

Owing to an article of Dann and Barclay (1), complexity involves a "management based on knowledge collection and its transformation" through "organization of people and activities" -that is "well trained and informed people" and encouraging informal groups"- to extract maximum value that is "transforming knowledge into marketable products and services".

Indeed, at the era of knowledge economy, management has a double aspect; to borrow the terms used by Thomas A. Stewart (2) it has to take care both of a "machine" and of a "garden". This attitude of mind is referred to as an "emergent strategy" contrary to the classical "deliberate" or "intended" strategy.

The emergent strategy "emerges" from a "garden" which has to be sowed, cultivated and harvested. It is not workflow-defined but human-centered.

Human capital is indeed a very valuable asset and it is worth being solicitous about it. It is mentioned in many dashboards such as Kaplan & Norton's balanced scorecard, Sveiby's Intangible Asset Monitor or Skandia's Navigator. You find into them economical, organizational, relational, human and educational items.

The educational one seems the one which may be used to obtain the state of mind complying with the so-called emergent strategy. The problem is that in every system you measure quantitative measurements but nobody tells you why you have people learning, what they learn and what they acquired by means of this learning. You just suppose that, as the great objectives are interlinked, the improvement of your ROI (if any) is partially indebted to this learning effort! It is quite unavailing.

So, we have to determine what people have to learn to be able to contribute to the global strategy through a useful and if possible innovative emergent strategy.

How to make so that the company, primarily made up of individuals having each one its aspirations and its characteristics, behaves like a single organization having itself its own originality and its finality, even if one considers that it is with the service of the individuals who make it up and his various partners - among whom figures community-?

Is it allowed to speak about collective intelligence - thus distributed without a centralization implying a determination of the objectives and the manner of reaching them by top-down instructions ?

On another side, which freedom of action remains with the actors of the company when no initiative is encouraged even tolerated on behalf of those which do nothing but carry out instructions elaborated or transmitted by the hierarchy? It is difficult to imagine a company innovating and able to react quickly to the external requirements and changes of the environment, whatever their nature: commercial, technological, legislative or social and their geographical impact, without a suitable organisational structure, a favorable state of mind and a cultural context being set up.

The conditions to fill will have to thus allow

- initiatives to express itself like consequence of the immersion of the whole of the agents in a regular flow of knowledge as well "pushed" as "drawn" leading those to react to any dysfunction or signal even "weak" of change

- problems to be solved and decisions to be made quite transparently and within a collaborative framework or a project management structure

That supposes nevertheless an essential prerequisite: the staff has to be trained and involved to act in accordance with the collective interest. For that, beside usual continuous training aiming at updating the trade-oriented knowledge, the staff needing it will receive a general initiation on aspects financial, economic, social, environmental and so on and on the strategic objectives specific to the company as well as on the various methods of decision-making and the data-processing assistance which is associated to them.

Well, at this point of our discussion, we may assert that innovation as well as collective reflection (based upon distributed intelligence) depend on a specific state-of-mind which is to be flourishing only in a context of some freedom.

In order to tap this distributed intelligence, you have to let people utter their opinion by means of networking and collaborative tools; moreover, you have to create the psychological and sociological conditions to enhance this utterance. People have no longer to hide their initiatives (until they are mature... and successful) but must unveil them at the beginning without fearing being blamed for not complying with the hierarchy.

Now, let us look how it could work in the case of a collective reflection. From the organizational point of view, you have to use collaborative platforms which generally help project leaders managing a project or a portfolio of projects, take care of as well work realized as the knowledge acquired in the shape of various documents, in a genuine traceable way. But an issue of prime importance is how you progress from the first statements to the final conclusion. To accomplish this, you need to create and use some concepts buoying out the rationale and suitable to your own context.

An important issue is the level at which the collaborative intelligence has to be practised; of course, the whole (extended) firm may be concerned but in this case, would it be possible to imagine a fractal structure of projects.

Moreover, is it possible to implement a collective intelligence oriented proceeding into a centralized organization insofar as you apply solutions like the above suggested ones?

A way of tackling complexity is the implementation of so-called « virtual enterprises »; a virtual enterprise is a whole generally made of several independent enterprises attempting to reach a common goal which is mostly temporary whereas behaving, seen from outside, as a unique enterprise; its management may be centralized but it is more often distributed -that is hosted inside each participating firm-.

Each partner has one or several definite roles and one of them may have a leadership or at least is initiating what may be considered as a project. The organization is virtual but of course the resources are well real. The virtual enterprise is distinguished by its management, its networking and ICT specific tools.

From the management point of view, it is useful to discriminate the strategic side from the operational one. The strategic point of view is namely related to the opportunity of entering a virtual organization, to the choice of partners (not always the same for different missions) and to business rules; the operational one concerns the tasks to be achieved, the roles assignment, intellectual property agreements and so on.

At the present time ICT tools exist for integrating, collaborating, networking (including social capital improving), knowledge management (human capital) and competencies sharing -as well as for programmable tasks and processes as non-programmable ones-, planning, resources acquisition, monitoring; standards are appearing for specifically dealing with virtual enterprises concerns such as modelling, unifying partners processes and various services (standard procedures) such as relationships between partners supported by XRM (eXtended Relationship Management) (3) (4) (5)

(1) Dann, Z. and Barclay, I., "Complexity Theory and Knowledge Management Application", The Electronic Journal of Knowledge Management, Vol. 4, Issue 1, pp 11-20, available on line at <http://www.ejkm.com>, 2006

(2) Thomas A. Stewart, The Wealth of Knowledge: Intellectual Capital and the Twenty-First Century Organization, NY, Random House, 2001

(3) RAND Corporation, Europe Competing: Business Needs and Technological Trends for Virtual, Smart Organisations in Europe, MG-195-EC, February 2004, Report for the European Commission of Information

(4) European Commission, Collaboration @ Work, Report 2006

(5) VTT, Globemen, 2003 (<http://www.inf.vtt.fi> then "English", then "Publications", then PDF, then VTT 2003, then "search: Globemen