

IDENTIFYING ORGANIZATIONAL COMPETENCIES IN PROJECT ORIENTED COMPANIES: AN EVOLUTIONARY APPROACH

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Building on the work of Prahalad and Hamel (1990), many methodologies have been proposed in the strategic management literature for the identification of organizational level core competencies (Bakker *et al.*, 1994; Tampoe, 1994; Gallon *et al.*, 1995; Coates *et al.*, 1997; Marino, 1996 and Javidan, 1998). All of them have two major drawbacks: i) they do not take into account the path dependent nature of organizational level core competencies (OLCCs) and ii) are not operationalized for a project - oriented company context like that of construction. The methodology proposed here supplements existing ones, by addressing the evolutionary dimension of OLCC development, taking under consideration path dependency and idiosyncrasy issues. In addition, the incorporation of management of projects theory (King, 1988; Arto and Dietrich, 2004; Jamieson and Morris, 2004; Morris, 2004) into the proposed methodological framework operationalizes it for the project-oriented company (Gareis, 2004) nature of construction majors.

Keywords: capabilities, competencies, organizational level core competencies, project-oriented company, evolutionary profiling.

INTRODUCTION

This paper stems from an ongoing research attempting to unearth the underlying mechanisms that international construction majors (ICMs) deploy to identify and leverage their organizational level core competencies (OLCCs) in an effort to successfully implement their intended strategies.

Within that context, a better understanding of the dynamics of OLCC development has the benefit of contributing to the understanding of underlying characteristics of OLCCs, as well as the causal link between those OLCCs and the achievement (or lack of) a company's competitive advantage, both related with successfully meeting organizational objectives (McGrath *et al.*, 1996) as well as achieving superior organizational performance (King *et al.*, 2001). Existing OLCC identification methods in the literature do not address the dynamic dimension of OLCC development. The methodology proposed here aspires to fill that gap.

DEFINITION OF KEY TERMS

First a definition of terms. The interchangeable use of the terms capabilities and competencies in the literature leads to confusion. Capabilities and competencies can exist both at the level of the individual as well as the level of the organization. Nelson

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and Winter define organizational level capabilities (1982:983), as a high level of routines (or collection of routines) that, together with its un-implementing input flows, confer upon an organization's management a set of decision options for producing significant outputs of a particular type. They consist of a series of business processes and routines that manage the interaction among its resources. Capabilities can be separated into operational and dynamic. Dynamic capabilities are concerned with change and govern the rate of change of ordinary capabilities (Winter, 2003).

An organizational level competence is a cross functional integration and coordination of organizational capabilities that have attained the highest possible level of functionality (Helfat and Peteraf, 2003) providing thus the organization with a functional and cultural capability differential over its competitors. Hall (1993) went on to argue that organizational competencies are the pillars of organizational competitiveness, which in turn can be achieved to the extent and speed that companies could build and exploit functional and cultural capability differentials. He defined functional and cultural capability differentials as a function of human skills and organizational processes.

The relationship between capabilities, competencies, and core competencies, both at an individual and organizational level, can be better explained with reference to Figure 1: The Core Competencies Hierarchy. Each level in hierarchy results from the integration of the elements in the lower level. Considering the firm as a pool of resources (Penrose, 1980), individuals develop individual level core competencies (ILCCs) by exploiting their company's resources through company specific processes. That 'set' of ILCCs and processes constitutes organizational level capabilities for that firm. When those are deployed in a manner that consistently delivers against objectives (McGrath *et al.*, 1996) then they can be said to provide the firm with a functional and cultural capability differential over its competitors and hence we can say they constitute organizational level competencies.

Organizational level core competencies (OLCCs), the highest level in the hierarchy, cross business units boundaries. They result from the integration of different business unit organizational level competencies (Javidan, 1998). For example, if an organization possesses organizational level competencies of i) structuring and signing concession contracts, ii) civil engineering design, iii) highway construction and iv) highways maintenance, each within one of four business units respectively, then their integration at a group level transcending business units could constitute an OLCC directly related to PFI/PPP service provision. Hamel and Prahalad (1994) defined OLCCs similarly to Hall (1993: 603) as "those desired skills, which are part of the collective learning of the organization in the form of employee know how and/or collective aptitudes that add up to the organizational culture". According to Prahalad and Hamel (1990) and Hamel and Prahalad (1994), a core competence must fulfil the following criteria:

- provide potential access to a wide variety of markets
- make a significant contribution to the perceived customer benefits of the end product.
- be difficult for competitors to imitate,

According to Gorman and Thomas (1997), the most important aspect of the distinction among capabilities and competencies is that competencies are value adding combinations of resources and capabilities. They conclude therefore, that a

competence is much more valuable than a capability or a resource since it is more difficult for competitors to detect or copy.

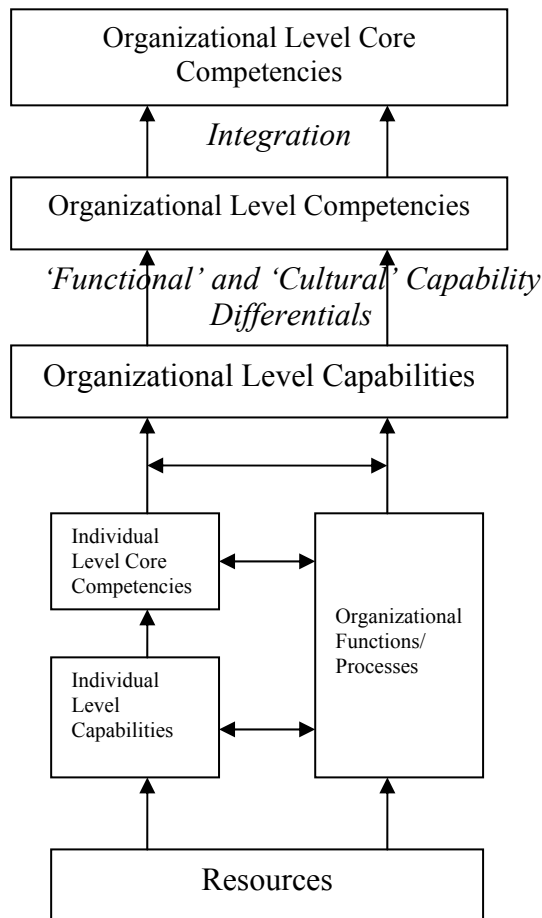


Figure 1: The Core Competencies Hierarchy (Adapted from Javidan et al. (1998))

The interest in this research, as well as the unit of focus of the methodology proposed here, is not skills or competencies in general. The interest here- and the reason for which the evolutionary profiling model has been developed – is to map company specific, path dependent evolutionary profiles of companies, in order to identify idiosyncratic underlying mechanisms, which underpin their OLCCs.

CORE COMPETENCE IDENTIFICATION METHODS

As already stated, a number of methods have been brought forward in the strategic management literature for the identification of OLCCs, the starting point of any competence-based strategy (Sanchez and Heene, 1996).

1. Galon *et al.* (1995) outlined a modular approach for the identification of ‘core technical competencies’ which starts by constructing an inventory of capabilities.
2. Coates (1996) proposed a top-down method which picks the core competencies intuitively and then de-aggregates them into critical capabilities.
3. Marino (1996), described a two phase method for developing consensus on a firm’s core competencies and capabilities which starts by profiling the current product/market situation and then assesses capabilities in terms of future market opportunities.

4. Tampoe (1994) advocates a reverse engineering approach which starts with end products and decomposes them to identify their core competencies.
5. Bakker *et al.* (1994) provided a core competence process for new business development programs which begins internally interviewing individuals; the potential core competencies are then evaluated after interviews with customers, competitors and industry experts.
6. In a multi-business firm, Javidan (1998) emphasized the need for operational definitions of the key concepts, linkages between management levels and integrations with the strategic planning process.

The drawbacks that the already proposed methodologies have are twofold: i) they do not consider the evolutionary aspect of core competencies and how that affects their content and ii) none of the methodologies brought forward is operationalized to address its project-based nature.

Currently proposed OLCC identification methods have adopted a number of philosophical approaches to research. Some adopted a deconstructionist philosophical approach (Gallon *et al.*, 1995; Coates 1996, Tampoe, 1998), others an approach of empirical observation and generalizations (Marino, 1996) and other an interpretative approach (Bakker *et al.*, 1994). However, none of these methods used in isolation can facilitate a methodology that will yield optimum results, especially in the case of management research, which should incorporate elements from each (Griseri, 2002) and even more so in the case of OLCCs, which are organizational social constructs (Hall, 1993; Hamel and Prahalad, 1994; McGrath *et al.*, 1996; Javidan, 1998). The authors here have adopted and followed a philosophical approach of ‘critical realism’ (Bhaskar, 1975; Sayer, 1999). Critical realism provides an alternative to several philosophical and methodological positions which have been found wanting (Smyth *et al.*, 2006). In some ways, critical realism, with its focus on necessity and contingency rather than regularity, on open rather than closed systems, on the ways in which critical processes could produce quite different results in different contexts (Sayer, 1999), fits comfortably with the requirements of this research. With the evolutionary profiling model proposed here and within the philosophical approach of critical realism, researchers can identify the company specific mechanisms through which OLCCs are being developed, while obtaining insights on the causalities of successful OLCC development and being able to recommend improvements on currently existing practices.

The ‘inclusive’ framework of the core competencies hierarchy on Figure 1, can assist in distinguishing between different ‘levels’ of competencies, as well as between capabilities and competencies. Finally, critical realism is a philosophical approach to research, highly appropriate for the case of project-oriented companies such as ICMs since it can lead to findings ‘critical to practice, being capable to take into consideration the complexity of the reality in which ICMs operate (Smyth *et al.*, 2006).

OLCCS AND THE NEED FOR EVOLUTIONARY PROFILING

In order to better understand the path dependent nature of OLCCs, they have to be examined through a number of lenses (Zoiopoulos *et al.*, 2006). The Oxford Dictionary defines the term competence as having the necessary ability or knowledge to do something successfully. Observing that the word competence has as a constituent the word petition, which, combined with com -meaning “comes with”- suggests that a competence is something which comes through the intentional

realization of a process towards specific objectives. That definition suggests that competence comes from the intentional process towards the realization of specific objectives and demands consideration of the evolutionary nature of OLCCs, embracing their path dependent nature.

It becomes evident that capabilities, competencies and core competencies share the common attributes of:

- being functionally based (Hall, 1992, 1993; Nelson and Winter, 1982)
- constituting of human skills and organizational processes (Hall, 1993; Hamel and Prahalad, 1994)

Existing similarities in their constituent parts means that capabilities, competencies and core competencies will inevitably exhibit similarities in the mechanisms that govern their evolutionary process. Based on those similarities and drawing from Helfat and Peteraf 's (2003) concept of the Capability Life-Cycle, we can separate the evolution of OLCCs in i) the founding, ii) the development and iii) the maturity stages. During the founding stage, an organized group/team with some type of leadership and capable of joint action will work towards a central objective, the achievement of which entails the creation of a new OLCC. For example, a company could establish a task force for the development of a PFI/PPP organizational level core competence (OLCC). In the development stage, the team or organization is set around capability, competence or core competence development and finally, in the maturity stage, the team or organization decides whether it will redeploy, transform, combine or retreat the organizational level core competence.

When a team is first put together, it begins with certain endowments, which are understandably team as well as company specific (Helfat and Lieberman, 2002). It is evident that due to path dependency, "endowments" set the stage for further capability, competence or core competence development. The notion of 'path dependencies' means that where a firm can go is a function of its current position and the paths ahead, its current position having been shaped by the path travelled (Teece *et al.*, 1997). The notion of 'path dependency' recognizes that history matters and thus that a firm's previous investment and repertoire of routines, (its history) constrains its future behaviour. Going back to our PFI/PPP example, if some of the individuals in the original task force possess ILCCs related to a PFI/PPP organizational level core competence, then the task force might decide to develop the OLCC organically. If not, then it might decide to acquire it.

After all, OLCCs exhibit equifinality (Eisenhardt *et al.* 2000, Helfat and Peteraf, 2003), in that each company will follow a unique path to develop or obtain an OLCC, which will deliver however the same end objective, that of achieving competitiveness in a chosen market. The notion of equifinality might at first shift the focus on the actual OLCCs, but some further consideration makes us realize that by embracing and addressing company specificity and path dependency, a company can obtain great insights as to the relationship of its initial core competence endowments at the founding stage and the success of its OLCC development venture. An evolutionary mapping and profiling of an organization's internal efforts related to the development of OLCCs can help us achieve that objective.

THE EVOLUTIONARY PROFILING MODEL

Key to the methodology proposed here, is an analysis framework that allows us to map the internal efforts of a company from setting strategic intent to implementing strategic architecture, in a project-oriented company context. Construction groups have already been conceptualized as project-oriented companies for the purpose of project management research (Bresnen *et al.*, 2005).

The analysis framework (Fig. 2) consists of three sequential stages of core competence development, shown on its first row. In core competence typology, the Capability Life Cycle and its three stages of i) founding, ii) development and iii) maturity, are the equivalent of the process of i) exhibiting strategic intent (SI) ii) setting strategic architecture (SA) and iii) implement those through Stretch and Leverage of existing OLCCs. In each column, the framework contains dimensions, drawn from a number of sources from management of projects theory (King, 1988; Artto and Dietrich, 2004; Jamieson and Morris, 2004; Morris, 2004) related to the management of project oriented companies and the implementation of their strategies. The framework, creates with its constituent elements a matrix which can facilitate the gathering, categorizing and summarizing of data, both in terms of the process of setting SI and the SA to achieve it and the actions a project oriented company has to take, to successfully implement that process. Goals are specific steps along the way to the accomplishment of broad objectives (King, 1988) – influencers and determinants of path dependent intent in terms of core competency theory (Prahalad and Hamel, 1990; Hamel and Prahalad, 1994; Mintzberg, 2003), and are established to reflect the expected outputs (which may include core competency routines) from strategies, and are directly achieved through strategies, which are in turn implemented through programs/projects for internal organizational change (thus mobilizing capabilities to induce and produce core competencies). Through this, the co-evolution of strategic elements in a project-oriented company context (columns 1 and 2 on figure 2).

In column 3, resource allocation mechanisms (King, 1989; Bresnan *et al.*, 2005) are the foundation of any successful stretch and leverage actions during the implementation of a competence based strategy. Linking business with project strategy (Jamieson and Morris, 2004) refers to the organizational systems in place to manage more systematically the linkage between business and project strategy, a function whose value is being furthermore increasingly recognized in the process and project-oriented nature of construction (Morris, 2004). Moving business strategy through portfolios, programs and projects, refer to the need that there must be coherent project management processes that integrate seamlessly with the strategic management process (Artto and Dietrich, 2004; Jamieson and Morris, 2004) as well as the need to manage strategy-program-portfolio-projects interrelations (Artto and Dietrich, 2004).

Strategic Intent	Strategic Architecture	Stretch and Leverage
Mission	Strategies	Resource Allocation Mechanisms
Objectives	Programmes/Initiatives	Moving Business Strategy through Portfolios Programs and Projects
Goals		Linking Business With Project Strategy Linking Individual with Business Objectives

Figure 2: The Analysis Framework

HOW THE METHODOLOGY WORKS

The framework of analysis is highly appropriate for ‘content’ analysis (May, 2003) especially in a case study research strategy. It can situate a company examined and its capability, competence and core competence development efforts within their own historical context of evolution (Yin, 2003), by enabling the categorization and subsequently the analysis of company specific data over the course of the life-cycle of an OLCC development effort.

Data gathering and analysis can be conducted as follows: First, data on a company for a period of time² that could have facilitated a sequence of setting, communicating and implementing SI and SA should be gathered. Whether the data qualitative or quantitative is not of primary importance as long as they can be summarized and classified - according to the sections that the analysis framework dictates. After data has been summarized and classified for a company, then the researcher can identify the co-evolution of company specific strategic elements of choice (King, 1988) along a company specific OLCC development path. Initially, relevant data can be collected through a desk study of publicly available documents related to the company under examination, such as annual reports and press publications. That initial step can then enable the researcher(s) to understand a company’s specific evolutionary process and further develop semi-structured interview questions that can be used to examine to a greater depth the underlying mechanisms outlined in the ‘Stretch and Leverage’ column of Figure 2: The Analysis Framework.

CONCLUSIONS/DISCUSSION

The evolutionary profiling methodology proposed here combines the evolutionary aspect of core competence development as well as the project-oriented nature of construction in a company specific context. It can be used to identify at any moment in time, not only which are the activity areas that the organization is developing (or has developed) an OLCC, but also at which stage of their life-cycle those are situated. It is therefore both dynamic and unconstrained by specific processes (Galon *et al.*, 1995; Coates, 1996; Marino, 1996; Tampoe, 1994) or definitions (Javidan, 1998). Furthermore, the core competencies hierarchy developed here, if used in conjunction with the evolutionary profiling, can assist in examining underlying mechanisms and dynamics of development and evolution at different levels of ‘competencies’ within an organization and monitor their interrelationships as they evolve.

The analysis framework proposed here can be helpful to both academics and practitioners in better understanding the dynamics OLCC development in parallel with a company pursuing the implementation of its intended strategies. In the case of our on-going research, it has already been applied to map the evolutionary profile of 6 international construction majors, identifying:

² The time period – depending on the availability and necessity for depth of examination – can range from 5 years upwards.

1. OLCC development efforts ‘transcending’ BUs (‘transcendence’ is in itself a core competence existence criteria).
2. OLCC areas that have lasted the test of time (in itself a proof that they are truly core competencies since they deliver value).
3. How OLCC development efforts are transformed with emerging strategies.

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