activities).

The biggest motivation to start providing services was the lack of financial resources for living. Other reasons for starting a service-oriented business model:

- Excess of certain types of resources: old buildings. After the restoration of the farm, new buildings were built, so the old ones remained unused. Farmers have started to search for new adaptation possibilities for old buildings.
- Reducing the risk of incurring losses due to the decreased prices of agricultural products. Since the main product of the farm is milk, the drop in milk prices had a significant impact on the farm's income.

Introduction of the product-service system used in the farm. The following agricultural products and other resources are used for building revenue streams from services that were created on the Šironija farm (see Table 5.3).

New services created by the farmer demonstrate that many synergies can be gained by using not only agricultural products and other resources to get income to the farm but also the knowledge and initiative of family members who were very creative, positive, and motivated to provide new services to increased demand of consumers.

What strategies were used to create the product plus service business model? One of the main reasons for the farmer to create the 'product plus service' business model was a revision of resources in the farm that was used for the production of agricultural products. A surplus of resources that generates a negative scale effect can be used for other

Table 5.3 Introduction of the product-service system in 'Šironija' farm

Agricultural resources	Services	Content of integrated product-service offerings
Grains	Education on bread baking	The wife of the farmer likes to bake bread at home. The farmer was growing grains on the farm. So they decided to create a new service—education on bread baking by using their grains
Hemp	Cannabis cultivation plus consultations and education on its cultivation	The Son of the farmer takes a lead role to grow hemp on the farm. Growing hemp was quite new activity in Lithuania as before growing hemp was abandoned activity in Lithuania. For this reason, consultation on growing hemp became very popular and the farmer has decided to create a new service—consultation, and education on its cultivation
Hemp	Education on the weaving of hemp fibre ropes	A side product of hemp cultivation was fibre and members of the family have agreed that new education on the weaving of hemp fibre ropes would be attractive for visitors to the farm. This service became popular during summer camps organized on the farm
Land	Camp organizing services	Part of the land was not used for farming activities. This land is on a hill, with a nice view of the forest. The farmer has decided to create a new service—to rent this land to organize summer camps for children and other participants. Additionally, to this, they were offering other services to the participants of the camp (such as bread baking, weaving of hemp fibre ropes, bike tours, etc.)

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purposes. On farm Šironija, a surplus of buildings, land, and knowledge were adapted for the provision of educational and tourism services.

Two main strategies were used to create the ‘product plus service’ business model based on the experiences using a product-oriented business model: extensive growth strategy and cooperation strategy.

In the beginning, the idea of the creation of new services was given by the most important products that were produced on the farm:

- *Grain cultivation plus* education on bread baking.
- *Cannabis cultivation plus* consultations and education on its cultivation. At this time, the cooperation strategy was used to find customers. The farmer has initiated cooperation with neighbouring farms and other companies from the region. The national platform ‘Village to Your Home’ was also used, which has helped to establish relations with consumer communities in Lithuania.

Later, principles of the *extensive growth strategy* were used. The revision of the available resources showed that some of them are not used, and it was decided that some of them can be used for the provision of services. The main material resources for service provision are land, buildings, equipment, and natural resources located in the territory of the farm. However, an important role in deciding to use these resources was the feeling of the farmer and the members of his cooperation network that accumulated knowledge and skills were not fully utilized. It was decided to use all these surplus resources for the preparation of children’s camps, educational programs, and the provision of guide services. A list of services is provided in Table 5.4.

The *cooperation strategy* was used both for the development and provision of services and for the development of the customer network. The creation of a customer network is organized in cooperation with other farmers, companies from the region, and other actors (for example, camp ‘Apple Island’, Molėtai Tourism and business centre, and Alanta agricultural school). The following methods are used to create a customer network:

Table 5.4 List of services offered by family farm 'Šironija'

Name of service	Content of service
Educations	Educational activities: (1) bread baking; (2) weaving of hemp fibre ropes, and (3) other topics, related to the activities of the farmer and his network
Camp organizing services	Renting farmland to organize camps, renting premises (for organizing accommodation and catering services), education on various topics, and organizing family camps with educational programmes. Clients are very diverse—Waldorf school, school teachers with students of their class and parents, seminar organizers (e.g. hemp rope weaving seminar, a camp of folklore songs, clay classes, etc.)
Children's camp project 'Return your land'	The children's camp "Return your land" has been running for 7 years. During the camp, children collect various stories about the places of this region, the children present the results of their searches to the parents and tourists. Support for the implementation of the project was received from the Ministry of Agriculture of the Republic of Lithuania
Guide services for ecological tourism (cycling)	Guide services for ecological tourism on cycling 'Kamastos žiedas' (<i>Kamasta ring</i>). 2 bicycle routes have been prepared. Participants of this route are 7 farms/homesteads. When travelling on these routes, it is possible to book educational sessions with farmers (e.g. beekeeper's educational session, beef cattle farm, old car museum, The Brass Park) in advance
Cannabis cultivation and consulting since 2014	Production of higher added value products from hemp (hemp seed oil, tea, shelled hemp seeds, etc.). After the cultivation of hemp, the interest in its production has increased. A cooperative of 6 members was established in the region. The cooperative has purchased a press for oil pressing and a drying device

(continued)

Table 5.4 (continued)

Name of service	Content of service
Consulting and education services	Farmer is participating in the international platforms <i>Couchsurfing</i> , <i>Workaway</i> , and <i>Helpx</i> , where everyone is invited to volunteer at the farm, so the farm invites volunteers who want to gain various experiences; participants are mostly foreigners
Provision of services to companies in the region	Farmer cooperates with camping 'Apple Island'. The location of the camp is nearby, and services are offered (as educational activities, and guide services for a bike tour)

Source Created by authors

- Cooperation with the academic community (i.e. VMU Academy of Agriculture; Alanta School of Agriculture);
- NGOs (i.e., rural communities; consumer communities of the national platform 'Village to Your Home'; Travelers Club);
- Companies located in this region (i.e. camping 'Apple Island', etc.);
- Government institutions (i.e., Ministry of Agriculture of the Republic of Lithuania, Molėtai District Municipality, Molėtai Tourism, and Business Information Center).

Benefits of moving to the product-service system. Main benefits of farm Šironija with the use of the business model 'product plus service':

- Reduced business risk.
- Increased operational profitability.
- Impact of servitization. The provision of new services makes life more attractive, diversified, and interesting, with the possibility of obtaining new knowledge.
- This is a new experience because new activities and services attract many people from abroad who want to use these services. Enables the realization of people's desire for a healthy life.

The new business model has opened an opportunity to reuse income in the development of business in the future. Income from services

currently constitutes the main income of a farmer's family. The farmer plans to use most of the received income for the development of the service business. The farmer also plans to diversify services, with a focus on a great perspective in organizing hiking trips.

The farmer has demonstrated the ability to apply strategic thinking approaches by elaborating a proper strategy for his business model, thus demonstrating the evolution from a product-oriented to a 'product plus service'-oriented business model.

Challenges to developing integrated product-service offerings. The most important 3 reasons hindering the development of farm Šironija using the business model 'product plus service' are as follows:

- Lack of customers. The range of services has been created, but the number of customers is insufficient. There is a lack of marketing knowledge on how to attract more tourists.
- Lack of suitable employees. It is difficult to find an employee with knowledge of marketing and advertising. It is also difficult to find workers for seasonal work (production and services; cannabis cultivation).
- Seasonality of services. Farmers want to find ways to offer more services in the winter season.

5.6 'Fallow Deer Farm' Case Study: Servitization as a Way to Overcome Barriers to Innovation Strategy

Introduction of the farm. The farm of Marius and Živilė Valukynai, which breeds fallow deer, is in the Varėnos district in a forestry area near the village of Merkinė. The farm started in 2017 when the farmers finally decided to realize a long-held dream. The owner of the farm is a forester who graduated from the Lithuanian Academy of Agriculture and was therefore familiar with the keeping and care of wild animals during his studies. The farm has 13.5 ha of land, approximately 3 ha of which is forest, and the rest is grassland. After five years of farming, the farm has

a herd of approximately 200 fallow deer. The farm is located on low-fertility land and is not profitable for traditional farming on such a plot.

At the time of setting up the farm, the farmers had the vision to breed fallow deer. In Lithuania, the CAP provided support for small farms to develop alternative farming activities, and breeding fallow deer was included in the list of supported activities, so the farmers hoped to benefit from support for the purchase of animals. On the other hand, farmers expected that this support would create demand for their activities.

Although the support was not forthcoming, the idea was not abandoned, and the project was carried out on its own resources. After discussions with Polish farmers, they purchased two herds of fallow deer. The farmers started with a product-driven business model.

Farmer's experience in strategic management obtained through developing a product-driven business model. *Extensive growth strategy.* The farm was set up with its own investments in land, fencing, and animals. Initially, the farmers purchased 65 animals, which quickly became calves, and the number of animals started to grow rapidly. For the farm to be profitable, it was necessary to achieve a scale of production of an innovative product that would generate a return on investment.

To achieve this, the farmers implemented an extensive growth strategy by increasing the herd size to 200 animals. Further increases in production were limited by the available land area. The farm had 10 ha of land, which could not be enlarged at that time for both natural and economic reasons. The land was situated in a forest, and the fallow deer needed grassland for feeding. The surrounding plots were farmed. No owners were willing to sell or lease the land. The only agreement that could be reached was with a neighbour to lease 3.5 ha of grassland so that the farm now owns 13.5 ha.

A year after the farm was set up, it became clear that it was no longer feasible to expand the business by extensively increasing the herd and the land. The farmers started to look for new solutions to increase the productivity of the business by implementing an intensification strategy.

Intensification strategy. In conventional livestock farming, the intensification strategy is implemented by changing the way animals are housed and fed. However, these measures were not suitable for wild animals.

Farmers immediately abandoned the idea of increasing the number of animals in the enclosures because it increased the risk of morbidity and mortality and because it entailed additional veterinary requirements and therefore additional costs. The farmers also considered that increasing the stocking density was incompatible with animal welfare requirements. The focus on quality production meant that the composition of feed should be as close as possible to natural conditions. This meant that the intensification of production was not in line with the farmers' approach to business.

Specialization strategy. Although the number of animals doubled during the first year of the farm's operation, sales per breed fell, and the price at which they could be sold was too low to cover the costs of farming. Farmers recognized that without investment support for breeding animals, the farm had become unprofitable and would not have been able to sustain itself. When the idea of breeding fallow deer and selling them to other farms as the breeding stock did not work out, the farmer had to look for another product that could be produced based on the available resources. However, specializing in wildlife breeding offered very few other opportunities to generate income from this business. The farm's equipment was only suited to the rearing of wild animals and would be too expensive to replace. In addition to the sale of livestock for breeding, game meat was offered to consumers. Once game meat production started, farmers realized that they could not use the traditional sales channels of selling exclusive game meat products in supermarkets or specialized shops. There was a shortage of quantities to supply to the shops. The possibility of supplying game meat to restaurants was considered, but the logistics were difficult to organize, and the costs would not have been worth it. The farm is remote from major cities where restaurants could be buyers of game meat if they decided to include it on their menus. In addition, the restaurants only needed a certain type of prime game meat, and there was a question of how to use the other parts of the carcass. The continued implementation of the specialization strategy did not offer the farm any more income opportunities and even threatened the survival of the farm.

Diversification strategy. Once farmers decided to produce game meat, they needed to ensure a steady income stream and manage the liquidity

of the farm. Keeping and maintaining the herds required continuous expenditure. An additional employee was hired to look after the animals, which added to the cost of labour charges. The diversification strategy was implemented by finding other activities linked to game meat production. The farmers invested in a slaughterhouse and tried to market packaged fresh and frozen game meat, what they called 'the product for consumers'. However, even these measures did not guarantee an increase in sales volumes. Demand for game meat grew slowly, and consumers were cautious about buying innovative products with which they had no experience.

Cooperation strategy. Farmers did not have the opportunity to cooperate with other farmers who produce the same products to overcome the challenges that the above strategies did not address. They were the only producers of this production in the region. However, farmers are actively cooperating with other local farmers in organizing the supply chain. For several years, fallow deer farmers have been buying feed (oats, hay, sugar beet, or vegetables) from local farmers. This cooperation reduces feed costs and simplifies logistics but does not solve the problem of demand for production.

Innovation strategy. Farmers who chose to produce an innovative product, game meat, faced problems that could not be solved by the strategies listed above. On the one hand, producing fallow deer gave the farm a distinctive character, but on the other hand, the farmers faced challenges in bringing the product to market. It should be mentioned that game meat dishes are part of Lithuania's culinary heritage, but for many decades, consumers have not been able to buy game meat on the market, so the product had to be reintroduced to consumers. For a new product that was viewed with distrust by consumers and priced higher than substitutes available on the market, it was necessary to find an innovative way of presenting it to the consumer, one that was inclusive and innovative, that would generate income throughout the year and that would create a higher value on the market than just selling the raw material.

Reasons to shift farming business from products to services. These barriers to a product-oriented business model have led to a shift towards a new product-service business model:

- Demand for game meat was growing slowly, so there was no aim to increase production volumes to increase farm income through economies of scale.
- The low demand for game meat made it unprofitable to increase the intensity of production, as this increased production costs and reduced the profitability of the business.
- The farm's equipment was only suitable for rearing fallow deer and would be too expensive to replace.
- The farm faced a liquidity problem due to the lack of sales and the lack of a stable income.
- There were no similar farms in the area with which to cooperate to meet the challenges of marketing production.
- Having decided to produce a new product, the farm had to create demand for this product: it had to implement marketing measures to reach a segment of potential game meat consumers. For this purpose, traditional marketing tools (e.g., advertising in the press, on TV, on a website, etc.) were costly and ineffective.

This gave rise to the idea of using services to sell the products, implementing a business model oriented towards the product-service system.

Introduction of the product-service system used in the farm. The farmers decided that they had to provide consumers with a ready-to-eat product rather than a raw material and to provide it in the form of a restaurant service. In 2020, they opened a game restaurant in Merkinė to increase the sales of the farm's game meat. The opening of the restaurant was prompted by two successful circumstances. First, for a few years, there had been a derelict building in the centre of Merkinė in a beautiful location near the town's central square, which could have been used as a restaurant. Farmers managed to buy it. Second, at the time when the idea was being implemented, the Lithuanian RDP supported business projects in rural areas that created jobs.

The restaurant perfectly met the project's selection criteria. The restaurant created approximately 20 jobs for the local population.

The farmers took a big risk in setting up a gourmet restaurant in a village, as the restaurant was aimed more at customers coming from elsewhere than at residents. The farmers hoped to generate customer interest

by exploiting the attractive geographical and historical advantages of the area. The village of Merkinės, with a population of approximately 1000, is located on the road from Vilnius to Druskininkai, a Lithuanian resort famous for its mineral waters, which are popular with both Lithuanians and foreigners. It is situated in a picturesque area at the crossroads of rivers and has a rich history. The area played a special role in Lithuanian history during the Middle Ages and is associated with a royal palace.

The rich history of the village was the inspiration for the restaurant concept. The farmers agreed to set up the restaurant in a classical style, where the customer would be surrounded by a beautiful environment, to make the customer come back again. The historical narrative is also reflected in the names and recipes of the dishes on the menu. The restaurant presents game dishes, but there are many dishes adapted to different tastes and diets and many recipes based on traditional cuisine typical of the region.

The quantity of game meat produced on the farm is sufficient to meet the restaurant's needs, so there is no need to look for any additional sales channels. The restaurant has opened new ways of working with local farmers. The restaurant's menu includes products grown by local farmers, bread made from cereals, vegetables, berries, and cheeses. The farmers also pointed out that they use berries grown on their own land for their dishes, depending on the season of harvest.

While welcoming the achievements of the restaurant, the farmers stressed that the popularity of the restaurant had exceeded their expectations, that they did not need to invest in marketing and that the customers who visited the restaurant recommended it to their friends and relatives. The popularity of the restaurant is illustrated by the fact that during the warm season and on weekends, the restaurant is only available for dinner by reservation.

What strategies were used to design the product-service system?

By adding services to agricultural production, farmers have overcome all business constraints:

- By implementing an extensive growth strategy, farmers were faced with land limitations that made investment in herd expansion impossible. The introduction of the restaurant service allowed the business to

increase its income without increasing the farm's output. The farmers argue that increasing the herd in the future is not advisable, as the current production volumes on the farm are sufficient to meet the needs of the restaurant.

- Running a small farm, the owners have had to carry out various operations themselves (animal care, slaughterhouse work, sale of animals for breeding and meat, etc.), and have had difficulties in carrying out the work in a timely and efficient manner. The restaurant has increased the business's income per unit of time. As the productivity of farming increased, additional staff was employed.
- The farm faced a marketing problem when producing a new product on the market. For a niche segment of consumers, the usual means of advertising and traditional sales channels were not suitable. The services made the farm profitable without changing its specialization, but the farm marketed higher value-added products, which increased the profitability of the business.
- The restaurant has diversified the farm's business risks, and because of the steady supply of game meat to the restaurant, the farm generates a steady income throughout the year.
- The opportunity to cooperate with local farmers producing different products has arisen. They supply restaurants with a variety of products that are not produced by the restaurant owners' farm.

Benefits of moving to the product-service system. In the opinion of the farmer, adding service components to agricultural products offers the following benefits:

- Business revenues have increased.
- Twenty employees were recruited, and the possibility of job-sharing was created, which increased productivity.
- The marketing of the products produced on the farm is ensured. The production capacity of the farm is fully sufficient to meet the needs of the restaurant without the need to look for additional supply channels.
- The income from the restaurant is generated evenly throughout the year, and the farm's risk is managed efficiently.

- Restaurant activities have also benefited other local businesses and farmers due to the increased number of visitors.
- The innovative product has led to a unique menu, and the restaurant operates without competitors in the region.

Farmers mentioned that the work of organizing the restaurant, in addition to the economic benefits, gives them great moral satisfaction and is interesting and creative.

Farmers also mentioned that the business transformation to the product-service system has contributed to the well-being of the community. An abandoned building in the centre of the town has been renovated, and the surroundings landscaped to accommodate the restaurant. The farm and restaurant created 20 jobs for members of the local community and increased family incomes. The restaurant attracted many customers to the town, creating demand for other businesses. The restaurant buys products from local farmers to cook its dishes, increasing the farmers' income and ensuring its sustainability.

Challenges to developing integrated product-service offerings. Regarding the difficulties they faced, the farmers mentioned the legal regulation that made it impossible for them to set up a restaurant on the farm, and they had to set up an additional family business.

5.7 Comparative Analysis of Incentives for Farming Servitization

Research on the experience of Lithuanian farms in designing and implementing a business model innovation that is relevant to the post-industrial economic system helped to reveal the diversity of configurations of the business model 'products plus services' and to identify their types. The six case studies of farm servitization presented here allow for the development and refinement of a mechanism for the transition from product-driven farming to a product-service system, explained by the theory of qualitative structures. They help provide answers to the research questions from a systemic, holistic, and evolutionary perspective.

Answers to the first two research questions *What strategies have farmers adopted using a product-oriented business model? What barriers to applying a product-oriented business model led the farmer to complement agricultural production with services?* allowed us to draw conclusions about the main incentives for farmers to change their business model. The case studies confirm that farmers who have undertaken business model transformation have experienced significant difficulties in implementing the agricultural product-oriented business model. The problems with the conventional business model have motivated them to look for a different way of farming. All farmers noted that they switched from a purely product-oriented business model to a 'product plus service' business model because they encountered specific barriers to business development that were difficult to overcome. When it became clear that the continued use of the adopted agricultural production strategies was no longer having a positive effect, the farmers started to remove the barriers by introducing services. The summary of the results of the case studies presented in Table 5.5 demonstrates the variety of incentives for farming servitization. A systematic analysis of the motives according to the qualitative structure approach showed that all farms faced several serious barriers to further adoption of the agricultural product-driven business model. In Table 5.5, the barriers reported by farmers are divided into two groups: (1) subjective barriers and (2) objective barriers. The subjective barriers are linked to the farmer's failure to build or reorganize the organizational construction of any of the strategies used. Objective barriers involve barriers that the farmer cannot overcome through individual effort. They are caused by the limiting forces of the adopted strategies and can be called a 'threshold' for the implementation of the strategy with a positive synergistic effect. The farmer can overcome the threshold only through the shift to a more complex strategy (in more detail, the theory of qualitative structure is introduced in Chapter 2).

Case studies show that the incentive to undertake servitization of farming can be triggered by encountering subjective or objective barriers to the adoption of any of the six agricultural production strategies defined by the Method of qualitative structure. All the cases confirm that the drivers to start the servitization of farming mainly depend on the

Table 5.5 Incentives for farming servitization as barriers to applying an agricultural product-oriented business model

Case	Strategy whose implementation barriers led to servitization	Subjective barriers	Objective barriers
Sun Circle Camping	Extensive growth strategy	Lack of relevant resources: 1. Barren land is unsuitable for generating revenue flows from traditional agricultural activity 2. The farmer lacks professional knowledge in agriculture and does not see the perspective to invest in traditional farming	All used traditional agricultural and aquacultural farming methods caused losses and could not guarantee sufficient income for the family
Moon Farm	Intensification strategy	The selected natural agriculture production methods caused low productivity in comparison with traditional agriculture, but it was the core philosophy of the established biodynamic farm	More intensive use of human resources in agriculture is impossible

(continued)

Table 5.5 (continued)

Case	Strategy whose implementation barriers led to servitization	Subjective barriers	Objective barriers
Milišiūnai sheep farm	Specialization strategy	Farmers liked sheep farming and were not willing to give it up for higher profits	Buyers did not pay farmers a higher price for organic animals and sheep were sold as conventional produce. Farmers have realized that a product-driven business model did not have the potential to increase income through a specialization strategy
Provansalis	Diversification strategy	Large and slow-paying investments in agricultural buildings and infrastructure, lack of available land to buy and expand the farm for cultivation of lower-risk crops	Diversification of agricultural activities was not helpful in reducing risk as experiments with many agricultural products (crops and animals) offered risk levels that were higher than the farmer's risk tolerance

(continued)

Table 5.5 (continued)

Case	Strategy whose implementation barriers led to servitization	Subjective barriers	Objective barriers
Šironija	Collaboration strategy	No possibility to increase milk prices even by cooperating with farmers from the neighbourhood	Farmers in the region are not finding beneficial areas of collaboration to change the situation of agricultural business
Fallow deer farm	Innovation strategy	The farm's resources and processes were adapted to produce only an innovative product, game meat, and were not suitable to produce other agricultural products	The farm faced difficulties in offering an unusual, unique, and expensive product to the market. Traditional sales channels were inadequate and traditional marketing tools (e.g., advertising in the press or on television, website, etc.) were expensive and ineffective to reach potential consumers of game meat

Source Created by the authors

barriers to evolving agribusiness according to the most complex adopted strategy and the reluctance to switch to another.

Answers to the third research question: *What kind of farm resources, including agricultural products, are used for building revenue streams from services?* demonstrates the potential of service business at farms. The case studies have shown how many different services can be combined

with agricultural activity and how successfully farm resources can be adapted to the needs of service provision. Although this study covered only 6 farming servitization projects, they illustrate the wide variety of services available on the farm. The summary of farm services presented in Table 5.6 can serve as a guide for other farms wishing to shift from the traditional agricultural business model to integrated product-service offerings or pure service business without additional investment.

Answers to the fourth research question *Which strategies were used to develop the product and service framework?* allowed us to identify the preconditions for a successful transformation of the traditional agricultural product-oriented business model and the ways in which the transition from a product-oriented business logic to a farming service logic is being developed. Detailed case studies of the servitization projects in Lithuanian farms exemplify how the shift from a ‘product-driven’ business model to a ‘service-driven’ business model makes it possible to overcome the barriers to the further development of farm business. Business model innovation, moving from a purely product-oriented business model to a ‘product plus service’ business model, opens up many new business development opportunities for farmers. The case studies demonstrate that servitization can be used as a way of overcoming barriers to farm development through all six strategies defined according to the qualitative structure method in the evolutionary framework (see Chapter 2).

1. *Servitization as a way of overcoming barriers to farm development through an extensive growth strategy.* If there are subjective barriers to further expansion of the basic resources needed for agricultural production (problem of access to land suitable for successful farm operation or lack of financial resources to buy agricultural land, farm animals and buildings, agricultural machinery, etc.), farm development can be carried out by increasing other types of resources suitable for the provision of services. For example, in the case of the Provansalis farm, the major barrier to continuing self-management with an extensive growth strategy was the problem of increasing the available land area for agricultural activities. The farmer used the

Table 5.6 Ideas on how to start a no-investment servitization of farming

Farm	Services available on the farm	Farm resources adapted to the needs of service provision
Sun Circle Camping	Recreational fishing, tent camping, caravan camping, rental of spaces (for different families, businesses, and other celebrations and events), holiday home rental, barn-type hall rental, active and passive entertaining services (Lithuanian and Japanese saunas; outdoor cooking; water transport: ordinary boats, paddleboards, water bikes; gathering mushrooms, berries, flowers, and herbs)	The ratio between aquacultural farming and recreational nature-based tourism changed into a services-dominant mode. Pond adapted to recreational fishing (fishing sectors); ½ of the abandoned land remains untouched; another ½ of the land is divided into different recreational sectors and extensively used for services provision (for private rest in nature—tent places with outside shower and toilets; holiday homes for families; barn-type building for family/business celebrations and overnight stay; for collective rest (POD type houses village); newly planted Sun Circle Park with infrastructure—for traditional national celebrations, and thematic chartered events—camper parking and tenting

(continued)

Table 5.6 (continued)

Farm	Services available on the farm	Farm resources adapted to the needs of service provision
Moon Farm	'Harvest-to-order' and 'made-to-order' vegetable-growing and delivery systems; vegetable basket collection and delivery to consumer's home	Agricultural land adapted to nature-friendly natural biodynamic farming (part of the land remain uncultivated, mulching applied); built greenhouses for vegetable seedling; established spaces for vegetable beds; application of simple agricultural machinery for treating the land; bough transport for delivering vegetable baskets
Milišiūnai sheep farm	Educational programmes on the benefits of sheep (visitors can taste and buy sheep meat sausages, order a lunch of lamb and mutton dishes also organize family celebrations on the farm), wool felting educational workshops, services 'Dry sauna on wool'	The services are based on agricultural resources: land and livestock. Visitors can walk through the pastures, learn about sheep breeds, and enjoy sheep meat and cheese. Sheep wool is used in woollen weaving workshops. Sheep wool yurts are also built for educational activities
Provansalis	Accommodation, educational activities (educational programmes World of Horses, Healthy Food, Young Farmer), tastings, horse and pony riding, and photoshoots	Horse and pony breeding was introduced to attract visitors and to provide riding services and photoshoots. Later, Highland cattle breeding was introduced also as an additional aspect in providing educational services In the future, to increase the scope of provided tourism services, the farmer intends to improve and expand the building according to the needs of tourists

(continued)

Table 5.6 (continued)

Farm	Services available on the farm	Farm resources adapted to the needs of service provision
Šironija	Education on bread baking <i>Cannabis cultivation plus</i> consultations and education on its cultivation Education on the weaving of hemp fibre ropes Camp organizing services	Old buildings and parts of the land were adapted to the needs of service provision The old family house is used for education on bread baking. This house has an old stove that is needed for baking bread. Grains are used from the farm Consultations and education on growing hemp and weaving hemp fibre ropes are organized on the farm using old buildings and hemp that are produced on the farm Camp services are provided in the part of the land that is not used for farming activities, on a hill, with a nice view to the forest The meat of the fallow deer produced on the farm is used for the restaurant's platters
Fallow deer farm	Restaurant services	The meat of the fallow deer produced on the farm is used for the restaurant's platters

Source Created by the authors

extensive expansion of key resources by building a manor house on the farm, which was adapted to the provision of rural tourism services.

If there is a surplus of resources for agricultural production, causing negative scale effects, resources can be used to provide services. Building of product-service system changes the set of production methods, and surplus agricultural resources can generate profit. For example, in the case of the Šironija farm, surplus outbuildings, land plots, and agricultural knowledge were used to provide educational and tourism services at the farm. Sun Circle Camping decided

to change the ratio between aquacultural farming and recreational nature-based tourism into a services-dominant mode.

2. *Servitization as a way of overcoming barriers to farm development through the intensification strategy.* The value chain for production in agriculture can be supplemented by service(s) as a new activity to increase the overall productivity of the farm (reducing the subjective barriers of the strategy). In the farms investigated, the incorporation of educational, advisory, and tourism services into the agricultural value chain was not the main motivation for the servitization of farming, but it did increase farm productivity. Subsequently, farmers appreciated the benefits of these services for overall farm productivity.

The provision of services is also used by farmers with the goal of reducing the objective barriers of the intensification strategy dealing with damage to the land and human resources because of high-intensity agricultural production processes. First, orientation to agroecology allows using agricultural land more carefully with the same economic benefits if a farmer sells farm-grown food directly to final consumers and obtains a much better price. The health of the soil and other natural resources is particularly positively affected by the adoption of made-to-order or harvest-to-order systems. For example, at Moon Farm, such systems helped plan the scale of seeding and apply rotation and biodynamics to keep the soil healthy and the naturally grown vegetables of the best nutrition quality until they were delivered to the consumer.

3. *Servitization as a way of overcoming barriers to farm development through the specialization strategy.* Specialized farms obtain all their income from one type of product and are more likely to be vulnerable to economic risks. When a farm faces the problem of low profitability due to the choice of its main product, it is time to think about switching from monoculture. Some farmers, unwilling to change their specialization in a particular crop or animal, start providing services directly related to their specialization. First, farmers try to use their knowledge of the key agricultural product as a resource and sell it in the form of educational, entertainment, and tourism services.

Cereals produced on the Šironija farm are used in educational programmes for bread baking. This gives the farm a new marketing

channel for grains with a much better price than the wholesale price. Hemp produced on this farm is used for education on the weaving of hemp fibre ropes. This increases sales of products from hemp that are produced on the farm.

The servitization of farming is also used to change the limiting force of the specialization strategy—resources for the next cycle of production. Building of product-service systems offers a new revenue model for farms. Agricultural products can be used as a major input for the provision of services rather than being sold as agricultural commodities. The use of agricultural products as a basis for the provision of services can increase their demand and profitability. For example, the farm Milišiūnai, producing organic sheep, has faced the problem of having to sell organically produced meat as conventionally produced meat because there is no possibility of slaughtering the animals in a certified slaughterhouse. The sheep were recognized as organic, but the mutton was not. As a result, they could not obtain a higher price for their products. The farmers tried to process the mutton and sell it to the farm visitors to make sausages from the meat and cheese from the sheep's milk, but sales from the farm grew slowly. However, by introducing the services, farmers have increased the sale of organic products at a higher price.

Moreover, by adding service components to the main agricultural product, the farm can enter a totally different market. For example, the Fallow deer farm solved the problem of exotic specialization by shifting from the agricultural commodity market to the restaurant market. Provansalis farm has started to provide accommodation services, a move that has changed the whole business model of the farm, as the main income now comes from tourism rather than agricultural products.

4. *Servitization as a way of overcoming barriers to farm development through the diversification strategy.* The diversification of farm activities, especially if it is decided to supplement crop production with livestock production or vice versa, requires a fundamental restructuring of farm resources. However, some types of services do not require significant financial resources. For example, the launch of

advisory, training, and education services was achieved at farm Šironija without any additional investment in farm assets.

The risk of farming activities, especially in small farms, can be reduced by offering services rather than by producing new types of agricultural products. For example, according to the experiments of farmers on the Provansalis, Šironija and Sun Circle Camping farms, their efforts to construct portfolios of agricultural products with a tolerable level of risk have failed. All the agricultural products that can be produced on the farm give a similar risk level. Their decision was to diversify agricultural activities with the provision of tourism and educational services that are less risky and more profitable than agriculture.

5. *Servitization as a way of overcoming barriers to farm development through the collaboration strategy.* Case studies show that farmers consider collaboration in the service business to be a more relevant and less complicated process compared to their experience in cooperating with agricultural producers. The initiation and coordination of collaborative actions between service providers are more successful because they mostly deal with occasional small problems that arise regularly. For example, the Šironija farm failed in its efforts to implement a collaboration strategy through active participation in two agricultural cooperatives joining milk and hemp producers. However, when the farm started to provide services, the collaboration strategy contributed significantly to service business development and the sustainability of the farm.

Case studies show that participation in service delivery processes broadens the range of possible areas of collaboration and involves more different partners. The new area for collaboration in farms is a partnership with clients. In the opinion of farmers, collaboration with clients provides great insight and is key to evolving the farming business. For example, in the case of the Šironija and Provansalis farms, cooperation with agricultural producers was slow and did not bring visible business benefits, but once services started to be provided, collaboration was focused on collaboration with clients. Collaboration with other service providers is also intensive and more successful than with producers of agricultural products.

6. *Servitization as a way of overcoming barriers to farm development through the innovation strategy.* Servitization is an effective solution for farms implementing the innovation strategy. The provision of educational and advisory services at the farm makes consumers aware of the advantages of innovative agricultural products, builds confidence in their quality, and increases sales. For example, at Fallow Deer farm-restaurant, much emphasis is placed on educating consumers about the advantages of new varieties of meat to make it an attractive alternative to conventional types of meat.

New products that are unknown to consumers in the region can be produced based on customer orders rather than for sale on the mass market. For example, Moon Farm not only offers biodynamic agricultural product delivery services but also grows vegetables according to consumer orders.

Answers to the fifth research question “*What are the benefits of farm servitization?*” demonstrated a very positive attitude of farmers towards the new business organization opportunities. After the first attempts to design and adopt a product-service system, entrepreneurial farmers find a number of advantages in this business model compared to the traditional agricultural product-driven business model. These advantages can be divided into two groups, distinguishing between the impact of farming servitization on the farm and on society as a whole.

When assessing the impact of farming servitization on their farm, all farmers emphasized the economic benefits of servitization for their businesses. The practical experience of the farms analysed shows that combining agricultural production with the provision of services can increase the effectiveness of any strategy. The most emphasized economic effects generated by farming servitization are in line with the evolutionary framework of six strategies designed according to the theory of qualitative structures:

1. More efficient use of available resources (servitization of farming generates the extensive growth strategy effect).
2. The increased overall productivity of the farm (servitization of farming generates the effects of the intensification strategy).

3. Increased profitability of the business (servitization of farming generates the specialization strategy effect).
4. Reduced dependence of the business on natural conditions and the fall in agricultural prices on the world market (servitization of farming generates a diversification strategy effect).
5. Increased economic and social sustainability of the farm (servitization of farming generates the collaboration strategy effect).
6. The farmer is in constant contact with the consumer of the products he produces, which helps to create a community of regular customers who trust his products, thus creating a source of income that is solely dependent on his own efforts (generated by the innovation strategy effect).

Another important effect of servitization of farming relates to *emotional benefits*. Farmers find that combining agricultural work with service provision increases the attractiveness of their daily activities. Even if the income from some types of services is similar or even slightly lower than that from agricultural production, they find the service-oriented farming model more acceptable because of the greater satisfaction they derive from their work. These statements of Lithuanian farmers are very much in line with recent research that has explored the need of modern societies to receive not only material but also positive emotional rewards for their work (Battaglia et al., 2015; Grandey et al., 2013; Hülshleger & Schewe, 2011; Meyerding, 2016).

In addition, all farmers noted the impact of farming servitization on the growth of human resource quality. Interaction with clients, especially the provision of advisory, educational, and training services, not only enhances farmers' professional knowledge but also helps to develop the social skills needed for a successful service business and broadens their general horizons.

Farmers also argued that farming servitization has social benefits, affecting society as a whole. In particular, it was stressed that the introduction of farmer services re-establishes the farmer's direct link with the consumers of the products produced, which was lost when the industrial food system took over. Continuous direct contact allows a better understanding of consumer needs and the adjustment of the range of products

and services offered and their qualitative characteristics in line with them. Such action by farmers helps to reduce the waste of agricultural resources and food, eliminates the confrontation between producer and consumer, and builds community.

Another aspect of the societal benefits of farming servitization, mentioned in all the farms studied, relates to the opportunities offered by service businesses for farmers to acquire new knowledge without the help of the formal education system. In the provision of services, especially extension services, there is a very intensive exchange of knowledge, not only with clients. Involvement in the service business helps farmers to use and share tacit knowledge more actively with each other and with other people. Thus, farming servitization contributes to raising the skills of farmers and the general level of education of society. These insights are in line with those of scholars who argue that the tacit knowledge of villagers and farmers is a valuable resource that can steer modern industrialized agriculture towards a more sustainable development path, as the industrialization of agriculture has led to the loss of farmers' previous knowledge of living in harmony with nature due to the spread of productivist logic and standardized solutions, as well as to the diminished sense of cohesion and cohesion among farmer communities (Fonte, 2008; Holloway & Kneafsey, 2004; Holloway et al., 2007).

All farmers noted that adopting a product-service system makes work more varied and interesting, as there are many more opportunities to choose the type and form of activity they want to pursue, and thus to realize their talents. This makes farming more attractive to the younger generation, who are less and less likely to want to take up industrialized farming, not only for economic reasons but also to have a rewarding job.

To summarize the farmers' views, combining agricultural production with the provision of services could be a much more socially beneficial way of organizing business in the countryside than a business model focused solely on agricultural production, as it allows for the promotion of a socially responsible culture of consumption, healthier eating and lifestyle habits and the idea of a happier and more sustainable human life. A systematic analysis of the answers to the last research question ("What are the reasons that hinder the servitization of farming?") shows

that the reasons can be divided into those that are specific to Lithuania and those that are generic and can be applied to any country.

The main general reasons mentioned are found in all four farming servitization projects studied. Farmers consider the following reasons to be the most important obstacles to farm servitization:

- Farmers lack the specific knowledge needed to organize the service delivery process and to find customers, as the organization of agricultural production is very different from the service business.
- It is difficult to find workers with expertise in service management and marketing who are willing to work on the farm.
- The season for most services related to farm and rural life coincides with the farm's agricultural production activities, which limits the development of services, which can only be achieved if ways are found to offer more services during the winter season.

The first reason, which is common to businesses engaged in all types of activities, is often cited in studies of barriers to the servitization of industrial enterprises, especially small ones (Hou & Neely, 2013). The other two reasons are more related to the small size of the farm and the specificities of the farming business.

The specific to Lithuania barriers to farm servitization are considered to be bureaucratic obstacles to legalizing farm service businesses and the lack of support for this business model innovation.

The multiple case studies have helped to clarify the assumptions that allow overcoming the barriers in the process of further deployment of each of the six production strategies that prevent the generation of a positive effect if the agribusiness is complemented by a service business. Based on the answers to the research questions, we have identified the major incentives for the transition from the traditional agricultural product-driven business model to a 'product plus service' system (see Chapter 6).

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6

Framework of Product-Driven Business Model Transformation Based on the Theory of Qualitative Structure

Dalia Vidickienė

The concept of the business model has recently been considered one of the key innovations that helps to understand the economic system of the post-industrial stage. Although the term ‘business model’ is not very new (it was first mentioned in the academic literature in 1957 by Bellman et al., 1957), this concept has only recently received attention. The rapid increase in research on this topic since the last decade of the twentieth century (Osterwalder & Pigneur, 2010) coincided with the beginning of the servitization of the economic system of developed countries, as the nature of services requires a multidisciplinary approach (Ostrom et al., 2010; Pugh & Subramony, 2016). In the last decade, business model research has been positioned as the main direction in the development of strategic management science, which can be defined as a theoretical mechanism for combining different literature streams (Ritter & Lettl, 2017). Therefore, comprehensive research on business model innovation, moving from a product-driven business model developed in the industrial stage of human evolution to a service-driven business model, covers many new aspects and integrates many social science disciplines.

Despite the manifold contributions of different disciplines, current research in the servitization field lacks a common foundation to explain

the incentives and transition processes to the service-driven business model. Business model innovation studies have confirmed that it is not enough to mechanically supplement activities with services when moving from a product-dominant logic to a service-dominant logic. The enterprise needs to fundamentally review its business model goals and redesign them (Alghisi & Saccani, 2015; Baines et al., 2009; Brax, 2005; Kindstrom, 2010; Kindstrom & Kowalkowski, 2014; Reim et al., 2015; Slepniov et al., 2010). Although the literature on service implementation is growing rapidly, there is a lack of connection between the topics analysed by scholars and those that are of relevance to practitioners (Baines et al., 2017). What practitioners are looking for relates to the challenges linked to the organizational change that a service business entails, the stages they need to follow, and what they should expect in each stage (Bustinza et al., 2017). However, there is no management discipline that provides guidance on how to move from a product-driven business model to a product-driven business model. In addition, the servitization of farming has its own specificities, which have been examined by only a few studies (Lankauskienė et al., 2022; Vidickienė et al., 2019, 2021).

The qualitative structure theory is able to provide such guidelines, as the qualitative structure concept assembles basic building blocks for the shift to an innovative business model. According to the theory of qualitative structure, no strategy allows a producer to evolve forever; they all have a threshold to evolution and specific subjective barriers related to the potential of a particular farm. Understanding evolution as an effort to overcome constraints to improve the quality of self-management develops a scheme that explains the incentives, ways, and benefits of farming servitization. After analysing the main constraints in the process of implementing the strategy, it is clear why and how it is useful to reorganize the product-driven business model of the farm.

The existence and origin of key constraints on evolution explain qualitative structure theory. According to the theory, a farm as a producer of agricultural products consists of three components: (1) the resources available, (2) production methods, and (3) products. The farm has the potential to use each of the three basic components mentioned as a self-management tool in any of the three dimensions of the qualitative structure: (1) organizational construction, (2) functioning, and (3)

communication with the external environment. The possible six combinations of the three components and three dimensions could be defined as a particular self-management strategy. Producers' self-management models, as different strategies, create an evolutionary framework that consists of a six-stage cycle, including the following:

- Stage 1. Extensive growth strategy (generates scale effect).
- Stage 2. Intensification strategy (generates experience effect).
- Stage 3. Specialization strategy (generates selection effect).
- Stage 4. Diversification strategy (generates complementarity effect).
- Stage 5. Collaboration strategy (generates integrity effect) and
- Stage 6. Innovation strategy (generates independence effect).

The evolutionary framework based on the theory of qualitative structure explains what key constraints can occur within a farm that uses an agricultural product-driven business model and how the constraints to strategy implementation become the incentives for farming servitization. The constraints can be caused by objective or subjective factors. The subjective factors create subjective barriers to the effective strategic management of the farm. The barriers arise due to a lack of capacity that the farm needs to succeed. They can be caused by a lack of competencies and skills in a specific local business environment or bad previous business decisions based on personal goals and opinions. The subjective barriers to the farm's evolution create ineffective use of the component representing the organizational construction of the strategy. The farmer can change the situation by continuing with the chosen strategy. It requires the farm to increase its capacity to manage the component in the role of active force.

Objective factors create a threshold for the continuation of the strategy because it no longer generates a positive effect and stops the farm's self-management evolution. Objective factors are not influenced by the competencies, skills, and personal feelings or opinions of the farmer in considering and representing facts. A threshold for the implementation of the strategy with a positive synergistic effect is determined by the quality of the component representing the limiting force. To improve the quality of this component, the farm must switch to a more complex

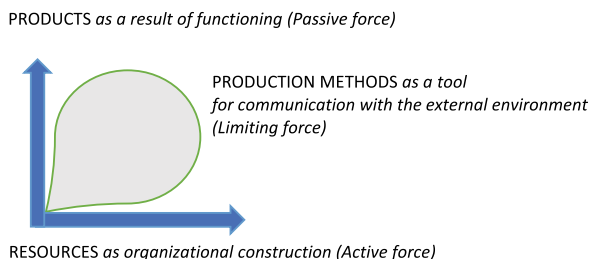


Fig. 6.1 The qualitative structure of the extensive growth strategy (Source Created by the author)

strategy (in more detail, the theory of qualitative structure is introduced in Chapter 2).

The qualitative structure approach helps to clearly describe how the servitization of farming allows overcoming constraints that arise in the process of the implementation of each of the six production strategies and generating benefits if the agricultural production business is complemented by a service business.

The extensive growth strategy is the self-management pattern, where the producer increases resources and believes that larger quantities of resources can generate more products. Here, organizational construction is resources, and the threshold of extensive growth depends on their synergy with production methods (see Fig. 6.1).

In agrarian societies, the main resources used to produce agricultural products were land and labour. The success of farming depended on the ability to use them as the organizational construction of the farm. With the industrialization of agriculture, the main resources that enabled the breakthrough in the farming business were the machines that replaced the physical labour of humans or animals. The use of agricultural machinery became the decisive factor in the development of farms, and the strategy of extensive growth was pursued by increasing the financial resources invested in agricultural production. Currently, the subjective barriers to the success of the extensive growth strategy mainly depend on the financial and organizational resources of the farm. If a farmer does not have the financial resources to buy necessary agricultural machinery, expand the land used, hire more skilled workers, or invest in

other resources needed for production, self-management according to an extensive growth strategy gives poor results.

The threshold to evolution using an extensive growth strategy is determined by the methods of production, as they represent the limiting force here. Sooner or later, a threshold looms before each producer, as any living organism does have a limit for certain aspects of its growth. Microeconomic theory explains the occurrence of negative scale effects in terms of several reasons that make the production method incompatible with the scale of production. Empirical research shows that the positive or negative scale effect mainly depends on the indirect costs of organizing production processes. If they remain fixed, the scale of production increases. As a result, total costs per unit of output start to fall, i.e., positive scale effects are obtained (Duffy, 2009). However, once a certain level of resource saturation is reached, the scale effect disappears. If an extensive growth strategy is pursued, the scale effect due to the further increase in resource endowments becomes negative. Self-management became ineffective because of the inability to use the full capacity of the available resources, delays and duplication of production operations, inflexible management decision-making, etc. This shows that further adoption of the extensive growth strategy is not appropriate.

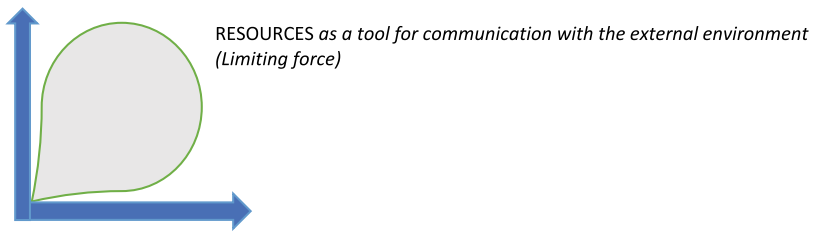
In the agrarian era, the objective threshold to expansion was usually reached by farmers owning a large plot of land or hiring many workers, as the manager of very large farms was no longer able to organize the work process efficiently. In the industrial era, negative effects started to generate the overstocking of agricultural machinery and equipment. Farmers have been involved in the constant and forcible adoption of industrial agricultural technologies and the ongoing enlargement of scale, that is, the phenomenon that Cochrane (1979) termed the technological treadmill. The fear of losing out in the modernization race led farms to continuously invest in new technologies. It reduced the efficiency of investment and, in many farms, started generating a negative scale effect. Currently, continuous investment in equipment is also driven by the increasing demands of the food industry and retail chains on the quality of farm products. Overcapacity of resources leads to unnecessarily high costs and makes farming economically inefficient, as the return on investment decreases and the unit cost of production rises.

According to the evolutionary approach, the solution to the problem caused by the mismatch between the production method used and the volume of resources available in the farm is to evolve to the second stage of the qualitative structure, which is defined as the intensification strategy. However, according to the servitization concept, one more solution exists. Shifting from a product-driven business model to a product-service system allows several ways to continue evolving according to the extensive growth strategy. First, servitization can help to remove subjective barriers dealing with a lack of financial resources or access to agricultural land. Service businesses often have lower overhead than product-based businesses. If it is not possible to further expand the resources necessary for agricultural production, the development of the farm can take place by increasing other types of resources suitable for the provision of services. The provision of many types of services does not require a large new investment. Farmers with an entrepreneurial spirit demonstrate how to launch a new business initiative with little or no funding.

The servitization of farming can also change the limiting force of the extensive growth strategy—production methods. The provision of services requires completely different methods of production than agriculture. When available resources are above the amount necessary to support the generation of a positive scale effect in agriculture, some of the farm resources can be used for service provision. Case studies on farming servitization projects show that all types of agricultural resources can be used for the provision of services, including land and on-farm buildings, equipment, crops, livestock and their products, professional knowledge and skills, etc. Building of product-service system changes the set of production methods and aligns it with the scale of production if surplus agricultural resources are used for service provision.

The intensification strategy is implemented by changing production methods to increase productivity. Here, the organizational construction for management is production methods, and all changes in the farm depend on the ability to improve them. The threshold of intensification depends on the synergy between the capacity of resources and production methods (see Fig. 6.2).

PRODUCTS as a result of functioning (*Passive force*)



PRODUCTION METHODS as organisational construction (*Active force*)

Fig. 6.2 The qualitative structure of the intensification strategy (Source Created by the author)

In the agrarian era, the intensification of agricultural production was mainly through improvements in tillage and animal feeding practices, but these generally did not lead to significant productivity gains. The industrialization of agriculture has focused on the changes in the production process according to technologies of the ‘green revolution’ and consolidation of land parcels to make them more suitable for the use of large-scale agricultural machinery. Industrial production methods have led to a huge leap in agricultural productivity. Between 1950 and 2005, the annual growth rate of labour productivity in agriculture in European countries was as high as 4.23 percent (Martín-Retortillo & Pinilla, 2012, p. 6).

The subjective barriers for a farm to evolve through an intensification strategy depend on the active force of its qualitative structure—production methods—and are linked to the farmer’s knowledge, skills, and experience. The prosperity of a farm depends to a large extent on the willingness to analyse and experiment and the interest in the most productive production methods. A detailed review and benchmarking of current production processes help to uncover hidden bottlenecks and improve productivity step by step.

The threshold to implement the intensification strategy depends on the capacity of the available resources. In agrarian societies, the most important barriers to increasing productivity were the low fertility of the land and the skills of agricultural workers to do tasks efficiently.

With the industrialization of agriculture, productivity gains have been driven mainly by replacing human labour with the labour of much more productive agricultural machinery. In addition, the production process was broken down into standardized operations that were easy to learn, so the skills of the agricultural workforce also played little role. However, the threshold to implement the intensification strategy with modern methods was reached quickly. It is now commonly recognized that the maintenance of high productivity according to industrial production methods leads to disturbance, disease, soil erosion, and overuse of natural capital. There are also growing concerns about the destruction of traditional farming systems and the loss of indigenous local agricultural knowledge. The technologies, which at the beginning of the industrialization of the agricultural sector had opened up many new opportunities for obtaining huge leaps in productivity, lost their appeal.

A new generation of farmers is looking for alternative production methods that optimize and stabilize yields. Agroecology is a growing movement that includes farmers and food producers who are using fair and sustainable regenerative practices. However, orientation to agroecology requires total reorganization of agri-food supply chains. The yields of organic farming are much lower and new methods are needed to keep the farm economically efficient. The first studies in the field show that direct contact with local food consumers allows for a change in farm productivity. However, the concept of a short food supply chain is still examined in the frame of 'good-dominant logic' (Lankauskienė et al., 2022) and brings little practical benefit to farmers as a guideline on how to reach the customer for an innovative product. In the post-industrial era, customers became the key players in the food system, and all activities and facilities of the demand chain should be oriented to fulfil customers' requests through qualitative services. The servitization of farming is necessary for the transformation of industrial food supply chains into post-industrial food demand networks. The farmers involved in the agroecology movement need to "think in terms of service provision, in which goods are seen as service distribution or provisioning mechanisms" (Lusch et al., 2010, p. 19). The provision of food delivery services or adoption of made-to-order or harvest-to-order systems leads to a significant increase in the overall productivity of farm activities.

PRODUCTION METHODS as a result of functioning (*Passive force*)

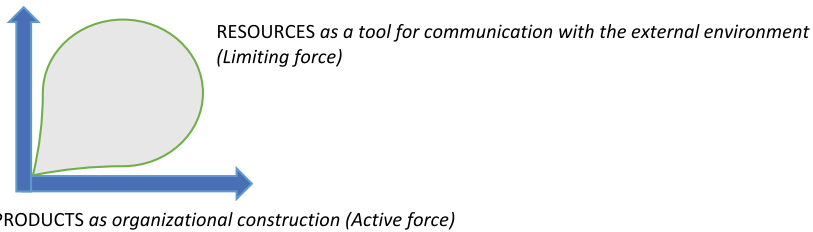


Fig. 6.3 The qualitative structure of the specialization strategy (Source Created by the author)

Service-dominant logic allows using agricultural land more carefully with the same economic benefits as farmers sell farm-grown food directly to final consumers and obtain a much better price.

Incentives for farming servitization are also linked to the labour-intensive nature of agroecology. Organic food requires hard physical work, but physically demanding jobs are less desirable. Consequently, agroecological methods also have a threshold. The shift from the traditional product-driven business model to the service-driven business model allows for a change in the profile of work, reducing the proportion of physical activity.

The specialization strategy starts by reducing the range of farm products if the experience in the production of agricultural products shows that the farm is able to produce some products more quickly and/or at a lower cost than other producers. Better production methods allow the producer to gain a competitive advantage over other producers. The threshold of specialization depends on the synergy between selected products and available resources (see Fig. 6.3).

Specialization implies the need to sell the products, i.e. is a market-focussed strategy. In agrarian societies, the market for agricultural products was underdeveloped, and few people adopted the specialization strategy on their farms as the dominant management mode. In most farms, the specialization strategy at that time was secondary, and farmers only used it to gain funds to meet household needs. In the industrial era, the situation changed radically, as the number of people employed

in manufacturing has grown and the food market size has grown alongside. With the growth of the agricultural market and the development of the food industry, farms were able to move to monoculture farming. This means that they can select to produce the farm-specific most suited product and start to organize their farm activities by adopting a specialization strategy. This strategy is place-oriented; therefore, the subjective barriers to the farm's ability to evolve through a specialization strategy are dealing with the competitiveness of the farm in local and international markets. If the farm fails to produce at least one agricultural product with above-average productivity, the specialization strategy does not provide any economic benefit, as commodity producers compete on cost leadership. This means that the farm stopped self-management evolution.

Many farms, however, have been successful in monoculture farming, and for several decades, a specialization strategy was the predominant pathway of farm development that allows for gaining a competitive advantage. Only a few farmers in some, often less favoured areas, continued with production models based on mixed farming and crop rotation, operating in an environment that did not offer many alternatives (De Roest et al., 2018). At the end of the twentieth century, farmers were increasingly confronted with new challenges related to the growing uncertainty of the business environment. The shift to free trade policies in the 1980s made it difficult for farmers in countries with high living standards to compete with countries where labour is cheap. Specialized farms producing for export have been particularly affected by rising business risks. Due to the globalization of the economy, agricultural activities increasingly depend not on individual efforts and skills but on changes in the business environment. Therefore, the specialization strategy became quite risky for farmers from an economic point of view.

In the twenty-first century, doubts about the benefits of monoculture are growing. The reduction in market support measures since 2000 has led to higher price volatility, which has increased the economic vulnerability of specialized farms (Chatellier, 2011). Increasing demands for nature protection are also an important factor reducing the attractiveness of narrow agricultural specialization. Farmers are forced to make

additional investments every year to meet new environmental protection standards, sanitary measures, and animal welfare standards. Climate change is also a factor increasing the risk for highly specialized farms. The negative impact of unpredictably changing climatic conditions on the profitability of agricultural activities (Burke & Emerick, 2016; Fahad & Wang, 2020; Serebrennikov et al., 2020; Wiebe et al., 2015) has led many farmers to question the benefits of the specialization strategy. Highly specialized farming is now only viable where markets are stable (De Roest et al., 2018), and this situation shows that many farms have already reached the threshold to continue the evolution through the specialization strategy.

Servitization of farming may be an original way to keep the farm's specialization. If the farmer lacks the skills to produce and sell the agricultural product with profit, servitization of farming can help to remove subjective barriers and increase the competitiveness of the farm. If the crops or animal husbandry produced on the farm are used as input for service provision, for instance, in gardening, food, or taste education programmes, the profitability may increase significantly.

Servitization of farming also helps to change the limiting force of the specialization strategy—resources for the next cycle of production. product-service systems offer a way to overcome the threshold and a strategic opportunity to secure the long-term competitive advantage of the farm. Case studies show many examples of how agricultural products can be used as resources for service provision in rural areas (see Chapter 5). Adding service components has been found to increase the market attractiveness of the product component, leading to increased sales growth (Kohtamäki et al., 2013). Cohesive delivery of products and services allows the farm to enter a new market, for example, tourism or restaurant, and obtain a much better price.

The diversification strategy aims to reduce the farm's dependence on a single product market and spread the risk across multiple areas. Expanding a farm's operations into new products requires the reorganization of resources. The threshold of diversification depends on the synergy between resources in investing and product portfolio (see Fig. 6.4).

In the agrarian era, the greatest risks were caused by adverse natural conditions, and mixed farming was dominant, especially since, as already

PRODUCTION METHODS as a result of functioning (*Passive force*)

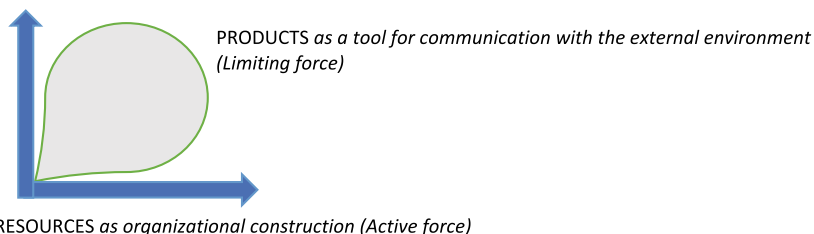


Fig. 6.4 The qualitative structure of the diversification strategy (*Source Created by the author*)

mentioned, poorly developed market relations did not encourage specialization. In the industrial era, the sustainability of economic activity is most dependent on unfavourable market conditions or changes in product quality requirements and increasing regulation. The purpose of diversification is to allow the farm to enter lines of business that are different from current operations. Diversification can reduce the risk, as losses from one type of production can be covered by profits from other activities. Diversifying a farm's enterprises reduces large year-to-year variations in income and ensures adequate cash flow. This strategy can also imply the exploitation of shared inputs for two or more products and open new marketing channels.

However, diversifying an agricultural business is complicated, and many farms, especially small farms, meet the subjective barriers to evolving through a diversification strategy. Expanding into new areas may increase capital investment requirements or require new or additional financing (for land, facilities, and equipment) that can be challenging to obtain. The diversification of activities is also related to the acquisition of knowledge and requires experience in a new field.

The ongoing economic conditions and business pivots in agriculture are taking a continued toll on farm business through the agricultural product-driven business model. Many farms have found that global supply chains have made agricultural markets increasingly volatile and that the effect of complementarity no longer occurs in the context of

risk management. This means that the farm has reached a threshold to continue evolution through the diversification strategy.

The combination of agriculture and services makes it possible to remove subjective barriers to the adoption of a diversification strategy. The reorganization of highly specialized farms is often very costly and challenging. Adding other agricultural activities usually requires different machinery and equipment. The need for a workforce diverse in skill sets may emerge, and the efforts to hire for diversity can be troublesome. If the farmer does not have sufficient funds and knowledge, diversification through restructuring existing resources may not be available. Introducing many types of services does not require a radical restructuring of economic resources and is an attractive alternative to agricultural diversification. By mastering the transition to providing a mix of products and services, the farm reduces risk.

The diversification of farming activities by services also offers great potential for changing the limiting force of the diversification strategy—products. A situation where the economic prospects for all agricultural products that can be produced on the farm become risky and unpredictable is a strong incentive to switch to the servitization of farming. When the risks are similar for all agricultural products, the provision of low-risk services becomes a perspective way of diversifying activities and thus reducing business risk.

The collaboration strategy is implemented when a farmer revises the existing business relations with other participants of the business ecosystem and changes them, thereby reducing the unpredictable influence of external factors and producing more resources for business development. The threshold of collaboration depends on the synergy between production methods that are included in the collaborative activities and products that are understood as benefits of collaboration (see Fig. 6.5).

In the agrarian era, the collaboration strategy helped to overcome temporary problems preventing the implementation of intensification and extensive growth strategies on the farm. The collaboration activities were organized as reciprocal aid between relatives and neighbours at times of high workload. These were usually related to a shortage of labour to carry out certain urgent seasonal tasks or the need for joint

RESOURCES as a result of functioning (*Passive force*)

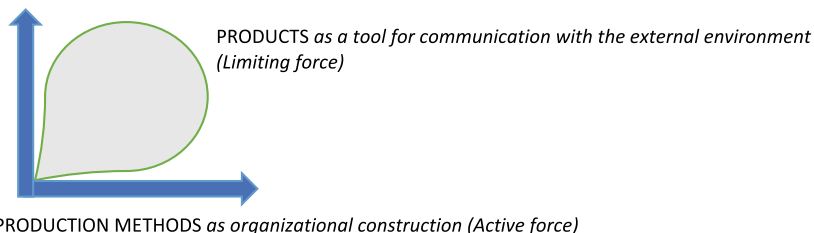


Fig. 6.5 The qualitative structure of the collaboration strategy (*Source Created by the author*)

human muscle contributions. Such collaboration is based on trust and the continual nurturing of personal relationships (Cialdella et al., 2009). With the industrialization of agriculture, the collaboration strategy has become the most relevant for the support of specialization and diversification strategies. Therefore, the scope of collaboration has expanded beyond agricultural production to include other supply chain activities. Market entry problems have been the main drivers of agricultural cooperative formation. The collaboration strategy was relevant to agricultural cooperatives as organizations that increase the bargaining power of farmers and help them achieve economic benefits.

However, the collaboration also faces challenges, and certain conditions must be met to render the collaboration successful. Farmers often fail to find the right partners and agree on a mutually acceptable way of coordinating actions. Subjective barriers to developing collaborative relationships by a farm can arise for a variety of reasons, such as a lack of teamwork skills or trust in others, the specificity of the business, lack of marketing skills and information about market developments, preexisting interpersonal communication problems, etc.

The threshold to continuing the evolution through the collaborative strategy appears when a defined common goal is achieved. If the common actions no longer generate collaboration outcomes, the collective is splitting up. If the farmer does not find new partners willing to start the next collaborative project, the threshold of evolution through the collaborative strategy is reached.

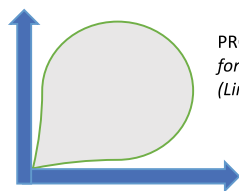
Another reason for the appearance of the threshold is related to a competitive environment. The increased tendency to compete often frustrates collaborative initiatives and creates a negative attitude towards the benefits of collaboration. If the competition is very strong in a region, farmers with good organizational skills and high educational qualifications are more likely to move to the sixth stage of evolution and start to implement an innovation strategy, rather than making low-return efforts to further strengthen collaboration with other farmers.

The servitization of farming based on the collaboration strategy opens new ways to adopt the collaborative strategy. Service business helps to remove several subjective barriers to the adoption of the collaboration strategy, as collaboration in a service business is easier than in agriculture. In the industrial era, the collaboration of farmers was oriented to create a situation where smaller farms reap the benefits of being one large farm. This collaboration model is focused on a long-term arrangement connecting farms and requires skills and efforts to tailor relationships to the needs of all parties involved to make collaboration truly successful. In the service economy, collaboration is treated as mutual value creation through service exchange. Therefore, collaboration is often used for joint actions to solve one-off problems and is based on short-time arrangements. Collaborative relationship building according to the service exchange model became simpler than institutional collaboration in farmers' cooperative organizations.

The servitization of farming also helps to change the limiting force of the collaboration strategy—production. The specifics of agriculture define possible partners and areas of collaboration. Farmers participating in the provision of services discover completely new areas of collaboration and other partners. The shift to the service-oriented business model offers farmers many ideas on how to find valuable partners and achieve a common goal through real-time collaboration.

The innovation strategy aims to reorganize the production process in such a way that the farm is focused on producing a new type of product that has not been produced in the region or country before. The threshold of collaboration depends on the synergy between innovative products and their production methods (see Fig. 6.6).

RESOURCES as a result of functioning (*Passive force*)



PRODUCTION METHODS as a tool
for communication with the external environment
(*Limiting force*)

PRODUCTS as organizational construction (*Active force*)

Fig. 6.6 The qualitative structure of the innovation strategy (Source Created by the author)

In agrarian societies, the innovation strategy was very rarely used in agriculture. Since the market economy was underdeveloped, agricultural producers were more often faced with the problem of adapting plants and animals to local natural conditions rather than with the problem of selling the products produced. As a result, the innovation strategy has been focused on the development of more productive or resistant varieties of plants or animals. Some innovations were implemented by a few progressive landlords who undertook to test or develop new varieties of crops or livestock. These innovators laid the foundations for the emergence of industrial agricultural technologies. When scientists developed smaller, fast-growing wheat that required less land to produce more grain, it had a dramatic effect. The techniques were extended to other crops and regions grappling with food insecurity. The Green Revolution totally transformed farming practices and rural economies.

At the end of the industrial era, a new social demand for changes in agriculture emerged. Innovation is becoming necessary not only as a response to natural factors due to increasing climate change but also to changes in consumption patterns. Changes in diets and patterns of work and leisure—often referred to as the “nutrition transition”—are already contributing to the causal factors underlying social-ecological innovations (Guerrero Lara et al., 2019). In recent decades, organic production has been seen as the main product innovation in agriculture. The shift in emphasis from ‘synthetic’ to authentic food has been called ‘the real food revolution’ (Adams, 2002). Farmers are trying to respond to food consumer fears regarding food safety, which are often associated with

intensive farming. They have become particularly acute because of the growing market of genetically modified food, the epidemics of foot and mouth disease, avian influenza, Creutzfeldt–Jakob disease, etc., Growing distrust in food quality, as well as the rapidly spreading ideas of socially responsible consumption, concern for animal welfare and the impact of intensive agricultural production on the environment are encouraging farmers to adopt an innovation strategy, resulting in new products with a higher nutritional or recreational value (Szmigin et al., 2003). Different degrees of environmental friendliness of food products have been introduced depending on the way they are produced: precision, organic, biodynamic, and natural agriculture.

Implementing an innovation strategy is much more complicated than the previous 5 strategies because it is not enough to create a new product. Since the new product is unfamiliar to consumers, the skills and traditions for its consumption become subjective barriers to the implementation of the innovation strategy and need to be developed.

The threshold to the evolution through the innovation strategy very quickly appears because of the limiting force—production methods. In the market economy, they include not only agrotechniques. The value chain at the farm covers each step in the process at which value is added, including the sourcing and marketing stages of its production. Farmers who have taken up organic production see problems not only in terms of technical knowledge but also in terms of the lack of marketing channels. Currently, they already clearly understand that the current supply system that ensures the reproduction cycle of the old product is not suitable for its new substitute. According to a product-driven business model, the farmer sells its products on a mass market where the contact between a farmer and final customers of agricultural products is lost. With the industrialization of agriculture after World War II, the vast majority of households in developed countries turned to supermarkets, and farmers' markets became increasingly less popular. They have maintained a share of the food market in only a few countries (Italy, France, Spain) whose cultures place particular emphasis on food quality, but in the USA, Canada, Australia, and New Zealand, farmers' markets have disappeared completely (Guthrie et al., 2006). Farmers adopting an innovation strategy have taken initiatives to revitalize farmers' markets

in urban areas or establish a direct link with the consumer in other ways, including farm shops, self-picking of berries, fruits, and vegetables, internet deliveries, etc. However, many of these initiatives have failed because family farms did not have the capacity and power to confront the global agri-food system. While support for such initiatives has been introduced, for example, the EU has supported projects oriented to the development of short food supply chains since 2014, the transformation of the agri-food supply system towards innovative solutions is slow. The slow progress is largely determined by the poorly developed theoretical base. The short food supply chain, as the main theoretical concept in the field, does not explain what type of business model can help farmers to change the current situation. The concept only highlights the large number of intermediaries that have entered the food supply chain since the industrialization of agriculture and defines a “short supply chain” as a chain involving a limited number of economic operators. When the massive industrialization of the agricultural sector began in the 1960s and 1970s, farmers were still receiving 40–50 percent of the supermarket price of food. However, since the 1970s, the share of farmers in developed countries has been below 10 percent (Guthrie et al., 2006). The farmer’s share has become increasingly small as many other operators (agricultural warehousemen, transporters, processors, traders) have come between the farmer and the final consumers (Coster, 2004; Coster & Kennon, 2005; Guthrie et al., 2006). However, the move away from a long food supply chain towards a maximally shortened version, where farmers sell farm-grown food directly to final consumers, is a much more complex process than the elimination of intermediaries.

Both academics and agricultural practitioners argue that a sustainable food system requires deep socioeconomic change (e.g., Hinrichs, 2014; Lankauskienė et al., 2022; Lutz et al., 2017; Spaargaren et al., 2013). It is important to find and implement an innovative business model that facilitates direct contact between the food producer and the food consumer. The relationship between the farmer and the customer is much closer if the farm turns to a service-driven business model. Research on successful agroecological transition pathways shows that a shift to agroecology should be combined with servitization of farming (Pereira et al., 2016, 2017; Vidickienė et al., 2019; Vidickienė

et al., 2021, 2023a, 2023b; Vidickienė & Gedminaitė-Raudonė, 2018a, 2018b; Lankauskienė et al., 2022). This creates not only confidence in the benefits of an innovative product but also the opportunity to better match the range and quality of the food produced with consumer needs. The shared objective is to establish and strengthen local, regional, and national food networks that are able to provide healthy, affordable, ecologically sound, and culturally diverse foods (Lutz et al., 2017).

An analysis of the factors constraining the evolution of the farmer as a producer of agricultural products with six different strategies reveals that they can motivate the servitization of farming. The understanding of why the strategy is no longer useful pushes a farmer to move away from product-oriented business logic and adopt a product-service system. This solution can significantly expand the possibilities of the farm business. Six case studies on farming servitization initiatives in Lithuania presented in Chapter 5 support this hypothesis and illustrate how the shift to a service-driven business model provides opportunities to further develop the farming business and ensure its sustainability through various business models of farming servitization.

The key incentives for farming servitization identified according to the qualitative structure approach are presented in Table 6.1. They explain why services should be added to agricultural activities and highlight how farming servitization can help (1) remove the subjective barriers related to the potential of a particular farm to change its organizational construction and (2) overcome a threshold to continue self-management evolution through a particular strategy.

When analysing or designing the farmers' business model, it is also important to bear in mind that the evolutionary relationship of the six production strategies means that the farmer does not abandon the previously adopted strategies. They are in the arsenal of adopted organizational tools and can be applied in parallel with the dominant strategy. Thus, once the farmers have entered the second stage of evolution and started to implement the intensification strategy, they have the skills to combine it with the extensive growth strategy. Once farmers reach the last stage of the evolutionary cycle and apply an innovation strategy, they have the capacity to simultaneously apply a business model that

Table 6.1 Incentives for farming servitization according to the Qualitative Structure approach

Strategy	How the strategy is implemented	Why is the strategy no longer useful?	Key incentives for farming servitization
Extensive growth strategy	The farm increases available resources (land, machinery, equipment, buildings, number of employees, etc.)	<i>Subjective barriers:</i> Lack of capacity to increase farm resources <i>Threshold:</i> further growth in resources starts to increase the cost per unit of production	Most services are less capital-intensive than agriculture Building of product-service system changes the set of production methods and surplus agricultural resources can be used to service provision

Strategy	How the strategy is implemented	Why is the strategy no longer useful?	Key incentives for farming servitization
Intensification strategy	The farm improves the production methods	<p><i>Subjective barriers:</i> the farmer lacks knowledge and skills to improve the agricultural production methods</p> <p><i>Threshold:</i> intensive use of land or human resources begins to damage them</p>	<p>The provision of services becomes an additional activity in the value chain, leading to a significant increase in the overall productivity of farm activities</p> <p>Service-dominant logic allows using agricultural land more carefully with the same economic benefits</p> <p>The product-service system allows for a change in the character of work, reducing the heavy physical labour needed to produce organic agricultural products</p>

(continued)

Table 6.1 (continued)

Strategy	How the strategy is implemented	Why is the strategy no longer useful?	Key incentives for farming servitization
Specialization strategy	The farm reduces the variety of products, focusing on the most profitable species	<p><i>Subjective barriers:</i> the farmer lacks the skills to produce and sell at least one type of agricultural product with above-average profitability</p> <p><i>Threshold:</i> monoculture farming makes the agricultural business extremely dependent on market situations and natural hazards</p>	<p>If the key farm product is used for the provision of services, farm profitability may increase</p> <p>When it becomes difficult to sell agricultural products profitably, they can be used as a major input for service provision. It allows entering a new market</p> <p>Many types of services do not require a radical transformation of economic resources to get started</p> <p>When the risks are similar for all the products that can be produced on the farm, the provision of low-risk services becomes an alternative to agricultural diversification</p>
Diversification strategy	The farm increases the variety of products, focusing on low-risk products	<p><i>Subjective barriers:</i> reorganization of the highly specialized farm often is very costly and challenging</p> <p><i>Threshold:</i> the economic perspectives for all the products that can be produced on the farm become risky and unpredictable</p>	

Strategy	How the strategy is implemented	Why is the strategy no longer useful?	Key incentives for farming servitization
Collaboration strategy	The farm revises and changes the existing business relations with other participants of the business ecosystem	<p><i>Subjective barriers:</i> the farmer is failing to establish useful partnerships</p> <p><i>Threshold:</i> There is a negative attitude towards collaboration in the region as farmers do not find beneficial areas of collaboration</p>	<p>Collaboration in a service business is easier than in agriculture, as joint action is most needed to solve one-off problems</p> <p>Service business offers new areas of collaboration and other partners</p>
Innovation strategy	The farm begins to produce new or improved product(s)	<p><i>Subjective barriers:</i> the farmer cannot find buyers for an innovative product</p> <p><i>Threshold:</i> The supply system that ensures the reproduction cycle of an old product is not suitable for its new substitute</p>	<p>Educational and consulting services introduce potential users to the advantages of an innovative product, build trust in a producer and increase sales</p> <p>When it is difficult to find buyers for an innovative product in the mass market, it can be promoted by offering services that bring the product closer to the consumer</p>

Source Created by the author

integrates all six strategies. In practice, in some periods, not all combinations of strategies may be applicable, as the farmer may face subjective constraints or may reach a threshold for implementing several strategies. However, if the situation changes, a farmer can always supplement the business model with the simpler strategies previously adopted.

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Part III

Territorial Servitization of Rural Regions



7

Territorial Servitization as a Challenge to Reorganizing the Rural Development of the Industrial Era

Dalia Vidickienė

Early developments in the field of servitization were mainly microlevel oriented and focused on transforming the business model of manufacturing companies. The academic and professional business literature has increasingly taken the servitization concept to explain why service thinking is the pathway to the long-term survival of manufacturing enterprises. Recent theoretical developments on servitization and notable servitization cases show the rationale and effects of successful shifts from a product-driven business model to a service-driven business model. As pointed out by Kamal et al. (2020), there is a growing understanding and acceptance of the organizational, operational, financial, technological, environmental, and strategic benefits of servitization among manufacturers. According to their study, one of the most cited benefits is “a sustainable source of competitive advantage”. The turn to a service-oriented business model provides a way to restore manufacturers’ competitiveness in both local and global markets (Bustinza et al., 2015; Crozet & Milet, 2017). Studies demonstrate that the functional relationship between manufacturing and services is the basis of positive or very positive economic performance (Herrero et al., 2020). Firms that start

selling services instead of products experience an increase in their profitability, employment, total sales, and sales of goods (Crozet & Milet, 2017; Osterwalder & Pigneur, 2010). Servitization can enable firms to differentiate their product from those of their competitors and support the consolidation and protection of the core product business (Baines et al., 2009; Neuhüttler et al., 2018; Opresnik & Taisch, 2015). Servitization allows for better customer relationships, increases customer loyalty (Baines & Lightfoot, 2013), and leads to higher market values (Fang et al., 2008). As services are more labour dependent and provide less visible rendering, it makes it more difficult to imitate and therefore leads to sustainable competitive advantage for organizations (Guo et al., 2015).

In the second decade of the twenty-first century, scholars have observed that a service-dominant logic perspective focused on product-service innovation systems can be extrapolated to a meso (regional) level, which describes the territorial properties nurturing interindustry collaborations (Lafuente et al., 2023), and launched studies on the territorial servitization of regions and countries (Cuadrado-Roura, 2016; De Propriis & Storai, 2019; Gebauer & Binz, 2019; Gomes et al., 2019; Horváth & Rabetino, 2019). A number of studies introduce servitization as a promising business model for addressing environmental and social challenges (Gaiardelli et al., 2014; Herrero et al., 2020) and as a key driver of regional development (Marino & Trapasso, 2020; Neuhüttler et al., 2018). However, as noted by Lafuente et al. (2019), much still needs to be studied concerning the factors that contribute to the development and effective functioning of the territorial servitization process. The question of how to achieve a more servitized economy in the region or country is a very new discussion issue in the regional development policy agenda. With the exception of some political initiatives in the EU and the USA (European Commission, 2011; Figueroa-Armijos, 2019), there are very few specific policies to stimulate the implementation of service-driven business models on the regional level.

This situation is surprising, as, at the current stage of research on servitization, it is becoming clear that the penetration of services into all economic activities through the service-based business model is a fundamental paradigm shift in the development of social and economic

systems. In this context, the term 'servitization' is used as an analogy for the term 'industrialization'. Industrialization is understood as the mass penetration of manufacturing technologies in all areas of the economy, and servitization is understood as the penetration of elements of service provision into all areas of the economy through an innovative business model. In the industrial economy, the exchange of consumer products is key. In contrast, the service economy is focused on the value in use, it emphasizes a performance-driven orientation where the consumer pays for the utilization of the product. In the service economy, consumers buy Power-by-the-Hour instead of aircraft and cars, or cleaning services instead of washing machines. The service economy optimizes the use of goods and services while consuming less energy or resources to increase the usage value to a maximum limit for the longest period (Rajput & Singh, 2019). Moreover, selling the services provided by the product rather than the product itself is a business model that might be environmentally superior to conventional selling, especially for high-cost products (Kanatlı & Karaer, 2022). Consequently, the service economy has the potential to be more environmentally friendly because it addresses the current level of material/resource consumption by finding options that can provide function and/or service to consumers without reducing their level of well-being.

Unfortunately, a large part of the world's academic society and traditional political parties still consider servitization as a secondary factor in economic development and continue to focus on the development of the manufacturing sector and the further industrialization of the agricultural sector, based on the achievements of the fourth industrial revolution. Most governments and representatives of developmental science still examine the shift in the proportion between industry and services towards services as a deindustrialization process and treat it as a negative phenomenon (Vidickienė, 2017). According to economists and politicians who think within the mental model of industrial society, the growth of the number of employed in the service sector is mostly related to the lack of jobs in the manufacturing sector and the growth of the bureaucratic apparatus. Fans of the industrial way of production believe that countries or regions where the service sector will be developed more than the manufacturing sector may experience economic stagnation or

at least slower economic growth. They consider the process of deindustrialization not a natural component of the evolution of the economic system but a process during which countries fail to ensure their economic growth and competitiveness (e.g., Alderson, 1999; Rowthorn & Coutts, 2004). This point of view comes from neoclassical economic theory, which associates ‘real’ economic growth only with the increase in the production of manufactured goods. Despite the abundant literature examining the extent of deindustrialization and the diversity of its manifestations, few studies provide recommendations for policymakers on how to stop the deindustrialization process. The main escalating theme of conservative-minded researchers is the transfer of manufacturing firms from highly developed countries to developing countries. They believe that the shrinking of the manufacturing sector in developed countries happens mainly for this reason.

The deindustrialization of rich economies is accelerating as labour moves away from industrial sectors, and this reallocation is taking centre stage in political circles, where calls for industrial policy, rising regulation, or protectionism are heard increasingly loudly (Imbs, 2017). Other proposed economic-social policies also seek to reduce the negative consequences of deindustrialization—unemployment and economic inequality—by increasing restrictions on labour relations and the free movement of goods and workers. However, as practice shows, policy measures based on restrictions are not very effective or even have side effects. As pointed out by Capello and Kroll (2016), the territorial servitization process falls within the wider territorial innovation system approach that is in many ways coherent with posits of place-based, bottom-up smart specialization. According to Lafuente et al. (2019), from this perspective, the role of policy is one of facilitator rather than a regulator, one that enables rather than intervenes, and one that focuses on improving attributes that strengthen desired territorial processes rather than the processes in themselves. However, much still needs to be observed and researched concerning the role of policy in territorial servitization, as servitization theory does not offer any new solutions or regional development policy instruments dealing with servitization.

In the search for effective ways to regulate modern economies and societies, the most promising avenue of research is based on the evolutionary concept of post-industrial economics. It emphasizes that the stage of social evolution when prosperity was generated by the manufacturing sector lost its relevance at the end of the twentieth century. The theory of post-industrial economy states that the predominance of the service sector in the structure of the economy and the penetration of service elements into manufacturing and agricultural business processes is an inevitable process of economic system evolution. It gradually takes place in all countries because changes at the micro level as the shift to a service-oriented business model also change the situation at the macro level through processes of territorial servitization. The mainstream servitization literature mostly describes the success of manufacturing firms in integrating services for their corporate clients. However, the literature is relatively silent on how territories benefit from the increasing shift of local entrepreneurs from product-driven to innovative service-driven business models. The benefits of increasing the number of firms adopting a product-service system must not only be calculated as the arithmetic sum of the individual benefits. Territorial servitization creates synergetic effects, especially if the firms adopting the innovative business model collaborate with each other. However, we still have too little knowledge to understand how to achieve synergies because, as noted by Herzenberg et al. (2019), the new economy is based on new rules of the game.

Rural studies and development policy still ignore socioeconomic paradigm change and the potential of servitization to increase the well-being of rural regions. Most of the rural innovation and entrepreneurship research to date has focused on studying factors that affect the innovation adoption behaviours of individuals and rural communities (Lokuge, 2021). Moreover, most of the research on rural entrepreneurship has been conducted by relating only the rural context to entrepreneurship (Gaddefors & Anderson, 2019) and has not considered that the evolution from the industrial to service economy mode, referred to as servitization, is changing the general rules of the socioeconomic game, and rural areas have entered a whole new business environment. The analysis of servitization in peripheral and rural regions is very briefly addressed in the academic literature (Herrero et al., 2020; Lankauskienė

et al., 2022; Marino & Trapasso, 2020; Vendrell-Herrero & Wilson, 2017; Vidickienė, 2018; Vidickienė & Gedminaitė-Raudonė, 2018a, 2018b, 2019; Vidickienė et al., 2021, 2023), and no guidance to policymakers on how to encourage servitization processes in rural regions exists. Policymakers are lacking answers to the following questions: “What impact can servitization of agriculture and farming have on rural economic and social prosperity?” and “What kind of support is needed for the development of emerging farming servitization practices?” The governments of rural regions wishing to promote servitization processes in their territory are faced with a lack of policy recommendations and case studies on successful innovative rural policy measures dealing with territorial servitization. To our knowledge, no prior studies have examined what organizational models of territorial servitization may be used and what kind of positive effects for rural regions can be generated by implementing a service-driven business model innovation in agriculture. The literature offers only a few suggestions on the specific nature of territorial servitization in peripheral regions. For example, according to the study on territorial servitization by Marino and Trapasso (2020), peripheral regions with fewer resources (capital) and capacities (services) must redirect their efforts to achieve the necessary preconditions of territorial servitization. However, governments can only act as catalysts for the servitization movement in rural regions if policymakers understand the incentives, barriers, and mechanisms of farming servitization and the organizational structure of servitization projects. The lack of theoretical guidance on farming servitization leads to poor capabilities in adopting service logic and the implementation of the service-driven business model as a key success factor in the post-industrial era.

One of the main reasons why rural and regional development research and policy very slowly develops the servitization field lies in the insufficiently developed general theory of territorial servitization. The review of the literature on this topic shows that the concept of territorial servitization is usually identified with the development of knowledge-intensive business services (KIBS) in the region (e.g., Basáez et al., 2020; Figueroa-Armijos, 2019; Herrero et al., 2020; Lombardi et al., 2022; Marino & Trapasso, 2020; Opazo-Basáez et al., 2020; Vendrell-Herrero & Wilson, 2017). The development of knowledge-intensive business services in

recent decades is interpreted as one of the indicators of a transformation from an industrial economy into a knowledge-based economy. KIBS are intermediaries between the producers of knowledge and its users (Hipp, 1999). According to den Hertog (2000, p. 505), “KIBS provide private companies or organizations that rely heavily on professional knowledge, i.e., knowledge or expertise related to a specific (technical) discipline or (technical) functional-domain to supply intermediate products and services that are knowledge-based”. Typical examples of KIBS are accounting, management consultancy, technical engineering, R&D activities, design, services related to computer and information technology, and financial services (Baláž, 2004). Consequently, the territorial servitization literature is focused on the examination of growing synergies between KIBS and manufacturing in areas characterized by high industrial specialization and a high concentration of SMEs (De Propriis & Storai, 2019; Gomes et al., 2019; Horváth & Rabetino, 2019; Sforzi & Boix, 2019). Since the development of knowledge-intensive service businesses in the academic literature has not been considered characteristic of rural regions (Virkkala, 2007), researchers have ignored the territorial servitization processes in rural regions.

However, the conceptualization of territorial servitization as knowledge-intensive services for manufacturing firms narrows the area covered by territorial servitization processes because it focuses only on one type of service, i.e., knowledge-intensive services. The need to revise the KIBS-based concept of territorial servitization best demonstrates servitization processes in rural regions. The most important area of servitization in rural regions—the servitization of farming—requires agricultural production to be supplemented not only with so-called ‘knowledge-intensive’ services but also with many simple services: transportation, packaging, accommodation and catering for tourists, etc. Therefore, in the further development of the concept of territorial servitization, it is important to consider the fact that the transition to a servitized economic system in rural regions is not based on technological innovations. First and foremost, it requires a transformation of supply networks. The biggest challenge for farms that adopted a product-service system is to offer varying degrees of service outcomes to a differentiated customer base. In most cases, they do not need

knowledge-intensive services related to a specific (technical) discipline or (technical) functional domain.

The shift from the industrial to post-industrial paradigm has significantly reduced the opportunities for politicians to learn from past policy experiences and promote regional development by relying on 'traditional' policies, as each new paradigm is based on new factors of production. The factors of production needed to produce a good or service differ greatly between the post-industrial, industrial, and agrarian eras. In the agrarian era, land ownership and labour were seen as key success factors. In the industrial era, these factors became secondary, and capital came to the fore. As a factor of production, capital refers to the purchase of goods made with money in production, and the success of farming largely depends on the size of the investment in agricultural machinery and equipment. The transition to the post-industrial service economy requires a review of the importance of capital in economic development, as the possession of material and financial capital is no longer a sufficient condition for the economic prosperity of an area. Research on economic success factors in recent decades shows that investment without innovative thinking creates low-profit business projects and does not lead to regional prosperity (Aksoy, 2017; Neumeier, 2017; Rajapathirana & Hui, 2018). This insight is particularly relevant for lagging rural regions, where many of the successful rural and regional policy instruments that have been used thus far have lost their power. A study by Marino and Trapasso (2020) demonstrates that weak regions are not equipped to respond in a positive manner (with endogenous growth) to the stimulus represented by 'traditional' regional policy, which attempts to compensate for the lack of factors of production, for example, by injecting capital to stimulate production investment. The main task for rural development policymakers is not to financially kickstart desirable socioeconomic processes by making decisions about 'where to invest public money and to what extent' but the creation and implementation of innovative governance models and policy instruments. Therefore, for proponents of the post-industrial theory, the question inevitably arises as to what new dimensions economic policy should have to maximize the benefits of territorial servitization in rural regions.

The literature review highlights two new dimensions that are needed in the design of post-industrial rural development policy. *The first dimension of the territorial servitization policy* relates to the shift from supporting technological innovations to supporting organizational and social innovations. Servitization comes with great opportunities but also poses many challenges. First, a mindset change and new organizational knowledge and skills are needed from selling products to providing services. To encourage and support the individual efforts of farmers and other rural entrepreneurs to move towards a service-oriented business model, priority must be given to the development of a regional innovation system and learning strategies.

Regional studies show that systemic policy interventions in regional innovation systems generate many positive economic effects. For example, the findings of the study by Pyka et al. (2019) show that (1) regional learning and knowledge exchange are accompanied by pronounced nonlinearities, and combined learning strategies generate the highest regional returns; (2) systemic interventions, originally designed to stimulate qualitatively different types of entrepreneurial entries, show—against the backdrop of different regional learning regimes—rather ambiguous effects for both the target firms and the incumbent firms. (3) Interventions designed to affect the individual linking behaviour of entrepreneurial firms are effective and robust even for different learning regimes. Support for innovative service-oriented farms through public programmes can be an effective instrument not only for the development of agriculture and the rural economy but also for the creation of a new, socially responsible culture of consumption and for the development of healthier eating and living habits. Empirical research shows that many farming servitization projects are oriented towards agroecology and other green technologies, ecovillages, and transformative tourism (Palojärvi et al., 2013; Pedrinho et al., 2022; Vidickienė et al., 2019, 2020). In this context, supporting farming servitization projects is a policy approach rooted in the notion of public value that can therefore make a significant contribution to social well-being.

While the topic of sustainability in the agricultural sector has recently been widely analysed in the academic literature, business models in farming, their sustainability, and the development of innovative models

still receive little attention from agri-food researchers (Barth et al., 2021; Tell et al., 2016; Ulvenblad et al., 2014). Moreover, our knowledge of developments in the agricultural sector is limited because research is not focused on key paradigm innovation in a post-industrial society, characterized by the move away from a 'product-driven' business model towards a 'product and service system'. For the business model theory to become an integrative framework for the design of post-industrial agriculture and rural development policies, it is necessary to broaden our knowledge of farming servitization from a business model perspective.

The second dimension of territorial servitization policy concerns the growing role of collaboration. The cocreation paradigm (Ramaswamy & Ozcan, 2014) based on a business model where part of the new value is created by the customer rather than the service provider is becoming increasingly prevalent in the provision of services. The degree to which the service customer is involved in the new value creation may vary, but the service provider always contributes. In line with this fundamental change in the creation of new value, modelling the collaboration between service providers and customers is a key challenge for researchers in the future. Moreover, in the service economy, collaboration within businesses and between businesses and business systems takes place on a vertical and horizontal scale in which the local dimension and territorial variables constitute the catalyst for processes of development (Marino & Trapasso, 2020). The development and implementation of a service-oriented business model require reliance on collaborative networks to reshape established value chains and successfully enter servitization trajectories. The new policy approaches should help the collaboration of business entities and consumers by cocreation of the new value in use. Governments can play a crucial role as catalysts in collaboration processes between small- and medium-sized enterprises by supporting multisided networking organizations. The multiple case studies show that rural development networks involved in the territorial servitization of rural regions can help to extract a wide range of individual and collective benefits through which a region is capable of improving its economic, political, and social welfare (see Chapter 9).

Both new dimensions show that in further developing the concept of territorial servitization, it is important to consider the fact that the

economic system of the post-industrial era is a higher quality, more complex phenomenon than the previous industrial economic system and that its governance requires several paradigm innovations not only in business management but also in economic policy and public administration. The shift to a service-driven business model requires a radical shift from a qualitative to a quantitative approach in agriculture and rural development policy. In the industrial stage of economic evolution, state intervention in economic development took the form of measures aimed at regulating quantitative parameters, such as prices of agricultural products, the scale of investment in modern means of production, and the costs of farming. Support mechanisms have been designed on the basis of scarcity-oriented economic theory. In a service economy, facilitating the building and coordination of relations between economic actors becomes the most important area requiring government support. This means that the focus must be on qualitative parameters, encouraging networking focused on innovative collaborative projects. Support mechanisms must be based on the postulates of management theories adapted to the needs of post-industrial society.

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8

Specifics of Collaboration in the Service Economy: Orientation to Multisided Platform-Based Networking

Dalia Vidickienė

8.1 The Increasing Role of Collaboration in the Service Economy

Collaboration has always existed, but major aims, content, and methods of collaboration management in the agrarian, industrial, and post-industrial eras have been different. In an agrarian era, the key task of collaboration managers was to generate more power through joint economic activities. Participation of agricultural community members in collaborative initiatives was voluntary. Working together in the sowing and harvesting of crops or in other agricultural and housekeeping work peasants were able: (1) to make jobs where big muscle power is needed; (2) reorganize the work process by collective actions in order to increase labour productivity and/or finish seasonal agricultural or work of house building and keeping on time.

In the industrial era, new tasks for collaboration management emerged as the majority of economic activities shifted from households to specialized business entities. Most of the population withdraws from the agricultural sector to participate in specialized occupations associated with trade and manufacturing. The role of commercial activities relating

to the buying and selling of goods has grown steadily. The commercial character of the industrial economic system required focusing on new goals and methods of collaboration. The owners of a business entity needed to develop new management skills because the simplistic methods of working together they had learned in the agrarian era no longer worked in many situations.

As stated in transaction cost theory, the goal of any actor in the specialized economic system is to minimize costs associated with transactions. To reduce transaction costs, institutions (sets of rules that humans impose on their dealings with each other) are created (North, 1984). Therefore, individuals will either choose to manage these resources themselves or collectively, depending on transaction costs. If markets operated in a perfect world, a collaboration between actors of a business ecosystem would not be needed, as market forces would provide the coordination and incentives needed for production activities. However, in a real market, the costs of conducting business transactions occur. They include costs incurred in the search for information on the price, quality, and availability of goods and services, search for potential buyers and sellers, and the relevant information about their behaviour and reliability, bargaining, making contracts, monitoring contractual partners, contract enforcement and the collection of damages for the violation of the terms of a contract, protection of property rights against third-party encroachment are all transaction costs. Collaboration is economically advantageous inside business entities and other organizations since institutionalized relationships limit individual freedom of action. The behaviour of market participants becomes better predictable and allows for significant reductions in transaction costs compared to the relationships that arise spontaneously in a free market. According to the theory of institutional economics, the creation of economic institutions as collective entities was a solution to challenges that arose in the uncertain business environment of the industrial era. Economic institutions became the key players in organizing the production, exchange, distribution, and consumption of goods, i.e., the industrial economic system matured into a complex of interrelated economic institutions through which economic activity is organized. In the industrial era, those who

wanted to be a member of the collaborative group joined the institutions. The task of managers was to formalize collaboration between people or organizations with similar interests. The collaboration was organized and managed according to agreements that legalized the rules of communication and collaboration.

Since a certain degree of agricultural industrialization was reached, new incentives emerged to generate more power through joint economic activities, and the goals for collaboration defined in the agrarian era have also been realized by new methods. First, a lack of capital encouraged the establishment of collective economic institutions in the form of agricultural cooperatives, as it was the most convenient way to include a large number of farmers in the capital accumulation process. By consolidating their small physical and financial capital and establishing a formal united organization, members of the collective institutions conceived a scale effect as market players and producers.

Second, small farmers were motivated to cooperate with each other as a response to changes that occurred in the labour market and market of agricultural products. Oligopoly or monopsony appeared more frequently in rural labour markets since agricultural mechanization resulted in fewer employers being willing to employ agricultural workers. Because of the large number of small farmers but only one or a few agricultural product collectors and processors, oligopoly or monopsony also often appeared in the market of agricultural products. Oligopoly or monopsony also resulted in distortions of competition. These processes and growing uncertainty in the business environment, along with increasing transactional costs, were a considerable incentive for farmers to cooperate and take collective action (Milford, 2004; Novkovic, 2006, 2008). Cooperative institutions became important tools for increasing farmers' bargaining power in oligopolistic markets of agricultural products. Rural people also used consumer cooperatives to increase their bargaining power in oligopolistic input markets. Hence, cooperative institutions offered farmers and other rural people the option of forming blocks with increased bargaining power and pooled resources to counter the ingrained imbalance in the market. Alongside traditional cooperatives, later collaboration has evolved through other forms of

economic institutions that join a group of people having a common economic interest, such as associations, clusters, strategic alliances, etc.

There exists a considerable body of literature on cooperative organizations joining farmers and other rural people. The literature review on agricultural cooperatives shows that it presents two strands: the cooperative as an extension of individual farms and the cooperative as a firm (Candemir et al., 2021). The second strand is oriented to the paradigm of the industrial era, and the first strand explores the cooperatives established according to the mental model of the agrarian era. However, cooperative studies still pay little attention to the influence of the post-industrial economy on the needs of rural people and new forms of economic collaboration. Collaboration inside agricultural companies remains briefly addressed in the literature, especially in the context of risk management in the dynamic business environment by reducing transaction costs. There exists a considerable body of literature on the agri-food supply chain that examines collaborative organization models in the agri-food sector (Ammirato et al., 2021). However, the agri-food sector has experienced profound transformations in recent years, and studying the agri-food supply chain is based on a more complex approach than collaboration at the institutional level.

The rise of the post-industrial economy has created new possibilities and needs for joint economic activities. Transitioning from an economy of goods to an economy of services suggests that more people must become engaged in their communities to address the challenges of the new evolutionary stage. In contrast to previous stages, the key drivers of regional economic performance do not come from territorial specialization as in the industrial era or from the pure quantitative agglomeration of farms in a particular region as in the agrarian era. In the service economy, the level of entrepreneurial activity in regions mainly depends on the interconnections and complementarities of geographically proximate groups of firms and institutions (Boix & Vaillant, 2010; Rocha & Sternberg, 2005). Many individuals must work collectively to make progress on complex issues (Ospina & Foldy, 2016). Management as a tool for organizing collective actions became one of the key factors of production together with land, labour, and capital, as the effectiveness of business processes is to a significant extent determined by the

managerial resources of a business entity. Business entities need not only specialized expertise but also a collaborative capability that unlocks the value of underused assets. As economic activities are changing from dominantly stand-alone to networked, an increasing number of scholars argue that new perspectives are needed to study collaborative relationships (Anggraeni et al., 2007; Batt & Purchase, 2004; Cullen-Lester & Yammarino, 2016; Kniffin & Patterson, 2019; Sorenson et al., 2008). Because of the growing importance of collaboration, the post-industrial economy is often referred to as a ‘collaborative economy’. “The Collaborative Economy is an economic model where ownership and access are shared between corporations, startups, and people. This results in market efficiencies that bear new products, services, and business growth” (Owyang et al., 2013, p. 4). Sometimes the collaborative economy is called the sharing economy. It is defined as the movement towards peer-to-peer sharing. However, peer-to-peer collaborative consumption covers only a small part of post-industrial collaborative activities. The last research in the collaborative economy field focuses on the impacts of collaboration on corporations and, more importantly, on ways of collaboration in a service-driven economic system.

According to proponents of collaborative approaches, in the service economy, the ability to collaborate with customers and other participants of a business system, including competitors, has become not one of the many success factors in all economic processes but a mandatory component of business skills (Botsman, 2015; Botsman & Rogers, 2010; Greer & Lei, 2012; Lang et al., 2019; Ritala & Hallikas, 2011; Vazquez-Brust et al., 2020). However, the success of collaborative activities is not necessarily predictable, and when it is achieved is often not as anticipated. According to the first studies in the field of collaborative advantage, the synergy that can be created through joint working—collaborations are more likely to reach collaborative inertia than collaborative advantage (Vangen & Huxham, 2013). Powerful barriers to reversing the trend for collaborative activities to be frustratingly slow to produce output or uncomfortably conflict-ridden are dealing with specifics of collaboration in the service economy.

The latest scientific literature emphasizes that collaboration in a servitized economic system is (or should be) fundamentally different from

collaboration in the industrial era (De Noni et al., 2018; Ertz & Leblanc-Proulx, 2018; Fehrer Fu et al., 2018; Ramezani & Camarinha-Matos, 2020). Consequently, it is important not only to increase the scale of collaboration but also to use new methods of collaboration that meet the needs of a service-oriented economic system. Important characteristics of the post-industrial era dealing with radical changes in collaborative activities can be defined as several paradigm innovations (“paradigm innovations are changes in the underlying mental models which frame what the organization does” [Bessant & Tidd, 2007, p. 13]). A systematic literature review on the new characteristics of the service economy identifies the following paradigm innovations related to the changes in the role and nature of collaboration: (1) the pursuit of competitive advantage is shifting to the creation of mutualistic symbiosis between participants of the business ecosystem; (2) institutionalized collaboration is replaced by network relations; (3) the collaboration between actors with similar interests is shifting to multiactor partnerships; and (4) the market economy is replaced by the platform economy. The first paradigm innovation explains why collaboration is extremely important in the post-industrial era. It emphasizes the importance of collaborative advantage and presents a new approach to collaborative relations building through the concepts of the ‘business ecosystem’ and ‘symbiotic relationships’. The second paradigm innovation introduces networks as a new organizational form of collaborative relationships that evolved from institutional models. The third paradigm innovation emphasizes the need to involve a diversity of actors in collaborative activities to address complex problems together. The fourth paradigm innovation discusses why and how the invisible mechanism of the market is replaced step-by-step by the visible mechanism of network platforms (see Fig. 8.1). All mentioned paradigm innovations are interwoven and complement each other.

Each of the listed paradigm innovations requires a radical change in the models of ‘good management’ and rural development policies and instruments formed in the industrial era. The next subchapters briefly present the essence of the mentioned paradigm innovations.

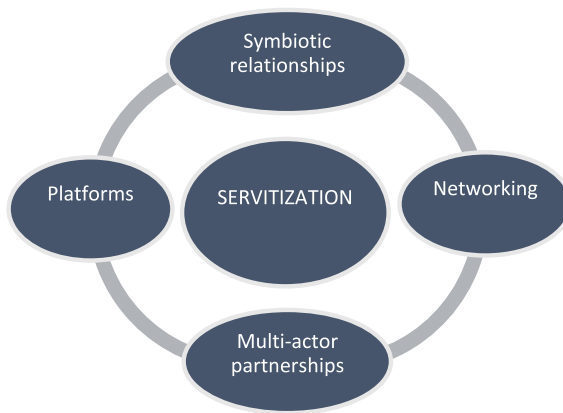


Fig. 8.1 Specifics of collaboration in the service economy (Source Created by the author)

8.2 Competition Replaced by the Pursuit of Symbiosis Between Participants of the Business Ecosystem

The first mentioned paradigm innovation, emphasizing that competition is replaced by the pursuit of symbiosis between participants of the business ecosystem, has received attention from academics and entrepreneurs only in the first decade of the twenty-first century. In the industrial era, the transactional perspective of business relationships has been popular. People have seen companies as rivals that are focused on their resources and capabilities to compete and survive in the market (Verna, 2016). This attitude was determined by the focus on supply chain management. In an industrial economic system characterized by overproduction, the competitive struggle for who would be able to obtain a greater share of the newly created value took place not only between companies but also between companies and consumers of their products. Since the processes of product value creation and product use were separated (the business was responsible for creating and delivering the product value to the consumer, while the consumer was responsible for making the most

efficient use of the value of the purchased product), the transactional relationship between the producer and consumer of a product was focused on sharing the value of the product, with each party seeking to obtain the largest share for itself. As business relationships were considered competitive, the main efforts of economic theorists and economic policymakers were focused on how to improve business competitiveness.

In the twenty-first century, the situation is changing radically. As noted by Mukhopadhyay and Bouwman (2018), conceptualizing firms as autonomous, independent entities struggling for competitive advantage does not adequately explain the present-day reality. The rise of the service economy changes how people view reciprocal relationships between companies and related business environments. Post-industrial paradigm requires organizations to transform their business models and shift from a transactional to a collaborative relationship mindset. Scientific and professional business literature increasingly emphasizes that “those who know how to collaborate win in the competitive battle” (e.g., Dutta & Crossan, 2005; Marinucci & Vergote, 2011; Mauleon et al., 2014; Vergote & Grandjean, 2015). This rule, which sounded paradoxical in the past, is already considered a key driver of the service economy. Servitization has changed the competitive landscape in the market by increasing the necessity of collaboration with other participants in business processes as cocreators of value. The new business term ‘coopetition’ emerged, which means ‘cooperative competition’ whereby competitors share costs and work together on parts of their businesses in which they do not compete (Combs & Davis, 2010).

Service relationships are about the activities between a service provider and a service consumer to ensure continual cocreation of value. The provision of a service and its use usually coincide in time, so in the relationship between the service provider and its client, attention should be primarily focused not on the price negotiations, but on the joint creative process. Since the post-industrial economy shifted from the production of things and their exchange to the provision of services, an increasing number of researchers have said that servitization can be successful only if there is close collaboration between the entrepreneur and client (Green et al., 2017). With the expansion of services, more attention should be given to the use of the client’s experience and knowledge in improving

business processes and introducing innovations (Brandon & Lu, 2009; Keiningham et al., 2020; Kokins et al., 2021; Lindblad & Guerrero, 2020; Romero & Molina, 2011). The success of cocreation activities depends on how much a service provider understands the client's needs and whether a client understands the service provider's capabilities. If the service provider is able to fulfil the client's wishes, the price negotiations usually end in favour of the service provider. In this way, servitization helps to replace the strategic orientation to transactional buyer–supplier relationships formed by the 'product-driven' business model with a new type of relationship specific to the service delivery process. Instead of competing for price and market share, a new type of relationship building is focused on collaboration as a way to create the highest possible value in use. In practice, service relationships focus on the shared creative process and the sharing of input and require collaboration in defining roles, responsibilities, process activities/tasks, and implementing supporting tools to support collaboration between the service provider and consumers.

Despite recognition that the servitization process is collaborative and innovative by nature and needs extensive and close collaboration for value cocreation (Perks et al., 2017), the current state of the servitization literature is focused either on the seller or on the customer perspective, providing few answers on multiactor collaborative processes in developing novel servitization solutions (Polova & Thomas, 2020; Raddats et al., 2019; Roehrich et al., 2019). However, successful servitization of the economic system, which is perceived as a gradual transition from a 'product-oriented' business model to a 'service-oriented' business model, depends to a large degree on the relationships with many economic agents. To increase knowledge on how to effectively collaborate with a large number of external partners, researchers are looking for analogies with biological ecosystems created by nature. Regarding a business environment as an ecosystem, the concept of the business ecosystem emerged. It opens a new way of looking at collaboration and examining complex adaptive business environments. J. F. Moore (1996, p. 26), who first introduced the concept of a business ecosystem, defined it as "an economic community supported by a foundation of interacting organizations and individuals—the organisms of the business world. The

economic community produces goods and services of value to customers, who are themselves members of the ecosystem. The member organisms also include suppliers, lead producers, competitors, and other stakeholders”. This and later proposed definitions of business ecosystems mainly stress the interconnectedness of economic agents and the fact that they depend on each other for their success and survival (Den Hartigh & Van Asseldonk, 2004; Peltoniemi, 2005).

The concept of the business ecosystem provides new theoretical and managerial implications for (1) the role of business environment participants and (2) the character of their relations. First, the business ecosystem perspective extends the traditional strategic management (core products and services) approach in the sense that a company should be considered not as a member of a single industry but as part of a business ecosystem that crosses a variety of industries. Second, as economic activity is changing from a stand-alone to an ecosystem of interconnected economic agents, the paradigm of atomistic actors competing against each other in an impersonal marketplace is becoming less adequate (Anggraeni et al., 2007). In the theory of the business ecosystem, collaboration is increasingly described as a symbiotic relationship. The term symbiosis, originating from biology, describes relationships between participants in a business ecosystem (Wei et al., 2020). According to the symbiotic approach, the collaboration between participants of the business ecosystem is understood as the coordination of actions and communications that bring benefits to all interacting parties. The emerging concept of symbiosis in business ecosystems aims to explain the higher-order architecture of real complex business environments and introduces the art of living together in the service economy. Even the concept of a ‘symbiotic economy’ has already been created, offering an alternative paradigm to the industrial economic system (Delannoy, 2017; Garcia-Olivares & Solé, 2015; Uchihashi, 2011).

Several researchers have highlighted symbiosis in business ecosystems with three types of symbiotic relationships: mutualism, commensalism, and parasitism (Manikas & Hansen, 2013; Sun et al., 2020; Yao & Zhou, 2016; Yoon et al., 2022). These three types are classified based on the distribution of benefits between the participants in such a relationship (Sun et al., 2020). The key challenge is to find a way to

create symbiotic relationships that benefit all actors in the business ecosystem (Gummesson, 2015). Therefore, the most interesting for the development of theory on collaborative relations building is mutualistic symbiosis. Nature is filled with examples of mutualistic symbiosis—a relationship in which dissimilar species benefit from the association. However, research regarding symbiotic relationships in business ecosystems is still at an early stage of development. Extant studies have mainly discussed business ecosystems at a conceptual level, such as the features and roles of business ecosystems, and have not paid much attention to the relationships between ecosystem participants and new ways of their organization (Karhiniemi, 2009; Peltoniemi & Vuori, 2004; Tsujimoto et al., 2018; Yoon et al., 2022). Considering that participants in a business ecosystem can benefit from coevolution, it is essential to examine and understand the relationships between participants in a business ecosystem (Yoon et al., 2022). Expanding the existing theoretical basis should provide more answers on who, how, and why symbiotic relationships are created and managed in business ecosystems. The business ecosystem concept visualizes firms as part of a network of collaborating and competing entities with a high level of interdependence and interconnectedness. Hence, collaborative leadership is shifting from institutions to networks.

8.3 Institutionalized Collaboration Replaced by Network Relations

According to Castells (2010), in the twenty-first century, humanity has entered the era of networking, where many functions and processes are implemented through networks. Networks become the main tool for management and public administration, which contributes to the achievement of new knowledge, exchange of information, and experience. The term ‘network’ is currently a central issue in many research fields and disciplines. From computer science, it shifted to social sciences, and researchers started to investigate the ‘soft computing’ area for modelling aspects related to collaborative human behaviour (Camarinha-Matos & Afsarmanesh, 2005). Currently, networks are

already recognized in society as a very important collaborative instrument in a period of turbulent post-industrial reality. Networks manifest in a large variety of types and organizational forms. As collaborative networks scholars identify clusters, extended enterprises, strategic alliances, dynamic supply chains, virtual enterprises and organizations, professional virtual communities, collaborative virtual laboratories, policy networks, etc. (Camarinha-Matos & Afsarmanesh, 2005; Cristofoli et al., 2017; Di Gregorio et al., 2019; Shuman & Twombly, 2010). Growing literature on collaborative networks as a dominating type of collaborative activity shows that recently, there has been an increasing tendency to replace the ties established within the framework of a formal institution with networking ties. Post-industrial society is even often referred to as a 'network society' (Castells, 1996, 2000a, 2000b), i.e., collaboration through networking is considered one of the main differences between industrial and post-industrial societies.

The phenomenon of collaborative networks is being described and interpreted in many different ways, depending on the background of the researcher, but scientists and businesses are just beginning to understand the principles of network building. The first organizational studies were oriented to the old industrial paradigm and tended to imply stability and linearity within the network (Müller-Seitz, 2012). When the service business began to dominate, the conventional linear supply chain approach was no longer appropriate for collaboration in the service economy. The relationships are nonlinear, as the final effect of service provision is obtained through the parallel implementation of many economic processes. Therefore, when undertaking business servitization, it is necessary to reorganize the old-established linear relationships of the supply chain. The relationships are also no longer stable. Service providers have very short life-cycles based on fashionability, as well as different cultures and practices (Mukhopadhyay & Bouwman, 2018). Consequently, we should examine and manage collaborative networks as dynamic nonlinear configurations.

According to recent studies, collaborative networks show high potential as drivers of value creation (Ammirato et al., 2021; Camarinha-Matos & Afsarmanesh, 2005). The materialization of this potential,

however, requires further progress in understanding their organizational forms and the underlying principles of the new form of collaboration, as fundamental differences exist between network-powered problem-solving and traditional organizational models. Network exposes a problem to participants with varied skills, experience, and perspectives. It can operate at a scale that exceeds even that of the largest and most complex global corporation, bringing in many more individuals to focus on a given challenge. Collaborative networks, with their unique characteristics, require fresh leadership skills (Mandell & Keast, 2009). Cullen-Lester and Yammarino (2016) explain that “a paradigm shift has occurred within the field – many scholars now view leadership as a property of the collective, not the individual” (p. 174), thus naming the collective as the focus of the new paradigm. Collaborative networks change the management tasks and the nature of competition. As pointed out Shuman and Twombly (2010, p. 3), “No longer is competition defined by products and services. Rather, it is defined by the ability of the people within an organization to build networks of relationships and work across boundaries in furtherance of delivering value to its customers and members”. However, researchers are still in the early days of acknowledging networks as a new organizational form of collaborative human relations.

A huge barrier to the development of collaborative network discipline is the lack of an evolutionary approach. According to the evolutionary approach, networks as post-industrial collaborative systems represent a more complex organizational structure that offers additional advantages to the participants. The theoretical lens of the research in the industrial network field is oriented to a sectoral approach that does not cover general goals and all types and purposes of relationships in service-driven business ecosystems. The evolutionary approach to collaboration is very helpful, as the context of evolutionary pathways gives many fresh perceptions in the collaborative network research field. The most productive way to do so is to conduct an evolutionary analysis of collaborative systems in the context of the evolution of economic systems from the agrarian to the industrial stage and from the industrial to the post-industrial stage. The post-industrial perspective offers guidelines on how to transform the collaborative system because it is based

on an integrated multidisciplinary view and provides higher-order information on key characteristics of collaborative systems in the previous stages of human socioeconomic evolution. and helps to identify major general attributes of a new stage. Moreover, the transition towards an evolutionary perspective removes several mental barriers of the industrial era regarding the organizational structures of collaborative systems that hinder the transition to a new post-industrial paradigm.

The institutions as hierarchical and closed organizational structures were the hallmark of the earlier era. Many studies define the organizational structure of networks as the opposite of two key characteristics of traditional institutions in the industrial era. The main differences between old-style collaborative systems and modern collaborative networks are the following characteristics of their organizational structure:

- Transition to a nonhierarchical bottom-up approach.
- Openness of access to network activities.

According to the first characteristic, in the industrial era, the relations between the members of the institution were usually based on a hierarchical top-down model of collaboration, i.e., members of the business and social institution had unequal rights when making decisions on how to organize joint activities and share earnings. There were also collaborative groups offering members equal rights and privileges within the organization (cooperatives, associations, etc.). They were designed according to the mental model of the agrarian era with the aim of using a collaborative community for the generation of scale effects in production and commercial activities. This type of collaboration was prevalent in rural areas. Rural development literature has mostly examined collaboration manifested through farmers' cooperative organizations.

According to the second characteristic, networks are divided into closed and open networks. In the competition-driven industrial era, a closed model of collaboration was a customary risk management strategy. Businesses protected their trade secrets from competitors and therefore had no interest in involving outsiders. The research and development

division of a business is also a closed system. The traditional closed-door partnership model was initially widely applied to network organizations as the only learned organizational routine. From the perspective of the first network theorist, they sought to understand the degree to which closed or open networks could be appropriately regarded as the normative ideal (Ahuja & Carley, 1998; Burt, 1992; Coleman, 1988; Walker et al., 1997). The development of information technology has led to the emergence of open-access networks. Their organizational structure allows anyone to participate in the network. Research shows that this way of organizing collaboration has a number of advantages (Forzati et al., 2010; Ter Wal et al., 2016; Ye & Kankanhalli, 2013). Open collaboration is particularly useful for the development of innovations because it generates a continuous innovation process by harnessing the ideas of network participants for product, process, and technological improvements. In contrast to the industrial economic system based on standardized solutions, the post-industrial service economy is driven by individualized approaches. Social scientists do not see eco-innovation as 'the solution' or 'means to an end' but rather as emerging experimental transformative processes (Loorbach et al., 2020; Sangiorgi, 2011). Open collaboration networks are organizations where not only regular network members but also those with a casual interest in the problem have an opportunity to propose new modifications to an existing solution or a replacement based on a paradigm shift (Bigliardi & Galati, 2018; Bigliardi et al., 2021; Schweisfurth et al., 2011; Torchia & Calabrò, 2019).

Conceptualization of the openness and nonhierarchical bottom-up approach as major differences between networks and institutions encouraged the emergence of networks that (1) are without guidance from a key network actor and (2) offer an open membership model. However, according to the evolutionary approach, networked structures should include the best organizational principles learned in the agrarian and industrial eras. As the networks evolved as a more complex form than institutions, the differences between the institutions and networks should not be characterized by the opposite attributes of organizational structure, i.e., as bottom-up vs top-up management approaches and open vs closed management systems. Nevertheless, this dualistic thinking

continues to fuel research in the network field, and the key challenges inherent to organizational structure transitions are defined in the literature as the shift to an open and bottom-up oriented nonhierarchical organizational structure. Such a simplistic conceptualization of the post-industrial organizational structure of collaborative networks does not work. It addresses the two-dimensional perception of reality, which creates a theoretical barrier in the development of knowledge on collaborative networks.

The nature of the service economy requires a turn to higher-order level theorization. A series of recent studies have indicated that dyadic approaches are not adequate to grasp the elements of service relationships (Cova & Salle, 2008; Ford & Håkansson, 2013; Nätti et al., 2014; Salo et al., 2009; Smith & Laage-Hellman, 1992). Rather than replacing the conventional industrial organizational structure with the opposite characteristic, we should pursue a merger of the two modes. The last research in the network field presents an innovative view in which the two mentioned opposite attributes are fundamentally interdependent and mutually enabling. This view is based on the evolutionary approach and revisits several myths about the best organizational structure of collaborative networks as a shift to characteristics that are opposite to traditional ones. According to the evolutionary approach, network structures must follow the principles of freedom with responsibility, autonomy with accountability, and openness with cohesion and coherence. A network as a more complex collaborative entity should integrate all methods of collaboration learned at the previous stages of evolution but apply them as higher-order resources.

8.4 The Collaboration Between Actors with Similar Interests Is Shifting to Multiactor Partnerships

The first insights of network theory were based on empirical research on the situation (Ammirato et al., 2021). According to the findings, connections between network nodes mostly occur among nodes with homogeneous characteristics. This property is called homophily. Homophily refers to the tendency of actors who share a specific similarity to interact more closely compared to actors that do not (McPherson et al., 2001). Later, it became clear that the first collaborative networks were designed according to the collaborative model of the industrial era, which is focused on collaboration between people or organizations with similar interests. The tendency for actors to form ties with similar others was among the most widely observed social phenomena (Ertug et al., 2022), as understanding the consequences of homophily was of great importance for management theory and practice. According to empirical and theoretical findings, a relationship between actors, based on similarity, is a key mechanism predictive of tie formation among organizations in civil society networks (Snijders & Lomi, 2019; Sommerfeldt et al., 2022). The obvious homophily effects also played a significant role in the supply processes of the industrial era. Management models have been designed according to a linear scheme, as the product-driven business model is oriented to linear supply chain logic, which describes a straight path from raw materials to production and finally to disposal. Each chain of the supply process has been managed as a separate building block, and the efforts of managers have been concentrated on the collaboration of actors with similar interests inside each chain.

Value is not created by the service provider alone in the service business. Value extends beyond value in exchange embedded in products or services delivered to a customer to include value in use, defined as a customer's outcome, purpose, or objective that is achieved through a service (Vargo & Lusch, 2004, 2008). Academic research initially explored customer engagement and engagement behaviour within the firm–customer dyad (Brodie et al., 2019). However, today, it is widely

accepted that service businesses involve a diversity of actors to address complex problems together. Moving the focus from one centred on dyadic firm–customer relationships emerged as an actor-to-actor orientation (Vargo & Lusch, 2011). An actor-to-actor orientation recognizes that regardless of their roles, all these actors—including the customer—are resource-integrating, service-providing “enterprises” (Vargo & Lusch, 2011, 2017) that engage in various contexts. The service provider cocreates value using and experiencing the service with the help of a range of network actors contributing to the process (Aarikka-Stenroos & Jaakkola, 2012; Grönroos, 2006, 2008; Nätti et al., 2014). Organizations open themselves to a variety of stakeholders, and collaboration happens in a network. Multiple types of actors beyond just customers, such as business partners, employees, local governments, NGOs, etc., participate in collaborative activities. Harnessing the strength of contributors, the network benefits and connects all parties in different and innovative ways. Consequently, multiactor partnerships have gained increasing importance during the last two decades. Therefore, suggestions on the reorganization of network management emphasize a need to move beyond homophily (Liang et al., 2016; Rhodes & Butler, 2010; Snijders & Lomi, 2019). According to the literature, homophily constitutes a limitation for actors who belong to service systems and presents an obstacle to shared understanding. The higher the level of homophily in a network, the more important it becomes to identify actors who are heterophilous and play a bridging role across groups (Ammirato et al., 2021; Di Gregorio et al., 2019; Li & Mostafavi, 2021).

Developing ideas on networks beyond homophily, a theory on two-sided networks emerged. The two-sided network (market) concept is rather novel: the first publications in the business management field on the organizational structure of two-sided networks and their effects appeared in the first decade of the twenty-first century (Eisenmann et al., 2009; Hagiu, 2006; Rochet & Tirole, 2003, 2004). In the industrial era, most networks generated a one-sided networking effect because they consisted of participants with similar interests and pursuing the same goal. To achieve a two-sided networking effect, the network must connect participants pursuing different goals. For example, a multi-sided network created for business improvement purposes may connect

farmers as producers of innovative agricultural products (side 1) and consumers (side 2). Although some interests of the farmers and the consumers differ, and when negotiating the price, they are competing, there are a number of aspects of business organization where the interests of both network sides coincide, for example, increasing the variety of distribution channels or improving the quality of the products. Well-organized two-sided networks have an advantage over one-sided networks because each participant benefits in a two-sided network from two types of effects.

Recent actor engagement research reflecting multiactor network structures emphasizes the collective nature of engagement beyond a dyadic interaction. The role of network actors' diversity is growing in the service economy because, as pointed out by Vargo and Lusch, (2016, p. 8), we should distinguish between coproduction, referring to the creation of the value proposition—essentially, design, definition, production, etc.—and value cocreation—the actions of multiple actors, often unaware of each other, that contribute to each other's well-being. Recent studies on how servitization is reconfiguring a company's or a region's business ecosystem also reveal a large-scale collaboration involving many actors with different interests (Huikkola et al., 2020; Kohtamäki et al., 2022; Zhang et al., 2021). Collaborative networks can be not only two-sided but also multisided, as a diversity of participants breeds complementarity and is more in line with the specifics of the service economy. The development of the concepts of one-sided, two-sided, and multisided networks presents new opportunities for management patterns and organizational forms of collaborative networks. The literature suggests a need to broaden the conceptual domain of customer engagement from the focal subject of customers/consumers to a general actor-to-actor perspective (). However, an emerging stream of engagement literature addressing versatile actors in networks is still fragmented and needs an interdisciplinary view. In particular, there is a lack of knowledge on how the complexity of different identity categories, inequalities, and their intersections impact diversity management practices (Dennissen et al., 2020). Recent developments in networks beyond homophily turn from the firm/customer dyad to relationships among multiple actors in service ecosystems, which are regarded from the perspective of service-dominant

(S-D) logic (Alexander et al., 2018; Chandler & Vargo, 2011; Fehrer et al., 2018; Lusch et al., 2016; Sharma et al., 2020; Vargo & Lusch, 2017).

With the growing realization that most service ecosystems consist of interactions among multiple participants, two new research challenges are emerging. First, according to post-industrialism theory, a network as a more complex organizational structure should focus on activities that bring benefits to all network participants. Influenced by the stereotypes of the industrial era researchers and managers concentrate on homophily effects and often forget that collaborative networks can generate mutual effects. Their task is to go beyond homophily and find a way to create symbiotic relationships between network participants with different and often conflicting interests. However, partnerships between actors with similar interests still dominate in collaborative practices. The names currently used in the academic literature for network effects demonstrate how deeply rooted this pattern is in mental models. It is interesting to note that the total network effect is called 'indirect', but effects that generate the same sides of a multisided network are named 'direct' effects. Collaborative networks such as ecosystems exist to create a higher level of value collectively than the members can create individually considering available resources, management skills, market access, and other constraints. A new challenge is to develop an understanding of the network as a whole and how the interactions between the network sides happen. Management of collaborative networks requires a holistic approach based on higher-order goals (Vidickienė & Gedminaitė-Raudonė, 2018, 2019; Vidickienė et al., 2021). A holistic view allows for a higher level of abstraction and makes it possible to coordinate network activities for mutual benefit to network participants. As pointed out by Vargo and Lusch (2017, p. 50), "one cannot fully understand the activity at one level without viewing it from another". Considering the higher-order goals can help us understand and predict the dynamic behaviour of business ecosystems and enhance our competence in collaborative network management.

Second, there are increasing calls for more research exploring the diversity of network relationships. The conceptualizations of network relationships based on the reality of the industrial era where the nature

of relationships was dominantly transactional implied a view that the relationship occurs between two or more pairs and should be examined as a pairwise relationship. Dyadic thinking, however, does not cover the multitude of interactions that occur among actors in service ecosystems within interrelated network structures on micro, meso-, and macrolevels. An extended view of the service ecosystem highlights the interdependent role of different participants engaged in multiple coexisting processes, indicating a many-to-many service experience (Vargo & Lusch, 2016). As the concept of business ecosystems is gradually evolving, it is becoming clear that collaborative relationships do not necessarily take place between two actors in an ecosystem, i.e., functions as interacting pairs. Business ecosystems demonstrate the richness of the interactions among their participants, and it gradually becomes obvious that a network is a set of relationships that are not decomposable to an aggregation of bilateral interactions. First, interactions can occur in groups of three or more participants and cannot be described in terms of dyads. Second, research on two-sided networks between businesses and consumers has shown that the sphere of collaboration of each network participant cannot be defined straightforwardly, as network participants may play different roles and simultaneously represent different sides of a network. For example, the same network participant may be a consumer of several products or services and represent a supplier of the resources used to produce the following goods or services. As a result, it is not always possible for the coordinators of multisided networks to unambiguously categorize their participants into certain groups (sides). Third, many interactions in ecosystems take place simultaneously (Battiston et al., 2020). Therefore, it is important to analyse not only the pairwise relationship that prevailed in the industrial era and can be characterized as a one-to-one relationship.

Recent theoretical developments have revealed that the behaviour of business ecosystems in the post-industrial economy depends at least on the following types of relationships:

- One-to-one relationship.
- One-to-many relationship.
- Many-to-one relationship.

- Many-to-many relationships.

The biggest challenge of the post-industrial era is the need to understand ‘many’. It requires higher-order thinking, especially in the management of many-to-many relationships. According to Gummesson (2004, p. 3), “to see and think many-to-many has two distinctive advantages:

1. It recognizes complexity. Networks show that everything is related, that everything influences everything. Networks are scale-free meaning that in principle their size is not limited. That can make it difficult – but it also offers opportunities and challenges. And who said marketing should be easy?
2. It offers a context. When newspapers print an interview statement out of context and make it a headline, the statement may be perceived as something else than was originally intended. In the same sense, loose statements, concepts, strategies, and models in marketing need a context.”

The insight on the need to move away from optimizing pairwise relationships towards a common goal becomes crucial for an effective collaborative network in today’s multiactor and dynamic business environment, as it has already been proven many times that optimizing the effects of a one-to-one relationship does not necessarily lead to the optimal performance of the whole organization. Considering that research regarding symbiotic relationships in multisided networks and business ecosystems is still at an early stage, a great perspective has a field of study on collaborative platforms.

8.5 Market Economy Replaced by the Platform Economy

Research on multisided networks has revealed that they function much more effectively if they are coordinated by a so-called ‘platform’ (Aarikka-Stenroos & Ritala, 2017; Eloranta & Turunen, 2016; Muzellec et al., 2015; Ritala et al., 2014; Schmidlechner et al., 2017). According to

the last research on multisided networks, platforms not only determine how actors in a multisided network interact with each other but also promote integration by creating interfaces that integrate diverse and semi-independent activities into an interacting system (Ansell & Gash, 2018; Ardolino et al., 2020). Moreover, platform managers have the task of generating synergy through the coordination of collaborative activities. They do this by promoting parallel and semiautonomous organizing, on the one hand, and aggregating or coordinating these organizing efforts, on the other.

The concept of a network platform is rapidly evolving. In the early days of platform-based network theory development, the network platform was imagined only as a technical solution enabling the low-cost exchange of data among actors through information technology capabilities. The rise of the platforms was regarded as one of the three iconic events of the 'digital revolution' (McAfee & Brynjolfsson, 2017). Computer algorithm-based services of digital platforms have been focused on the provision and use of data applied in many spheres of people's lives. Many commercial digital platforms have been set up on private initiatives. Platform owners seek to exploit the potential of data for their own benefit or, in some cases, to monetize these data by selling them to third parties (Loebbecke & Picot, 2015). Currently, public data spaces are emerging as a new form of digital platform, changing the rules of the game for organizations seeking to create data-driven innovations and shape digital transformation (European Commission, 2018). The emergence of public data spaces helps solve complex societal problems and adds an ecosystem perspective to the digital platform research field (Beverungen et al., 2022).

Initially, the post-industrial economy was called the 'information economy', as information has been recognized as a key economic resource. Hence, the research on the first-generation platforms was focused on the technological capacity of the platform for the management of information. Somewhat later, second-generation digital platforms focused on transaction management emerged. They were partly a strategic response to intense price-based competition among manufacturers of relatively similar products (Kenney & Zysman, 2016) by

increased capacity to drive business value with widespread digital technology solutions. Developers of second-generation digital platforms shifted their focus from automated information management to creating an infrastructure that helps manage transactions. Online digital platforms were widely used to facilitate the interaction and exchange of goods and services. Developing digital platforms helps increase trading profit as the platform improves transaction frequency and efficiency by reducing search costs, low replication, and verification costs. Through zero-cost replication, the platform enables application providers to quickly provide services for a large number of customers with interoperability (Xue et al., 2020).

The research on second-generation platforms complements the knowledge of the platform's technological profile by market profile. Markets and platforms have been considered the same item (Rochet & Tirole, 2003). The term 'two-/multisided market' was often used as a synonym for 'two-/multisided network'. Management theory has focused on the impact of network platforms on the minimization of transaction costs between market sides. The new insights explain how the platforms act as an intermediary between the buyer and the seller (Nocke et al., 2007) and provide a new structure to quickly and effectively match with low search costs (Julien, 2012). Later, scholars concentrated on examining the difference in pricing between multisided markets and one-sided markets (Sanchez-Cartas & Leon, 2021).

In 1999, Möller and Halinen (p. 413) predicted that "The competitive environment of firms is undergoing a fundamental change. Traditional markets are being rapidly replaced by networks". Today, the business world is witnessing the realization of this prediction as it becomes obvious that the market economy is replaced by the platform economy. Long-time common perceptions of managers on their ability to change the market were based on the popular statement of Adam Smith that the economy "is controlled by an invisible hand". Thanks to the new knowledge on how to generate two-/multiside network effects today, the economic systems are controlled by a visible hand. The emergence of purposefully created and consciously managed platform-based networks is changing the way people think about their ability to

manage business ecosystems for the beneficial coexistence of participants. First, platform-based networks fulfil the traditional functions of product markets to balance supply and demand, suggesting new ways to affect price and output. Second, platforms help to transform many organizational models developed in the industrial era. The research acknowledged the economic importance of transactional platforms in building and promoting new consumption patterns (Guaita Martínez et al., 2023; Łobejko & Bartczak, 2021; Yeganeh, 2019), transforming existing competition (Inoue & Tsujimoto, 2018), and offering new ways of coordinating sharing practices (Frenken & Schor, 2019; Sutherland & Jarrahi, 2018; Wirtz et al., 2019) according to the rules of the service economy. Together, platform-based networks (markets) are provoking reorganization of a wide variety of markets, work arrangements, and ultimately value creation and capture (Kenney & Zysman, 2016).

At the beginning of the twenty-first century, multisided platforms provide the basis for new business models that unite partners, customers, and suppliers and serve the goals of several target groups (Eisenmann et al., 2009; Hagiu & Wright, 2015; Müller et al., 2018). The use of platforms for economic purposes has become global and dominant in terms of market value. The new evolutionary stage of socioeconomic development is often named the ‘platform economy’ (Andersson Schwarz, 2017; Evans et al., 2011; Fu et al., 2021; Gössling & Michael Hall, 2019; Kiesling, 2020; Nooren et al., 2018; Saberian et al., 2020), as “the platform owners are seemingly developing power that may be even more formidable than was that of the factory owners in the early industrial revolution” (Kenney & Zysman, 2016).

Currently, third-generation platform-based networks have emerged with a broader approach to the role of platforms. It states that the network platform is important not only as a technical means of communication and data sharing or as a tool for transaction cost management. Platforms can also serve as an organizational infrastructure that influences the achievements of individual businesses and the regional business ecosystem (Aarikka-Stenroos & Ritala, 2017). The research on third-generation platform-based networks tries to enrich and extend existing theory on the platform’s competitive identity domain and emphasizes

a need to shift from the transactional product-centric model to relational service-oriented engagement (Kamalaldin et al., 2020; Reim et al., 2018; Sousa & da Silveira, 2017). Hence, recent platform research is focusing on two new types of networks that emerged in the post-industrial era—(1) collaborative and (2) innovation networks—and their platforms.

Examination of the collaborative networks gives an understanding of how the relational power of networks, with its emphasis on a mutualistic symbiosis between participants, integrates previously dispersed and even competitive entities focused on one-to-one relationships into a collective venture oriented mainly to many-to-many relationships (Agronoff, 2003; Agronoff & McGuire, 2003; Gummesson, 2004; Mandell & Harrington, 1999). As pointed out by Keast and Mandell (2013, p. 33), “All networks are focused on accomplishing tasks by working with others. However, in collaborative networks, this aspect, while important, is not the critical emphasis. Instead, collaborative networks are centered on changing the way people are accustomed to working in their individual organizations”.

Examination of innovation networks provides an understanding of innovation as a nonlinear, evolutionary, interactive learning process with a social nature (Dahesh et al., 2020). The importance of multiactor partnerships for the development of the region’s innovation system has also been demonstrated empirically by studying the influence of the triple and later the quadruple or quintuple helix model (Carayannis & Campbell, 2010). An innovation platform allows for new activities and unpredicted synergetic effects that might disturb the existing markets and transform business models and value-creation processes.

The emergent collaborative innovation network concept oriented to the ecosystem approach proved to be successful in leveraging the combined competence of heterogeneous actors for the cocreation of value in the service economy. The creation of a multisided collaborative network is particularly useful for the shift to an innovative service-driven business model, as it helps to reorganize ties between actors of the ecosystem. Several studies have already appeared in the scientific literature on the subject of servitization, claiming that the success of servitization is largely determined by close collaboration between

different partners (Desmarchelier et al., 2019; Kapoor et al., 2021; Polova & Thomas, 2020). However, in the context of servitization, platform-based networks have been little studied thus far, and many questions remain to be answered in the literature. Academic literature has thus far traditionally focused on the benefits of servitization in enhancing the competitive advantages of servitized firms (Kamal et al., 2020) rather than on strengthening their collaborative relationships with customers and other actors in the business ecosystem and generating network effects. Some new insights provide digital servitization case studies as illustrative examples of how digitalization combined with servitization significantly transforms provider–customer relationships. Researchers report that digital servitization tends to create closer provider–customer relationships characterized by cocreation logic, long-term commitment, and greater investment in the relationship (Kamalaldin et al., 2020).

The most promising direction for future research could be considered the examination of multisided network coordination strategies and mechanisms through collaboration in the triadic perspective. Past studies have analysed collaborative activities, particularly in dyads between suppliers and client firms. However, according to the last studies in this field, service relationships are more active if the intermediary exists. To better benefit from service, customers should be involved in the design, marketing, delivery, and other value-creation processes initiated and managed by the supplier. Several researchers aim to investigate collaboration patterns with a triadic view and provide new insights for understanding capability development through collaboration from the triadic perspective (Mena et al., 2013; Nätti et al., 2014; Nimmy et al., 2019). As pointed out by Choi and Wu (2009, p. 263), “a dyad shows how a node affects another node, but it is not able to address how a link may affect another link... the triad that captures the basic essence of a network and allows us to study the behavior of a network”. New research avenues are focused on examining the triad, or three-party relationship, as the unit of analysis and the most elementary building block of networks (Choi & Wu, 2009; Nätti et al., 2014; Patrucco et al., 2022). Significant progress in triadic relationship research has been achieved by examining ‘collaborative consumption’ and multisided networks. Research on collaborative consumption delineated it from

other, more traditional forms of exchange and explained why an intermediary is needed in the service business. A growing interest in studying triads emerged in the operations and supply chain management literature (Demirel et al., 2019; Ta et al., 2018; Wynstra et al., 2015; Zhang et al., 2015). Scholars also aim to explain how collective triadic relationships produce superior performance to dyadic-diffused relationships because they can capture the most benefits because of their greater bargaining power (Lanier et al., 2010; Nimmy et al., 2019).

However, the mentioned new research strands do not cover all challenges of servitization, and it is a question of future research to investigate how collaborative platforms facilitate, enable, and regulate many-to-many, one-to-many, and many-to-one relationships between multisided network participants. Therefore, the qualitative structure theory offers a totally new approach to relational diversity in the collaborative context.

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9

Case Studies of Rural Regions Servitization-Oriented Collaborative Networks Building

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Holistic empirical studies concerning the impact of external and internal factors of farming servitization are very limited in the scientific literature (Gedminaitė-Raudonė & Lankauskienė et al., 2022; Vidickienė, 2013, 2020; Vidickienė & Gedminaitė-Raudonė, 2018, 2019; Vidickienė et al., 2021). Considering rural regions' servitization as a long-term and often incremental process, there is a strong need for studies on the servitization implementation process over time. Aiming to address the observed gap, we conduct in-depth case studies demonstrating the novel evolutionary approach towards building collaborative networks that are oriented towards the servitization of rural regions. In a recent decade, a sharp increase in innovative collaborative networks, uniting a variety of services proposed by rural actors, has been spectated in Lithuania. The most interesting of them have been selected for analysis in this book, aiming to demonstrate the multifaceted nature of internal and external factors that shape their motivations and define particular collaborative structures due to reaching a particular evolutionary stage and having an impact on the servitization of rural regions.

A multiple case study approach was chosen to investigate the manifestations of farming servitization in Lithuania, as the research problem

and research questions are empirically new and still theoretically undefined. Many experts in scientific methods emphasize the appropriateness of this method when the research problem under analysis is still unexplored and original. Case studies enable an in-depth assessment of the phenomenon under study and help collect evidence for the formation of new theoretical assumptions about it (Eisenhardt, 1989). Insights from case studies can be deployed on a larger scale and extended from one local context to another. As the aim of our research is to make a theoretical contribution to the conceptualization of the organizational structure and platform models of collaborative networks that promote the servitization of farming and other rural businesses, we analysed targeted case studies, specifically selected to illustrate the different aspects of the servitization phenomenon.

Based on existing case selection strategies in scientific research, purposive sampling is normally used when the case is selected for a specific objective and not because it has some elements of the phenomenon under analysis (Curtis et al., 2000; Miles & Huberman, 1994). This study does not rely on any single case selection strategy but rather on a cluster of cases. Thus, a comprehensive assessment of the content of the rural servitization project might be performed, and ways to implement the innovative business model could be defined.

The following four strategies were selected from the sixteen most common case selection strategies recommended for researchers when using the case study approach (Patton, 1990, pp. 182–183).

1. A maximum variation strategy, where cases are chosen to be as different as possible but united by a common feature;
2. Theoretical strategy, where cases are selected that are consistent with the theoretical approach used in the study;
3. A criterion strategy, where all the cases selected meet a certain criterion;
4. Intensity strategy, where cases are selected that provide the most information.

Using this cluster of cases selection strategy, potential candidates include platforms of national and regional multistakeholder collaboration networks, which have been active in Lithuania for several years and contribute to the promotion of rural economies' servitization processes. Information about their activities was gathered from the media, and six targeted cases were selected for the case study. The following 4 stages were implemented for the selection process:

Phase 1. A criterion-based strategy, where a common attribute—the impact on rural servitization—is satisfied by pooling cases. Information was gathered on the various national or regional multisided collaborative networks operating in Lithuania, based on a platform that contributes to the servitization of rural regions. Thirty-six collaborative networks were identified that promote their activities widely in the media.

Phase 2. All 36 networks were assessed, and only those networks that have been active for at least five years (Intensity strategy to gather as much information as possible) were selected. Twenty-seven networks were selected.

Phase 3. Based on the theoretical approach, aiming to demonstrate how networks evolve by changing their qualitative structure, the national and regional multisided collaborative networks accelerating the servitization of rural economies in Lithuania were divided into six groups based on the stage of evolution of network management (from the lowest to the highest level) (Theoretical strategy). Each group is represented by at least 3 networks. Eighteen networks were selected.

Phase 4. In each of the six groups, one network with the most active and diverse activities was selected for the case study (Maximum variation strategy). Six networks were finally left to conduct the expected targeted case studies.

The following six purposive case studies demonstrate the organizational model of collaborative networks in Lithuania that help farmers to servitize their activities, demonstrating their evolutionary path:

1. The collaborative network 'CoolŪkis' promotes servitization of farming by renting unused agricultural land to city residents wishing to engage in gardening and horticulture activities in their free time.

2. The collaborative network ‘Viva Sol’ aims to create a network for farmers producing exceptional quality cheese and their consumers.
3. The collaborative network ‘Salty Winds’, which has started to organize activities independently from the regional LAG, aims to specialize in the development and coordination of the activities of farmers, artists, and craftsmen that provide services in the region.
4. The collaborative network ‘Rural Tourism’, which aims to encourage owners of rural tourism farmhouses to work closely with local farmers to offer farm products and services to their guests.
5. The ‘Milk Road’ collaborative network promotes cooperation between various projects initiated in different regions of Lithuania for developing the milk cluster, encouraging dairy farms to provide slow, ecological, and ethnographic tourism services.
6. The collaborative network ‘Natural Agriculture’, which helps innovative farmers adopt a new way of farming according to natural agricultural methods and create a supply system to consumers by the provision of services that ensures the reproductive cycle of the products produced using natural agriculture principles.

The qualitative structure method was used for this study. Each case study aimed to demonstrate the potential and instruments of management strategies of six collaborative networks that help farmers and other rural residents move from a purely agricultural product-oriented business model to a ‘product plus service’ business model with their agricultural production strategies.

Data collection. The process of data collection for the case studies was organized into three stages.

Stage 1. A systematic analysis of the information about selected collaborative networks available in the media and in the scientific and professional literature.

Stage 2. Qualitative in-depth interviews with the managers of the platforms of the selected collaborative networks enabled thorough insight into the phenomenon under investigation and answered the research questions. The case studies were carried out between June 2020 and September 2022, and the duration of the interviews was approximately 3 hours.

Stage 3. Additional consultations with managers of the collaborative networks to clarify or complement the information obtained during the interviews. This stage took place in October–November 2022.

Following the triangulation principle, collected data consist of a wide range of material: semi-structured interviews with network leaders, visits to networking events, memos and presentations of workshops, articles in the regional and national press, TV, radio, and on the website about the historical development of the network. The results of the case studies were summarized based on the main objectives of the study.

The study had 2 research tasks. First, it was important to identify the 3 main components of the collaborative network's qualitative structure at the moment of its establishment:

1. Expected effects (What were the original objectives of the networking, and to what extent were they related to territorial servitization?)
2. Network participants (What do network participants represent?)
3. Platform as infrastructure to facilitate collaboration. (What was the organizational structure of the network including the distribution of roles and responsibilities among network participants?)

The second research task was to examine the evolution of the qualitative structure of the network.

The unstructured interviews were used to analyse how, starting from the simplest type of networking, i.e., 'many-as-one', focused on creating unity among members and increasing the number of network members connected by a single goal through the Extensive growth strategy, an increasingly complex network management strategy has been applied, which has created new networking goals and required the development of a different networking model (see Chapter 10).

The study sought to determine the following:

1. Did the network use the following self-management strategies?
 - Intensification strategy, where the network platform is improved to intensify the collaboration (development of organizational instruments to mobilize the participants, changes in the institutional

and organizational structure, changes in the rules for the collaboration), based on the relations ‘One-to-many’, or the ‘platform - for network participants’.

- Specialization strategy, which is matching-focused and aims to align the interests of participants of the network, based on the relations ‘One-to-one’, or the ‘participant to participant’.
 - Diversification strategy, which is used for attracting a new group (or several groups) of participants with the potential to generate a complementarity effect to previous activities of the network and based on the relations ‘many-to-one’, or ‘participants – for the platform’, to increase the competitiveness of the platform.
 - Collaboration strategy, based on the relationship model ‘many-to-many’, seeks to find the best ways to transform old competitive relationships and, through communication and working together with new actors, create a network of networks with more relationships of mutualistic symbiosis.
 - Innovation strategy is based on the ‘one-transforms-many’ relationship model, and network participants use the network to influence the situation in society directly or indirectly.
2. What accelerated the network to shift to another self-management strategy?
 3. To what extent did the effect generated by the collaborative network contribute to the development of territorial servitization? What are the future challenges?

Summarizing the specific features of the applied research approach, this study can be described as explanatory, aiming at a comprehensive description of the data and a developed conceptualization of the phenomenon, and is based on the comparison of several cases.

9.1 A Case Study of the 'CoolŪkis' Network

Introduction of the collaborative network. The establishment of the 'CoolŪkis' network started in 2015. The network name 'CoolŪkis' integrates two English and Lithuanian words, 'cool' and 'farm'. Two friends, Ieva Česnulaitytė and Austė Černiauskaitė, initiated the creation of this network in Lithuania after their studies abroad. This idea was found by I. Česnulaitytė at the international conference in the UK, where a similar project of renting the garden for city residents in the UK was implemented very successfully. She suggested implementing a similar project in rural areas around the capital of Lithuania in the Vilnius region. Both initiators have agreed that such a project should be successful in Lithuania as well since many residents in cities do not have land where they could grow vegetables and at the same time escape from the city. At the same time, there are many areas around cities with much vacant and unused land. The owners of this land are often small farmers or elderly people who are no longer able to work in agriculture or take gardening activities. Therefore, the creation of a network has started between farmers or elderly villagers who own land and young people living in the city, young families, and other residents interested in growing vegetables. The collaborative network is based on a platform that aims to help network members make better use of available land resources by opening access to other people and employing the knowledge of gardening of elderly farmers and rural residents. Other aims of the network are to promote communication, reduce the isolation of elderly individuals, encourage young people to return closer to nature, and become acquainted with the peculiarities of growing vegetables. The network also contributes to the promotion of a healthy lifestyle and the consumption of local food.

Expected effects of the network. Different aims to become members of the network were identified by the network members at the establishment of the network. The biggest motivation for farmers and rural residents (landowners of villages, towns, and/or garden communities) was to use unused land for gardening activities again. It was important for them to receive additional income through an innovative way

of using their land, thus supporting the implementation of the servitization model of farming and territorial servitization principles. According to the rules of the network, vegetable and fruit growers leave approximately 10–15 percent of the harvest for them. Additionally, members have (1) the opportunity to communicate with new people, (2) participate in community activities and organized events, (3) ask users of their land for some services and help (e.g., to buy and bring some products from the city, etc.

Motivation for other groups of the members of the network—residents of the cities—was the opportunity to grow vegetables and fruits for their consumption, become members of communities and thus experience various social activities and organize events, spend time in nature, and escape from the city. A large part of the citizens participating in the network are young families who are interested in showing all the activities to their children, i.e., how to do gardening, how to plant and take care of vegetables and fruits, how the harvest grows, and when each vegetable is ripe.

Network participants. One side of the network is farmers and residents of rural areas renting part of their land for gardening activities. Members receive approximately 10–15 percent of all harvest from this piece of land. Another side of the network is residents of cities willing to grow vegetables and fruits in rural areas. Most often, residents of cities with no links to rural areas became members of this network aiming to establish a close relationship with the rural population and nature.

Later, after 2–3 years of development, the network CoolŪkis became a multisided network. It cooperates with (1) farmers and rural residents who have their land and allow others to use it; (2) city residents, youth, and young families who want to engage in gardening and spend more time in nature; (3) public organizations (municipalities, rural communities) responsible for the employment of residents, social inclusion, increasing the attractiveness of the residential areas, etc.); (4) various NGOs (Caritas organization, Green organization (žali.lt), supporting various initiatives promoting cooperation, responsible and sustainable consumption, promotion of local food, etc.

There are no restrictions to becoming a member of this network. Membership in the network is not formalized. Every spring, the teams

of participants from previous years are confirmed, and new teams are selected, who want to do gardening and participate in training or seminars, as well as farmers and rural residents who are ready to rent their plots suitable for gardening for the season.

All members of this network can be defined as a homogeneous group, as the effects of each side of the network lead towards more sustainable development, responsible and sustainable consumption, support of local food and short supply chains, and social networking.

Platform as infrastructure to facilitate collaboration. The legal status of the network CoolÜkis is a public organization. All members participate in the network activities, and others can join at any time. The possibility of becoming a member of the network depends on the specifics of the activity, i.e., usually depends on the start of the gardening season. Most of the activities are planned seasonally, and participation may be limited until the start of activities. For example, new teams for growing vegetables are created before the beginning of spring or at the very beginning of spring. An invitation for land providers—farmers or rural residents—is also discussed in the spring. Anyone can join any other activities regularly, such as organized seminars, training, meetings, or events.

Management of the network is mixed. Some activities have a centralized structure, while others have a decentralized structure. The owner of the platform is responsible for its management and development, organizing activities centrally.

The creation of the network started with no financial support, and all organizational activities were implemented on a voluntary basis. During the project implementation phase, more volunteers joined the project to help manage an innovative gardening project through their knowledge and skills. The economic rationale of the project participants is based on paid access to the gardening place and consulting services. Members are not paying for the maintenance work of the platform. Administrators of the initiative are searching for various models and projects that can support this social initiative and maintenance costs.

Step-by-step evolution of the qualitative structure of the collaborative network. An extensive growth strategy has been used by the network since the establishment of the network in 2015. Network

CoolŪkis is still focused on membership growth and developed further by offering and providing new services to network members in addition to what was planned at the beginning of the network. The network aims to increase both types of members to obtain a scale effect. The platform used by the network helps to increase the number of members and to organize network activities.

During the development of the project, the initiators of the network were responsible for involving many volunteers from different fields—programming, communication, design, and ecology. Programming and design specialists helped to create a website for the network, and communication specialists—communication strategy and various information materials. Specialists in the field of ecology helped to organize various trainings and seminars. Volunteers participating in the network not only used their existing knowledge to implement various activities to create this network but also learned and investigated new things themselves.

The platform used by the network offers information instruments that encourage farmers and rural residents to implement the proposed agricultural land servitization model. All information about network participants and activities is provided on the (1) network CoolŪkis website with an interactive section and on (2) social networks. Information is provided about (1) service providers as quickly as possible—a detailed and illustrative story about each member of the network who can rent their land to residents, families, young people who want gardening, presenting the owners of the land interests, experience, etc.; (2) range of services—opportunities to rent land, participate in training and seminars on various selected topics, etc.; and (3) the search for new residents who want to join an already existing team. Information about various events and organized discussions is also published. In an interactive section (blog), participants describe their collaborative experience during each season.

Various relations between members were created and used by these network members for 7 years after the establishment of the network. The dominant relation in this network between members is ‘many-as-one’, with a focus on increasing the number of participants based on the principles of the extensive growth strategy. Later, other relations emerged: ‘One-to-one’, ‘Many-to-many’, and ‘Many-to-one’.

A detailed description of each relation is provided below.

1. 'Many-to-one': 'platform – for members'. Part of the communication between the members of the network takes place through the platform, which mainly serves to receive and disseminate information, especially in preparation for the new gardening season. The managers of the platform are also engaged in organizing seminars and training, presenting the gardening experience for network members on the platform. In this case, the platform generates a bilateral network effect between the service provider—farmers and rural residents who are renting their land—and their consumers—members of the network engaged in gardening (residents of the cities, young families, etc.). This platform also acts as an intermediary that helps establish and maintain collaborative relationships with other member groups of the multifaceted network.
2. 'One-to-one': 'member to member'. This relationship is usually formed between vegetable growers who want to cooperate and start activities as one team for the vegetable-growing season. Member to member provides consulting services on gardening practices, peculiarities of growing and caring for vegetables, etc. A 'member-to-member' relationship is also established when the service provider establishes direct contact with the customer. These relations can generate effects not directly related to gardening but with requests for other social services and help for owners of the land (e.g., to buy and bring some products from the city, etc.)
3. 'Many-to-many'. This type of relationship between members is created by promoting network activities on various social networks: Facebook, Twitter, and Instagram. The most commonly used social network in Lithuania is Facebook. Discussions about the content of the platform on social networks help to add new members to this collaborative network. On the website presenting the network platform itself, a separate section has been created where project participants can describe their collaborative experience during each season (i.e., write their blog [BLOG]). A blog that shares the experience of activities and impressions of gardening is an interactive form of communication. The initiators of the project also plan to

hold more seminars and training on ecology, sustainable lifestyle, healthy nutrition, gardening, etc., topics. This would attract more new members to the network. They also plan to prepare newsletters, which would provide relevant information related to the implementation of the network activities, so that as many people as possible could become familiar with the network and could become members of the network in the future.

4. 'Many-to-one'. This type of relationship is also created by this network, as the initiators of the network involve all members in the process of developing the platform's architecture and instruments. The involvement of members in this process usually takes place by organizing events and discussions on how the content of the platform can be supplemented with new necessary instruments. In this way, it was decided to hold more seminars and training on ecology, sustainable living, and other topics. This activity helped to include new members—participants who could give lectures (e.g., ecology students from various higher education institutions, etc.

Future challenges. To what extent did the effect generated by cooperation contribute to the development of territorial servitization?

Multifaceted effects are generated by the cooperation of the network members that contribute to the development of territorial servitization: (1) economic effect—farmers/rural residents still use the land for production and income generation, and no additional investment is needed; (2) social effect—elderly people can communicate, participate in community activities and various events, also get some services; (3) environmental effect—such initiatives enable to restart the use of land, for example, abandoned land; (4) cultural effect—elderly people can participate in various events, to spread their knowledge for young people, organize various cultural activities.

The activities of the network, with a focus on the social aspect of the servitization of farming, can help to solve many problems that are relevant for rural areas today, related to the problems of land use and social issues. Using activities of the network as a good practice example, authorities can encourage the establishment of more similar initiatives in

the regions to support the use of an innovative agricultural land servitization model to address issues of abandoned land. Encouraging new similar initiatives would help solve social problems by increasing opportunities for communication and cooperation, involving young people in economic activities, and reducing the social exclusion of elderly people. Such initiatives would also contribute to promoting a healthy lifestyle and increasing the scale of local food consumption.

9.2 A Case Study of the 'Viva Sol' Network

Introduction of the collaborative network. The development of the Viva Sol organization can be described in three evolution stages—first, an association, then a network, and currently a network with subsidiary organizations (public institutions). The very beginning of the organization goes back to 2006 when the main initiator and one of the founders of the Viva Sol association Valdas Kavaliauskas and his wife moved to the village of Dargužiai in the Varėna district. The family ran a small goat farm and produced French-style goat milk cheeses for sale. The founder of Viva Sol was an experienced entrepreneur, had extensive experience in business management, and had realized the difficulties in selling exceptional quality dairy products produced in very limited amounts, so he started to bring together farmers of neighbouring farms to cooperate in producing, marketing, and selling the production. Such a business development proposal had many advantages because by cooperating, each farmer could produce the type of cheeses they wanted, and a narrow specialization not only did not reduce the number of consumers but also increased it since the collaborating cheese makers could offer cheeses of various types and tastes and to please even the most demanding consumers, intensified production, and implemented intensification strategy helped to speed up the processes of organizing direct sales (Vidickienė et al., 2021).

However, the founder of the Viva Sol association sought not only to take care of the cheese trade, i.e., to sell cheeses in local markets or shops but also to establish a connection between producers and consumers. Therefore, the initial goal of the association was to bring

together communities of producers and eaters to gain each other's trust. It is worth noting that Viva Sol was one of the very first associations uniting producers and eaters and is a good example of community-supported agriculture in Lithuania (Kniūkšta, 2015). From the early days of the organization's establishment, Viva Sol paid great attention to rural vitality by strengthening the skills of cheesemakers, popularization of cheeses, settlement of new families in the countryside, bringing together the city and the countryside, and openness of food producers and farms to consumers (Viva Sol, 2023).

Expected effects of the network. In 2006, when the association was established, the main goal was to achieve rural vitality. This was expected to be achieved by bringing together individuals and organizations and making joint efforts to increase the economic and social well-being of small farmers, artisans, and other rural residents and preserve a sustainable environment and sustainable social relations in the countryside. Additionally, Viva Sol aimed to bring rural and urban people together through local food, rural development initiatives, and learning from each other. Later, these aspects were also expressed in the statute of the organization, where the association Viva Sol declared 6 activity goals (see Table 9.1).

Table 9.1 Viva Sol association goals

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1. To bring together rural and urban living, working, and studying persons to solve rural and urban problems;
 2. To promote cooperation between rural and urban communities, strengthen the civil activity of members, strengthen their organization and ability to represent community interests;
 3. To represent and defend the interests of association members, to cooperate constructively with government and business institutions in solving community problems;
 4. To promote bonds of solidarity between urban eaters and rural producers by organizing training, events, and other activities;
 5. To provide comprehensive information and assistance to association members;
 6. To develop and maintain relations with other similar organizations in Lithuania and abroad
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Source Statute of Association Viva Sol (2009)

The goals described in the Statute are much broader and more complex than just providing collaboration between producers and consumers, and it clearly shows that even in the beginning of the activity, association Viva Sol saw the potential to outgrow the association framework and to become a multilateral network that strengthens rural areas and stakeholders of rural areas and encourages educational training and events.

Viva Sol also declared its most recent areas of activity for 2022–2023, which are (1) Promoting short food supply chains; (2) Conducting training in the fields of food production, environmental protection, and agroecology; (3) Combating climate change and assessing its impact on rural areas, applying agroecological farming practices; (4) Advocacy of the interests of small farmers; and (5) Implementation of projects on rural culture and heritage tourism services in local communities, youth involvement in community activities through culture in the countryside, environmental protection, and agroecology (Viva Sol, 2023).

Knowing the goals, it is clear that members of local rural areas geographically close to the Dargužiai who wanted to implement previously described goals formally or informally joined the organization. Cooperation between members of the Viva Sol and followers was implemented through various activities from simple and direct, such as organized cheeses markets, cheeses selling networks, education, and various community events, to more profound, such as implemented international projects. The development of the Viva Sol reveals that various cooperation forms greatly contributed to the development of territorial servitization and the developed intensification aspect within the network.

Network participants. At the end of 2022, the association had 22 members, including 3 legal entities and 19 natural persons. One-third of the members are small farmers and cheesemakers, and others are socially active people who are indifferent to the village, living in Lithuania and abroad. The Statute of association states that a member of the association is a person who has submitted a written request to become a member of the association, has paid the entrance fee, and has been accepted as a member by the decision of the board of the association or the meeting (Statute, 2009). The membership procedure is typical for the association,

and the number of members has increased twice since 2006, when there were only 11 members in the association.

Viva Sol is an open organization that does have full members, as described in the Statute, but it also has approximately 400 informal members or even so-called followers and supporters who are usually customers of the cheese producers who are members of the Viva Sol network. 400 people supporting the organization is a good result, as the goal of the network was to bring together people who support the consumption of healthy, clean, and local food. The survival and creation of small farms were encouraged by inviting city people to visit rural areas and contribute to the activities organized by cheesemakers, local activists, and educators.

Interests of network members. A bilateral network is usually found in business ecosystems, where only producers and consumers interact and multilateral cooperation networks connect not only product producers and their consumers or service providers and their customers but also aim to ensure permanent connections between all participants in the business ecosystem: product producers and their consumers, service providers and their customers, sellers of business resources and end-use goods and demand-forming marketing professionals, as well as various NGOs and social movements, political parties influencing business processes and government institutions regulating and implementing them, scientific institutions, innovators, and many more.

Networking and enabling the network means that stakeholders of the network have different interests, but they can implement their goals by collaborating with each other. Following this idea, Viva Sol emerged from the bilateral network, having a few interests, such as selling good quality cheeses, connecting cheese producers and consumers, and educating consumers and the public about good quality, clean, and fresh products. Later, the network expanded and developed into a multilateral cooperation network where different levels of cooperation and different interests exist between members and different stakeholders, such as (1) small farmers and cheese producers; (2) consumers—regular cheese buyers living in various Lithuanian regions; (3) public institutions (Baltic Environmental Forum, vocational school ‘Masters of Village’ (orig. ‘Sodžiaus meistrai’), independent art initiative ‘Spinners’ (orig.

‘Verpėjos’); (4) sellers of material resources (technical equipment and raw materials) needed for business; (5) providers of services (e.g., marketing, public relations, IT services) for the cheese-making business; (6) NGOs (rural communities, consumer associations); (7) private consultants and advisory agencies; (8) regular training participants, (9) public administration institutions (ministries, municipalities, townships) (Vidickienė et al., 2021).

The Viva Sol network emphasizes that national authorities do not directly support the activities of the network. At the stage of establishing the network, one of the network parties—farmers, and cheese producers communicated more intensively with representatives of the local government—elders, the village community, and the municipality of the district where the network was established. The main areas of cooperation were network activities that helped to increase the vitality of the rural areas, not only providing fresh local products to the market and applying the principles of a short food supply chain but also educational activities that increase the attractiveness of the rural areas, creating a different image of rural areas. Usually, Viva Sol is also presented as a successful example of rural area activity by national and local public administration institutions.

Therefore, even the stakeholders connected by the network are not a homogenous group, but they have strongly embodied similar general interests, such as bringing together people from rural and urban areas to learn from each other, to provide and to eat good quality food, to be friendly and aware about surrounding nature and limited natural resources and to respect them and to make rural areas more engaging to live and strive.

Platform as infrastructure to facilitate collaboration. The Viva Sol network is legally established as an association. Association Viva Sol was founded in 2006 in Dargužiai village in Southern Lithuania and currently has 22 formal members, of which 3 are legal entities and the rest are natural persons. New members of the association are accepted by representatives of the association Viva Sol according to the procedure approved by the association (Statute, 2009). The participation of other members (supports, consumers, students) is informal, voluntary, and without any obligations.

Not only the members of the association but also other members of the network who do not have a formal status participate in the activities of the network. The number of regular cheese eaters is approximately 400 people from all over Lithuania. Other previously discussed groups are also actively involved in the activities of the network, especially educational organizations, individual consultants, and visitors of education activities. Visitors are invited to educational activities and tastings in cooperation with rural communities and consumer associations. Therefore, the network can be described as an open type of organization (Gedminaitė-Raudonė & Simonaitytė, 2021).

Operating as an association, it was difficult to organize profit-seeking activities of the network, so in 2008, the association founded the public organization Cheesemaker's House, whose name as a brand belongs to the association. The established public organization carries out various activities and holds a few other legal entities. 'Cheesemaker's House' provides public catering and cheese sales in Dargužiai, the cheese trade cooperative 'Our Cheeses' unites cheese makers, and the cheese-making school 'Everything to Cheeses' supplies sourdough and equipment to small cheesemakers (Viva Sol, 2023). Therefore, the association Viva Sol outgrew itself, and to fulfil its needs, a network of various legal and natural entities was created providing different products and services to the members of the network.

The association's activities are financed by members' contributions, income from events (training, study visits), organization of trade of farmers' products, international and national project grants, residents' income tax support, and individual charity (Statute, 2009).

The management of the network is mixed, as the network unites very different members, and their involvement in the organization differs as well. Certain activities, including those of an association-type organization, use a centralized management structure, while others use a fragmented or decentralized management structure.

The management of the association takes place based on the typical structure of the association established following the law, and therefore, one member has one vote at the general meeting of members, which elects a five-member board, and its members elect the chairperson of the

board. The director is appointed from among the members of the association, and the director performs permanent functions. Bookkeeping services are outsourced, and the auditor is elected from the members of the association for three years (Statute, 2009).

The management bodies of the association took over the joint role of a coordinator of the collaboration platform of all network members and are responsible for managing and improving the network's activities by organizing activities jointly. The directions of the association's activities are determined during the annual general meeting of members. The direction of activities is often continuous, but the network takes into account recent national and international trends, the competence and motivation of the members, and their eagerness and responsibilities for working towards one or another direction. Therefore, new directions for the network's activities are also included (Viva Sol, 2023).

A decentralized management model also takes place in the network. As the number of users and service providers grew, they began to organize themselves into separate groups and cooperate with the association according to a decentralized management model, independently organizing the execution and delivery of orders and deciding on participation in educational sessions, seminars, training, or discussions. For example, one group founded the cooperative 'Our Cheeses' and united the families of four small cheesemakers and farmers. Cheesemakers produce dairy products and grow vegetables and sell them in the 'Cheesemaker's house', which was established by the association Viva Sol. 'Cheesemaker's House' also organizes many activities independently, but many activities of these groups are also initiated and organized by associations.

For a long time, the main information tools used by the network members were nondigital, face-to-face meetings, discussions, seminars, and training, which took place regularly. Due to the COVID-19 pandemic, direct communication decreased greatly, and the role of the network website 'vivasol.lt' increased to a great extent, as the page provides detailed information about the network, participants, planned activities, and events. Currently, the network's page is used more actively than ever before to spread information about the network's activities. Information about initiatives organized by the network is also published on other web pages, as well as on social networks such as Facebook and

Instagram. Social media channels are mostly used to spread information, reach out to new possible members and consumers, and discuss relevant ideas and good practices (Gedminaitė-Raudonė & Simonaitytė, 2021). In addition, social networks at the present time help to provide information about the range of services and products, new service providers, or new initiatives, ideas, or proposals of existing service providers, which allows for increasing trade.

Step-by-step evolution of the qualitative structure of the collaborative network. The success of the Viva Sol network is based on the ability of the association and its founders to act as a platform for cooperation to move from the advantages of a simpler strategy of self-regulation to the implementation of a more complex strategy. Therefore, the most important aspect of such infrastructure is the platform's tools that facilitate the cooperation processes between the network members. The purpose of the Viva Sol platform is multifaceted, and the next part of the case study reveals how and what strategies (from simple to the most complex) were applied.

The extensive growth strategy was the most relevant at the very beginning of the association creation when the founder sought new members, and this strategy was implemented successfully as the number of formal members increased twice. Generally, when a platform works as one, the number of network participants connected by a single goal is essentially increased. It might be stated that the strategy many-as-one was also relevant in the later stages of the network when the organization was in search of new consumers and tried to expand its production capacity. At the stage of its establishment, the main goal of the Viva Sol network platform was to ensure the sale of produced products and to maintain the selected narrow specialization, which intensified production; therefore, the tools used by the platform were oriented towards this. The business model chosen by the members of the network was based on the servitization of farming, enabling them to intensify the production of dairy products and services that are more profitable compared to dairy production only, and moreover, cooperation is a good tool for implementing the goal of intensification strategy—to speed up the processes of organizing direct sales.

The platform to members type of connection is actively developed in the Viva Sol association's network using the website 'vivasol.lt', which acts as an intermediary between cheese-making and educational service providers and the end users of these services, generating a bilateral network effect. This type of relationship enables an **intensification strategy** to intensify the collaboration, and the platform is improved. The platform is focused on the provision of marketing services and allows users to obtain information about cheese production, contact the service providers, and order other services.

Part of the communication between the members of the network takes place through the platform, mainly obtaining and disseminating information, ordering products, ordering individual baskets of cheeses, and organizing seminars and training. In this case, the platform generates a bilateral network effect between various service providers and their customer groups (between farmers and regular buyers of cheese, between training organizers and visitors of continuing education). The network platform also acts as an intermediary that helps establish and maintain collaborative relationships between other member groups of the multilateral network. This collaboration type is employed to the greatest extent, even though other types of relationships also take place in the development of the Viva Sol network platform. The Viva Sol platform helps small farmers, cheesemakers, and other members who want to sell products and servitize their businesses to find each other. The main organizational instrument at the stage of establishing the network was the cheese ordering system created by farmers. The network has developed and implemented a cheese ordering system adapted to the needs of its members, forming an individual basket of cheese and organizing their collection at several locations in Lithuania.

The platform pays a lot of attention to the support of the chosen intensification strategy and when there was a need to deepen the knowledge of certain issues in the field of cheese production, new members were sought to cooperate with. In this way, during the development stage of the network, new members who can provide long-term training services joined the activities of the Viva Sol network, and therefore, the cooperation started in organizing various activities, such as:

- educations on cheese-making, natural fermentation, and cider production;
- special training on cheese-making at craft summer camps;
- cheese tasting events;
- a sightseeing tour of Dargužiai;
- preparation of project applications;
- educational visits to villages with catering services;
- joint purchase of raw materials (e.g., sourdough) for cheese production;
- voluntary work on the farm (e.g., goat herding).

‘Member-to-member’ types of relationships in this network are diverse, depending on the specific situation and needs of each member. Therefore, in the next stage of network development, the **specialization strategy** was employed; after gaining cooperation experience, a group of participants focused on special interests separated from a large network, and individual cooperation of network participants was encouraged. As a result of this strategy, the public institution ‘Cheesemaker’s House’, the cheese production cooperative ‘Our Cheeses’, and cheese-making school ‘Everything for Cheeses’ were established. This relationship can be formed between members of different and the same type; for example, cheesemakers produce cheese individually but cooperate in organizing the logistics of delivering the cheese to consumers, employing marketing strategies, participating in markets or fairs, and going to events. ‘Member-to-member’ may provide consulting services on cheese-making practices, technologies, features of purchasing raw materials for cheese production, etc. A member-to-member relationship can also be established when the service provider establishes long-term contacts with a customer, to whom he later produces cheeses according to his individual orders.

The ‘many-to-one’ connection type is also a characteristic of the Viva Sol network, as the founders of the network involve all members in the process of improving and increasing the amount of information and organizational tools of the network platform. The involvement of members in this process usually takes place during organized educational sessions, discussions on selected topics and events, and discussions

on how the activities of the network can be supplemented with new necessary tools. Therefore, it was decided to organize more seminars and training on ecology, sustainable lifestyle, and other topics, so it is clear that a **diversification strategy** is implemented as well, as participants with diverse interests are included.

A diversification strategy is enabled by establishing permanent close relations with customers. The members of the network offered more services: various events in the rural environment, members of the platform started to organize lectures and discussions, as well as the sale of their products in various markets and meetings with consumers in the urban environment during various tastings. By doing so, consumers and other supporters of the network started to be invited to thematic seminars and other educational activities. In this way, the platform helps narrowly specialized farmers who intensified their production and services to create a group of people interested in their products and services. After gaining the trust of regular customers, it became possible to sell not individual goods but to offer to buy a basket of goods formed by cheesemakers. Although the customer cannot choose and does not know exactly what will be in the cheeses basket he ordered, usually, the customer trusts that the producer will put the freshest, best, and tastiest product because it is about solidarity and honesty (Vaičkutė, 2020).

Events also serve as instruments for consumers to contribute to the network's contribution to improving the quality of performance of products and services offered by farmers and other network members. Consumers' knowledge is used as a resource for business improvement, providing many ideas on how to improve network members' products and services in the future.

'Many-to-many' types of relationships between members are created by promoting the platform on various social networks: Facebook, Instagram, and YouTube. At this stage, the **collaboration strategy** was implemented as connections were made with other networks to cover a larger area, sell more productions, and deliver more services. The most commonly used network is Facebook, where information about the content of the platform, events, tastings, educational sessions, and activities are published. Using social networks also helps to attract and

include new members in this collaborative network. Cheese eaters generally share their experiences about good quality dairy products, made locally and with guaranteed quality by the farmers who sell the products (by themselves). Information is also being spread about the possibility of direct communication with the farmer who produces these products, thus strengthening the relationship and mutual trust.

At this stage, the platform initiates cooperation projects for individual business groups on a specific topic, which generates a one-sided networking effect; for example, the cooperation of cheese producers is encouraged not in production but by organizing the delivery of dairy products, joint logistics and participation in markets, fairs and/or education events. Recently, Viva Sol has started to participate in international projects implemented under the NORDPLUS Adult, ERASMUS+, and HORIZON 2020 programmes. Participation provides great cocreation and networking possibilities and helps to overcome current issues in more sophisticated and up-to-date ways.

The Viva Sol platform is focused on the following three cooperation effects. First, as a result of intensified activities, better quality cheeses are produced, which farmers sell at an ever-increasing price (the platform offers farmers and consumers—cheese eaters—access to the knowledge-rich services of consultants invited by other network members or association leaders, participating in regularly organized training, seminars, discussions), and cooperation allows consumers to offer a wide range of products whose quality substantially increases over time. Second, resource savings are taking place due to cooperation in obtaining the scale effect characteristic of an extensive growth strategy (farmers cooperate on joint transport, publicity, educational events, joint use of premises, etc.). Third, due to the use of various tools characteristic of the intensification strategy, the productivity of network members' activities increases—the platform offers its network's members to share work, implement joint projects, and use each other's services.

To what extent did the effect generated by cooperation contribute to the development of territorial servitization? The Viva Sol association implemented various forms of collaboration that led to the servitization of business and to the implementation of an intensification strategy within the network. This can be analysed in a few stages by the

development of Viva Sol: (1) collaboration to strengthen links between members of the association; (2) collaboration to get to know specialized knowledge for direct consumers of Viva Sol association production; and (3) collaboration to change the values of outside members such as followers, supporters, and consumers.

First, collaboration is needed to strengthen links between members of the association. At first, the founder of Viva Sol realized the difficulties in selling exceptional quality dairy products produced in very limited amounts, and he started to bring together farmers from neighbouring farms to cooperate in producing, marketing, and selling the production. Such a business development proposal had many advantages because by cooperating, each farmer could produce the type of cheeses they wanted, and a narrow specialization not only did not reduce the number of consumers but also expanded their abilities since the cooperating group of farmers could intensify their production and offer cheeses of various types and tastes and please even the most demanding consumers. Even at the beginning, the network did not provide services straight away, and the members of the network understood the importance of trust and direct contact, which can be strengthened by providing services as well.

Second, collaboration to get to know specialized knowledge for direct consumers of Viva Sol association production. At first, the association set out to organize its own Cheese Market in a cafe in the capital and to open a 'Cheesemakers House' in the village of Dargužiai. Later, the association began to provide the services that regular cheese eaters wanted, and a system for the production and delivery of cheese baskets was introduced. This way of selling made it possible to establish close, continuous cooperative relationships between farmers and consumers of their products. Seeing the tangible effect, the farmers began to actively strengthen the ties of cooperation between rural and urban residents, offering their customers not only fresh, clean, and exceptional quality dairy products but also many educational services. The focus on servitization greatly expanded the initial goals of the collaboration.

Third, collaboration to change the values of outside members—followers, supporters, and consumers. By implementing various projects and educational activities for their consumers, later, the network of Viva Sol decided to expand its services and organize many more events for the

public. The association aims to bring rural and urban people together through local food, rural development initiatives, and learning from each other. Rural people are encouraged to visit the city, get to know the city life and the activities of the city dwellers, and understand what people who live away from nature think about. In this way, a closer relationship between the countryside and the city is developed. Various means are used to achieve the goal: various events are organized in a rural environment, lectures and discussions are held, and farmers meet with eaters in an urban environment by organizing various tastings, thematic seminars, and selling their products in local food markets.

In recent years, the topic of the network's activity has been significantly developed, focusing on the support of the vitality of rural regions, which can turn the Viva Sol network platform into a significant management instrument of the regional business ecosystem, which not only demonstrates an attractive example of the servitization of farming but also manifests a good example of bottom-up rural development initiatives that are increasingly supported by Lithuanian authorities in developing Lithuanian rural areas as well.

The case study of Viva Sol revealed that the founders of each platform must find a solution that the agreed rules support cooperation and make actions more coordinated, rather than locking them into certain frameworks that may hinder the development of cooperative initiatives in the future. The effectiveness of the Viva Sol network also depends on how many of the opportunities for generating network effects revealed by the theory of network activity will be consciously and purposefully used when creating a platform for a more specific network.

9.3 A Case Study of the 'Salty Winds' Network

Introduction of the collaborative network. The 'Salty Winds' network supports the servitization of farming by offering tourism and educational services to consumers. The establishment of the Salty Winds network was initiated by the members of the Local Action Group (LAG) of the Druskininkai region in 2015. The activities and initiatives of

LAG of Druskininkai have played an important role in the development of the Druskininkai region since 2009. Members of this LAG were aiming to strengthen the community and the local economy in the territory of the Druskininkai region and provide an opportunity for residents to contribute to the development of the Druskininkai region. During various events and meetings, day-to-day activities they encouraged residents to inform about existing problems and search together for solutions. This community became very strong with many creative ideas and solutions on how to make a change in the region, as this was a remote region in Lithuania but very rich in beautiful nature and known as the place with many SPA resources.

The main aim of the network is to create opportunities for residents, farmers, artists, and rural communities of the Druskininkai region to promote their services and sell their products, thereby strengthening their activities and their ideas. The network also aims to spread the local culture and craftsmanship.

The long experience of close collaboration with local people and a strong focus on the development of local activities and services in tourism and culture led to the establishment of the network Salty Winds in 2015. The network specializes in developing and coordinating the activities of regional farmers, artists, and craftsmen who provide services for consumers. The network also contributes to the sustainable regional development of the Druskininkai region and the consumption of local food.

Expected effects of the network. Activities devoted to the implementation of the LAG strategy have helped to find many creative people in the region. Local people had much experience in arts and traditional crafts and had a basket of services in their farms or living places but no experience in how to sell it and/or advertise it in the market and for a good price. They thought that this knowledge could be used and could provide a good income for local people. At the same time, the flow of tourists to the Druskininkai region has increased significantly. They were searching for various activities and educational programmes.

Different aims to become members of the network were identified by the network members at the establishment of the network.

The most important aim to become a member of this network was a large number of services provided by the network that are needed for each person or entity of the region for their business activity as marketing activities, a platform for service provision, communication tools, customer searching engines, etc. Network Salty Winds had these tools in place, as they defined their activity as organizers of educational programmes and routes with many years of experience in collaboration with artists, craftsmen, and farmers in the Druskininkai region that are providing services to consumers.

Network offers educational programmes, entertainment, and events, organize training and conferences, provide other services, and promote local products. The strength of this network is that it can create and adapt services according to the needs of consumers depending on their age (activities for children and adults), type, and size (companies, families, individual visitors).

Additionally, members have (1) the opportunity to communicate and cooperate with new and old members in service provisions, (2) participate in community activities and organized events, and (3) initiate the creation of new tools that are needed for the network.

Network participants. In 2022, the network had more than 25 different members as actors and legal entities from the rural area of the Druskininkai region, thus involving over 110 residents of Druskininkai in network activities. To offer the most diverse services to tourists and residents, the network also cooperates with companies providing tourism services, Spa centres, and other organizations operating in the Druskininkai region.

The interests of the members are mainly focused on the income from service provision to the consumers using a specialization strategy in this network. Members of the network collaborate, as consumers can choose to visit more than one place, and members can provide several activities for the same group of tourists and visitors.

The legal status of the network Salty Winds is a public organization. All members participate in the network activities, and others can join at any time. There are some restrictions to becoming a member of this network: members need to be from the Druskininkai region, and they

need to have a profession, knowledge, or experience of tourism or educational services that can be used for the creation of new activities and later to be promoted by the network. Membership in the network is formalized. Members dedicate approximately 15 percent of their profit to the network.

All members of this network can be defined as a homogeneous group, as the effects of each side of the network lead towards more sustainable development, responsible and sustainable consumption, support of local food and short supply chains, and social networking.

Platform as infrastructure to facilitate collaboration. Services created by the members of this collaborative network are promoted on a platform ([‘surusvejai.lt’](http://surusvejai.lt)) that aims to help members of the network make better use of available services by opening up access to consumers and employing the knowledge of local farmers, artists, craftsmen, and rural residents. Network Salty Winds also act as a label of quality. They explain why the quality of services is important and educate how to create services based on ideas of sustainability. The network is still focused on membership growth and is developed further by offering and providing new services to consumers aiming to increase the number of services for consumers (tourists) coming to visit the Druskininkai region.

Step-by-step evolution of the qualitative structure of the collaborative network. An extensive growth strategy was used by the Druskininkai LAG since 2009 before the establishment of the network Salty Winds in 2015. When members of the LAG understood that there is a huge need for unique tourism services in the region and that many creative people live in the region, discussions started on how to gather all potential service providers together. Therefore, they invited farmers, artists, craftsmen, and rural residents to shape their knowledge in the creation of a service. They were focused on enlarging the number of members to have a variety of services that can be provided to consumers.

In the 2023 network, Salty Winds is still focusing on membership growth. On the one hand, they encourage more local people to join this network with their services. Additionally, the network aims to increase consumers’ side—to have more people who are using their services. Two types of consumers are using the services of the network—groups and

individuals coming from Lithuania and abroad. The network is experiencing two main challenges: service providers want to internationalize their service so that individuals from different countries can come and understand the content of the service with no translation. Additionally, they want to have a digital tool for booking that would enable different groups and individuals to take part in one programme at the same date and time.

Intensification of network platform services. The intensification strategy started in 2014–2015 when Druskininkai LAG had a sufficient number of members ready to provide tourism services in the market, but they needed to have a platform where consumers could find information about services.

The platform used by the network offers information instruments that encourage farmers, artists, craftsmen, and rural residents to implement a tourism servitization model. All information about services and activities by the network and its members is provided on the (1) network Salty Winds website with an interactive section and on (2) social networks. The main platform of the network is the website 'surusvejai.lt', where information about all educational programmes, entertainment, and events are provided with the possibility to book these services or send a request to the network to organize individual programmes according to the needs of the consumers. The platform is based on the specialization strategy in which members specialize in their services but cooperate by creating a set of combined services according to the needs of consumers. Information is provided about service providers as quickly as possible—a detailed and illustrative story about service, experience, payments, etc.

Many programmes are available: (1) Lithuanian traditions and food; (2) Salty Lesson; (3) Orientation programme Magical Druskininkai: (Not) Lost; (4) The theatrical tour 'Mineral Town' in Druskininkai and many others.

The network is helping in the creation of programmes and services based on the needs of consumers—tourists and visitors—and on the knowledge and experience that members of the network gained in their life experience. This makes this network very unique, in close cooperation with both sides of the network—the consumer side and the producer (service provider) side.

Management of the network is centralized. The owner of the platform is responsible for its management and development, organizing activities centrally. The network has enough resources from input from members to cover their annual expenses. Members of the network dedicate 15 percent of the profit to the network. Members are not paying for the maintenance work of the platform. In the beginning, the network received a small number of public funds (approx. EUR 500) for maintenance work of the platform.

Narrowing the objectives of the network. A specialization strategy was applied in 2015 when the LAG of Druskininkai had enough members and a platform for information about services. In 2015, they specialized and established a network of Salty Winds that was responsible for the coordination and administration of this work. The network became moderator and coordinator. Members of the LAG understand that it is better to create a separate network that will specialize in providing services on tourism and educational activities. This specialization strategy supports the activity of Druskininkai municipality, as Druskininkai is famous as an attractive resort in Lithuania that provides many tourism activities and has good infrastructure for it. The LAG of Druskininkai continued implementation of the LAG strategy for the Druskininkai region and other activities supported for implementation of it.

Three types of relations between members are used by this network for 8 years after the establishment of the network. The dominant relation in this network between members is 'One to one' with a focus on increasing the effects of being members of this platform based on the principles of the specialization strategy. Members of the network have their specialization strategy for their activities and services, but in the network, they interact with other members aiming to obtain higher effects using the platform and other tools provided by the network. Later, other relations emerged: 'One-to-many', 'One-to-one', and 'Many-to-many'.

A detailed description of each relation is provided below.

1. 'One-to-one': member to member. This relationship is usually formed between members of the network. Rich experiences of cooperation between members in the LAG of Druskininkai have led to

the creation of a network with a special interest-oriented group of participants that have separated from the large network. In this way, the individual cooperation of network participants was encouraged. Member to member in this network, Salty Winds collaborate when consumers (tourists, families, groups of people, etc.) are willing to obtain more tourism and educational services. Members can collaborate on logistics, the creation of common programmes, educational programmes, food services, etc.

2. 'One-to-many': platform—for members. The platform is the main communication and marketing tool of the members of the network to provide information about their services, the possibility to purchase them or contact the network for the creation of a new package of services based on the needs of consumers. Part of the communication between the members of the network takes place through the platform, which mainly serves to receive and disseminate information. In this case, the platform generates a bilateral network effect between the service provider—farmers, artists, craftsmen, and rural residents who are providing services, and their consumers—who are willing to purchase these services.
3. 'Many-to-many'. This type of relationship between members is created by promoting network activities on various social networks: Facebook, Twitter, and Instagram. The most commonly used social network in Lithuania is Facebook. Discussions about activities, events, and new services of the platform on social networks help to attract new consumers to this collaborative network.

Future challenges. To what extent did the effect generated by cooperation contribute to the development of territorial servitization?

Multifaceted effects are generated by the cooperation of the network members that contribute to the development of territorial servitization: (1) economic effect—farmers, artists, craftsmen, and rural residents support the local economy and income generation, and no additional investment is needed; (2) social effect—rural residents can communicate, participate in community activities and various events, and receive some services; (3) cultural effect—rural residents are helping to preserve old traditions, learn about the young generation, increase their ability to

participate in various events, spread their knowledge to young people, and organize various cultural activities.

The activities of the network help to support the development strategy by the Druskininkai municipality focus on the use of local resources, sustainable development of the region, and promotion of cultural tourism activities in the Druskininkai region (Strategic Development Plan of Druskininkai, 2021). Using activities of the network as a good practice example, authorities from other regions can encourage the establishment of more similar initiatives in the regions to support the use of an innovative tourism servitization model to address issues of the local economy by using local resources. Encouraging new similar initiatives would help solve social problems by increasing opportunities for communication and cooperation, involving young people in economic activities, and reducing the social exclusion of elderly people (especially those who are still keeping local traditions, local crafts, etc.). Such initiatives would also contribute to increasing the scale of local food consumption.

9.4 A Case Study of the 'Rural Tourism' Network

Introduction of Rural Tourism Network. The establishment of the Rural Tourism network was initiated by farmers and other rural residents who, by visiting rural tourism businesses in other countries, started to set up homesteads offering such services to tourists in Lithuania. The first rural tourism homestead in Lithuania was established in 1994 in the Šiauliai district. Three years after the first rural tourism homestead was established, in 1997, the owners of rural tourism homesteads formalized their network links by establishing the Lithuanian Rural Tourism Association. The network's founders thought that cooperation would make it easier to overcome the challenges of the new activity, as many rural tourism owners at this time were combining their activities with farming.

Network participants. The Rural Tourism Network was set up as a one-sided, homogeneous network of small, rural family businesses, representing the interests of entrepreneurs involved in rural tourism services. Since its foundation, the network has operated as an open organization,

seeking to attract as many members as possible. The main condition for becoming a member of the association was the implementation of a rural tourism business. Membership was easy to achieve, just by signing the membership application form and paying the joining fee.

The rural tourism business was primarily set up by rural people, some of whom were farmers with available rooms that could be adapted for accommodation and who wished to provide rural tourism services in addition to their existing professional activities. The second group was urban dwellers who, having regained small plots of land and buildings through restitution after independence, did not want to farm and were looking for other alternative uses for their property. Some of them planned to move to the countryside, while others wanted to combine their rural activities with their professional activities in the city. Rural tourism services have also become an excellent alternative to agricultural businesses for farmers who want to diversify their activities and implement a service-driven business model.

Expected effects. The starting objectives of the rural tourism network were closely linked to territorial servitization. In the second half of the twentieth century, the rural economy was dominated by agriculture, while the services were mainly linked to the activities of public sector institutions (schools, health services, libraries). The modernization of farms in Lithuania following the agricultural reform led to a decline in agricultural employment and a lack of income-generating economic activities for rural populations. Farmers and other rural residents started to set up rural tourism businesses to create additional sources of income. The Rural Tourism Network aimed to create favourable conditions for the development of rural tourism services.

The owners of rural tourism homesteads were motivated to join the cooperation network by the difficulties they faced when starting their business. There was neither a legal framework nor business experience in this activity. Customers who lived in areas remote from the homesteads, mostly in towns, were sceptical of new, untried services, and traditional marketing tools were too expensive for the business. Many of the first rural tourism entrepreneurs lacked economic and marketing knowledge. The addition of tourism services to farming required different knowledge

and business contacts than those needed to produce and market agricultural products. In addition, as already mentioned, working together made it possible to represent the interests of rural tourism entrepreneurs to the authorities and to introduce new services to customers.

Platform as infrastructure to facilitate collaboration. The institutional structure of the collaboration platform was chosen to be a legal entity—a nationwide association, a nonprofit organization focused on member representation. This allowed defining of the rights and obligations of the network members and empowered the governing bodies of the association to act on behalf of the members, to carry out certain economic activities that benefit the members and to implement various projects. The association's Statutes provide that the governing bodies of the association are the General Assembly, the Association Council, which elects the Chairperson, and the President (Statute, 2015). The president organizes the day-to-day activities of the association and has the power to represent the association before the authorities. The association has paid staff to ensure the implementation of the organization's activities.

The institutional structure of the association chosen for the network platform was more convenient than other legal alternatives suitable for cooperation activities, such as public bodies or cooperatives, and more in line with the needs of rural tourism entrepreneurs. The procedures for setting up the association are straightforward, and it can operate voluntarily without hired staff. This has enabled a small organization to start small and then grow and transform rapidly according to needs. The association's operational documents divide rights and responsibilities between the association's governing bodies and members and define the decision-making process and how the association acts on its behalf.

At the beginning of its operation, the organizational structure of the network can be described as centralized in terms of the degree of centralization. In a small organization, there was no need for a regional structure, and the general assembly could be convened by all members. The association currently has regional branches, which are registered by a decision of the Council if the branch has at least 7 members. The autonomy of the regional chapters is limited, as they are not legal entities, but they can, on their initiative, organize cooperation activities at the local level, if necessary, in accordance with the mandate given to

them in the statutes of the organization. The association is financed by its members through membership and annual fees. The annual fees are a prerequisite for the continuity of membership, as members who fail to pay the fees are expelled from the association. The annual fee is differentiated according to two components: the number of places available and the quality of the services provided by the farmhouse. The association is also able to attract external funding for its activities through participation in international and national programmes.

Step-by-step evolution of the qualitative structure of the collaborative network. The success of the rural tourism network was due to the ability of the association, which acted as a platform for cooperation, to move from the advantages of a simpler strategy of self-regulation to the implementation of a more complex strategy.

Extensive growth strategy—increasing the number of network members connected by a single goal. During the network's formative phase, a strategy of increasing the number of members was applied to build up the power to implement decisions that are important to the network members. The network's relationships followed a many-as-one model. The creation of the network was motivated by two objectives that were relevant to all members at the time: overregulation of rural tourism and lack of resources to start a business. The rural tourism business has been subject to regulation by large businesses and has faced high compliance costs and administrative burdens. Rural tourism is inherently a small business, as the services are provided in a low-density area using natural recreational resources. The network members have sought to adapt regulation to small business opportunities. From an economic point of view, the members of the network were also united by the fact that investment was necessary for the development of their business. Most of the rural tourism businesses were set up in rooms suitable for tourist accommodation or urban holiday homes. The start-up of these businesses required investment to better adapt existing premises to accommodation or to construct and equip new buildings. Farmers and villagers wishing to engage in this business were faced with the problem of lack of funds and the banks' cautious approach to lending, which also hampered the development of service.

The association has developed a *common agenda* and has begun to represent its members before the authorities, participate actively in various working groups and propose the best solutions to support the rural tourism industry. This has led to more owners of rural tourism farmhouses joining the association, and the number of members has increased rapidly. In turn, the increased number of members made it possible to reduce membership fees and make the association's services cheaper, which made participation in the association economically attractive.

The association was able to attract EU funding for rural development to achieve the economic objectives of its members. EU CAP support reached the countryside when Lithuania started the EU accession procedure. EU institutions linked the provision of rural tourism services to the diversification of farmers' activities and the increase in farm income. Investment support for the establishment and development of rural tourism businesses was made available to Lithuanian farmers and villagers. The association focused on negotiating with the Ministry of Agriculture, which distributes EU support, on the level and conditions of support, to express the interests of its members. These efforts have contributed to the implementation of investment industries for rural tourism businesses in Lithuania's rural development programmes (Sapard 2002–2004, RDP 2004–2006 and RDP 2007–2013) between 2002 and 2007. This has led to a substantial increase in the number of rural tourism businesses while at the same time increasing the number of members of the association. The Rural Tourism Association has been active in providing advice to those wishing to receive support. Membership has increased 24-fold: as of 2019, the association had 406 members, 80 percent of whom were farmers.

The number of rural tourism farms in Lithuania grew rapidly after attracting investment support for the establishment and development of agritourism farmsteads, and many of them continued to participate in cooperation network activities. The number of agritourism farmsteads in Lithuania has grown rapidly in recent years. In 2001, 203 homesteads were registered in the Register of Tourism Services and Resources, and later, this number increased: 288 in 2002, 355 in 2003, and 450 in 2004. Since then, the number of rural tourism farmsteads has stabilized and

fluctuated between 500 and 600. A major expansion of the sector took place in 2021 when some of the population started to work remotely due to the COVID pandemic and wanted to move to rural tourism farms. In 2021, there were 1064 agritourism farmhouses in Lithuania.

Recently, the association has been encouraging the growth of the network's membership by promoting rural tourism activities among young people. To achieve this goal, the association has implemented an e-communication project called 'Opportunities for young people to develop their business in the countryside'. The project produced video clips that presented good examples of the implementation of measures supported by the Rural Development Assistance (RDA) in the rural tourism business, promoting this business among young people.

Intensification strategy—to intensify collaboration, the platform is being improved: institutional and organizational structure, and rules governing collaboration. As restrictions on the development of rural tourism businesses have been resolved and the supply of rural tourism services has increased, the interest of network members to actively participate in the network has decreased. Homestead owners began to look at other members of the network as competitors and were no longer willing to share their experiences. The cooperation strategy that had been implemented was no longer relevant for the network members. The association, as a cooperation platform, had to adapt to the needs of the new members of the network and offer a new cooperation strategy. The new strategy was implemented by mobilizing the participants and providing more services to its members. As the number of homesteads and the range of services grew, entrepreneurs faced the problem of attracting customers. With low attendance, seasonality, and a low variety of services, the business was not getting the return on investment it needed. Many of the first rural tourism providers lacked economic and marketing knowledge. Farmers also complained about this, as complementing farming with tourism services required different knowledge and business contacts than producing and marketing agricultural products.

The association started to organize various seminars and training programmes to increase the productivity of the activity and improve the quality of rural tourism services. For example, the association has

implemented the E-KITOUR project to improve e-marketing competencies in the rural tourism sector. The project developed training modules and a practical guide for the implementation of e-marketing measures in small and medium-sized enterprises involved in rural tourism. The project “Competence development through staff training” provided training focused on improving business management and efficiency and enhancing the professional competencies of staff. The STORIE project, funded by the ‘Erasmus+ programme’, has developed an international learning programme that is freely available online. The project aims to improve the competitiveness and competence of small rural companies in the field of tourism product development and marketing by developing their skills and capacity to develop and promote sustainable tourism products based on intangible cultural heritage through the development of a learning programme.

The association has developed information tools to market its members’ services better and more cost-effectively. In the initial phase, a database of farmhouses available for holidays and accommodation was created. It was made publicly available to customers on the website ‘[ato stogskaime.lt](http://atostogskaime.lt)’. The creation of this website provided the network platform with tools to automate business processes, allowing it to provide information to the owners of rural tourism homestays on customer bookings promptly and to make it easy for tourists to book rural tourism services.

The second set of services provided by the platform to its members focused on the professional representation of the interests of the network members in the governmental authorities for policy decisions: the Ministry of Agriculture and the Ministry of Economy and Innovation. The association is invited to actively participate in the various working groups and to make proposals both on rural tourism policy measures and regulations and on joint agricultural and rural policy decisions that affect the rural tourism business environment. The association has been represented for many years in various working groups and committees of public authorities: the Tourism Council at the Ministry of Economy and Innovation; the Project Selection Committee at the Ministry of Agriculture; the Presidium of the Chamber of Tourism; the Board of Directors of the European Federation of Rural Tourism, etc. The association provides

its members with information on the changing business environment, new legislation, and recommendations on how to proceed. It sends out more than 50 newsletters each year to its members with relevant and useful information.

With the introduction of the intensification start-up, the association has not only increased the capacity of the Lithuanian rural tourism business but has also enabled members to save a lot of money on the cost of searching for information and consultants, which they would have had to incur individually to seek new knowledge. Unfortunately, the association has thus far hesitated to introduce an instrument to assess the quality of services. Information on how customers rate the service provided is not published on the online booking platform at each of the network members' homesteads. Customers can only give feedback on the quality of service on social networks.

The decrease in interest in training and other events among the network's members was a signal that the network had exhausted the potential of its intensification strategy. The members of the network realized that the success of their business depended on a certain market orientation and long-term relationships with their customers. The members of the network started to form groups with different interests.

Specialization strategy—a special interest-oriented group of participants breaks away from a large network after gaining experience in cooperation, promoting individual cooperation among network members. The Rural Tourism network has moved towards a specialization strategy. This means that the network focuses on activities that provide the greatest benefit to the network participants by eliminating irrelevant activities. To attract customers, rural tourism farms have not only worked to improve the quality of their accommodations but have also sought to develop a wider spectrum of services and to add a variety of recreational services to differentiate themselves from competitors. However, the result was the opposite. The homesteads were similar, and it was not possible to provide quality services in the same homestead, e.g., for active holiday-makers and seniors looking for a quieter holiday, to organize a children's holiday camp and celebrate family holidays at the same time. In addition, the expansion of the range of services required additional resources

that were often not used efficiently, as they did not help to attract more customers. The owners of rural tourism homestays have therefore realized that they need to adapt their activities to those clients who generate the most income. The network offered a way for rural tourism businesses to specialize in the services that are most useful to them so that they could be recognized by their customers in the market. 'One-to-one' or 'participant-to-participant' relationships were introduced.

It should be noted that the situation in the market for rural tourism services has changed radically. Although all the farmhouses are called agritourism farmhouses, the range and quality of the services they provide have varied significantly. In the initial phase of the development of rural tourism, farm buildings were often adapted to the business by renovating, reconstructing, or extending them. In addition, new modern buildings designed to meet the needs of a rural tourism business were built. In addition, a wide range of services was provided by the rural tourism farmhouses to attract more customers. This diversity often caused inconvenience for customers if several groups of tourists stayed at the same time, whose needs were difficult to reconcile. Given that the wide variety of rural tourism services on the market makes it difficult for customers to know what type and quality of service they can expect, platform tools have been developed to help balance the interests of both those receiving and those providing tourism services. The platform focuses on two main aspects of the specialization of homesteads.

The first aspect of specialization, formed by the new platform instrument, informed tourists about the type of holiday offered by the farmhouse. To make it clear to the user what he/she would find in agritourism farmhouses, the website divided all agritourism farmhouses into 10 groups according to the needs of the customers: relaxing holidays, family holidays, holidays for families with children, business events, active leisure, nature-friendliness, sightseeing, culinary heritage, wellness, and agrotourism. The emergence of this platform instrument not only provides additional information for tourists but also has an impact on the development of the rural tourism business, as by deciding on a specific market segment, rural tourism farms can make more efficient use of resources and better plan their business.

The second aspect of specialization focused on differences in the level of comfort offered by the homestead. The association has developed and implemented a quality standard for rural tourism services, which provides consumers with reliable information on the level of comfort offered by a rural tourism farmhouse. The level of comfort is assessed on three aspects: living conditions, the tourism services offered in the farmhouse, and the farmhouse environment. The comfort level is indicated by the association's logo sign—storks. The higher the level of comfort, the more storks are awarded. This rating system is very convenient for customers because when choosing a homestead, they can see how many storks a particular homestead has, and they can see on the website what level of comfort is represented by a particular marking. If the number of storks is selected in the website search, the system will select all the homesteads that meet this attribute.

With the implementation of the specialization strategy, the rural tourism network has become a two-sided network linking services, businesses, and customers. Additionally, the association set up a Facebook discussion group to strengthen the link between the owners of the rural tourism homesteads, and the network has developed tools to reconcile the different interests of the participants in the network based on a one-to-one relationship. Each rural tourism owner defined their services more clearly, and each customer was able to choose the services that suited their needs and financial possibilities. This creates the preconditions for mutual satisfaction and repeat visits.

The diversification strategy, which is used for attracting a new group (or several groups) of participants with the potential to generate a complementarity effect to previous activities of the network and based on the 'many-to-one' or participants-to-platform communication model, aims to increase the competitiveness of the platform. After the creation of the online platform of the Rural Tourism network 'atostogoskaime.lt', it has been for some time the largest and most important website providing customers with information on the availability of rural tourism services and how to book them online. However, competitors have gradually emerged, offering e-advertising services to agritourism farmhouse owners on other websites. The websites of municipal tourism centres have also started to promote rural tourism, and larger farmhouses have set up their

websites. Increasing competition has led to the risk that the number of members of the rural tourism network may decrease or that they may become less involved in the network because they spend part of their time in other similar networks.

To mitigate these risks, the rural tourism network has moved towards a diversification strategy. The association has invited other businesses providing services to tourists in rural areas to join its activities, thus increasing the network's number of potential members through many-to-one networking. The Rural Tourism network has created the possibility for cooperation between rural tourism farms and other businesses providing services in the same area, to exchange information about their customers and to offer the customers of the rural tourism farms the products or services of other businesses, e.g., educational services, entertainment, or local food. Such cooperation is beneficial for both rural tourism businesses and other businesses, as the members of the network are engaged in noncompeting activities and the attractiveness of the businesses of both members of the network is increased.

As part of the diversification strategy, the rural tourism network has implemented a communication project on 'The role of rural tourism in rural development processes - promoting local food culture'. The aim was to promote the idea of local home-cooked food, to encourage villagers to organize nontraditional activities presenting their national and culinary heritage, to contribute to the development of gastronomic tourism, and to increase travel to rural regions. The project has become another organizational tool to promote cooperation in rural areas between service providers, small rural producers, farmers, and the community. To better manage the riskiness of the rural tourism business in the short term, the association also proposes an organizational instrument to reduce the risk of failure of individual bookings. The platform offers last-minute deals, and the members of the association support each other when they cannot meet their commitments to customers because rural tourism businesses operating in the same area cooperate.

As tourists want to taste local products as well as holidays, the network tries to provide them with as much information as possible on local options to meet their needs. To raise consumer awareness of culinary heritage, the association has implemented two projects promoting

the development of culinary tourism in Lithuania, which are currently serving as information tools. The project 'Guide to Traditional Lithuanian Food' has collected and systematized material on 65 culinary heritage objects and their cooking sites in all ethnographic regions of Lithuania, as well as created video films and photo material. The content produced is published on the website 'skoniukelias.lt'. The project 'Culinary Route of the Baltic Sea Region', aimed at introducing gourmets to the national cuisines of Lithuania, Estonia, Latvia, Poland, Germany, and Russia. A map and a dedicated website 'Baltic Sea Culinary Routes' ('balticseaculinary.com') have been developed in Denmark, Finland, Sweden, and Norway for those planning to travel to regions around the Baltic Sea. The association plans to start publishing information on products grown and sold directly by local farmers on the website. This would also encourage small farmers to join the Rural Tourism network.

Social networking sites are important information tools to attract new members and increase the market by providing up-to-date information. A message sent on the Facebook account '[AtostogosKaime.lt](https://www.facebook.com/AtostogosKaime.lt)' reaches users directly and is often further spread within the network to other participants. The Facebook page is also used to exchange business information, consult and share experiences, present new legislation, or invite joint business proposals.

To summarize the activities of the Rural Tourism Network, a large part of the network's activities is focused on the promotion of the servitization of farming in the context of tourism services. This is particularly relevant for the development of the economic and social environment of rural areas dependent on traditional agricultural activities. The information and organizational tools offered by the association help rural tourism farmers reduce the risks of their agricultural production business by complementing it with service provision and reconfiguring rural tourism business links in a way that expands local business opportunities.

Future challenges. To what extent did the effect generated by cooperation contribute to the development of territorial servitization? The cooperation instruments used by the Rural Tourism network platform have significantly contributed to the servitization of rural economies. The first instruments of the network platform were designed with the interests of the owners of rural tourism homesteads only

in mind, implementing the network management model of ‘many-as-one’, in other words, the association for homogeneous members. Later, moving towards more complex network models, such as ‘many-to-one’ or ‘participants-to-platform’, based on the use of a diversification strategy, representatives of other businesses were invited to join the network, and the network offered instruments for the cooperation of rural tourism homestead owners with other rural businesses.

The main reference for further development of the rural tourism network is to make the network’s organizational structure more open and to make greater use of the public’s creative powers, as a systematic analysis of the information and organizational tools used by the network platform shows that both the platform managers and the owners of rural tourism homesteads avoid discussing and evaluating their activities in public. If this fear of publicity were to be overcome, the network could further improve its activities, provide the platform with more effective tools, and give the rural tourism business clear guidelines on where to concentrate their efforts to improve the quality of their services and to broaden their range of products.

Crossing this barrier of fear of publicity would allow the network to further improve its activities, give the platform more effective instruments, and provide rural tourism businesses with clear guidance on where to focus their efforts in improving the quality of their services and expanding their range.

9.5 A Case Study of the ‘Milk Road’ Network

Introduction to the collaborative network and expected effects. The ‘Milk Road’ collaborative network is a mini-cluster for small dairy producers and rural gastro-tourism service providers, encouraging and promoting slow, ecological, and ethnographic tourism. The network unites small dairy producers and tourism services providers in 4 municipal regions of the northwestern part of Lithuania: Rietavas, Telšiai, Plungė, and Kupiškis. The founder of the initial idea of creating the network of dairy producers and local tourism services providers is Laima

Dockevičienė. She is the head of the Milk Road association and the coordinator of all the network's initiatives. L. Dockevičienė is also the leader of the local action group (LAG) 'Rietavas Initiatives' and the director of the Rietavas Tourism and Business Information Center. All these organizations, based in Rietavas, together with the other three local action groups (LAGs) and tourism information centres in Telšiai, Plungė, and Kupiškis, in collaboration play a significant role in sustaining the Milk Road network.

The initiator received the idea of establishing the network during business visits to France, Sweden, Denmark, Germany, and Latvia. The partners to start the initiative had been selected due to their similar direction of activities. All these LAGs represent rural areas that are similar in terms of economic development, have potential for rural tourism development, are predominantly dairy farms, and are geographically homogeneous, especially the districts of Telšiai, Plungė, and Rietavas. In all areas, as farms become larger, small farms are disappearing and young people, no longer seeing opportunities to survive in the countryside, are leaving to work, and often to live, in cities or abroad. Small individual producers experience difficulties finding niches to sell their products or services. This highly limits their possibilities to sustain the expected quality of life, and they often lack the knowledge and motivation to do so.

All partnering regions share similar problems: few tourist routes and cognitive trails; poor tourism marketing (cultural heritage objects and other tourist destinations are ineffectively adapted to tourism); no tourist routes developed to be included in a unified tourism system; inefficient use of information technologies; undeveloped cooperation between farmers; and obvious problems in the marketing of products.

The collaborative activity towards network building started with the joint LAG project Milk Road: from local producer to consumer¹ (further—Project). The project should complement the measures implemented in the local development strategies. However, the most important was the collaboration for joint expected effects, which cannot be

¹ The project "Milk Road: from local producer to consumer", No. 4TT-KE-13-1-0002, was funded by the Lithuanian Rural Development Programme 2007–2013, measure "Territorial and International Cooperation" under axis IV "Implementing the LEADER Approach".

reached by LAGs acting in isolation. The partners have chosen the seemingly traditional Lithuanian theme of milk, which is common to Lithuanians as a former agricultural country, but the taken approach to the subject was unconventional. Project partners relied on the strengths of the regions, i.e., their traditions, the beauty of nature, and the skills of the people. They expected to preserve the traditions of dairy production and processing and at the same time encouraged the creation of new products and services, testing and introducing interesting and attractive forms of presentation, and changing consumer habits by taking advantage of the geographical location and forming mini clusters. This was foreseen as a significant turn in strengthening the involved regions and becoming competitive in the Baltic Sea Region and Europe.

Officially, the collaborative network Milk Road was registered on May 28, 2015, as an association. Multiple objectives were set for the project, which covered not only the network itself but also synergetic effects for the areas involved. The first objective was to create a mini-cluster for dairy production and rural tourism services, covering 4 LAG areas in Lithuania. In addition, improvement of the quality of life by creating the conditions for increased employment for local people should be achieved. Furthermore, it was important to develop the entrepreneurial skills of local people and promote cooperation in developing competitive local products and services. Finally, to maximize the expected impact, dissemination of the good practice in rural development cooperation was foreseen. Unfortunately, the project had a very limited time for implementation, which was less than one year (the project started on July 7, 2014, and ended on May 31, 2015). Moreover, very limited resources of 0,1 million euros were allocated to make the envisioned change (Rietavas LAG, 2023).

Nevertheless, the foreseen expected effects of collaborative networking were promising. The network aimed to create the preconditions for the renewal of the production of local producers, acting in a dairy sector in cooperation with local gastro-tourism services. The development of market outlets for local products and services should increase the added value of the products and services provided by dairy farms, while ensuring higher incomes for small rural actors. In addition, it was

seen as a facilitation opportunity for rural youth to stay in the countryside, as well as the reinforcement of integration between cities and rural areas.

In summary, it was expected to create new perspectives for rural areas involved in traditional dairy farming and the relatively new economic activity of rural tourism by providing alternative and innovative development opportunities for family farms and small rural enterprises.

Network participants. The participants of the cluster-based network are united by the dairy theme. The network is open to various bodies operating in rural areas of the 4 participating regions: farmers, rural tourism services providers, local community organizations, rural entrepreneurs, craftspeople, artists, cultural organizations, educational institutions, municipal organizations, and other bodies. The network forms a route under a generalized title Milk Road, which includes services for tasting and purchasing dairy products, health treatment services offered by rural tourism farmsteads, educational programmes on farms, community celebrations of traditional festivals, and other services. Along the route, farmers, local producers, rural communities, and rural tourism farms of four northwestern Lithuanian regions, i.e., Rietavas, Plungė, Telšiai, and Kupiškis, invite farmers to visit their farms and meet villagers, listen to their stories, determine about and see how cheese and other dairy products are made, taste traditional regional specialties, buy rustic products, try out a variety of wellness treatments, and experience the hospitality of Lithuania's countryside. Recently, the Milk Road network consists of 32 members who offer on-farm visiting services and propose different products.

Platform as infrastructure to facilitate collaboration. Milk Road is a formal organization that has held association status since its establishment. The coordinating role of the association belongs to the initiator of the idea—Laima Dockeyičienė, who is the head of the association. The organizational structure of the network is based on the association code of conduct, which is an internal document. The organizational structure is defined. It is composed of coordinating bodies in each region, 4 in total: LAGs in Rietavas, Plungė, Telšiai, and Kupiškis.

An internet website 'Pienokelias.lt' serves as an electronic platform to ease the management processes of a collaborative structure and to make

the route easily accessible for consumers. All 4 regions of the Milk Road are represented on separate common-design sheets. Each sheet on the platform contains an interactive map of the region with marked destinations to visit. There are 4 major types of destinations provided on each region's map:

1. crafts (e.g., educational activities at the Žemaitė Memorial Museum—Bukantė Manor 'Žemaitija culinary heritage'; Luokė Community Craft Yard in Telšiai, etc.);
2. services (e.g., Oginskis Museum of Cultural History in Rietavas; Rietavas Stud Farm, etc.);
3. products (e.g., Cooperative 'ECO Žemaitija' cheeses in Tešiai; Stasys Petrošius seed oil products in Rietavas, etc.);
4. other activities (e.g., Adomynė village community, representing the cultural and culinary heritage of the Kupiškis region; Energy Labyrinths and Geometric Figures Park near Plungė, etc.)

Each member of the network, who is on the route, every year is visited by the coordinator of the Milk Road to have a face-to-face conversation about the plans for the coming year and the ambitions to remain part of the network. Thus, all participating farmsteads and other types of service providers are reviewed once a year by the coordinator of the network. Coordinators in regions are LAGs, and their contacts are explored on the internet website. However, the activities of farmsteads and rural tourism services providers in regions are mostly advertised via regional tourist information centres.

Participation in the network is free of charge. It often happens that those willing to participate in the network directly contact the regional representative via contacts left on the website or the principal coordinator in Rietavas directly. Then, if the potential newcomers fit the philosophy of Milk Road, they can become a member of the association, and its contacts appear on the interactive map on the website.

In parallel, members of the network are one after another represented on the network's Milk Road Facebook account, which is publicly available to everyone. This social network is also used to share the most recent association's news and events.

One more part of the network's infrastructure of crucial importance for relationship building is the mobile bureau, established in a caravan-type bus. It is often used as a mobile dairy technology and product development (e.g., cheese-making process) demonstration office, which provides consultancy and presentations of local products and is used for storage and sale of dairy products at fairs and exhibitions. This physical platform from the very beginning played a very important role in advertising the Lithuanian dairy traditions and culinary heritage both in Lithuania and abroad. Many different places had been visited using this mobile bureau for consultancy throughout Lithuania. The mobile bureau also serves very well when taking part in exhibitions (refrigerators are needed to keep the dairy product of good quality for a longer period, especially when it is hot outside) in Lithuania and abroad.

Currently, all the described infrastructure is managed under the association coordinators' abilities to mobilize resources from local LAGs' and Rietavas business information centres' funds. The nearest plan is to set the association's membership fee, which would be used to keep the necessary infrastructure regularly updated.

Step-by-step evolution of the qualitative structure of the collaborative network. Milk Road passed five self-management stages, which are described as particular qualitative structures of the collaborative network. Each of the stages contributed to the evolution of the network until it reached its current state.

Extensive growth strategy. The evolutionary cycle of the network started with mobilizing participants as a crucial component of the first evolutionary stage. Aiming to fulfil the initial objective—to create a mini-cluster of dairy producers and rural tourism services providers, covering 4 LAG areas, it was necessary to attract and mobilize a sufficient number of participants interested in the issue. The dairy topic was known to the initiator since her family also used to keep a few cows, as many did in Lithuania at that time. Soon, at the very beginning of the twentieth century, the so-called 'third government surge' went into action in Lithuania, and rural communities started being increasingly accelerated to become active bodies of self-government. At that time, L. Dockevičienė was already a coordinator of the Šiauliai County Farmers'

Association. Alongside, she became a founder of the first rural community in Lithuania, which united her native village, and she also took the lead of six more nearby communities. Aiming to do something unusual to attract dairy producers to collaborate and start innovative activities in cooperation, she organized the 'Mis Cow' competition (at that time Lithuanian rural communities used to organize so-called 'Mis' prize-winning competitions for the most beautiful girls of the village). The result was as expected, and the unusual initiative attracted the interest of people who were indifferent to dairy. Further informal networking was done by attending the courses for farmers.

By the end of the twentieth century, around the years 2010–2011, the so-called 'milk crisis' occurred in Lithuania. Milk producers get used to pouring milk into fields as a protest against low raw milk farm gate prices. The situation was very complicated for all dairy farmers, especially the smallest ones, since the economic survival of dairy farms was no longer impossible. It was necessary to find other ways to operate in the area to revive respect for dairy farming and cows.

Increasingly, alongside the European Union's aid for agricultural and other activities development, international cross-border initiatives began. In 2013, the founder of Milk Road organized local small milk producers (a few women) to take part in the international agriculture production exhibition in Latvia. This was the first step forward to expanding the current (still informal) network with several participants internationally and making collaborative relations with dairy producers in neighbouring countries, which might create opportunities for small farmers to do something innovative and ensure the necessary survival of farms. However, this first experience in an international exhibition abroad was not successful. L. Dockeyvičienė with her team was not accepted, as they did not have the necessary milk storage refrigerators to stay in the exhibition for a few days. However, the founder of the network and the team gained valuable experience and made good informal connections with the locals, who invited her to take part in a particular cross-border initiative—to prepare a joint proposal with Latvians. Unfortunately, this initiative also failed.

Then, L. Dockeyvičienė decided to lead a new initiative—to take the option provided by the Lithuanian Rural Development Programme

2007–2013, measure ‘Territorial and International Cooperation’ under axis IV ‘Implementing the LEADER Approach’. She contacted the participants from the recently failed cross-border project application with Latvians and suggested taking part in a joint proposal to establish the network. In this way, small-scale dairy farming and local tourism services might unite into a network to create collaborative value for consumers. This would be a recipe to survive the increasingly difficult economic times of rural areas. Initially, many farmers were contacted and agreed to be part of the application in creating the envisioned Milk Road network. However, in the final stage, L. Dockevičienė dealt only with Kupiškis, Plungė, and Telšiai LAGs to submit a joint proposal together with the LAG ‘Rietavas initiatives’ for the establishment of a network. The formal Milk Road has become a need to attract a necessary critical mass of participants and to develop the needed infrastructure to manage the network effectively—a platform supported by IT (internet website) and mobile offices. The project application was submitted, and after a long evaluation time, it was approved. Thus, holding the necessary initial resources and predefined participants, the network entered the next evolutionary phase: the critical mass of participants was predefined, and the common agenda was set by preparing a joint proposal (relationship model ‘many-as-one’). The time had come to make the connections between participants more effective.

Intensification strategy. During the extensive growth phase, the number of participants interested in the collaboration between small dairy farming and neighbouring rural tourism services farmsteads increased. The establishment of a particular platform to make the connections with participants more effective became more a necessity than a desire. Since the four regions were acting together in the project, there was a need to find a solution that would fit all and could be shared among partners on demand to mobilize participants. Thus, a caravan-type bus was bought and adapted to be a mobile bureau of the Milk Road. At the same time, 12 experts were trained (3 from each LAG) who contributed to the organization of the mobile office. Thus, the consultancy mobile bureau went into action to make the connections between participants more effective.

The mobile bureau started visiting the predefined participants on the network. The experts introduced the potential predefined participants of the Milk Road on their future duties and responsibilities of being part of the network. To most of the visited farmers, accepting visitors on their farms was a completely new experience. They were surprised to whom it would be interesting to come and look at their daily activity on a farm. Therefore, much should be done by experts to get the farmers acquainted with forthcoming changes.

Thus, after visiting the predefined participants, and after giving the consultancy regarding the future activities of the network, only those who were ready to be part of the network were fixed as potential farmsteads to visit for developing the route (28 in total in that phase). The remaining dairy farmers and local rural tourism services providers became approved structures in the four regions for further collaboration in the network. Accordingly, the internet website '[MilkRoad.it](#)' was designed to make the connections among the participants more effective. The website acted as a guiding interactive tool, where potential visitors could find the location and details of farmers and rural tourism services providers. At the same time, the platform helped the participants to know each other and to share contacts when the visitor asked what else interesting might be visited in the region. In parallel, tourism and business information centres have already received an interactive tool to recommend visitor places to visit in the network. Thus, modern IT solutions and ordinary personal face-to-face communication methods helped establish the relationship model 'one-to-many'.

Despite a very short period (less than one year), the networking activity took momentum. The built connections became a formally established network in 2015. At the very beginning, the interest in the network was tremendous, and this became a serious unforeseen challenge to both network participants and coordinators. Participants of the network, especially the common farmers, who were not accustomed to receiving external attention, were shocked by the flow of visitors, coming to visit their farms by buses. They were more or less ready to show their farm (hence, but most of them didn't want to let them enter their living houses), the milk processing process, to provide small amounts of products for degustation. However, they were not ready to sell their

products, as this was a completely new experience for them: no sufficient amounts of products prepared for sale, no packaging materials prepared. Another problem was the dissatisfaction of visitors, the 'urban inhabitants', who did not understand the inability of farmers to provide at least minimal personal hygiene facilities for visitors during their stay at a farm (handwashing facilities and toilet).

In turn, all the listed experiences caused changes in the structure of network participants. Part of them escaped the Milk Road, and the new ones joined. Others started changing their collaboration mode by forming particular groups that were more successful in providing the expected services to consumers while receiving the expected effects from the network. First, it was the revenue flows to ensure the quality of life in a rural area with remaining farming activities, fulfilled with services. Thus, shifting to the next evolutionary stage of a qualitative structure of the network began.

Specialization strategy. Milk Road empowered a platform to create better relationships between remaining network participants with different, and sometimes conflicting, interests. The principal coordinator took the lead, together with regional coordinators in Rietavas, Plungė, Telšiai, and Kupiškis, to visit the participants of the network. Personal face-to-face conversations were performed to analyse and evaluate the existing challenges and needs of network participants, appealing to participants' loyalty and long-term engagement in the network.

A common change in the platform organization was envisioned, since it became evident that the operation of the platform should be changed to better perform a matching function of the network. The platform already worked well to serve the benefits of network participants by attracting those connected to the dairy activity. The providers of dairy products and rural tourism services of the network were easily found by the visitors using the information provided on the website. However, the visitors' flows remained unpredictable, and participants of the network repeatedly highlighted this problem. It was decided among coordinators in regions that LAGs as regional coordinators should take a more active role in allocating customers to the activities provided by network participants. There was already evidence that some farmsteads and other rural tourism services providers are visited more often than others and that

they bothered network participants. Initially, the platform had no incentive to manage the allocation of visitor flows to all destinations equally in the network.

It became evident that since the overall territory of the Milk Road is quite scattered, a more active role of regional coordinators is in demand. A common solution was found to start cooperation with regional tourism information centres in four towns. They were introduced in detail with the network's idea, the farmsteads and other rural tourism services providers, the materials, and the expected effects of the network. Thus, the '*one-to-one*' relationship started being implemented. Tourism information centres performed the active matching role in regions together with regional LAGs to make the interaction among the visitors and participants of the network more effective. Thus, in such a combination, the participants of the Milk Road became involved in the two networks at the same time: a specialized network and a common rural tourism association. This again became a challenge due to increasing competition. The next evolutionary stage was approaching.

Diversification strategy. To overcome the competitiveness barrier, the network changed its organizational mode. The regional coordinating bodies had already been dealing quite well in allocating visitors to small dairy producers. However, the interest of organized visitors was not limited to visiting only dairy-related farmsteads. For instance, during the same one-day tour, they wanted to take part in a milk cheese processing demonstration, have lunch in a local small restaurant or at a farmstead, visit a honey-bee keeping museum, and finalize with local beer tasting. More participants, able to propose a wider range of rural tourism services, should be attracted to the network.

Therefore, the coordinators of the Milk Road started inviting other rural tourism services providers and other stakeholders (e.g., museums, local craft communities, etc.) to the route, and thus, the new participants entered the network. The platform was reorganized by grouping the participants into four major groups: crafts, services, products, and other activities. This grouping appeared on the interactive map of the Milk Road website. This diversified participants of the network, in turn, formed particular smaller networks in regions, which started providing collaborative services. On a particular visitor's request, while

visiting one farmstead or another type of Milk Road participant, it was possible to receive advice on what else might be visited in the area, thus recommending other network participants' farmsteads. The regional and thematic cross-regional self-managed smaller networks started operating within the network for mutual benefit, linking major participants' groups with complementors, encompassing the '*many-to-one*' relationship. Thus, a value for a greater base of stakeholders was proposed, and network members started feeling better about the expected effects of the network. In addition, the competitiveness of the network increased.

Collaboration strategy. With increased competitiveness, well-developed infrastructure for networking, participants' loyalty, and long-term engagement, with increasing mutual benefits from cooperation, the network was ready for the next evolutionary stage. The network coordinators, with help of the well-functioning and extensively used mobile bureau, step-by-step started mobilizing participants of the network for more complex purposes.

Milk Road, an already well-known network in Lithuania, used to step the borders and take part in other types of activities, in addition to serving the interests of tourists. Many exhibitions had been visited abroad with an interchanging set of network participants, which enabled new collaborative relations abroad, thus stepping into the '*many-to-many*' relationship model. Different groups of participants of the network started being involved in different international and cross-border projects and other types of activities with rural communities abroad, mostly in Germany, Sweden, Estonia, and Poland. Thus, the network started focusing on the needs of a bigger ecosystem, and they already had good matured practices and experiences to share.

In this way, by taking an active role in targeted international communities and events, Milk Road disclosed the targeted collaboration partners, which are valuable for future developments. Among the targeted network participants' interest in the larger system was increasing the competitiveness of local dairy producers by establishing export relations to serve the needs of foreigners for fresh and healthy handmade Lithuanian local products. At the same time, the special interest from abroad arrived at the organizational practices and created effects reached by Milk Road regarding territorial servitization in Lithuania. Special interest had

been received from Sweden, as well as Germany. They became durable partners for many further initiatives of the network in the form of collaborative projects, joint community celebrations and festivals, etc. For example, a group of Milk Road participants had been invited to take part in a cooperation and capacity-building project ‘SB FICA - South Baltic Food Innovation Culture Actors’ (project duration: December 2017–September 2019), funded by EU South Baltic Programme, with the common denominators being food and culture. Krinova Incubator & Science Park (Sweden) has been running the project together with partners: Rietavas Business and Information Centre (Lithuania), Czarna Dąbrówka, a small municipality in Northern Poland, and the Baltic Sea Cultural Centre in Gdańsk (Poland). The intention of the SB FICA project was to learn from each other and to learn about each other. An exchange of history, traditions and culture, and innovations. Another example is the project ‘SB FOOD INNO – Developing food innovation capacity in the South Baltic Region’, funded by the Interreg 2014–2020 INTERREG V-A Poland–Denmark–Germany–Lithuania–Sweden (South Baltic) programme (project duration: July 2017–July 2020). This project’s main objective was to strengthen innovation capacity in food SMEs by exploiting the potential in network and innovation activities in triple helix cooperation between food SMEs, the public sector, and knowledge institutions. The partnership is expected to change innovation capacity significantly in food SMEs by making development resources available for food SMEs, of which many today lack innovation collaborations. Milk Road took part in the project as an associated partner.

This and many other new experiences greatly helped change the already established networking methods in Milk Road, thus accelerating particular groups of network participants who were involved in the project to transform their traditional farming practices and start serving the needs of a bigger system. The thresholds of the current evolutionary stage of Milk Road as a multisided network, e.g., the effect of networking on social well-being, have not yet been approached. There are still unexploited opportunities in this phase (due to the latter pandemic issues and others) for coordinated actions with other organizations, which can

make the network activities more intensive and beneficial to multiple stakeholders, as well as the bigger system.

To what extent have the effects generated by the collaborative network contributed to the development of territorial servitization? Future challenges. The collaborative Milk Road network played a fully transformative role in developing the territorial servitization of the four involved regions of Lithuania. The five evolutionary phases of interchanging moving components of the network, i.e., participants, effects, and platform, contributed to crucially important changes in the mindset of the small dairy farmers and local rural tourism services providers, making them skilled entrepreneurs with competitive products and services locally and internationally, equipped with necessary infrastructure and ready to generate the expected effects.

Before the establishment of the network, individually acting small local dairy producers and small rural tourism services providers were facing multiple challenges, starting from economic inefficiency, inability to propose competitive and attractive products and services to consumers, and inability to find consumers and realization channels for their products and services. Unskilled dairy farmers and small rural tourism services providers, acting in isolation, had no incentives, knowledge, skills, and tools to become acting participants in territorial servitization.

The Milk Road network developed a platform based on IT solutions (i.e., internet website and Facebook account) and physical tools (i.e., mobile bureau—caravan bus) and enabled mobilizing participants to the collaborative action—to become part of the network and to accumulate power for expected effects. The establishment of the Milk Road association served to overcome the challenges faced by small dairy producers and tourism services providers. The necessary knowledge and skills to start servitization in their farms were gathered by receiving continuous training and consultancy organized by coordinators of the network. By taking part in the network, farmers solved the issues of finding consumers and realization channels for their products and services. Step-by-step, they gathered knowledge and skills that transformed their mindset and business model. They started developing products and services, which became attractive to consumers, thus

ensuring revenue flows. The competitiveness increased locally, nationally, and internationally.

Collaboration using the platform and its tools generated multiple networking effects. The territorial servitization was gradually reached by attracting small-scale dairy farmers to be part of the network and collaborate with rural services providers, thus reaching the expected effects—transforming the common farming mode and shifting to servitized business models. Sufficient revenue flows became a reality after connecting into multiple smaller collaboration networks to reduce the risks and ensure the complementarity effect. Finally, the relationship model expanded into ‘many-to-many’, which not only satisfied the needs of the network’s participants (the micro level) and the network as an organization itself (the mezzo level) but also started going beyond and focusing on the needs of a bigger system (macro level) by crossing the regional and national borders and diversified areas of activity.

Thus, thanks to the Milk Road network, territorial servitization had been established in the four northwestern regions of Lithuania, united with a common dairy-related theme and supported both by small dairy farmers and local rural tourism and cultural services providers. Among the core challenges is sustaining the network’s platform—both the internet website and the mobile office, since financial resources to the network were ensured only during the implementation of the project (i.e., less than 1 year from the establishment). The activity of the network after the project ended has been supported by regional LAGs and tourism and business information centres and the project in partnership. The nearest plans are to revive the Milk Road association, whose liveness recently suffered due to the pandemic times, and to introduce the membership fee, which is necessary to keep the platform facilities up to date.

9.6 A Case Study of the ‘Natural Agriculture’ Network

Introduction of the collaborative network. The network of Natural Agriculture was established in 2008 when the initiators Saulius Jasionis and Laimis Žmuida came up with the natural agriculture idea. Both like-minded people were actively interested in natural agriculture, studied a variety of books about agricultural farming principles, looked for natural farming methods that help reduce the use of external resources, and advocated for small-scale farming, which is important for individuality and harmony with nature (Gedminaitė-Raudonė & Simonaitytė, 2021, pp. 212–213). By experimenting, accumulating, and applying the knowledge gained in the literature, a new and unique theory of natural agriculture was created where the most suitable solutions for the Lithuanian climate were proposed.

Natural agriculture means no ploughing, digging, or loosening of the soil, and the absence of active digging allows the creation of a natural soil structure, which ensures good conditions for air to reach the roots of plants, maintains moisture, and creates a suitable environment for soil-living organisms (Jasionis, 2023). The soil is kept covered with dead plant waste (dry grass, leaves, straw), and therefore, artificially mulched soil does not dry out. The production of natural agriculture is always clean and rich in biologically active substances, and vegetables and fruits are incomparably more valuable and fragrant than those grown in arable soil (Kurlavičius, 2010, pp. 75–76). In conventional and organic farming, soil is constantly eroded and destroyed, while in natural farming, the soil is layered by weeds, straw, and other materials, and it becomes fertile and appetizing to decomposers, which transforms the weeds and straw into natural fertilizers.

To spread knowledge about the natural way of farming, natural horticulture, and specifically about natural agriculture and its differences from conventional and even organic farming, the initiators needed to share their knowledge with like-minded people, and therefore, established an online public cooperation network, available on the website ‘www.gerazemdirbyste.lt’.

Expected effects of joining the collaborative network and its participants. The established collaboration network was a unilateral network uniting natural agriculture farmers growing vegetables and fruits according to natural agricultural methods. The core of the collaboration network was small-scale family farmers as well as some other stakeholders who owned and/or used land and who were keen on ecology and natural agriculture. Even at the beginning, there have not been many members, and there have not been any restrictions to becoming a member. The founders of the network sought to attract various cooperating people and organizations to learn as much as possible about natural agriculture and to spread the ideas of natural agriculture in Lithuania as widely as possible. In the early days of the network, natural farming was very popular, and the network attracted a wide variety of members, as it was an innovative way of farming that was unknown to many. The representatives of the Lithuanian ecological villages' movement showed great activity, and they initiated a forum on the website 'gerazemdirbyste.lt', where people interested in natural agriculture began to gather. Therefore, even in the beginning, the network united a very heterogeneous group of members.

As the network expanded and the informal communication between members of the network became insufficient, the community needed deeper knowledge and experience in natural agriculture. Therefore, the founders of the network began to organize lectures and practical seminars, invite consultants to come to the natural agriculture farms, and help farmers adapt the available knowledge to the peculiarities of the land (Vidickienė, 2013). Therefore, the main reason for cooperation at the stage of establishing the network was the need for knowledge and experience. NGOs interested in ecology, private consultants, and scientific institutions or their representatives began to participate in the activities of the network.

In 2010–2011, the natural agriculture network expanded the scope of activities, and the number of members increased. The new goals of the network platform have greatly expanded the diversity of network members. The activities of the network have been joined by consumers, i.e., city dwellers who want to buy products grown using natural farming principles and rural residents who want to buy seeds or seedlings and

seek to know more about the principles of natural farming. Additionally, sellers and producers of material resources (organic seeds, seedlings, grass, and straw) needed for the natural farming business and services providers (carriers, city-based dealers, etc.) have taken an interest in the network's activities. The commercial success of the farmers of natural agriculture has also led to the desire to cooperate with producers of similar products: organic farmers, beekeepers, etc. (Vidickienė et al., 2021).

The discussed processes transformed the unilateral network into a multilateral cooperation network connecting the interests of many different groups, which includes growers and consumers of natural agricultural products, non-governmental organizations, private consultants, scientific institutions, producers of material resources needed for business, providers of services needed for business and even similar product manufacturers. Overall, between 400 and 600 members of the network actively participate in the activities of the natural agriculture network and participate in practical training, consultations, fairs, and other educational activities (Gedminaitė-Raudonė & Simonaitytė, 2021).

Platform as infrastructure to facilitate collaboration. The Natural Agriculture network is an open organization, and it does not have a formal structure. Therefore, there are no formalized procedures for joining the network. Members of the network are all persons interested in the principles of natural agriculture and registered in the forum of the website 'gerazemdirbyste.lt' and/or members of two Facebook groups: *Natural Agriculture* and *Natural Agriculture. Forum of followers of *Saulius Jasionis** and/or following Facebook page *Natural agriculture* and/or interested in natural agriculture and participating in various activities organized by network members.

It is worth noting that in the beginning, network management was more centralized, activities were coordinated, and everything was based on a single platform, which was basically a web page. During the development of the network, there has been a transition towards decentralized management. Currently, the members of the Natural Agriculture network communicate and cooperate on four platforms: the forum of the website 'gerazemdirbyste.lt' and the public Facebook group *Natural agriculture. Forum of followers of *Saulius Jasionis**, the public Facebook group *Natural Agriculture* and the Facebook page *Natural agriculture*.

The management of the network and the formation of all operating platforms are based on voluntary activities, and the members of the network maintain and administer them free of charge. This means that there are no coordinated finances of the platform and there is no structure or rules regulating cooperation. The main regulation of communication and collaboration can be described only by the moral values of the community, as it stated that the group is for anyone interested in natural farming, regardless of their political, religious views, nationality, moral beliefs, etc., and members of the group must respect each other (Natural Agriculture. Forum of followers of Saulius Jasionis, 2023).

However, even though the network is decentralized to a great extent, and it does not have a formal structure, the network still provides many valuable examples of collaboration, starting with educational activities, training, tastings, and going to some trustworthy examples as assisting each other by sharing contacts of consumers if the farmer cannot provide products or services at a given time. Therefore, the initial goal—to spread ideas of natural farming—is still important, and it is spread both personally and by using social media networks.

Step-by-step evolution of the qualitative structure of the collaborative network. The success of the Natural Agriculture network is based on the ability of the network to act as a platform for specialization, cooperation, innovations, and to move from the advantages of a simpler strategy of self-regulation to the implementation of a more complex strategy. Therefore, the most important aspect of such infrastructure is the platform's tools that facilitate the cooperation processes between the network members. The purpose of the natural agriculture platform is multifaceted, and the next part of the case study reveals how and what strategies (from simple to the most complex) were applied.

An extensive growth strategy was the most relevant at the very beginning of the network when the founders sought new members and the 'many-as-one' relationship type was suitable to spread ideas about natural agriculture and to increase the number of supporters and members. Generally, when a platform works as one, the number of network participants connected by a single goal is essentially increased.

At the stage of its establishment, the main goal of the network platform was to ensure the spread of knowledge on innovative methods of agriculture by educating members, experiencing the difference between conventional and natural agriculture, and maintaining the selected innovative strategy, which led to changes not only in the understanding of farming but also in the behaviour. Therefore, the tools used by the platform were oriented towards this. Since the main goal of four currently decentralized natural agriculture cooperation networks is the promotion of natural farming methods and products as a radical innovation in agriculture and the generation of an innovation strategy effect, the information and organizational tools used by their platforms were primarily focused on this. It might be stated that an extensive growth strategy was also relevant in the later stages of the network when the organization was in search of new members and employed different communication channels.

At the beginning of the network, the focus was on tools that contribute to the acquisition of deeper knowledge about the innovative method of agriculture and the unique characteristics of the production grown using it. The platform actively offers farmers and anyone interested in trying this method of farming in practice. The members of the network organize many different seminars and trainings available to members and the general public by posting information on their website 'gerazemdirbyste.lt'.

'One-to-many' relationship type is realized between the platform and its members. Initially, the platform functioned as a tool to disseminate information about natural agriculture on a national scale. Network members publicly and actively shared advice with each other on the website forum. This type of relationship enabled an **intensification strategy** to intensify the collaboration the platform improves itself as well. It is worth noting that this aspect of the platform is still relevant today, but over time, the Natural Agriculture network had attracted even more consumers, i.e., people who want to eat organic fruits, vegetables, berries, and herbs. Therefore, the founder of the network made certain efforts to make the cooperation platform an intermediary actor between producers and service providers of natural agriculture products on one side and customers on the other. Therefore, the natural farming

network platform started acting as an intermediary that helps to establish and maintain cooperative relations between the members of the multi-lateral network: those who want to gain knowledge about innovative farming systems find information and can further deepen and educate themselves in organized seminars, and those who have such knowledge gain more opportunities to provide educational services because of networking activities.

Network participants not only communicate online but also organize face-to-face events and hold meetings and events (training, practical and online seminars, fairs, education, and other activities) for network members. For many years, an annual meeting of the members of the network was organized, which attracted approximately 200 participants. The network is used to discuss natural farming innovations, new and heritage-protected varieties of seeds, joint activities, and future events. However, an annual convention has not been held for several years, and the benefits of such meetings were significantly reduced after the ban on the exchange of non-certified seeds. Finally, natural farming enthusiasts stopped holding annual meetings due to the COVID-19 pandemic. As the national network has recently been decentralized, several groups have been formed, with activists working decentralized and independently organizing discussions on how to improve the dissemination of organic farming, training, seminars, tastings, fairs, and educational activities and participating independently in them (Vidickienė et al., 2021).

The 'member-to-member' type of relationship is very important in the Natural Agriculture network, as a significant part of the activity is carried out for free and voluntarily. The member-to-member network type is expressed by members looking for advice and sharing their knowledge personally or publicly on the 'gerazemdirbyste.lt' platform and through social networks. This type of relationship is diverse, depending on the specific situation and needs of each member; therefore, the **specialization strategy** is employed because after gaining cooperation experience, a group of participants focused on special interests, separated from a large network, and individual cooperation of network participants is encouraged. The member-to-member type of relationship provides consultation and advice to the members on many daily activities, such as soil cultivation, sowing, seeding, mulching, vegetable growing, storage, and many

others. The cooperation of the members of the network helps to accumulate experience in natural agriculture to improve its technology and to adapt theoretical knowledge to the climatic conditions of Lithuania. The member-to-member relationship helps to create not only a community of food producers but also a direct connection between farmers and regular consumers from the city.

At this stage, the network prepared certification rules for natural agricultural production, which provide rules for all stages of vegetable, herb, and other production, as well as strict control of agrotechnics and deadlines for the sale of products. Products grown according to the principles of natural agriculture, except for those stored for the winter, are sold no later than a day after picking or uprooting. These set high standards contributed greatly to marketing the production of natural agriculture. Most products are sold only at the place of cultivation, by digging or picking the selected product, and only after the customer has arrived. This makes it possible to further increase the quality of food, ensuring that the consumer obtains the freshest products (Vidickienė, 2013).

The platform still pays little attention to supporting the chosen specialization. If there is a need to deepen knowledge on certain specific issues, it is suggested to use the services of other members of the network who are more experienced or specialize in growing certain types of plants using natural agriculture. However, the network could also contribute to the formation of a wider range of products and services, thereby reducing the main disadvantage of the specialization strategy - difficulties in finding a sufficient number of buyers for a specific product. Thus far, platforms of natural agriculture only form a variety of services, but not products, offering user educational service packages, which are jointly provided by several businesses engaged in natural farming, jointly organizing seminars or fairs of natural agriculture products.

The 'many-to-one' relationship type is particularly inherent in the network, as network members discuss and analyse the network's activities both online—on their platform and on social networks, as well as during face-to-face meetings, where they discuss the possibilities of improving the platform's architecture and its instruments. During the development of the Natural Agriculture network, different opinions, prioritization of different activities, and differences in values arose among its members,

and three different platforms were established on Facebook: in 2010, the Facebook page *Natural Agriculture* was established, in 2014, a public Facebook group *Natural Agriculture*, and in 2015, a public Facebook group *Natural Agriculture. A Forum of followers of Saulius Jasionis* was established. The many-to-one relationship type also enables the **diversification strategy** because members of the network who have different interests were also included, and the network became more diverse. Three different public groups on Facebook also prove that. Some former members of the national network do not participate in all the activities of the network: some of them participate in only the primary platform, others participate in the activities of the Facebook page or Facebook groups, and some members are more eager to have only direct face-to-face contact. In other words, there is currently no single national natural agriculture network; it has split up into separate natural farming networks, and some of them cooperate and exchange information.

At this stage, organizational tools were oriented towards those natural agriculture farmers who wanted to develop their businesses to sell new products and services. Therefore, new and attractive ways to promote natural agriculture were employed. This was a very important phase of the network, as it was understood that selling products and services might be even more difficult than growing and/or creating products or services because of the very high competition in the food market. For this purpose, in 2010, the very first social network page *Natural Agriculture* was established on Facebook. Members of the network understood the importance of good timing and social networks, and therefore, they introduced many activities, such as tastings of natural agricultural products, seed and seedling exchange fairs, online and practical seminars, training, and education for farmers and consumers interested in natural agriculture. The website and social networks ensure the presentation of natural agriculture farmers and the range of products and services they offer. Social media and a website also helped to create a base of regular and potential consumers to whom new products and services, new service providers, various promotions, and a wide variety of events are presented. The four currently operating platforms also promote the cooperation of individual farmers engaged in the natural farming business; they are offered one or several day(s) events and seminars in which

farmers representing different areas of natural agriculture participate, give their presentations and share their experiences. However, online platforms are not used to their full potential, as a united system for selling products grown by the principles of natural agriculture has not been created (Vidickienė et al., 2021).

‘Many-to-many’ types of relationships between members are created by promoting the platform on various social networks: Facebook, Instagram, and YouTube. Since natural agriculture primarily aims for clean and healthy food products, a cleaner environment, and better environmental quality, it is very important to spread ideas not only among the current members of the network. At this stage of network development, the **collaboration strategy** is implemented, as connections are made with other networks to cover a larger area, spread knowledge about natural agriculture and deliver more services.

After starting natural farming businesses, the platform also offered network members to cooperate by assisting each other by sharing contacts of consumers if the farmer could not provide products or services at a given time. Farmers shared the needs of customers personally and by using social networks. In addition, natural farming networks use organizational tools that contribute to saving resources by organizing the natural farming business. Network members can use the platform to initiate cost reduction projects by cooperating on shared transportation, consultant visits to several neighbouring farms, marketing, and educational events.

The members of the Natural Agriculture network not only promote the values of natural agriculture on the natural agriculture website ‘gerazemdirbyste.lt’ but also use other opportunities for cooperation obtainable by social networks. Social networks offer both members and the general public a more acceptable content of presentation, where advice and information can be asked in real-time without having to search for an additional page on the internet or in a forum. Social networks offer a convenient and user-friendly mechanism for promoting and inviting members and non-members to fairs, seminars, and consultations, where members of one platform can invite and inform network members and people from other networks in real time, and this information becomes visible and public not only to active network members but also for

everyone interested in it. The many-to-many relationship type helps to attract new members to the network and engage them more. This type of relationship was especially actively used when the participants of the national network split into several groups. Relations between those interested in natural agriculture are created not only by promoting the principles of natural agriculture on the website of natural agriculture 'www.gerazemdirbyste.lt' but also by using the other three previously mentioned cooperation platforms on Facebook. This type of relationship ensures that all followers of natural agriculture participating in the activities of both the platform 'gerazemdirbyste.lt' and social networks are included, create, and cocreate the content of platforms, help advertise natural agriculture and are an important part of it (Vidickienė et al., 2021).

Finally, the network of Natural Agriculture uses the relationship type 'one-transforms-many', as it not only connects people and platforms but also changes the norms and values of society. People who join the network's activities have more eco-friendly, nature-oriented, and clean-living-oriented values. Therefore, the innovative goal of collaboration turns the network into a social movement changing society, and by doing so, an **innovation strategy** is employed. Relationships one-transforms-many are one the most difficult to measure, as the key is transformation and the change of society. However, it can be stated that the network of Natural Agriculture is changing society in several ways: (1) as it attracts more members, organic and clean food is becoming more popular, and more people are interested in natural agriculture, it changes farmer and nature relations, and many previous 'normal' practices, such as the usage of fertilizers, become more marginalized; (2) the network advocates for new small-scale family farming as relevant to individuality; and (3) the network creates and strengthens new food consumption habits and requests for a new quality of food (Gedminaitė-Raudonė & Simonaitytė, 2021).

Networks' achievements and innovations in this area show the growth of people interested in innovative farming. However, L. Žmuida, one of the initiators of the Natural Agriculture network, believes that natural agriculture is a very specific branch of agriculture; it is not intended for everyone and therefore will not attract many members. Therefore,

the growth and development of the network should also develop naturally, without over-introducing these ideas to the general public. On the other hand, the effectiveness of this type of instrument depends on the methods and channels of information presentation. Experience has shown that the most effective information channels for attracting more members are social networks. They provide information, invitations to events, and discussions on issues of concern to everyone, reaching not only members of the natural farming network who have been interested in it for many years but all those who want to learn about natural farming from both the business and consumer sides (Vidickienė et al., 2021).

The openness of the network allows for attracting a wide variety of new members. The website and social networks are accessible to the public, and it encourages farmers, other service providers, consultants, and people who have just started farming to change their activities towards more natural ones to supplement and servitize their business. Website and Facebook pages are also useful for consumers looking for higher consumption value and environmentally friendly food products and looking for meaningful time spent volunteering in rural areas, growing clean food, and educating themselves about it.

To what extent did the effect generated by cooperation contribute to the development of territorial servitization? The strategic goals of the collaborative network platform have undergone a natural evolution process typical of the commercialization of innovation in three stages.

During the first stage, the network was focused only on spreading the principles of natural agriculture as an innovation, and it helped bring together people to whom living in harmony with nature was particularly important in agricultural activities. The network served as a place to share experiences and advice.

During the second stage, the platform started encouraging natural agriculture farmers to grow vegetables and fruits to sell their surplus products. The network began to offer its members various organizational tools, helping them market the consumption of vegetables and fruits grown according to an innovative method and to create a supply system that ensures the reproduction cycle of new types of agricultural products. Since 2011, the network began to organize the trading system

of food products grown according to the principles of natural agriculture, and a few growers began to sell their production. Information about this possibility was publicly available on the website (Vidickienė, 2013). At this stage of development, the scope of network activities has increased even more, and the network has become useful not only for those who engage in natural agriculture but also for those who are looking to buy such products. The natural farming platform did not provide an online ordering system, where users could place their individual or group orders, but farmers engaged in natural farming had their own individual ordering systems. Members of the network, using Facebook social network groups and pages, actively publish and share information about the possibilities of such orders. This shows that the network helps innovative farmers create a supply system that ensures the reproduction cycle of a new type of product. It was implemented by helping network members create a system for product ordering—first ordering to grow and later ordering to deliver products. This was achieved by using servitization. In other words, organizational measures were used to help generate the innovation strategy effect. The cooperation has helped to gather a community of regular customers who trust the products of natural agriculture, thus creating a source of income for the producers of these products (Vidickienė et al., 2021).

During the third stage, the platform started to provide not only products but also services to members and the public. The network covers a broad variety of services starting with educational activities about natural farming, tastings, online courses, shadowing practices, volunteering activities, and many more. In the face of the COVID-19 pandemic, natural agriculture has gained even greater public attention, and many more people have become interested in the principles of natural agriculture, its benefits, and ways to grow food by themselves. This was encouraged by the fact that during the pandemic, many city dwellers moved to the countryside and bought homesteads, which became especially popular, and it was further strengthened by Russia's military aggression in Ukraine. Currently, members of the network organize online seminars on how to store, preserve, grow, and gather food in the wild in case of a military crisis. In the face of uncertain times, people have turned to one of the most important needs—food security,

food sovereignty, and the provision of clean, nutritious, and fresh food. Therefore, it is believed that the network of Natural Agriculture has great potential to grow and to implement even more various goals than it does today.

The case study revealed that the natural agriculture network helped bring together a community of innovative product producers, service providers, and consumers. Its activities contribute greatly to the emergence of innovatively grown food and the various supply systems necessary for their access to the consumer. The creation and implementation of such systems promote the servitization of farming, i.e., farmers of natural agriculture not only grow products but also provide many services that also generate income. Those who grow food products only for their own needs also play an important role in disseminating information, improving the quality of products and services, and generally spreading the ideas of natural agriculture.

In just over 15 years, the network has grown significantly from a group of a few enthusiasts to four networks with their platforms. Therefore, the main challenge in the future will be the coordination of actions of the network, aiming that the members of individual networks communicate more effectively with each other, and the differences between the current platforms complement the common aspiration to popularize natural farming methods in Lithuania and to increase the consumption of clean, organic, and natural products.

9.7 Characteristics of Rural Development Networks Contributing to the Development of Territorial Servitization in Rural Areas

The analysis of rural networks operating in Lithuania, with the aim of finding the most appropriate examples for the case studies, as well as the detailed case studies of six networks, show that all of them contribute to the development of territorial servitization in rural areas. However, each network does this differently, as their platforms focus on different

strategic objectives. Research on the experience of rural development networks has helped to reveal the qualitative structure of these organizations and the peculiarities of their evolution. The six case studies presented in the previous section provide answers to the research questions about the participants in the networks, their collective goals as a platform for common actions, strategies used to achieve the desired network effects, and a variety of organizational tools for networking.

Network platform. The platform of collaborative networks is defined as something more than a piece of technology or software that connects users with other members of a community. It includes the platform team, composed of the initiators, owners, and managers of the network.

The research confirmed that the organizational structure and management style of Lithuanian regional and national networks involved in the servitization of the rural economy is oriented to the key paradigm innovations of the post-industrial service economy. First, none of the Lithuanian rural networks analysed uses a centralized organizational structure but develops a hybrid model that corresponds to the specifics of the network's activity. The mix of decentralized and centralized structures allows the introduction of a flexible management style by creating a Platform Team. The team creates and enforces the strategic vision and direction for the network activities; initiates special projects, events, and meetings of network participants; offers other communication and collaboration tools; and builds out a funding model for the network activities. The roles and responsibilities of the platform team also include ongoing administration. The transformational leadership approach is at the heart of platform team building. This type of leadership focuses on motivating people to achieve collective success, building relationships of trust, and empowering network members to contribute to the network's goals. A hybrid model of decentralized and centralized structure encourages creative initiatives and gives network participants the best of both approaches.

Second, the way in which the participants of rural development networks organize activities and manage their relationships does not fit within the framework of traditional institutions. In fact, the examined networks are informal organizations, and only some of them have a

formal structure and the legal personality of an 'association' (an 'association' is a type of NGO, and the law sets minimum standards for the creation, management, and operation of a joint NGO activity to be eligible for EU and national support). The networks with the legal personality only ensure that their management and decision-making bodies are in accordance with their statutes, but they are otherwise free to determine the arrangements for pursuing their objectives on the basis of interpersonal and interorganizational relationships outside the formal organizational structure. The members of the formal governance bodies of the association work together with the informal members of the network platform team involved in the implementation of special network events, projects, and initiatives.

Participants. The servitization of farming is reducing competition in rural regions, and local entrepreneurs are increasingly involved in collaborative projects and network organizations. Case studies reveal the diversity of actors involved in the servitization of farming. To accelerate the servitization process, platform teams of rural networks are developing new organizational tools to consolidate and mobilize participants. A systematic analysis of the actors involved in the activities of rural development networks dealing with territorial servitization has shown that there is a clear evolution in the composition of the participants.

The first participants of rural development networks were actual or potential service providers in farms and rural settlements. They had similar interests and formed one homogeneous group. Wanting to develop an innovative business model for their farm, they looked for like-minded people and hoped to find the best solutions together. Service users are also active in rural development networks. This group of network participants has an interest in increasing the supply of the innovative services they need in a region or country. For instance, the first participants of the Natural Agriculture network were people who wanted to use food of particularly high quality but could not afford to buy it on the market. Some of them have learned to grow vegetables using natural farming methods themselves, but others have gone to great lengths to set up places where they can order the products they want.

However, over time, all networks are moving away from the traditional practice of collaboration in agricultural cooperatives and non-governmental organizations between entities with similar characteristics. The platform teams gradually rearrange the structure of the participants to achieve cooperation between different actors. First, one-way networks are striving to transform themselves into two-way networks. Networks organized as collectives of potential or actual service providers seek to involve the customers of their services in their organization's activities, while networks of service users seek to collaborate with service providers. In the first case, service providers should find a way to bring together a group of clients and establish regular and close contact with them. For example, the founders of the Viva Sol network were initially focused on creating a two-sided network. Once the group of cheese producers was formed in the village, the platform team immediately set about mobilizing the other side of the network and started to create a community of cheese eaters in the capital of Lithuania Vilnius. Close cooperation with customers in the large city helped to spread the word about the special cheeses. The networking efforts created marketing channels and increased sales for all farms in the village. In the second case, the service-seeking group has to engage in activities that facilitate the emergence of the service providers they want. For example, the network Coolūkis started its activities by gathering a group of young people who wanted to learn the basics of gardening. However, to find people willing to teach gardening and to provide a place to practice, the platform team had to do a lot of work. To recruit members of the other side of the network, they had to specifically seek out available plots of land among the older generation of villagers and personally persuade them to join the initiative promoted by the network.

How quickly the network evolves from one-sided to multisided depends on the knowledge and skills of the network platform team in the management field. Case studies show that platform initiators can be inspired by the success of globally growing two-sided platform businesses and start with the idea of using a network organization to align the interests of service providers and their clients. However, in practice, they go the same evolutionary pathway as all community-based networks—the group of participants most interested in the idea proposed by the

platform is brought together at the beginning, and then it starts to form a second network group. These two groups are coming together to support the development of territorial servitization. The activities of two-sided network organizations are focused on aligning the interests of service customers and providers. Participation in training and events organized by the network enables service providers to become more aware of their client's needs and to start delivering better quality services. Close interaction with network members has also revealed that some service components can be dropped, as they only add to the cost of the service and are not appreciated by customers.

The experience of mature rural development networks shows that it later became apparent that business development could benefit from cooperation with special groups of actors in the local business ecosystem, e.g., with suppliers, business consultants, etc. A special role may be played by a group of service providers offering complementary services that do not compete with mainstream service providers.

The summary of the case study results shows that the industrial-era attitude that effective collaboration is possible only between similar entities has been replaced by an orientation towards the diversity of collaborating parties. In all the cases analysed, the incentive to collaborate on rural servitization issues comes from various groups that can be identified as representatives of special interests in the local business ecosystem. The networks in the servitization field mainly involve the following groups that can potentially create complementarity effects:

1. Farmers.
2. Other entrepreneurs operating in rural areas.
3. People engaged in leisure gardening.
4. Service users.
5. Suppliers.
6. Service providers to rural businesses.
7. Private consultants and their organizations.
8. Educational and research institutions.
9. Non-governmental organizations and individual volunteers.
10. Public agencies.

It is also important to note that the group representing entrepreneurs is not homogenous. Depending on the specificities of the network participants' businesses, entrepreneurs operating in rural areas may represent different interests and form several different network sides with complementarity effects. The network platform team should take this into account and find ways to combine different interests by adopting the diversification strategy of network self-management. This strategy allows the creation of a multisided network that involves only special groups of participants. The set of network sides must be chosen in such a way that the heterogeneity of the participants would generate the complementarity effect. Otherwise, involving more diverse groups in the network can lead to poor communication and reduced teamwork, conflict, exclusion, and other unintended negative effects that will encourage network participants to move to other similar collaborative organizations.

Effects of networking. The analysis of rural development networks operating in Lithuania has shown that the effects of networking depend on the ability of network leaders to match common and individual objectives. The case studies confirm that successful service businesses in rural areas rely on a wide range of business relationships. Farmers involved in pioneering servitization initiatives lack experience in the service business and have strong incentives to collaborate with each other and with other actors in the regional business ecosystem. By participating in network activities, they expect to solve many business problems. The participants in the networks surveyed found that they experienced the following individual benefits as a result of their participation in the network:

1. *Empowerment of participants through the creation of the relationship 'many-as-one'.* The combined power of a group based on the scale effect allows for achieving effects that cannot be achieved individually. Together, the members of the network have created a local market and business ecosystem for their services. For example, the Viva Sol network created a local market of exclusive cheeses in Vilnius, the Rural Tourism network created a national market for tourism services in rural areas, and the Natural Agriculture network created several local markets of vegetables with exceptional quality. All the networks help the participants market educational services. The farms offer

very different educational programmes and specific training and advisory services on farming, food, introduction to wildlife, and nature protection. A two-sided or multisided network structure enables the spread of information on the services widely and effectively and saves participants' marketing costs.

The case studies show that in all the networks examined, the platform teams aim to create not only the mentioned cross-side network effects. Participation in network organization helps farms develop farming servitization projects because of the communication and collaboration between homogenous participants. The analysed rural development networks practise the generation of same-side network scale effects by the following activities:

- Encouraging group ordering of services (customer collaboration).
- Promoting group purchasing of raw materials and services (business collaboration).
- Initiating joint projects to optimize logistics and supply chain (specific business collaboration).

Engagement in network activities also gives the participant power and status in a particular situation through support and knowledge from other members of the group. If the number of people who want to participate in network activities grows, so does the power of the network.

2. *Empowerment of participants through the creation of the relationship 'one-to-many'*. All the networks build platform teams that involve the most active network participants. The platform team aims to act as an intermediary between network participants. In contrast to many social networks, where the key platform task is to facilitate the exchange of information between network participants, analysed networks have a strong focus on joint activities. They are oriented to the organization of various collective marketing and logistic projects, including festivals, fairs, and other public events. Networks also place a strong emphasis on participants learning from each other. Learning from best practices through training and workshops on the farms of network members helps them to succeed on their own farms.

3. *Alignment of the interests of participants through the creation of the 'one-to-one' relationship generates a 'win-win' situation.* All analysed networks help participants find new connections that can be beneficial to them because they will be new clients or will refer to potential clients; they will become service providers, suppliers, etc. The network participants-clients obtain more information on the specifics of the services, so they can choose the best ones for them. The network participants-service providers obtain information from prospective customers in their target market about what additional services they need or how the quality of the services can be improved. Collective marketing and logistic projects enable each network participant to concentrate on the most favourable tasks and roles. For example, the activities of the Rural Tourism network platform team helped owners of tourist farms clearly identify their specialization in the rural tourism market. The events of the Natural Agriculture network are the place where customers can find a personal vegetable grower.
4. *Alignment of the interests of participants through the creation of the relationship 'many-to-one' generates a complementarity effect.* Reorganization of the one-sided or two-sided network to a multisided one increases network participants' business development opportunities. If a newly added group of participants is complementary to participants' business activities, it can increase competitive advantages for both sides. For example, the involvement of a large group of craftsmen in the Rural Tourism network may be very useful for owners of tourist farms.
5. *Transformation of participants' working habits through the creation of the relationship 'many-to-many'.* The leaders of the networks find that networking generates an unexpected effect—collaboration with new people helps to change the previous working methods and routines. Changing work habits creates a good foundation for better performance and the development of skills necessary for service providers, including effective communication, time management, compliance, and punctuality. Their insights are in line with research on complex problem-solving issues. Numerous studies reported in the literature illustrate non-systemic behaviour by individuals confronted with a complex problem (Maani & Maharaj, 2001). Entering a network

organization, an individual hopes to be guided by professionals and gain additional benefits. For example, the international projects of the Milk Road network encouraged Lithuanian farmers to transform several traditional farming and marketing practices and increased the competitiveness of local dairy producers by establishing export relations. Joint initiatives by the Rural Tourism network have increased the range of services offered to tourists and helped to improve the quality of services, especially in accommodation and time management.

6. *Transformation of participants' consumption habits through the creation of the relationship 'one-for-many'.* This type of relationship was deliberately used in two of the networks studied. The Natural Agriculture network functions as a social movement whose mission is to transform participants' attitudes and behaviour concerning food and land consumption. The network Coolūkis was also established as a local social movement with a mission to preserve the tradition of gardening, passing it on to children and growing at least some of their own food.

Both networks aim to organize the activities with an orientation to the relationship 'one-for-many'. They seek to provide a strong platform (*one*) for network participants and all members of society (*many*), which helps transform consumption habits developed in the industrial era. The participants of those networks feel the satisfaction of contributing to social change by creating a community that demonstrates an innovative approach to consumption through personal actions.

The servitization of individual businesses generates many territorial servitization effects that contribute to the development of the whole rural region.

Benefits to the economic development of a region or country. The analysis of rural development networks operating in Lithuania, based on the theory of qualitative structure, has shown that collective actions in the farming servitization field help to extract the many network effects through which a region is capable of improving its economic, political,

and social welfare. The activities of the network organizations examined benefit the economic development of a region or country in the following ways:

- Rural populations are encouraged to create an additional source of income through service provision.
- Regions reduce the need for investment by adapting unused or ineffectively used land, buildings, knowledge, and other tangible and intangible rural resources to the needs of service provision.
- Farming servitization creates new tourist destinations.
- Networking helps farmers attract customers to their most profitable product or service.
- Rural populations obtain a higher share of the added value generated by agricultural production.
- Networking creates local food systems and makes available high-quality food.

Summarizing the experience of the Lithuanian rural development networks studied, it can be argued that the academic literature currently focuses too much on the role of IT tools and services in networking. However, they only serve as means of communication and do little to mobilize network members for joint action. The mere use of IT to disseminate information relevant to network members and the automation of routine networking processes are not sufficient to encourage farmers and other rural residents to join the network. The servitization of farming has economic targets, and network participants measure the effects of networking in terms of economic benefits. Moreover, in rural areas, direct contact and collective actions based on trust and mutual respect are particularly valued. The abundance of information flow through digital communication *tools* often has a negative impact on the attractiveness of joining a network. According to the opinion of the network participants, more important factors are the transformative leadership and skills of the network platform team. The success of the network activities mainly depends on whether the platform team ensures that any network participant can initiate common actions and advocate for change.

It is evident that the findings of the case studies presented in this monograph should be verified by exploring more rural development networks focused on the promotion of farming servitization and by broadening the scope of the study, as this study is based only on Lithuanian cases. However, even with a limited empirical base, the research contributed to the creation of new knowledge and the use of existing knowledge in an innovative way. It revealed many new insights for practical actions and made a theoretical contribution to the conceptualization of the strategic goals, the organizational structure, and the types of platform teams as key managers of collaborative networks that promote the processes of servitization in rural areas.

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10

Framework of Networking Strategies Based on the Qualitative Structure Approach

Dalia Vidickienė

The networks can emerge and grow organically; however, the process can also be managed through conscious intervention. The research within organizational and marketing studies has distinguished networks that are intentionally managed from networks that are emergent without guidance from a key network actor or platform team (e.g., Dagnino et al., 2016; Leite et al., 2020; Möller & Svahn, 2006; Ritter et al., 2004). Empirical and theoretical research on the organizational structures of networks has revealed that the leader is able to purposefully influence a network (Dhanaraj & Parkhe, 2006; Hinterhuber, 2002; Kniffin & Patterson, 2019; Lorenzoni & Lipparini, 1999; Müller-Seitz, 2012), and intentionally established and purposefully managed networks generate more positive and fewer negative effects (Perks et al., 2017; Rostek & Młodzianowski, 2018). The critical role of network management in mobilizing value cocreation is further supported by marketing research (e.g., Gummesson, 2015; Jaakkola & Hakanen, 2013; Partanen & Möller, 2012). Conscious and intentional relationship management in network organizations is particularly important in the collaboration-driven service economy, and scholars adopting a

managerial perspective on networks have identified the lack of organizational structure as the major obstacle against collaboration (Karoui et al., 2010; Ospina & Foldy, 2016; Vargo & Lusch, 2016). However, what is the most appropriate organizational structure for a post-industrial network? Why do researchers in the field of collaborative networks avoid the terms ‘governance’ and ‘management’ and use terms such as ‘coordination’, ‘orchestration’, or ‘choreography’? (Baklouti et al., 2017; Ferraro & Iovanella, 2015). Should leadership in collaborative networks be different? The literature on the organizational structure of networks provides few answers to the above questions. Moreover, the research focuses more on the structural characteristics of networks and ignores the determinants of network evolution (Li et al., 2021).

Examination of networking from a collaborative perspective leads to a more complex understanding of network management. In the industrial era, leadership was seen as a top-down process and hence primarily a property of the leader with little role for the follower. Currently, a new approach has emerged, and leadership is seen as a reciprocal process where both the leader and the follower play an active role in the relationship (Martin et al., 2019). Shared leadership as the management style emerged where the power and influence are distributed across a group of people where the conveyance of influence can be both upwards and downwards in the hierarchical chain (Pearce & Wassenaar, 2014). Teams can also assign a new leader for each task based on the match between the task requirements and the members’ competencies (Johnson et al., 2002). The new approach to leadership is best visible in collaborative networks where collaboration is an intentional property that derives from the shared belief that along with the network, members could achieve goals that would not be possible or would have a higher cost if attempted by them individually. As discussed in Chapter 9, the concept of a collaborative network emerged in the post-industrial era and represents the thinking of third-generation network designers. They imply that communication and transactions between participants are not enough and define networks as relationship-based organizations (e.g., Girard & Fallery, 2011; Keast & Hampson, 2007; Morçöl et al., 2021; Rostek & Młodzianowski, 2018). Despite the growing number of studies in the platform-based networks field, the knowledge of how to design

and manage network activities and effects according to the relationship-based approach is still very fragmented. Recent studies reveal several interesting insights into a relationship perspective that platform teams oriented to a transformational leadership approach rose to address this issue (Karoui et al., 2010; Leite et al., 2020). Unlike the dominant transactional approach, transformational leadership is not based on a 'give and take' relationship but on the articulation of an energizing vision and challenging goals. According to Burns (1978), who first introduced the concept of transforming leadership, the transforming approach creates a significant change in the lives of people and organizations. It redesigns perceptions and values and changes expectations and aspirations. In its ideal form, transformational leadership creates valuable and positive change in followers with the end goal of developing followers into leaders.

Understanding network management as a collective effort of participants to coordinate activities and overcome obstacles to a common goal is in line with the theory of qualitative structure (Kalinauskas, 1991; Vidickienė, 2013), which provides guidance on how to improve the quality of any whole entity by self-management (see Chapter 2). The qualitative structure method, based on evolutionary and holistic approaches, enables us to reveal the complexity and dynamics of networks through the prism of more different aspects than in the literature on collaboration, networks, and regional entrepreneurial ecosystems to fully exploit the potential of territorial servitization in the development of rural economies. Analysis of networks as a living and evolving whole according to the qualitative structure theory helps to develop the evolutionary framework as a scheme that explains how networks emerge and can be managed.

From the managerial perspective, a network is commonly understood as a group of entities that share or are motivated by at least one common issue or interest or work together to achieve a common objective. The qualitative structure of the network should be defined to be appropriate for all representatives of networks. It does not matter whether a network is a virtual or tangible network rooted in physical objects and real-world social behaviour. It does not matter whether a network is built for communication, transactions, or transformation of society through

collective actions, i.e., according to the concept of the first-, second-, or third-generation networks discussed in Sect. 8.5. They all use the same building blocks of the qualitative structure.

According to the theory of qualitative structure, the network as a whole entity should consist of three components: tools of self-management. The biggest challenge is choosing a name for the components-tools, as different scientific perspectives have different names for the same phenomenon. As noted by Mandell et al., (2017, p. 327), “the current language used in the literature on networks does not adequately explain the distinctive workings of collaborative networks, nor does it provide sufficient emphasis on the relational aspects of these entities”. Moreover, there are many specialized concepts to explain the different features of the networks. In the context of qualitative structure, the following names for three network tools will be used: network participants, network effects, and network platform.

Component-tool A. Participants. Any network is created as a means of interaction. To start a network-building process, it is necessary to find who will interact, i.e., who will be the participants of the group. Computer science ignores this extremely important aspect of networking and defines a network as “*a group of two or more devices or nodes that can communicate*” (Technopedia, 2020). Therefore, the name ‘network nodes’ is usually used in the IT literature. The transactional perspective-oriented second-generation networks highlight that a network should create a value that is understandable as practical utility and replace the term ‘network nodes’ with the term ‘network users’. The literature on collaborative networks prefers the terms ‘network participants’ or ‘network members’. They emphasize the role of active participation in network activities. As the concept of collaborative networks is in line with the post-industrial service economy and demonstrates most self-management options, the term ‘participants’ will be used to define the qualitative structure of networks (the term ‘network members’ comes from the institutional literature and is more oriented towards the industrial paradigm).

Component-tool B. Effects. Networking activities always have consequences (outcomes, results). In the literature, this is usually referred to as the ‘effect’, and this term will be used for the definition of the qualitative

structure of a network. The networking effects are sometimes difficult to measure, and they are not easily visible to outsiders. However, they need to be obvious to network participants because otherwise there is no purpose in being involved in the network. At the current stage of the development of network theory, the literature tends to provide a narrow definition of network effects. The network effect is defined as a phenomenon whereby an increased number of users affect the increased value proposition of the service or good. Such a definition emerged from a transactional perspective and is addressed only to the most obvious and simplest in the sense of the management network effect. However, qualitative structure analysis of networking organizations shows that network effects can be more varied.

Component-tool C. Platform. The mission of any network is to create symbiotic relationships between users, but there is a widespread belief in society that relationships are formed automatically. The last insights of network theory disagree with such a perception and suggest that any network has an infrastructure as the set of facilities and systems that serve for relationship building. An informal infrastructure depends on the norms of reciprocity and trust among actors, given that they sustain the relationships among actors. A formal infrastructure considers the existence of contracts, rules, and regulations. A network infrastructure that connects users in intentionally established and purposefully managed networks is called a 'platform'. IT literature usually defines a platform as a piece of technology or software, but literature dealing with the analysis of networks within the management field provides a more comprehensive understanding of platforms. With the rise of business platforms, many research streams have emerged on the role of platform owners, managers, and platform service/product owners. They highlight the input of real people into the network's functioning. The literature on collaboration networks further expands our understanding of network management by discussing how to establish a so-called 'platform team' and develop effective leadership. From the third-generation network perspective, a network platform defines the goals and agenda of networking and offers a set of self-management instruments that facilitate network functioning.

All three components—tools—are necessary for the wholeness of a network organization. If a network loses even one component, it ceases to exist as a representative of network organizations.

According to qualitative structure theory (see Chapter 2), any whole resides in a three-dimensional continuum. The dimensions are the following: (1) organizational construction (represents an active force in the self-management process), (2) functioning (represents a passive force), and (3) communication with the external environment (represents a limiting force). The network as a whole entity has the potential to use all three basic component tools in any dimension of the qualitative structure.

The possible six combinations of the three components (participants, platform, and effects) used in three dimensions could be defined as a particular self-management strategy. Each combination of components has the potential to maintain or increase achieved self-management quality through the different relationships between network components. How powerful and fruitful synergy will be created through each combination when a strategy is implemented by a particular network organization depends on subjective barriers developing organizational construction.

Self-management models of network organizations, as different strategies based on the qualitative structure approach, may be named as follows:

1. Extensive growth strategy.
2. Intensification strategy.
3. Specialization strategy.
4. Diversification strategy.
5. Collaboration strategy.
6. Innovation strategy.

They identify basic network self-management modes with growing complexity based on the differences of qualitative structure and create an evolutionary framework of six stages (see Fig. 10.1). Moving to the next strategy, a network strives to evolve self-management quality by adding new knowledge and skills. At the first stage of the evolutionary cycle, a

network is able to use only one component—participants—as a tool. In the last stage of the evolution cycle, a network operates all three components as self-management tools in the internal and external environment. The desirable sequence of combinations between components-tools and quality dimensions in a network organization self-management process is shown in Fig. 10.1. The sequence of combinations is based on logical principles first and foremost. A network cannot jump to a higher stage of evolution by skipping the preceding stage(s), as the competencies of self-management that have been developed in the past define the options range for today's actions. If the implementation of an extensive growth strategy results in a small number of participants in the network's activities, it may limit the network's ability to implement the other five strategies. For instance, a small group may face trouble implementing the intensive growth strategy because of a lack of human and financial resources to build an effective platform team, develop necessary software solutions, purchase office equipment, etc. The suggested framework provides guidelines on how to increase the quality of self-management for any network and step-by-step evolve it into a powerful and resilient organization.

All the stages have different objectives and mechanisms to increase the quality of the network organization.

Stage 1. When a network is created as a group of participants that share or are motivated by at least one common issue, this issue becomes a mission of the network. To define an initial platform of the network, the initiators of the network should agree on a common agenda. The effect of the network's activities will be evaluated depending on how successful the implementation of the set agenda will be. Networking is based on the belief that participants have the capacity to create the combined power of a group, which is greater than the total power achieved by each acting separately. Engagement in network activities gives the participant power and status in a particular situation through support and knowledge from other members of the group. Network theory explains that growth in the number of participants generates a significant increase in the network effect; consequently, each new network organization starts with an *extensive growth strategy*. Participants represent the active force of the network, and the task of the self-management strategy is to increase their number.

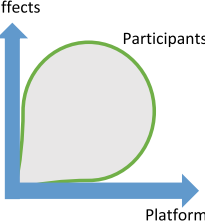
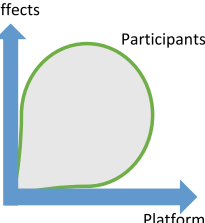
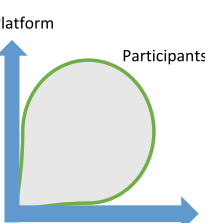
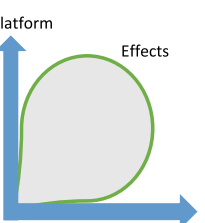
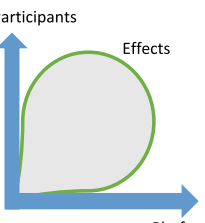
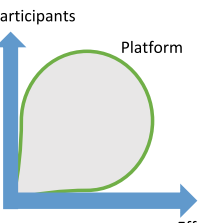
Approach	Place-oriented	Time-oriented
Empowerment-focused	 <p>STAGE 1. Extensive growth strategy <i>Creates a common agenda through 'many as one' relationship</i></p>	 <p>STAGE 2. Intensification strategy <i>Mobilises participants through 'one-to-many' relationship</i></p>
Matching-focused	 <p>STAGE 3. Specialization strategy <i>Aligns the interests through 'one-to-one' relationship</i></p>	 <p>STAGE 4. Diversification strategy <i>Combines the interests through 'many-to-one' relationship</i></p>
Transformation-focused	 <p>STAGE 5. Collaboration strategy <i>Identifies ways to achieve mutual benefits through 'many-to-many' relationship</i></p>	 <p>STAGE 6. Innovation strategy <i>Drives social changes through 'one-to-many' relationship</i></p>

Fig. 10.1 The desirable sequence of combinations between components and quality dimensions in a network organization self-management process (Source Created by the author)

The first step is to reach a critical mass of participants. This is the point at which the effect of the network begins to grow significantly, and the network organization becomes empowered to fulfil the networking goals. However, simply increasing the number of participants is not enough. An extensive growth strategy is a self-management pattern, where participation in network activities is focused on the empowerment of participants, and this aspect is essential in the first stage of network evolution. In the relationship-building context, the task is to create a '*many-as-one*' relationship. When everyone comes together and acts as one, the networking goals can be achieved more effectively. Well-managed networks demonstrate how the ability of members to act in unison helps to gain power and freedom in the political, economic, and social life of participants.

The growth of the number of participants gives the network more power, but it has a threshold. Large network organizations face a lack of effective management and weak ties problems if too many participants are on the network. Congestion generates a negative network effect whereby too many participants can slow a network down, reducing the platform's utility and frustrating network members. When a negative scale network effect occurs, the platform team faces a decision to change its strategy.

Stage 2. Shift to the *intensification strategy* means that instead of aiming for a steady increase in the number of participants, the platform team is focusing on how to make relationships between network participants more productive. The strategy is time-focused, and the challenge is to find reasons why some networking goals and instruments became ineffective and unsatisfying. The strategy emphasizes network participants' satisfaction and retention and encourages the search for better ways to enable the platform to provide high-quality services. A network platform as an intermediary may facilitate the exchange of information, tacit knowledge, other intangible and tangible resources, products, and services. In the relationship-building context, the strategy is based on the '*one-to-many*' relationship model. This means that information flows and collective actions are organized from a single source—the platform. Relating to network evolution, the one-to-many model of relationships is primarily important as a vehicle for experimentation with various ways to build a strong network. The intensification strategy aims to increase

the power of a network by changing organizational structure, networking style and techniques, reorganizing digital, financial, and organizational instruments of the platform or introducing new ones, etc. At the heart of this strategy is learning from experience and best practices for turning weak ties into strong ties. How large the reorganization of the current networking practice will be depends on the characteristics of the participants, as the participants represent a limiting force in the second stage of network evolution. It sometimes happens that modern networking methods cannot be used because of a lack of leadership or IT skills, financial resources, etc.

In the network theory and practice growth era, many new recommendations on how to mobilize the network participants for the reorganization of networking methods with the aim. Consequently, the platform team, especially in small-scale networks, is in no hurry to move to the next strategy according to the evolutionary pathway. A signal that a network should shift to the next strategy is the following situations:

- Decreased interest of participants in being involved in network activities. This may mean that too many different events and contacts are on offer or that participants feel that the measures on offer are not having the desired effect.
- Separate groups are forming within the network. This tendency means that network participants do not need all the interaction methods offered by the platform and tend to specialize to be able to form groups with high synergy.

Both situations provide an incentive to revise previously defined goals of networking. How to do so in a systemic way explains the next strategy on the evolutionary pathway.

Stage 3. The specialization strategy is implemented with the aim of building a platform that has the capacity to create better relationships between network participants with different, and sometimes conflicting, interests. It focuses on participants' loyalty and long-term engagement. Implementation of the specialization strategy means that the network aims to offer the top benefits participants are asking for. The strategy is matching-focused and aims to align the interests of participants.

The active force—network effects—are analysed and evaluated in the context of the benefits to participants. As a result of the most desirable benefit selection, suggestions arise on how to reduce types of purposefully pursued effects and concentrate on the most important. Special effects-oriented networks typically restructure the network according to the ‘two-sided’ model. The two-sided network has two distinct participant groups that provide each other with network benefits. The last couple of decades have seen a rise in two-sided networks that brings producers and consumers together. However, two-sided networks can connect various groups with matching interests, for instance, employers with employees, doctors with patients, educators with learners, etc. The challenge is to enable the platform to provide high-quality services for both network sides, as in two-sided networks, participants on each side typically require very different functionality from their common platform. The well-managed platform aims to generate not only the positive cross-side effect but also seeks to achieve same-side network effects. The same-side effects are created by a combination of the specialization strategy with the extensive growth and intensification strategies.

In the relationship-building context, the strategy is based on the ‘one-to-one’ relationship. Creating a one-to-one relationship means that the network plays an active matchmaking role by aligning the interests of participants. A one-to-one relationship between two objects, A and B, occurs when an object of type A can be related to only one instance of an object of type B, and vice versa. To enable the two network sides to interact effectively, the platform should play an active matchmaking role and minimize transaction costs between the two network sides. The platform team focuses on participants’ loyalty and long-term engagement through the personalization of relationships and regular, periodic communication with network participants.

The specialization strategy is useful as long as it helps to make the network platform attractive for both sides. However, in a globalized and highly dynamic service economy, there is a proliferation of competing networks offering similar or more attractive services. Network participants may move to other similar networks or join several network organizations at the same time. Increasing competition can lead to a network losing many of its members or to them becoming less engaged in

network activities because they spend part of their time in other similar networks. If this happens, the network should enter the next stage of evolution by adopting a more complex strategy.

Stage 4. The diversification strategy helps to reorganize the structure of network participants with the aim of strengthening the platform's competitive advantage. The strategy is implemented by attracting a new group (or several groups) of participants with the potential to generate a complementarity effect to previous activities of the network. Implementation of this strategy results in multisided network building by linking major participants' groups with complementors. A multisided network is a new form of organization that enables distinct groups of agents to interact with each other for mutual benefits. Multisided platforms create value for a wider base of stakeholders as intermediaries between at least three groups, e.g., businesses, customers, software developers, and advertisers. In the relationship-building context, the diversification strategy is based on the 'many-to-one' relationship model. Creating a many-to-one relationship means that the network plays an active matchmaking role by combining the interests of participants. A combination of several sides of the network (*many*) should help to increase the competitiveness of the platform (*one*). The success of the strategy depends on the characteristics of the newly involved groups of participants. Therefore, the set of network sides must be chosen in such a way that the heterogeneity of the participants allows synergies to be created as they complement each other.

There are numerous ways to change the composition of a multisided network participant portfolio configuration. For this reason, most networks, especially large networks, tend to delay moving to the next stage of evolution. However, increasing dynamism in the environment at a subsequent time can reduce the achieved advantages of the network platform. Difficulties in managing multiple network goals and activities encourage the revision of the network platform.

Stage 5. The collaboration strategy uses the network's capacity to address networking among multiple members for more complex goals. The hope to create a more sustainable future is based on the belief that the platform should be important for the development of a bigger ecosystem than the network. It requires taking a wider view and looking at the network goals

and activities on a much larger scale—regional, national, continental, or even global. The strategy is oriented to the needs of a large system (macro level) and goes beyond the direct effects of the network organization (mezzo level) and individual benefits of the network participants (micro level). The network is defined as a subsystem of the macrolevel system, and the network activities are designed in relation to the behaviour of the large system. Understanding what other subsystems are and how they interact to create a large system directs a network to involve new participants. For success, there is not enough spreading network activities over a larger geographical area. Here, the platform is the active force. The strategy should be focused on collaboration that has the potential to change the way people are accustomed to communicating and working in the network. The biggest challenge is to identify the key actors in the big system that can become valuable partners. Collaboration with new actors should help to change the previous networking methods and instruments. The new collaborative activities offered by a platform should transform traditional practices used by network participants.

In the relationship-building context, the collaboration strategy is based on the ‘*many-to-many*’ relationship model. The challenge is to find the best ways to transform old competitive relationships and create a network of networks with more relationships of mutualistic symbiosis. The strategy should be based on the principles of mutuality and reciprocity when all stakeholders in a specific partnership benefit from the partnership in a way that is meaningful and beneficial to them as well as to the larger shared goals.

The collaboration strategy can also help reduce the gaps between the desired and the real capacity of the four previous strategies. Through common efforts, the network members have the possibility to break the subjective barriers or move the threshold by changing the limiting force.

1. Collaboration can provide new opportunities to increase the number of participants in the case of a low capacity of the extensive growth strategy.
2. Coordinated actions with other organizations can make network activities more intensive.

3. Collaboration can help increase the capacity of the specialization strategy through collective projects, where each network participant concentrates on the most favourable tasks and roles.
4. Joint projects with other networks or traditional organizations increase competitive advantages if partners complement each other.

The collaboration strategy, however, has a threshold depending on the limiting force—the effect of networking. In an extremely dynamic environment, the collaboration effect may be insufficient to maintain social well-being. Moreover, a network of networks is usually a very large organization and faces the problem that in large groups, a single actor has such a small impact on the collective good that collaboration is irrational. When such a situation arises, transformative leaders begin searching for alternative solutions.

Stage 6. The innovation strategy is particularly relevant when people realize that there is a specific problem in their society that they want to address and use the network to influence the situation in society directly or indirectly. Such networks usually represent a social movement that aims to change social patterns, behaviours, and cultures. In the relationship-building context, the innovation strategy aims to create such an effect when the network organization transforms many people's lives, i.e., '*one transforms many*'. The task is an articulation of an energizing vision and challenging goals that attract participants with a passion for changing lives. Core to the success of using innovation strategy is transformative leadership. A leader with transformative thinking can enter the existing resilient collaborative network or create a new network. Currently, many new-generation social movements start as newly established network organizations. This means that the start-up network should learn and practise five less complex self-management strategies in a very short time to be able to inspire and support individual and collective growth and positive cultural shifts. According to qualitative structure theory, innovation strategy is the last stage in the evolutionary cycle of any whole entity. Therefore, the network platform team should have the capacity to formulate the mission, goals, and agenda of the network with an orientation to the wider context and use all types of management instruments that are necessary for the mobilization of participants (Stage

2), alignment of the participants' interests (Stage 3), combination of the participants' interests (Stage 4), and navigation between macro, mezzo, and micro levels (Stage 5).

The innovation strategy completes one evolutionary cycle and starts a new cycle with a spiral trajectory because the start-up networks that are oriented to changes in social life should go through the same stages of the evolutionary pathway. Although each loop of the spiral brings us back to the same place, it takes us to a higher and more evolved level of self-management at each turn.

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Part IV

Summary of Key Findings



11

Discussion and Conclusions

Dalia Vidickienė

Following earlier agrarian and industrial ‘revolutions’, postindustrialism suggested yet another revolution that would again transform how societies were organized (Hoey, 2015). Transformation of the societies’ organizational model occurs through the implementation of several paradigm innovations. The academic community is still discussing the full list of paradigm innovations in the post-industrial economic system; however, most scholars agree that a holistic view should be based on the key innovation—a transition from producing and providing products as goods to service delivery, with very few firms directly manufacturing any goods. Although the role of the service sector was emphasized from the outset (see Bell, 1973), the real difference between the mental models of industrial and post-industrial economic systems became apparent only in the 1990s. After two decades of criticism of claims about the service-oriented nature of the post-industrial economic system, clear evidence has emerged that manufacturing firms are servitizing—either adding services to or integrating services into their core products.

The servitization of manufacturing has already been extensively studied in the scientific literature. A community of scholars is gradually emerging to develop a servitization science that encompasses many

of the social sciences and disciplines related to service delivery (see literature reviews by Baines, Lightfoot, Benedettini, et al., 2009; Calabrese et al., 2019; Khanra et al., 2021; Kowalkowski et al., 2017; Lightfoot et al., 2013; Rabetino et al., 2018, 2021; Raddats et al., 2019; Zhang & Banerji, 2017). However, the analysis of the agricultural sector still tries to use the terms of the industrial economy, and the innovations in the business model associated with this phenomenon are not identified as the servitization of farming. Although service-oriented business models are already quite common in farming practice, they have thus far been largely neglected in the scientific literature. Agrarian economics and rural development researchers are trying to solve new economic and social problems by using old methods that have worked well in the industrial era, i.e., by focusing on the technological solutions to agriculture offered by the Third and Fourth Industrial Revolutions. However, the rapid growth of the service sector in the global economy and the servitization of manufacturing are prompting agricultural economists to focus on this phenomenon and its potential for evolving agricultural and rural economies.

It is difficult to directly use the insights gained thus far in the research on the servitization of manufacturing for the development of a theory of farming servitization, as research findings are fragmented and do not provide a big picture of the nature and applicability of this new economic phenomenon. Many researchers simply list the characteristics of the servitization process identified in the research and try to draw a map of strategic actions (e.g., Rabetino et al., 2015) or explore what the characteristics are of the products of the servitized firm (e.g., Raddats et al., 2016). Other studies analyse the degree of servitization activity (e.g., Raddats & Kowalkowski, 2014), the way in which services and products are blended (e.g., Adrodegari & Saccani, 2017; Geum et al., 2011), the motivation to undertake servitization efforts in manufacturing enterprises (e.g., Baines, Lightfoot, Peppard, et al., 2009; Oliva & Kallenberg, 2003) and its benefits (e.g., Wang et al., 2018).

Some researchers pose a more complex challenge and use the systems methodology to understand the economic logic of this paradigm innovation in a broader context. According to systems methodology, it is important to analyse the servitized business entity as a part of the larger

system. Most often, the systems view is applied for the analysis of a narrow specific area of servitization in the context of servitization as a phenomenon, such as the specifics of servitization in project-based firms (Kujala et al., 2011), in oil and gas companies (Bandinelli & Gamberi, 2012), in the machine tool industry (Copani, 2014), in companies producing capital goods (Adrodegari et al., 2015), in mergers and acquisitions (Xing et al., 2017), and many others.

The research presented in this monograph also draws on a systems view. The systems' methodological view requires analysing the research object as part of a larger system (Arbnor & Bjerke, 2008). Here, as the larger system is chosen, the process of evolution of the global economic system from the agrarian to industrial paradigm and from the industrial to post-industrial paradigm. The manifestations of servitization in agriculture are analysed in the context of key differences between the three paradigms. Research on changes over a long time period allows for a much broader understanding of the servitization phenomenon and for a systematic disclosure of the possibilities of servitization in farming and rural regions.

Focusing on paradigm changes in the global economic system extends the systems methodology to incorporate an evolutionary approach that reveals more new aspects that are important for the improvement of farming in the post-industrial era. Moreover, in contrast to most studies on servitization, which rely on a reductionist approach, this study uses a holistic approach. A holistic approach is often equated in the academic literature with the most comprehensive study of an object and is called a 'more complex' or 'more holistic' approach. The holistic approach adopted in this study is different; it seeks to perceive as an indivisible whole the two major research objects: (1) the farmer, which aims to shift from the agricultural product-driven business model to the 'product-service system', and (2) territorial servitization in rural regions. To achieve this goal, the manifestations of farming servitization are analysed and evaluated using the qualitative structure approach proposed by I. Kalinauskas (Kalinauskas, 1991) and developed and improved by other authors (Grigas, 1999; Lobanova, 2000; Melnikienė & Vidickienė, 2019; Shmakov, 2007; Vidickienė, 2013; Vidickienė & Melnikienė, 2014). The qualitative structure theory does not equate complex and holistic

approaches, it particularly emphasizes the distinction between the object as a system, defined by a list of components or subsystems, and the object as a whole. Most systems can continue to exist if a structural component is removed from the system. The qualitative structure of an entity is defined in such a way that the removal of any structural component destroys the object (Kalinauskas, 1991). This means that the qualitative structure approach imposes more rigorous requirements on the description of the object under study as an indivisible entity than systems theory. Moreover, according to qualitative structure theory, holistic and evolutionary approaches are inseparable. Identification of the qualitative structure for the research object as a whole entity allows us to understand their evolutionary path and reveal new aspects of individual and collective levels of the servitization process.

The theory of qualitative structure can also be referred to as a second-order science. Like second-order cybernetics, it extends the traditional scientific approach by bringing scientists within the domain of what is described and analysed (Müller & Riegler, 2014; Umpleby, 2016). The qualitative structure approach is focused on self-management and provides models of research processes for when the scientist is within the phenomenon being studied. In this way, it connects the observer with the object being observed. Such an approach differs from first-order science based on the classical type of scientific rationality, which, according to Umpleby et al. (2019), is based on the paradigm 'subject – object'. (The subject here is an observer that observes the research object.) The researcher oriented to first-order thinking concentrates attention on the object and, in theoretical descriptions and explanations, tends to eliminate everything that refers to the subject or the means and operations of the research activity. According to the classical type of scientific rationality, this elimination is regarded as a necessary condition for obtaining objectively true knowledge of the world. The theory of qualitative structure suggests a nonclassical type of scientific rationality that is based on the paradigm of 'subject – subject'. This type of rationality is called second-order science, where the observer is seen as a social participant (Lepskiy, 2018; Umpleby et al., 2019).

The qualitative structure approach is particularly relevant at the current stage of society's development, as successful service management

demands a fundamental change in mindset and a new approach to solving business problems in most manufacturing companies and farm enterprises. The paradigm ‘subject – object’ has been common in the product-driven industrial economy that is focused on the relationship ‘customer-product’. However, as Polaine et al. (2013, p. 85) point out, service systems “present a different type of complexity than industrial products”. In the service business, the relationships are based on the paradigm of ‘subject – subject’. The service provider codesigns a service with a client and strives to evolve its quality compared with the standard offer. Unlike in the industrial era, in a service economy, each stage of the service cycle should be seamlessly integrated, and each business function should be part of a coherent whole. The specific nature of service business requires examining and designing business strategies according to holistic, evolutionary, and collaborative approaches. As the concept of qualitative structure is based on these approaches, it offers a new and more appropriate foundation for research in management science.

The servitization of farming is a very relevant object of research, allowing us to demonstrate the advantages of the qualitative structure approach as an interdisciplinary and second-order science. As noted by Alrøe and Noe (2014, p. 65), “the science of sustainable agriculture is an example of a science that does not have its own scientific perspective. It depends on interdisciplinary collaboration between many different specialized disciplines such as plant physiology, organic chemistry, soil physics, environmental science, ecology, engineering, statistics, business economics, and sociology; and it must always be prepared to include new perspectives (recently, e.g., climate change, marketing, and social systems) due to the influence of a large variety of stakeholders and the structural and semantic developments within agriculture, food, the environment, and society at large”. Moreover, the focus on the qualitative changes in farming allows us to more clearly demonstrate why and how a switch from ‘product-oriented’ business logic to ‘service-oriented’ business logic happens. In manufacturing, the transition from the product-driven business model to a product-service system is mostly taking place in large companies run by managers with different interests. It is therefore often difficult to identify an overall strategic orientation

when examining the personal views of owners and managers. In agriculture, servitization tends to take place in small farms where the owner is also the manager. Investigation of farmers' perceptions gives a more generalized view of business logic and adopted strategies. This is very useful for analysing the evolution of the qualitative structure of a business entity in the context of self-management.

The choice of the qualitative structure approach as the theoretical background of the research allowed us to reveal new aspects of both levels of servitization—micro and macro. Findings from both theory and practice on servitization based on the qualitative structure analysis provide answers to the key research question—‘How to make farming more adaptable to the realities of the 21st century?’ and ‘How to overcome the barriers to farming through servitization in rural areas on individual and regional levels?’ The research on servitization in farming (micro level), based on the qualitative structure approach, has highlighted the following:

- the preconditions for the servitization of farming, moving from an agricultural ‘product-driven’ business model to a ‘product-service’ system.
- the role of constraints to effective agricultural product-driven strategy implementation on farmers’ motivation to change the business model.
- the benefits of service provision in terms of improving the resilience of the farm business.

Of course, the findings of this research should be validated by extending the scope of the study both in the sense of qualitative characteristics of servitization and quantitatively by studying more projects of farm servitization implemented by individual and collective efforts because this study is based only on Lithuanian cases. However, even with a limited empirical base, the results of the research have shown that the qualitative structure approach has the following advantages compared to the theories and methods used thus far in farming business model research:

- provides a clear identification of the strategic factors causing the crisis in the industrial farming system based on scale effects, intensification, and specialization strategies.
- helps to avoid confrontation between innovators and proponents of the industrial mode of production, as the evolutionary approach emphasizes that all previous farming methods are not discarded. After a critical assessment of their strengths and weaknesses, the best features of these methods continue to be used in combination with new methods.
- integrates production-oriented and service-oriented business models, schematically explaining their interrelationships.
- reveals many new opportunities for adapting the farm business model to the current stage of societal development, making it more efficient, attractive to the younger generation, and more beneficial to society.

The research also generated new theoretical insights on the territorial servitization issue (macro level). Considering the high dynamism and uncertainty of the business environment, participants in business ecosystems are forced to develop new methods of collaboration and new structured approaches to face the challenges of post-industrial society. Research on territorial servitization in rural areas has revealed the importance of considering paradigm innovations in collaboration. Multiple case study analysis shows that the belief of the industrial era that effective collaboration is only possible between similar entities has been replaced by an orientation towards the diversity of cooperating parties. The shift from collaboration between actors with similar characteristics and interests to multiactor partnerships creates new challenges for network leaders. Moving away from the traditional practice of collaboration between entities with similar characteristics requires new management orientations and skills. The leaders of collaborative networks need to consider the specifics of collaboration in the service economy and focus on the development of multisided platform-based network organizations.

Examination of rural development networks involved in the territorial servitization of rural regions according to the qualitative structure

approach has highlighted the input of collaboration into the reorganization of farming and allowed the creation of the framework for strengthening networking activities. The framework offers a novel approach to networking as designed with a focus on relationship building, including six types of relationships (many-as-one, many-to-one, one-to-one, one-to-many, many-to-many, and one for many). A relational perspective is especially important for the development of multisided networks. It is capable of capturing the complexity and evolutionary pathway of collaboration by identifying the main self-management strategies as the ways in which various synergetic effects can be generated and enhanced through networking activities. The suggested framework of six networking strategies can be a dual-purpose tool. First, it explains how farmers and transformative leaders of rural networks can use network organizations to accelerate the transition to a service-oriented business model in farming. Second, the framework is oriented to the specific nature of post-industrial networking. It facilitates the development of multi-party collaborative relationships and provides step-by-step guidelines for the evolutionary pathway allowing network organizations to assess their current situation, identify areas for improvement, and develop strategic plans for growth and success. The proposed framework of six networking strategies can be used not only by networks focused on the territorial servitization of rural areas but also by any network organization, regardless of the purpose of the collaboration.

The topic of servitization has recently attracted an increasing number of scholars from a wide range of disciplines, underlining its growing importance from both an academic and an economic perspective. The research based on the concept of qualitative structure provides a different approach to the servitization phenomenon. The research findings call for a new paradigm of strategic management that focuses on innovative representations of post-industrial reality but can integrate previous management knowledge. The qualitative structure approach presented in the monograph offers such a paradigm. It integrates management knowledge of agrarian and industrial eras and opens up an original and promising approach for research and action in service economics. Drawing on cross-disciplinary literature and multiple case studies on the service-driven business model in farming and strategies of rural

development networks aiming to accelerate the servitization process, the monograph provides a comprehensive guide to the theory and practice of management based on the post-industrial paradigm.

The main challenge in implementing qualitative structure approach is that it involves a paradigmatic shift compared to conventional thinking. However, in our opinion, the shift from industrial to post-industrial society should be accompanied by a shift in mental models. Servitization pushes researchers, entrepreneurs, and policymakers into the area of an unknown intangible reality as the socioeconomic system has become a more complex phenomenon. Most resources in the service economy are intangible, and we need a new roadmap for future development. The challenge for researchers is to chart this new roadmap. Research into the incentives and barriers to moving away from industrial models of thinking around the servitization of farming provides an opportunity to start designing such a map.

The book is an invitation to both researchers and practitioners to extend the ideas on servitization proposed under the umbrella of first-order science that emerged as a reflection of the mental model of the industrial era. However, we should bear in mind that mental models are enduring and resistant to change. As pointed out by Jonh Ikerd in his book “Crisis and opportunity: Sustainability in American agriculture”, “successful old paradigms, such as industrialization, often collect a host of avid, but unwitting, advocates. The advocates tend to apply their industrial paradigm – unconsciously, spontaneously – to any problem that arises. They separate, sequence, analyse and organize as a matter of standard operating procedure. Integration, simultaneity, synthesis and spontaneity are missing from their mental problem-solving tool box. Thus, they are automatically led to specialization, never to synergism, as their logical solution, regardless of the nature of the problem” (Ikerd, 2008, p. 32). However, belief in the industrial paradigm as the ultimate truth creates a tunnel vision that ignores innovations and limits the evolution of knowledge. The post-industrial paradigm is not competing with the industrial paradigm. It is based on an evolutionary approach and merely proposes a broader view of the world, exploring it as a more complex space with more possibilities. Considering the post-industrial economy as the next stage of social evolution and using research methods

appropriate to its nature enables us to gain more opportunities for faster advancement.

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