Customer Relationship Management and the Value Network

Philipp Osterrieder

. . . do not spare any reasonable expense to come at early and true information; always recollecting, and bearing in mind, that vague and uncertain accounts of things are . . . more disturbing and dangerous than receiving none at all.
George Washington

Key Takeaways

- Customer data is of the highest relevance for manufacturers, which is why professionalizing the CRM system to efficiently collect, store, and process customer information is inevitable.
- The company-customer relationship evolves from reactive, transaction-based value-in-exchange to proactive, continuous collaboration, and value-in-use.
- The way value is created for the customer increasingly resembles a network, where in each member contributes a share.
- Manufacturers that apply a non-direct sales approach are required to leverage the capabilities of distributors to enable the transition toward smart services.
- Manufacturing companies need to foster partner embeddedness as intermediaries play a vital role to win against new competitors.

Without customers, a company cannot sell products. Without customer knowledge, a company cannot understand their needs. Without this understanding, a company cannot develop the right product. Without the right products, a company cannot be sustainably successful.

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Customers are, in very broad terms, a source of information and financial means—both necessary and tremendously valuable for the longevity of a company's existence.

In principle, companies in business-to-consumer markets may survive by applying a shotgun approach (i.e., not caring for the individual needs of its customers but serving the market with products in the hope that "someone will buy it"). In B2B markets, however, there are fewer customers, and their bargaining power much higher. Manufacturing companies need to anticipate the problems and cater for customer needs to be successful. CRM is key. But the integration of the customer into product development changed over time, and even nowadays, the degree to which companies emphasize customer inputs varies a lot.

Consider the following example to underline the necessity to professionalize CRM parallel to the servitization journey of a manufacturing company. An automotive supplier once started to develop industrial services at various isles throughout the company, as the process had not yet been structured and responsibilities were unclear. As an effect, the IT department started to construct a new smart service and involved the corresponding service unit only very late in the process. The task of the service unit was now to shape the business model in cooperation with customers to find a possible way of selling the new service. The problem was that customer insight was largely absent at the beginning of service development. Thus, the company struggled even to convince customers to test the service free of charge. While the manufacturer was confronted with a considerable problem of service adoption, one of the main difficulties was to manage all the customer information the employees gathered in the process of going back and forth to the customer. The service required a consultative selling approach, wherefore different employees (sales, tech sales, experts, technicians, IT staff) repeatedly visited the few selected beta customers. The service product manager finally realized that they had no strategy in place on how to cope with all the insights, responses, and feedback they received from the customers. When a customer dropped out of the sales funnel, nobody questioned why. The manufacturer understood at that point that it requires a sophisticated CRM system to 1) converge and condense the information, 2) analyze it, and 3) learn from it to improve future customer experiences.

In the process of value creation, firms do not only experience the rising importance of customers but also an increased complexity due to the inter-relation with multiple partners. In the scope of this chapter, we would like to elaborate on CRM and the value network as enabling activities for service innovation, sales, and operations. CRM, especially, requires more and more attention, wherefore we start with discussing the evolution of company-customer interactions in the following. We then present the development of the value chain to a value network, in which a manufacturing company needs to position itself strategically. The chapter ends with a set of recommendations and a brief summary.

1 The Evolution of Company-Customer Interaction

For manufacturing companies, taking care of customers and nurturing customer relationships is a vital activity that gained significance in the last years. CRM is not only one piece of a puzzle to sustainable growth, but instead it also provides substantial input to industrial service management.

Essentially, a CRM system can emphasize operational, analytical, or collaborative value. The analytical type of CRM, for instance, may be able to examine customer history, preferences, and profitability information from the available data. It further offers the possibility to analyze, predict, and derive customer value and behavior besides forecast demand. Implementing an analytical CRM system consequently supports in serving the customer with relevant information and a value proposition tailored to the corresponding needs. The operational type focuses on easing the company-customer interaction across multiple channels, while a collaborative CRM caters for efficient integration of the entire supply chain (Adhikari & Adhikari, 2009).

So, how should manufacturers use CRM? During a benchmarking study at the Institute of Technology Management of the University of St.Gallen (ITEM-HSG) in 2018, we asked manufacturing companies how they apply CRM. We provided the following four possibilities: (1) collection of all customer data in one database, (2) integration of the information systems across all units, (3) capturing data from every customer touchpoint, and (4) use of data between different information systems.

Between 41 and 53% of the respondents ($n = 80$) use CRM in one of these presented ways to at least a fairly great extent. It shows that the adoption of CRM (concerning the four displayed options) could still be improved among manufacturing companies.

However, these options focus on the technical characteristics of a CRM system. CRM has been approached from different perspectives and undoubtedly contains a large IT component with the goal to manage customer data, but it also pertains to marketing aspects with a high focus on relationship marketing. CRM is a broad concept, and to clarify this, we draw on the definition by Payne and Frow (2005, p. 168):

> CRM is a strategic approach that is concerned with creating improved shareholder value through the development of appropriate relationships with key customers and customer segments. CRM unites the potential of relationship marketing strategies and IT to create profitable, long-term relationships with customers and other key stakeholders. CRM provides enhanced opportunities to use data and information to both understand customers and cocreate value with them. This requires a cross-functional integration of processes, people, operations, and marketing capabilities that is enabled through information, technology, and applications.

Connected to their definition is the creation of a framework covering five different processes, which are part of a holistic CRM strategy. Payne and Frow (2005) include strategy development, value creation, multichannel integration, performance

assessment, and information management process in their framework. It underlines what we expressed before: A purposeful CRM strategy affects industrial service management at various interfaces.

Yet, in the scope of this chapter, we will not treat all related aspects of CRM. The following paragraphs highlight the change in customer interaction and relationship for manufacturing companies, due to the introduction of industrial services.

1.1 First Efforts

In the early phases of the servitization journey, manufacturing companies often already established long-term relationships with customers. It is a known business logic that satisfied customers are more likely to stay with a particular supplier. When a manufacturing company is thus able to deliver superior products with high perceived value by the customers, it typically turns into high customer satisfaction. As an effect, satisfied customers are less price-sensitive, when manufacturers start to provide first physical services or introduce new product generations.

Consequently, firms employ account management teams and salespeople that look after their customers. Relationship marketing is thus found in bits and pieces throughout the company, even at the beginning of the servitization journey, but is rarely managed with explicit concepts, models, or strategies.

In regard to (digital) customer engagement strategies, traditional product manufacturers lag behind other branches. During the same benchmarking study mentioned above, we inquired which means these companies use to engage with customers (i.e., to develop customer relationships). The top 3 approaches were periodic notifications about new products/services (53%), exclusive events (60%), and key account management teams (78%).

The major part of customer touchpoints still reflects traditional interaction models, even though the focus shifts from individual product sales or service transactions to contractual agreements and longer relationships. However, especially at the beginning of the servitization journey, most manufacturing companies execute single transactions, for products and physical services equally, which may not require a higher degree of customer interaction. At this stage, companies are mostly reactive to customer requests or complaints, customer touchpoints are infrequent and mainly focused on sales cases or service incidents, and the main value comes from product or service features (Hood, Brady, & Dhanasri, 2016). Timewise, the main work of key account management teams or similar salespeople can be characterized by two seasons: time of sales and time between sales. During the time of sales, the interaction may be high to close the deal, while in the time between sales, touchpoints are usually rare and mostly reactive to customer complaints or fixtures (Storbacka, Windahl, Nenonen, & Salonen, 2013).

Today, the status quo in the industrial service business is largely characterized by "low tech, high touch." Few service operations processes are automated or professionally managed, and outcomes often depend on the human aspect. Service technicians arrive upon a customer request and perform initial problem identification

on-site, often having to come back later with the right parts to solve the issue. Even though remote access enables remote maintenance operations, low-tech service operations with a high number of human touchpoints still reflect a recurring phenomenon across many industries and geographic regions.

When a manufacturing company is then maturing to deliver more sophisticated services, physical and/or smart services, relationship models, as well as interaction frequency need to change. It consequently creates a sense of urgency for these firms, which we outline below.

1.2 Sense of Urgency

The transition of manufacturing companies to providers of complementary products and industrial services, or of solutions, changes the relationship with the existing customers from primarily reactive services to a more proactive service approach. Nurturing the customer relationship becomes a crucial activity in a service-oriented organization, as the higher focus on customer lifetime value commonly enables the company to achieve higher margins, increase existing customers' share of wallet, and extend the profitable solutions to new customers while increasing their market share and achieving greater economies of scale and scope (Rabetino, Kohtamäki, Lehtonen, & Kostama, 2015).

While the potential gains will seem convincing, many manufacturers lack the appropriate relationship concepts, engagement strategies, as well as marketing planning and monitoring tradition for it. As stated above, the most common approach to interacting with customers is still through key account management teams. With a predominant focus on price and value-in-exchange instead of on lifecycle cost and value-in-use, this may not be surprising.

When the value proposition is now changing to industrial services that demonstrate their highest value throughout the lifetime of a product, imagine a remote monitoring or predictive maintenance service; for instance, it imposes significant changes to the way the provider should interact with its customers.

To summarize the differences between a traditional product manufacturer offering physical services and a smart service provider, consider the following (Table 1) adapted from Hood et al. (2016).

The table shows a clear trend toward an increase of customer touchpoints, which extends to the time between the sales cases, due to the substantial change in value delivery. Figure 1 illustrates the approximated distribution of customer touchpoints over time.

The graph visualizes that even though digital technologies enable remote opportunities, the human touch gains importance as the number of interactions increases for smart services. Essentially, the relationship with the customer intensifies substantially (Rabetino et al., 2015). Smart service sales commonly require longer sales cycles and include more stakeholders. Moreover, selling smart services often involves a free trial phase involving intensive exchanges. Between the sales cases, it might be fruitful to carry out regular meetings to quantify the realized

Table 1 Comparison of a traditional manufacturer and a smart service provider

	Customer experience	Frequency of interactions	Context of interactions	Value
Traditional manufacturer	*Reactive*—To customer or partner inquiries and complaints	*Little to none*—Mainly at the time of sales or during service incidents	*Standard*—Sales or physical service cases	*Product*—The main features of the product or the physical service deliver the value (e.g., repair)
Smart service provider	*Proactive*—With an intentionally designed approach	*Continuous*—Ongoing dialogue, enabled (e.g., by digital platforms)	*Customized*—Purposefully designed depending on the customers' contingencies	*Service/data*—The insights gathered from the analyzed data become a major value driver

Fig. 1 Approximated distribution of the number of company-customer interactions. Own illustration

value of currently operated services. The latter option appears probable, as the customers' uncertainty about the effect of a smart service, taking again the example of a predictive maintenance service, is real. Scheduling regular meetings, where the manufacturer can give insights into detected events that were mitigated in advance, wherever possible connected with a rough calculation of a prevented loss, is a good means to alleviate the uncertainty.

Additional interactions are conceivable that include discussions about the currently obtained service portfolio or paid features of a single service containing multiple traits. Customers typically appreciate the proactive assessment of the paid features by the supplying company. The sales force might conclude that a particular customer is paying for something he does not use and consequently eliminate the feature from the next bill. Such short-time margin losses commonly turn into long-term customer satisfaction and loyalty.

Even though manufacturing companies might now anticipate the reasonability to professionalize their customer touchpoints, customers could be a problem too. Some might not want to engage in deeper relationships, as the supplying manufacturer only delivers non-core products or services. It may then be essential to think about strategies on how to teach the customer that a deeper relationship could be beneficial for both sides. In any case, the company should always integrate the customer's perspective already into the process of designing new customer interaction and engagement concepts.

1.3 Professionalizing Customer Touchpoints

Manufacturing companies that come from a tradition of long-term relationships with established customers may naturally transition toward increased customer embeddedness by fostering closeness to and interaction with the appropriate stakeholders (Storbacka et al., 2013). Fundamental for increasing customer embeddedness and a prerequisite for many kinds of services is trust. Trust within partnerships is crucial, as manufacturers would like to get data from and insights into customer actions that help understand the product performance and how the customer uses it. Manufacturing companies that proved to be a reliable business partner over time can build on the created trust. Otherwise, it can be a major challenge.

For instance, moving toward equipment-as-a-service business models (i.e., offers where equipment is not sold to but used by the customer for a negotiated purpose), time, and fee entails a raising intensity of the relationship with the customer based on trust to secure ongoing availability. Such business models appeal to many companies (consider the Hilti fleet management system[1] or the KUKA car-body-as-a-service concept for Chrysler[2]) but require extensive customer knowledge. Customer embeddedness is, thus, essential to pinpoint the problems and needs of the customer to create customized value propositions.

Maturing from offering physical services to smart services and maybe further to equipment-as-a-service business models involves a significant mindset change. Essentially, this change can be described by visualizing the transformation of value propositions, which are developed, sold, and delivered through a long-term process *with* the customer rather than *to* the customer (Storbacka et al., 2013).

To realize increased customer embeddedness, manufacturing companies may come up with an engagement strategy as part of their overall CRM concept. Acknowledging the opportunities given by digital technologies, platforms can be used to integrate the customer into various topics. The trend goes toward omnichannel presence to catch customer attention and touchpoints in any possible

[1] https://www.hilti.group/content/hilti/CP/XX/en/services/tool-services/fleet-management.html, Baumbach (2005)

[2] https://www.kuka.com/en-de/industries/solutions-database/2016/04/kuka-toledo-production-operations

way. Companies can then profit from data analytics to build customer profiles and enable the change from reactive to proactive customer interaction. Leveraging digital interaction models may even offer possibilities to scale back investment in sales and account management teams. However, it is more likely that these employees can benefit from the digital tools to ease exchanges with customers, increase their reach, or conquer untapped opportunities.

Self-service systems reflect one example of a digital engagement platform. Here, customers can access a one-stop customer portal to manage and order spare parts, see their order history, investigate instruction manuals, place warranty claims, inform themselves about new product generations, and much more. MyVoith[3] is one of these self-service systems for customers of the Voith Group that we see popping up recently throughout many industries.

The advantages are evident. Channeling customer inquiries enables faster reaction times, lower administrative efforts, lower susceptibility to errors, and better information sharing, ultimately leading to significant customer satisfaction.

With customer satisfaction being the breeding ground for trust and the consecutive willingness to embark on long-term contractual agreements in terms of smart service or solution offers, we found that companies and customers have a non-linear (i.e., circular) relationship. Customer satisfaction leads to trust. Trust leads to the openness to granting the supplier access to the required data to perform the defined smart services. Engaging the customer in the whole process and demonstrating the value of the service regularly lead to customer satisfaction, which again strengthens the created trust.

An elaborate CRM strategy containing the provider-customer interaction concept should, consequently, already be in place as soon as the first smart services are introduced to early adopters among the customer base.

1.4 Implementing CRM

In our view, CRM is mainly about managing customer relationships in an organized manner and focuses on leveraging and exploiting interactions with the customer to enhance customer satisfaction, in turn, securing financial returns and increasing customer profitability (cf. Bull, 2003; Gummesson, 2004).

Coming back to the findings of Payne and Frow (2005), implementing CRM means the development or adaption of business processes and the integration of IT systems. Concerning the process development, many manufacturers directly strive to go fully digital. Developing an online portal to channel customer interactions may benefit significantly from a reasonable analogous process mapping before elevating it into the cloud. Being clear about the underlying processes, inter-relations, and boundary conditions "on paper" can prevent developing a digitalized chaos. Creating a customer portal as part of the customer engagement strategy can already

[3] http://www.voith.com/corp-en/digital-solutions/myvoith.html

demonstrate a big pain point when not executed based on pre-defined lean processes and a sound approach to the integration of IT systems.

Manufacturing companies commonly already have a working portfolio of IT systems and customer data at multiple places that need to be fused. Specifically, the enterprise resource planning (ERP) system has a strong connection to the CRM system. Synthesizing both infrastructures could create major efforts. As many companies are aware of this, several try to use the ERP as long as possible for CRM-related operations. However, at some point, it is a reasonable choice to include a CRM provider in further development to cater for the interfaces between these systems. Often, this is time-consuming and expensive. It may, therefore, be a good idea to pay for expert advice in the early phases of CRM development to align the IT infrastructure carefully. Clarifying underlying business processes beforehand "on paper" might again be a valuable approach to prevent a head start into IT systems integration that prolongs substantially without the necessary preparation.

Apart from the technological challenges, CRM requires attention from an organizational point of view. Concerning the organizational integration, previous findings suggest that CRM is a multi-faceted phenomenon but part of the marketing strategy. Companies typically launch CRM initiatives from the marketing, sales, or service department, while the cooperation of at least these three units would be beneficial. However, as we concluded above, CRM pertains to multiple departments throughout the company, which implies that an organization-wide CRM strategy with clearly defined objectives should be pursued (Keramati, Mehrabi, & Mojir, 2010).

Launching a CRM program necessitates a clear project lead ensuring its purpose and functionality throughout every corner of the company. Measures for data maintenance need to be taken as it is equally imperative for the sales force and service technicians to keep the customer data up to date.

Moreover, the department in charge must define methods to increase customer embeddedness over a longer time horizon. We provided the example of a self-service system as a passive method to enable the convergence of customer touchpoints—passive in the sense that it still requires the customer to access the portal from his perspective.

An active method to enhance customer embeddedness as part of implementing a CRM strategy is, for instance, service coproduction or sometimes also called co-creation. It presents a suitable tool to infuse a service mindset within a technology-dominated organization (Rabetino et al., 2015). Service co-creation enables manufacturing companies to innovate services with the customer and hence merges innovation and sales activities. To execute a co-creation approach within the sales force, the company should be aware of the resource and competencies required for all related activities, including timely service delivery.

Siemens Mobility is a manufacturing company that excels in co-creating smart services with its customers, wherefore we encourage to investigate the respective case in Part II of the book.

Throughout the time of continuous service delivery, the number of customer touchpoints is likely to decrease, but manufacturing companies should find ways of creating a regular exchange. Digital channels provide efficient interaction models,

while quantification meetings (as outlined above) and manifold other customer events could be ideated and executed as part of the CRM strategy. Here, the leading CRM department must provide options for maintaining the customer relationship for the entire organization.

2 The Evolution of Company Collaborations

Doing business can be understood as a network of relationships. Companies receive material or goods from suppliers. They may get advice from consultants. Many firms count on opinions and support from experts. A company can have one to multiple development or service partners. Distributors or agents may sell their products, and customers use them. While this enumeration is not conclusive, Teece (2010) describes a business model as an externally oriented description of the relationships a company has with a variety of actors.

Most traditional value chains at manufacturing companies will change or already have changed to a constellation forming a network rather than a chain. Business strategists have already elaborated on this topic for some time, but in slow-moving industries with long-lasting product lifecycles or strict market regulations, the changes come with reduced speed.

The intensified focus on core competencies in the last decades naturally forced manufacturing companies to deal with multiple partners contributing to the final product. A similar development takes place for organizations that now embark on the servitization journey. Servitization means integrating the contributions of a network of actors to create customer value, but the characteristics of the network and the challenges for the orchestrator differ whether a manufacturer operates with a direct or non-direct sales approach.

Therefore, we elaborate on the changes for companies concerning the following six dimensions depending on their sales approach in the subsequent paragraphs:

- New and existing partner involvement
- Redefining service delivery
- Financial flows
- Data flow, data access, and data ownership
- Customer access
- Vulnerability to new entrants

2.1 Manufacturers with Direct Sales

Companies that have direct customer contact may have fewer difficulties in transitioning to a value network providing smart services. Close customer relationships built on trust can enable the manufacturer to cope with the changing situation and influences inherited from the introduction of smart services.

2.1.1 New and Existing Partner Involvement

Firms may redefine themselves from a producer of goods to a provider of a complementary portfolio of products and industrial services or of further solutions (Storbacka et al., 2013). It may indicate that the company has to cooperate with formerly unknown partners for data-related matters. Depending on the make-or-buy assessment the manufacturer conducted at some point throughout the servitization journey, it is likely that the company concluded to partner with specific service providers, software or other tech companies, and startups. It is a common approach to seal new partnerships with companies or even acquire startups that excel in capabilities not found within the manufacturer. For instance, to build the customer portal MyVoith, which we introduced before, Voith first partnered with the digitalization agency Ray Sono[4] and then acquired 60% of the company.[5]

Enlarging the organizational network by connecting to additional partners or by strengthening bonds with existing partners entails various advantages and drawbacks. The advantages focus primarily on the ability to combine the knowledge and capabilities of the different actors. Each participant supports the network with its core competency and shares the required information.

Drawbacks embrace the increasing complexity to manage the new variety of partners and to leverage the appropriate capabilities internally. Necessary capabilities may include the possibility to perform solid requirements engineering for new software products, such as a customer portal, without being highly dependent on third parties.

2.1.2 Redefining Service Delivery

One aspect that could have a more severe influence on the value network of a manufacturing company is its strategy for service delivery. In a situation where a company is close to the customers by having local service and sales units, the manufacturer should contemplate the approach for smart services. The question is whether the smart service should be delivered centrally or locally. For instance, it may be fruitful to split the activities into backstage and frontstage processes. While the data could be fed back to a central data repository, the physical service job can then be executed by a local service technician.

With a central database, the algorithms can unfold their potential to process big data, and software engineers may improve the algorithms due to a higher input variety. It may further create worthy insights for product and service development, reduce administrative cost, and foster standardization. Once the processed data exceeds predefined thresholds or any other negative event occurs, the central operations center triggers the corresponding service activity from the regional subsidiary.

However, country or customer regulations may hinder the transmission of the data from its origin to the central repository located in another region. Manufacturers

[4] https://www.raysono.com/raysono/references/voith

[5] https://www.raysono.com/raysono/stories/gemeinsame-digitalisierung-der-industrie-mit-voith

may further ensure that issuing the triggers on time does not depend on the working hours of the operations center.

Service delivery may consequently change compared to established processes when introducing smart services (cf. Chap. "Service Operations" for details).

2.1.3 Financial Flows

As manufacturing companies have a direct connection with the customer, in this case, the financial compensation for delivering smart services is unlikely to change and flows immediately to the provider. Here, shares of this compensation may be split between the manufacturer, a data analytics partner, the cloud provider, and other potential stakeholders.

2.1.4 Data Flow, Data Access, and Data Ownership

Offering smart services will require firms to examine adaptations to the governance structure with a special focus on data-related issues. Receiving access to the data is still a highly relevant challenge for many manufacturing companies, even though they follow a direct sales approach. This means, when companies convince their customers to receive their data by promising value in return (e.g., by providing valuable smart services), regulations about how the information is transmitted and who owns the data must be in place.

Manufacturers can negotiate individual conditions regarding whether the customer allows a continuous connection, or the data is only transferred batch-wise. Here, a compromise has to be found, including the customers' security regulations, infrastructural limitations (e.g., sampling rate), and the necessary input for the functioning of the service.

2.1.5 Customer Access

Acquiring insight from customers carries tremendous importance for various positions within the company, which is why we elaborated on possible (digital) customer engagement strategies to increase customer embeddedness. For manufacturing companies that rely on a direct sales approach, it should be less of an issue to get customers involved. As sales and service employees already have a personal connection to many customers, they are in the pole position to strengthen the relationship.

2.1.6 Vulnerability to New Entrants

Enabling the products to create data through a diversity of sensors paves the way for third parties to directly dock on the manufacturers' customers. Third parties are principally in the same position as the manufacturer to convince the customer to share the generated data with them. Startups and other tech companies could leverage their greater agility, data-savviness, and proficiency, as well as the resulting superiority against the manufacturer to seal the deal.

Some manufacturing companies may encounter the threat of third parties connecting directly to their end-customers by creating closed systems or lock-in effects. Opting for such possibilities may, though, lead to customer dissatisfaction or

provoke disharmony. Hence, companies should balance whether they have the right position and opportunity to do so.

In general, we experienced that working with open systems increases transparency and shows confidence in their own abilities. Manufacturers repeatedly emphasize not feeling intensive pressure from third parties in this scenario as the new competitors lack the specific product and domain knowledge to provide actionable insights from the data. Highlighting significant events within the data only becomes valuable when related to the corresponding hardware or mechanics in the system.

Consider the following example to illustrate the discrepancy between data insights and valuable information. A company producing agricultural and construction machinery once contracted a data analytics provider to examine the data captured from several identical machines to detect irregularities with the impetus to learn from the data and to improve the product. The analysts came up with a highly significant event in which at any moment a particular action was executed, the system triggered a plethora of error codes. They concluded that to eliminate the actuation of the error codes, the trigger event should be avoided. The manufacturer then discovered that the trigger event the analysts detected was the start of the engine. Here, the system released error codes, such as "no fuel pressure" because the pumps kicked in with a short delay after the engine start. Eliminating the engine start is, however, not a feasible option.

The result exemplifies that insights from data should always be translated into valuable information. The same accounts for all industrial services, wherefore manufacturing companies that have direct sales can profit from the direct customer access and play to its strengths.

2.2 Manufacturers with Indirect Sales

Contrary to the limited number of changes concerning the selected dimensions for manufacturing companies with a direct sales approach, the drawbacks can be potentially significant for those not having direct customer contacts but still want to play in the field of smart services (see Fig. 2 below). Thus, when manufacturers advance toward smart service provision, tensions and conflicts of interest may arise. Yet, we need to differentiate between exclusive and non-exclusive distributors in the following.

2.2.1 New and Existing Partner Involvement

In principle, all mentioned aspects regarding new partner involvement for manufacturers with a direct sales approach are equally relevant for companies relying on distributors. The main addition concentrates on the significant and even increasing value of the distributor.

A transaction-oriented business with a focus on value-in-exchange (as with hardware products and physical services) can work well as distributors only need limited selling capabilities. In the best case, the products stand for themselves, and distributors come into play when basic maintenance or spare parts are required.

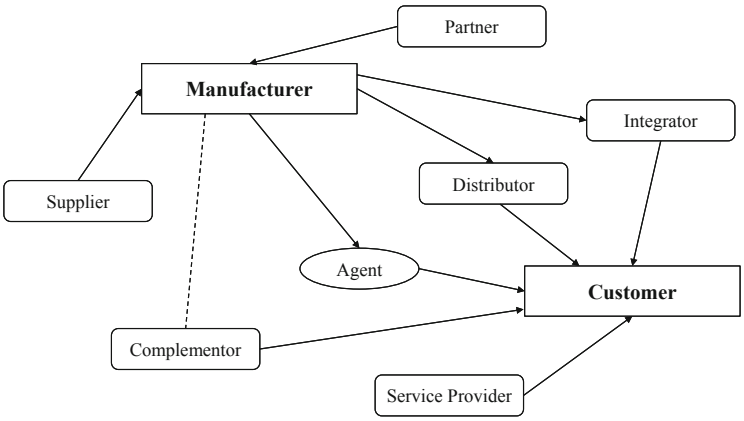

Fig. 2 Example of a value network with channel partners. Own illustration

Operations are easier to standardize and more transferable to distributors. For smart services, however, a consultative selling approach necessitates profound, detailed knowledge and the capability to explain every characteristic, interdependency, and consequence. Distributors receive much more responsibility as the importance of the sales force increases. Not only do distributors and their personnel now have the duty to sell more complex offers but especially to leverage customer embeddedness to capture valuable customer insights.

From the manufacturers' point of view, the activities shift from engaging the customer to enabling the distributor for selling and delivering smart services, as well as to capture and transfer customer information. Consequently, increasing partner embeddedness is not only vital to enable the distributor but also to strengthen links in particular with non-exclusive dealers.

Digital platforms can again support fostering partner embeddedness. Partner relationship management platforms could provide relevant delivery information for the channel partners and end-customers in a reliable and timely manner, decrease sales and administration expenses, shorten sales and support cycles, as well as build consistent customer experience quality among different channels (Hood et al., 2016).

2.2.2 Redefining Service Delivery

For manufacturing companies that rely on distributors for sales and service operations, defining processes for smart service delivery can either be similar to the challenges stated above or even more complex due to the integration of an external organization into the process.

We can argue that whether a manufacturer has to include a local subsidiary or a distributor into service operations does not change a lot. To ensure the ongoing availability and functionality of the smart service, the manufacturer must define a coordinated plan involving a data operations center, the distributor, and the customer. Service delivery is, thus, tightly interlinked with the data and information flow discussed below.

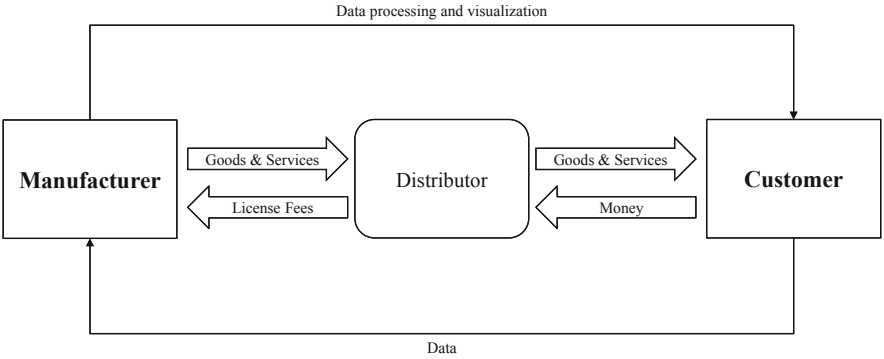

Fig. 3 Visualization of product, service, financial, and information flow between the manufacturer, the distributor, and the customer. Own illustration

Consider Fig. 3, which illustrates one feasible possibility to deliver smart services with distributors. It shows that while the flow of goods and industrial services goes from the manufacturer via the distributor to the end customer, the recipient directly links the data to the provider and receives the corresponding outcome in return (e.g., reports, visualizations, etc.).

Bypassing the distributor is in most cases not a sustainable option in service delivery, as the distributor might step back from selling the manufacturers' products and services in the future or strives to inhibit the data connection between the manufacturing company and the customer. Instead, enabling the distributor with a clear idea of how he can directly benefit from this development is imperative.

However, it strongly depends on the individual constellation of a manufacturer's network and which opportunities it has concerning the smart service portfolio and service delivery. Previous findings suggest that servitization endeavors need to be tailored to the position of the company within the value network and the importance of the products to the customer (Bustinza, Bigdeli, Baines, & Elliot, 2015).

Voith Turbo is only able to showcase its predictive maintenance solution since it aims to interact with the end-customers of its automatic transmission unit. Even though the product is typically shipped to and installed by the OEM of the vehicle, Voith sells the service directly to the private or public transportation operator. Yet, the automatic transmission unit is one of the most important parts of the vehicle and a major cause of unplanned downtimes. The bus operator has, thus, a legitimate interest in talking directly to Voith.

In this case, the OEM might be an integrator instead of a distributor, but Voith has the ability and power to bypass the OEM. Many manufacturing companies that operate with a network of distributors are likely not to have this power.

The position of the company within a network and the importance of the product for the customer, thus, determine the information the company can capture from real users of the products, in turn, scoping which services it may offer, how it should redefine the service delivery, and which competitive advantages it can achieve.

2.2.3 Financial Flows

Figure 3 indicates that the financial flow could be split into two streams. While the manufacturer might demand a fixed fee for software licenses or each specific smart service, the distributor has certain creativity in negotiating the pricing strategy with the customer. For instance, for each machine profiting from a predictive maintenance service, the manufacturer receives EUR 200 per month, while the distributor and the end-customer agreed on a total price billed once a year.

Yet, the manufacturer should propose pricing plans for their distributors to enable a reasonable harmonization across the final price level.

2.2.4 Data Flow, Data Access, and Data Ownership

Similar to manufacturers with a direct sales approach, firms, in this case, have to define a clear governance structure with a focus on data-related issues. The additional complexity stems from the moderating role of the distributor. Here, the distributor needs to take up the task of negotiating feasible conditions for data access in combination with company and customer regulations, despite not being immediately concerned with data transmission.

2.2.5 Customer Access

Manufacturing companies in a network where customer access is limited—due to products being primarily sold through distributors—could be in a vulnerable position for several reasons. Customer interaction, especially customer integration, may be widely limited or impossible due to the intermediary, who receives greater bargaining power as the provider of the smart service is highly dependent on complete customer insights. The customer or the intermediary may prevent data sharing directly to the manufacturer, wherefore certain smart services could not be offered at all.

Manufacturing companies that operate with exclusive dealers or which have established a solid and trustful partnership with non-exclusive dealers may not encounter the same challenges and drawbacks. Good partnerships can offset the vulnerable position of a manufacturer without direct customer contacts. The CRM strategy might slightly adapt to foster not only the customer but also partner embeddedness. John Deere proves impressively, for instance, that having direct sales is not a prerequisite to be successful with smart services. Their activities just change to enabling the distributor, compared to any other company not selling through an intermediary (see the John Deere case in Part II of the book).

We already expressed the possibility of implementing a partner relationship management program to receive indirect customer access by increasing partner embeddedness. Consequently, manufacturing companies can find creative ways of capturing customer information by cooperating with distributors. For example, joint workshops of the company, the dealer, and the customer could be possible ways of adapting the aforementioned co-creation process. In any case, the manufacturing company has to keep in mind that it needs to design a smart service reaching a win-win-win situation. Distributors need to benefit directly from offering smart services

for the OEM, which also requires that the necessary investment the distributor needs to make should be compensated over the short or long term.

2.2.6 Vulnerability to New Entrants

When manufacturing companies have weaker bonds with the end-customer due to the intermediary, new entrants may demonstrate an even greater threat of docking directly to the customer by promising process improvements or other services based on the data transmitted from the OEM's products.

Third parties may still be limited in the significance of their service outcomes, wherefore manufacturers have to mitigate the increased risk of new competitors by increasing partner embeddedness, as we concluded before.

Consequently, when a manufacturing company obtains a non-ideal position within a network, it should focus even more on its strength to combine the provided services with domain and product knowledge, as well as the asset to offer a complete, complementing, and compelling portfolio. But recognizing the impact of the distributor and defining the challenges that ensure are vital activities for the manufacturer. Notably, when manufacturing companies find ways to strengthen bonds with the distributor and let him profit from introducing smart services, the distributor has an intrinsic motivation of winning against new competitors. Enabling the distributor may, thus, lead to a beneficial partnership for every participant of the value network.

3 Managerial Implications

Professionalizing the CRM is the way to go for manufacturing companies that move forward in the servitization journey. Customer inputs are crucial for service-related operations, and customer-centricity is important for the whole company, even though it somewhat opposes the technology fascination within the engineering department. Infusing the service mindset is, thus, a great challenge.

Practitioners can implement a variety of passive and active measures to enhance customer embeddedness. Self-service systems or one-stop platforms could increase customer engagement. Introducing a co-creation approach intensifies the customer involvement in the service development and sales cycles.

Essentially, manufacturing companies should find ways to engage more with the customer and manage customer touchpoints meticulously. It means that companies should prepare, execute, and learn from customer encounters. Showing customers the increased value of their position could result in appreciation, but a company should not show vulnerability (i.e., dependency), leading to the higher bargaining power of the customer. Instead, emphasizing the mutual development character may strengthen bonds.

Employing a CRM system to professionalize the customer relationship also means making use of the data to increase efficiency and leverage economies of scale and scope. Fusing databases and capturing customer information are not sufficient when a company does not strive to create valuable insights from

it. Therefore, the data can be used to create customer profiles, improve service offerings, and perhaps modularize services to decrease the required customization efforts and increase economies of scale.

The type of industrial service offering further depends on the companies' role in the value network. Therefore, the manufacturer should examine its position, describe strengths and potential risks, formulate mitigation strategies, as well as cycle the information to the service and/or corporate strategy development. The question is, which position does the company want to have, and what does this mean for the servitization journey?

Once the company is clear about the position and what it wants to achieve, it can focus on partner or customer embeddedness (depending on a direct or non-direct sales situation) by applying digital collaboration platforms or further means.

4 Summary

While manufacturing companies could previously rely on solid engineering capabilities to reach their customer base, simply providing high-quality products is not enough for servitization endeavors. The customer relationship evolves from reactive transaction-based value-in-exchange to proactive, continuous collaboration and value-in-use. Introducing advanced industrial services successfully depends on the ability of the provider to process information and insights from the customer. But first, the company needs to acquire this information and these insights.

There are multiple ways to interact with customers passively and actively. In each way, the company should manage customer interactions wisely. When the manufacturer has problems receiving direct customer input due to an intermediary, it should focus on enabling the channel partner to deliver the necessary information by increasing the partner embeddedness and organizational networkedness. The firm should be clear about its position in the value network as it affects the service strategy and industrial service portfolio. But no matter which position a company may have, want, or strive for, there are always opportunities to be successful. Just the challenges and activities will differ.

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