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THE EVOLVING DYNAMICS OF SERVICE CO-CREATION IN A VIABLE SYSTEMS PERSPECTIVE

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Abstract

In today's competitive arena, competent responsible decision-makers have a core role in monitoring environmental needs, trends and expectations and dealing with interactive relationships in the wider service ecosystem.

As there has been a shift in perspective from products to services, new research agendas focus on encouraging and guiding managers towards an appropriate approach to service systems

Our paper – combining both a traditional analytical approach (focus on the parts) and holistic approach (focus on the whole) – privileges a relational perspective and suggests an innovative methodology whereby system dynamics prevail over structural components in order to analyze service systems for value co-creation.

In line with the aims of the present study, we argue that VSA is a coherent approach justifying the logical shift in the pathway from a Service Dominant Logic (SDL) to Service Science (SS) and culminating in a process of General Systems Theory (GST). This framework illustrates how value is co-created through interaction.

In substance, our paper explains how the dynamics of service co-creation evolves by means of an approach grounded on a series of postulates inherent to VSA, SS and SDL. In this respect, the structure and system dichotomy clarifies the statics and dynamics relative to products and services respectively.

Key words: Viable Systems Approach (VSA); Service Science (SS); Service-dominant logic (SDL), structure and system dichotomy, service co-creation.

Introduction

The paper can be considered in the context of current debate in favour of discarding a Goods Dominant Logic (GDL) with a propensity for the emergent Service Dominant Logic (SDL) that is stimulating the academic and professional world in terms of Marketing and Management (Sheth, Sisodia, eds., 2006).

The shift in perspective is collocated within a scientific framework underpinned by the traditional studies of SSME - Service, Science, Management, Engineering - (in short SS) and those of Service Dominant Logic (SDL) where an attempt is made to redefine the modalities inherent to the dynamics and competitive scenarios for value creation.

In the logics of service, any phenomenon and its parts are no longer considered individual instances of decision-making or aspects of management, but rather synergistic relational processes between diverse actors which consonant in the same viable context converge towards common goals of participative value (Spohrer, Maglio, 2008).

The key to this revolution is to be found in the methodological framework of the Viable Systems Approach (VSA) (Golinelli, 2000, Barile, 2000): an approach based on a systems matrix capable of formalizing logical pathways that connect the explicative hypothesis of a new paradigm SDL with that of the pragmatic and operative paradigm of SS.

The link is achieved by progressively shifting the observation perspective of reality from a focus on the parts, links and potential relations (in other words on the structure or on the “product”) to a representation that emphasizes on the contrary, interaction and the process (focus on the system or on the “service”). In other words, a shift from consonance between synergic (relation and function) actors to systemic and resonant (interaction and role) actors in the process of value creation and consequently, of co-competitive advantage.

In the context of the changing scenarios worldwide, our analysis on the evolving trends of value co-creation moves from the need to rethink competitive conditions and processes, addressed more and more to shaping complex systems – system of systems – (IBM Institute for Business Value Analysis, 2010).

In line with this outlook, the “IBM Smarter Planet” (Spohrer, Maglio, 2010/a, 2010/b) is worthy of note in that by making the logics of “service” its own, it champions an innovative modality of interpreting social dynamics, with the widespread involvement of various researchers and scholars: to the extent that viability, success in business and collective wellbeing are conditioned not by the essential aspect of services (health, energy, communications, security, transport, infrastructure), but on the contrary by the convergence, efficacy and functionality of integrated and widespread processes, producers of collective and distributed value.

Theoretical Background

The General Systems Theory (GST) is qualified as a general theory applicable to diverse natural and social contexts, the formalization of which is underpinned by maths logics (Golinelli, Barile, 2008). In actual fact for sciences that are based on the principle of “order” – evoking the “possibility and not the certainty of events” –, GST framed systemically, privileges behaviour analyses in scenarios characterized by conditions of uncertainty (Spohrer *et al.*, 2010).

This approach as will emerge, facilitates the acquisition of new ideas and knowledge, new methods of investigation and research that represent a source of cognitive wealth and guarantee greater value by virtue of the competitive framework of the system of systems.

From this perspective, there is a focus on the methodological framework of the paper taking into account that:

- a) the GST refers to the concept of “goal seeking and self control” (von Bertalanffy, 1962, p.13); so that systems are represented as a “complex of interacting components, the conceptual features of organized combinations, interactions, mechanization, centralization, competition, aims, etc., applied to concrete phenomena” (von Bertalanffy, 1962, p.13),

and considering that:

- b) the Open System Theory (OST) focuses on the dichotomy organization (the system) and the environment in which it is involved. The theory considers two orders of cybernetics in terms of adaptive levels, with reference to the informative deviation (counteraction – first level; amplification – second level), and reflects on the capacity of the organization to adapt to shifts in environmental conditions (with or without information processing needs) (Boulding, 1956; Katz e Kahn, 1978),

it is accepted that:

- c) the Viable Systems Approach (VSA) can be considered a grounded theory, because it suggests a new interpretation both of corporate behaviour and relative interaction with the context (Beer, 1972) and consolidated strategic-organizational managerial corporate models. In other words, it facilitates the analysis of the internal components (sub-systems) of a firm as well as the analysis of relationships between firms and the other influential systems entities of its context (supra-systems) (Golinelli, 2000; Barile 2008).

From our perspective, this approach could represent a valid contribution to the International scientific community deriving as it does, from the accepted view that an organization – consequently also a firm – is a viable system which owes its survival and its capability for creating value to its potential for relations and interactions with other viable systems.

This assumption is even more evident when an organization (firm) operates in extremely complex contexts (Barile, Polese, 2009). The conceptual analysis underpinning the research is based accordingly, on “what” and “how” competitive logics and the focus on services has changed thanks to contributions from SDL, SS and VSA.

While SDL and SS have been integrated in exploring and comprehending Services – which can be represented efficiently by means of complex systems in which value exchanged in terms of service is produced by various co-operating actors – the VSA maintains that any system is viable – accordingly, in our case the service is viable –, when there is harmonious growth together with other systems (other services) and generates a process of value creation and competitive advantage. It would appear quite evident that the VSA is perfectly capable of sustaining the methodological and analytical integration of SDL and SS, as concerns the new concepts of service: *value creation, organizational relations, systems of system*.

The integrated SDL-SS-VSA methodological framework consequently is underpinned by three meta-conditions:

- 1) the SDL point of view: is a theoretical hypothesis, constructed on abductions and intuitions which, framed within the marketing context, discarding the traditional competitive “goods-dominant focused” paradigm in favour of the more realistic “service-dominant focused” paradigm (Vargo, Lusch, 2006, Gummesson, 2009).
In this sense, SDL, aware that a new theory must be built given that its schema have by now become mere routine; confirms intuitively, that a product as such is of no great relevance.
The focus becomes the function.
- 2) The SS point of view: as an IBM research initiative, tends to promote a new discipline capable of responding (theoretically and practically) to the emergent research issue on Service Systems. The interdisciplinary project, deriving from studies on Computer Science (Spohrer *et al.*, 2007), Human Behaviour (Mc Clelland, 1975; Miles, Snow, 1984) and on Organizational Theory (March, 1991) aims to sustain the concept of a new and better world which is socially, technologically and economically linked. In this respect, SS, starting from SDL, shifts to meet the needs of the society of Tomorrow; a society, based on the logics of a “systems of system” where the parts and not the parties are crucial and where the logics of role predominate (who does what for).
There is a shift in focus consequently from the function to the role
- 3) The VSA point of view: as a theory based on a systemic matrix, this approach is fully capable of interpreting the features and dynamics of global competition (business arena). Furthermore, the VSA facilitates comprehension as to why the role exists. The approach explicates how both SDL and SS are both valid but partial; in other words the particle (SDL), the wave (SS) seen not as a whole but disjointedly. Moreover, the approach

illustrates how the two theoretical stances of SDL and SS, are of equal value. In other words, the VSA approach clarifies how SDL and SS are two perspectives of the same phenomenon.

The focus on service makes sense only if the function is role contextualized.

An example of marketing clarifies the concept.

If we consider the product “ice-cream”, responding to “product” logics, we have an item which is cool (structure); if there is a shift to the logics of “service”, the ice-cream becomes a cool item which refreshes the palate (system). Both logics (product and service) are two separate explicative means of partial efficacy in that they both remain out of context (de-contextualized). With a shift of logics in favour of “the role of ice-cream” there is a shift in focus to an adequate explanation of the “viable role of the service system”: i.e. a refreshing food item that – after a football match with friends, or after a walk with one’s partner in the heat of the tropics – contributes to creating (a) consonance between the parties (b) the object and context in which they find themselves and (c) to generating mutual resonance and satisfaction.

In this sense SDL-SS-VSA embraces the concept of “contextualized viable service” interpreting the structure (how is it made?), comprehending its systemic aim (how does it work?) and giving a realistic sense – economic and social – to value co-creation (what is it for in a given context).

Although the concept of firm as a system is certainly not new, (von Bertalanffy, 1968), the innovative features of the VSA lie in the fact that the comprehension of phenomena, above all in complex scenarios, cannot be resolved exclusively by means of an analytical approach but on the contrary, only through a global vision approach (Piciocchi *et al.*, 2009) – with the interlinking of SS and SDL with interrelated phenomena. Added to which is the fundamental condition of viability: a firm as a viable system is an organization capable of increasing and/or maintaining its capability for survival (competitive advantage) by means of collaborating, cooperating and sharing efficacious processes of interaction between components (other systems) for the co-creation of value and coordinated in specific established roles (Piciocchi, Saviano, Bassano, 2009) (Service Value Co-Creation of System of Systems).

Findings

SDL–SS–VSA represents an integrated approach for comprehending the innovative logics and dynamics of systemic phenomena in general and service systems in particular.

The utility of the approach lies in the implications deriving from the value generated by the interrelation and co-creating aims relative to the parts (systems) (Spohrer, Kwan, 2008):

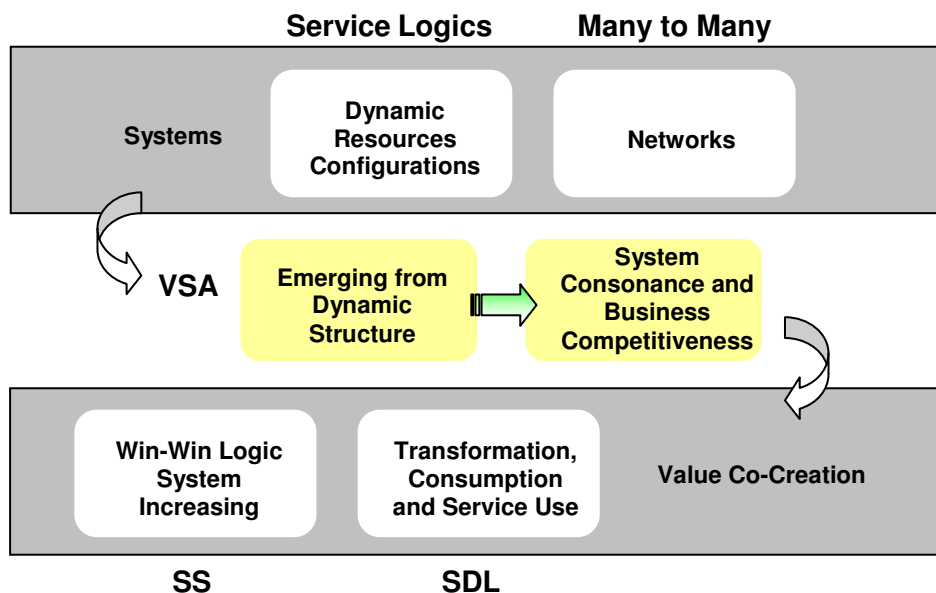
- 1) The creation of social and economic advantage of the collective-win type, both in terms of governance mechanisms and value propositions;
- 2) The potential for using knowledge/specialist capability (provider perspective) to generate processes of adequate social and economic growth to guarantee the satisfaction of the population/marketplace (customer perspective).

In this sense as a result, Service Systems represent sophisticated entities of value and knowledge which, seen as an extensive population of stakeholders interact on a cooperative basis to generate social and competitive advantage to be shared amongst customers, providers, authorities, competitors (Spohrer, Kwan, 2008; Gummesson, 2002, 2009).

This implies that Service is none other than the result of applied competence (knowledge, expertise, resources, relationships) to generate benefits for other entities (Vargo, Lusch, 2004, 2008).

If this SDL–SS matrix based definition of service is accepted, then the concept of “applied result” refers to what in a VSA perspective, can potentially be demonstrated/shown and shared. In other words, the service is the systemic configuration of the product; the process of relations and interactions between viable systems (operant) coordinated synergistically in the generating value co-creation (operand) for the social and economic well being of the population.

Fig. 1 – An integrated interpretation of Value and Systems



Source: our elaboration adapted from Barile S., Polese F., Service Dominant Logic and Service Science: a contribute deriving from network theories, in E., Gummesson, C., Mele, F., Polese (eds). *The 2009 Naples Forum on Service: Service Science, S-Dlogic and network theory*. Napoli: Giannini.

In this perspective, three fundamental assumptions are discussed (Saviano M, 2010) spring to mind:

- 1) *Do goods and services represent a dichotomy?*
- 2) *Is there a paradigm shift from “goods” towards “services”?*
- 3) *Do “goods and services” configure a pluralistic marketing approach?*

1) Do goods and services represent a dichotomy?

Relative to this preliminary aspect, Vargo e Lusch have clarified that SDL “*is concerned with the vertical relationship between service and goods, rather than the horizontal difference between services and goods*” (Vargo and Lush, 2008:29). Goods and service represent neither a *dichotomy* nor a *continuum*

2) Is there a paradigm shift from “goods” towards “services”?

In a Service System, if the focus is on goods (or services), then the emphasis is on *single elements* (parts) of a service process (whole). In other words, the focus is on the *static* elements of the service system. But a system emerges *dynamically*.

This means that the shift from “goods to service” implies a shift from a *static view based on single elements and/or relations* to a *dynamic view based on the service interaction process*. This is clearly a *change in perspective*.

The shift in perspective from GDL to SDL is the expression of a more general shift from a traditional *dominant* view focused on *goods, parts, components, objects, and so forth* (the analytical reductionist approach, adequate for a “given” environment) to a currently more appropriate perspective that extends the view from the parts to the relations (*structure view*) and from the relations (*static*) to the whole interaction (*dynamic*) process (*systems view*).

3) Do “goods and services” configure a pluralistic marketing approach?

This assumption, strictly linked to the previous ones, reflects on the need to reform marketing as a discipline taking into account the co-relation existent between “goods and services” in a process that sees a shift in focus from a static-structural paradigm of goods to a dynamic-systemic paradigm of services. In this respect issues posed by various Authors can be resolved - *What or Who Needs Reforming?* (Grover, 2006), *Does Marketing Need Reform School?* (Holbrook, 2006), *Does Marketing Need Transcend Modernity?* (Firat, Dholakia, 2006), *Revitalizing the Role of Marketing in Business Organizations: What Can Poor Academics Do to Help?* (Raju, 2006).

The Goods-Services continuum, consequently, corresponding more to an explicative type analysis of the Goods-Services relation, in that it is coherent with a vision that sees in the relation and interaction between systems, the essence of the value creation process. In this sense, components, activities and processes are relevant in providing services to others (consumers) in order to obtain mutual value (providers).

The three queries illustrate how the shift from a Goods-Dominant-Logic (GDL) to a Service-Dominant-Logic (SDL) is, consequently, the expression of a more general shift from a traditional vision focussed on goods, parts, components, objects etc. (an analytical reductionist approach) which is quite adequate in conditions of certainty in a widespread variety of “given” scenarios and moving towards a more appropriate perspective (a holistic approach) which from an analysis of the parts (structure and relations from a static viewpoint) leads to the comprehension of the “whole”, characterized by dynamic interaction and widespread value co-creation processes (systems and interactions view).

The shift is clearly understood if examined on the basis of VSA constructs and assumptions. The shift of perspective from static to dynamic, formalized in the Viable Systems Approach (Golinelli 2000, 2001, 2002, 2005, 2008, 2010; Barile, 2000, 2008, 2009, 2010), implies reflection on the general interpretative scheme (structure/system) in reference to the universal static-dynamic paradigm. In other words, on the basis of the structure/system approach, any phenomenon, social and/or economic organization – can be observed from three viewpoints:

- 1) *How is it made?* \Leftrightarrow The link between the parts [Structure Based View (StBV)]
- 2) *How does it work?* \Leftrightarrow The relation between parts [Systems Based View (SyBV)]
- 3) *What it is for?* \Leftrightarrow The interaction between parts [Service Based View (SeBV)]

From the point of view of recent literature, the shift from a *static* to a *dynamic* view is formalized in the Viable Systems Approach (VSA) (Golinelli, 2000, 2005, 2010; Barile, 2000, 2008, 2009), which devises a general interpretation scheme – *structure-system* – with reference to the universal *static-dynamic* paradigm.

On the basis of the *structure-system* approach, the phenomenon can be observed from a three fold perspective:

1. **how it is made** (*Structure Based View – StBV*)
2. **how it works** (*Systems Based View – SyBV*)
3. **what it is for** (*Service Based View – SeBV*)

In other words, any phenomenon can be *described* by focusing on its static components (*parts*) and *relations* (*structure*). But, to understand how it functions, its contextual internal/external interactions need to be interpreted (*system*).

Practical Implications

In VSA terms:

A *service system* (dynamic perspective) emerges from a *service structure* (static perspective).

This means that *several systems can emerge from the same structure in the same way that one system can emerge from several structures*.

Consequently, a static goods structure expresses its *potential* of value co-creation only *through* a dynamic *service interaction process*.

Therefore, we can argue that the relationship between “goods and service”, is equivalent to that between StBV and SyBV:

$$\text{GDL: SDL} = \text{StBV} : \text{SyBV}$$

only if analysis shifts from the function to the role and if a phenomenon (and its relative dynamics) is studied on the basis of the conditions outlined below:

- static v/s dynamic;
- objective v/s subjective;
- structure v/s system;

can the interaction phase be reached, i.e. *the viable role of the service system* (SeBV).

The same relationship can be applied to the second debateable issue given that resources can be operant or operand, *one might ask whether there is an inherent risk of another potentially “dangerous dichotomy”?* If we try to define, classify, distinguish, etc. resources by focussing on their nature, characteristics or features, there is always the risk of falling into a “GDL” trap.

According to the VSA *structure-system* perspective, we can envisage resources as *both* operant and operand depending not so much on how they are made (StBV), but specifically on the *dynamic role* they play (SyBV) for the service system in a specific context (SeBV).

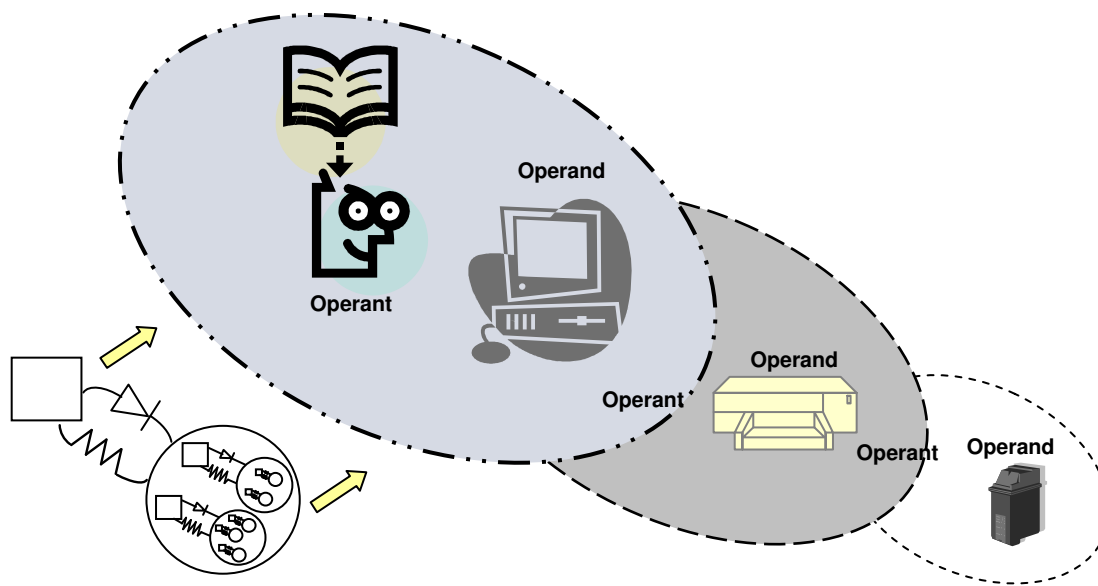
Examples:

- **People:** even if, as viable systems, always express an *operant* potential, they can also be “operated” upon as *operand* resources by an *operant* subject.

- **Technology:** in the same way, a technological tool (e.g. PC) is generally an *operand resource*, operated by an *operant* user, at the same time, it also has an *operant role* (Windows XP) in relation to all its components/sub-systems (software, hardware, energy, etc.). (Barile, 2009, Saviano, 2010).

As you can see from the figure, the same operant/operand scheme recurs at several levels, as in Beer's VS recursive scheme.

Fig. 2 – Operand vs Operant Roles



Recursive model scheme

Source: Saviano M, 2010 adapted from Beer, S. 1985.

The same recursive scheme emerges in the VSA conceptual framework, representing both the internal and the external context of the system. In this figure we can see how the operative structure of the system can be considered externally as an operand resource and internally as an operant resource.

This confirms that the structural configuration of a service in itself does not fully explain phenomena and their implications; this needs to be integrated with a systemic interpretation – the role played in a process within a service structure – in order to comprehend and consequently, appreciate its capability for generating value.

Fig. 3 – The Viable System Internal Recursive Scheme

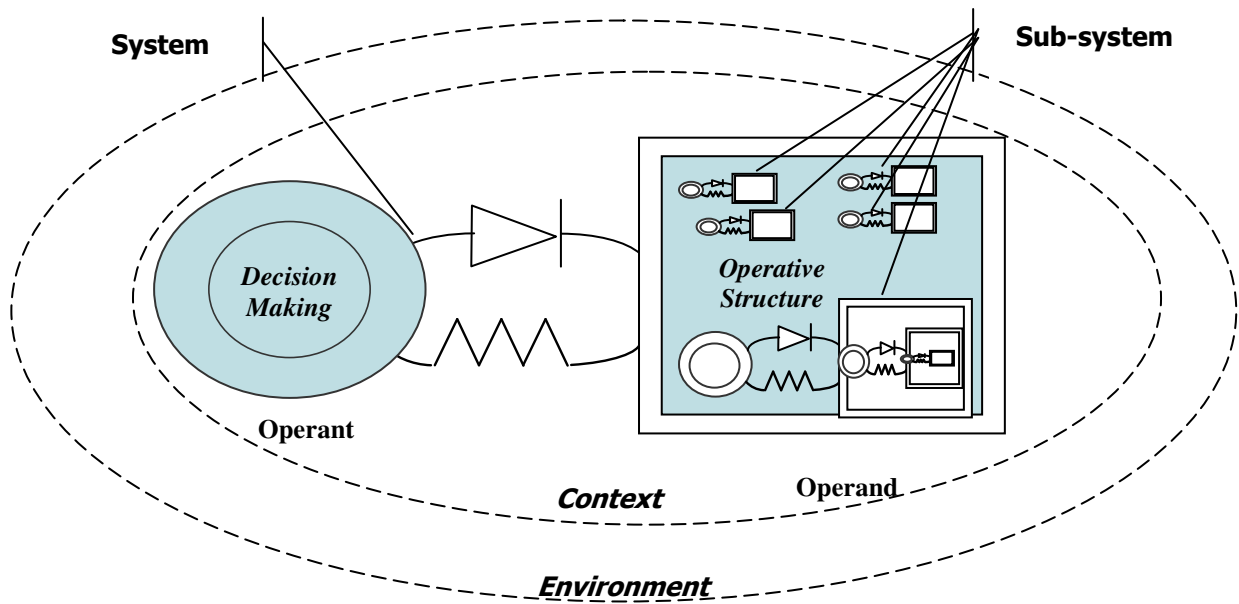
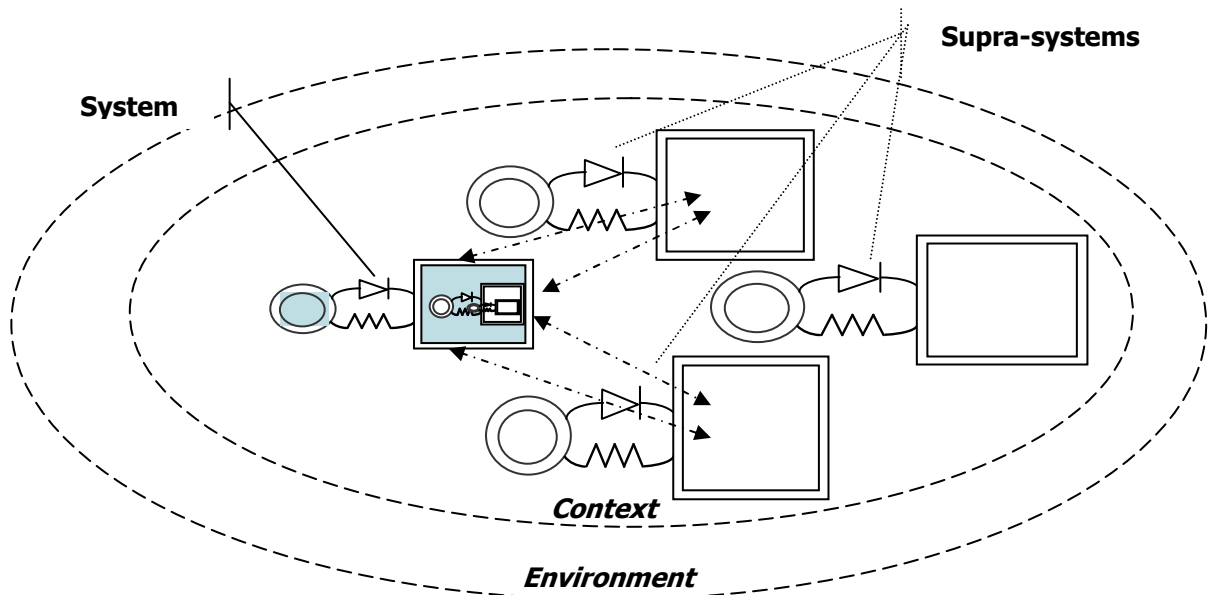


Fig. 4 – The Viable System Internal Recursive Scheme



Source: Saviano M, 2010 adapted from Beer, S. 1985.

Concluding Remarks

In the traditional approach, Services have always been relegated to the sub-category of Goods. Evolving trends in marketing studies, the focus on the search for sustainable permanent competitive advantage, the complexity and environmental variability, have all led to a change in perspective which rather than placing Goods and Services, in a dichotomic correlation repositions them on a continuum. The custom in marketing studies has almost always placed goods at the centre of market relations, the corporate goal and the condition for competitive advantage. (Gronroos, 2000, Norman Ramirez, 1993).

Growing competitiveness, the difficulty of the Goods-dominant logic to guarantee substantial and marked elements of differentiation and consequently, of distributional value, have embraced the relational-systems perspective in which value is seen as the synergistic result of inter-systems sharing and cooperative processes between structurally consonant and resonant actors in terms of objectives. In other words, value is not seen from a partial perspective of corporate benefit or in favour of other stakeholders, but rather in a global sense (whole value) the capability of the System to generate satisfaction and benefits both personal and for other entities.

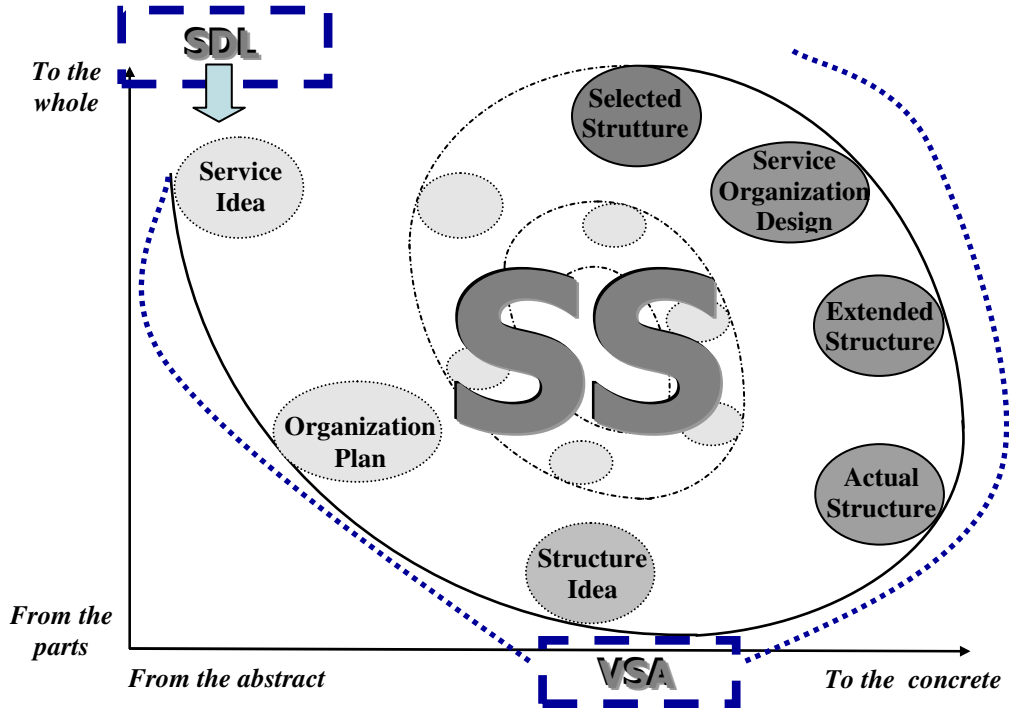
“Applied expertise (skills and knowledge) for the entity itself (system)” (Maglio, Spohrer, 2008a; 2008b), necessarily shifts the perspective of analysis of value to where the goods themselves are interpreted as “mechanisms/objects of service distribution” (Lush, Vargo, 2004) and services as effective configurations of processes capable of differentiating and generating value for the stakeholders (Gummesson, 2002).

If it is accepted that such considerations imply convergence in the perspective of a Knowledge Co-creating System, then it is quite legitimate to sustain the change prospected by SS, accepted and applied by SDL in marketing and justified methodologically by the VSA: *“highlighting the principles underpinning complex service systems (not to mention the value propositions linking them) in order to build abroad-based corpus of knowledge, theoretical and practical, capable of supporting the innovative dynamics of Service Systems”* (IfM and IBM, 2008). This means devising a Viable System Conceptual Framework on the basis of the structure-system perspective, in other words, goods-services.

This SDL–SS–VSA framework of convergence – adapting Prof. Golinelli’s conceptual framework to science and service marketing, highlights, starting from the SDL mindset, by means of the VSA construct (based on the StBV and SyBV dichotomy) how the concept of Service System, both its value co-creating logics (SeBV): the shift from SDL applied to marketing, through the VSA (conceptual framework), to SS constitutes an integrated interpretative key (value proposition) for grasping the dynamics of co-operation for value co-creation (as illustrated in figures 5 and 6 below). Taking into account the above considerations and as can be evinced from the illustrations it follows that relative to the proposing of a new paradigm, there is always an underlying (SDL-Idea) Logic emerging which, by means of a series of planning techniques (VSA-Plan) facilitates the realizing of an opera (SS-Design).

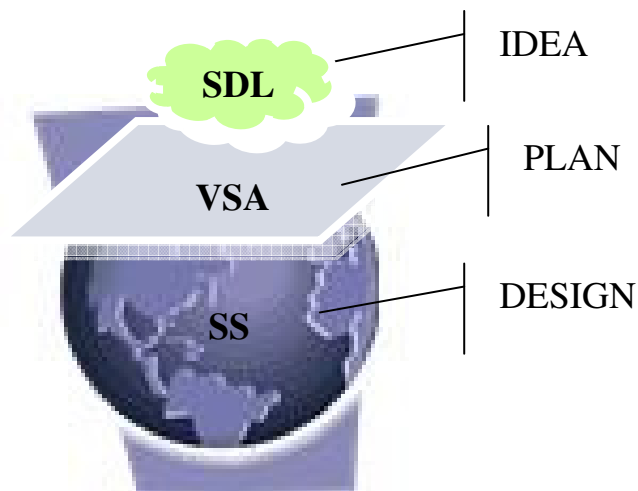
This implies that the focus on Services identifies in the VSA approach a tool with which to mark out a pathway starting from SDL and logically developed by SS in perfect consonance with the General Systems Theory (GTS) and the changing scenarios of global viability.

Fig. 5 – SDL-VSA-SS Convergence Framework



Source: Saviano M, 2010 adapted from Golinelli, G.M. 2010.

Fig. 6 – SDL-VSA-SS: an Idea as Logic – an Approach as a Plan – a Science as a Design



Source: Adapted from Saviano, M. 2010.

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