ECONSTOR
Make Your Publications Visible.

A Service of

ZBW Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Barile, Sergio; Pels, Jaqueline; Polese, Francesco; Saviano, Marialuisa

Article

An introduction to the viable systems approach and its contribution to marketing

jbm - Journal of Business Market Management

Provided in Cooperation with:
jbm - Journal of Business Market Management

Suggested Citation: Barile, Sergio; Pels, Jaqueline; Polese, Francesco; Saviano, Marialuisa (2012) : An introduction to the viable systems approach and its contribution to marketing, jbm - Journal of Business Market Management, Freie Universität Berlin, Marketing-Department, Berlin, Vol. 5, Iss. 2, pp. 54-78, https://nbn-resolving.de/urn:nbn:de:0114-jbm-v5i2.140

This Version is available at:
https://hdl.handle.net/10419/66007

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

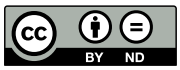
Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



http://creativecommons.org/licenses/by-nd/3.0/

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

RESEARCH ARTICLE

J Bus Mark Manag (2012) 2: 54–78
URN urn:nbn:de:0114-jbm-v5i2.140

An Introduction to the Viable Systems Approach and its Contribution to Marketing

Sergio Barile · Jaqueline Pels · Francesco Polese · Marialuisa Saviano

Abstract: Organizations are increasingly challenged by dynamism and turbulence that determine conditions of complexity in decision making. The aim of this paper is to highlight the need for a general frame of reference for management and marketing and to justify why adopting a systems approach is adequate at both theoretical and practical level. Specifically, the purpose of this paper is to explain why a systems approach is needed to understand business and market dynamics, and why the VSA may represent a good integrator of management and marketing theories and practices. The paper begins with a brief review of systems theories that have been proposed in the general context of management and marketing. It proceeds by illustrating the fundamental principles and concepts of the VSA and its contribution to marketing. The paper closes by discussing future research avenues and suggesting implications for researchers and practitioners.

Keywords: Systems thinking · Viable Systems Approach · Marketing

Published online: 15.06.2012

© jbm 2012

Sergio Barile
Sapienza, University of Rome, Italy
Jaqueline Pels
Business School University Torcuato Di Tella, Argentina
Francesco Polese (C) · Marialuisa Saviano
University of Salerno, Italy
e-mail: fpolese@unisa.it

Introduction

Given the dynamism and instability of contemporary markets, all businesses and economic actors encounter conditions of growing complexity (Ng et al. 2012). In defining strategy, each actor should consider all of the other actors and stakeholders that might influence its relationships with the market (Gummesson & Polese 2009; Vargo & Lusch 2011; Vargo, Lusch & Polese 2012). The resulting scenario is characterized by a high number of dynamically changing interconnections to be considered. In such a scenario, events are not characterized by simple cause-effect relationships but define networks of relationships within which complex patterns of interactions occur (Gummesson 2001). Consequently, decision makers experience difficulty in making successful and effective choices, and rational decision making thus becomes challenging (Barile 2009; Barile & Saviano 2010b). These new contextual conditions have prompted the belief that both management and marketing theories are in need of a new paradigm of conceptual thought (Ghoshal & Moran 2005; Lusch 2007).

During the second half of the last century, numerous disciplines have attempted to develop new models that are capable of adequately representing the observed reality and its dynamics by pursuing studies of system theory (von Bertalanffy 1968; Parsons 1971; Beer 1972; Maturana & Varela 1975). Based on a general perspective of observation, systems theories have been adopted in several disciplinary domains, including management and, more recently, marketing (Ng et al. 2012).

Despite the widely accepted view of business as a socio-technical open system, we observe that the implications of this qualification are rarely explored in depth. Thus, although they generally agree on a systems view of business organizations, scholars have neglected the exploration of the systemic properties of business, which are illustrated only superficially or are implicitly present as premises or implications of the representation of business as a system. As a consequence, many relevant system characteristics are not considered in decision-making processes.

A growing dissatisfaction with existing business and marketing models, stimulated an Italian research community to seek a more satisfactory scientific approach, capable of representing better the complex context. This scientific effort has led to the introduction and development of the Viable Systems Approach (VSA). Rather than representing another theory, the VSA adopts the premise of the systemic functioning of business and market actors and offers a general framework of reference within which each theoretical contribution has a clear positioning (Golinelli 2010).

Thus, the purpose of this paper is to explain why a systems approach is needed to understand business and market dynamics, and why the VSA may represent a good integrator of management and marketing theories and practices.

The paper begins with a brief review of systems theories as proposed in the general context of management and marketing. The paper proceeds by illustrating the fundamental principles and concepts of the VSA and its contribution to marketing. The paper closes by discussing future research avenues and suggesting implications for researchers and practitioners.

A brief introduction to systems theories

Systems theories in management: initial thoughts and developments

Today, systems thinking is present in all management disciplines (Golinelli 2000). Systems theories have characterized management research from various perspectives that have offered different contributions to the understanding of governance and operation mechanisms (Golinelli 2010).

The initial contribution to the development of a systems view of firms was offered by Taylor (1911), who adopted an analytic-reductionist approach to business studies on the basis of a mechanistic view of the firm by emphasizing the structure's components and relations. At that time, conditions of stability characterized the environment, and firms could focus on production processes to improve efficiency. Building on Taylor's scientific proposals, Urwick and Gulick (1937) theorized firms as closed systems operating according to deterministic schemes whose dynamics were completely controlled. Although appreciated decades later, a fundamental contribution to systems thinking studies was offered by the 1922 Bogdanov Tektology studies (see Bogdanov 1980), which may represent the first attempt to define a real science of structure, to describe its organization and to explain all connections existing among the parts of any system.

Towards the middle of the last century, a prolific research stream represented by open systems theories developed and challenged the conception of firms as closed systems.. According to this view, which build on a parallelism with living entities, firms are characterized by a life cycle, absorb external resources to pursue their own finality (survival), reflect an articulated structure of different components (each with a specific function) and are adaptable entities according to a progressive specialization (Hannan & Freeman 1977).

At that time, a strong influence on business studies was exerted by Stafford Beer (1972) with his view of firms as cybernetic systems that are strengthened by self-regulating capacities to enable better management of changing contextual conditions. According to Beer, governance ability relies on a self-regulation mechanism that is capable of increasing the fulfillment of a system's finality or the ability to undertake corrective actions.

Each of these systems theory proposals within the management field has been developed by focusing on specific aspects of systemic functioning that have led to the identification of relevant properties. The first attempt to propose such a general framework of systems theory was accomplished with the studies of von Bertalanffy, founder of the "general system theory" (GST) (1968).

Another systems thinking contribution was proposed by Katz and Kahn (1978) who studied the mutual inferences of organization (the system) and the environment in which it is involved. The Theory considers cybernetics adaptive capacity of organization in order to evolve in environmental conditions (with or without information processing need) (Katz & Kahn 1978).

A more recent contribution of systems thinking to business studies is represented by the works of Capra and its insightful studies on networks (1997), or by the view of

firms as cognitive systems; this view highlights the importance of knowledge and learning processes that are fundamental for system viability (Clark 1997).

Systems theories in marketing: initial thoughts and developments

The systems approach is not new within the marketing field. Within marketing, systems thinking was adopted by various research streams, each of which has provided a contribution to the overall understanding of market mechanisms. These perspectives are synthesized in Table 1. We shall focus specifically on Alderson, the macro-marketing school, the IMP group, service-dominant logic and service science.

The first step occurred in the 1960s, when Alderson's view of marketing as a function was appraised for its "vital role in the dynamic process of matching goods and needs and in organizing institutions and processes to serve this ultimate purpose" (Alderson 1964, p. 94). His functionalist view was grounded in a total systems approach, which devised "descriptive generalizations of marketing activities and institutions" (Alderson 1964, p. 106) in which organized behavior systems played a central role. Hence, marketing theory was based on a functionalist approach to studying "a nested hierarchy of systems of action in which system levels are differentiated in terms of their functions" (Dixon & Wilkinson 1989, p. 64).

Alderson's work will later for the basis to the development of vertical marketing systems, thinking. This system logic is revealed to be primarily a means of better controlling the market and does not overcome the transactional logic of exchange (Saviano 2003). Through vertical marketing systems, in fact, marketers essentially gained control over distribution channels by developing means of blocking competitors from entering these channels. These trends led to the development of direct marketing with the aim of maintaining a long-term relationship with consumers (McCammon 1965).

However, although researchers had already begun to attribute a prominent role to a systems approach in marketing in the late 1960s (Lewis & Erickson 1969), it was more than a decade later that, through the introduction of macro-marketing studies, systems assumed a lead role in promising marketing research avenues. In fact, macro-marketing was proposed as the study of:

(a) marketing systems,
(b) the influence and consequences of marketing systems on society, and
(c) the influence and consequences of society on marketing systems (Hunt 1981, p. 7).

Hence, the macro-marketing perspective allows for varying levels of aggregation to capture systemic views that embrace businesses and business interactions with different legal, political, and social value systems. In this context, the adoption of general systems theory in marketing specifically led to a wider view of market exchange, in which a marketing system could be considered "a complex social mechanism for coordinating production, distribution and consumption decisions" (Dowling 1983, p. 22) or even as "a differentiated sub-system of the society […with…] an impact on other social systems, the cultural system, and the material environment" (Dixon 1984, p. 4).

Systems thinking has also influenced the first works of the IMP (Industrial Marketing and Purchasing) research group. for example, Hakansson's view of the "visible hands", stimulated beneficial situations for enterprises immersed in networked contexts (Hakansson 1987, p. 89). However, only in the last decade authors have begun proposing business and networks as complex adaptive systems that are not centrally directed (Ritter, Wilkinson & Johnston 2004; Miller & Page 2007).

Significant contribution to the systems view within marketing can be traced back to the work of Chase (1978); only through the service-dominant (S-D) logic (Vargo & Lusch 2004) and service science (SS) (Spohrer et al. 2007) can we truly appreciate the full integration of systems thinking within marketing research. Hence, dynamic network structures have been conceptualized as "open system[s]", as systems that are "capable of improving the state of another system through sharing or applying its resources…and capable of improving its own state by acquiring external resources" (Spohrer et al. 2008, p. 7). Accordingly, S-D logic proposed a service ecosystem as a spontaneously sensing and responding spatial and temporal structure of largely loosely coupled, value-proposing social and economic actors that interact through institutions, technology, and language to (1) co-produce service offerings, (2) engage in mutual service provision, and (3) co-create value (Lusch, Vargo & Tanniru 2010).

The dynamics and complexity of a system may be influenced by two key variables, both of which are driven by value co-creation with customers (Vargo, Maglio & Akaka 2008): first, component knowledge (of each type of transformation); and second, architectural or system knowledge (that provides an understanding of integration and how the value proposition will enable value co-creation with customers) (Ng et al. 2011). In addition, the concept of reconfiguring system elements to ensure relevance for its focus on system dynamics began to influence marketing ideas; in fact, each instance of resource integration, service provision, and value creation changes the nature of the system to some degree and thus the context for the next iteration and determination of value creation. Networks are not merely networks (aggregations of relationships); they are also dynamic systems (Vargo & Lusch 2011). Indeed, a focus on the dynamics aspects of systems enables the acknowledgment of the crucial implications of complexity. Hence, as markets and marketing become increasingly complex, complexity theory, network theory, and systems theory are likely to play more prominent roles in future marketing developments. Accordingly, given the systemic nature of value creation, the adoption of a systems approach, which includes a general observation of phenomena, enables value exchanges with other socio-economic actors (Barile & Polese 2011, p. 167). Only through a high level of observation it is possible to create successful value proposition by stimulating flexibility and adapting to and embracing change as outcomes emerge (Barile, Saviano, Polese & Di Nauta 2012).

Recently, Layton (2007) proposed an effective definition of a marketing system as a network of individuals, groups, and/or entities that are linked directly or indirectly through sequential or shared participation in an economic exchange that creates, assembles, transforms, and ensures the availability of both tangible and intangible products that are provided in response to customer demand. Subsequently, the relevant systemic property of emergence has been captured by qualifying marketing systems as emergent patterns in flows of transactions (Layton 2011).

This view prompts a focus on interaction, and some streams have extended the contribution of systems thinking to service research advances by specifically focusing on the concepts of 'interaction', 'whole' and their relations to the issue of complexity and control mechanisms (Ng, Maull & Smith 2011).

Table 1: Focus points in the evolution of systems thinking in marketing

Authors	Focus	Year
Alderson W.	Within his functionalist view grounded in total systems approach, he attributed to marketing function a vital role in the dynamic process of matching goods and needs.	1964
McCammon,	Marketers gained control over channels of distribution and developed means of blocking competitors from entering into these channels.	1965
Lewis R., Erickson L.	Only two approaches have the potential of providing a theoretical base for marketing: the functional and the systems approaches.	1969
Chase	The 'customer contact model' holds that the potential efficiency of a service system is a function of the degree of customer contact entailed in the creation of the service.	1978
Hunt S.	Macro-marketing is the study of (a) marketing systems, (b) the impact and consequences of marketing systems on society, and (c) the impact and consequences of society on marketing systems.	1981
Dowling G.	A marketing system is a complex social mechanism for coordinating production, distribution and consumption decisions.	1983
Dixon D.	The marketing system is a differentiated sub-system of the society… and it has an impact on other social systems, the cultural system, and the material environment.	1984
Dixon D. and Wilkinson I.	Marketing theory is based on a functionalist approach in which the system of action studied was "a nested hierarchy of systems of action in which system levels are differentiated in terms of their functions."	1989
Layton R.	A marketing system is a network of individuals, groups, and/or entities linked directly or indirectly through sequential or shared participation in economic exchange.	2007
Spohrer, Vargo, Caswell, Maglio	Dynamic network structures are conceptualized as "open system[s]" that are "capable of improving the state of another system through sharing or applying its resources…and capable of improving its own state by acquiring external resources" (p. 7).	2008
Vargo, Maglio, Akaka	The dynamics and complexity of the system may be influenced by value co-creation with the customer.	2008
Lusch, Vargo, Tanniru	A service ecosystem is a spontaneously sensing and responding spatial and temporal structure of largely loosely coupled, value-proposing social and economic actors interacting through institutions, technology, and language to (1) co-produce service	2010

	offerings, (2) engage in mutual service provision, and (3) co-create value.	
Mele, Pels and Polese	Systems theories and perspectives can effectively contribute to management, marketing and service research due to their dual approach: the global, holistic view of observed phenomena and the specific, reductionist view of their specific components and traits.	2010
Barile and Polese	The systems perception in many-to-many marketing is strictly linked to networks, in *vSA* to dynamic interactions, and in service logics to dynamic resources reconfigurations. As theories based on systems thinking, networking and value co-creation, *vSA* and many-to-many marketing are strongly supportive of the future developments of S-D logic and service science.	2010
Vargo and Lusch	Networks are not just networks (aggregations of relationships); they are dynamic systems.	2011
Barile and Polese	Given the systemic nature of value creation, it is important for managers to adopt a systemic approach, a general level observation of the observed complex phenomena to enable value exchanges with customers.	2011
Layton, R.	Marketing systems are identified and categorized as emergent patterns in flows of transactions.	2011

However, following the identification of theoretical and/or practical proposals that express the adoption of a systems perspective to some extent, it is worthwhile to underline that the systems view that is adopted in the context of marketing clearly reflects the adoption of this view in the more general context of management. Thus, when referring to, for example, a systems view in marketing in the 1960s, we should recall that this view would have differed significantly four decades later, being influenced by the evolving context conditions. In particular, the systems approach that has been identified as characterizing marketing in the 1960s (Guatri, Vicari & Fiocca 1999) prior to the instability that emerged a decade later significantly differs from the systems approach that currently characterizes marketing. Indeed, the stable or unstable conditions of markets have a strong influence in shaping relational configurations (Pels & Lefaix-Durand 2009) and the systems approach.

At this point, the specific contribution of the *vSA* relates to systems in conditions of rapid change and instability as opposed to what may be identified as a systems in stable conditions (Saviano 1999). The latter approach qualifies a systems perspective that characterizes a conception of systems that is strongly connected to the stability of rules and procedures that are identified as routines, is effectively governed by a central power that authorizes and regulates deviations, and reflects the hierarchical structure of the mass production of large companies (Saviano 2003). Thus, when scholars associate system-business governance with the logic of technical management-oriented planning and negotiation for control purposes, they qualify a business model that is an expression of managerial and mass production and that is

strongly oriented toward standardization and economies of scale (Rullani 1999). This conception of systems significantly differs from that of the *VSA* that represents, as we will illustrate in the next section. The *VSA* is construed on the basis of a version of Beer's (1972) Viable System Model that is updated by considering implications of the highly dynamic environment that characterizes business contexts and in which complexity plays a central role.

The contribution of systems theories to marketing: a research gap

The trend toward a shift in marketing has led to a service-based view that is centered on the concept of co-creation emerging from multi-actor interaction. This view underlines the dynamic nature of the service exchange and highlights aspects that are truly of a systemic nature. The shift from a traditional transactional view of exchange that is focused on the dyadic level of relations has addressed a view of value as being co-created through many-to-many interactions (Gummesson 2008). This central aspect in turn highlights the emergent and contextual nature of the service outcome (Smith & Ng 2012) that would benefit from a systems thinking approach, as underlined within the community of SS when referring to the broader field of service systems management (Spohrer et al. 2008; Mele & Polese 2011).

As previously mentioned, marketing theory is currently at a turning point in the contrasting paths of overarching prevailing research mainstreams that have successfully characterized marketing practices during the last century (Gummesson, Lusch & Vargo 2010) and emerging needs that are arising from current market contexts and are traced by more recent research streams of S-D logic (Vargo & Lusch 2008), SS (Spohrer et al. 2007; IfM-IBM 2008).

These emerging research streams have addressed issues, such as complexity, systems thinking, human behavior, competitiveness, and service systems; nevertheless, we continue to believe that there is a missing element. The relevant changes in customer culture and behavior, globalization and competition, information and communication technology, and many other areas suggest the need for a need to rethink marketing roots in contrast with the trend that is interpreting marketing as an over-organized and isolated function and marketing in search of new approaches (Grönroos 2002). If the community of marketing scholars and their professional associations do not assume a lead role in studying and researching marketing as a societal process and institution, then this type of research will be exclusively left to scholars outside of marketing and likely outside of business (Lusch 2007, p. 267). In this view, it appears that marketing theory could benefit from a greater perspective of interpretation of the discipline in a shift from the description of substantive detail to abstraction and generalization (Gummesson 2005).

The shift in perspective from a goods-dominant logic to a service-dominant logic (Vargo & Lusch 2004) has been related to the assumption that relationship marketing reflects the evolution from a reductionist view to a systems view in the marketing approach, defines the basis for a service-based systems view of market exchange (Golinelli, Barile, Saviano & Polese 2012). Accordingly, the identified trends and signals suggest the need for communities to work together in co-creating knowledge

through the development of a common frame of reference by sharing information, schemes and, most importantly, values and beliefs.

Thus, in three decades, new marketing proposals have challenged the 1960s marketing management and marketing mix approach, and the discipline currently appears to have reached a turning point calling for more systemic and integrative theory (Saviano 2001; Gummesson, Mele & Polese 2009; 2011). Hence, there is an emerging "effort to better utilize accumulated knowledge fragments through re-conceptualization, thus making complex knowledge more coherent and presentable […since…] it is an arduous task to raise theory at a higher level" (Gummesson 2012).

The Viable Systems Approach

The *VSA* has been developed within the Italian research community (Golinelli 2000, 2010; Barile 2000, 2009; Barile, Bassano, Calabrese et al. 2011) and is based on an updated version of the Viable System Model of Stafford Beer (1972). As mentioned, the *VSA* has been developed within the disciplinary field of business management from the early works of Barile (2000) and Golinelli (2000) following a rich research stream of systems theories, such as the theories of open and closed systems (von Bertalanffy, 1968), socio-technical systems (Emery & Trist 1960), the law of requisite variety (Ashby 1958), and systems dynamics (Forrester 1994). The goal of this research community was to develop a methodological approach to address system dynamics in conditions of complexity, with the ultimate aim of achieving system viability through a sustainable governance approach to business phenomena.

Thus, the *VSA* was proposed as an interpretative governance methodology that offers a systems thinking contribution to the understanding and management of social and business organizations, as this approach provides a general framework that accounts for both structural configuration and the dynamics of functioning. Its general schemes are useful for interpreting the concept of complexity in that these schemes highlight its systemic nature and support the investigation of its implications for decision making (Barile 2009; Barile & Saviano 2011b; Saviano & Di Nauta 2011). When acting in conditions of complexity, the *VSA* allows identifying (and qualifying) relevant actors who influence decision making and the actions that must be pursued to accomplish sustainable performance. Thus, by offering both a methodological key to understand complexity and a governance approach to complexity, the *VSA* provides support to decision makers under uncertain conditions (Barile 2009; Saviano & Berardi 2009).

As complexity implies uncertainty and making choices without a rational basis in terms of available information and solutions to which to refer (Barile 2009), acting in such a context requires organizations to be well equipped not only with experienced techniques and tools but also with schemes of reference that are sufficiently general to be compatible with any problematic situation or decision-making context. This type of support is fundamental in providing orientation when any traditional approach does not appear to be useful in addressing choices.

Therefore, we argue that that *VSA* allows addressing the gap in marketing management research regarding complexity. To illustrate the concepts, schemes and

criteria of the *VSA*, we propose an outline of the basic elements of the *VSA* general framework in the next section.

The VSA as a meta-model to interpret business and social phenomena

As a premise, we must clarify is that the *VSA*, as its abbreviation suggests, is essentially an 'approach' that proposes the adoption of 'systems' thinking interpretative schemes as meta-models for understanding any social or business phenomenon. The 'meta' positioning of this approach underlines that it should not be viewed as a set of operative models to apply to a specific problematic context.

As a methodological approach, the *VSA* aims to direct perspectives according to the nature of investigated phenomena and, consequently, the choice of appropriate techniques and tools to help distinguish problem-solving from decision-making situations according to the subjective interpretative capacity of decision makers (rather than the objective characteristics of the investigated problem).

Consistent with its basic assumptions and disciplinary roots, *VSA* also proposes a terminological setting (equipped with a glossary) that is useful for sharing systems-based language and avoiding common misunderstandings resulting from the use of different terms to express the same concepts and ideas. In this manner, this approach offers a coherent theoretical framework of reference for both interpreting and governing the dynamics of social entities from the perspective of social sciences.

The *VSA* proposes a model of firms (or any organizations) as 'viable systems', and this model can easily fit the representation of any social entity at both the individual and organizational levels.

Thus, the *VSA* offers a methodological framework that is useful for analyzing and governing the dynamics of businesses and social systems by adopting the logic of adjustment, transformation, restructuring and redefinition of a system's traits in accordance with the trends and expectations of a rapidly changing environment from which complex conditions continuously arise and challenge the decision-making process.

Viewing individuals and social organizations as viable systems enables their interpretation as open systems that aim to survive in their context by dynamically interacting with several other systems entities that the observed system perceives as relevant in that they offer resources that are critical for its functioning and viability. In this respect, a viable system satisfies three fundamental systemic conditions (Barile & Saviano 2011a):

- (partial) openness, which is the ability to exchange resources with the other systems of the context in a selective manner
- contextualization, which is the search for viability through interaction with certain privileged entities, such as supra-systems that influence its survival
- dynamism, which is the development of structure in accordance with emerging changes

To clarify its basic principles and to render the methodology sharable, the *VSA* offers some premises to its general framework as basic propositions to be accepted when adopting this approach (Barile 2008; Golinelli 2010) (see Table 2). By referring to these basic propositions, researchers and decision makers can capture the features

and properties that are recognized as universally representative and generally true in any investigated systemic entities or phenomena.

Table 2: The *vSA* Propositions (Source: Elaboration on Golinelli 2010 and Barile 2008)

Proposition I	a viable system in a specific context has the main purpose of surviving.
Proposition II	the viable system in its ontological representation can be conceived with a dual perspective: that of structure and that of system.
Proposition III	the viable system in its behavioral qualification is characterized by the identification of two distinct logical areas: that of decision making and operations.
Proposition IV	the viable system, in its existential dynamics, is conditioned in its pursuit of final purpose and goals by interaction with sub-systems and supra-systems from which and to which, respectively, it obtains and supplies direction and rules.
Proposition V	for a viable system, all the external entities are also viable systems, or rather components that trace back to a viable system on a superior level.

Survival and viability

Proposition I affirms that any system, as a viable entity, is naturally inclined toward survival within its context; thus, the ultimate goal of viable systems is viability. This concept, which is intriguing and powerful, integrates efficiency, effectiveness and sustainability perspectives by stimulating business behavior and competitiveness based on value creation.

Structure and system

Proposition II refers to the most general interpretation scheme that is proposed by the VSA, which is the structure-system dualisim (Barile & Saviano 2008, 2010, 2011a). This proposition essentially suggests a fundamental distinction between static and dynamic perspectives and underlines the necessity of considering that the structural (and static) representation that focuses on the parts that compose the observed entity and the relations that link these parts according to an organizational pattern can objectively describe that entity and thus benefits from the support of an analytical-reductionist approach. However, when we need to interpret the dynamics of the functioning of an entity or observed phenomenon, we shift from a static perspective to a dynamic and holistic perspective that requires a focus on interaction and the whole and implies a recognition that our interpretation or observation and its results will inevitably depend on our subjective view, aims and interpretative capacity.

The structure-system dualism supports the interpretative orientation that addresses the appropriate perspective and identifies the relevant elements while being aware of the limits of a subjective interpretation and its implications. Specifically, it addresses the issue of selecting the correct approach, whether analytical-reductionist, synthetic,

or holistic, that is consistent with the nature and features of the investigated phenomenon/problem.

Decision making and operations

To identify and evaluate the viability of a system, two distinct areas must endow a system with the functions that are necessary to survive: the decision-making and operation areas (Proposition III). To be and remain viable, all systems must be capable of selecting and pursue their goals (decision making) and implementing planned activities (operations) to produce outputs. To assess the extent to which a system is capable of achieving its goals, one must determine the degree of completion of the system in terms of both governing and acting capabilities.

Supra-systems, sub-systems and borders

Finally, Proposition IV and V explain the mechanisms of the viable functioning of systems by establishing relationships and interactions with other viable entities within an open environment. These propositions introduce the concepts of supra- and sub-systems that are fundamental to the understanding of the conditions of viability of the observed system.

As mentioned, viable systems exist and pursue their goals by interacting with multiple actors, each with his/her own goal/perspective. Thus, with a VSA, a system must be able to direct multiple perspectives toward a common and shared goal. The clear identification of a system's goal specifically enables the definition and selection of the resources that are needed to ensure the effective functioning of the system. Indeed, these resources are owned by actors who must be engaged within the system to gain access rights to their own resources (Maglio & Spohrer 2008). This delicate process defines a system's relational context composed of other systems, distinguishing the internal (sub-systems) from the external context (supra-systems). However, this distinction is significant only from a structural organizational perspective; in fact, any of these systems, whether internal or external to the system in focus, are perceived as 'supra-systems' when relationships with the system in focus are concerned. Evaluations of the degree of relevance of supra-systems are made in terms of how critical their resources are and how capable of influencing the system's dynamics they are. This governance activity fundamentally results in orienting the system in the correct direction when defining the relational strategies and exerting adequate effort toward satisfying the needs of supra-systems. The fundamental criteria that guide a system's decision maker in defining a relational strategy are consonance and resonance. According to the VSA, the term 'consonance' refers to the relational compatibility between two or more entities that aim to interact for the purpose of an emerging system in terms of the potential harmony of their interaction. However, this approach merely offers a 'static' evaluation of a potential harmonious relationship. Accordingly, real systemic harmony must be achieved as 'resonance' when entities begin their interaction. Drawing again on the dualism between the 'structure' and 'system' perspectives, resonance is the process and the output of harmonious

systemic interactions that emerge on the basis of conditions of consonance at the structural relationship level.

A VSA contribution to understanding complexity

As underlined, business and social organizations encounter conditions of growing complexity when managing systems with the aim of achieving their goals and surviving in this rapidly changing environment by maintaining their viability. Next, adopting the systems thinking lens, we highlight some aspects of complexity that are relevant when managing business and social systems (Barile & Saviano 2010, 2011b):

- Different observers perceive different levels of complexity.
- The 'same' observer perceives different levels of complexity at different systemic states.
- The perception of an event from inside of the system that has generated it differs from observing the event from outside of the system.
- Structure representation rather than system representation induces the perception of different levels of complexity.
- A system itself is not simple or complex based on its structural features; rather, a system is simple or complex depending on the observer's knowledge, capacity and ability to understand it.
- A system is a phenomenon that can generate chaos, complexity or simply complication, depending on the interpretative capacity of the observer (decision maker).

These aspects of complexity make decision makers aware of the need to identify actors who are involved in the investigated problem and consider their perspectives and to specify the system's level of observation, the collocation of the observer within or outside of the observed problem's dynamics, the subjective interpretative capacity of the observer and the consequent qualification of the problematic context as simple, complicated, complex or even chaotic (Barile 2009).

To evaluate and consequently identify possible lines of action within a problematic context, one must distinguish between conditions of complication and complexity. In the former, the manger finds itself in a context of problem solving and it is always possible to find support in consolidated models, techniques and tools. In the latter, the manger finds itself in a decision-making context in which variables may not be measurable or even known, the use of current techniques or tools may even worsen the situation. In other words, when encountering complex conditions, decision makers are unable to fully comprehend emerging problems or phenomena by identifying variables or the expected cause-effect relationships. As a consequence, these individuals become disoriented (Saviano & Di Nauta 2011) and are forced to resort to criteria and actions that are primarily based on emotional feelings (Barile 2009).

The contribution of the *VSA* to marketing

The *VSA* propositions that were introduced above enable the introduction of the *VSA* 10 fundamental concepts (FCs). The FCs are adopted as an interpretation scheme for the discussion of *VSA* contributions to marketing. The 10 FCs help highlight the parallelism between *VSA* and marketing theory.

Table 3: The 10 fundamental concepts (FCs) of *VSA* (Source: Adapted from Barile & Polese 2010b)

	Fundamental concepts
FC1	Individuals, organizations, and social institutions are systems that consist of elements directed towards a specific goal.
FC2	Every system (of level L) identifies several supra-systems, positioned at a higher level (L+1), and several sub-systems, located at a lower level (L-1).
FC3	The interpretation of complex phenomena requires interdisciplinary approaches and should synthesize both a reductionistic view (analyzing elements and their relations) and an holistic view (capable of observing the whole).
FC4	Systems are open to connection with other systems for the exchange of resources. A system boundary is a changing concept within which all the activities and resources needed for the system's evolutionary dynamic are included.
FC5	Viable systems are autopoietic and self-organizing; that is, they are capable of self-generating internal conditions, which through self-regulation, support the reach of equilibrated conditions, thus synthesizing internal possibilities and external constraints.
FC6	Every organization is constituted by components that have specific roles, activities, and objectives, which are undertaken within constraints, norms, and rules. From structure emerges a system through the transformation of relations into dynamic interactions with sub-systems and supra-systems.
FC7	Systems are consonant when there is a potential compatibility among the system's components. Systems are resonant when there is effective harmonic interaction among components.
FC8	A system's viability is determined by its capability, over time, to develop harmonic behavior in sub-systems and supra-systems through consonant and resonant relationships.
FC9	Business dynamic and viability require continuous structural and systemic changes focused to the alignment of internal structural potentialities with external systemic demands.
FC10	Viable systems continuously align internal complexity with external complexity in order to better manage changes affecting its viable behavior. Decision-makers within these cognitive processes are influenced by strong beliefs, his/her interpretational schemes, and information.

FC 1: Systems approach

VSA FC1 basically asserts that people, families, networks, enterprises, and public and private organizations are complex actors that can be understood as systems. In marketing, this concept is applicable when observing customers, business, communities, and any other economic actors: all these actors can be considered systems.

FC 2: Systems hierarchy

VSA FC2 posits that every system hierarchy is determined by observation from a specific perspective. Thus, the designation of a 'supra-system' or a 'sub-systems' is subjective. In a market context, this concept suggests that every actor (system) is a resource integrator that coordinates its own resources (components/sub-systems) and a set of acquired/available resources (released by supra-systems).

FC 3: Reductionism and holism

According to *VSA* FC3, the transition from a reductionist view to a holistic view implies a shift of attention from the parts to the relationships to the interactions. Thus, for a full understanding of the market and co-creation interaction, a holistic view of the whole and an analysis of individual elements and their relationships are required.

FC 4: Open systems and systems boundaries

VSA FC4 asserts that nothing happens in isolation and that the exchange of information and service of open systems is fundamental within every system dynamic. Accordingly, marketing strategies tend to valorize not only property resources but all accessible resources that are possessed by engaged actors. Modern marketing theory recognizes that enterprises do not create value in isolation. There is now an appropriate recognition of the roles of multiple actors and interested parties in various value co-creation processes within a customer-balanced centricity. Moreover, the notion of co-creation is inherently associated with vanishing boundaries between actors within markets.

FC 5: Autopoiesis, homeostasis, and self-regulation

VSA FC5 implies that every system is autopoietic (that is, able to generate new internal conditions). In addition, every system is also self-organizing, as it continuously aligns internal and external complexity. In a market scenario, these two characteristics form the basis for sustainable behavior during encounters of opportunities and threats. In pursuing its ultimate goals, every business requires the internal capacity to evolve and self-regulate to adapt to external changes and survive in the long term. Businesses constantly strive to meet market requirements by changing their value propositions.

FC 6: Structures and systems

VSA FC6 suggests an iterative passage from structure to system, which involves a passage from a static view to a dynamic view, and a focus shift from individual components (and relations) to a holistic view of the observed reality. From the same structure, many systems can emerge as a consequence of the various combinations of internal and external components that are designed to pursue various objectives. Every actor has a structure (a set of capacities) that must be organized to meet the demands of the market. In so doing, businesses are transformed from static structures to dynamic systems. The shift from a structure to a systems perspective has relevant implications for marketing and essentially suggests to shift focus from the object to the process of exchange that means from a static to a dynamic view of market exchange considering the multiple emerging viewpoints and expectations.

FC 7: Consonance and resonance

VSA FC7 posits that consonant relationships refer to a static view (structure) in which one could merely evaluate the likelihood of a positive and harmonic relation. In contrast, resonant relations are referred to as a dynamic view (systemic) in which one could evaluate the concreteness and effectiveness of positive and harmonic interactions. Consonance and resonance aptly represent a model that describes ideal and rewarding co-creation exchanges among actors of service experiences.

FC 8: Systems viability

The key concept of *VSA* FC8 is related to the notion of viability, which refers to a system's competitiveness and co-creation capability. That is, in a market context, every actor attempts to behave in a viable, sustainable, and harmonious manner in pursuit of its own goals.

FC 9: Adaptation and relationship development

According to *VSA* FC9, the evolutionary dynamics of viable systems demonstrate continuous alignment between internal potential and external expectations (Golinelli et al. 2010). Service systems seek to establish positive and harmonious interactions with other systems to strengthen value co-creation processes and experiences. Positive interactions between providers and customers are dynamic and always changing as subjective judgments vary over time.

FC 10: Complexity and decision making

VSA FC10 proposes that the internal and external alignment in a system is achievable through a cognitive process that enables an evolution from conditions of chaos, complexity, complication, and certainty (Barile 2009c). Marketing theory is increasingly

focused on networks of relationships within which interactions occur. Network configurations can pose problems in terms of the knowledge and cognitive alignment that implies the necessity of managing cognitive alignment among all of the engaged actors.

An overview of the 10 FCs of the VSA essentially highlights the underlying assumption that enterprises do not create value in isolation (Håkansson & Snehota 1989); rather, enterprises engage in cooperative value creation processes that involve multiple actors and resources (Prahalad & Ramaswamy 2004). Indeed, the term 'co-creation of value', which has emerged prominently in the context of S-D logic (Vargo & Lusch 2004, 2008; Lambert & Garcia-Dastugue 2006; Lusch et al. 2007), is inherently associated with vanishing boundaries between actors within markets. In this regard, all 10 FCs of the *VSA* are clearly applicable to modern marketing theory in describing the concept of shared value co-creation among multiple actors.

Hence, new value co-creation models lead us to shift our attention from production to utilization, from product to process, and from transaction to relationship and thus enhance our sensitivity to the complexity of roles and actor systems (Vargo, Maglio & Akaka 2008). Value co-creation is not limited to the activities of any one exchange or a dyad of service systems; rather, it occurs through the integration of existing resources with those resources that are available from a variety of service systems that can contribute to system well-being as determined by a system's environmental context (Payne, Storbacka & Frow 2008; Vargo, Maglio & Akaka 2008).

In fact, a deeper examination of the implications of S-D logic for market relationships shows the extent to which value co-creation processes are fundamentally based on multiple actors exchanging expectations and dynamically fulfilling needs (Polese, 2009; Pels & Polese 2010), which intrinsically implies a systems view to capture the essence of every exchange (Pels, Polese & Brodie 2012) and viability conditions in service systems (Golnam, Regev & Wegmann 2011). At this juncture, *VSA* emerges as a viable approach for marketing research.

Marketing approaches and perspectives: A final overview

By proposing an overview of marketing approaches, Table 4 compares the *VSA* with various developments in marketing theory, beginning with the '4Ps' and progressing through relationship marketing, many-to-many marketing, and S-D logic. Comparing these developments with the *VSA*, one can observe that the progression of marketing theory is congruent with the characteristics of the *VSA*. In particular, focus shifts from a traditional object-based view to a view focused first on the dyadic dimension of exchange then on a wider network view and finally on a service-based view. This shift accomplishes a passage from a static, structure-based to a dynamic systems-based view of market exchange that can significantly benefit from the contribution of a systems approach.

Table 4: Comparison of marketing approaches and perspectives (Source: Barile and Polese 2011)

Paradigm	Focus	Main aspects	Final purpose	Point of view	Focus
Traditional Marketing Management	Transactions	Client acquisition	Market share and growth	Internal (business unit)	Customer oriented on the supplier's conditions
Relationship marketing	Relationships	Cooperation	Long-term competitiveness	External (relational)	Two-party focus (supplier-customer relationship)
Many-to-many marketing	Networked interactions	Customer-balanced centricity	Network reinforcement	External (reticular)	Multi-party focus (network of all stakeholders)
S-D logic	Service	Co-creation	Competitive adaptive actors	Both internal and external	Multi-party focus
VSA	Systems	Viability	System survival	Both internal and external (systemic)	Multi-party focus

Thus, the *VSA* appears to be fully consistent with contemporary market theory, which emphasizes that the survival capacity of a firm (that is, the end goal of a viable system) is a function of its value creation capacities through cooperation with other actors and is linked to the technical, cognitive, and relational aspects of the particular context in which the firm is located (Polese & Di Nauta 2012). The result is a complex value creation process of consonance and competitiveness in which value creation and value diffusion are complementary aspects of the same process of "extended value" (Gummesson & Polese 2009).

Finally, the contribution of the *VSA* to marketing theories is derived from its wider systemic perspective and suggests direct efforts to elevate marketing discussions to a higher level; in fact, more general theories increase our ability to understand major changes in market conditions and the usefulness of technological advances (Gummesson 2002). Because value can be accessed only on a relative basis, that is in comparison with competitor offerings (Lusch, Vargo & Tanniru 2009), we believe that it is important for managers to adopt a systemic approach that includes wider perspective that comprises customers, partners, competitors, and other actors.

Managerial implications and future research directions

According to its definition, the *VSA* is essentially an approach that suggests the adoption of a systems thinking view to address the complex conditions in markets. The underlying assumption is that through the adoption of systems thinking, researchers and practitioners could benefit from meta-models that are useful to integrate existing shared scientific models and theories. We believe that marketing is among those

scientific fields in which the *VSA* could support research and practice. Nevertheless, we feel the need to clarify the extent to which this outcome can be achieved. The *VSA* is not a set of operative 'models to apply', and it does not provide optimal solutions. Rather, this approach is a general 'method to adopt' to increase the effectiveness of other well-established and consolidated marketing operative models in addressing market scenarios. This approach also provides a terminological setting, contributes clarity and provides a systems language within service research.

The *VSA*, when adopted by itself, does not solve any practical marketing issue. However, we may extend the same considerations to S-D logic. Nevertheless, both S-D logic and the *VSA* support a service-centered culture and a methodological framework: systems thinking.

The practical consequences of the *VSA* contribution are clear when applied to marketing practices. The majority of marketing (and management) models and theoretical proposals originated several decades ago in business and market contexts that differed from the current business context. The mere interpretation of a worldwide accepted marketing model, such as the Growth Strategy Matrix (Ansoff 1957), could be misleading on its own. The model could be applied if its suggestions are filtered by insights from the *VSA*. For example, the model could be well supported when the four growth strategies (market penetration, market development, product development and diversification) are evaluated in addition to other theories, conceived during a period in which business decision makers were forced to address significant turbulence and complexity, and are capable of raising different perspectives (such as S-D logic, the *VSA* and other scientific proposals).

We believe that the interpretation of the fundamental concepts of the *VSA* and their implications to marketing has great potential for both marketing theory and practice; therefore, we invite scholars to engage in the further interpretations of the 10 FCs in specific marketing contexts. Additional efforts could be made to integrate the *VSA* perspective with more specific marketing constructs.

The paper has introduced the *VSA* and proposed a systems perspective as a useful meta-model to capture the inner nature of marketing scientific advances. It has stimulated scientific integration and convergence. We believe that the implicit common roots, in systems thinking, of different research communities have not yet been sufficiently exploited and that marketing researchers should contribute to valorizing any unifying attempt. This is our wish for future marketing research to tune in with the most recent systems thinking proposals.

References

Alderson, Wroe (1964), "A normative theory of marketing systems", in *Theory in marketing*, Reavis Cox, Wroe Alderson and Stanley Shapiro, eds. Homewood: Richard Irwin, 92–108.

Ansoff, Igor (1957), "Strategies for Diversification", *Harvard Business Review,* 35 (5), 113–124.

Ashby, Ross W. (1958), "General Systems Theory as a New Discipline", *General Systems*, 3, 1–6.

Badinelli, Ralph, Sergio Barile, Irene Ng and Francesco Polese (2012), “Viable Service Systems and Decision Making in Service Management”, *Journal of Service Management*, in print.

Barabási, Albert L. (2002), *Linked: The New Science of Networks*. Cambridge: Perseus.

Barile, Sergio (2000), *Contributi sul pensiero sistemico in economia d’impresa*. Salerno:Arnia.

——— (2008), *L’impresa come sistema. Contributi sull’Approccio Sistemico Vitale*, I ed.. Torino: Giappichelli.

——— (2009a), *Management Sistemico Vitale*. Torino: Giappichelli.

——— (2009b), “Verso la qualificazione del concetto di complessità sistemica”, *Sinergie,* 79, 47–76.

——— (2009c), “The dynamic of information varieties in the processes of decision making”, *Proceedings of the 13th World Multi-Conference on Systemics, Cybernetics and Informatics*: *WMSCI*, Florida.

——— and Francesco Polese (2010a), “Linking Viable Systems Approach and Many-to-Many Network Approach to Service-Dominant Logic and Service Science”, *International Journal of Quality and Service Sciences,* 2 (1), 23–42.

——— and ——— (2010b), “Smart Service Systems and Viable Service Systems”, *Service Science*, 2 (1), 21–40.

——— and ——— (2011), “The Viable Systems Approach and its potential contribution to marketing theory”, in *Contributions to theoretical and practical evidences in management. A Viable Systems Approach (VSA),* Various Authors, eds. Avellino: International Printing, 139–173.

——— and Marialuisa Saviano (2008), “Le basi del pensiero sistemico: la dicotomia struttura-sistema”, in *L’impresa come sistema,* Sergio Barile, ed. Torino: Giappichelli, II. Ed., 63–81.

——— and ——— (2010a), “S-DL, VSA and SS – Highlighting Convergences”, *International CooperLink Workshop The emerging Perspective of Service Science for Management and Marketing Studies*, Naples, June 9.

——— and ——— (2010b), “A New Perspective of Systems Complexity in Service Science”, *Impresa, Ambiente, Management,* 4 (3), 375–414.

——— and ——— (2011a), “Foundations of systems thinking: the structure-systems paradigm”, in *Contributions to theoretical and practical evidences in management. A Viable Systems Approach (VSA),* Various Authors, eds. Avellino: International Printing, 1–25.

——— and ——— (2011b). “Qualifying the concept of systems complexity”, in *Contributions to theoretical and practical evidences in management. A Viable Systems Approach (VSA),* Various Authors, eds. Avellino: International Printing, 27-63.

———, ———, Francesco Polese and Primiano Di Nauta (2012), “Reflections on Service Systems Boundaries: A Viable Systems Perspective. The case of the London Borough of Sutton”, *European Journal of Management*, in print.

Beer, Stafford (1972), *Brain of the Firm*. London: The Penguin Press.

Bogdanov, Alexander (1922), *Tektologiya: Vseobschaya Organizatsionnaya Nauka*, Berlin and Petrograd-Moscow.

——— (1980), *Essays in Tektology: The General Science of Organization*. Seaside: Intersystems Publications.

Capra, Fritjof (1997), *The web of life*. New York: Doubleday-Anchor Book.

——— (2002), *The Hidden Connections*. London: HarperCollins.

Chase, Richard B. (1978), "Where does the customer fit in a service operation?", *Harvard Business Review*, 56 (6), 137–142.

Christopher, William F. (2007), *Holistic Management – Managing What Matters for Company Success*. Hoboken: Wiley-Interscience.

Clark, Andy (1997), "The Dynamical Challenge", *Cognitive Science*, 21 (4), 461–481.

Demirkan, Haluk, Robert J. Kauffman, Jamshid A. Vayghan, Hans-Georg Fill, Dimitris Karagiannis and Paul P. Maglio (2008), "Service-oriented technology and management: perspectives on research and practice for the coming decade. Perspectives on the technology of service operations", *Electronic Commerce Research and Applications*, 7 (4), 356–376.

Dixon, Donald F. (1984), "Macromarketing: A social systems perspective", *Journal of Macromarketing*, 4 (2), 4–17.

——— and Ian Wilkinson (1989), "An alternative paradigm for marketing theory", *European Journal of Marketing*, 23 (8), 59–69.

Doty, Harold D., William H. Glick and George P. Huber (1993), "Fit, Equifinality, and Organizational Effectiveness: A Test of two Configurational Theories", *The Academy of Management Journal*, 36 (6), 1196–1250.

Dowling, Graham R. (1983), "The application of general systems theory to an analysis of marketing systems", *Journal of Macromarketing,* 3 (2), 22–32.

Emery, Frederick E. and Eric L. Trist (1960), "Socio-technical Systems", in *Management Science, Models and Techniques,* West, Churchman C. and Michel Verhulst, eds. New York: Pergamon.

Ghoshal, Sumantra and Peter Moran (2005), "Towards a Good Theory of Management", in *Sumantra Ghoshal on Management– A Force of God,* Julian Birkinshaw and Gita Piramal, eds. London: Prentice Hall, 1–28.

Golinelli, Gaetano M. (2000), *L'approccio Sistemico al Governo dell'Impresa – L'Impresa Sistema Vitale*, I ed. Padova: Cedam.

——— (2008), *L'approccio sistemico al governo di impresa - Verso la scientificazione dell'azione di governo*. Padova: Cedam.

——— (2010), *Viable Systems Approach (VSA). Governing Business Dynamics*. Padova: Kluwer Cedam.

——— , Sergio Barile, James Spohrer and Clara Bassano (2010), "The evolving dynamics of service co-creation in a viable system perspective", *Proceeding Act The 13th Toulon Verona Conference*, Coimbra.

———, ——— , Marialuisa Saviano and Francesco Polese (2012), "Perspective Shifts in Marketing: Towards a Paradigm Change?", *Service Science*, 4 (2).

Golnam, Arash, Gil Regev and Alain Wegmann, (2011), "A Modeling Framework for Analyzing the Viability of Service Systems", *International Journal of Service Science, Management, Engineering, and Technology*, 2 (3), 51–64.

Grönroos, Chistian (2002), "Quo Vadis, Marketing? Toward a Relationship Marketing Paradigm", *The Marketing Review*, 3, 129–146.

Guatri Luigi, Salvatore Vicari and Renato Fiocca (1999), *Marketing*. Milano: McGraw-Hill.

Gummesson, Evert (2001), "Are Current Research Approaches in Marketing Leading Us Astray?", *Marketing Theory*, 1 (1), 27–48.

——— (2002), "Practical Value of Adequate Marketing Management Theory", *European Journal of Marketing*, 36 (3), 325–349.

——— (2005), "How Grounded Theory Supported My Rethinking of Marketing", *Proceedings of the 37th World Congress of the International Institute of Sociology*, Stockholm, July 5-9.

——— (2008), *Total Relationship Marketing*. Oxford: Butterworth-Heinemann.

——— , Cristina Mele and Francesco Polese (2009), "Service Science, S-D logic and network theory: Integrating the perspectives for a new research agenda", in *Service Science, S-D logic and network theory*, Evert Gummesson, Cristina Mele and Francesco Polese, eds. Napoli: Giannini, 1–6.

——— and Francesco Polese (2009), "B2B is not an island", *Journal of Business & Industrial Marketing*, 24 (5), 337–350.

———, Robert F. Lusch and Stephen L. Vargo (2010), "Transitioning from service management to service-dominant logic: Observations and recommendations", *International Journal of Quality and Service Sciences*, 2 (1), 8–22.

———, Cristina Mele and Francesco Polese (2011), "Integrating the 3 Pillars of the 2011 Naples Forum on Service: S-D logic, Network & Systems Theory and Service Science", in *Service-Dominant Logic, Network & Systems Theory and Service* Science, Evert Gummesson, Cristina Mele and Francesco Polese, eds. Napoli: Giannini, 5–6.

——— (2012), "The Three Service Marketing paradigms. Which one are you guided by?", *Mercati & Competitività*, 2, 5–13.

Hakansson, Hakan (1987), *Industrial Technological Development – A Network Approach*. Beckenham: Croom Helm.

——— and Ivan Snehota (1989), "No Business Is an Island – The Concept of Business Strategies", *Scandinavian Journal of Management*, 5 (3), 187–200.

Hannan, Michael T. and John Freeman (1977), "The Population Ecology of Organizations", *American Journal of Sociology,* 82 (5), 929–964.

Hunt, Shelby D. (1981), "Macromarketing as a multidimensional concept", *Journal of Macromarketing,* 1 (1), 245–249.

IfM, IBM (2008). *Succeeding through Service Innovation: A Service Perspective for Education, Research, Business and Government*. Cambridge: University of Cambridge Institute for Manufacturing.

Layton, Roger A. (2007), "Marketing Systems: A Core Macromarketing Concept", *Journal of Macromarketing,* 27 (3), 227–242.

——— (2011), "Towards a theory of marketing systems", *European Journal of Marketing,* 45, 1-2, 259–276.

Lambert, Douglas M. and Sebastiàn J. Garcia-Dastugue (2006), "Cross-functional business processes for the implementation of service-dominant logic", in *The service dominant logic of marketing: Dialog, debate and directions*, Robert F. Lusch and Stephen L. Vargo, eds. New York: M. E. Sharpe, 150–165.

Lewis, Richard J. and Leo G. Erickson (1969), “Marketing Functions and Marketing Systems: A Synthesis”, in *Journal of Marketing*, 33 (3), 10–14.

Lusch, Robert F.(2007), “Marketing’s Evolving Identity: Defining Our Future”, *Journal of Public Policy & Marketing*, 26 (2), 261–268.

———, Stephen L. Vargo and Mohan Tanniru (2009), “Service, Value Networks and Learning”, *Journal of the Academy of Marketing Science*, (January), 19–31.

———, ——— and Matthew O’Brien (2007), “Competing through Service – Insights from Service-Dominant Logic”, *Journal of Retailing*, 83, 5–18.

Maglio, Paul P. and James Spohrer (2008), “Fundamentals of service science”, *Journal of the Academy of Marketing Science*, 36 (1), 18–20.

Maturana, Humberto R. and Francisco J. Varela (1975), *Autopoietic systems*. BLC Report 9. University of Illinois.

McCammon, Bert C. (1965), “The Emergence and Growth of Contractually Integrated Channels in the American Economy”, in *Economic Growth, Competition, and World Markets*, Peter D. Bennett, ed. Chicago: American Marketing Association, 496–515.

Mele, Cristina, Jaqueline Pels and Francesco Polese (2010), “A Brief Review of Systems Theories and Their Managerial Applications”, *Service Science*, 2 (1/2), 126–135.

——— and Francesco Polese (2011), “Key dimensions of Service Systems: Interaction in social & technological networks to foster value co-creation”, in *The Science of Service Systems*, Haluk Demirkan, James Spohrer and Vikas Krishna, eds. Springer, 37–59.

Meyer, Alan D., Anne S. Tsui and C.R. Hinings (1993), “Configurational Approaches to Organizational Analysis”, *Academy of Management Journal*, 36 (6), 1175–1195.

Miller, John .H. and Scott E. Page (2007), *Complex Adaptive Systems: An Introduction to Computational Models of Social Life*. Princeton: Princeton University Press.

Ng, Irene, Roger Maull and Laura Smith (2011), “Embedding the new discipline of service science”, in *The Science of Service Systems*, Haluk Demirkan, James Spohrer and Vikas Krishna, eds. Springer, 13–36.

———, Glenn Parry, Duncan MacFarlane, Peter Wild and Paul Tasker (eds) (2011), *Complex Engineering Service Systems: Concepts & Research*. London: Springer.

———, Ralph Badinelli, Francesco Polese, Primiano Di Nauta, Heldge Löbler and Sue Halliday (2012), “S-D Logic Research Directions and Opportunities: The Perspective of Systems, Complexity and Engineering”, *Marketing Theory*. forthcoming.

Parsons, Talcott (1971), *The System of Modern Societies*. Englewood Cliffs: Prentice-Hall.

Payne, Adrian F., Kay Storbacka and Pennie Frow (2008), “Managing the Co-Creation of Value”, *Journal of Academy of Marketing Science,* 36 (1), 83–96.

Pels, Jaqueline and Francesco Polese (2010), “Configurational fit: Understanding the Pre-requisites to Successful Value Co-creation”, *Impresa, Ambiente, Management*, 3, 355–374.

———, ——— and Roderick Brodie (2012), “Value Co-creation: Using a Viable Systems Approach to Draw Implications from Organizational Theories”, *Mercati & Competitività*, 2, 19–38.

——— and Aurelia Lefaix-Durand (2009), "Introducing Managers in Marketing Practices Studies: A Configurational Approach to the Way Organizations Relate to their Markets", *38th Annual Conference of the EMAC*, Nantes.

Polese, Francesco and Primiano Di Nauta (2012), "A Viable Systems Approach to Relationship Management in S-D Logic and Service Science", *Business Administration Review*, forthcoming.

——— (2009), "Reflections about Value Generation through Networking Culture and Social Relations", *Quaderno di Sinergie*, "*Firms' Government – Value, Processes and Networks*", 16 (December), 193–215.

Prahalad, Coimbatore Krishnarao and Venkatram Ramaswamy (2004), *The Future of Competition: Co-Creating Unique Value with Customers*. Boston: Harvard Business School Press.

Qiu, Robin G. (2009), "Computational Thinking of Service Systems: Dynamics and Adaptiveness Modeling", *Service Science,* 1 (1), 42–55.

Ritter, Thomas, Ian F. Wilkinson and Wesley J. Johnston (2004), "Managing in complex business networks", *Industrial Marketing Management*, 33, 175–183.

Rullani, Enzo (1999), *Sistemi ed evoluzione nel management*. Milano: Etas.

Saviano, Marialuisa (1999), "La strategia come scelta emergente dal dinamismo ambientale. Una rilettura del tema alla luce della visione sistemica", *Esperienze d'impresa,* 1, 107–128.

——— (2001), "Il fenomeno della globalizzazione: verso un'interpretazione in chiave sistemica vitale", *Esperienze d'impresa,* 1, 41–68.

——— (2003), *Analisi sistemico vitale della distribuzione commerciale*. Torino: Giappichelli.

——— and Massimiliano Berardi (2009), "Decision making under complexity. The case of SME", in *Managerial and Entrepreneurial Developments in the Mediterranean Area,* Demetris Vrontis, Yaakov Weber, Rudi Kaufmann and Shlomo Tarba, eds. 1619–1643.

———, Clara Bassano and Mario Calabrese (2010), "A VSA-SS Approach to Healthcare Service Systems. The Triple Target of Efficiency, Effectiveness and Sustainability", *Service Science*, 2 (1/2), 41–61.

——— and Primiano Di Nauta (2011), "Project Management as a compass in complex decision making contexts. A Viable Systems Approach", *Proceedings of 12th International Conference on Product Focused Software Development and Process Improvement*, New York, 112–119.

Smith, Laura A. and Irene Ng (2012), "Service systems for value co-creation", in *Managing Services: Challenges and Innovation*, Kathryn Haynes and Irena Grugulis, eds. Coventry: Warwick Manufacturing Group, forthcoming.

Spohrer, James, Paul P. Maglio, John Bailey and Daniel Gruhl (2007), "Steps Toward a Science of Service Systems", *IEEE Computer*, 40 (1), 71–77.

———, Laura Anderson, Norm Pass and Tryg Ager (2008), "Service Science and Service Dominant Logic", *Otago Forum 2*, 4–18.

Vargo, Stephen L. and Robert F. Lusch (2004), "Evolving to a New Dominant Logic for Marketing", *Journal of Marketing*, 68, 1–17.

——— and ——— (2008), "Service-Dominant Logic – Continuing the Evolution", *Journal of the Academy of Marketing Science*, 36, 1–10.

——— and ——— (2011), “It’s all B2B…and beyond: toward a systems perspective of the market”, *Industrial Marketing Management*, 40, 181–187.

———, ——— and Francesco Polese (2012), “Toward a Service (Eco)Systems Perspective on Value Creation”, *International Journal of Service Science, Management, Engineering and Technology*, in print.

———, Paul P. Maglio and Melissa A. Akaka (2008), “On Value and Value Co-Creation – A Service Systems and Service Logic Perspective”, *European Management Journal*, 26 (3), 145–152.

Various Authors (2011), *Contributions to theoretical and practical advances in management. A Viable Systems Approach (VSA),* Avellino: International Printing.

von Bertalanffy, Ludwig (1968), *General System Theory – Foundations, Development, Applications*. New York: George Braziller.

Websites

http://en.wikipedia.org/wiki/Viable_systems_approach
http://www.asvsa.org
http://www.naplesforumonservice.it