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# InnKnow FORUM

This exploratory, qualitative, empirical study aims to understand the relationship between managers' sensemaking of their organisations' espoused Corporate Social Responsibility (CSR) intentions and CSR outcomes, through asking three research questions: (1). How do managers make sense of the CSR intentions espoused by their organisations? (2). What are the outcomes of the sensemaking process? and (3). To what extent are these outcomes congruent with the organisations' espoused CSR intentions?

## Exploration into the Relationship between Managers' Sensemaking and CSR Outcomes

by Sharon M. Jackson, Visiting Research Fellow at MSL

These questions have arisen because of the challenge for organisations to integrate their espoused CSR principles into daily business processes, which can conflict with traditionally understood business objectives of profit maximisation, (Freidman, 1970; Le Menestrel & Bettignies, 2002). Both practitioner and academic literature have been critical of firms promoting themselves as responsible businesses where there is a perceived gap between rhetoric and action (Christian Aid, 2004; Conley & Williams, 2005).

More worrying is the suggestion of firms deliberately using CSR reporting to hide unchallenged and unchanged behaviours

in daily operations (Conley & Williams, 2005; Ramus & Montiel 2005). The sector chosen for this study is the electronic consumer products industry because it has a potentially huge impact on the environment and society and is starting to engage in CSR.

Furthermore there are few empirical studies on CSR in this sector. The two organisations in this study Alpha and Delta Electronics (pseudonyms) are both globally recognised, Japanese owned, consumer electronic product manufacturing companies with European Headquarter sites in the UK.



## Editorial Note

How do managers make sense of the CSR intentions espoused by their organizations, and what are the outcomes of the sensemaking process? The lead article in this issue, authored by Sharon M. Jackson, Director of Carlton CSR (UK) and of the European Sustainability Academy in Crete (GR) and a Visiting Research Fellow at MSL, analyses a number of research questions relevant to the relationship between Managers' sensemaking and CSR outcomes.

The reminder of this year's issue presents the InnKnow articles published on the website of MSL ([www.msl.aueb.gr](http://www.msl.aueb.gr)) as "stories of the month" during 2009. Studying the recent financial crisis, I. Katsikis, examines "The Effects of Corporate Ownership on Downsizing Decision Making Process" while K. Fameli studies the "Change in Health Care Organizations". My own article focuses on "The "Fuzzy Back-End" of Collaborative R&D Projects" while a second article by I. Katsikis is "On the Formation of a Sector: The Case of Computer Services". Finally, Dr K. Kostopoulos discusses the prerequisites for "Leading New Product Development Teams".

Klas Eric Soderquist





# Managers' Sensemaking and CSR Outcomes

This research observes the sensemaking of operational managers who are not in designated CSR roles but are expected to incorporate the organisation's espoused CSR principles in their daily decision making and actions.

The research method used is a case study approach (Yin, 2003) to collect data through focus group dialogue which is analysed through Conversation Analysis (CA), a subset of discourse analysis which focuses on "local, in situ construction of meaning" (Clifton, 2006).

My proposition is that the way managers interpret organisational CSR intentions can be distorted and lead to behaviours which are incongruent with the espoused intentions. This can go unnoticed because individual's meaning and sensemaking processes give the behaviour a legitimacy which is valid to them in their own reality. By sensemaking I mean what information people select as being relevant to them which then impacts on their interpretation and subsequent behaviour.

## What is CSR?

CSR has emerged as a relatively new business phenomenon, driven by societal demands for greater corporate responsibility (Waddock, 2000; Zadek, 2003). The general principle underpinning CSR is that businesses are responsible for their impact on the society and environment in which they operate (Margolis & Walsh, 2003).

## What is Sensemaking?

Sensemaking, can be described as a process which is subliminal, ongoing and iterative. It can be taken for granted and is considered as having a central role to human behaviour (Weick, Sutcliffe & Obstfeld, 2005; Argyris, 1990, 1992). The work of Weick (1995) is central to the literature covering sensemaking theory. He proposes that sensemaking is not accurate, but more about plausibility and acceptance for ease (Weick, 1995, p. 55). It is a cognitive process which moves from "scanning" to "interpretation", and involves "noticing and bracketing" specific, selected words and cues which have to be;

*"forcibly carved out of the undifferentiated flux of raw experience and conceptually fixed and labelled so that they can become the common currency for communicational exchanges"* (Chia, 2000, p. 513).

## 2. Theoretical Positioning

The seminal works emerging from the fields of Organisational Behaviour and Organisational Learning to inform this study were; Karl E. Weick's sensemaking in organisations, Chris Argyris' theories of action and defensive routines and Edgar H. Schein's work on organisational culture. The core focus of this study being the theoretical sensemaking process.

### Sequential Sensemaking Process

Three similar sensemaking frameworks emerged through a literature review. Figure. 1. represents my interpretation of an amalgamation of the three studies to illustrate a sensemaking sequence.

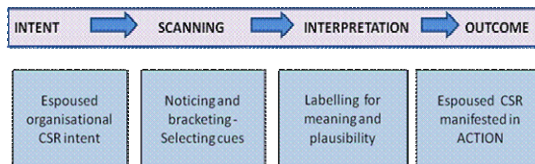
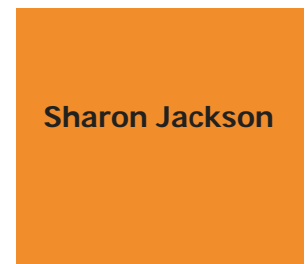


Figure 1. Adapted from Daft & Weick (1984), Starbuck & Milliken (1988), Thomas, Clark & Gioia, (1993).

The main contribution from these studies to my work are the "scanning and interpretation" phases of the theoretical sensemaking process. The process of sensemaking starts with selecting and bracketing cues then moves to a phase of interpretation before decision making and action, or no action. If this is the process that managers engage to make sense of their organisation's CSR intentions, it is likely that outcomes of action may not be congruent with the original intention if the bracketing and selecting process deselects critical elements to produce an inaccurate or incomplete picture for interpretation, thus distorting understanding of the intention. The eventual outcome is likely to be one of the following;

1. the action is congruent with the espoused intention
2. the action is not congruent with the espoused intention
3. there is no action at all.

Critical to this study is that at the point of "scanning" information about organisationally espoused CSR intentions, the details selected can be incomplete and inaccurate due to influences which distort the "noticing and bracketing" elements of the process. These influences include managers' perceptions and their own "theories of action", organisational culture and practices, and organisational identity.



# Managers' Sensemaking and CSR Outcomes

## 3. Findings

Two key findings from the empirical study which relate most pertinently to the research questions;

*Finding 1. Managers' sensemaking process can lead to an outcome of "No Action".*

Influences on managers' sensemaking processes can lead to distorted "scanning and interpretation", which combined with defensive routines means that "no action" and maintaining the status quo may be the outcome. Where this happens, managers convince themselves that someone else is "doing" the CSR in their organisation or that it is something for them to do in the future.

*Finding 2. Organisational culture impacts on CSR outcomes*

Where a "business case" is the prime driver for CSR, there can be more failed initiatives and a sense of general cynicism towards espoused CSR intentions. Managers' sensemaking "scanning" phase selects cues from the identifiable culture of sales and profit which can be used in a defensive routine to justify why CSR activities are not enacted in daily business decision making. The exception to this is where individuals select cues aligned with their own tacit knowledge and experience. A secondary level finding is that managers do not read their organisations' CSR communications.

## 4. Discussion

The main findings from this study provide some insight into how managers' sensemaking processes can prevent them from taking any action related to CSR intentions, therefore, a likely contributory factor to the problem of a gap between rhetoric and action in the context of the commitments organisations espouse towards the environment and society.

This study shows that the information managers scan and select is influenced by their own perceptual filters, tacit experience, theories of action, organisational culture and identity, all of which impact on their interpretation and subsequent behaviour.

Some managers believe that they understand the CSR intentions and that they are acting in alignment with the organisationally espoused CSR principles. However, both the literature and the findings from this empirical study indicate that managers can adopt inaccurate perceptions (Mezias & Starbuck, 2003). They can "preserve" their perceptions, incorrect or otherwise, through defensive routines. Through their defensive routines people convince themselves that they are acting congruently with espoused intentions.

A fascinating observation from this study is that, even if the prevailing organisational culture is aligned with the espoused CSR intentions, managers' own sensemaking can "derail" interpretation and subliminally sabotage enactment of CSR intentions. This indicates that, for CSR aspirations to be embedded, it is necessary for there to be sensemaking coherence between organisational interpretive systems and individuals' interpretation and meaning making. Effectively this means the necessity for an explicit interrelationship between organisational sensemaking and individual sensemaking.

The scanning phase of the sensemaking process appears to play a critical role in terms of how CSR intentions are inter-

preted and what the outcome of action will be. Where an individual notices cues that are different to their own "reality" they may have to "do something" which they feel inadequately trained in or knowledgeable about, therefore feel threatened.

The model emerging from this research builds on the three theoretical sensemaking sequences used to guide this study, see Figure 1., which assume than an action, either good or bad, will be the outcome. These could be described as actions of "commission"; however, this study found that an alternative outcome of the sensemaking process is "no action", i.e. the action of "omission" and maintaining the status quo, as shown in Figure 2.

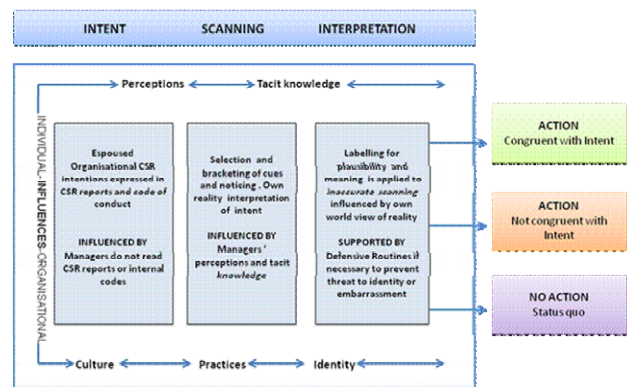


Figure 2. Impact of managers' sensemaking on CSR Outcomes © Sharon M. Jackson, 2009.

A "no action" outcome of the sensemaking process is possible even when people are fully aware of the espoused CSR intentions of the organisation they represent and what is expected of them. They appear to draw on their tacit knowledge and from selected words (Chia, 2000) in an attempt to complete an interpretation that they feel comfortable with, filling any gaps in their perception with socially constructed data.

The empirical study revealed two very interesting practical examples.

1. Deselecting the present - members of the focus group commented 10 times during two hours that there were too many lights on in the room, yet nobody turned them off. The conversation analysis shows the managers to say "in five years time one of us would get up and turn off the extra lights".
2. Deselecting responsibility - an IT Manager skilfully refused to accept cues and prompts from her peers that IT has an important role to play in meeting their CSR aspirations. She deselected cues which do not align with her own interpretation of her responsibility to act, which she had reached through her own sensemaking processes.

These individual examples seem relatively unimportant, however, if this scenario is happening in organisations, all over the world, every day, this could be a significant indicator as to why organisations are not achieving their espoused CSR intentions and why goals to reduce emissions and energy use, necessary to reduce the impact of climate change, are not being met.

# Managers' Sensemaking and CSR Outcomes

## Organisational culture, identity, sensemaking and CSR

At Delta the managers selected cues from their prevailing image about the sale of their products, such that when talking about their espoused contribution to community they selected cues to link selling products with societal need. The findings from this study suggest that an overriding culture of "business and profit first" does not help managers understand what is expected of them in terms of CSR or to motivate them to engage in CSR activities. In general, CSR intentions in daily business do not seem to make sense to people where the bedrock character of the organisation is to "sell things and to make money".

## Implications for embedding CSR

One of the perennial challenges of embedding CSR can be that CSR is not usually a defined strategy, or a single policy, but more an aspirational construct to which managers are expected to contribute. In both of the study cases, managers were confused about their organisation's CSR intentions.

Without understanding more about the relationship between organisational sensemaking and managers' sensemaking, distorted interpretation of espoused CSR is likely to remain unchallenged. There is a view that CSR management education is not currently effective in providing managers with skills and knowledge necessary to embed CSR in organisations

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(Giacalone and Thompson, 2006). The findings in this study suggest that CSR teaching and consulting, including in HEI, requires a fundamental shift in the way executive education is designed and delivered.

## 5. Conclusion

The findings from this research study suggest that the best results for enacting CSR intentions are likely to occur in an organisational culture, underpinned by a moral framework, but only when there is alignment between individual sensemaking and organisational sensemaking.

However, these findings should be treated cautiously as only two cases were studied. It is not, therefore, possible to draw any generalisable conclusions from this study alone. Further research is recommended.

From a practical view, this suggests the necessity for novel CSR communication methods, including discussion forums and communities of learning to find out what CSR means to managers and how they interpret CSR in their own day-to-day reality.

This study makes a contribution to theory, in that "no action", status quo is a possible outcome of sensemaking, and also contributes theoretical insight into the phenomenon of the interrelationship between organisational sensemaking and individual sensemaking.

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# The Effects of Corporate Ownership on Downsizing Decision Making

## Introduction

*During the last decades, downsizing has been utilized widely by firms as a strategic choice (Stavrou et al., 2007; Chadwick et al., 2004; De Meuse et al., 2004) in order to improve operating efficiency (Chadwick et al., 2004; Nixon et al., 2004). Even though, there are many different ways to downsize a firm, in the majority of cases downsizing involves extensive layoffs (Greenberg, 1991; Greenhalgh and McKersie, 1980; McCune et al., 1988). As Stavrou et al., (2007) highlight, in the case of downsizing, the layoff of some people is an essential prelude to "rightsizing" the company so that it can invest in innovations that will make the remaining labour force more competitive (Lazonick, 2003). In any case though it's a difficult process that has to be designed and executed very carefully and its effect will be very much dependent on the strategy that will be followed.*



While various aspects of the downsizing process have been widely studied, their connection to firm ownership status and the reasons behind it are missing from the literature. This article aims contribute in closing this gap by exploring the differences in downsizing behaviour depending upon the different ownership status of firms: stock versus privately held firms, foreign versus domestic firms, state-owned versus private companies and family owned versus non-family owned firms.

The findings suggest that the extent of family ownership decreases the likelihood of deep job cuts while corporate firms downsize less than non-family firms, irrespective of performance. We conclude that family owners provide patient capital and have a strong long-term perspective.

## The Definition of Downsizing

Downsizing can be empirically defined as deep job cuts (above 5%), Block, (2008, p.18). When sales and profits fall, downsizing and cost-cutting are usually among the first management reactions. As examples, we can consider a wide number of firms, including Xerox, Boeing, Merck & Co, Toshiba and Sony Ericsson which announced job cuts of 5%, 6%, 12%, 20% and 30% of their workforce, respectively, in the wake of the recent financial crisis (Uchitelle, 2008, Vasileiou & Katsikis, 2009). All firms refer to a slowdown in profits and sales as the main reason for the job cuts.

Theoretically, a downsizing occurs when the corporation permanently reduces its employment level without necessarily abandoning a product market, process, activity or geographic location (Lazonick, 2003). Cameron (1994), gives a more comprehensive definition of downsizing: it involves reduction in personnel through different personnel-reduction strategies, it is focused on improving the effectiveness of the organization as it represents a set of activities targeted at organizational improvement and finally downsizing affects work processes because when workforce contracts, fewer employees have to deal with the same amount of work and this has an impact on what work gets done and how it gets done.

## Empirical Research on the Relationship between Ownership and Downsizing

The role of ownership seems to be critical importance in the in the corporate downsizing decision making process as this factor lead to a different behaviour. Although of great importance, only little empirical work has been done on the relationship between the ownership of the firm and its decision for downsizing.

As Vicente-Lorente and Suárez-González, (2009, p.1614), argue that ownership has received scarce attention even though it exerts a meaningful influence on the firm strategy as a whole, and consequently on downsizing behavior employees. In their empirical work, Vicente-Lorente and Suárez-González, (2009), use a sample of large Spanish firms (1990 - 1998) in order to confirm that stock firms and state-owned firms engaged in a privatization process are more likely to downsize than privately held domestic companies. They found less conclusive results about the downsizing behavior of foreign firms.

As Vicente-Lorente and Suárez-González (2007) highlight, the extant empirical studies on downsizing determinants differ widely in methods and theory, which complicates any attempt to develop comprehensive models.

However, these heterogeneous pieces of research suggest that downsizing is the outcome of a process that involves techno-economic, institutional and socio-cognitive factors (McKinley et al. 2000). These theoretical explanations summarize most of the arguments in the empirical literature that have been forwarded to justify the role of downsizing predictors.

The empirical design of relevant studies (eg. Vicente-Lorente and Suárez-González, 2007) has been unable to disentangle the ultimate underlying drivers of downsizing. This becomes clear in the case of foreign-controlled companies, in which legitimacy and short-term thinking are both reasons for these firms to be more active in downsizing decisions.

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# The Effects of Corporate Ownership on Downsizing Decision Making

The evidence supporting that foreign firms depict an enhanced proclivity to downsize appears to be weak and seemingly temporary. Nonetheless, their findings can be seen as a source of compelling research questions and future empirical work in this issue.

In the following table we exhibit the results of our review on the role and the effect of ownership on the corporate downsizing behavior. As it is obvious findings from a variety of recent empirical studies proves that ownership does matter when firms undertake downsizing strategies and whether they may have strong or weak tendency to downsize.

Ownership status	Downsizing behavior
State owned	Strong
Private firms	Weak
Stock listed firms	Strong
Non-stock listed	Weak
Foreign owned	-
Domestic owned	-
Family owned	Weak
Non-family owned	Strong

Table 1: The Role of Ownership on Downsizing Behavior

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# Change in Health Care Organizations

*Organization theory has developed through major epochs of classical, human relations and contingency approaches, all of which have contributed to the accumulation of knowledge about implementing change (Nelson 2003). The demands of an ever-increasing competitive and changing environment are driving the need for enhanced understanding and knowledge about how to lead and manage organizational change rapidly, efficiently and effectively (Nohria and Beer, 2000). Every kind of organization must change and innovate to survive. New discoveries and inventions quickly replace standard ways of doing things (Draft, 2004).*

How can we make change happen? What factors govern the way change unfolds? What frameworks could enhance the effective implementation, and maximize the positive returns (in the broadest possible sense) of change efforts? These are some fundamental questions that continuously are informed by organization science scholarship, but that nonetheless persist in the study and practice of change in organizations (Pettigrew et. al, 2001). Change in organizations is governed by a multitude of simultaneously present forces, which act and interact in different ways and with different intensity when change efforts are analyzed over time - between their initiation and their at least partial completion that results in some kind of assessable outcome. Attempts to understand organizational change occupy a central place in the development of organization theory (Miles, et al., 1997). It is crucial to focus on assessing the importance of external as well as internal driving forces and inhibitors, managerial as well as employees' cognitions and actions, and strategic, structural and organizational variables influencing the unfolding of change.

Current theory development has concluded on four fundamental "motors" of change, for which, however, the empirical underpinning remains limited, particularly from comparative research in a larger number of organisations. *Our ambition is to build on the most recent achievements in the area and contribute to the field by developing measurements and empirically test the influence of those different, sometimes converging sometimes diverging, forces that govern the unfolding of change.* We investigate change processes with respect to the assumed presence and complementary interplay of the four change motors evolutionary, life cycle, dialectical, and teleological synthesised by Van de Ven & Poole (1995). We briefly review typologies of change and models of change processes and introduce the four change motors.

*Life-cycle process theory:* A life-cycle model depicts the process of change in an entity as progressing through a necessary sequence of

stages or phases. The specific content of these stages or phases is prescribed and regulated by an institutional, natural or logical program pre-figured at the beginning of the cycle. A life-cycle motor drives change through a form or pattern that is either immanent in the developing entity or imposed on it by external institutions (DiMaggio & Powell, 1983).

*Teleological Process Theory:* A teleological process views change as a cycle of goal formulation, implementation, evaluation, and modification of actions or goals based on what was learned or intended by the organizational unit or entity that underwent the change. This cycle emerges through purposeful enactment or social construction of an envisioned end state among individuals within the entity (Van de Ven & Poole, 1995).

*Dialectical Process Theory:* In dialectical models of development conflicts emerge between entities espousing opposing theses and antitheses that collide to produce a synthesis, which in time becomes the thesis for the next cycle of a dialectical progression. Confrontation and conflict between opposing entities generate this dialectical cycle. Change emerges from a dialectical motor through efforts to deal with contradictions, conflicts or tensions within or around the unit undergoing change (Van de Ven and Poole, 2004). The event sequence of the Dialectical motor unfolds through thesis - antithesis, conflict, synthesis and again thesis - antithesis. Its generative mechanism is that of pluralism, confrontation and conflict.

*Evolutionary Process Theory:* An evolutionary model of development consists of a repetitive sequence of, selection and retention events among entities in a designated population. This evolutionary cycle is generated by competition for scarce environmental resources between entities (e.g., organizations) inhabiting a population (e.g. a sector of activity) (Van de Ven & Poole, 1995). The evolutionary motor drives change through the core process of variation-selection-retention. In this familiar explanation, variations in existing unit characteristics occur and those that enable the unit to complete for scarce resources in the environment are selected for survival (Van de Ven and Poole,

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# Change in Health Care Organizations

## The Healthcare System: Pressures for Change

A huge organisational change that the Greek Government is being implemented in the healthcare sector is the Operational System of Information Society. The main subject of our research is to recognise how this major change effort unfolding within the organizations and how the development process will be affected by the presence and interplay of the four "change motors" namely Life cycle, Teleology, Dialectical and Evolutionary. Quantitative and qualitative research methodologies based on a sample of Greek hospitals which have introduced Information Society initiative programs, will serve as an empirical platform.

The healthcare system is composed of a complex net of entities, activities and processes - at the core of which, inevitably, are the clinical processes - and involves a wide range of participants (Stahr et al., 2000), with each of these aspects bringing to the system a different set of needs, priorities and evaluation criteria.

Structural change has been a constant feature of the healthcare sector for many years. Improving the management of change in the public sector, particularly in health, is vital if the dysfunctional effects regularly created are to be minimized. The organizational change process needs to be managed in a way that is sensitive to the impact of organizational change on the whole organization and appropriate to the contingent environmental conditions at the time.

The Operational Programme "IS" is the main level for implementing an overall national strategy leading to the Information Society. Major institutional actions are being implemented in parallel with supplementary measures under the operational programme. In its progress toward the "IS", Greece faces a series of challenges. In order for the country to be able to benefit from developments, it should confront for the country to capitalise on new developments, certain weaknesses that prevent investment and the creation of new economic activity must be overcome. Information Society has formulated, with specific objectives and implementation procedures.

It is of high importance to examine the factors that affect the way that change unfolds with the planning and implementation of the IS operational Programme in the healthcare sector. The introduction of an organizational change like integrated information systems and the access of hospitals and health centres to the national telecommunication infrastructure will strengthen the effectiveness and efficiency of continuous health care as regards the diagnosis, treatment and rehabilitation of the patients. Furthermore, both at the level of the hospital and health unit, as well as of the Health system in general, the operational cost can be decreased with rational management procedures.

There are seven Regional Health Administrations today (former Regional Health and Welfare System) which are

mainly implemented by the Information Society. The strategy of the Ministry of Health and Social Solidarity concerns:

- The introduction of information systems for the support of the Regional Health Administrations;
- The gradual completion of the introduction of information technologies to the secondary/ tertiary (Hospitals) and primary health care (Health Centres and personal doctors).

The development and operation of the Integrated Health Information System in the Regional Health Administrations aims the introduction of information and communication technologies to the field of health. The Integrated Health Information System will directly contribute to the support of institutional and organisational interventions and reforms and indirectly to the upgrading of the quality of services, the restructuring of internal procedures and the provision of services for the citizen.

There is continuous improvement of the situation with the use of new technologies in certain sectors of the field of health with projects that are either in the process of completion or will be completed in the immediate future. It is also anticipated that integrated information health systems will be established in the Administrations of Health Regions and its 130 Hospitals, Health Centers and Regional Clinics of their region. These systems concern all the steps of the patient's care allowing for a more effective use of the resources and the improvement of the qualitative and effective administration of hospitals as well as the provision of better services to the patient on the basis of scientifically documented knowledge.

Due to the new online health services which speed up the search for data about patients and their medical history, new diagnostic applications and new technological equipment, the Information Society is providing practical support to prevention, diagnosis and treatment. The regional structure of the health system with 7 regional health systems also determines the allocation of major projects of health services under the Information Society Operational Programme.

The project seeks to improve services provided to citizens and professionals overall and to improve management of national health system resource procedures. Our research is driven by the apparent need for developing theoretical explanations to the unfolding of change that integrate content and process, and that are inclusive as far as different driving forces or influencing factors are concerned.





# Change in Health Care Organizations

What is more, this research will focus on assessing the importance of external as well as internal driving forces and inhibitors, managerial as well as employees' cognitions and actions, and strategic, structural and organizational variables influencing the unfolding of change. The ambition of the research is to build on the most recent achievements in the area and contribute to the field by developing measurements and empirically test the influence of those different, sometimes converging sometimes diverging, forces that govern the unfolding of change.

The obvious problematic then becomes to identify and analyse how and why change efforts unfold as they do in order to inform both theory and practice of a more appropriate way of holistically embracing the phenomena of change.

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# The "Fuzzy Back-End" of Collaborative R&D Projects

## Introduction

*In a recently accomplished research project ([www.innovationimpact.org](http://www.innovationimpact.org)), itself a collaborative effort, we analyzed, among many other things, qualitative data on the final phase of publicly funded collaborative research projects (under the EU FP5 and FP6 frameworks). Interviews were conducted in 70 organizations - companies, research institutes and universities.*

Concerning dissemination, opinions among interviewees ranged from "a core activity" (by definition in the research organizations) or "very important for image building" (among larger companies) or still "an opportunity to make ourselves known" (among SMEs), to "an activity without substance" or "a half-hearted and insufficient effort to reach a market" (firm examples irrespective of size).

Hence, interviewees in general had opinions about the issue of dissemination, while in terms of continuing the project beyond the formal deadline and the end of the public funds the picture was quite blurred.

In the absence of a formalized post project evaluation with the objective of analysing and thinking over the pros and cons of the project (which is a rule in larger firms when it come to commercial R&D projects), it seems that what actually happens after the moment that "the project just ends" is quite random.

Some partners might decide to form a 'couple' for exploiting further some of the results without necessarily informing the other partners, let alone the EU about this. In other cases, partners seem to roll the ball between them, expecting that the other part will take the next step towards some kind of suite of the project efforts; "now we wait for them to come back with some ideas for how to take this further" as one interview expressed it.

It also happens that EU project 'n' generates the conditions for a proposal for EU project 'n+1', which, if leading to accumulated knowledge or a further exploitation of the results, can be seen as the most positive outcome of a project. In other cases still, a project result might be exploited by one partner together with some other organization who was not part of the initial project.

If perceived a little bit as a 'failure' from the perspective of the project consortium, e.g., the other partners were not interested or competent enough to take the step towards commercializa-

tion, it could in practice be even a greater success due to a still broader dissemination of the project results seen from an external perspective.

The above shows that one indeed can talk about a "fuzzy back-end" of the EU funded RTD projects, paraphrasing the more established concept of the "fuzzy front-end" of R&D and New Product Development<sup>1</sup>. The problem is that the "back-end fuzz" is about confusion concerning the exploitation of the results and not about a breeding ground for creativity as it is in the front-end.

In some instances, interviewees blamed the rules of the funding instruments for allowing for too much of free interpretation of what a successful end-of-project phase means, and for allowing for legal problems to surface too easily. The back-end fuzz is also a major reason behind the fact that even well-managed projects might 'stumble' towards the end and therefore fail to produce any significant innovation impact.

Legal issues can create last minute conflicts about exploitation rights for instance, if the rules of the instrument and the agreed procedures prove insufficient when the bottom line is about who will make a profit from the project output.

In other instances, the lack of understanding or anticipation of regulatory issues can lead to the outcomes remaining on the shelf in spite of clear initial goals for commercialization and satisfactory technology and knowledge results.

Another example of the back-end fuzz can be if a product innovation fails because when commercialization is engaged, partners realize that other supporting technology or system components needed as complements for the use of the innovation produced are missing in the targeted market.

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## The "Fuzzy Back-End" of Collaborative R&D Projects

Based on the above, the critical threshold that has to be overcome, before the project consortium splits, is to substantially plan for how to take the outcome further, including taking it towards commercialization. Unfortunately, many projects end up in a kind of dead-end with respect to commercialization, as companies sometimes find themselves in a position that one interviewee summarized as follows "As a profit-making company we have to master the entire chain of research, development and commercialization.

But when it comes to EU projects, we can only open up the development part [for competitive reasons]. Then, as the technology is often cutting edge, we end up doing some quite limited testing and concluding that it might be commercialisable later but neither we nor the labs developing the technology are in a position to take it any further. Then the project ends".

The solution for many company interviewees would be to assist the research institutions in creating spin-offs for exploiting the project findings. On the other hand, research organizations roll the ball back to the companies, saying that exploitation is not the role of the ROs. Hence, our research identified a true gap between an inability of companies to commercialise the project output due to a lack of full R&D chain control, and an incapacity or even strategic misalignment from the side of the research organizations to enter into spin-off or spin-out activities. Especially the spin-off activity can be a problem in some university labs, where the spin-off activity remains a grey zone with respect to the regulatory frameworks in each country.

The potentially most relevant and logical bridge over this gap might be the SME. An SME could possibly more easily integrate the scientific and the applied part, from its more focused and less scale dependent development path compared to the large company. The SME could also be a test bench for both the labs and the larger company, of course not without commercial risk. The risk factor is an important issue that was referred to by SMEs that had taken on this bridging role.

From their perspective and in their turn, they call upon the larger companies to commit to the risk sharing mechanism in the EU collaborative projects for example by providing access to specific internal resources, act as pilot market (i.e., customer) for the new product/process/service, or even support financially a spin-off activity. Many of the Research Organizations cases also have developed specific collaboration structures with SMEs. Hence, it seems that there is a dynamism created in the sense of bridging the gap, even though from the perspective of many SMEs things are moving quite slowly.

<sup>1</sup> Notion coined by Smith, P.G. & Reinertsen, D.G. (1991), *Developing Products in Half the Time*. New York: Van Nostrand Reinhold. See also, e.g., Reid, S.E. & de Brentani, U. (2004), "The Fuzzy Front End of New Product Development for Discontinuous Innovations: A Theoretical Model", *Journal of Product Innovation Management*, 21 (3), 170-184.



## On the Formation of a Sector: The Case of Computer Services

*Industries can no longer be taken for granted. As sectors dis-integrate and re-integrate, converge and transform, the question of how exactly entrepreneurial activities are structured, and what determines the firms' and sectors' boundaries evolution becomes more crucial than ever. Firms are increasingly trying to shape the nature of their environment and the ways in which labor is divided in the sector; they try to shape the "rules and roles" through which labor (and knowledge) is divided and coordinated.*

As Brusoni et al. (2009) argue, by using a recently coined term, firms try to shape and re-define their "industry architectures", i.e. the templates that determine "who does what" in a sector, as they appreciate that this will affect "who takes what". Research that takes place at the Management Science Laboratory of AUEB, studies the evolution of industries resulting to the formation of the industrial architecture in the case of the Computer Services Sector in Greece.

Some argue that the ability - and need - to change industry architectures derives from the emergence of new scientific and technological knowledge which affect the competitive dynamics of the entire economy and the way business takes place. New sectors have emerged on the basis of new disciplines (e.g. biotechnologies) as well as on the basis of the integration of old ones (e.g. mechatronics). Moreover, traditional sectors are affected by new disciplines in ways which challenge incumbents' positions and favor the entry of new actors (e.g., telecommunications).

As Brusoni et al. (2009), stress the "political" role played by old established organizations. For example, incumbents may influence which technological paths are pursued: leveraging on their role as industrial leaders, through strategic moves such as mergers and acquisitions, focused investments, lobbying for the adoption of specific standards, etc.

Thus, as firms try to re-organize their industry environment, one major issue emerges: firms must create and simultaneously integrate knowledge to create advantage as well as coordinate sets of complex interdependencies that cut across firms' boundaries.

### Strategic Dynamics & Industrial Evolution

In terms of the existing theoretical apparatus, as Brusoni et al. (2009) argue, research has offered key building blocks that provide answers to partial questions to understand the evolution of industry architectures. Researchers from the New Institutional/Transaction Cost economics, for instance, have explained how firms may choose their boundaries.

Scholars of technological change have considered how organizations and technologies co-evolve over time. Yet, only recently have we started understanding what shapes the nature of the sectors that we study, and in what are the forces that explain why and how sectors swing between knowledge boundaries.

Likewise, it seems that the link between the boundaries of organizations and the knowledge bases in the sector has been shown to be important in the strategy literature, and it is clear that the boundaries of knowledge and the boundaries of specific organizations are not fully mapped onto each other.

However, our understanding of how knowledge becomes integrated in a complex web of relationships in a sector is still in its early stages. As Brusoni et al. (2009) argue:

1. First, we have a very limited set of empirical studies that consider the dynamics at the level of "industry architectures", which can exhibit how new sectors emerge, or how the roles of various industry participants are (re)-defined.
2. Second, we do not yet have a set of studies that considers how sectors change as a result of new opportunities, new knowledge bases, and / or new technologies.
3. Third, we have yet to propose the micro-mechanisms that explain how the structures that integrate knowledge emerge, and how they affect the industries' prospects, or how they change over time.

### The Formation of the Computer Services Sector in Greece

The recent European Trend Chart Reports (2004, 2005, 2006) using data from the Community Innovation Services - CIS indicators present Greece, followed by Belgium and Finland, as an innovation leader in the Computer Services Sector. Computer services enjoy a high knowledge creation and knowledge diffusion intensity meaning that such services position high on an innovation intensity scale. Leading countries in Computer and related activities in Europe are Greece and Belgium.

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# On the Formation of a Sector: The Case of Computer Services

Greece is leading in share of SMEs co-operating, innovation expenditures, share of firms that receive public subsidies to innovate, gross investment in machinery and equipment, R&D expenditures and growth rate of employment. Belgium is leading in share of firms innovating in-house and sales share of both new-to-market and new-to-firm products. Computer and related activities is one the most innovative services sectors. In the six CIS indicators the sector performs at least twice as good as total services. Computer and related activities is now the most innovative sector of all the services sectors. In six CIS indicators the sector performs at least twice as good as total services. The SIS characterizes the CS sector as being a knowledge-diffusion, rather than as a knowledge-creator sector. Below we present a table with a detailed definition of NACE K.72 code used by the sectoral innovation scoreboard in its analysis.

Research that takes place in MSL has been occupied with examining the processes of formation what is now known as "the Computer Services Industry". Our analysis adopts a longitudinal field study methodology and uses firm level data dated back from 1940 to 2008.

## Data Collection

In order to examine the evolution and the formation of the sector we collected data covering the years 1940-2008 from the ICAP Databank (v.7.34). Our sample included firm level information relevant to the year of establishment and to the product activities in terms of NACE codes, for all the companies with four digit codes at NACE 72. The initial number of the sample of the firm was 489. Additionally, we manage to locate and confirm the NACE codes for the products/services of the 482 of them which is the final sample of our research. The firms of our sample cover a wide spectrum of different activities as the list of NACE codes on the following table (Table 1), shows.

NACE Code	
G .51.84	Wholesale of Computers, Computer Peripheral Equipment and Software
G .52.48	Other Retail Sale in Specialized Stores
K .72.10	Hardware Consultancy
K .72.22	Software Consultancy and Supply
K .72.30	Data Processing
K .72.40	Database Activities
K .72.60	Other Computer Related Activities
K .74.14	Business and Management Consultancy Activities
M .80.42	Adult and Other Education n.e.c.

## Data Analysis and Results

We analysed the data of our sample in terms of the year of establishment in order to create the "firm entry" diagram for the evolution of the new venture creation activities. Additionally, we studied the specific NACE orientation of that new entrant firms select during their establishment. This provides important knowledge on the orientation of the entrepreneurial activities during the time of the establishment and further allows us to map and understand the dynamic of

changes during a long term period. The following figure (Figure 1) exhibits the way in which the Computer services sector was formulated, in terms of its knowledge domains and product activities. The numbers illustrated on the graph show the firm entries per year while, the different colours

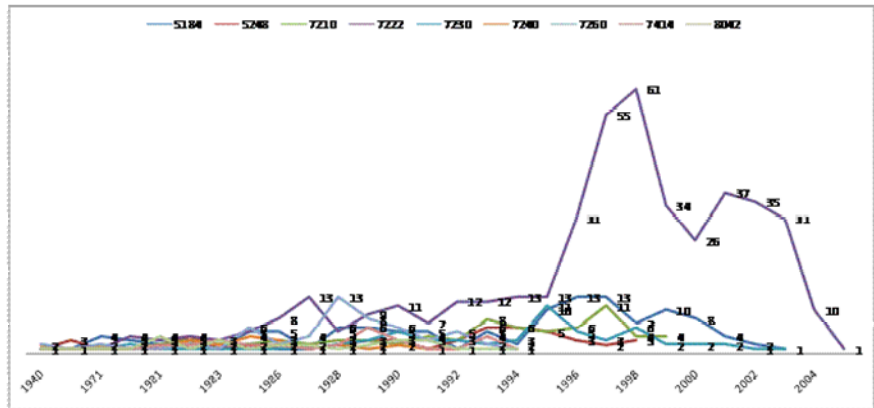


exhibit different products and activities of the respected firms.

Figure 1: Firm Entries in the Computer Services Sector, n=482

## Conclusions and Discussion

In this article we exhibit the sectoral dynamics in the formation of the computer services industry architecture from year 1940 to 2008. Our analysis contributes by showing how the industrial structure of the sector is evolved for the years studied and add to our common understanding of what shapes the nature of the sectors that we study, and in what are the forces that explain why and how sectors swing between different knowledge and product boundaries.

Data gather and analysed for the case of the Computer Services map and exhibit the process of evolution of the sector from its initial set as a group of firms in a variety of complementary services, (such as the wholesale of computers, or computer peripheral equipment and software and adults education in IT, only to name a few); to a more focused into its core competencies in the area of "Software Consultancy and Supply" (NACE K.72.22) dynamic cluster.

Although, it begun as an amalgam of different activities during the nineties the sector was transformed to a purely service sector. Besides its main orientation towards "Software Consultancy and Supply" activities the fields that also survived during this transformation just to prove its service orientation were that of the "Data Processing" (K.72.30) and the "Other Computer Related Activities" (K .72.60). These are until now the main lines around which the sector is organized, although the "Software Consultancy and Supply" remains the major activity.

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## Leading New Product Development Teams

*The performance of organizational teams is a multidimensional construct, which can be defined as the extent to which a team is able to meet established objectives (Hoegl & Gemuenden, 2001). In New Product Development (NPD), specific dimensions of team performance include the adherence to predefined technical performance and quality, the meeting efficiency targets, and innovativeness (Ancona and Candell, 1992b; Hoegl & Gemuenden, 2001). Technical performance and quality refer to certain desired properties of the output produced by the team.*

For a NPD team in charge of designing a specific part of a larger product, several properties may be important, including functionality, manufacturability, durability and robustness, dimensional integrity, as well as optical and tactile attractiveness. Efficiency comprises adherence to budget objectives and adherence to schedule objectives. Adherence to budget objectives refers to the costs associated with the team's development activities (i.e., personnel, prototype material, testing, and so on). As for schedule objectives, all groups in a multi-team project are included in an overall sequence of milestones (design reviews, and so on) where certain deliverables are expected at predefined times, which, in turn, provide necessary input for other teams. Innovativeness of the team refers to number of new products, processes or ideas introduced by the team.

Team performance objectives can take many forms (e.g., quantity, speed, accuracy, efficiency, service to others) but the clarity or specificity of those goals can strongly affect their attainment. In order to combine efforts effectively, team members have to understand jointly what it is they are trying to achieve. Much research also indicates that involvement in goal-setting fosters commitment to those goals (Locke & Latham, 1990), and consequently better group performance. Moreover, scholars have also directed their attention toward understanding the mechanisms through which objectives impact group outcomes.

Weingart (1992), for example, argued that members' effort and quality of the planning process mediated the effect of goal difficulty on performance, and found that group goals raised member effort, which translated into greater team performance. Moreover, Katzenbach and Smith (1993) reported that the existence of clear, unambiguous goals provide benefits pertaining to: the work content of the team's task, the basis for clear communication and constructive conflict among group members, focus on achieving desired outcomes, how members' unique expertise can be best utilized, and the increased motivation of the group.

These positive effects of clear strategic goals are illustrated in the example that follows from

a recently undertaken case study.

In an SME dedicated to developing advanced bio-economy and carbon recycling technologies, the power of clear mission, strategy and goals, has been a key success factor for carving out a niche market from a record successful process innovations.

Building on its mission 'Science to Achieve Results', bridging the gap between research and innovation is an integral part of this company's mission, and a main explanatory factor behind its strong innovation focus in all its collaborative R&D activities. Strategically speaking, the company sets its R&D agenda and selects projects only if they fit 100% with its mission and technology development directions. Moreover, it systematically integrates existing or potential customers in the projects, thus ensuring a potential offset market for what is being developed.

Positioned in a high growth but still immature market, the strategy in terms of 'where to go' – sustainable lead in environmental technologies with emphasis on recycling- and in terms of 'how to get there' –be an innovative solutions provider- reinforce the technology-based innovation focus maintained in project activities. Building on this strategizing, explicit goals in terms of market penetration, application of new science and are set, monitored and continuously stretched; As the entrepreneurs summarized the approach "On our narrow road, we want to be the best, the most concentrated and focused to collect and exploit all the available knowledge in the field".

### Leading Teams for Goal Achievement

Team leaders have a key role in achieving team goals, as well as in monitoring and sustaining a high team performance. Team leaders should be capable of performing a range of leadership behaviors that promote teamwork, organize and direct project work, manage relationships with external stakeholders, and stimulate creativity and innovation (Hirst & Mann, 2004).

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# Leading New Product Development Teams

Effective team leadership has been reported as one of the most important vehicles for directing and steering project successfully, especially in those situations concerning a new product development process (Keller, 1996). For example, recent studies (e.g., Lovelace et al., 2001) suggest that the characteristics of group leaders significantly affect the work climate and learning in teams, in such a way that leaders may set a positive and safe environment and resolve issues that would otherwise result in extensive, dysfunctional conflict.

Cumulatively, these actions are most likely to increase group members' feelings of freedom to express task-related doubts, engage in constructive dialogue, establish trust and collaboration within team, and enhance the application of acquired knowledge (Edmondson, 1999). Barry (1991) conducted a detailed qualitative study of engineering and product development teams, and he identified four leadership roles that are critical to ensure teams are able to tackle the challenges of R&D work. Further refined by Yukl (2002) these roles are: Boundary spanning, Facilitative, Innovation-stimulating leadership, and Directive leadership. Leaning on a series of case studies of NPD teams conducted over several years, we attempt to shed some light on these dimensions.

Boundary spanning leadership involves coordinating the team's task with outside stakeholders, managing 'outgroup' relationships and negotiating resources and objectives (e.g., with top management executives, suppliers, and users) as well as scanning for information and ideas. In our case studies the seniority and tenure within the organization, as well as the social capital built up by the team leaders, were the factors identified as determining for effective boundary spanning leadership. "It is fundamentally a question of the network one has built up over the years, both inside and outside the company, and how much one can actually leverage this network", as one team leader stated.

Facilitative leadership refers to whether the leader encourages an atmosphere conducive to teamwork, ensuring all team members have the opportunity to express their ideas and opinions and participate in group's activities, sharing of valuable information and discussion of different perspectives. The most essential factor for effective facilitative leadership identified in the case studies was the attitude towards errors adopted by the team leader. "Having worked under many team leaders over the years, and even under more than one at the same time, what makes a difference is whether the leader searches for the who or the what behind problems and errors that turn up", explained a senior technical expert we interviewed. He continued: "The 'who-focused' instills fear in the teams, while the 'what-focused' leader instills a learning culture that encourages everyone to work together for a common best solution".

A leader who acts as an innovator envisions project opportunities and new approaches by questioning team assumptions and challenging the status quo. Analyzing innovation drivers in our case studies, the leadership element that quite naturally stood out is that of a creative leader. But creativity is not enough; it has to be coupled with a capability of envisioning a real end state, i.e., the specificities of a new component, product or process that provide the team with enough orientation in order to be able to materialize what is

innovative. "It's maybe tough for my collaborators, but I tend to position my team's goal in what I call the 'extreme quadrant' which means 'never thought of – never tried', envisioning what someone might conceive as impossible to make but really extraordinary to have. Then I do all I can to have the people with me, even if some of the feels it's like jumping out of the window on the 10th", expressed one project manager with an exceptional record of new product innovations from his teams. Both team members and R&D Managers in his organization agreed that the combination of tough goals ("looking at his record, we call them tough now and not impossible as we used to..." as a team member clarified) and a strong drive of trying them out in practice are keys to the high innovation performance of the organization.

Finally, directive leaders achieve structured and ordered performance of project work by communicating instructions, setting priorities, deadlines and standards. From our case studies, this leadership dimension comes out as a necessary but not sufficient condition for high NPD performance. In cases of projects failing on one or more of the performance criteria, the lack of plans, structured project management rules or blurred communication was the largely dominating cause. However, no interviewees attributed great new product successes to this dimension alone. "Lack of adequate management can indeed break the success of the project, but on the other hand structure and rules is not what will make that great innovation success", as a senior engineer stated it.

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In order to achieve desired and targeted New Product Development Performance, i.e., technical performance and quality, efficiency and innovativeness, team leadership is critical. Having discussed briefly the nature of objectives and the importance of them being clear and specific, we identified four leadership dimensions in the literature and searched for an enrichment of them from a series of case studies of NPD teams conducted over several years. Our analysis emphasizes the strong complementarity between these dimensions. The directive leadership emphasizing rules, structure and reporting is a necessary platform for the project to advance and for R&D management to supervise resource allocation and dynamically adjust strategy.

On the opposite side, the innovation-stimulating dimension, which translates into a strong envisioning power and implementation capability, is what will produce an outcome that is really new and innovative, with high potential of commercial success. In between, we find the dimensions which are more internal to the interpersonal dynamics of the team and its leadership. The boundary spanning dimension is necessary for facilitating the progression of the project, and for making the team lean and efficient in its interaction with other players inside and outside the organization. The facilitative dimension, finally, is the one that will ensure an appropriate climate enabling effective interactions and continuous learning within the team.

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## Next and Previous Issues of InnKnow FORUM

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The focus of previous newsletters, available on our website, was:

**The Architecture of an Information Revolution** – lead article (no 11, fall 2008)

**Customer Involvement in Innovation and Marketing** – lead article (no 10, spring 2007)

**Strategic Entrepreneurship** – lead article (no 9, spring 2006)

**The Role of Gender in Family Business Succession** – lead article (no 8, fall 2005)

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