Chapter 4
Why Porter Is Not Enough: Economic Foundations of Sustainable Strategic Management

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4.1 Introduction

Henry Mintzberg (2014, 2017) continues to challenge our discipline to move toward the pull of the practice of management, which requires strategic managers to understand the complexity of the current business environment and not to view management in terms of compartmentalized packages. In other words, strategic managers need the ability to combine multiple sources of information in order to make good strategic decisions and therefore, they need models that accurately represent the current business environment and the practice of strategic management. The traditional models of strategic management represent what Alfred North Whitehead (1929) calls misplaced concreteness, mistaking abstract models for an accurate representation of reality. The 1980s Porterian (1980, 1985) models of industry and value chain analyses are the cornerstones of the current strategic management paradigm and have been invaluable in the development of the field. However, they no longer represent the current business environment, thus providing examples of mistaking abstract models for accurate representations of reality. This chapter summarizes the reality of the current business environment and the pull of the practice of management along with the neoclassical economic assumptions underlying the current strategic management paradigm. Given the co-evolutionary nature of the development of strategic management theory (Stead & Stead, 2010), a co-evolutionary shift from the fundamental assumptions of strategic management to a new paradigm of sustainable strategic management is proposed. Sustainable strategic management and its open-system models are a more accurate representation of current reality, thereby reducing the effects of misplaced concreteness (Whitehead, 1929) in the minds of both students and managers.

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4.2 Co-evolution and the Pull of the Practice of Strategic Management

Co-evolution provides a theoretical context for the examination of strategic management as it relates to the practice of strategic management and the current business environment (Stead & Stead, 2013). Co-evolution, with its roots in the biological and geological sciences (Ehrlich & Raven, 1964; Lovelock, 1988), refers to the concept that entities evolve in concert with one another. Over the decades co-evolutionary theory has emerged as a popular organizational science framework where it is generally viewed as an umbrella theory that can tie together popular organizational theories (Lewin, Long, & Carroll, 1999; Porter, 2006; Volberda & Lewin, 2003). Co-evolution reflects changes that are typically specific, reciprocal, adaptive, boundary spanning and lead to permanent changes in the entities involved (Porter, 2006). Strategic management theory development is co-evolutionary in nature where the theory coevolves in concert with the practice of management (Stead & Stead, 2010).

This process of reciprocal adaptation indicates that we are the next stage of coevolution of the field of strategic management, where sustainability has become a competitive force and open structures and processes have emerged to capture the collective learning of stakeholders. Forty-two years ago, the Strategic Management Society (SMS) held its landmark Pittsburg conference where the fundamental assumptions of the field of business policy and planning were questioned and the new strategic management paradigm was proposed. At the time, business policy and planning referred to the internal integration of the functional levels of the firm with a goal of resource maximization. As the environment changed and the scope of the field broadened, the strategic management paradigm slowly emerged (Gnyawali, 2017; Hofer & Schendel, 1978). Even as the practice of strategic management reflected the new strategic management paradigm, academicians were slow to change. According to Hofer and Schendel (1978: xi), "To date, this extension in scope has not been reflected in texts in the field." The issues currently faced by the strategic management community are similar to those of the late 1970s (Gnyawali, 2017), where the textbooks do not reflect the current practice of strategic management. The practice of strategic management is pulling current strategic management theory to coevolve to the open-system paradigm of SSM, where the neo-classical, economic assumptions underlying the paradigm are being questioned and changed. In this section, the current context in which corporations now practice strategic management is summarized along with some of the reciprocally adaptive strategic management structures and processes which have emerged in concert with the changing business environment.

4.2.1 Sustainability and the Circular Economy

The increasing demand of stakeholders for more sustainable business practices has had a major impact on how strategic management is practiced. As Meyer zum Felde

demonstrates in his previous chapter, sustainability is now an important item on the strategic agendas of CEOs.[1] The longitudinal data over an 8 year period (2009–2017) on corporate sustainability from the *MIT Sloan Management Review*, in partnership with The Boston Consulting Group (BCG), confirm that the emergence of sustainability is a strategic shift that has taken place in the context of organizational environments, even though unevenly distributed across industries and geographies. Overall, global executives demonstrate a much higher commitment to sustainability than they did in 1987 when the Bruntland Commission first proposed the concept of sustainable development (Kiron et al., 2017). Their surveys of global managers found that sustainability is becoming a competitive necessity for organizations, that firms have changed their business models to incorporate sustainability and that they are now collaborating with suppliers, NGOs, governments, industry alliances, and competitors in innovative, sustainability projects (Haanaes et al., 2011; Kiron et al. 2014; Kiron, Kruschwitz, Haanaes, & Velken, 2012; Kiron, Kruschwitz, Reeves, & Goh, 2013). In their 2016 survey they found a growing interest in sustainability among mainstream investors who are increasingly using sustainability-related criteria in making their investment decisions. The data demonstrate a performance gap between investor demands for more trustworthy environmental, social and governance (ESG) criteria before making investment decisions and strategic managers ability to deliver more sustainable business performance (Busch, Bauer, & Orlitzky, 2016; Unruh et al., 2016). The totality of this longitudinal research makes clear that strategic managers are operating at the intersection of economy, society, and ecology where stakeholders are increasingly demanding that organizations create not only economic value, but also ecological and social value as well.

A joint report by the World Council on Sustainable Development (WBCSD) and the Boston Consulting Group (2018) on the circular economy also demonstrates that corporate leaders are increasingly viewing the economic, ecological, and societal value of strategies which re-use and recycle resources. This open-system, cradle-to-cradle (McDonough & Braungart, 2002) approach challenges the traditional, economic model of the economy as a closed system, and envisions a new model that mimics nature and is regenerative by design. Like nature, the vision of a circular economy is one of no waste and of total materials recycling. Of the 78 global managers interviewed and surveyed, 97% believe that the circular economy concept drives innovation and makes their company more efficient and competitive, while 96% said that it was important for the firm's long-run success. The data reveal that 51% of managers state that circular economy strategies have already added to corporate profits, where their customers are the most influential, external stakeholder group in the organization's environment (WBCSD & BCG, 2018). The circular economy approach provides a pathway for organizations to engage in more sustainable business practices, thus responding to increased stakeholder demands for sustainability.

[1]For more information see Chap. 3.

4.2.2 The Anthropocene

Geologists now believe that humankind has had such a significant impact on the environment of the planet that they have declared a distinct, entirely new geological epoch called the Anthropocene, where abrupt global environmental change is caused by human activity transgressing one or more planetary boundaries (Rockström et al., 2009). In geology, the Earth's official timeline is delineated by epochs. The Anthoprocene replaces the current epoch, the Holocene, which began 12,000 years ago at the end of the last ice age. Although the Anthropocene epoch has not yet been officially declared, scientists believe that the stratigraphic data provide evidence that the Anthropocene is clearly distinguishable from the Holocene epoch. The Anthropocene stands alone stratigraphically as a new epoch beginning sometime in the mid-twentieth century (World Economic Forum, 2016). Rockström et al. (2009) and Steffen et al. (2015) have identified nine planetary boundaries that if transgressed will trigger discontinuous, abrupt environmental change within planetary systems, threatening human survival. These authors define unacceptable, environmental change by its relationship to the risks humanity faces in the transition of the planet from the Holocene to the Anthropocene. These boundaries are interdependent and coevolve with one another.

The planetary boundaries' concept proposes a new approach to global sustainability by scientifically defining the planetary boundaries within which humanity can safely operate in the Anthropocene. The goal is to provide quantitative, scientific measures of the planetary boundaries of climate change, ocean acidification, stratospheric ozone, biogeochemical nitrogen and phosphorus cycles, freshwater use, land system change, change in biosphere integrity, introduction of novel entities, and atmospheric aerosol loading. Research indicates four of the nine planetary boundaries have already been crossed: climate change, loss of biosphere integrity, land-system change, and altered biogeochemical cycles of phosphorus and nitrogen (Steffen et al., 2015). Two of these, climate change and biosphere integrity, are core boundaries, where, according to scientists, altering either has the potential to drive Earth's planetary system into a new state (Rockström et al., 2009; Steffen et al., 2015). As Lovelock (1988) notes, the Earth and its organisms coevolve over time in a self-regulating, complex, planetary system where humans, although the dominant species, are nonetheless mere organisms reliant on the Earth to provide life-supporting systems. The planet's self-regulating mechanisms, its planetary boundaries, could easily create an environment that no longer supports human life. These are the coevolving, systemic issues facing humankind in the epoch of the Anthropocene.[2]

[2]See also Chap. 1.

4.2.3 Open-System Structures

In practice, open-system structures and practices are becoming increasingly important for strategic managers' ability to adapt their firms to the current business context. The business ecosystem structure has become pervasive in strategic management due to the interdependences across firms and their activities (Adler, 2017). The competitive landscape has experienced a profound shift, where ecosystem structures with multi-sector, multi-stakeholder relationships reflect the competitive model of co-opetition, (Branderburger & Nalebuff, 1996). Co-opetition is an open-system model that is characterized as a network of key players who cooperate and compete with one another in order to create maximum profitability for the network. Competition is not between individual firms, but is between communities of firms sharing complementary products and/or services, similar processes and capabilities, and a shared vision. Cooperation within the ecosystem extends beyond suppliers and customers to include all the participants in the community, including the relevant stakeholders such as NGOs, trade associations, governments, etc. Multi-sector, multi-stakeholder relationships are characteristic of the business ecosystem structure. The collaborative, competitive nature of co-opetition creates a highly competitive environment in which potential competitors may arise from traditionally non-competitive sectors. Competition and collaboration exist within and between business ecosystems (Moore, 1993, 1996, 2006).

The business ecosystem structure allows strategic managers to explore new market space at the interface of the economic, ecological, and social sectors of the external environment and to identify more opportunities through collective strategies in industries increasingly moving toward co-opetition. Business ecosystems formulate and implement strategies to compete and to cooperate in a typical predator/prey relationship of coevolution (Iansiti & Levien, 2004a, 2004b).

Apple, Alphabet, Amazon, and Facebook, among others, all effectively compete utilizing the business ecosystem structure, reflecting the pull of the practice of strategic management.

In practice, the global automobile industry is coevolving from a static, oligopolistic industry structure with a high concentration ratio within fixed industry boundaries to a fragmented industry without borders. IBM forecasts that by 2025 there will be a new industry structure characterized by openness, inclusiveness, and without borders between the firm, its consumers and complementary industries. Seventy-five percent of the automobile executives interviewed expect that by 2025 non-traditional industry participants will play an active role in co-creating and innovating in the emerging automotive ecosystem (IBM Institute for Business Value, 2015).

4.2.4 Open Strategy and Open Innovation

The concepts of open strategy and open innovation are also now popular strategic management practices that provide the benefits of openness as a means of creating

value at the interface with the firm's traditional economic boundaries and the natural and social environments (Appleyard & Chesbrough, 2017; Bogers, Chesbrough, & Moedas, 2018). Open innovation and open strategy reflect the increased openness of corporate strategic management processes that recognize the importance of incorporating multiple stakeholders from the economic, social, and ecological environments in the innovation and strategic planning processes. Open strategy and innovation take such forms as crowdsourcing, inter-organizational strategizing, and shared business ecosystem structures (Stieger, Matzler, Chatterjee, & Ladstätter-Fussenegger, 2012). The current trend of more open strategic management processes has two basic dimensions: (1) greater inclusiveness of both internal and external stakeholders in the process and (2) greater internal and external transparency in both process and outcomes (Whittington, Cailluet, & Yakis-Douglas, 2011).

Open innovation and open strategy reflect the coevolution of strategic management practices toward a more open-system, economic perspective. Do the traditional strategic management frameworks and models, embedded within the assumptions of neoclassical economics, provide strategic managers with an accurate view of reality where value capture for the firm happens at the interface of the economy, society, and the ecosystem? Does traditional industry analysis (Porter, 1980) depict the complexities of co-opetition? Is Porter enough to respond to the pull of the practice of strategic management toward more openness where collective, collaborative strategies with all their complexities and reciprocal interdependencies are creating value? In the next section, the influence of the neoclassical, macroeconomic assumption of a closed economic system on the current strategic management paradigm is examined.

4.3 Neoclassical Economics and the Strategic Management Paradigm

The strategic management paradigm is implicitly rooted in the assumptions of the neoclassical economic paradigm, in particularly in the economics of industrial organizations, where the issues from the natural and social environments are considered as nonmarket externalities. By assuming that the economy is a closed system, neoclassical economics assumes away the social and natural environments.

4.3.1 The Neoclassical Macroeconomic Assumptions

In general, neoclassical economics assumes (1) that unlimited economic growth on a finite sphere is possible, (2) that natural capital is an almost perfect substitute for man-made capital, thus resources are viewed as virtually unlimited, and (3) that the radical self-interests of the "economic man" are the best way to allocate resources (Daly & Farley, 2011). Opportunities and challenges at the intersection of society

and ecosystem are considered mere externalities that must be internalized within the closed economy. These are the fundamental economic assumptions underlying the strategic management paradigm.

As more and more strategic issues emerged at the interface between the firm and its natural and social environments, neoclassical economic theory coevolved to environmental economics, where the economy is still assumed to be a closed system, but the theory does recognize the value of non-market goods that are external to the closed system economy. Micro-market mechanisms, such as cap and trade and pollution quotas, are used to internalize the environmental costs of doing business, which in the past have been considered external to the economic system (Costanza, 1989).

These micro-market mechanisms are indeed an improvement and a stage in the coevolution of economic theory, but these do not go far enough in internalizing environmental costs into the economic system. Given that in reality the economy is a coevolving subsystem of the ecosystem, the logical conclusion is that the global economy has an optimal size beyond which the negative biophysical consequences of growth begin to outweigh the positive consequences. Unfortunately, the concept of optimal size is not a part of neoclassical macroeconomic theory. Whereas microeconomic theory teaches that organizations should strive to maintain an optimal size beyond which their marginal costs will be greater than their marginal revenues, the idea of optimal size is somehow lost in the shift to macroeconomic theories of the total economy. Neoclassical macroeconomics assumes that the benefits of growth will outweigh the costs of growth regardless of how big the economy gets. The concepts of optimal scale and diminishing marginal utility are virtually ignored in neoclassical macroeconomics. However, these micro-market mechanisms used in environmental economics are subject to macro-controls based on the planet's ecological limits or carrying capacity (Costanza, 1989; Daly & Farley, 2011).

4.3.2 The Influence of Neoclassical Economics on the Strategic Management Paradigm

The Porterian Five Forces Model (1980) and Value Chain Model (1985) are popular abstract models of the strategic management paradigm and provide a convenient way to identify actions that could enhance a firm's competitive position within a closed economic system. These models have enhanced our understanding of strategic management and the expansion of these concepts by other scholars has furthered the development of the field of strategic management. However, today the pull of the practice of management and the changing business context require the questioning of the fundamental assumptions of the strategic management paradigm, just as the founding members of SMS did forty-two years ago when they questioned the fundamental assumptions of the business policy and planning paradigm.

Porter's (1980) Five Forces and Value Chain (1985) models, couched within the neoclassical economic paradigm, continue to dominate thinking in current strategic management education (Barney & Hesterly, 2015; Dess, Lumpkin, & Eisner, 2014; Hitt, Ireland, & Hoskisson, 2017; Rothaermel, 2017; Thompson, Peteraf, Gamble, & Strickland, 2018). The Five Forces Model (1980) portrays a static perspective of "what is" within a closed-system economy and well-defined industry borders, as demonstrated by Fig. 4.1. The model suggests that strategic managers scan the product market segments in which they compete for opportunities and threats without much regard for context. The structure of the industry in traditional industry analysis determines the rules for competing, which directly influence the economic performance and conduct of the firm. Strategic managers' primary focus in this case is on increasing market share within well-defined industry boundaries, and the

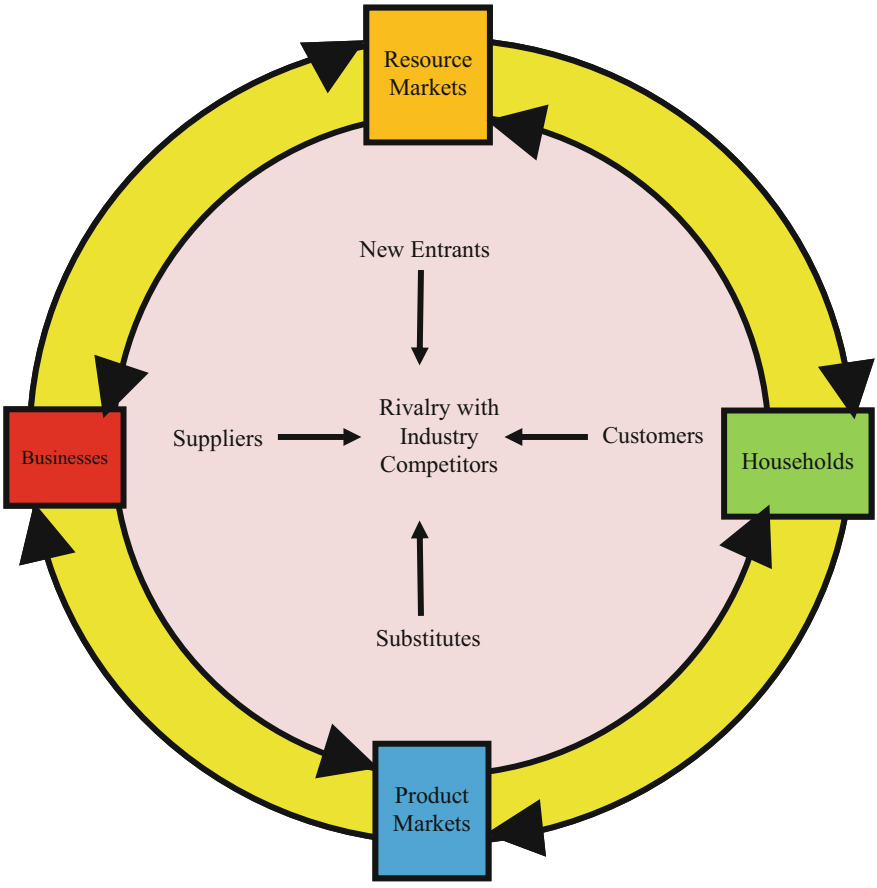

Fig. 4.1 Traditional industry analysis. Source: Adapted from Michael E. Porter's Five Forces model, Michael E. Porter. 1980. *Competitive Strategy*. New York, Free Press. This model appears in Jean Garner Stead and W. Edward Stead. 2014. *Sustainable Strategic Management*. London, Routledge

competition is defined as those firms that directly compete in individual product and/or service categories (Moore, 1996).

Within the Five Forces Model (Porter, 1980), cooperative relationships are typically limited to those with direct suppliers and customers. This narrow perspective of stakeholders excludes stakeholders such as social entrepreneurs, NGOs, and networks, which are necessary for social value creation (Drayton & Budinich, 2010). The capabilities to create value are viewed as residing in a single firm, and organizational performance is primarily measured in terms of how well the individual firm is managed with respect to its economic sustainability (Moore, 1996). Thus, within Porter's (1980) model of industry analysis, strategic managers will often rest their decisions on familiar mental models, such as the closed-economy, that allow them to adapt to change within well-defined industry boundaries. This process often leaves managers with narrow, static pictures of current and future reality. These static pictures restrict managers' ability to readily recognize the opportunities and challenges at the interface with the firm's social and natural environments, limiting both social and ecological value creation.

Porterian Value Chain Analysis (1985) extends the Five Forces concept (1980) by linking it to the value chain of a firm where advantageous competitive positions can be found across the value-creating activities of the firm within a closed economic system, as demonstrated in Fig. 4.2.

Using this model to assess and analyze resources and to determine core competencies is, however, an outdated approach to value creation since it ignores the societal and ecological context in which business operates. Porter and Kramer (2011) agree that the traditional value chain provides too narrow a focus on short-term financial performance while ignoring broader societal needs that are critical for long-term success. Therefore, they have developed an expanded view of value creation that includes the greater society. Their expanded view of the value chain is based on the principle of shared value, "which involves creating economic value in a way that also creates value for society by addressing its needs and challenges" (Porter & Kramer, 2011: 64). The creating shared value (CSV) concept is a stage of coevolution in strategic management theory similar to environmental economics in economic theory. And, the CSV concept, like environmental economics, is based on the neoclassical macroeconomic assumption of the economy as a closed system, and therefore social and ecological issues are seen as mere externalities of the closed economy. Dyllick and Muff (2015) also view CSV as the first stage in moving toward true business sustainability, dubbing it refined shareholder value management or Business Sustainability 1.0.

According to Porter and Kramer (2011), capitalism provides win-win opportunities for the firm to address a social issue while capturing economic value. Early on Dyllick and Hockerts (2002) termed this win-win strategy as socio-efficiency, where profitability and social performance are intricately linked. The CSV concept is corporate-centric, where the corporation perceives itself as the center of the stakeholder network, rather than the stakeholder of the problem. Within this framework, addressing social issues generates positive economic benefits such as reduced costs or increased reputational capital. Mintzberg (2015) views these win-win strategies as fanciful and says it is naïve to believe that these strategies will create the kind of

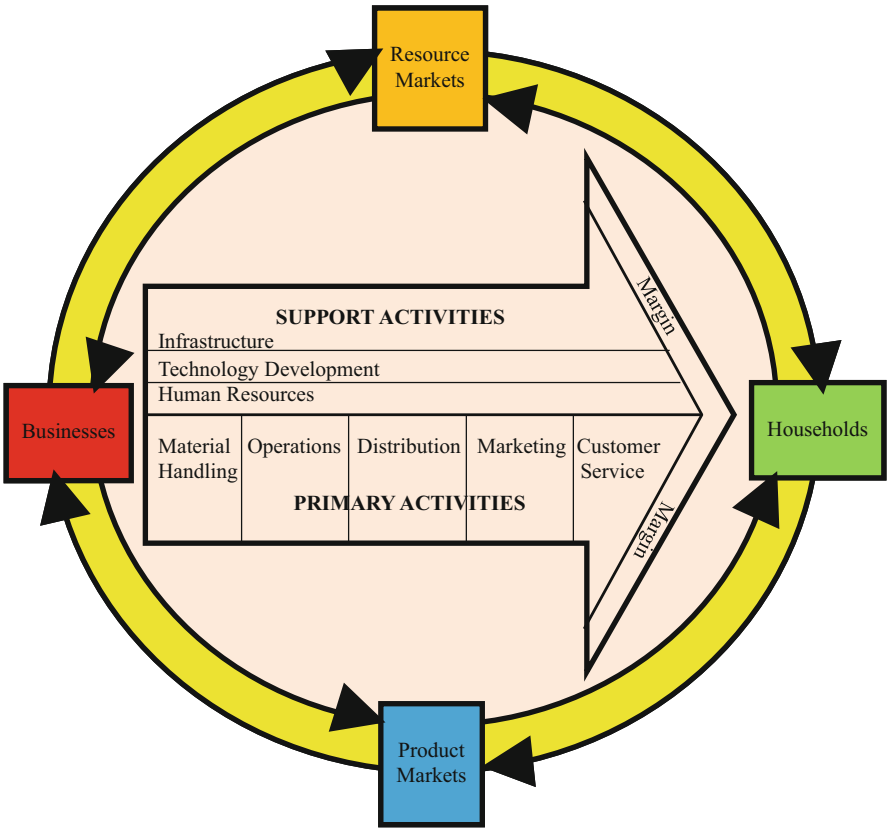

Fig. 4.2 Closed system value chain analysis. Source: Adapted from Michael E. Porter's Value Chain model, Michael E. Porter. 1985. *Competitive Advantage.* New York, Free Press. This model appears in Jean Garner Stead and W. Edward Stead. 2014. *Sustainable Strategic Management.* London, Routledge

change needed to deal with society's current, systemic challenges. The CSV concept is merely an extension of traditional value chain analysis in which firms differentiate themselves from competitors via socio-efficiency. In other words, the CSV concept does not manifest industry-wide solutions and multi-stakeholder initiatives to address systemic social problems (Crane, Palazzo, Spence, & Matten, 2014; Dyllick & Muff, 2015).

The CSV concept assumes capitalism is magic, creating value out of nothing (Elkington, 2012). The primary activities of the firm do not account for either the value of natural capital which has evolved over millions of years, or the costs of wastes after consumption. By ignoring the entropy law, the second law of thermodynamics, Porter and Kramer's (2011) CSV concept clearly reflects the neoclassical, macroeconomic assumption of a closed-system economy. In addition, the support activities are not generally structured to support an open-system planning model

required in open innovation, open strategy, and the business ecosystem structure. Hence, the CSV concept is an incremental step, rather than a transformational one, in a co-evolutionary journey toward sustainable strategic management.

Over a decade ago, Grant (2007: 23) concluded that the "collective strategic management perspective must become very long run" and develop new constructs and modes of analyses in order to address the ecological tipping points facing society. In the next section, the macroeconomic, neoclassical assumption of a closed economic system in which the current strategic management paradigm is grounded is questioned and a new set of assumptions and constructs based on the assumptions of ecological economics is presented. The assumption of an open system economy views the firm as a coevolving subsystem of the economy, society, and ecosystem, thereby better depicting the current reality of the practice of management and the current business environment. Although Porter's earlier strategy models (1980, 1985), as well as the CSV extension, have been invaluable in the development of the field of strategic management, it is now time for a fundamental, transformational change from the closed-system, strategic management paradigm to the open-system paradigm of sustainable strategic management (SSM). This shift will reduce the fallacy of misplaced concreteness (Whitehead, 1929), where the Porterian models of strategic management are mistaken for representing the current business environment and the practice of strategic management.

4.4 Ecological Economics: Foundation Principles for Twenty-First Century Strategic Management

Strategic management, the practice of management and the business environment coevolve in concert with one another (Grant, 2007). The assumptions of ecological economics provide new ways of seeing the firm as a coevolving subsystem of the economy, society and ecosystem. The assumptions of ecological economics provide a more accurate picture of reality than the neoclassical paradigm's view of economy as a closed system. In this section, the basic tenets of ecological economics will be examined.

4.4.1 The Economy Is Entropic

Whereas environmental economics is based on relative scarcity, ecological economics is based on absolute scarcity imposed on the economy by the second law of thermodynamics, the entropy law (Daly, 1977; Georgescu-Roegen, 1971). Although the energy of the universe is constant, the entropy law says that there is a qualitative change every time energy is transformed from one state to another; some of its available energy to do work is lost. When energy is no longer available to do work it

becomes a waste product. Further, entropy is irreversible and associated with the forward movement of time; things always get older, never younger (Ehrlich, Ehrlich, & Holdren, 1977).

Georgescu-Roegen (1971) contends that since the entropy law is a natural law that clearly defines the physical limits of economic activity, it should form the foundation upon which economic theories are based. He says that the only way to account for the true value of natural resources, the intrinsic value of life, and the actual cost of pollution and overpopulation is to base economic theories on the entropy law. The macroeconomic assumption that economic activity is not subject to the entropy law leads directly to the fallacious assumption that unlimited economic expansion is possible. The neoclassical economic abstraction of the economy represented by a closed circular flow of exchange value represents a classic example of misplaced concreteness (Daly, 1987). The carrying capacity of the planet is virtually ignored in neoclassical economics and the overshoot in carrying capacity is at the heart of the ecological challenges faced by humankind (Wackernagel et al., 2002).

4.4.2 Ecological Economics

Ecological economics has emerged as the next co-evolutionary stage in economic theory, requiring a shift in the economic paradigm to an open-system view of the economy (Costanza, 1989; Daly, 1977; Georgescu-Roegen, 1971). Based on the theories of his mentor, Georgescu-Rogen, Herman Daly (1977) proposes an economic model called a steady-state economy that, unlike the closed-economy, accounts for the flow of matter and energy through the economy. By adding throughput to his model, he opens the closed-system economy to the natural environment and bases the steady-state economy on the assumption that the entropy law imposes absolute limits on the capacity of the economy. Daly (1977: 199) says, "To deny the relevance of the entropy law to economics is to deny the relevance of the differences between a lump of coal and a pile of ashes." Thus, ecological economics recognizes that the carrying capacity of the planet imposes limits on economic activity.

Essentially, ecological economics is based on: (1) a dynamic, holistic, co-evolutionary view of the world as coevolving subsystems of economy and society on a finite sphere; (2) multi-scale time frames that recognize both the short-term dimensions of daily economic decisions and the long-term co-evolutionary dimensions of nature's processes; (3) the recognition that humans are a part of nature; (4) a macroeconomic goal of sustainability (sustainable scale) and appropriate microeconomic goals to support this; (5) a belief that technology is important but not a panacea for achieving sustainability; and (6) a belief that solutions to ecological problems must transcend traditional disciplinary boundaries (Costanza, Daly, & Bartholomew, 1991).

The theories and models based on neoclassical economic assumptions are not adequate to inform strategic managers and students on how to respond to today's grand challenges such as climate change and income inequality. The theoretical

Table 4.1 Comparison between the strategic management paradigm and the sustainable strategic management paradigm

Strategic management	SSM
Based on neoclassical economics	*Based on ecological economics*
• Economy is a closed system • Unlimited economic growth is possible • Unlimited resources where man-made capital and natural capital are assumed to be near perfect substitutes • Linear throughput of matter and energy through economy; no recycling • Economic man assumption – individual is self-contained, value neutral • Radical self-interest as core value	• Economy is an open, coevolving subsystem of the economy, society and ecosystem • Unlimited economic growth is not possible on a finite sphere • Resources are limited by the Entropy Law • Planetary boundaries • Circular economy • Individual exists within the context of others • Sustainability as core value
Models	*Models*
• Static view of "what is" • Adaptive learning • Well defined industry boundaries without much consideration of context • Competition is directly between competitors/products within defined segments • Traditional fragmented or consolidated industry structures • Cooperation is limited to direct suppliers and customers • Performance based on economic value creation • Planning processes of formulation and implementation are separate • Incremental change • Porter's Five Forces, VCA, CSV models	• Coevolutionary view of "what can be" • Generative learning • Industry boundaries are blurred and a matter of choice; rewriting of industry rules • Coopetition—competition between networks of firms that are coevolving, symbiotic, and self-reinforcing • Ecosystem industry structure • Multi-stakeholder, multi-sector partnerships • Performance is based on triple-bottom line (economic, social, and ecological) value creation • Planning processes are open and represent the collective wisdom of the firm • Transformational change • Open strategy and open innovation

models of Porter (1980, 1985) and Porter and Kramer (2011) do not accurately depict the reality of today's business environment. Only by re-conceptualizing traditional, closed system theories and models in which the current strategic management paradigm is embedded can we provide strategic managers and students with frameworks to explore the opportunity space at the interface of economy, ecology, and society. The theories of ecological economics provide this basic, conceptual framework in which the next co-evolutionary stage of strategic management is grounded. The Table 4.1 compares the strategic management and SSM paradigm.

4.5 Sustainable Strategic Management: The Pull of Practice

Sustainable strategic management with ecological economics as its theoretical framework represents transformational change in the current strategic management paradigm, rather than the incrementalism of Porter and Kramer's (2011) CSV

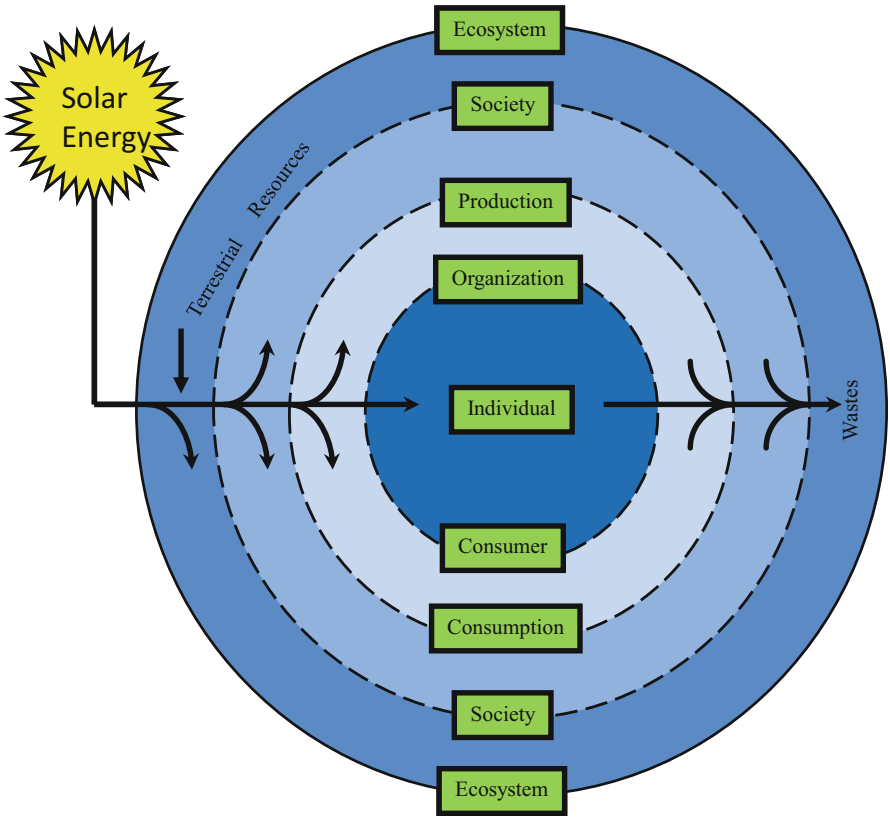

Fig. 4.3 Open living system economy. This model appears in Jean Garner Stead and W. Edward Stead. 2014. *Sustainable Strategic Management*. London, Routledge

concept. Strategic management students and practitioners need new models and constructs that better reflect the current realities of the practice of strategic management. An open-system model based on Daly's (1977) steady-state economy, where the firm is viewed as a coevolving subsystem of economy, society, and ecosystem governed by the entropy law, is proposed in Fig. 4.3. It provides strategic managers with a new paradigm that reduces the misplaced concreteness (Whitehead, 1929) demonstrated by the closed-system models of the strategic management paradigm.

This open-system, theoretical framework allows strategic managers to focus on interrelationships and dynamic processes of change rather than linear cause and effects of traditional industry analysis, enabling them to look beyond industry borders and to generate not only economic value, but also ecological and social value. Sustainable strategic management expands strategic managers' ability to shape their organizations' future by encouraging strategic managers to question the underlying assumptions on which the firm's strategy is formulated and to ask, "What can be?" (Stead & Stead, 2014). Sustainable strategic management represents

truly sustainable business, what Dyllick and Muff (2015) call Sustainability 3.0. This open-system model represents a new way of viewing the firm and its external environment.

Techniques such life cycle analysis (Esty & Winston, 2008) and footprint analysis (Laszlo, 2008) have emerged to assist strategic managers in gathering data and understanding the value creation from the ecological and social sectors of the firm's external environment. Life cycle analysis allows firms to expand the scope of traditional value chain analysis to include the value of ecosystem services and natural capital, where footprint analysis expands the analysis to include social value-added data. A cradle-to-cradle (McDonough & Braungart, 2002) footprint analysis goes beyond the limited economic scope of value chain analysis to include ecological and social value creation in order to determine the true impact of the organization's footprint (Laszlo, 2008). Figure 4.4 is proposed as an open-system

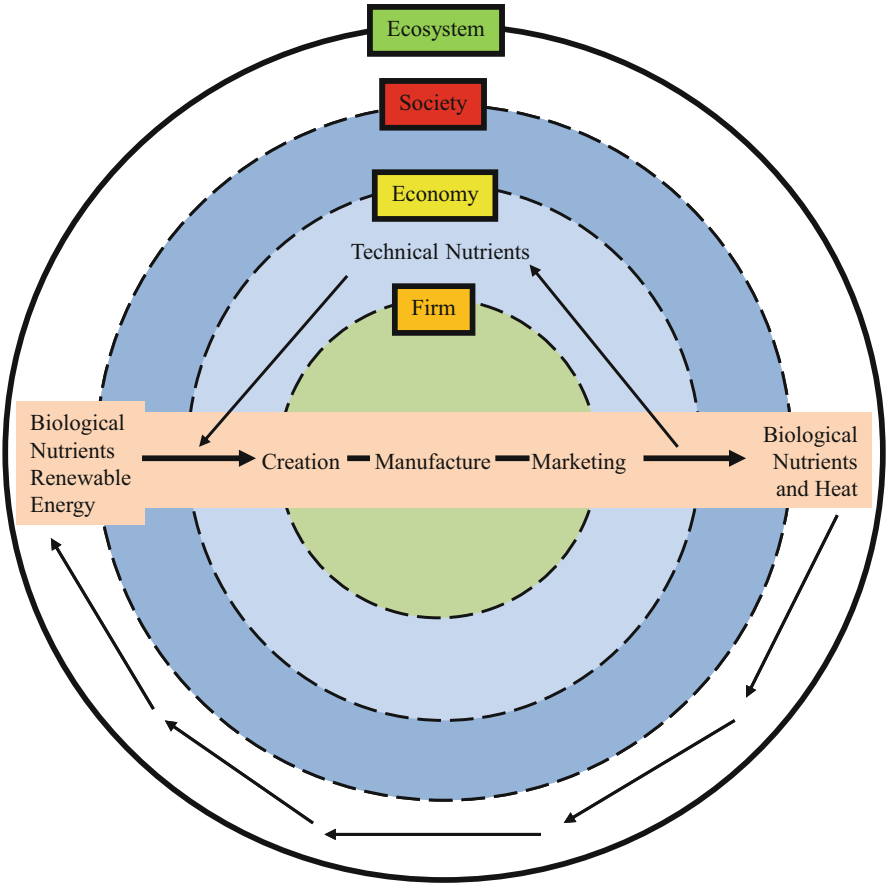

Fig. 4.4 Open system value chain. This model appears in Jean Garner Stead and W. Edward Stead. 2014. *Sustainable Strategic Management*. London, Routledge

view of the value creating process where triple-bottom line (Elkington, 1997) data assist strategic managers in creating value for the expanded view of the firm's stakeholders (Stead & Stead, 2010, 2014).

Figure 4.4 is a more accurate representation of the twenty-first century value creation process, where not only economic value, but also ecological and social value can be captured. SSM moves beyond socio and eco-efficiency to eco and socio-effectiveness (Dyllick & Hockerts, 2002). Sustainable strategic management represents a truly sustainable enterprise (Dyllick & Muff, 2015), where strategic managers are better able to use corporate resources to address the systemic social and ecological challenges of our time. The open-system models of sustainable strategic management provide strategic managers with a better depiction of current reality thereby reducing the misplaced concreteness (Whitehead, 1929) of the Porterian models of the strategic management paradigm.

4.6 Conclusions

In sum, the Porterian view of the industry and value chain are examples of the fallacy of misplaced concreteness (Whitehead, 1929) and are not now realistic enough to capture the value creation from the firm's interface with the social and natural environments. In other words, they do not reflect the pull of the practice of strategic management nor the current business context. Porter's models (1980, 1985) are the cornerstone of the strategic management paradigm and are grounded within the neoclassical, economic paradigm of a closed economic system. Even the CSV concept (Porter & Kramer, 2011) is not enough to guide strategic managers' decision-making processes, because it is merely an incremental extension of the traditional value chain, representing the win-win strategies of social differentiation and socio-efficiency (Dyllick & Hockerts, 2002).

Sustainable strategic management has coevolved in concert with the practice of strategic management and represents the next co-evolutionary stage of strategic management. Just as in 1977 when the founders of the SMS questioned the assumptions of business policy and planning and proposed the strategic management paradigm, today scholars and practitioners alike are questioning the underlying economic assumptions of the strategic management paradigm. Not until the neoclassical, macroeconomic assumption of the closed-system economy is questioned and changed can strategic management coevolve to sustainable strategic management, where ecological economics provides the theoretical construct for its models. Sustainable strategic management represents a more accurate view of the context in which business is practiced and provides a conceptual framework to those strategic managers interested in moving their firm toward a truly sustainable enterprise.

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