Towards a *value co-creation based* Healthcare System

Francesca Iandolo[1], Mario Calabrese[2], Emanuela Antonucci[3], Francesco Caputo[4]*

Purpose – Healthcare system embraces legal, ethical and socio-economic instances, involving several actors with different priorities, resources and influences. Characterized by a high technological level and, together, a discomfort echoed by a growing distrust of patients it no longer considers man as a whole, but as a set of independent components "to be fixed" as they fail Aware of these issues, aim of this work is to investigate how the interaction is fostered in order to enable the value co-creation process.

Design/Methodology/approach – The contribute is based on the principles of *Service-Dominant Logic*, re-interpreted using the lens of *Viable Systems Approach* in order to identify, through the *Information Variety Model*, the peculiarities of the operator individual identity and, consequently, the aspects that act supporting value co-creation. This methodological lens, overcoming the limitations of the reductionist view of phenomena, allows to shift from considering 'the parts' to considering 'the whole'.

Findings – The paper highlights the relevance of values alignment and shared objectives for the convergence of the Healthcare System towards a logic of value co-creation. The patient is first-person involved in a sanitary process that starts from the individual. In this way the comparison between the multiple perspectives involved does not end in a fruitless conflict of interests, evolving towards approaches in which the combination of different individual information varieties allows to solve historical problems of Health sector (bureaucracy, individual responsibility, use of resources ...).

Research implications – The need to identify effective approaches to value co-creation in Healthcare System is highlighted through the re-reading of surveys and secondary data helpful to understand the underlying dynamics of public-private interaction. The work is thus oriented to identify, using the Information Variety Model, the intervention levers through which making value co-creation possible.

Practical implications – The work defines the first step of a research project, whose goal is to establish guidelines that facilitate the process of interaction between different actors through the understanding of individual identities.

Originality/value – The value of the work lies in the definition of an observation perspective that is not limited to structural components; it shows that interactions among viable systems, oriented to value co-creation, can be realized in a systemic view, by reading and understanding individual and context instances.

Key words – *Healthcare System; Information Variety Model; Public-private reports; Value co-creation; Viable Systems Approach.*

Paper type – Conceptual paper.

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* Although the present work is the result of joint discussions, the paragraphs 1 and 3.2 are to attribute to *Mario Calabrese*, the paragraphs 2 and 3 are to attribute to *Francesca Iandolo*, the paragraphs 2.1 and 5 are to attribute to *Emanuela Antonucci*, the paragraphs 3.1, 4, and 6 are to attribute to *Francesco Caputo*.

1. Introduction to systemic thinking

Nowadays, the great intellectual adventure is about the governance of the extraordinary complexity that surrounds our world: it is true, complexity has always existed, even if its perception, fostered by the globalization of our society, is recent. Since ancient times, in search for knowledge and expansion of wisdom, people have always focused on logic and simple explanations, in order to promote the prosperity of mankind. A first attempt to better understand this approach can be found in the text of speeches on the method of Descartes. The work clarifies the function of reason in the research and it establishes the rules to get positive results with possible solutions of problems previously thought insoluble.

The rules identified are four (Cartesio, 2010:45 e ss.):

1. *precept of fact (rule of evidence*): not accept anything as true that you did not know with evidence: to avoid, that is, carefully precipitation and prevention;
2. *reductionist precept (rule analysis*): divide each problem to study it in many minor parts, as many as are possible and necessary to better solve it;
3. *deterministic or causal precept (rule of synthesis):* reorganize all the thoughts, beginning with the simplest and easiest objects to understand, to go up gradually, as by degrees, to the knowledge of the most complex one, and assuming an order even among those ones that do not proceed from each other naturally;
4. *precept of completeness (control rule):* do full enumerations so complete and so general reviews omitting nothing.

"Classical science in its diverse disciplines, be it chemistry, biology, psychology or the social sciences, tried to isolate the elements of the observed universe —chemical compounds and enzymes, cells, elementary sensations, freely competing individuals, what not—expecting that, by putting them together again, conceptually or experimentally, the whole or system—cell, mind,society—would result and be intelligible." (Bertalanffy, 1972: 414-415). The first systemic ideas can be seen, therefore, as a reaction against the reductionism of the scientific method. The idea of using the concept of system to study a specific phenomenon is attributed to the German biologist Ludwig von Bertalanffy who, in his work *General systems theory*, formulated some principles that are applied within a complex class of disciplines belonging to the human knowledge (Bertalanffy, 1969). The ability to observe reality through the systemic perspective is the art of knowing how to produce reliable inferences about the behavior of a given system, trying to develop a deeper knowledge of its underlying structure. The ambition of systems thinking is to replace the Cartesian precepts with the following principles (Cartesio, 2010:75):

1. *principle of relevance*: any object, component, structure, system considered is defined in relation to the implicit or explicit intentions of the observer;
2. *principle of holism*: considering the object, component, structure and system in a larger context implies the need to focus on the interrelations among its different components, rather than on the individual behavior ;
3. *principle of teleonomy*: it's not possible to read the object, the component, the structure, the system itself, rather that its actions, trying to figure out the project that the decision-maker has decided to achieve;
4. *principle of the observation perspective*: each representation of reality is necessarily biased and depends on the perspective of investigation of the observer.

It is a radical change in the way that we use in thinking and looking the real world, by adopting the consistent logic of the interconnection rather than the one based on the cause and effect principle, it is the relentless effort of decoding linear analysis in circular analysis. Systems theory sees over the simple mechanistic view. Concerning the future, the most important thing to underline is how we formulate our goals linked to the efficiency of our actions, rather than to the material progress. The goal is always linked to the way you want get it.

2. Contributions to theoretical advances in management of Healthcare System

Recent advances in service research have underlined the need of a paradigm shift from a "goods-dominant" to a "service-dominant" logic (Vargo, and Lusch, 2004). This advance can be interpreted as a consequence of the evolution of economic contexts and underlines the need of including, in analysing economic phenomena, those activities, often not considered, that have always characterized processes defined "services".

Passing from a "goods-dominant" to a "service-dominant" logic has several implications, (Vargo, Lusch, and Morgan, 2006; Lusch, and Vargo, 2006; Vargo, and Lusch, 2008; Barile, and Polese, 2009) as we don't refer exclusively to the exchange in terms of 'goods', but the *focus* is on resources. Such change of venue is rich in implications. For example the need of going beyond the notion of 'connection' to introduce the 'relation' and 'interaction' among parties (Barile, 2008). With 'relation' it is defined a structural link that, where activated, can evolve into an interaction, intended as a dynamic process that goes beyond the physical exchange with money, introduces a wider relation that includes values that satisfy often implicit needs.

Consumer is not seen only as the final recipient of the transaction, but as an active subject the different actors involved in the purchasing process cooperate with to create value; a composite value, able to satisfy, in different ways, the needs of the different parties (Vargo, Maglio, and Akaka, 2008). The service exchange, thus, seems to be based upon a relational harmony, shared among the involved actors, that seems to be strongly based upon co-experienced value (Polese, Russo, and Carrubbo, 2009).

If we consider these issues with reference to Health Systems and define service as an exchange among actors (Vargo, and Lusch, 2011:181-187), it is clear that value is not simply traded within a transaction, but, rather, created by all those who participate, in an interactive perspective that involves all stakeholders. The network of relationships among the various actors involved in Health System, in fact, is realized through the implementation of an exchange related not only to physical goods and/or services, but also to the technical-professional (sharing of protocols, guidelines, procedures, programs and research training, etc..) and management. Health, in fact, is a system involved in the management of a large number of resources and relationships and, in order to co-create value, it is necessary to contemplate all the instances coming from the different actors involved in the processes. Moreover, a significant call for an ethical convergence has to be taken into account (Saviano, Bassano, and Calabrese, 2010), in order to foster a composite approach that consider a variety of actors.

We can consider, for example, the national health plans (NHPs) that define the strategies shared between all the actors and the consequent planning of organizational and management models to ensure effective responses to the health needs in the view of a clinical governance. Beyond promoting the development of institutional instruments for negotiated planning between municipalities and

local health authorities, for the development of organizational and management shared fields for integration, they search for creating an interactive system. This is aimed to a proper organization and management at the top of the network relations considered, in the absence of which the value co-creation process would be not possible. What we can read, for example, in the Italian National Healthcare Plan 2011-20133 is that the main target of the Health System is to guarantee *"wellness and health"* to citizens and communities as *"the real wealth of Health system is the health of citizens".* This orientation underlines how it is necessary to consider service exchange processes in their unified and interactive dynamics, taking into account all the actors involved in these processes.

The service view, together with actions that involve the whole network of healthcare system, can be a useful perspective to better understand and analyse these phenomena.

2.1.The Network Vision for the definition of common based view

Networking is an umbrella concept (Polese, 2009a), involving business realities, social sciences, and technology.

Jones et al. (1997) defined network as an organization model that allows more effective response to market conditions dominated by uncertainty, resource specificity, task complexity and frequent transactions. Others stated that networks are tools to manage environmental complexity (Lorenzoni, 1992; Burt, 1983; Hakansson, 1987; Jarrillo, 1988; Bartlett, and Ghoshal, 1990) or to gain reciprocal benefits and share valorizing resources.

From a business viewpoint, networks are originated from the decision of several enterprises to be inherently involved in a common production process deciding to combine their resources and competencies and/or by a leader enterprise attracting other businesses to join in its activities. Such networks include suppliers, customer, intermediaries, competitors, investors, government agencies, media and whoever influences a selling and buying situation (Gummesson, 2004).

According to the concept of "embeddedness" (Granovetter, 1985), actors cannot be considered apart from their operating context but involved in systems where enjoying collaborative advantages, network roles, and rules and cooperative strategies.

Network exists if relationships exist. Much has been written over the years about relationships. Currently, the global market changes and the emergence of new approaches require a review of the role of relationships in terms of systems competitiveness and survival. In modern systems, in particular, relations represent the viable part (Polese, Pels, and Brodie, 2011). In general, relations concern an increase in connections among firms characterised by the exchange of information, continuity, developing sense of commitment and trust, looking for a collaborative network.

In a less selfish perspective, the relational need arises from the fact that any system can be conveyed outside only through relations, since it is not possible to gain success remaining isolated from the relational network of suppliers, distributors and financiers, technological system and potential demand.

Others have examined networks and relations in terms of resource sharing and common goal achievement (Jarrillo, 1988; Jones, Hesterly, and Borgatti, 1997). Coherently, cohesive, interpersonal, fiduciary, long-term relationships in networks are based on the sharing of a common aim (Polese, Pels, and Brodie, 2011).

The activation of these relationships only occurs when systems and systems elements are rationally connected (Luhmann, 1990) to pursue the system finalities. The activation of reticular relationships between system elements and other systems allows for the improvement of dynamic system

interactions, strengthening system chances of competing successfully, gaining system advantages and ultimately surviving. This activation of relational pattern, finally, assists in the realisation of a "completed system" as defined by the VSA or, essentially, an effective system. To facilitate interaction development and maintain system advantages, in fact, every system element operate synergistically to provide stability and equilibrium to all of involved entities (internal or external) and to the system as a whole.

Accordingly, many-to-many networks are involved in reticular systems (Gummesson, 2008a), characterized by relationship interactions, resources sharing (information and knowledge) and common purposes, that is-to increase global value and to develop/provide efficient service (Polese, and Minguzzi, 2010).

In other words, networks are characterized by reticular relations between the elements and systems (Allee, 2000) to enhance interactions, transforming the static network into a dynamic system, strengthening its ability to compete, gain competitive advantage and thus survive . From one hand, convergence of all the system components towards a common, higher-level goal triggers processes to improve the efficiency and effectiveness of the final performances; from the other hand, interactions between sub-internal components and over-and external structures (Barile, 2008) support a balanced appropriate growth useful for the ultimate goal of the system.

Recalling the relational view of firm (Golinelli, 2000, 2005, 2010; Barile, 2000, 2008, Various Author, 2011), each organization can be conceived as dynamic resource involved in many-to-many interactions (Prahalad, and Ramaswamy, 2000; Lovelock, and Gummesson, 2004; Achrol, and Kotler, 2006; Gummesson, 2008a, 2008b). Such relations determine the adoption of strategies, policies and business behaviors aimed to the satisfaction and efficiency of performance both inside and outside the organization (Lusch, Vargo, and Wessels, 2008). As stressed by Polese (2009b), beyond the advantages of sharing the same production system and integrating the offer into a global product, strengthening the learning process and improving the production process, firms organize themselves in stable networks because of the weak aggregating forces between entities involved.

According to the theory of networks, organizations are not autonomous entities, but dependent on the individual and the relationships that exist between them (Vicari, 1991). Just as individuals within a company regularly interact in accordance with commonly accepted norms of behavior, in the same way networks adopt social patterns and cultural attitudes in their interactions with other parties in order to create and maintain a shared end (Polese, Moretta Tartaglione, 2007). In summary, the relational theory argues that modern organizations can be better understood as network systems, in which there are strong functional interdependencies between the various actors, aimed at success.

The development of such networks requires social patterns to be applicable to both organizations and individuals (Mele, and Polese, 2011, Polese, 2009c), that is a cultural attitude to be open-minded and positive towards interactions with internal and external business partners. Such a culture entails a win-win attitude for all interested parties who wish to gain benefits from the exchange and sharing occurred.

Concerning, in particular, healthcare organizations they are aimed at the collective health and its sustainability. The work they perform is aimed to affirm a collective orientation which is healthcare as a public value. This approach necessarily implies the involvement, empowerment and awareness of all, from clinicians to patients or citizens.

Ultimately, the health organizations can be interpreted at the light of networking approach, or in a broader framework of relations, and can also be defined a systems that establish relations with

various actors involved in the same environment. Through these networks, such organizations are able to get the resources they need and to exchange them within the system they represent as well as with the environment, by sharing the common goal of creating sustainable value for the benefit of all, precisely health.

To conclude, in the attempt to get at a vision that goes beyond the specifics of the parties to consider the whole, useful contributions stems from the network vision that points out the interdependence of the parts for the pursuit of common goals. In the light of the premises of reticular vision, it is evident that, in order to operate effectively, a system needs a strong alignment of objectives and a common act toward an end recognized as valid by its components. If the network is not cognitively aligned, through the share of common resources, values and objectives, value is destroyed. Thus, network perspective highlights the importance for the health system to evolve to the configuration of a network cognitively aligned, where interdependencies exist in knowledge, specializations and care processes, in which the activation of interaction and sharing makes it possible the emergence of a system-oriented value co-creation through the involvement and the combination of individual perspectives. All this is implemented in the necessity to shift the focus from the individual actors (general practitioners, clinics, hospitals, pharmacies, etc.) to the interaction between all of them in order to identify the conditions under which it is possible to facilitate the alignment of values and the definition of a common purpose such as to generate a unique identity within and conditions of harmony with the environment.

3. The Viable Systems Approach as interpretive lens in rereading of Health Reports

Highlighted the need for a reinterpretation of healthcare system, a useful contribution comes from the *Viable Systems Approach*, through which it is possible to have a clear view of the phenomena investigated in terms of their structural components and with regard to their systemic functioning.

In this perspective, the attention will be focused on the structure-system dichotomy (Barile, and Saviano, 2011), intended as a general Interpretation Scheme, that allows to better understand how healthcare, although having a functional structure, still does not work as a viable system, in the way defined by the ***VSA*** postulates (Barile, 2008). The adoption of systemic paradigm for the analysis of phenomena derives from the application of the systemic view -firstly adopted in biology (Bertalanffy, 1968)- that revolutionized the way of observing them, as it goes beyond the traditional analytical-mechanistic approach, founded on a cause-effect view (given a cause, there will necessarily be the expected effect). A systemic approach, in fact, puts emphasis on the whole more than on single elements, as the analysis of the single elements, though still considered, can be seen only as a 'reconstruction of the whole', taking into account the principle of interaction which underpins the internal and external relations to a system.

A systems approach can be useful also in rereading Health Reports, as it implies a change of view that is rich in implications. The notion of viable system, firstly introduced by Stafford Beer (1972), is intended as a system that *survives, remains united and is integral and homeostatically balanced both internally and externally and also has mechanisms and opportunities to grow and learn, to grow and adapt, that is to become more effective in its environment*. The notion of viable system theorized by the ***VSA*** (Golinelli 2000, 2010; Barile 2006, 2009) partly refers to the one by Beer, but with some conceptual innovations. In this approach, in fact, beyond the analysis of the structural components of a system, more emphasis is given to the interaction between the system

and the reference context, as it enables the system to learn, adapt and develop over time (homeostasis) in order to survive. The purpose of survival characterizes all the viable systems and consists in undergoing changes in system's logical and physical elements in order to preserve their ability to survive. Compared to the approach of Beer, however, the notion of viable system by ***vSA*** gives greater emphasis to the action of the governing body (Golinelli 2000), which is required to maintain the viability of the system within the context of reference. Therefore, in order to link the definition of viable system to the principles of the enterprise, it is necessary to refer to five postulates which are essential to the existence of what we define viable system:

TABLE 1: *ASV Postulates*

Postulates	Description
Survival	A viable system has the aim of surviving within the context in which it is inserted.
Isotropy	The viable system is characterized by the simultaneous presence of structure and system.
Interaction	The viable system consists of two areas, that can be represented as "deciding" one and "acting" one.
Completeness	The system interacts, in its dynamic, with supra systems and sub systems from which it draws and to which it provides guidance and rules.
Isotropy	For a viable system all the external components are considered viable system, that is referring to another system at a supra level.

Source: Barile, S. (2008: 24).

Thus, it becomes evident that, among the advantages of this notion of viable system, there is the possibility to interpret and represent more effectively the evolving dynamic of phenomena, which development processes are increasingly influenced by the need to set up and use effectively the relationships with the multiple entities present and active in the environment.

The importance of interaction between the viable system and the referring context underlines the characteristic of "openness" that the decision maker must have, in order to recognize problem situations, to identify possible solutions, and to choose the most appropriate path of resolution.

The paradigmatic shift proposed by the cited theory implies the importance of relation and interaction, rather than connection, among actors, and this consequentially calls for interactive dynamism that goes beyond the physical/monetary exchange, comprising elements such as individuals' values and strong believes/attitudes; the service exchange, thus, seems to be based upon a relational harmony shared among the involved actors, that seems to be strongly based upon co-experienced value. These considerations become useful in rereading Health Reports as they allow us to use a wider approach in interpreting and putting in practice what they state. In our perspective, in fact, defining Health as a viable system implies that it promotes the exchange of resources between actors cognitively aligned toward a common goal, that is the collective health; this means that the decision makers' actions have to be targeted in order to achieve it.

The call for a change in the way healthcare is intended comes from the World Health Organization (WHO) that, in the introduction to its 2008 World Health Report underlines the necessity to "*Put people at the centre of health care"* and, in this sense, the importance of considering what people believe are *"desirable ways of living as individuals and what they expect for their societies – i.e. what people value – constitute important parameters for governing the health sector*". These issues seem to be consistent with the proposition of the ***vSA*** used as an interpretative lens as they press for the inclusion of people's need and expectations in the decision making processes. The inclusion of these factors are related to an interactive and dynamic perspective that is linked to the necessity of an enlargement of the goals of the Health System. Beyond the necessity of being efficient,

in fact, several targets have to be considered, such as "*improving the overall level of health; reducing health inequalities; improving the responsiveness of the system to people's needs and expectations; and ensuring financial fairness in the way funds for health are collected"* (The World Health Report, 2010:78). The composition of these various goals, simultaneously considered although sometimes competing, can be assumed as the main target the decision makers' actions and policies have to be addressed.

3.1.By efficiency to effectiveness through the systemic view

From the foregoing it is clear that current models of health system governance are guided by a logic of efficiency (Michelini, 2000; Barile, 2012) in which the focus is on individual action rather than on the process. About this, it is evident the influence of reductionism as a school of thought, based on understanding and efficiency of the structural components rather than on the reading and interpretation of the flows. In this regard, it emerges the need to clarify that, in the adopted view,

> "*effectiveness, efficiency - in both meanings of the productivity and cost-effectiveness - and profitability are not purposes but criteria (regarding the reason for the decision to be made) and even the objectives: The objective, however, sets concrete result that is to be achieved and therefore regards the achievement of specified levels of the criteria, applied to specific objects (the entire company, significant share of it) in schedule*" (Panati, and Golinelli, 1991:112).

Bearing in mind that effective governance do not consider the system as a whole, it reveals the need for the health system, to proceed with a rereading of the dynamics that allows to move the focus from the parts to whole. This approach allows the emergence of a new logic-oriented discussion and sharing instead of the traditional logic of imposition and confrontation. In this regard,

> "*Barnard focuses its attention on the observable in any type of organization, as a set of coordinated efforts, activities and operations aimed at a common goal and puts the well-known distinction between efficacy of the system achieve that end, and efficiency as a system's ability to meet the same participants in the overall (even on a temporary basis, such as customers or occasional participants in an undertaking), so as to promote the efforts and performance to achieve the purpose adopted. The functions of the executive are aimed at improving both the effectiveness and efficiency, the first with methodologies that ensure the goal with less use of resources and effort, and the second with interventions on participants to convince them to accept and be 'satisfactory' condition participation more feasible"* (Ceccanti, 1996:52).

It is therefore necessary to identify how the effectiveness and efficiency are interrelated in order to promote an amalgamation of perspectives that allows a broader view of the phenomenon under investigation.

If we read any Handbook of Healthcare (Srivastava, 2007; Kongstvedt, 2001; Kongstvedt, 2002; Randolph, 2012) we can observe as many different approaches guide managers to ask themselves a series of questions like, for example (Ginter, Swayne, and Duncan, 1998: 142-143):

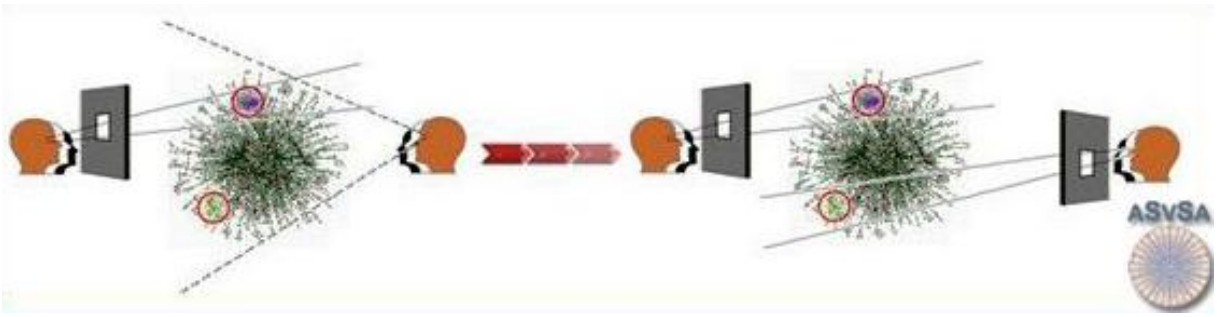
- *Are we not doing anything new that we should be doing?*
- *Are we doing some things now that we should not be doing?*
- *Are we doing some things now that we should continue to do, but in different way?*

At same time, a lot of academic studies (Brook, 1994; Schweiger, 1994; Fellin, Apolone, and Tampieri, 1995; Kogut, 2010) describe the process of measuring the quality in healthcare as a sequence of activities that analyzes time, cost, and results of individual activities. Also marketing studies (Brown, and Swartz, 1989; Loeken, Steine, Sandvik, and Laerum,1997; Simon, 1997; Andaleeb, 2001; Schiavi, 2004) define the measurement of patient satisfaction through questionnaires and instrument that focalize attention on a specific event, neglecting the dynamics within which those activities are realized. The highlighted approaches inevitably result in the failure to consider the fundamental aspects of the system value.

In this regard, considering the different bents of the various actors involved, it becomes crucial to achieve an accomplished understanding of the 'health process', able to provide useful information for improving the overall effectiveness, switching from looking at the individual aspects to observing the complex of dynamics.

It is needed, specifically, to understand that, for the evolution of the Healthcare Structure in a Viable Healthcare System, it is not enough to focus the planning and the strategy on the analysis and control of individual components, but 'conditio sine qua non' is the lecture of whole (Thompson, 1967) by which they relate in order to identify potential areas of sharing and value co-creation (Pels, and Polese, 2010; Polese, Pels, Brodie, 2011; Pels, Brodie, and Polese, 2012; Golinelli, Barile, Saviano, and Polese, 2012) (see Fig. 1).

FIG. 1 – *Towards an array of perspectives*.



Source: Barile S. in Golinelli G.M. et al. (2012: 123).
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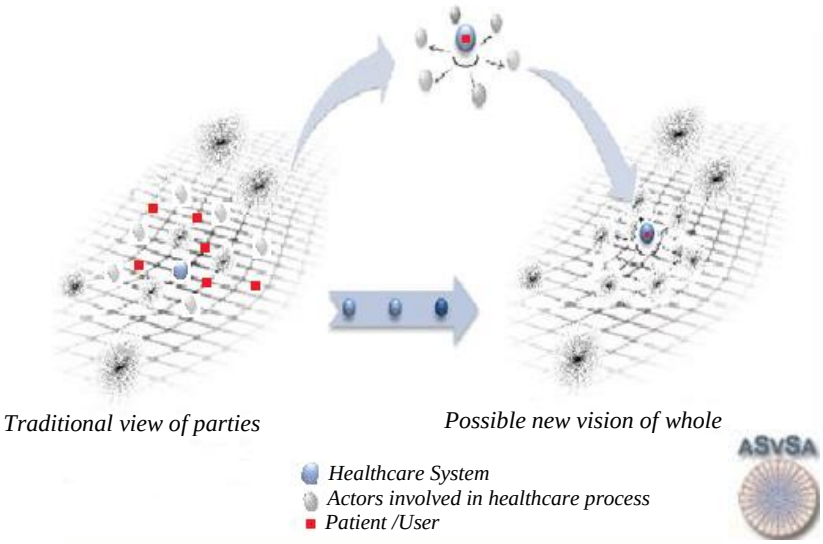
Only through the upgrade of the perspective described above, it could be possible to overcome the limitations associated to the traditional view, by recombining the principles of efficiency, typically related to the corporatization process of the health system (Saraceno, 1960; Giorgi, 1997; Cifalinò, 2000; Adinolfi, 2001; Barbetta, Turati, 2001; Fioroni, and Del Favero, 2003; Butera, Cosentini, and Cotugno, 2004; Barile, 2007; Cantù, 2010), with a logic of effectiveness management able to put the patient at the center of its 'think'.

The shift from a focus on efficiency (control of the parties) to a governance oriented *also* to the effectiveness (vision of the whole) allows to better understand the importance of individual actions in the dynamics of the healthcare process (Saviano, 2012). Such a shift would make it clear, in our view, the need for the health system 'to break free from the cage' in which it is closed to open itself to a value co-creation process within the context (Dibley, and Clark, 2011; Barile, and Saviano, 2012).

The combination of skills, competencies and values between healthcare system and actors that constitute its 'gravitation basin' would allow the dissolution of boundaries, allowing the emergence

of a higher-level entity that, through a unique identity, can provide a 'satisfactory' answer to the users' needs (see Fig. 2).

Fig. 2 – *The emergence of higher-level entity in Healthcare Sector.*



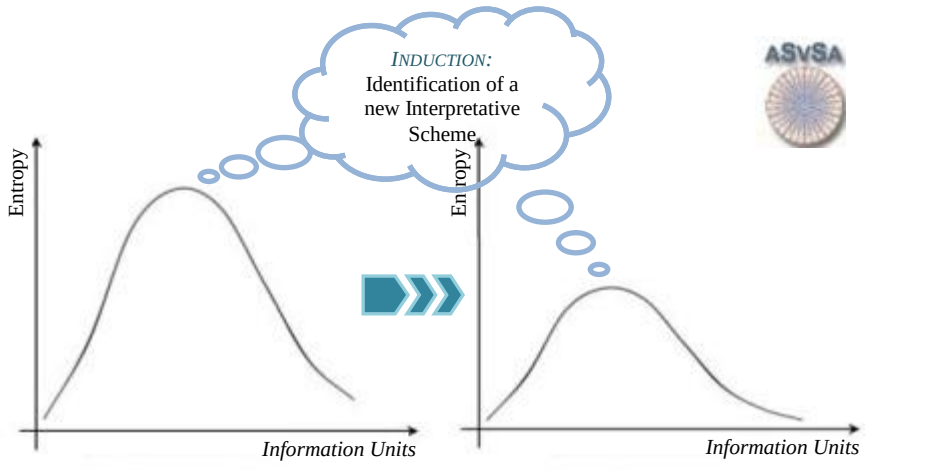
Source: Adaptation from Various Author (2011: 49), www.asvsa.org.

The definition of a new order of aggregation, as we will show with the age.na.s. survey, could, in the outlined perspective, afford to overcome the cognitive distances characterizing the different actors trough the alignment of Categorical Values and the definition of new Interpretation Schemes.

Starting from the combination of Information Units of individual actors, it is conceivable the emergence of new lecture keys (Schemes) of the observed problems (Saviano, and Caputo, 2012) with the consequent possibility of:

- optimizing the relationship between resources employed and results achieved (efficiency);
- better include instances originating from the context on which to base guidelines for future interventions (effectiveness).

FIG. 3 – *The emergence of a new Interpretive Scheme thank to multi-actor integration.*



Source: Adaptation from Barile, S. (2009:119).

3.2.The contribution of Information Variety Model in the governance of Healthcare System

The shared approach to face the strategic and operational issues with a "protocol" methodology, that is standardized on how to realize them, has now shown its clear limits. The performanced drift, and the decay of the level of effectiveness of the results underline the need to redefine the approach at healthcare problems.

In fact, the sudden evolution of healthcare organizations in the direction of complex entities, requires management to overcome the approval of professional service, trying to mediate among the indications coming from the rational logic, today associated with the process of corporatization of health and other rules based on institutional and professional values and interests, of particular relevance in the world of medicine. The will to overcome the traditional approaches requires a rethink of methods, techniques and tools considered in the crisis that determines the changes in competitive contexts, and often inappropriate in healthcare organizations, where the systemic linkages are weak and where the unplanned and emergent phenomena are particularly important for managerial actions.

This statement suggests the following three considerations:

- the health board is rapidly evolving towards a system where institutional, technical and marketing forces act with various importance that depends on their criticality and/or their influence;
- healthcare organizations are asked to meet the needs of specific supra-systems. Therefore, they have to adapt their behaviors to better use their resources, satisfying the costumers and, at the same time, being efficient on the public services provided;
- the different contextual factors contribute, in the evolution of nature and functions assigned, to different types of institutional healthcare organizations, evolving, over time, in a dynamic way.

All this suggests that the healthcare is characterized by an extreme 'complexity and richness', caused by a variety of factors. The increasing entropy that characterizes our society, refers to the management search for appropriate levels of consonance. What appears to be important, now indispensable, is not the deep technical knowledge related to this or that stage of production, but the ability to well define the context of reference, to be able to identify the relevant supra-systems, and finally, the ability to identify a solution that is in consonant with the identified context. Anyway, in conditions of complexity, solutions considered to be apparently and in absolute excellent, risk, for a lack of consonance, not to be applied (Barile, and Saviano, 2010). Just remember the cases in which the organizational initiatives, rather than the introduction of enterprise software tested and consolidated, have been invalidated by the inability to fall measures and products in the existing operational structure.

On the basis of what has been said in the preceding paragraphs, a new approach should allow:

- a possible measurement of the views and opinions of the participants in the decisions;
- detecting the specific characteristics of the context, its management and the government of a project and / or a program and / or a portfolio of initiatives;
- adapting to different possible levels of needs and "culture" of the context in which they are employed;

- adjusting processes, in relation to the best knowledge of the phenomenon under investigation and, therefore, the need for progressively more accurate measurements of the levels of satisfaction (consonance);
- understanding the importance of the interactions among the different components that make up the systemic context and take part in the dynamics of the overall system;
- arriving at the definition of operational models customized, context oriented, specific for a situation, at a precise time and in a specific place.

The effectiveness of the methodology summarized in the proposal of the informative variety is based on the ability that it has to suggest the analysis, classification and measurement of different connections, relationships, and interactions in a single system so viable, and in the dynamic relationship between two or more viable systems, according to a strictly recursive criterion. The ratio of recursion allows, thanks to the possibility of different hypotheses of contextualization to analyze and measure the phenomenon of consonance, in terms of a design that compares the goodness of different solutions. Thus, the problem of the choice has to be redefined. It should be seen as a search for an optimal solution in terms of objective, true in every time and place, relatively to the problematic type firstly proposed, but it must be replaced by the need to locate a possibility able to maximize the level of "consonance" among the different actors present in that place and at that time. In essence, the decisional intent can be seen as a redefinition of the structural design of the "Information Variety" of the participants to the process of finding the solution to bring them closer, or more consonant. The articulation of an Information Variety in its components (Information Units, Interpretation Schemes and Categorical Values), provides the instrumental equipment to achieve a model for measuring the dynamics of viable systems (Calabrese, Iandolo, and Bilotta, 2011). This conceptualization tries to examine, on the basis of the relevance of the supra-systems produced within the context on the possible information varieties of the individual viable systems involved, what are the possible prospects for a recovery of consonance and, therefore, for the identification of shared and accepted solutions.

4. Identity as catalyst for value co-creation in Healthcare System

The marked route suggests as a key element, in the establishment of a better performing governance of Healthcare System, the shift from a reductionist approach, currently prevailing in the definition of the conducts, to a vision based on proximity, made possible by a reticular approach, up to a vision focused on the identity, in which the alignment of Categorical Value, the comparison of Interpretation Schemes and the definition of an ultimate goal, deeply 'felt' by all the actors, allow the emergence of a Viable System.

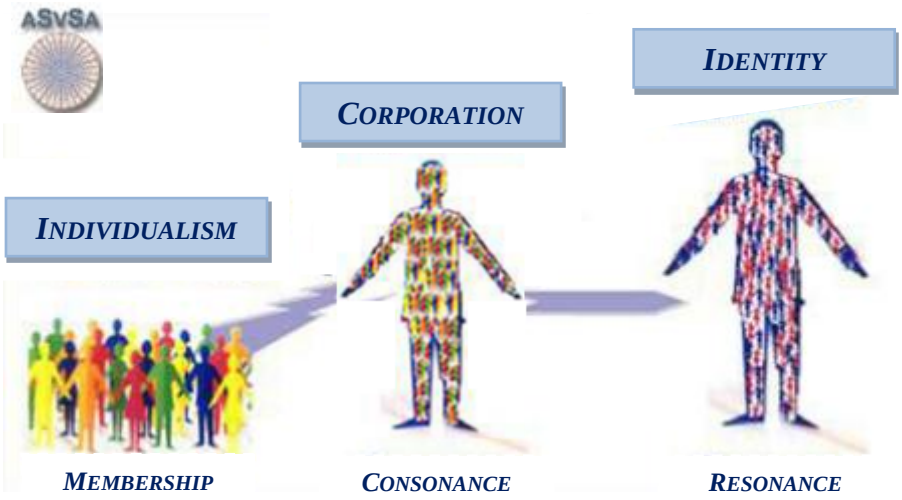
The desired 'evolution' described arises from the consideration that, as evidenced by Barnard, "*only three things are needed to have an organization: (1) communication, (2) a willingness to serve, and (3) a common purpose*" (Ginter, Swayne, and Duncan, 1998:141), together with the "*belief in the real existence of a common purpose is the essential executive function*" (Barnard, 1938: 87); in our perspective, this function can correctly work only if all the parts of the organization have the same identity and only if this identity reflects the expectations of the contest.

It is therefore clear how the health system can take advantage of an enormous potential to meet the challenges imposed by its context of reference. It is necessary, in this regard, to rethink how to approach the relationship with the multitude of actors in possession of 'relevant' resources

(Golinelli, 2000, 2002, 2010) for the survival of the System. Aware of this need, a key element on which our work is focused is the exaltation of the need to encourage the Information Variety contamination in order to create value propositions that generate satisfaction and do not cause only an indiscriminate use of the available resources. The methodological reference, in this phase, is to the contribution of the service logic (Vargo, and Akaka,2009; Grönroos, 2011, 2012; Lusch, and Vargo, 2011; Paulin, Ferguson, and Fallu, 2011; Hilton, Hughes, and Chalcraft, 2012; Saarijärvia, 2012) and in particular to the contributions on value co-creation (Lusch, and Vargo, 2006, 2011; Lusch, Vargo, and Wessels, 2008, Vargo, 2011; McColl-Kennedy, Vargo, Dagger, Sweeney, and van Kasteren, 2012; Wieland, Polese, Vargo, and Lusch, 2012) which underlines the path through which redefine the 'market' relationships.

In order to allow this redefinition, it is firstly necessary to enhance, as stated above, the transition from an individual logic, where the individual prevails on the group, to a logic of corporation, in which the parties live together in function of a strong sense of belonging (consonance). The 'last' transition is the definition of a logic of identity that is possible when the sense of belonging becomes so strong as to push the actors to abandon their 'road' to become part of a global entity whose strength is not simply given by the sum of the parties, but from an exponential combination of individual skills (resonance) (see Fig. 4).

FIG. 4 – *The emergence of a collective consciousness*.



Source: Adapted from Barile, S. (2012), www.asvsa.org.

The path that, in our view, could allow the emergence of most 'effective' governance models for the Healthcare System requiring the definition and implementation of a series of 'steps' subsequently connected in a spiral logic. The 'slope' of the spiral configures the transition from the traditional view to the identification of value co-creation schemes whose expression could be the provision of a superior quality health service dropped on the specific instances coming from the context (see Fig. 5).

FIG. 5 – *Schematization of drivers underlying to the emergence of Viable System.*

Source: Adapted from Barile S. (2011: 364), www.asvsa.org.

The steps that make up the spiral representative of the contamination and sharing necessary to enable the emergence of Viable Heathcare System – based on value co-creation – from an aggregate of actors are:

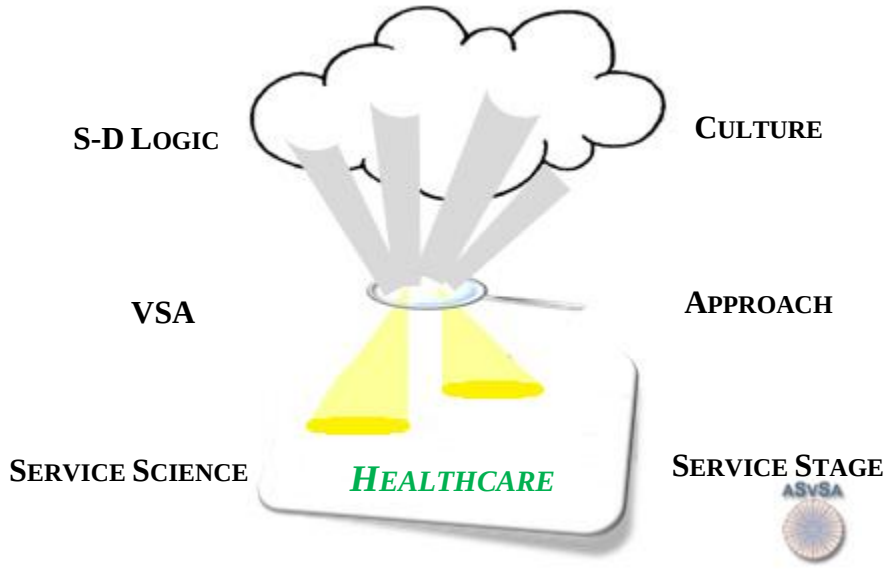
- *Belonging*, where the actors are approaching in function of their belonging to the same environment and they develop paths whose principles and objectives may diverge considerably;
- *Sharing*, in which the parties, as result of prolonged contacts, identify potential areas of sharing and they start the first 'common' activities (sometimes speculatively);
- *Motivation*, where the prolonged exchange, supported by the failure to engage in conduct intended to harm the other actors, allows the identification of shared goals to which refer in the achievement of the individual activities;
- *Implication*, in which the existence of a common purpose, if truly shared, causes the convergence of information variety of individual actors to shared 'pillars'. This circumstance occurs especially where there is a communion of 'strong beliefs' (optimistic view) (Barile, 2011) or where parties acquire awareness about belonging to a 'strong community' in order to survive (speculative vision);
- *Action*, in which the convergence of individual Information Varieties pushes the actors to identify common development paths regardless to individual programs and projects. The latter condition allows the abstraction of individual parts in a higher-level system capable to gather its capabilities from the widespread skills in the context of belonging.

Evidence of the virtuous path outlined is the 'health service' such as performance provided to community that is no longer limited to a one-way flow which, starting from an actor (e.g. hospital), is addressed to a recipient (patient). In the proposal design, health service becomes a circuit whose origin is due to a different mix of skills and actors (including patients) in the system and whose destination has to be found within the same system because the provision of service generates information and elements necessary to enable the adaptation of system to changes of context, ensuring its survival.

We arrive, in this way, at the definition of a new frame of reference (Saviano, Bassano, and Calabrese, 2010), that, combining systemic view and service logic, allows to provide useful indications

about how the health system can combine skills and competencies of different actors (see Fig. 6) for overcoming the problems that historically hinder, especially in Italy, the emergence of a Viable Healthcare System.

FIG. 6 – *The combination between S-D Logic, VSA and Service Science for value co-creation in Healthcare*



Source: Adapted from Various Author (2011:157), www.asvsa.org.

5. A rereading of public-private relationship in health system: the age.na.s. survey

Defined the conceptual framework upon which the reflections developed in this work are based, it is interesting to contextualize the operative implications through observations designed to validate the assumptions made.

In this context, it is meant in what follows, to re-read an empirical investigation conducted in 2010 by age.na.s. under the supervision of Italian 'Ministry of Labour, Health and Social Policies' in order to identify the contribution that the formulated prospects can offer to operators as well to scholars.

Specifically, the approach is oriented to investigate 'how' and 'with what effects' the interaction between actors equipped with defined Information Varieties impacts on the resolution of specific problems and/or on definition of new development paths.

Without any doubt, the need for greater health integration is the basis of all re-balancing processes of health systems that are currently in place. There is a growing awareness that the several health services offered to the public should be increasingly interconnected, with the goal of building a network that meets the needs of citizens, reduces waste to minimum, results in a reconsideration of the role of the District (Longo, 2012).

The latter evolved in time as an integrated system of organizational units that work together to achieve the objectives of primary care. In this context, age.na.s. has decided to carry out a survey in 2010 on the implementation of the Districts in Italy, focusing the attention on the relationship between the different actors of primary care and their integration.

The 2010 survey uses a questionnaire prepared by a joint working group consisting of regional and national experts, who has identified as the scope of the investigation certain featuring aspects of the District on the national territory: the function of the District as a reference point for the citizen,

the coordination of the network of services, patterns of integration and relationship between the different actors of primary care.

The first result certainly relevant is the almost unanimous compliance to the survey by the population: 681 Districts of the total of 711 (96%) have made available to release information. It follows a strong responsiveness of the system, a willing determination to share information by the most "young people" of our health services, placing a fundamental requirement for the establishment of a network at national level, which seems to be built on high motivation and attention to the development of discussion and public debate.

For data collection, self-completed questionnaire were submitted to the Directors of Districts, consisting of 33 questions, mainly qualitative. The questions were made up of open questions or multiple choice. The structure of the questionnaire mainly referred to the following 4 dimensions:
1) common goals and vision: it refers to the existence of common goals and their sharing by the team, the recognition of motivational differences and diversity of definitions and expectations concerning collaboration; 2) formalization as adherence to procedures, behaviors and results to be achieved; 3) internalization; and 4) governance.

The time of reference has been set at 31 December 2009.

With regard to the points of interest for the purposes of this study, the survey stresses that the degree of collaboration between the different actors of primary care is perceived by the District Directors as good in most cases and insufficient in marginal measure (as reported in table 2); it exists, therefore, room for improvement, considering that the judgment can become excellent.

TABLE 2: *Rating of relational levels among the different primary care providers (percentages, N=673)*

Geographic area	Insufficient	Sufficient	Good	Excellent
Nord East	0.0	13.5	80.1	6.4
Nord West	2.8	6.3	81.8	9.1
Centre	1.7	16.0	72.2	10.1
South e Islands	2.6	20.6	65.2	11.6
Total	1.9	15.2	73.2	9.7

Source: Age.na.s., 2011

Among the tools for interaction and involvement of the different actors in the achievement of common goals, there are training and the use of database information.

In the first case, it is possible to reinforce and support interactions between the different health professional figures, and to foster communication between the different stakeholders with respect to the overall goals to achieve; in the second one sharing of knowledge, values, goals and processes of accountability are triggered.

TABLE 3: *Number of meetings during the year between Director and responsible for activities (percentages, N=673)*

Geographic area	0	1-5	>5
Nord East	1.4	46.1	52.2
Nord West	0.0	39.9	60.1
Centre	0.0	36.1	63.9
South e Islands	1.9	43.0	55.1
Total	1.0	41.8	57.2

Source: Age.na.s., 2011

TABLE 4: *Databases and information flows usage for the collection and exchange of information between operators (percentages, N=680)*

Geographic area	Often	Rarely	Never
Nord East	75.9	21.3	2.8
Nord West	78.6	21.4	0.0
Centre	65.3	29.7	5.0
South e Islands	54.5	32.2	13.3
Total	66.0	27.2	6.8

Source: Age.na.s., 2011

The survey, therefore, underlines the importance of a careful training to the specific needs of the operators and the territory, as well as opportunities for growth in a complex and articulated environment as the District. Similarly, as shown in table 4, most of the districts (66%) currently use database and information flows for the collection and exchange of information between operators.

These simple questions were meant to focus the attention on a central element in complex organizations such as health, that is- to assess the awareness of the existence of different actors as well as of their interdependence (as previously stressed with reference to the concepts of 'belonging' and 'sharing') and the importance to manage it, which results in the need for personal and professional reciprocal knowledge, their values and mutual trust.

It should be noted that in the last decade a great interest has developed in the improvement of collaboration between health care professionals.

The theme of interaction between different actors is analyzed especially in comparison with the need to implement a networking health care, taking into account the need to balance the tendency towards specialization of disciplines and sectorization of doing. This is also due to the paradigm shift that requires structured and horizontal integration patterns. Patterns that are not automatically applicable, but that require a process of shared change, based on the responsibility of the players (accountability), which tends to consciously overcome the risks of self-referring and fragmentation, away from the systemic, relational and networking logics.

Suggestions from the scientific literature referred to in the previous paragraphs, provide keys to make explicit the individual dimensions that are at the basis of the cooperation between various actors and professionals, which help to achieve common health goals as part of a complex adaptive system as primary care. In particular, we highlight the role of relations for the realization of multidisciplinary collaboration in complex systems.

Such choice is motivated by the fact that the District is required to be a complex adaptive system of primary health care, characterized by a multitude of professionals and organizations, each with large technical and legal autonomy now called to multidisciplinary collaboration, establishing a team logic. This passage implies that the District is considered neither a closed system nor a hierarchical pattern of territorial service network.

What emerges from the survey is a district system evolving rapidly, even compared to the role of the different actors of primary care. Although the framework has general nature, the results are encouraging, revealing a district system still unknown but full of experiences and good practices.

6. Conclusions and implications for future research

The reflections developed allow the emergence of a new observation perspective in which it is discovered the importance held by individuals and their contribution to the success of whole. Accordingly, any system entity enjoys networking advantages as well as rules and cooperative strategies. In this perspective, a proper management of network is closely related to the cognitive alignment of the actors, to their mutual trust that leads them to give up the prerogatives of government in favor of higher-level entities, to their skills in choosing the correct means of integration and involvement in the processes implemented, in other words to the 'level of identification' at the system.

The path outlined shows that the Healthcare System cannot longer overlook a vision based on the effectiveness, in which the cognitive alignment among different actors permits the identification of a common identity through which makes it possible the emergence of a Viable Healthcare System based on the value co-creation. In this perspective Healthcare System must be oriented to improve the physical and psychological condition not only of the patients but of the whole context, increasing public awareness of the healthcare systems as networks of relations which activate empowerments of several actors and evolving to a welfare community.

The Viable Systems Approach represents the cultural framework ideal to allow the development of new conceptualizations that can incorporate the gradually emerging interdisciplinary solicitations through an expansion of 'perspective'. The issues of complexity, the increasing emphasis on the emotional components, the diffusion of innovative concepts coming from a network approach, will provide stimuli and directions to imagine new theoretical and practical developments.

The proposed model, by describing the dynamics underlying the behavior of the system makes, highlights the initiatives to be put in place to promote the consonance between the parties.

This approach pushes towards the definition of the system identity and towards the establishment of Interpretation Schemes and shared Categorical Values that are metabolized in the depths so much that individual actors give up their autonomy in favor of broader objectives of systemic functioning and survival.

To Have a clear vision of investigated elements is a first crucial goal of a research process oriented to the definition of survey, monitoring and governance instruments able to identify the mechanisms to promote the realization of a system identity. So it is possible to increase the value generated by the interactions in order to provide guidance to the operators about the contextualization of models, application of the techniques and use of tools provided by literature.

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