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CORE COMPETENCIES AND PHASES OF THE ORGANIZATIONAL LIFE CYCLE

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─Abstract ─

Organizations evolve according to well-defined phases during which it must raise some competencies more than others. This study discusses the importance of core competencies according to the phases of the life cycle of the organization. In this research, we mobilize the core competencies approach to explore the competence required at each stage of the organizational life cycle. The quantitative study of 50 Tunisian companies operating in the food sector shows that the importance of core competencies varies according to phases of the life cycle of the organization. Indeed, the integration competencies are the competencies most critical during the start-up, managers mobilize their market competencies much more during the expansion phase and finally the technological competencies are the most important competencies during the maturity phase.

Key Words: *Core competencies, organizational life cycle, Tunisia.*
JEL Classification: D90, E32, J50, L00, L20, M10, Q00.

1. INTRODUCTION

The core competence approach has tried to explain the growth of enterprises. It highlights the importance of core competencies as a source of sustainable competitive advantages. The evolution of the organization can be either encouraged or limited by the nature of the competencies deployed within the enterprise. The identification of competencies is necessary, but is particularly sensitive since the organization goes through phases (startup, expansion, maturity, renewal, decline) in which it must optimally manage its portfolio of core competencies. We try in this research to answer the following questions: Are the core competencies the same equally important in every phase of the life cycle of the organization? Is their importance change from one phase to another? If yes, what are the most important competencies in each phase of the life cycle of the organization? The objective of this work is to determine the most important competencies in each phases of the life cycle of the organization.

We mobilize theoretical work on the organization life cycle and competence approach. Then, we present the methodology of empirical research followed by 50 Tunisian companies operating in the food sector. Finally we discuss the results.

2. LITTERAURE REVIEW

2.1. The life cycle of the organization: an inevitable evolution

Stages of the organizational life cycles are interpreted as gradual changes where organizations growth periodically (Hafsi and Denis, 1997). The organizational life cycle (OLC) "*is defined by the internal characteristics of the organization and external environment in which it operates"* (Silvola, 2008a: 29) and also by adopting the biological design "*a collective interpretation of the environment of the organization under the control of the directors. Most firms do not pass inexorably from one stage of development to another according to the traditional biological perspective* "(Lester, Parnell and Carraher, 2003:340).

One of the first models of the life cycle was presented by Chandler (1962) who identified four phases of the evolution model of the organization. Greiner (1977) followed and presented one of the best known models characterized by phases of evolution and revolution periods of organizational change. Then we witness a proliferation of models according to the theory of life cycle which remain largely without empirical efforts. Most OLC models adopt the naming of stages or phases of the life cycle (Hanks and *al*., 1993; Smith, Mitchell and Summer, 1985; Miller

and Friesen, 1984; Quinn and Cameron, 1983), others make use of those growth stages (Kazanjian and Drazin, 1990, Scott and Bruce, 1987) or stages of development (Dodge, Fullerton and Robbins, 1994, Churchill Lewis, 1983). We choose the type of the models according to the phases of the OLC models because they have been verified empirically. These OLC phases are (Dodge, Fullerton and Robbins, 1994: 123): "*sequences of events that describe the change in each moment, a hierarchical progression difficult to control and a composition of a wide range of activities and structures organizational* ".

Although the OLC has been reduced to a set of phases that vary three to ten, there is unanimous agreement that it is "*a way of organizational development and has different characteristics associated with each phase*" (Dodge, Fullerton and Robbins, 1994: 123). Models describe changes in the organization of specific periods of development of the organization, while those with lesser number of phases usually combine developmental periods. Miller and Friesen (1983) proposed a five-phase model applicable to any organization that seems more appropriate for our research. These phases are Start-up (existence, the entrepreneurial phase), Expansion (growth, survival), Maturity (success), Renewal (diversification) and Decline (death): It is the cycle of evolution of the organization phase of birth that is marked by a formal structure in the direction of "*One Man Show*". An organization in growth seeks to meet the needs of its customers and to adapt to the environment. During maturity, the organization chooses to maintain an institutionalization of procedures. It enters into a process of change and innovation for revitalization. In disability and resistance, the organization may decline.

2.2. Core competencies: Definitions and Dimensions

2.2.1. Definition

The competence approach has grown considerably, particularly in strategic management. It puts into perspective the importance of core competencies as an explanatory factor for the sustainability and competitiveness of the firm. It is based on the principle that business assets and mobilizes resources and combines them to serve its customers, by using knowledge and organizational processes that are unique. In this context, several definitions have been proposed for the concept of core competence.

Table1: Definitions of core competencies

Authors	Definitions
Prahalad et Hamel (1990)	Collective learning organization, especially how to coordinate diverse production competencies and integrate multiple streams of technology.
Doz (1994)	The underlying processes that combine skills, active systems and values that provide a competitive advantage and provide useful features for customers.
Markides et Williamson (1994: 153)	« *A pool of experience, knowledge, and systems that together can act as catalysts that create and accumulate new strategic assets.* »

Each author has tried to illuminate a facet of this concept but all agree to the fact that skills are created within the firm by the interaction between the different actors. They are based on the interaction between resources, routines, knowledge specific to each firm and the result of organizational learning. Recombinations are skills that enable the company to design, manufacture and distribute products and services to various customers in various markets (Durand, 2000).

2.2.2. The dimensions of the core competencies

Some have stressed the importance of technology among core dimensions of competence (Meyer and Utterback, 1992), others have focused on marketing aspects (Li and Calantone, 1998), while others have beyond these two types of competencies, stated transversal integrative competences (Song and Thieme, 2006). Wang et al. (2004) considers that the core competencies consist of technological competencies, marketing competencies and integrative competencies.

Technological competencies relate not only to the control and the ability to combine various technologies, but also to the ability to mobilize technological resources effectively throughout the organization (Walsh and Linton, 2002; Afuah, 2002). They reflect the level of technological expertise of the firm and its ability to learn about new technologies. Marketing competencies are defined by Wang et al. (2004: 255) as "*the capabilities and processes designed to apply the collective knowledge, skills and resources of the firm to market its related needs* ...". Knowledge of competitors falls within the marketing competencies and allows the company to assess the sustainability of the value of knowledge and customer access channels that a company currently owns (Day, 1994). For Kohli and Jaworski (1990) market skills allows as to understand the profound needs of current and future customers and the factors affecting them. As for the integrative competencies, they are transferable skills that combine, coordinate and integrate

different professions, specific skills and activities both inside and outside the company. They can generate new applications of knowledge existing in the business (Kogut and Zander, 1992). They correspond to the interaction cross-functional information sharing, coordination, and joint participation in specific tasks (Song and Thieme, 2006).

Our research is to determine the importance of core competencies according to the phases of the CVO. The working hypothesis states that the importance of core competencies varies according to phases of the life cycle of the organization.

3. METHODOLOGY

3.1. Sample and data collection

The data collection was based on a convenience sample. It was ensured through a questionnaire that was answered on the spot. Our final sample included 50 executives of companies operating in the food sector.

3.2. Measures

The measurements are performed by Likert scales graded 5 whose validity and reliability have been confirmed in previous studies.

Table 2: Variables operationalization

Variable	Item description	References
Phases of OLC (25 items)	Five determinants explanatory phase: structure, specialization / differentiation, the process of information, decision making and formalization.	Lester et Parnell (2008) ; Lester, Parnell et Carraher (2003) ; Hanks et al (1993)
Core competences (24 items)	Relating to technological capabilities, market and internal and external coordination	Wang et al. (2004)

3.3. Analysis Method

We began by conducting a principal component factor analysis on the variable cycle of life and core competencies, which allowed us to obtain three phases (startup, expansion and maturity) and 3 factors for core competencies namely technological competencies the market competencies, and integration competencies. To classify Tunisian companies in the food industry according to their phases of LCO, we used the method of "clustering". We conducted a hierarchical cluster analysis in order to identify the number of phases in the change in the observation of group homogeneity throughout the dendrogram.

Finally, we developed a non-hierarchical classification according to the method of aggregation "Ward". A three-fold variable is found (phase start-up versus expansion phase versus maturity phase) as a dependent variable. We will try to explain a set of metric variables. Discriminate analysis is the best method to solve our problem. Data analysis is performed using the software SPSS.18.

4. RESULTS

4.1. Reliability and validity of instruments scales

The reliability on each dimension is very convenient with a value of Cronbach's alpha exceeding 0.7. Similarly, correlations between items and scale scores are higher than 0.6. Items relating to each variable participate properly in its construction.

Table 3: Reliability analysis

Variables		Symbols	Cronbach's alpha
Core competencies	Technological competencies	TECH _COMP	0,825
	Marketing competencies	MAR_COMP	0,736
	Integrative competencies	INTEG _COMP	0,703
OLC phases	Startup	STAR	0,905
	Expansion	EXPAN	0,866
	Maturity	MATUR	0,853

4.2. Relationship between core competencies and phases of organizational life cycle

4.2.1. Verification of the conditions of application of the discriminant analysis

Before starting the discriminate analysis, we tested the three conditions of application; the normal distribution of variables (core competencies) is checked by Skweness and kurtosis indexes, and observation charts. Secondly, the analysis of the correlation matrix proves favorable. There is no problem of multicolinearity between the explanatory variables. Finally, the equality of covariance matrices was tested by the test Box's M. The risk of rejection of H0 is checked, which leads us to accept the null hypothesis and conclude the equality of covariance matrices.

4.2.2. Estimation of discriminante functions

The number of discriminate functions is equal to two. We must use the full estimation method (Jolibert and Jourdon, 2006:387) to test our hypotheses. To

check the relevance of the discriminant functions, we will make sure of the difference between the centroids. These are reflected in the low value of "Wilks' Lambda". The value zero means that we can conclude the discriminating power of selected features.

Table 4: Tests of equality of group means

	Wilks's Lambda	F	ddl1	ddl2	Signifiance
TECH _COMP	0,490	24,415	2	47	0,000
MAR_COMP	0,517	21,966	2	47	0,000
INTEG _COMP	0,972	0,679	2	47	0,512

The value for the first function is 0.268, so this is a significant discriminate function at 5%. Value for the second function is a little higher but remains significant as well.

Table 5 : Wilk's Lambda Table

Wilks's Lambda					
Testing one or more functions		**Wilks's Lambda**	**Chi-square**	**ddl**	**Signifiance**
Dimension	**1 to 2**	0,268	60,580	6	0,000
	2	0,585	24,634	2	0,000

We can dig deeper by checking the significance practice. Since there are two discriminate functions, the Eigenvalue associated with the first function is 1.185 and this function represents 62.6% of the explained variance. Associated canonical correlation is 0.736. The square of this correlation indicates that 85.79% of the variance in the dependent variable is explained by the independent variables. Similarly, the Eigenvalue of the second function is 0.708 and this function considers that 41.47% of the variation in the phase of the life cycle of organizations is explained by the core competencies.

Table 6: Eigenvalues

Function		Eigenvalues	% of variance	Cumulative %	Canonical correlation
Dimension	1	1,185	62,6	62,6	0,736
	2	0,708	37,4	100,0	0,644

Hence, we can say that there are significant relationships between the dimensions of core competences and the phases of the life cycle. Therefore, we can say that our research proposal is confirmed *à priori* as part of Tunisian companies; equality between the phases of the life cycle of organizations is rejected and it follows that these phases differ in one or more explanatory variables used in our work. We can distinguish between three phases of the life cycle of the

organization that are starting up, expansion and maturity. This indicates that the discrimination is significant.

4.2.3. Most discriminating competencies

The evaluation of the most important competency for each phase of the CVO is performed by examining the weight of different competencies in discriminating between the phases. This involves examining the values of the coefficients of canonical discriminate functions standardized to be between ± 0.3 (Hair et al, 1995).

Table 7: Discriminate function coefficients table

Independant Variables	Functions	
	1	2
TECH _COMP	**0,806**	-0,784
MAR_COMP	0,454	**0,978**
INTEG _COMP	-0,251	0,125

It is clear from this table that at the first discriminate function, technological competencies are the most discriminating factor (0.806). At the second function, the marketing competencies factor is the most discriminating (0.978). Since, function 1 is mainly associated with the factor of technological competencies; we expect that this is the factor explaining the variation between phases of organizational life cycle. These results are also confirmed by examining the structure matrix table.

Table 8: Loading between predictors and discriminant functions

Independent variables	Functions	
	1	2
TECH _COMP	**0,892**	-0,371
MAR_COMP	0.697	**0.713**
INTEG _COMP	0.137	0.098

Thus, we can conclude that the technological competencies and marketing competencies have a structure coefficient greater than 0.3 in absolute value, and have specifically the most important significance level. Therefore, these variables affect the phase of the life cycle of the organization significantly.

Finally, through the confusion matrix, the results of the classification made by the procedure of SPSS DISCRIM Bayesian rule according to assignment, shows that 88% of Tunisian firms are correctly classified. By using the value of QPRESS,

discriminate function thus provides a good prediction of classification and the overall discriminate model is validated.

5. THE IMPORTANCE OF CORE COMPETENCIES ACCORDING TO PHASES OF THE OLC

An examination of the standardized coefficients and ranking functions allows us to support our research hypothesis.

Table 9: Coefficients of ranking functions

	Start-up	Expansion	Maturity
TECH _COMP	7,181	8,805	**11,736**
MAR_COMP	1,389	**4,809**	2,072
INTEG _COMP	**6,164**	5,494	5,118
(Constante)	-25,605	-41,169	-40,707

Thus, we can say that technological competencies are the discriminate factor between the phases. In addition, they are the most important competencies of maturity phase. As stated in the work of Churchill and Lewis (1983), maturity stands for consolidation and control of financial results. At this stage, the climate is conducive to challenges, innovation and new product development (Kazanjian and Drazin, 1990; Adizes, 1988). Similarly, previous results showed that due to internal problems and control problems, leaders give more importance to the technical performance, otherwise provide new products and promote the recovery of the organization (Lester, Parnell and Carraher, 2003; Dodge et al, 1994). Although the size of the technological competencies differentiates between the three phases, it is rather crucial for maturity phase.

Marketing competencies are more important during the expansion phase. The vision of the organization is moving outwards when the latter chooses growth (Hanks et al, 1993). Thus, faced with the problems of cost control and the need to ensure a profit, the leader turns to the market to ensure results (Beverland and Locksbin, 2001, Hanks et *al.*, 1993; Kazanjian and Drazin, 1990). By comparing several companies Portnoff and Lamblin (2003) show that organizational growth is closely linked to essentially relational competencies. The expansion phase is characterized by an assessment of the market environment and concretization of an information system (Lester and Parnell, 2004; Miller and Friesen, 1984).

The integrative competencies are most valuable during the startup phase. Indeed, at the beginning of the life cycle of the organization, the leader is moving towards production, improving quality and focuses on the security of financial resources

(Jawahar and Mclaughin, 2001, Kazanjian and Drazin, 1990, Quinn and Cameron, 1983) and marketing problems (Dodge and Robbins, 1992). This first period requires the coordination of all functions and supports the efforts of all staff to overcome the initial challenges.

6. CONCLUSION

The objectives of this research were to study the importance of core competencies according to the phases of the life cycle of organizations. To ensure this objective, a theoretical study in which we defined the concepts of core competencies and organizational life cycle has proved to be interesting. The analysis of the results of our empirical research has resulted in a organizational life cycle of Tunisian food sector organizations defined by three phases (startup, expansion, maturity) and core competencies defined by three dimensions (technological competencies, marketing competencies and integrative competencies).

The results show that technological competencies and marketing competencies differentiate between phases of organizational life cycle. In addition, integrative competencies are the most critical competencies during the startup phase, whereas the expansion phase requires much more marketing competencies and the technological competencies are the most critical competencies of maturity phase.

Our research has certainly brought additional lighting to the context of the evolution of the organization and helped refine the theoretical and methodological studies on the life cycle of organizations and core competencies. Our first contribution is to operationalize these concepts. Our research will help managers to position themselves on the phase of the life cycle of their organization and ensure optimization of mobilized competencies. It reveals to leaders the factors explaining growth engines for their organization.

Our study has certain limitations in our methodological choices. Some limitations are suggested because we believe that the results may be different in the sector services. Moreover, there is a degree of subjectivity in the appreciation of personal response. In addition, this research does not help to understand the processes through core competencies and organizational life cycle phases. A research study more in depth would be appropriate.

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