Authors: Sergio Barile and Francesco Polese

Title: The Viable Systems Approach and its potential contribution to marketing theory

CHAPTER VI

THE VIABLE SYSTEMS APPROACH AND ITS POTENTIAL CONTRIBUTION TO MARKETING THEORY

Sergio Barile and Francesco Polese

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1.1. INTRODUCTION

Contemporary thinking on marketing theory is turning away from abstract structures and formalised frameworks to embrace new ways of thinking that seek to align marketing theory and practice with the real perceived needs of the market. As Grönroos (2002:140) has observed:

...what we are experiencing today with the growing awareness of the relationship marketing approach is a return to the natural systems-oriented way of managing customer relationships that existed before
marketing became a far too clinical decision making discipline, and an over-organized and isolated function ... What marketing deserves is new approaches, new paradigms, which are more market oriented and where the customer indeed is the focal point as suggested by the marketing concept.

Several authors have thought along similar lines. In the 1990s customer relationship management (CRM) became an extension of relationship marketing directed to implement relational thinking in business systems, and in the 2000s service-dominant (S-D) logic took the lead in service thinking.

The contention of the present study is that these approaches, and marketing theory in general, can be augmented by the fundamental principles of the ‘Viable Systems Approach’ (VSA) (Golinelli, 2000, 2005, 2009; Barile, 2000; 2008). The (VSA), which has been developed and widely diffused within the Italian cultural community in the past decade, is a multidisciplinary approach that is linked with network analysis and general systems theory. Despite its solid theoretical foundations, the (VSA) is not strictly a theory; rather, it represents a methodological approach that is useful for the comprehension of complex phenomena involving individuals, communities, business, and society in general. The aim of this contribution is to assist researchers, scholars and practitioners to gain a better understanding of the characteristics and potential of (VSA) for application in modern marketing theory.

The paper is structured as follows. The next section describes recent trends in marketing theory, with a particular focus on relationship marketing and service research. The third section proceeds to describe the roots and principles of the (VSA). The fourth section applies the principles of (VSA) to contemporary marketing theory. The final section present the major findings and implications of the study.

1.2. MARKETING THEORY

1.2.1. Marketing theory at a turning point

Marketing theory and practice are in search of new approaches and new overarching theories. It has been suggested that marketing
theory is in need of a new paradigm of conceptual thought (Gummesson, 2002; Ghoshal and Moran, 2005). As Gummesson et al. (2009:1) have observed:

Intriguing issues such as complexity, system thinking, human behaviour, competitiveness, and service systems … all require new marketing and management theory. New approaches to marketing have been brewing for the past three decades, challenging the 1960s marketing management and marketing mix. These include service marketing and management, relationship marketing and customer relationship management (CRM), and relational and network applications … The discipline has reached a turning point …

In parallel with these developments, the boundaries of the marketing discipline have been enlarged. The American Marketing Association’s updated definition of marketing (approved in October 2007, downloaded 28th December 2010) reflected this by defining marketing in very broad terms:

Marketing is the activity, set of institutions and processes for creating, communicating, delivering and exchanging offerings that have value for customers, clients, partners and society at large.

According to Grönroos (2002), these ideas of marketing as a wide-ranging discipline that is involved with the wider society in which it functions, represent a return to marketing roots—in contrast to the trend in the mid-to-late twentieth century, when marketing research became a rather over-organised, inward-looking, and isolated function.

In noting this wider (societal) perspective on marketing, Gummesson (2002:326) also drew attention to the need for new approaches to marketing theory:

Marketing is such a captivating, confusing and rich field that no one has been able to sort out its constituent elements and their links on a higher conceptual level, a more general and systemic theory.

It would thus seem that marketing theory is broadening its outlook and returning to its roots in the marketplace of society. As it does so, there is concern that marketing now lacks theory to replace
the conventional “certainties” that are being discarded. As Gummesson et al. (2009:1) have commented:

We are left with a fragmented and confusing view … calling for more systemic and integrative theory.

Several scholars have seen dangers in this situation. For example, Lusch (2007:267) has warned:

If the community of marketing scholars and their professional associations does not take a lead role in studying and researching marketing as a societal process and institution, this type of research will be left exclusively to scholars outside marketing and, most likely, outside business.

Against this background, it seems that marketing theory requires a new perspective of interpretation of the discipline. According to Gummesson (2005), there is a need for a shift from description of substantive detail to a greater degree of abstraction and generalisation. In this regard, the emergence of relationship marketing, service-dominant (S-D) logic, and service science have been important developments (Dann and Dann, 2007). Each of these is considered in more detail below.

1.2.2. Relationship marketing and networks

Relationships between people are characteristic of both social life and business life. As Gummesson (2005) observed: “Life is a network of relations, and so is business”. No individual or business exists in isolation, especially in the modern world of interconnected information and communication technologies.

The trend toward interconnected globalisation has led to a re-evaluation of the role of relationships in business competitiveness and survival. There is a growing recognition that relationships represent distinctive and valuable resources that should be carefully developed and maintained. This is especially so in view of the growing relevance of services in all business sectors—including manufacturing industries, which are increasingly augmenting their goods offerings with additional services. The adoption of such a service-oriented framework in business models and management strategies has
fundamentally altered the way in which businesses relate to the market in the modern service economy (Rullani, 1997; Grönroos, 2000).

Relationships between persons and businesses are increasingly regarded as valuable resources in the contemporary service economy, precisely because a ‘service’, by its very nature, is essentially an activity that is performed by one person (or group) for the benefit of another person (or group) within the context of a relationship between the two parties. In other words, services are essentially relational in nature (Rust, 2004). Services provide assistance and expertise, rather than a tangible product, within an interaction between a provider and a client, who usually know one another (Katzan, 2008; Pine and Gilmore, 1999). Moreover, the inherent customisation of a service provided to a known client involves a co-productive relationship in which providers and clients both act as participants in the service process. Indeed, the relationship between the two parties represents the key characteristic that differentiates a service-system model from the traditional transactional model of goods-based economics (Normann and Ramírez, 1994; Normann, 2001).

The relational nature of services is also apparent in the concept of a ‘service solution’. According to Grönroos (2008), services can be understood as a series of activities in which resources (employees, physical resources, goods, systems of service providers) are used in interaction with the customer in order to find a solution to the customer’s needs. From this perspective, a ‘service solution’ involves the activities of many actors within a co-creation logic (Prahalad and Ramaswamy, 2004; Vargo et al., 2008). As Polese et al. (2009) observed, service can thus be understood as an “interaction between entities in a reticular system … to improve value co-creation outcomes under a win–win logic inside interrelated processes”.

The increasing emphasis on a relational approach to business and marketing has led to a proliferation of research under the umbrella of relationship marketing — within which CRM has become a prominent element. CRM basically assumes a dyadic customer–supplier relationship, which is, of course, the core of marketing. Recent research has advanced this proposition by taking account of the articulated ensemble of actors that characterise both the supplier side and the demand side of the dyad in the real world. The ‘one-to-one’ dyadic relationship between supplier and customer has been expanded to more complex ‘network-to-network’ interaction in which visible
and invisible interactions, common purposes, and resource sharing all play a critical role.

All relationships exist within networks. As Capra (1997) observed, “life consists of a network of relationships in which we interact”. Network theory, therefore, has much to offer CRM in business. In accordance with the relational approach to business described above, network theory considers every entity to be a dynamic operant resource that engages in reticular (networked) interactions involving many-to-many relationships (Prahalad and Ramanswamy, 2004; Lovelock and Gummesson, 2004; Achrol and Kotler, 2006; Gummesson, 1993, 2006, 2008). According to this perspective, networked relationships determine every organisation’s behaviour, strategies, and policies—which are calibrated with a view to achieving mutual satisfaction and optimal outcomes from the relationships among components and/or organisations (Womack and Jones, 2005; Lusch et al., 2007).

According to network theory, organisations are not autonomous entities; rather, they are dependent upon individuals and the networks of relationships that exist among them (Vicari, 1991). Just as individuals habitually interact in accordance with accepted cultural norms of behaviour, business networks also adopt certain social patterns and cultural attitudes in their iterative interactions with other parties. In particular, successful business networks seek to develop a culture of ‘win–win’ relationships, rather than engaging in short-term opportunistic behaviour. They seek to do this by fostering and maintaining a shared willingness to enhance co-creation processes through long-lasting relationships and shared values. This requires continuous improvement in the interactions among network elements with a view to optimising resource allocation, collaborative advantages, and cooperative strategies (Castells, 1996; Gulati, 1998; Capra, 2002). Such relationships are characterised by exchanges of pertinent information in the context of increasing commitment and trust (Richardson, 1972; Hakansson and Ostberg, 1975).

Various terms have been used to describe these voluntary ties among businesses and other economic entities, including ‘heterarchy’ (Hedlund, 1986) and ‘polycentric structure’ (Forsgren et al., 1991); however, the term ‘network’ has now become generally accepted to describe this emerging economic entity (Bartlett and Ghoshal, 1990). Network theory seeks to analyse the phenomena of resource-sharing and goal-achievement in such networks in terms of various
organisational constructs—including ‘nodes’, ‘connections’, ‘aggregating forces’, ‘central control’, ‘dynamic equilibrium’, and ‘structural variability’ (Richardson, 1972; Jarrillo, 1988). These constructs are utilised in network theory to analyse and explain the multiple contributions to value creation within the observed systems. In doing so, the traditional notion of the supply chain has been replaced by a logic of co-production within constellations of systems and so-called ‘virtuous cycles’ (Lusch, 2011).

In contrast to the traditional conceptualisation of the value chain, network theory goes beyond the notion of a distinctive resource (related to an individual entity’s fixed capacities) to embrace the idea that every entity has the ability to reconfigure its own service systems in collaboration with the other entities in the network to produce a synergistic ‘service value network’ (Allee, 2000) in which all the networked entities are ‘embedded’ (Granovetter, 1985). Apart from the various service providers within such a service value network, another key element in network theory is represented by network enablers. Such enablers promote interactive exchange processes and the essential development of positive relationships within the network through direct and indirect connections with external interdependent service systems (Polese et al., 2009). Enablers thus represent the less ‘visible’ relationships among the overt entities of the network (suppliers and clients), but they nevertheless make an essential contribution to the competitiveness of the whole system (Polese, 2009).

In summary, network theory holds that service systems can best be understood as networks in which functional interdependencies exist among the various participants in order to succeed in the face of increasing environmental complexity (Richardson, 1972; Hakansson and Snehota, 1995). According to this view, transactional models and linear sequential supply chains are now obsolete (Stampacchia and Russo Spena, 2010). In contrast, networked interactions are understood as the driver of value as the participating actors develop a joint process of collaborative value creation, thus creating a distinctive competitive advantage through their networked relationships.
1.2.3. Service-dominant logic and service science

Drawing on the notions of relational marketing and network theory (as described above), new marketing proposals have been introduced in recent years. In particular, service-dominant (S-D) logic and ‘service science’ (SS) have become especially prominent.

According to the emerging paradigm of S-D logic, service is defined as the application of specialized competencies (knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself (Vargo and Lusch, 2004, 2006, 2008). Moreover, according to S-D logic, value does not reside within a production process to be reflected in the market sale price (in accordance with the conventional paradigm of value-in-exchange); rather, value is perceived and co-produced by customers in a co-creation process, before being realized as value-in-use as the value offering is transformed and consumed (Vargo and Lusch, 2006, 2008). Service is thus realised in terms of the mutual benefits and the mutual satisfaction of co-creation processes (Lusch et al., 2007).

In terms of relationships, S-D logic thus proposes that the customer is a co-producer of service, and that marketing is a process of doing things in interaction with the customer. Customers are therefore active participants in relational exchanges and co-production. In this sense, S-D logic posits that all business consists of relational service activities. Moreover, S-D logic recognizes that these relational service activities are conducted within integrated service-provision systems, that involve relationships among many organisations. In Darwinian terms, these ‘service ecosystems’ are ‘conditioned’ (or influenced) by a variety of systemic elements (technological, economic, political, and social).

S-D logic thus proposes a paradigmatic shift from a goods-dominant (G-D) logic that emphasises value-in-exchange through transactions to a much more challenging (indeed revolutionary) perspective of value-co-creation and value-in-use. This has implications for many disciplines—including marketing, organisational studies, public administration, economics, and many other social sciences. For the purposes of the present study, its emphasis on interactions and collaborative activities means that S-D logic clearly posits business as a network of relational service activities.
The second recent proposal in marketing theory noted above, so-called ‘service science’ (SS) adopts a scientific view of service that emphasises the role of service systems (Alter, 2008). According to SS, service is understood as a dynamic system of interacting and interdependent parts (people, technologies, and business activities) that creates and delivers value, thus achieving and maintaining a sustainable competitive advantage (Maglio et al., 2006; Maglio and Spohrer, 2008).

In emphasising service systems, SS is thus focusing on networks of relationships as the fundamental elements in the concept of service (Spohrer et al., 2007). According to SS, value co-creation is the outcome of value proposition-based interaction mechanisms (Spohrer et al., 2008), in which relationships between interacting systems, based upon a ‘win–win’ logic, are consciously developed to achieve mutual satisfaction and optimal outcomes for all parties involved (Maglio and Spohrer, 2008).

SS has become a new multidisciplinary research endeavor involving computer science, behavioural psychology, organisational theory, industrial engineering, business studies, management sciences, and social sciences. This research ground is based upon the practitioner’s perspective, with a view to delineating the factors that characterise service systems and their performance in the world of business.

1.2.4. Links between S-D logic and SS

It is apparent from this brief description of S-D logic and SS that both emphasise the themes of: (i) the centrality of continuous interactions among actors; (ii) networked relationships; (iii) value co-creation; and (iv) the notion of a service system. However, in pursuing these common themes targeted to marketing research advances, the two approaches have somewhat different emphases. S-D logic places particular emphasis on service exchange among various complementary and differentiated actors, whereas SS places more explicit emphasis on understanding complex service systems and the promotion of service innovation. In many ways, it might be said that S-D logic represents a cultural/philosophical approach to service, whereas SS represents its scientific research ground.
1.3. **GENERAL SYSTEMS THEORY AND VIABLE SYSTEMS APPROACH**

1.3.1. General Systems Theory and systems properties

A General Systems Theory is “[…] a logical-mathematical discipline, in itself purely formal but applicable to the various empirical sciences. For sciences concerned with “organized wholes”, it would be of similar significance to that which probability theory has for sciences concerned with “chance events”; the latter, too, is a formal mathematical discipline which can be applied to most diverse fields, such as thermodynamics, biological and medical experimentation, genetics, life insurance statistics, etc” (von Bertalanffy, 1968:37).

Deeper study into the various realities, especially in the scientific field, other than those lying within the range of interests of a firm, makes it possible to highlight and acquire new ideas and knowledge, new methods of investigation, and new models of analysis, which make up an important source of wealth, and give greater value to the observation of system’s dynamics. A General Systems Theory is based on a sometimes logical-formal (reductionist), sometimes heuristic-general (holistic) approach to the problems and phenomena under observation, which suggests how it could contribute to lay the foundations for numerous scientific disciplines.

As above pointed, from a system viewpoint every system at a certain level is in relation with supra-systems and sub-systems. The first ones are hierarchically ordered in function of their being more or less critical and influential towards the system; the seconds ought to be directed and managed by the system in order to contribute to its finality (Barile, 2008). The introduction of these concepts challenges the question regarding system boundaries, which has very little sense in this kind of optic. Contact creates participation; a given system tends to absorb supra-systems and sub-systems (components) in order to develop as a whole system (Barile, 2008).

About system theories we can notice how:

- General System Theory (GST) replaces vitalism (teleology) with something else, so it develops the concept of “goal seeking and self controlling behavior” (von Bertalanffy, 1962:13); from biophysics, systems are the “complex of interacting components, concepts characteristics of organized wholes such as interaction,
mechanization, centralization, competition, finality, etc., applying this to concrete phenomena” (von Bertalanffy, 1962:13).

- Open System Theory (OST) focuses about a dichotomy concepts: the organization (the system) and the environment in which it is involved. The Theory considers two order cybernetics adaptive level, referred to the informative deviation (counteraction – first level; amplification – second level), and reflects about organizations’ capacity to adapt themselves to shifts in environmental conditions (with or without information processing need) (Boulding, 1956; Katz and Kahn, 1978).

- Viable Systems Approach (VSA) represents a Grand Theory both proposing a new representation of the behavioral approach to business and the relative interactions with its context (the theory) (Beer, 1972; 1975), and suggesting a new interpretation of consolidated strategic organizational and managerial models (the practice). It enables the analysis of relationships among enterprise’s internal components (sub-systems), as well as the analysis of relationships between enterprises and other influencing systemic actors of their context (supra-systems) (Golinelli, 2000; Barile 2008).

### 1.3.2. Viable Systems Approach

Given the similarities that exist between S-D logic and SS, especially their shared conception of service as a relational phenomenon, there have been various attempts to link the two. The present study suggests that the ‘Viable Systems Approach’ (VSA) is a promising avenue for making such a linkage. More generally, as markets and marketing become increasingly complex, it is likely that complexity theory, network theory, and systems theory will play more prominent roles in future marketing developments. Against this background, the present study contends that the (VSA) represents a promising approach to modern marketing theory.

#### 1.3.2.1. Theoretical roots of (VSA)

The (VSA) is a systems-based approach to business theory that has become increasingly prominent in Italian academic circles in the past decade. The origins of systems theory go back to the 1950s when
Chapters from various scientific and social disciplines developed an interdisciplinary theory based on the concept of systems (von Bertalanffy, 1956). Systems thinking shifted the focus from the parts to the whole; that is, it perceived reality as an integrated and interacting unity of phenomena in which the individual properties of the isolated parts become indistinct, while the relationships between the parts (and the events they produce through their interaction) became much more important. By adopting the view that “system elements are rationally connected” (Luhmann, 1990), the systems approach sought to explain a phenomenon in its entirety (von Bertalanffy, 1968). This shift of focus from the components themselves to their relationships suggests that from the attention to the individual elements displayed by the observer should shift to a focus on the relationships among the elements, and this should be accomplished without losing sight of the identity of each individual element.

Drawing on such systems thinking, the (VSA) interprets observed actors and their environments beginning with an analysis of the relationships among fundamental elements, and proceeding to a consideration of more complex related systems (von Bertalanffy, 1968). The fundamental unit of analysis is a system made up of many parts (Parsons, 1971). Every entity (an individual, a consumer, an organisation, or a community) is perceived as a system that is made up of interlinked sub-components that strive towards a common goal.

As a multidisciplinary theory, (VSA) has drawn on several key concepts derived from other disciplines. These include: (i) homeostasis and equifinality from ecology (Hannan and Freeman, 1977); (ii) autopoiesis from chemistry and biology (Maturana and Varela, 1975); (iii) cognitivism from sociology and psychology (Clark, 1993); and (iv) information technology from cybernetics studies (Beer, 1975). Indeed, according to Golinelli (2000), (VSA) perceives an organisation as “… an open system [that is] aimed, organic, autopoietic, cognitive, [and] cybernetic”. (VSA) thus offers a new conception of phenomenological reality that synthesises philosophical, sociological, mathematical, physical and biological approaches.

An important concept in (VSA) is the notion of a firm as a viable system—that is, a firm is a viable system if it has the ability to enhance its survival capacity continuously over time. According to (VSA), this is the end goal of the firm as a system. This depends on the efficacy...
and the efficiency of the interactions among the component parts of the system within every business arena. Moreover, the firm as a viable system interacts with other systems, which can be identified as ‘supra-systems’ and ‘sub-systems’.

The so-called ‘supra-systems’ are more or less critical in their influence on the focal system, whereas the ‘sub-systems’ are directed and managed by the focal system in a manner that contributes to its viability (Barile, 2008). The introduction of these concepts challenges the notion of ‘system boundaries’, which has very little relevance in this perspective. Indeed, according to Barile (2008), a given system tends to absorb ‘supra-systems’ and ‘sub-systems’ in order to develop itself as a viable system.

1.3.2.2 Fundamental concepts of (VSA)

It is apparent from the above discussion that (VSA) focuses on the analysis of relationships among socio-economic actors in search of viable interacting conditions (Golinelli, 2000, 2005; Golinelli et al., 2001; Barile, 2000). In doing so, (VSA) enables an analysis to be made of the relationships that exist among an enterprise’s internal components, as well as an analysis of the relationships between enterprises and other systemic actors in their environment.

According to (VSA), an enterprise develops as an open system that is characterised by:

* many components (both tangible and intangible);
* interdependence and communication among these components; and
* activation of these relationships in order to pursue the system’s goal.

(VSA) is based upon ten fundamental concepts (FCs) (Barile and Polese, 2010b). These FCs, which are summarised below, are described in greater detail in Table 1.

- FC 1: Systems approach: Individuals, organisations, and social institutions can all be understood as systems that consist of elements directed towards specific goals (Beer, 1975).
- FC 2: Systems hierarchy: 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) (Parsons, 1971).
• FC 3: Reductionism and holism The interpretation of complex phenomena requires a synthesis of both a reductionistic view (analysing elements and their relationships) and an holistic view (capable of observing the whole) (von Bertalanffy, 1956).

• FC 4: Open systems and systems’ boundaries: 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 (Beer, 1975).

• FC 5: Autopoiesis, homeostasis, and self-regulation: In a complex environment, each system is stimulated to become an ‘autopoietic’ self-organising system (Maturana and Varela, 1975) in order to reach a ‘common finality’. A system is able to maintain a state of internal equilibrium through its ability to adapt (Hannan and Freeman, 1977). According to the notion of system ‘homeostasis’ (Beer, 1975), a system maintains its own specific identity by not modifying its internal features excessively in an attempt to achieve internal and external equilibrium.

• FC 6: Structures and systems: Every system is constituted by individual elements that have assigned roles, activities, and tasks. The passage from structure to system involves a passage from the static to the dynamic, as the focus moves from individual components and relationships to an holistic view of the observed reality. In this regard, the principle of ‘equifinality’ refers to various systems reaching the same end state from different starting conditions (that is, from different structures) by taking different evolutionary paths (Hannan and Freeman, 1977; Doty et al., 1993; Meyer et al., 1993).

• FC 7: Consonance and resonance: The term ‘consonance’ refers to the potential compatibility between systems elements; however, for system survival, real systemic harmony needs to be achieved as ‘resonance’, which refers to elements operating in a distinctive fashion for a single purpose (Nigro and Bassano, 2003). Resonance is thus harmonious systemic interaction, whereas consonance is structural and relational (Barile, 2008).

• FC 8: System viability: A system’s ability to survive is determined by its capacity, over time, to demonstrate consonant and resonant behaviour (Piciocchi and Bassano, 2009; Piciocchi et al., 2009). A viable system can dynamically adjust its structure and
behaviour to achieve consonance with its context, and thus preserve its stability.

- FC 9: Adaptation and relationship development: Firms are able to compete and survive in a particular context if they engage in continuous dynamic processes of change (Golinelli, 2000, 2010; Barile, 2008; Saviano and Berardi, 2009). Competitive enterprise behaviour requires the ability to identify and manage functions and relationships, establish communication channels, organise information flow, and rationalise and harmonise enterprise development with the environment (Barile and Gatti, 2007; Christopher, 2007).

- FC 10: Complexity and decision-making: Complexity refers to a particular combination of multiplicities and autonomies in a given context. The decision-maker needs to distinguish between: (i) ‘variety’ (which refers to possible variants that a phenomenon might present to the observer at a given time); (ii) ‘variability’ (which refers to observed changes in variety over time); and (iii) ‘indeterminacy’ (which refers to whether it is possible to fully understand a given phenomenon) (Golinelli, 2010). (VSA) relates the difficulties of decision making to the problem of complexity; that is, cognitive alignment between the observer and the observed system is a problem of knowledge and information.

Table 1: The ten fundamental concepts (FCs) of (VSA)

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<th>Fundamental concepts</th>
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<tr>
<td>FC 1</td>
<td>Individuals, organisations, and social institutions are systems that consist of elements directed towards a specific goal. People, families, networks, enterprises, public and private organisations are complex actors, all of which can be understood as systems.</td>
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<td>FC 2</td>
<td>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). Every hierarchy of systems is determined by observation from a specific perspective. The designation of a ‘supra-system’ or a ‘sub-systems’ is thus subjective.</td>
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<td>FC 3</td>
<td>The interpretation of complex phenomena requires interdisciplinary approaches, and should synthesize both a reductionistic view (analysing elements and their relations) and an holistic view (capable of observing the whole). The contribution of relationships (static, structural) and interactions (dynamic, systemic) is fundamental to the observed phenomenon (reality).</td>
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<td>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.</td>
<td>Nothing happens in isolation. The exchange of information and service of open systems is fundamental within every system dynamic. Within systems boundaries not only property resources are valorized, but many available, thus accessible resources (even though these are owned by other systems).</td>
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<td>Viable systems are autopoietic and self-organising; that is, they are capable of self-generating internal conditions, which through self-regulation, support the reach of equilibrated conditions, thus synthesising internal possibilities and external constraints.</td>
<td>Every system is autopoietic, and is thus able to generate new internal conditions. Every system is also self-organising as it continuously aligns internal and external complexity. These two characteristics are the basis for sustainable behaviour in the face of opportunities and threats.</td>
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<td>Every organisation 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.</td>
<td>The passage from structure to system involves a passage from a static view to a dynamic view, and focus shifts from individual components and relations to an 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 designed to pursue various objectives.</td>
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<td>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.</td>
<td>Consonant relationships refer to the static view (structure) where you could just evaluate the chances of a positive and harmonic relation. Resonant relations are referred to a dynamic view (systemic) where you could evaluate concrete and effective positive and harmonic interactions.</td>
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<td>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.</td>
<td>Viability is related to the system’s competitiveness and to the systems co-creation capability.</td>
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<td>Business dynamic and viability require continuous structural and systemic changes focused to the alignment of internal structural potentialities with external systemic demands.</td>
<td>The evolutionary dynamics of viable systems demonstrate continuous alignment between internal potentials and external expectations.</td>
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The Viable System Approach and its potential contribution to marketing theory

1.4. APPLYING (VSA) TO MARKETING THEORY - SYNTHESISING S-D LOGIC AND SS THROUGH (VSA)

As previously noted, the contention of the present study is that (VSA) has the potential to make a substantial contribution to the development of new marketing theory. Indeed, there are many
parallels between the concepts of \(VSA\) (as shown in Table 1) and modern marketing thinking—especially with regard to the general focus on the customer and the development of such concepts as service-dominant (S-D) logic, service science (SS), customer relationship management (CRM), total quality management (TQM), relationship marketing, and many-to-many marketing (Gummesson, 2008). All of these concepts are coherent with \(VSA\)'s heavy emphasis on viable systems and the importance of harmonious relationships between ‘supra systems’ and ‘subsystems’, which can (as noted above) include customers, suppliers, and networks as ‘systems’.

In particular, the present study proposes that the \(VSA\) is a methodology capable of synthesising the cultural/philosophical approach of S-D logic with its research ground, represented by SS. Although S-D logic, SS, and \(VSA\) share several complementary features, and although the correlations among the three are strong, it is nevertheless true that they appear to represent different conceptual levels. In particular, S-D logic represents a philosophical/cultural approach to service, whereas SS represents the scientific research ground of S-D logic, and \(VSA\) represents an analytical methodology. Nevertheless, given that S-D logic, SS, and \(VSA\) are all strongly based upon relationships, it is arguable that a productive synthesis of the three is possible.

In figure 1 the scientific positioning of the three theories are presented; as suggested S-D logic is perceivable at a higher level, being it at relevant level of abstraction and generalization, whereas \(VSA\) may be the scientific and methodological bridge of S-D logic with SS, which – for its intrinsic operating objectives - is positioned on the service ground, at a practical level.
Figure 1: Synthesis between S-D logic and SS through (VSA)

Source: Our elaboration on Barile and Saviano, 2010

With a view to integrating (VSA) with marketing theory in general, and recent service research advances in particular, Table 2 presents the ten fundamental concepts (FCs) of (VSA) in parallel with their implications for marketing theory. Some of the more important implications are discussed in more detail below.

Table 2: Implications from (VSA) for marketing theory

<table>
<thead>
<tr>
<th>(VSA) fundamental concepts</th>
<th>Implications for marketing theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC 1: Systems approach</td>
<td>Customers, business, communities, and actors can all be seen as systems.</td>
</tr>
<tr>
<td>FC 2: Systems hierarchy</td>
<td>Every actor (system) in a market is a resource integrator that coordinates its own resources (components/sub-systems) and a set of acquired/available resources (released by supra-systems).</td>
</tr>
<tr>
<td>FC 3: Reductionism and holism</td>
<td>A full understanding of the market and the co-creation interaction requires both an holistic view of the whole and the analysis of individual elements and their relationships.</td>
</tr>
<tr>
<td>FC 4: Open systems and systems boundaries</td>
<td>Modern marketing theory recognises that enterprises do not create value in isolation. There is now appropriate recognition of the roles played by multiple actors and interested parties in various value co-creation processes within a customer balanced centricity. The notion of co-creation is inherently associated with vanishing boundaries between actors within markets.</td>
</tr>
<tr>
<td>FC 5: Autopoiesis, homeostasis, and self-regulation</td>
<td>In pursuing its ultimate goals, every business requires the internal capacity to evolve and self-regulate in order to adapt to external changes and survive in the long term. Businesses constantly strive to meet market requirements by changing their value propositions.</td>
</tr>
<tr>
<td>FC 6: Structures and systems</td>
<td>Every actor has a structure (set of capacities) that must be organised to meet the demands of the market. In so doing, businesses are transformed from static structures to dynamic systems.</td>
</tr>
<tr>
<td>FC 7: Consonance and resonance</td>
<td>Consonance (potential compatibility between systems elements) and resonance (harmonious interaction among actors in service interactions) well represent a model describing ideal and rewarding co-creation exchanges among actors of service experiences.</td>
</tr>
<tr>
<td>FC 8: Systems viability</td>
<td>Every actor in a market attempts to behave in a viable, sustainable, and harmonious manner in pursuit of its own goals.</td>
</tr>
<tr>
<td>FC 9: Adaptation and relationship development</td>
<td>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 with time.</td>
</tr>
<tr>
<td>FC 10: Complexity and decision-making</td>
<td>Marketing theory is increasingly focused on networks of relationships within which interactions take place. The complexity of such networks is a problem in terms of the knowledge and cognitive alignment that is required between the decision-maker’s system and the observed reality.</td>
</tr>
</tbody>
</table>

Source: Our elaboration

1.4.1. Complexity

Modern marketing theory is not characterised by simple cause-and-effect relationships; rather, it is concerned with networks of relationships within which complex patterns of interactions take place.
The Viable System Approach and its potential contribution to marketing theory (Gummesson, 2001). Given this complexity, rational decision making is becoming increasingly difficult (Saviano et al., 2010).

According to (VSA), decision-making in the face of such complexity is essentially a problem of accumulating sufficient knowledge to establish cognitive alignment between the decision-maker’s system and the observed reality. According to Christopher (2007), the probabilistic complexity throughout a corporation can be effectively controlled only by an equivalent amount of probabilistic complexity in the controller.

Given the complexity, dynamism, and instability of contemporary markets, businesses have to adopt a policy of continuous change. They must formulate new models of the business scenario to enable them to develop more effective solutions to emerging customer expectations (Ng et al, 2010). In so doing, they must take into account all the other actors and stakeholders that might possibly influence its relationships with the market.

1.4.2. Decision Making

The observation of reality today shows increasing complex phenomena affecting business, individuals, government and, in general every decision maker. All the attempt to undertake robust and solid decisions, strategies, behavior seem to fail for the number of elements to take into account (variety), and for their changes during time (variability). Moreover there are unknown and unpredictable additional elements which, indeed, can influence the result of any kind of process, development, interaction (Saviano, 2001).

In this mainframe what are the fundaments of customers decisions or of a business marketing plan definition? What are the key elements affecting sustainable decisions and strategies? (VSA) relates the difficulties of decision making to a problem of complexity, of cognitive alignment between the observer and the observed system: it is all a problem of knowledge and informative variety. Knowledge development processes, in our opinion and according to (VSA), may be initially represented by abductive inferences, later verifiable inductively. This process may be graphically represented by a curve (the equation is $y = \delta e^{-\beta x^a}$, where the possible alternatives of a learning process (or of a decision making process), are declined for a viable system. On the ordinates entropy is represented, whereas
horizontally information flow is shown. Decision making is affected by information. At an early stage of the dialogue, or of the learning process, information is not ordered, it is chaotic, it is probably insufficient to enable a full comprehension of the problem (the curve is hence steep, and goes vertically upwards showing an increase of entropy). As information flows, and the learning process effectively takes place, this entropy gradually goes down to lower levels. This is the gradual process that starts from chaos, via abduction passes through complexity and via induction fosters complication, and finally throughout deduction arrives to awareness.

Since the introduced awareness is related to cognitive alignment processes among systems, it has to be pointed how it represents a subjective awareness, referable to the decision maker and the observed complex reality, and not perceivable upon a general level. A biochemical engineer can reach a satisfactory level of confidence about an observed process, since its knowledge about the element affecting the result may be high, if not total, but of course an architect, lacking of basilar knowledge about biochemistry may find the same process very complex.

**Figure 2: From chaos towards certainty in decision making**

Source: Barile, 2009
One of the most interesting inferences of this proposal is the rationalization, and consequent management of the decision-making process in order to design and look for cognitive alignment. If satisfactory decision making is due to knowledge and informative resonance (Barile, 2009b) between the involved decision makers, hence a deeper look at their value systems, interests and rooted cultural traits should be attempted (Polese and Minguzzi, 2009) in order to better comprehend the elements affecting complexity management.

1.4.3. Open systems and systems boundaries

Enterprises do not create value in isolation (Håkansson and Snehota, 1989); rather, they engage in cooperative value-creation processes that involve multiple actors and resources (Prahalad and Ramaswamy, 2004). Indeed, the term ‘co-creation of value’, which has emerged so prominently in the context of S-D logic (Vargo and Lusch, 2004; 2008; Lusch et al., 2007), is inherently associated with vanishing boundaries between actors within markets. In this regard, the \(VSA\) notion of ‘open systems’ is clearly applicable to modern marketing theory in describing the concept of shared value co-creation among multiple actors.

1.4.4. Equifinality

When referring to the concept of autopoiesis, homeostasis, and self-regulation (see FC 5) the \(VSA\) implies that systems dynamic is based upon the important concept of ‘equifinality’, which means that for a system many paths can lead to the same goal (Hannan and Freeman, 1977). This latter concept seems relevant to modern ideas of sustainable marketing strategies. Modern marketing theory has moved the emphasis from strategies targeted at specific clients towards strategies that are directed to a wider set of external (and internal) actors—including customers’ communities, partners, suppliers, and so on. In other words, it seems that modern marketing theory recognises that there are many ways to achieve a goal in marketing proposals. If the end goal of marketing is the satisfactory behaviour of one actor in relation with many other actors, the \(VSA\) concept of equifinality —
that there can be numerous paths to the same result — would seem to be applicable to modern marketing theory. After all (Storbacka and Neenonen, 2009:366)

...in order to balance the heterogeneity of customers, customer relationships and portfolios, firms have simultaneously develop differentiated business models [as] configurations of inter-related capabilities. [...] A particularly important driver of relationship performance is the configurational fit between internal and relational capabilities.

1.4.5. System viability

(VSA) proposes that viable systems are able to survive in a particular context as a result of dynamic processes of adaptation, transformation, restructuring, and so on (Golinelli, 2009). In a similar vein, S-D logic recognises that providers gain market share and competitive advantages through appropriate adaptations to external changes and stimuli (Vargo and Lusch, 2008). This continuous learning process requires constant monitoring and evaluation of accumulated technological knowledge and innovation to re-orient the tasks and objectives of the system.

Thus viability describes the evolution of the system since it can capture the dynamic of its components especially with reference with the variation of system’s traits due to internal characteristics and external opportunities. Indeed, (VSA) goes beyond that, in the attempt to:

- classify the external supra-systems (in order to understand which of them are more critical and influential for business behaviour);
- establish a qualitative method to measure the system capability to satisfactory behaviours (based upon affinity of cultural, knowledge, value and other dimensions).

These suggestions seem to fit with every decision maker acting as a player in a marketing experience when pursuing a co-creating process involving many actors (supra and sub systems). For these reasons, the important (VSA) concept of a viable system seems to be attuned to modern marketing’s emphasis on adaptation and innovation.
1.4.6. Governance and relationships

Much of \( VSA \) theory is based upon relationship governance and management. In particular, \( VSA \) emphasises the system’s ability to foster relationships through dynamic and harmonious interactions. This is closely aligned with the concept of value co-creation in S-D logic, which basically refers to a process in which all actors need to be satisfied in a mutual win–win interaction. However, despite the importance of relationships in both S-D logic and SS, neither explicitly addresses the issue of how these relationships can be managed for the benefit of all actors.

In this regard, \( VSA \) has much to contribute in terms of the design and management of positive interactions among actors. \( VSA \) emphasises the importance of dynamic models that are based on multi-criteria decision-support systems that are capable of reaching satisfactory conditions through continuous feedback from other systems (including customers and suppliers) to production processes. In modern marketing terminology, this constitutes ‘co-design’, ‘co-production’, and ‘co-creation’. \( VSA \) thus proposes a model that is likely to be useful for marketing theory in terms of relationship management among the actors whose resources need to be integrated for a successful service exchange.

1.4.7. Consonance and resonance

According to \( VSA \), every viable system’s development involves the harmonisation of the system with its supra-systems and sub-systems through consonant and resonant behaviour. In marketing terms, consonance and resonance represent the potential and realised competitive strategies employed by every successful firm in search of resources and harmonious relationships with other actors in their network.

\( VSA \) thus postulates a gradual process of consonance and resonance between network actors through cognitive harmonisation (Barile and Polese, 2010a). In parallel with this notion, \( VSA \) introduces the concepts of enactment and sense-making (Weick, 1995) as being crucial for effective consonant and resonant behaviour.
Through enactment and sense-making, these actors learn how to fulfill the needs of potential partners and customers.

1.5. CONCLUSIONS AND IMPLICATIONS

1.5.1. Major conclusion

The Viable Systems Approach (VSA) is a complexity theory that draws upon a variety of disciplines, including chaos theory, autopoiesis (self-organising systems), and fractal geometry (among others). It thus has the potential to provide a more comprehensive understanding of contemporary marketing theory by its integration of network, relational, and systemic perspectives. Although emergent marketing theories, especially service-dominant (S-D) logic, have greatly enhanced marketing theory, the present study has argued that these new theories can be augmented by certain aspects of the (VSA) perspective.

According to Gummesson (2002), the complexity of marketing make it a “… poor context for conceptual understanding and development of contemporary phenomena”. If Gummesson (2002) is correct, a full comprehension of this complex phenomenon requires a complexity theory; as Ashby’s (1958) basic law of control asserted: “… only variety can absorb variety”. In this regard, (VSA) is not being proposed as being a ‘higher theory’ than other marketing theories; rather, it provides a broader perspective that includes pertinent aspects of systems thinking and complexity theory. Given the growing complexity of marketing itself, (VSA) has much to offer contemporary marketing theory.

1.5.2. Implications for future research

(VSA) provides many potential avenues for future marketing research. In particular, Parson’s (1971) hierarchy principle (1971), which formed the basis of the second fundamental concept of (VSA) in Table 2, is likely to have many applications in business-to-business (B2B), business-to-customer (B2C), and customer-to-customer (C2C) marketing. In these areas, value co-creation and value experiences are extremely complex when dealing with so many actors in many-to-
many co-creation service experiences (Gummesson and Polese, 2009). A broader perspective that is capable of differentiating distinct roles and needs from various observational standpoints is required (Prahalad and Bettis, 1986; Pels et al, 2009). (VSA) in general, and the hierarchy principle in particular, could well provide a fruitful framework for future research in this area.

However, despite the intuitive relevance of this and other aspects of (VSA) to contemporary marketing theory, more research is needed to deepen the suggested theoretical correlations. The present paper has described only a little of the potential contribution that (VSA) might make to advances in modern marketing theory. Further work is needed to provider breadth and depth to the intriguing possibilities revealed in the present study.

1.5.3. Implications for practitioners

The (VSA) concepts of consonance and resonance represent key factors for successful interactions and competitive success. In terms of practice, consonance refers to the appropriate design of a business process in relation to a firm’s distribution partners, whereas resonance refers to the contractual agreement between the parties that realises the desired win–win interaction. For example, a potentially efficient e-marketplace platform developed by a retailer represents consonance, but it is only when customers and partners effectively adopt the platform that effective resonance takes place for everyone’s benefit.

1.5.4. Future academic developments

Table 3 compares (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 (VSA), it is apparent that the progression of marketing theory is congruent with the characteristics of (VSA).
### Table 3: Comparison of marketing paradigms

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

Source: Our elaboration

The (VSA) approach thus appears to be fully coherent with contemporary market theory, which emphasises 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 co-operation with other actors, linked to the technical, cognitive, and relational aspects of the particular context in which the firm is located. 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” (Barile and Gatti, 2007).

Finally, the contribution of (VSA) to Marketing Theories derive from its systemic view, as well as from the main relevant aspects coming from its new paradigmatic vision. It seems as if efforts ought to be directed in putting marketing discussion at an higher level, in fact the more general the theory, the better our ability to understand major changes in market conditions and the usefulness of technological advances (Gummesson, 2002). Principally we believe...
that, 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 in order to enable value exchanges with customers; since value can only be accessed on a relative basis, that is in comparison to competitor offerings (Lusch, Vargo and Tanniru, 2009), the systemic approach may enable a viewpoint fostering a wider perspective comprising partners, competitors, market requests and so on.

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