

TOWARDS A CULTURE OF SHARING AND EXCHANGE: INVESTING IN THE INTANGIBLE ASSETS AND INTELLECTUAL CAPITAL FOR THE LEVERAGING OF COLLABORATIVE NETWORKS

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An important challenge in establishing lasting changes of culture and values in an organisation involves ensuring that organized learning processes are anchored within the organisation. Our experience from several projects shows that good intentions are not sufficient for ensuring the operation of a CN. Many of the existing patterns reflect an earlier situation when research was not as strictly monitored for its short-term results and its financial (contributions to) outcomes. The central point of the paper is that collaborative networks (CN) do not need to 'live with' and experience all the deficiencies faced in regard to the introduction of virtual forms of organisation in the corporate world, as these have been introduced in several national or application contexts in Europe.

1. INTRODUCTION

The central point of the paper is that collaborative networks (CN) do not need to 'live with' and experience all the deficiencies faced in regard to the introduction of virtual forms of organisation in the corporate world, as these have been introduced in several national or application contexts in Europe. We have been accumulating lessons learnt in Europe and are in a position today to report on our personal experiences, thus possibly helping provide useful advice and recommendations to the development of some genuine breeding environments for such networks.

The shadow capital on which we argue that we should build such infrastructures are the mistakes that have been made (and to a great extent continue to make) in the addressed area. There has been a repetition of the same old mistakes. These include tendencies for:

- Overdoses of formalisms and structurally rigorous platforms that only partially work and provide useful solutions to existing problems

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- Lack of investment in the human aspects both from the side of the CN provider and the user,
- Focusing only on short-term (and therefore short-sighted) results and deliverables
- Undervaluing the efficacies created through the learning dimension as a medium to increase any organisational as well as individual intellectual assets.

In our paper we make an analysis of two failure stories and focus on the soft aspects related to the introduction of a CN infrastructure and make explicit references to the common mistakes when building or purchasing a ready-for-use system or application. The overall aim is to come up with a set of representative cases that may provide food for thought and radical ideas for avoiding pitfalls related to the suboptimal introduction of the concept of CN.

In contrast to tangible products and services, it is difficult for a CN to import its soft assets from elsewhere. It can ‘import’ technological infrastructures and capitalize on technological innovations, however, it still remains a question for the people that constitute its grid how they can make best use of concepts selectively and on a need to do basis. Even in the case of non collaborative networks, innovations cannot be copied or lent by other networks - in the same way that the future of a CN and its potential cannot be mortgaged under the procurement of some monolithic and silo infrastructures which have rarely worked.

2. THE ADDRESSED AREA

2.1 European research projects as instances of CN

European Framework research projects are carried out by partners operating as an extended enterprise, whose different Intellectual Assets (IAs) and the value thereof need to be recognised in order to successfully prepare the ground for the completion of the project. Taking this into account, there is a need to manage the project as a ‘business’ (even if this involves adopting a business attitude), in the sense that it must be approached as a specific endeavour to achieve certain defined goals.

Based on the experience established from our involvement in nine projects that have been implemented over a period of 6 years (1999 – 2004), there is clear empirical evidence that a considerable majority of projects fail because they do not succeed in identifying their individual purpose in terms of the knowledge produced and excellence achieved. One can attribute this shortcoming as project management failure, technical failure, requirements failure, or market definition failure. Like medicine that is not considered as an exact science, as is the case with mathematics, one can rely only on empirical data *and* the relevance that can be validated with certain hypotheses. From our side, the evaluation criteria related to the following success indicators:

- Creation of a jointly recognized and co-owned intellectual asset, and establishment of some elementary structure for its management [C_1];
- Continuation of the collaboration into at least one subset of the initial partnership for a period of at least two years [C_2], and last but not least;

- Organization of processes that are exhibiting at least one of the following (a) recognition of the exact contributions to be made at scientific or technological/technical level, (b) agreement on the qualitative criteria that shall be used for validating the success of the project work, and (c) delineation of information related to the positioning of the project with respect to other research approaches, the market and competition at large. For this last subcriterion, we relied on different techniques, spanning from the traditional SWOT analysis of strengths, weaknesses, opportunities and threats, to more sophisticated ones relying on roadmaps and benchmarking [C₃].

The aforementioned suboptimality derives mainly as a result of a reluctance to develop a common culture and a team spirit which shall facilitate the creation of an open environment, supporting the sharing of knowledge communication, experiences and ideas, and most importantly their sharing. To avoid this, an obvious remedy for any company and therefore any project is to know at each distinct moment: its assets (both tangible and intangible – especially the latter), its competitors, and (of course) the market; how to express them with the most accurate figures possible, and how to increase them by means of opening the various types of corporate information and knowledge resources to the other members of the CN.

It is not uncommon to find projects which fail to have a realistic estimation of the global situation regarding the application of the project's intended outputs in the real world and the related market conditions. Methods for the valuation or measurement of Intellectual Assets can be characterized as 'solutions in search of a problem', and although there seems to be confusion about the distinction between valuation and measurement, the distinction is fundamental yet not fully recognized in the field (Andriessen, 2003). The aim and the motivation of our approach is rather simple and straightforward: to come to a quantitative overview of the monetary value of all types of intangible assets that are to be created by the project in order to be able to exploit these assets, on two levels:

- For the entire CN; and
- For each individual CN member separately.

From the plethora of methodologies and practices which have been built variously on the schools of thought or 'communities' of – amongst others - Intellectual Capital management, Accounting, Performance measurement, and Valuation, we built our approach on an adapted version of the Weightless Wealth Toolkit by Andriessen (Andriessen, 2004).

2.2 The need to invest in intangibles

An important challenge in establishing lasting changes of culture and values in an organisation involves ensuring that organized learning processes are anchored within the organisation. Traditional courses and training are considered efficient, but it often seems as if the long-term effect is missing. Furthermore, traditional courses are often used by organisations to train their employees so they can perform better, but in the same ways as they always have done.

There are several positive aspects to both tactics, but if the goal of the learning is to gain new knowledge and to establish changes in behaviour as well as further learning in the organisation, it is important to use a strategy based on pedagogical

theories and methods that take individual as well as organizational learning into consideration. There is a saying: 'Those that have hammers, will see only nails'. In the greater scheme of things, corporate decision-making includes more than scientific approaches and methods.

Our own experience working with decision-making processes dates back to the beginning of 1990. We have been closely involved with a wide range of different organisations in the research, the business software and the IT industry in general, and different types and levels of decision-making styles and cultures. In all these settings, we have been exposed to different learning strategies based on problem-based and project-organised approaches, and our experience is that they provided quite another learning outcome. We consider this Situation-Room learning approach an effective and motivating way to organise the kind of learning situations needed when working with changes in behaviour, strategies, and innovative processes in companies and organizations, as it is for the case of product development.

Authors like (Nonaka, 1991; Nonaka and Takeuchi, 1995), (Leonard-Barton, 1995), (Sveiby, 1997), (Sveiby and Lloyd, 1988), and many more, claim that knowledge is the most important resource. "In an economy where the only certainty is uncertainty, the sure source of lasting competitive advantage is knowledge" (Nonaka, 1995). However, this does not mean that the knowledge-based view is a synonym for the resource-based view. The most important and fundamental difference is that the resource-based view only implicitly refers to knowledge, whereas the knowledge-based view gives extensive elaboration on the nature and definition of knowledge and the way it should be managed (Thompson Klein, 1996). Knowledge management literature can be seen as a further specification or extension (Bontis, 2002) of the resource-based view into a 'knowledge-based theory of the firm'.

In parallel a closely related and more holistic perspective on the value creating resources of the organisation emerged. This intangible-based view of the firm is based on the work of authors like (Sveiby, 1997), (Stewart, 1997) and (Edvinsson, 1997). This so-called Intellectual Capital movement uses knowledge and intellectual capital interchangeably. Although closely related, the meaning of knowledge in this movement fundamentally differs from the definition of knowledge in the knowledge-based view of the firm. Intellectual capital, intellectual assets, intangible assets, intangibles, knowledge assets, knowledge capital or whatever term is used within this movement, refers to the traditional hidden sources of value creation (of which knowledge is just one). Hidden in the sense that existing management techniques do not have the methods or instruments to reveal them.

This intangible-based view of the firm inspired the intellectual capital movement to further elaborate on the nature of intangible resources and the way they should be measured and managed. This view serves as a starting point for application within the corporate environment.

(Weick, 1995) presents a detailed theory of sensemaking in organizational contexts, particularly those characterized by novelty or other forms of description. He suggests that individual and group activities are inextricably intertwined. Weick's work is compatible with constructivist perspectives of knowledge, in that situations become 'real' only through the interpretive processes of sensemaking which reveal how different parties construe the situation. (Choo, 1999) summarizes three-step processes that are central to sensemaking: *Enactment*: the process by

which individuals in an organization actively create the environment which they face; *Selection*: the process by which people in an organization generate an enacted environment that provides a cause-and-effect explanation of what is taking place; *Retention*: enacted or meaningful environments are stored for future retrieval upon occurrence of new equivocal situations.

According to Weick, people engage in sensemaking in two main ways. Belief driven sensemaking takes place through arguing (creating meaning by comparing dissimilar ideas) or expecting/confirming (creating meaning by connecting similar ideas). Action-driven sensemaking involves people committing (engaging in highly visible actions to which they have commitment) or manipulating (acting to create an environment that people can comprehend).

Weick addresses the social dimensions of knowledge sharing by drawing on Wiley's work (Wiley, 1988) which suggests that there are three levels of sensemaking above that of the individual: *Intersubjective*: synthesis of self from I to We; *Generic subjective*: interaction to create meaning at the group or organizational level; *Extrasubjective*: meaning attains the strength of culture – 'pure meanings'.

Bringing these concepts together, therefore, Weick sees organizational sensemaking as the drive to develop generic subjectivity through arguing, expecting, committing and manipulating. These social dimensions converge with Nonaka and Takeuchi's (Nonaka, 1995) view on the role of socialization in transforming tacit to explicit knowledge. Companies provide many different types of services to their employees and stakeholders; the interactions between the abstract entity of a corporation and its people are mostly process-based and can be categorised as follows (Lenk, 1999): structured procedures or routines, semi-structured decision processes and negotiation-based case-solving.

(Capurro, 2004) furthermore states that what can be managed is information or explicit knowledge and that implicit knowledge can only be "enabled". In this context, explicit means that it can be clearly observed and expressed (and also digitalised), as opposed to implicit knowledge that can not be directly formulated (skills, experiences, insight, intuition, judgement, etc.) When knowledge is explicit, it can be represented as declarative or procedural knowledge. We are aware that in the domain of cognitive sciences, the distinction between procedural and declarative models is related to the brain memory system - see for example (Ullman, 2001), but here we used these terms here in a limited sense, as defined in computer science: *Declarative knowledge components* represent facts and events in terms of concepts and relations; *Procedural knowledge components* describe actions to be taken in order to solve a problem step by step.

For cases where knowledge is implicit and cannot be formalized, we introduced the concept of distribution: knowledge can be individual or collective, and in both cases components identify who has this knowledge or where it can be found. Finally we added a set of metadata (know-where, know-when, know-who, etc.) that describe these knowledge-components and that make it possible to manage them.

3. THE CORPORATE REALITY

3.1 General

- "An institution able to show a record of efficient involvement in projects and

research activities in a specific area in the past is able to set up a similarly adequately skilled research team in any new project”.

- *“A company active in the area addressed by a research project with a successful record of sales (products or services) will be similarly willing to sell the products or services, resulting from the research project it participates in”.*
- *“A company or institution participates in a research project in order to develop know-how necessary for its future operations, to cope with future challenges and to establish strategic alliances”.*

In many cases, regarding the above, there is a huge discrepancy between what is put forward in a proposal or a review and the daily routine of a project. In certain other cases, intentions need to be supported by actions. In all cases, the everyday financial pressure – in periods of economic uncertainties in particular – affect the initial commitment to a project, under the surging demand for cash-flow and better economic indices of the organization.

A research institution might truly wish to enter a new research area, but has to operate under the tremendous pressure to bring in money – which makes researchers grasp at any opportunity that appears on the street corner. In the event of a proposal being successful, they will lose time and momentum because they will have to organize an ad hoc team – either by asking people who might be interested, or by hiring new people to get on board. This kills the potential of a good head start to a project.

Participation in an RTD project allows an organization to gain additional cashflow, national matching funds (for public research or academic institutes), opportunities for press releases and company promotion (research is always fashionable, to get funded for it is trendy, but to actually conduct it might be considered nerdy!). Sometimes organizations join research consortia just because they cannot stay out of them. Organizations tend to look for ready made consortia to join. In very few cases a proposal is written by more than three people, with most partners limiting their contribution to CVs and lists of previous project participations.

On the project supply-side, there is often ambivalence towards speculative opportunism (yesterday we were selling information brokerage systems – today we sell Semantic Web – tomorrow Grids and Grid computing). It is not uncommon to have such concept drift taking place continuously; this happens in the economy and in the market. As the above may seem apocryphal, here are some examples:

- In a recently completed project, we had taken the responsibility to prepare a business plan. We collaborated closely with the manager. From the very start we had expressed our commitment to support this plan even after the completion of the project. We organized a set of communications and contacts with external consultants and spent much time on it – most of which did not come from the project budget as it involved several people from other departments of our institutions. The result was not positive as the manager’s interest faded after the ‘successful’ completion of the project. To our regret, what we know is that they keep on investing in the platform they developed in that project and they do have a longer-term research plan for their work.
- In another recently completed project, we had taken the responsibility to prepare a business plan. We developed a fully developed draft which we circulated to the consortium, but there was no response or reaction to this. As this project has

again terminated “successfully” by submitting also its e-TIP, why bother with such things like a business plan? It is obvious that the completion of the project meant the termination of partners’ interest to the subject.

The lesson learned from the above stories from the front line is that there is an urgent need to examine our Value Chains – those that we have and which we need to improve, and those that we don’t have and therefore need to create from scratch. Perhaps there is arrogance and a resting on our laurels that exists in our continent in contrast to North America, Asia and Japan that hinders the creation of such Value Chains in the research and innovation fields.

Looking at the intangible assets (in terms of knowledge) won and lost during the projects, as well as to the same assets before these started and after they ended, i.e. considering the particular life cycle of the projects, the picture is not bad for the individual participants of the CN, but it is devastatingly discouraging for the commonly owned assets. To the latter, there is a clear failure in capitalising even at the level of lessons jointly learned. Furthermore,,there is an unequivocal tendency for each party to draw its own conclusions, in the same way as its party forms its own policy and negotiates with the other parties in a very basic and non value added way.

3.2 Concluding remarks

Our experience from several projects shows that good intentions are not sufficient for ensuring the operation of a CN. Many of the existing patterns reflect an earlier situation when research was not as strictly monitored for its short-term results and its financial (contributions to) outcomes.

Furthermore, it seems that the central challenge faced by a CN is the implementation of flexible, time-variant co-operation models. As a result, our view on posing more importance to aspects related to the soft skills of a CN is of direct utility; it is essential nowadays for the created CN structures to be able to dynamically modify their formation (i.e. to evolve continuously) and to have the necessary knowledge to do so appropriately in relation to the intangible assets which they are using.

Having several first and second hand experiences in the success or failures faced from the more demanding and relatively complicated projects or tasks, to less complex and simple ones, the story has to do usually with the same ingredients:

- People, and
- How these interact to each other or with each other, and
- How they perceive and analyse the world they live in, the events that are taking place and to which they have or need to respond to, and
- How they document their knowledge, their wants, their goals, their history of what they did or they aimed to do, and,
- How they access and make use of the documented knowledge – be it theirs or someone else’s , and finally,
- How they manage to improve their behavior either at the individual level or at the collective one, or – sometimes – at both through learning processes or other optimization processes.

However, to manage a coordinated behavior of individuals is a difficult, if not unachievable, task. Even if people are working together for the same goal, and have

all unanimously agreed to the same objective and target, it is human nature that they shall develop differentiations in regard to the means that each individual shall employ for meeting any specified end. Or, even in the case that there is agreement regarding the means, there will be different opinions on the instrumentations of these very specific means, the orchestration of all individuals around them, etc. This helps us come to the conclusion that the main difficulty concerns the synthesis of all these different 'resources'.

Though the starting point for us has been problems that appear in the corporate world, any type of 'problem' that involves most of the above components can be regarded as subject to the same need for being approached with a preferably simple and consistent method for modeling the problem.

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