Simple tools with a complex attitude

A new way to imprint the implicit factors of organizational culture and make sense of maturity for change

Stefanos Michiotis, Bruce Cronin

Abstract

In this paper we introduce a new generation of sensemaking tools that are able to imprint organizational values, qualities, and skills, assess their compatibility with the corporate vision or their adequacy for a specific change and depict organizational archetypes. The main advantage of these tools derives from their ability to deliver reliable, tangible and contextual information on intangible assets and ambiguous issues. For this, they use archetypal models to structure their content, complex emergent methods to collect data, common logic rules to assess them and geometric templates to visualize the results. This combination permits easy contextualization of the content, authentic and real life representing data, removal of biases, as well as meaningful and comparable deliverables. The experience from the development and implementation of such a relevant tool shows that a structured approach to emergence and self-organization is feasible and fruitful. This opens new perspectives for the objectivity, wider acceptance and transferability of findings in qualitative research and the creation of effective diagnostic tools to be used especially in complex and transitional contexts.

Introduction

During the last two decades organizational attention has shifted towards less tangible items of culture and capabilities, such as potential for synergy, adaptability to change and employee engagement. As all these comprise substantial parts of a business enterprise or organization, a Sisyphean task is often put on managers' shoulders: to control the kaleidoscope of staff (or stakeholder) perceptions and overcome their resistance to a planned change. In this way, the mainstream management logic hopes to align the organizational culture to the corporate strategy and vision. But as we know by experience, this can hardly work; instead, as is often said, *culture eats strategy for breakfast.*

This burden cannot be carried successfully due to a dual limitation of the mainstream linear — deterministic approach. First is the imposition of meaning and power that many managers attempt; just like Xerxes' decision to whip the waters at Hellespont strait 300 times, in order to calm it down. And second, is the inefficiency of the conventional linear analytical tools used for the assessment of a complex context or a transitional situation. In this paper, we will first briefly discuss both of these limitations before proposing a more viable approach to organizational change.

From a perspective of social systems as complex and adaptive, we argue that, in such contexts, an understanding of complex processes and archetypes can very helpful in designing effective sensemaking tools. We suggest that instead of battling to defeat resisting stereotypes, leaders or managers would more usefully orient themselves to the underlying archetypes of the organization. By making sense of these core characteristics, hidden relations among the conflicting parts can be discovered and used as connecting building elements for a new common pathway to a desired future. For this, we outline the design principles of such tool and discuss the experience gained from implementing it in real life conditions.

Intangibles, change and complexity

Despite the central importance of mobilizing intangible assets for significant organizational development, such assets are illusive. They cannot be held or stored and, most importantly, remain difficult to recognize and measure for three major reasons: a) they consist of mainly human relationships and competencies, b) no objective measures or uniform standards exist for all cases, and c) any indicators are subject to one's perspective and interpretations.[1] On the other hand, when an organization stands on the threshold of a significant change, these valuable, intangible assets may dissipate. In the face of major change, people often feel that their habits, principles, and values are seriously challenged and eventually, their collective identity and integrity are at stake. This prompts them to entrench within their deeper assumptions, which until then remained relatively concealed or 'manageable' but now emerge loudly, often abrasively, and create doubts, reticence and resistance to the change initiative.[2]

Regarding the measurement problem of intangible assets, Kaplan and Norton[3] identify two crucial factors that exist for their quantification and value; these are the strategic compatibility and readiness of the organization to develop a specific intangible

that has been set as a strategic goal. In particular, they emphasize the importance of alignment of organizational culture with corporate vision and the compatibility of staff competences with strategic objectives. They also suggest that the objects of assessment should be: a) the degree of alignment of the organization's current capabilities with those needed for the leadership vision ('competency gap') and b) the readiness of the organization's leadership and employees to undergo the necessary changes in the existing culture. Finally, they note that these are extremely important factors in deciding in which intangibles to invest. To Kaplan and Norton, the most real and revolutionary opportunity in measuring intangible assets lies in studying and assessing how well prepared an organization's people, systems and culture are to carry out its strategy. Kaplan and Norton's indicators are also valid in the area of organizational change, as they point to two of the main pitfalls of change initiatives: the dominance of the organization's fundamental assumptions and the inability of leadership to assess the real maturity for change[4]

The difficulties with both the assessment of intangibles and the successful implementation of reforms or higher order change[5] relate to the empirical fact that people perceive and interpret many things according to their beliefs, values, rationales or objectives and they are driven to different conclusions and behaviors; this abundance of diverse, strong and competing ideas, voices and cultures constitute what we know as *social complexity*.[6,7] Failure to acknowledge the reality of social complexity and attempts to deal with its consequences by imposing or misusing power is what eventually creates 'tough problems'; most of the time, it is the attempted 'solution' that creates the real problem.[8,7]

As we have argued elsewhere,[9,2,4] these difficulties go beyond the deterministic worldview and attitude of many managers. The mainstream linear analytical tools have also proved inadequate when working with whatever is implicit and ambiguous but yet real and powerful. Due to their fundamental assumptions, these tools cannot accurately assess the non-quantifiable aspects or the maturity status of an organization. Moreover, people's responses to questionnaire-like assessment tools are subject to conformism, social desirability, gaming or political correctness. And finally, people's choices and actions are often not rational but subject to their perception and behavior patterns, especially on issues they consider most salient[9] Relevant problems exist with the mainstream approach of planned change and its main tool, the 'road-map'. On the one hand, the dominant management perspective prevents experts from conceiving the whole picture and assessing the 'accurate status' and the real maturity of the organization for change. And on the other, there is a conceptual and trust gap between organizational insiders and outside experts. Insiders frequently simply take important details of the organizational context for granted and are reluctant to reveal important tacit aspects of their organizational life. Thus, the values, qualities and priorities of the stakeholders, as well as the core elements of their (potential) resistance remain intractable. As a result, the 'road-maps' lack crucial information, neglect hidden traps, comprise erroneous estimations and, in general, due to these, serious deviations appear and planned milestones and goals cannot be met.[4]

Conclusively, a new kind of sensemaking tool is needed for leaders and managers to discover the implicit capabilities that constitute the subtle potential of their organization and the crucial factors that facilitate or impede the success of a change initiative. Once these are known, choices and priorities can be made among contradictory alternatives on a safer basis, avoiding irreversible mistakes. Within the frame of complexity, many interesting sensemaking methods and tools have been developed that enable the emergence of the deeper perceptions and hidden implicit knowledge of the participants. Moreover, they foster people's engagement with the process and reduce expert bias, thus helping the imprint of the implicit aspects of the organizational complexity and sensitivity to the perils that are usually encountered during a higher-order change. Yet, these technologies have a number of limitations, the most significant of which is their inability to structure their outcome (either in the form of emerged properties or in the form of relationships) and relate the new knowledge acquired to tangible and meaningful issues, in order to 'transfer the message' to others.

The world of archetypes

Archetypes can be very helpful in making sense of personal and collective behavior, for human experience is structured on and around these axiomatic pre-existing principles that deeply influence what we see, how we interpret it and what we decide to do. [10] Archetypes can manifest either on a personal level, as complexes, or collectively, as cultural elements and characteristics and can be recognized only through their effects that are imprinted in diverse *images* and *patterns* existing mainly in narratives. On the collective level, they resemble pathways opened by human experience or depositories of human knowledge waiting to be walked or filled by new travelers.[11] And therefore, they operate as *ordering or organizing principles* of human behavior in a given context and *probability rules* of the collective behavior related to the organizational or social values. Moreover, they can bear the contradictions, ambiguity and paradox of human life as they possess both positive and negative sides (the latter referred to as the *shadow*) that cannot be reduced to a simple formula. Thus, they share many characteristics with strange attractors, without *a priori* form but indicating feasible journeys in the landscape of social and organizational life.[12,13,14] In the organizational context, some interesting tools seek to harness archetypal figures but are often applied in a non-complex, linear manner via structured questionnaires and the like. Furthermore, some methods that attempt to extract archetypes from narrative tend to get drown in tedious rounds of process, with context overwhelming any potential comparative insight[2]

Archetypal models offer a way to overcome these limitations. Archetypal models comprise either a typology for the structure and content of a complex system or an attempt to model the dynamics of its behavior. Commonly used examples include the *Four Elements*, the *Hero's Journey* template, the *Olympian Gods* and the *Zodiac Circle*. Such models broadly demarcate the structure of a human system and the relationships between its basic elements. For example in an organizational context this *representation*

could take the form of symbolized key players and the oppositional or collaborative forces among them. The figures and relations make sense to all, even if the details are different in each case. The archetypal models can also refer to the life stages (of an individual, organization or initiative) and the initiation rituals at the thresholds between them. At these thresholds, new perceptions and behavioral patterns are shaped as the old roles fade away or are shaken off and new ones emerge in turbulence. While the structure and stages of archetypal models are pretty much alike over time and place, they do not operate in a mass or stereotypical way; they are neither statistical nor deterministic models. Instead, they allow different interpretations and respect an individual's right of free will and choice. This is analogous to a theatrical play that maintains a story and delivers a message while the characters, the setting and the idioms adapt each time to the needs of the specific context.[2] These models help surface the deeper challenges that are most likely to face the protagonists of any change process. They metaphorically indicate ways for the cultivation of leaders' personal awareness and their ability to let go. Through participants' choices, they can either confirm an existing pathway or shape a new one. In any case, their decisions will be added to a knowledge-reservoir, full of experience, value and truth. After all, these archetypal models and forms have been resonant for thousands of years in the practice of sensemaking contributing to a more holistic perspective and facilitating the understanding of a system's complexity.[2] These characteristics of archetypal models (stability of structure and diversity of content) along with the capacity for complex emergent methods to evoke genuine expressions of complex dynamics (for example, interpretations of reality, emotions, attitudes, behaviors and decisions) underpin the idea for a new type of sensemaking tool.

In the following sections we present such a tool, *Prognostis*, that was created through the collaboration of the University of Greenwich Business School and a Greek consulting company, Tetras Consultants. We will outline the main features of the tool and briefly discuss the experience gained from its real life implementations.

Crafting a new sense making tool

An effective sensemaking tool must answer the two main difficulties identified by Kaplan and Norton[3] and, thus, be able to deliver: a) the implicit factors and capabilities that shape the collective perception and behavior of a system and the extent of their alignment with leadership vision; and b) the readiness of the organization's leadership and employees to undergo the necessary cultural changes for this. With regard to this scope, these factors relate to two further notions: the *capacity* and *maturity* for change. *Capacity* includes the sum of the qualities, values, skills and inclinations that are inherent in the organization or have been obtained throughout its evolution, while *maturity* includes the individuals' or groups' ability to discover the 'keys' needed and their will to use them.[4] Seen from a leader's perspective, it is the awareness and ability to let go of a dominant quality or skill (that is non-functional anymore or ineffective for a particular challenge), in order to let in a more appropriate one, even if it seems polar opposite to the old.

Basic concept

The dipole in the title of the paper provides the core concept of the tool: "*simple tools – complex attitude*". On the one hand, the tool needs to be simple, for people always tend to simplify real life procedures and consider simple things more attractive trustworthy than any complicated 'new fad'. This means that the stimuli must be simple and meaningful. Even if they provoke diverse feelings and thoughts, the steps of the process should be easy to apply without creating any feelings of threat. The assessment rules should be based on common sense and the results should be visualized in a clear cut way. On the other hand, a complex attitude means that one knows that a complex system cannot be controlled or changed by an outsider but only disturbed or tuned. This means that the outsider, the external catalyst, should act more like a facilitator than an expert, avoiding interference with the dynamics of the groups, trusting the self-organizing parts of the process and providing time and space for its emergent outcome. When examining the results one should look for subtle indications and non-fitting data, focus on diversities and allow different interpretations; the outsider should be alert not to interpret but only to indicate issues (findings) for later discussion among the participants. Thus, providing that the process is friendly, participative, self-organized (but at the same time structured) and representing everyday organizational life, the emergent properties will be authentic, tendencies towards conformism or social desirability will be reduced and the results can more readily challenge the established assumptions of the target group. These considerations, together with the transferability of results and the adaptability of the tool, consist the design principles.

Main assumptions

There are two main assumptions on which the structure and process of the tool are based. First, it is assumed that intangible assets can be represented by archetypal elements, as they both act as driving forces. Indeed, in an organizational context, intangible assets do not stand alone but interact with others; as such, they attract or repel attention and values and create ambiguous or controversial feelings. Therefore, just like archetypes, intangibles can be represented by contextualized items or issues that possess a strong symbolic meaning within a given system. Thus, we could reveal assets that are currently active or *in potentia* through their effects, that is, some emergent reactions of people created by the intangibles and related to them. This is analogous to the way we understand archetypes through their manifestations. Second, it is assumed that "when we give

people an image, we plug into the large, old part of the brain and we are wired together, not only to individual memories and fantasies but with those of mankind".[15] In other words, when people are attracted to a certain archetypal image, phrase, pattern or situation among others, they indirectly indicate an influential archetype (dominant or shadow) in their context and surface the collective patterns of behavior within the group they belong to. This occurs because values are attached to symbolic images that attract or repel our attention through chaotic dynamics. The meaning of these symbolic images vastly transcends their content. Actually, the meaning of a symbol is synonymous with its capacity to generate a dynamic relationship between the one who interprets and that which is discovered.

Therefore, such archetypal triggers (images or phrases) referring to issues, goals or situations can be used as a means for the participants to depict, beyond rational descriptions, aspects of their current or desired reality and raise unconscious facets, needs, intentions or feelings generated by it. Moreover, by spontaneously expressing an archetypal issue in contextual terms (that is, of their own reality), people provide the elements for a meaningful language, through which messages can be communicated effectively within the specific context. Thus, instead of trying to assess the intangible assets directly, we could focus our attention on creating, imprinting and assessing the results they create. We could view the intangible assets as challenges or needs that activate the system's *capacity* and test its *maturity*. Some challenges can activate a system's capacity that until then may exist *in potentia*, while others do not. On the other hand, mapping these implicit factors when stimulated by the intangible assets shows the ways these driving forces and needs resonate within the system on a higher-order level. Moreover, this map could be contextually expressed, meaning in real personas, real problems and mainly in a language easily understood by everyone in the system. In other words, the degree of coherence of the collective capacity and the intangible assets, on the one hand, and the awareness of its experience gaps in dealing with change, on the other, reveal a system's ability to make sense of itself and its environment and to adapt to it. This will help leaders more reliably choose and prioritize among contradictory plans towards a compatible and thus feasible change.

Objectives and cornerstones of the tool

On this basis, we could specifically focus on revealing: a) which of the identified assets are currently active or *in potentia*; b) which are compatible with implicit factors (such as core values, qualities, skills, deficits, beliefs) that create and maintain the collective perception and behavior patterns of the system; c) gaps in the collective experience when facing and dealing with challenges; d) how these factors and properties relate to one another; and e) the commonalities and differences in these factors among participating stakeholders. Taking into account the above requirements, the design cornerstones of the tool are the following:

1. Structural elements are based on archetypal models, for these can represent the intangible elements of an organizational system and their relationships, as well as the dynamics of its maturation process; thus they can relate ephemeral and contextual issues to recurring and archetypal aspects of life.

2. Processional elements employ complex facilitation techniques[16,17] that engage the participants during the process, enable the emergence of their deeper assumptions, and reduce outsider biases, gaming and social desirability; these help participants accept their own outcome more easily.

3. Assessment is carried out on the basis of common sense rules, simple statistics and basic network analysis that help deliver tangible and comprehensive information on intangible assets and ambiguous issues.

4. Simple geometrical templates and schemes are used to imprint the emerged patterns, as these facilitate a clear understanding of the relation between the issues examined (the elements of the tool) and the emerged properties; thus participants obtain a direct sense of the outcome.

5. The tool has a modular and 'meta' character that makes it flexible, able to merge with other tools or models of different structure and to accommodate varying content, in order to easily create new *ad hoc* tools with applicability in different cases.

Structure and components of the tool

The tool was designed with two diagnostic sets of stimuli; the first to estimate the status of intangible assets (manifested or *in potentia*, compatible with the shared culture or not) and the second to reveal strong and weak points of the collective experience regarding change. As presented elsewhere,[9,4] the sensemaking tool *Prognostis* consists of:

1. Two sets of twelve elements, the content of which can be also organized into a 3×4 matrix based on Young's[18] concepts of threefold and fourfold operators. The first set can represent the intangible assets of the organization's capacity (such as folds of the corporate profile, corporate goals and priorities, activity areas and customer needs). The second can represent investigated fields of collective (in-) experience, such as complementary tasks of an action plan or demanding situations or challenges based on a life cycle; it is from these that the system's capacity is acquired or applied to.

2. A number of stimuli representing fundamental needs, forces or challenges, which are encountered in the organizational context (for example, identity, creativity, learning, risk, success, communication, stability, expansion or competition); through their confrontation the collective personality (culture) of the system is shaped. For the needs of each application, one of the stimuli is referential (sets the scene) and drives the questions that stimulate participants with regards to the 12 elements of the tool.

3. A databank of contextual phrases, patterns and situations or archetypal images that are used during the process. Such items with a strong symbolism in a given context enable participants to expressed attraction or repulse towards the features of the existing reality, a desired future, and/or demanding situations. The values, qualities, emotions, skills and deficits that emerge within the elements of the model reveal the intangible assets of the organization or community. This depository is enriched through the application of the sensemaking tool in various and different settings.

Preparatory actions

Initially, the research targets and objectives are specified by the management and sampling criteria are set (for example, management or general staff, different regions or divisions of the organization or different categories of stakeholders), and engagement methods and logistical issues are dealt with. Then, the content of the tool is contextualized based on the information provided through interviews with management and staff, examining official documents (such as business plans) or even narrative gathering with stakeholders, while the specific issues to be examined are provided by those commissioning the investigation.

Data collection and assessment

The main idea of the *process* is a circle. The intangibles, which are related to contextual phrases or symbolic images (meaningful to all but in different ways), stimulate the participants to surface unconscious facets, needs, intentions or feelings; this occurs spontaneously, beyond rational description. In this way, implicit aspects of the organizational or social culture emerge (for example, values, beliefs, qualities, skills or deficits), but these are expressed in a contextual manner. The mapping of the patterns created by such effects leads back to the stimuli (that is, the representations of the intangibles) and indicates the extent of their compatibility with the shared culture. Yet, there is second conceptual circle that refers to the participants; it begins with individual participants, then moves to groups and finally ends to the management or leaders' team. It is a *circle of perception* representing how the individual members of the organization or community continuously bring their assumptions into their working environment and then negotiate them in their interactions with other members; eventually all this new information is available to the management or leadership.

More specifically, during the data collection process, participants are asked to form groups, within which initially each participant personally expresses how he/she perceives reality and change to a desired future, which of the main actions of the business plan are considered ready to go, which others would be better delayed and the collective competencies or weak points of the system. What is crucial here is that participants do not rank *all* elements of the tool (that is, the intangibles or the situations) but choose only a couple of them; thus they prioritize, just like the managers do. After indicating what they consider significant, feasible and desired (or what not), they describe the impact of these on them in terms of values, emotions, qualities, obstacles, skills or deficits; thus, the emerged properties are related to the stimuli.

Next, the participants discuss the digitalized patterns that are automatically created by summing the individual choices of the group, providing a first glimpse of their contribution to the collective findings. They also combine the elements of the two sets into compatible assemblies and some of the emerged properties into contextual figures. In this way, personal perceptions create properties related to the stimulating issues and these are synthesized into collective patterns and entities.

During the assessment phase, the data, grouped into tables and assemblies, are compared to the outcomes of other groups, identifying similarities, differences and complementarities. The data are also summarized in simple graphs and statistics. The information in these various forms is discussed by the participants; they not only generate the data but also interpret it. Thus, secondary contextual information is included in the final report provided to the leadership or management of the organization.

The main steps and outcomes of the data collection and assessment phases are presented in Figure 1.

Deliverables

1. Aspects of the collective personality and unrealized potential: for example, the most influential elements and significant properties, obstacles impeding the transition between elements (fears or holdbacks), fourfold and threefold classifications of these, and significant differences among the perception of reality and the desired future; see Figure 2 and Table 1.

2. Shadow issues, blind spots and possible traps, such as absent or non-related elements or properties, influential properties incompatible with the mainstream (corporate) profile, properties irrelevant to the expected meaning of intangibles, impeding factors existing in parallel with influential points, significant differences among the findings of different groups or between corporate prototypes and extracted archetypes.

3. Perception / behavior patterns (complexes) in the form of organizational personas, networks of the emerged qualities and skills and fundamental relationships among the elements indicating critical variables and pathways; see Figure 3.

In this way, the sensemaking tool can present the implicit factors characterizing the specific organizational culture, outline the fields of collective experience and identify cognitive obstacles to the activation of the unrealized potential and the desired transition of the organization. This is presented in summary form via tables of absolute figures and proportions of emerged or selected qualitative findings (for example, values, skills, obstacles, deficits and characteristics); graphic illustration of the findings (with concentration patterns, bars, charts, polygons); comparative tables and graphs of the findings with respect to control groups, categories of options and their time dimension (present — future).

In the final phase, a summary report is prepared, designed to encourage the leadership team to discuss findings and interpretations with all participants. This includes the highlighting of shadow aspects, hidden potential, gaps in experience and inconsistencies between corporate and organizational culture.

Implementation and results of the tool

Within a six-year time period (late 2011—mid 2017) the tool was successfully implemented in five independent cases in Greece. Each case differed in context and target groups: organization staff, local community residents (policy 'consumers') and (educational) system stakeholders.

Three cases were undertaken in large public corporations in transition; they were facing a merger or reorganization process and were seeking to introduce a new organizational culture. In each case the sample included 145 — 260 persons from mid-level management and first-line staff. *Prognostis* was used to examine: a) the compatibility of the organizational culture and needs with the corporate vision; b) efficient ways to achieve the organization's strategic goals and implement their action plans; and c) core aspects of the organizational culture. Among the most important findings were the following:

1. In one case, organization staff seemed willing to follow corporate goals for privatization and market orientation but were not ready for it. Indeed, the qualities and obstacles that emerged and were associated with these transitions showed clearly that, from the participants' viewpoint, neither staff nor leadership were ready for this goal. The staff did not seem conscious of what they had to let go or be prepared for what to let in; safety, joy, certainty and survival were the main properties that emerged, while adaptation, learning and entrepreneurial spirit were the aspects selected as least important.

2. In another case, the organization seemed to be divided into 'parallel worlds' with only a few contact points; these were identified and then used as the common ground from which a revised action plan was developed. From this, instead of trying to impose changes according to the initially planned sequence, the leadership retained the internal logic of change but revised the implementation plan to better fit the indications of the collective maturity for change. The new revised road map reflected staff suggestions about the starting point and the relations of goals and actions that emerged during the process.

3. In all three cases, the desired transitions seemed strongly impeded by the dominant culture of public sector, poor management, and a feeling of instability and uncertainty generated by the economic crisis. Without recognition and discussion of these blind spots, effective transition was not possible and inertia ensued.

Another area of application was a local community context in early 2013, a point in the wider Greek crisis when many local authorities were being reorganised. The leaders of these authorities typically had visions for the future that diverged from those of various sections of the community and social stakeholders. *Prognostis* was used to reveal the needs and feelings of different groups of residents as well as their expectations of a new leadership. In particular, the issues investigated were: a) the priorities and the degree of satisfaction or dissatisfaction from the current leadership; b) factors that enabled or impeded people's participation in local services; and c) the main social / local profiles. The results showed that: a) the residents were disappointed by the existing leadership and b) both at the time of the case and in future, they were interested in immediate daily issues and the maintenance of the local service infrastructure rather than participation or visions of the future. The veracity of these considerations was confirmed by the result of a subsequent local election victory of a candidate representing this position.

A third area of application of *Prognostis* was in the Greek secondary education system. The Ministry of Education was interested in discovering factors that helped or impeded the success of entrepreneurship education programs, so the comparator groups were formed by pupils, teachers and administrative staff. In this case, the invesigatory tool was a synthesis of the original *Prognostis* along with the *Cynefin* model[17,19] Organizational and Team Culture Indicator (OTCI) model. The domains of the *Cynefin* model were used as a signification template for the emerged properties (instead of the twelvefold) and the twelve archetypal figures of the OTCI as a 3×4 generic matrix for the creation of the profiles of entrepreneurs and consumers. The case revealed some interesting blind spots, mainly among the teaching staff; their perceptions of entrepreneurship were full of personal projections and misunderstandings of how a business works. Among the suggestions made to the Ministry was that the trainers in entrepreneurial programmes should undertake relevant business education.

A common pattern among all the cases relates to the collective experience in interacting with the tool. This pattern contained: a) a difficulty in transcending stereotypes; b) a contradictory attitude regarding change; although most wanted change, very few believed that was possible; c) difficulty in formulating something abstract or intangible; d) an abundance of communication skills, which tended to slow the process; and e) difficulty synergizing, likely a feature of the national cultural context of the cases.

The great benefit of the tool was that it minimized outsider bias in the investigation and development of findings; the role of the outsider is to stimulate the participants and stakeholders to do this themselves. Findings were presented neutrally, avoiding any guiding of attention toward the interests or assumptions of the leadership or the outsider. In this way, secondary information was able to emerge from the participants' commentary; they could either skip any (unsettling) information or focus on it.

The majority of the participants seemed to enjoy the process and work together effectively. Participants and stakeholders evaluated the process as positive or very positive (82-97%). Overall satisfaction was highest among members of the groups who characterized the process as interesting, pleasant, innovative, game-like, and relaxing. Understanding and acceptance of the results was enabled by the quantitative expression of qualitative factors in terms of both objectivity and accuracy.

Discussion: Experience gained

The sensemaking tool met all the specifications indicated in the literature, with regard to its development, application and validation. With the exception of some logistical limitations that can be addressed in the future, the tool responded effectively to the weaknesses of linear analytic assessment tools and some pioneer complex sensemaking techniques. The main assumptions and design principles of the tool were confirmed. Intangible assets can be represented by symbolic images, phrases, situations and the like that possess an archetypal meaning within the context; these items can stimulate people to

surface their own properties (values, needs, qualities, skills, intentions or feelings) that otherwise would remain hidden, despite these being critical motivators. Moreover, archetypal models can operate as a signification framework for intangibles by corresponding these with model elements; the meaning created by the emergent properties attributed by the participants is indicative of the collective perception and behavior patterns and their dynamics within the context. In particular, the twelvefold model proved the most consistent basis for the creation of the generic matrix. The archetypal character of the 12 situations creates a sense of familiarity for the participants because these situations correspond to basic and distinct stages of any human endeavor. This readily made sense to the participants in the case studies, allowed them to recognize important milestones in their own experience and to identify with the process. Thus, they were enabled to reflect on the strength and weaknesses of their own context, through their own perspectives.

Examining similarities and differences among the patterns that emerged from different comparator groups and among the meanings of the properties attributed to the intangibles, possible qualitative findings could be readily articulated in a quantitative way. The combination of the emerged properties (values, qualities, skills and deficits) into complexes and networks provided a contextual map of competences, as well as contextual organizational or social personas. This kind of information can lead to the identification of possible critical variables within the system, as well as to the construction of an original 'road-map' of qualities indicating safer and more reliable pathways towards a desired change. It can also lead to the creation of reliable educational tasks or contextual investigatory scenarios referring to organizational development and change issues. Furthermore, through its restructuring, the tool proved not only to be able to contextualize and adapt to different settings and needs, but also to work efficiently with other models and tools derived from the area of complexity and archetypes.

The lifelikeness of the process and the plausibility of the results were confirmed by the participants' and stakeholders' evaluation. The influences of social desirability, conformism and gaming were eliminated by the emergent, irreversible and accessible features of the process. Indeed, the results produced within the groups were evaluated as authentic and were considered to depict the organizational culture or social reality well. Moreover, due to the self-signification and the participatory character of the process, the results were easily accepted by participants and stakeholders. Acceptance was additionally enabled by the use of simple quantitative rules, simple statistics for the data assessment and easily understood assumptions, compatible with common sense. A similar impact was found from the use of geometrical schemes and templates that enabled the visualization of the results. They proved adequate to evidently imprint the preferences, gaps, contradictions and blind spots within a particular context.

The application experience suggests that some particular skills are useful in employing such tools: suspension of judgment, rushed interpretation and personal biases; avoidance of providing any kind of rational description in advance of the session or analytical summary after it; trusting the process and letting participants lead it towards where they need to, without worrying about one's own authority or the outcome; unfolding anything that seems out of step with the usual pattern; avoiding the temptation to deliver tangible results at the end of the day, which usually leads to hurried conclusions or interpretations of data based on one's own assumptions and habitual patterns; presenting results in an unprejudiced way with enough space for the participants and stakeholders to state their own conclusions.

Another interesting finding in deploying the tool was the transformation of the twelvefold-based pattern of the complexes of elements or qualities into a network-like graph. This substituted the diagonal connections between the elements with the edges of a network graph. Through such graphs, the connections between the qualities/skills or elements can indicate: a) which assets of the collective capacity (active or *in potentia*) are central to the stability of the context; and b) which pathway can be used in order for a certain quality, skill or intangible asset to be accessed or meaning to be cultivated or accomplished in a natural way within a particular context.

By overlapping such network graphs or pathways, one can depict the core elements of the organizational archetypes; this can lead to the identification of the *bifurcation variables*, which are of crucial importance in transitional contexts. On the other hand, the combination of archetypes with geometric forms and network analysis graphs can lead to the creation of valuable organizational change tools, such as original '*road-maps*' (networks), reliable educational tasks or contextual investigatory scenarios, indicating safer pathways to develop qualities or move towards change. This provides a new application of social network analysis.

Thus, the application of the tool in these cases verifies its consistency with the basic considerations of complexity, while at the same time extends the literature. When examining a given system for intangibles, it is better to focus on how these can emerge from the system's members, be interpreted in contextual terms and assessed through common-logic criteria. It is far more effective to invite people join in a participatory workshop, where they can depict their own reality and express it in their own way, than to ask them to codify their reality within some classification system constructed from an out-of-context logic. This was confirmed by the participants' and stakeholders' evaluation in the independent tests that took place in different contexts.

With regard to limitations of the tool, in the absence of a software application and the limited time participants could commit to the data collection workshops, the originally conceived maturity assessment stage was dropped at a very early point and self-assessment was not included as an extended stage in the process. Furthermore, the tool is subject of a few more limitations in terms of: a) the non-participative way of setting the assessment criteria and rules; b) sampling and contextualization issues when applied to bigger and less coherent populations or in regional, national or transnational level; and c) potential mistrust among leaders and stakeholders that would exclude a certain part of the context or potential participants.

Yet such a tool, especially in a digital version, can be applied in a wide variety of application fields, such as in cases of: a) business mergers and acquisitions, in order to assess existing intangible assets and compatibility of the existing culture with the new corporate spirit; b) reorganizations in corporations or organizations or the introduction of innovation programs in organizations or communities, in order to estimate the readiness for such changes; c) social reform policies, in order to identify the best way to implement them without energizing the collective 'shadow'; and d) people with special needs, marginalized populations or emigrants and refugees, in order to access their viewpoints and test planned policies before implementation.
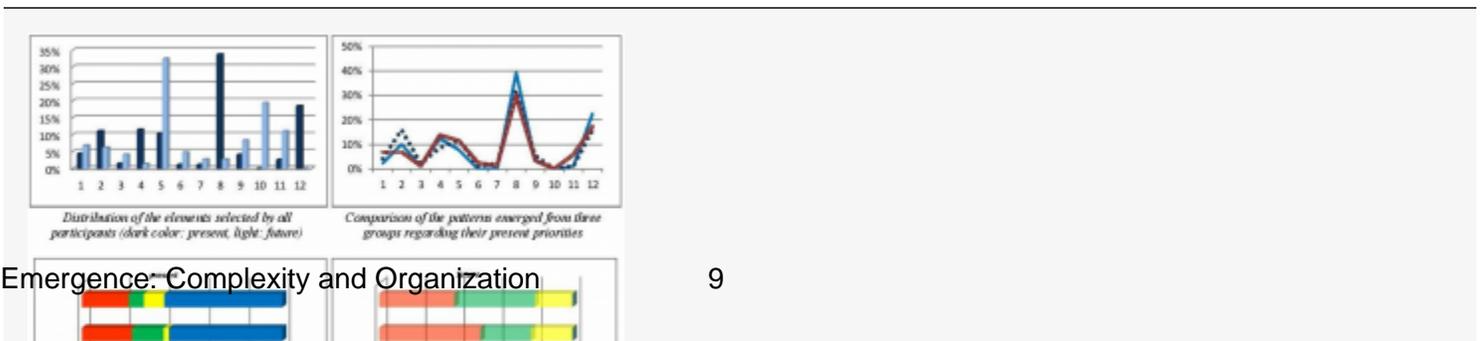
Conclusions

Through the verification of the design principles of the tool and the validation of its results by the participants and the stakeholders, a new way to reveal and assess intangible assets of a business, organization or system has been developed. The results confirm that key aspects of the dynamics of the collective perception and behavior can be revealed by the combination of the two major ingredients of the tool; archetypes and complex emergent techniques. The former strongly affect all people, but not in the same way or to the same extent, while the latter stimulate participants to reveal the extent to which they resonate with their own archetypes, with those of other participants and with those of the system as a whole. It is clear that such a combination of previously barely-related or seemingly unconnected scientific domains (for example, archetypes, geometric templates, network analysis, qualitative research methodologies and software development models) can open new areas and routes in scientific knowledge.

The main advantage of the tool developed in this project is that it can be applied to complex or intractable problems or in far-from-equilibrium conditions, where mainstream linear tools fail. Its added value is that within such environments, it can deliver reliable, tangible and transferable results on the implicit factors that influence human decisions and behavior. Knowing the relationships among these factors and the limitations of their context, leaders and managers can make sense of the situation *as it is* and develop realistic strategies for the context. Thus, they can choose on a safer basis the most feasible and effective pathways towards the desired future. But most of all, the tool provides a new way of making sense of the core characteristics of a context and its readiness for a specific cultural change. It demonstrates that complex tools do not need to be complicated; they can be simple but operated with a complex attitude. After all, complexity is the existence of simple patterns that emerge from variety and diversity; not the opposite.[20]

Figures and Tables

Fig. 1: Visualization of the collection and assessment process in conceptual terms

Distribution of the elements selected by all participants (dark color: present, light: future)

Comparison of the patterns emerged from three groups regarding their present priorities

Fig. 2: Aspects of the collective personality and unrealized potential in a Greek Public Corporation

Nov. 2011

Most frequent relations and impeded transitions (arrows) among the 12 elements

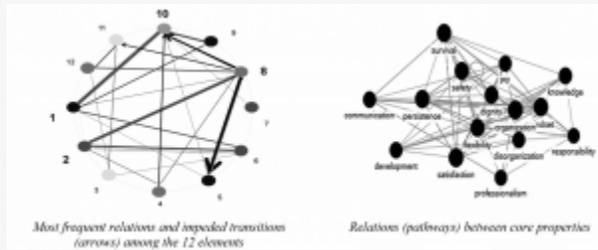Relations (pathways) between core properties

Fig. 3: Perception / behavior complexes in a Greek Public Corporation

Nov. 2011 – fundamental relationships among the elements and network of the emerged core qualities and skills.

Table 1

Properties most frequently emerged in a Greek Public Corporation (Nov. 2011) (Frequency of appearance %)

Qualities of the present reality	%	Qualities of a desired future	%	Obstacles between present & future	%
Joy	41%	Survival	27%	Public sector mindset	17%
Satisfaction	40%	Safety	16%	Poor state management	12%
Survival	30%	Certainty	13%	Economic crisis	12%
Dignity	28%	Hope	12%	Uncertainty – Insecurity	9%
Safety	10%	Satisfaction	9%	Non meritocracy	5%
Trust	10%	Dignity	8%	Rigidity	4%
Professionalism	10%	Joy	8%		

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