Modelling Collective Activities to Assess Impact of Managerial Innovation on Business Performance

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Abstract: Economist state that for untangling the Solow paradox an understanding of how IT usage is related to the nature of managerial work and the context in which it is deployed is required. It seems necessary to identify how organization works and the context of implementation to understand and measure the impact of an innovation. To achieve this, we adopt the Resource-based View (RBV) of the firm. In this theoretical perspective, performance depends on organizational ability to exploit and develop productive resources. These abilities are called "business process" in a practical context or collective activities in this submission. What will now be measured is not the organizational output but the collective work transformation. This involves the ability to model/represent the collective activity functioning. However, modelling is generally carried out after the decision-making. To allow an effective decision, managers need to know what to improve. To achieve this, we propose a framework to represent main characteristic of collective activities.

Keywords: decision making, business performance, managerial innovation, business activity.

1 Introduction

"If you can't measure, you can't manage". In the context of the implementation of an innovation, the main issue is to identify what to measure. What is traditionally measured is the result of productive activities. This approach may encounter a kind of Solow paradox: existence of a discrepancy between innovation and measures of organizational output. Economists state that for untangling the paradox an understanding of how IT usage is related to the nature of managerial work and the context in which it is deployed is required. It seems necessary to identify how organization works and the context of implementation to understand and measure the impact of an innovation. To achieve this, we adopt the Resource-based View (RBV) of the firm. In this theoretical perspective, performance depends on organizational ability to exploit and develop productive

resources. These abilities are called "business process" in a practical context or collective activities in this submission. What will now be measured is not the organizational output but the collective work transformation. This involves the ability to model/represent the collective activity functioning. However, modelling is generally carried out after the decision-making. To allow an effective decision, managers need to know what to improve. To achieve this, we propose a framework to represent main characteristic of collective activities. We have developed a framework established from structural properties shared by organization, innovation and activity. Theses structural properties are knowledge and relationship. We have made a taxonomy based on control level of each of these structural properties.

2 Performance foundations

In this chapter, after few considerations about Firm Performance, we develop what we mean by competitive advantage.

A few considerations about Firm Performance

Academic have not yet reached a consensus about what performance is and how it should be assess. Try to reach this consensus is not the purpose of this paper. Following [1] we consider a multidimensional vision of this concept. Performance is related to four dimensions:

- Economic or Financial Efficiency;
- Human Resource Value (development and satisfaction of employee);
- Legitimacy of the organization to external groups (satisfaction of shareholders, customers);
- Sustainability of the organization (which is the basic indicator of organizational performance).

A firm is efficient if it produces value for both its shareholders and its internal and external stakeholders. What are the conditions for the creation of these values? Strategic literature postulates that firm have to develop a competitive advantage.

Competitive advantage

For many academics as [2], competitive advantage of a company depends on its ability to control its market. However Resource-based View theorists as [3] consider that performance factor are not exogenous but endogenous: performance depends on firm ability to develop a competitive advantage from its resources. All resource is not strategic ones. For [4], to be source of competitive advantage resource has to be idiosyncratic and hard to be replicated. This concept of resource is ambiguous because it encompasses two different objects: the resource in economic sense and organizational ability to exploit these resources. It seems that only the last one has characteristics expected by [4]. Indeed, this ability is related to a history, to a culture. Due to its historical and cultural dimension, this ability is hard to imitate and to transfer. Assess firm performance requires an analysis of this ability rather than resource. Ability is linked to action. And in organization, action is necessarily collective. Improve business performance implies improve the quality of resource exploitation by firm, what we call for the rest of this paper collective activity.

3 Modelling collective activities

In this chapter, we present theoretical principles on which taxonomy has been developed. Each component of this taxonomy are described.

Theoretical Principles

Organization and managerial innovation are isomorphs: they have the same structural properties. Theses structural properties are knowledge and relationship [5]. Knowledge refers to all information, representations and know-how shared, stored by all or part of the organization. Relationship concerns different types of contacts and connections, direct or otherwise, formal or not, between the entities (actors or groups of actors) of the organization. Collective activity is also established to this dual structure. Level of anticipation and prescription of these two elements is variable. It usually depends on the degree of market uncertainty. This level of uncertainty is revealed by the level of decision-making autonomy granted to an actor or a group of players. Level anticipation and prescription of knowledge and relationship are two axes of quadrant of activity. Three of them make up our collective activities taxonomy.

Collective activities taxonomy

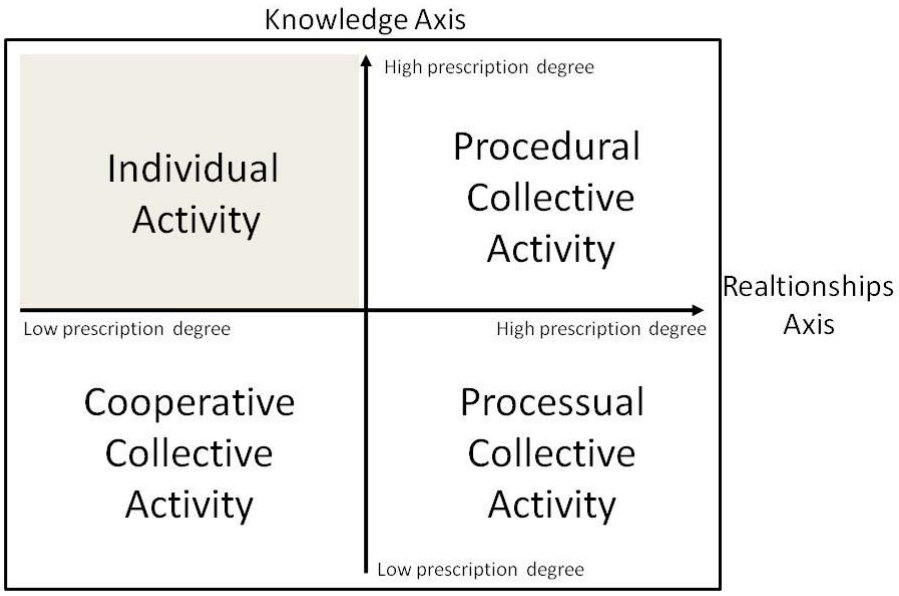

Figure 1 Collective activities taxonomy established from knowledge and relationship anticipation and prescription degree.

Procedural collective activity
When anticipation and prescription degree of knowledge and relationships is high, the way activity is performed is largely determined (or determinable) in advance. This kind of collective activity is related to work situations where all actor of a team know exactly what they have to do and how perform it. These situations are often subject to procedural rules previously established by a specific operator. The observation of procedures by individuals is the condition of success of this activity. However, the ergonomic stresses psychology is often a time lag between the task and the activity [6].

Processual collective activity
The second taxon is characterized by a low degree of anticipation and prescription of knowledge and a high degree for relationship. Organization and coordination of tasks are prescribed while the content of the task itself is not. These activities constitute a producer and consumer of knowledge, what [7] combines a distributed cognitive process. This type of activity is typically a process in the meaning of ISO 9000: "a set of correlated or interactive activities that transform inputs into output elements." This kind of activity corresponds to situations where what is known is what must be done and by whom. Individual(s) actor(s) is(are) responsible for defining how to achieve the task (knowledge). Individuals are autonomous. For [8] autonomy supposes individual capacity to produce its own rules, so ability to define its own action process. In this sense, any processual collective activity supposes a degree of autonomy for social regulation between stakeholders. The main stages of the process are known, but their contents is unknown by “internal regulator”.

Cooperative collective activity
In the case low degree of anticipation for knowledge and relations between individuals, the collective work can be regarded as cooperation. Indeed, cooperation describes the mutual dependence between several actors [9]. The players will have to define the roles and coordinate their actions.
It seems here important to specify what we mean by “cooperation”. Following [10], we consider that collaboration is related to situation where people work together without sharing a common objective. So, “two people could work together, help each other to achieve a specific task without necessarily sharing the same goal” (p.24). In contrast, cooperation between individuals supposes become aware of common goal and building of a repository that allow identification, collection and centralization "skills needed for individuals to engage in cooperative process” [11]. Cooperation occurs in situations where only the objective is defined. Knowledge is emerging from interactions between individuals, and it is himself influenced by emergent relationships. With time, anticipation degree of these relationships could increase; this is the result of organization learning. Thus, group will gradually develop and manage its own processes of action and moved from a collective based on cooperation, a collective based on the process. [8] notes about this that cooperative action need to be coordinated (i.e. evolve towards formalization degree strongest than interpersonal relationship) to achieve the result expected.

The last component of the taxonomy is not described because of it is not a collective activity but an individual one.

Conclusion

Understand how people work together to select suitable managerial innovation is the purpose of this analytical framework presented in this communication. From the anticipation and prescription degree of knowledge and relationships we have developed taxonomy of collective activities. This taxonomy consists of three components: procedural collective activities, processual and cooperative. This taxonomy is not an end in itself but as an element of component of decision-making tool for manager. We are continuing our work to identify managerial innovations according to the kind of collective activities. Furthermore, we will continue our investigations to define the context of theses action. Indeed, this context allows us to identify how people are supposed to work together. Once collective activity identified, managers could:

- Identify enabler for improvement by setting out the conditions for collective action (for instance, strengthening the degree of anticipation and prescription of knowledge or relationships)
- Selecting managerial and technological solutions (i.e. the technical substrate of managerial innovation) according to their impacts on conditions of collective action.

Identify the context and so, the kind of collective activity, suppose to take in account managerial and individual point of view. There are "objective" indicators about context as external environment and internal organization. However, it seems necessary to combine it with the sensory experience of individual actors. In other words, objective indicators is a regulatory control [12] and the individual perception a self-regulating. The effectiveness of the desired changes may therefore be dependent on the quality of the confrontation of these two views, which [12] refers to "joint control". In Social Regulation theory, regulatory activity, and thus the possibility to reach a compromise, involves concrete interactions, operating at different levels. These interactions involve the explanation, confrontation and recognition of the different views. Through these interactions, actors become aware that they have participated to a decision. This participation allows actors to know sacrifices required and so, it ensures change process. This point allows us to highlight another use of this taxonomy: at the confrontation of these two points of views about collective activity, stakeholders engage themselves in the adoption process of the managerial innovation.

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