6th International Conference on Industrial Engineering and Industrial Management.
XVI Congreso de Ingeniería de Organización. Vigo, July 18-20, 2012

Can we study Human Resource Management evolution from the lens of complexity? Cladistics analysis

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Abstract In this paper, we show how evolution and changes in organizations have been analyzed with the lens of complexity, particularly with Cladistics techniques. We argue how the order chosen to select and adopt new practices can affect to the final results, particularly in human resource management. We conclude that cladistics, an evolutionary classification scheme from the biological sciences, can be used also in human resource management context. Particularly we will demonstrate in this paper that this methodology can be very helpful to understand how an organization select and adopt best practices in human resource management in order to achieve a competitive advantage and the importance in the order they implement them.

Keywords: Human Resource Management Practices, Complexity, Cladistics, High-Involvement Work Practices, Evolution.

1.1 Introduction

Evolution and changes in organizations has been broadly studied by scholars in the last few years. There is a consensus that organizations are facing unprecedented levels of change and consequently, the adaptability, flexibility and the capacity to learn and manage change are key ingredients in success and survival (Adamides y Pomonis, 2009; Allen, 2001; Antonelli, 2009; Burnes, 2004; Karlsson y Ahlström, 1996; van Driel y Devos, 2007).

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Despite this consensus, successful organizational change has proved a very elusive state, with many studies reporting a very high failure rate, sometimes 80% or above (Burnes, 2005).

In this paper, we study, as the engine of evolution and change, the introduction of tools and practices that are new to a particular organization and intended to enhance its performance and success. We specially focus on practices at the operational level.

There are many studies already published dealing with the adoption of practices and tools at this level (Akdere, 2009; Albors y Hervás, 2006; Anand y Kodali, 2008; Collaine et al., 2002; Doolen y Hacker, 2005; Herron y Braiden, 2006; Hipple, 2005; Marin-Garcia et al., 2011; Mol y Birkinshaw, 2009; Pavnaskar et al., 2003). However, when organizations implant certain tools and practices looking for a competitive advantage, not always achieve success on it. Moreover, some practices succeed in one organization but fail in another, although they were similar organization in comparable environments (Baxter y Hirschhauser, 2004; Bayo-Moriones et al., 2008; Corso et al., 2007; Doolen y Hacker, 2005; Garcia-Sabater et al., 2011). But, when analyzing the reason of success or failure in implementation of tools and practices, we have found that there is no consensus by scholars (Mol y Birkinshaw, 2009).

At this paper, we specially focus on Human Resource Management (HRM) practices that affect the day-to-day work of management at the operational level. We do not try to explain the cause of success or failure on the selection of HRM practices, but introduce a methodology to study the different paths and final states that an organization can reach depending on the implanted practices, and the order in which these practices have been selected. This approach have been already analysed by scholars with the lens of complexity, particularly, with Cladistics, an evolutionary classification scheme from the biological sciences. However there are few applications published illustrating this methodology, and only for operation management systems in automotive assembly industry (Baldwin et al., 2005; Leseure, 2002; McCarthy et al., 2000).

1.2 Evolution in Organizations, Complexity Approach

Evolution in organizations has been analysed from different points of view, and using different methodologies and approaches. Traditional approaches are based in a deterministic, predictive research paradigm, in contrast to complex evolutionary perspective in which the competitive advantage does not last forever. In a changing environment, sustainable competitive advantage needs to reflect the rate at which the organization can identify new niches, exploit them, and then adapt to the new niche, and so on as the environment continues to change (Allen, 2001).

Complexity theories are a set of theories that derives from different scientific disciples such as biology, physics and mathematics. They are increasingly being seen by academics and practitioners as a way of understanding organizations and promoting organization change. A complex system is defined as any system that has within itself a capacity to respond to its environment in more than one way. It has some internal possibilities of choice or response over time which are not always predictable (Allen, 2001). Within this

context, the evolution process of an organization consists of a set of decisions taken by the different actors. There is a consensus that decision-making in general, and in management in particular, is plagued by unpredictability, risk and uncertainty (Baldwin et al., 2005).

We face the study of evolution of organization as a result of introduction of HRM practices from a complex evolutionary perspective since they are path dependent, and the order in which the different evolutionary estates are achieved affects to the final outcome (SYDOW et al., 2009; Vergne y Durand, 2010).

1.3 Cladistics

At this section we introduce the cladistics technique, as a tool from complexity, to identify different possible paths taken by organizations. Some scholars have started using, in a still incipient way, the biological concept of evolution, extrapolated to the evolution of organizations, products and production systems (Adamides y Pomonis, 2009; AlGeddawy y ElMaraghy, 2010; Baldwin et al., 2005; ElMaraghy et al., 2008; Lee y Jo, 2007; Leseure, 2002; McCarthy et al., 2000; Tsinopoulos y McCarthy, 2000). They are using cladistics as a best practice benchmarking classification system.

Taking the definition of cladistics from its original context, biology, it is a qualitative classification technique. It is a systematization technique that reveals the complex orderly pattern of relationships between the specimens. The set of these patterns is called a phylogeny, i.e. the history and order of change of the different groups of specimen (Leseure, 2002).

Cladistics studies can provide organizations with a map of the ecosystem in which they exist. Subsequently, by phylogenetic analysis, it can be determine which action should be implemented to bring about change (McCarthy et al., 2000; Tsinopoulos y McCarthy, 2000). This approach may also be employed as a tool for organizations to locate their position in evolution with respect to their position in evolution with respect to their competitors providing the opportunity to engineer their organization (Baldwin et al., 2005).

This new evolutionary perspective for analyzing organizations takes into account its history and identifying their likely future evolution (Baldwin et al., 2005). The main advantage of cladistics over other classification technics is that while the others are artificial and subjective, cladistics approach, by using evolution as an external reference point, can produce classifications that are natural, objective and unambiguous (Baldwin et al., 2005). Moreover, cladistics shows the path to be taken by organizations in order to evolve to a superior stage, by comparison with path already taken by other organizations. It also shows the critical junction or decision points where implanting certain practices or tools organizations can take an irreversible path. When selecting this path, it does not allow the organization to achieve certain final stages of evolution (optimum or not).

One of the cladistics techniques is the Cladogram, which is a model of the evolution of systems through space and time (Leseure, 2002). Although this technique comes from others fields of science, it has been already used in social sciences, however it is still widespread. There are a few examples of cladograms in automotive assembly industry for

the introduction of practices in operations management systems (Baldwin et al., 2005; Leseure, 2002; McCarthy et al., 2000). Examples published show a range of practices (as characters), and the different evolution paths the organization can follow. As a result of the path followed, the cladogram represents the different outcome, or final states that can be reached.

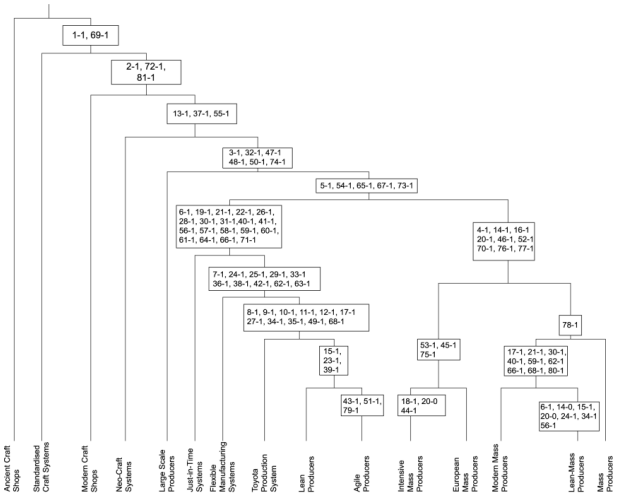

Fig. 1.1 Automotive Assembly Cladogram ((Leseure, 2002))

The examples in automotive assembly industry show the evolution of organization from ancient craft shops to more competitive organization with more competitive operation management systems such as lean production or agile production, as shown in figure 1.1.The numbers in boxes represent the different operation management practices.

1.3.1 Application to HRM practices

Due to its high explanatory power and simplicity of interpretation of the graph, this technique can be used also in HRM context to represent the adoption of practices of HRM in organizations.

When talking about HRM practices, as we are focusing at operational level, we are referring to High-Involvement Work Practices (HIWP). However, although it is topic broadly studied in the last years, we have found to date no example of Cladogram applied to the HRM practices.

There are many studies that list the best HIWP. The list of practices can be different depending on the author, however most of the scholars agree that practices can be grouped in four categories: training, communication, empowerment and rewards (Combs et al., 2006; Guerrero y Barraud-Didier, 2004; Lawler III, 1991; Lin, 2006; Zatzick y Iverson, 2006). We propose the following list of practices to construct further the caldogram:

Table 1.1 HRM Practices

Category	Practice
Empowerment	EMP1. Suggestion system: A program that elicits individual employee suggestions on improving work or the work environment
	EMP2. Survey feedback: Use of employee attitude survey results, not simply as an employee opinion poll (in motivation, satisfaction, training needs and expectations), but rather as part of a larger problem solving process in which survey data are used to encourage, structure, and measure the effectiveness of employee participation
	EMP3. Job enrichment or redesign: Design of work that is intended to increase worker performance and job satisfaction by increasing skill variety, autonomy, significance and identity of the task, and performance feedback
	EMP4. Quality circles: Structured type of employee participation groups in which groups of volunteers from a particular work area meet regularly to identify and suggest improvements to work-related problems. The goals of QCs are improved quality and productivity, there are no direct rewards for circle activity, group problem solving training is provided, and the groups' only power is to suggest changes to management.
	EMP5. Employee participation groups other than quality circles: Any employee participation groups, such as task teams or employee work councils, which do not fall within the definitions of either self-managing work teams or quality circles. Usually these groups are formed by personnel from different departments or even different level. Its mission is also to make suggestions for improvement but with a broader scope.
	EMP6. Mini-business units: Relatively small, self-contained organizational unit (perhaps smaller than the plant level) that produces its own product of service and operates in a decentralized, partly autonomous fashion as a small business.
	EMP7. SeIf-managing work teams: Also termed autonomous work groups, semi-autonomous work groups, self-regulating work teams, or simply work teams. The work group (in some cases, acting without a supervisor) is responsible for a whole product or service, and makes decisions about task assignments and work methods. The team may be responsible for its own support services such as maintenance, purchasing, and quality control and may perform certain personnel functions such as hiring and firing team members and determining pay increases.
Reward	REW1. Individual bonus based on skills and/or knowledge: employees have a base salary plus an additional amount based on the amount of jobs he or she can develop, or on his or her level of training.
	REW2. Share of profits of the organization: employees receive a certain amount of money as a function of the profits of the organization.
	REW3. Share of profits based on suggestions made (Gainsharing, Scanlon…): The employee or employees perceive abonus proportional to the savings achieved by improvements in productivity, quality or cost reduction.
	REW4. Individual Bonus based on individual goals: employees perceived an extra amount in their salary for achieving certain short-term objectives or goals.

Table 1.1 HRM Practices (continued)

Category	Practice
	REW7. Participation in the capital of the company: the employee perceives as a part of the reward a certain amount of shares of the company's capital.
	REW8. Flexible remuneration: the employee decides how to perceive the extra salary. The most common alternatives are: in cash, through training, travels, social benefits, extra vacations… Employees do not decide the amount, but they have full autonomy on how to receive it.
	REW9. Job security: company policies or clauses in contracts intended to avoid layoffs.
Communication	COMM1. Regularly share information with employees.
Training	TRAIN1. Training in decision making/ problem solving in groups skills.
	TRAIN2. Training in leadership, business administration and team management skills.
	TRAIN3. Training in statistical analysis and quality.
	TRAIN4. Training for other areas or jobs within the company.

1.4 Conclusions and Further Research

Although this description is somewhat simplified, the cladistic approach can be very useful to human resources management for academics, consultants or entrepreneurs alike (Baldwin et al., 2005).

For academics, four main purposes can be identified: 1. mental clarification and communication of the practices and tools under study; 2. discovering new practices and tools in human resources management; 3. planning an organizational structure for change initiatives; 4. a checklist for categorizing and classifying existing and new human resource management models.

For entrepreneurs (a) best practice can be benchmarked, (b) change and transformations may be guided, and (c) strategies may be developed as problem areas can be identified through the cladogram. They may be able to identify the position on the cladogram of both themselves and their competitors and use it as a guide in organizational reengineering for sustainability.

In terms of consultants a classification would facilitate the storage, alignment and development of structural models of human resource management systems that would provide them with a generic library of structural solutions to maximize the organization effectiveness.

We are working on developing the whole cladogram of HRM practices for the auxiliary automotive industry.

1.5 Acknowledgements

The work described in this paper has been supported by several projects:

- "CORSARI MAGIC DPI2010-18243" by the Ministerio de Ciencia e Innovación del Gobierno de España within the Program de "Proyectos de Investigación Fundamental No Orientada"
- "Construcción de un cuestionario de factores psicosociales para el diagnóstico de condiciones de trabajo y efectos sobre la salud y la satisfacción laboral. Adaptación a entornos docentes universitarios" (PAID-05-11-2846) of the Universitat Politècnica de València
- "PROGRAMACION DE PRODUCCION EN CADENAS DE SUMINISTRO SINCRONIZADAS MULTIETAPA CON ENSAMBLAJES/DESENSAMBLAJES CON RENOVACION CONSTANTE DE PRODUCTOS EN UN CONTEXTO DE INNOVACION DPI2011-27633" by the Ministerio de Ciencia e Innovación del Gobierno de España within the Program de "Proyectos de Investigación Fundamental No Orientada"

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