KNOWLEDGE MANAGEMENT MODEL:
PRACTICAL APPLICATION FOR COMPETENCY DEVELOPMENT

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ABSTRACT: **Purpose:** This study presents a knowledge management (KM) conceptual model for competency development and a case study in a law service firm which implemented the KM model in a competencies development program. **Methodology/approach:** the case-study method was applied according to Yin (2003) concepts, focusing a six-professional group involved in CDA. Data were collected in the beginning of the program and 12 months later from the following sources: interviews with CDA participants, direct and participative observation and documents/organizational statements analysis. **Findings/practical implications:** after twelve months, CDA participants presented performance improvements that were not registered in four years of traditional training practices. The experience showed that, more than developing competencies, the method can accelerate time for competencies development. **Limitations:** the KM model implementation in a small and more easily controlled group may have favoured the positive results. Studies are continuing to analyse the program over a longer period of time during which it will be possible to evaluate the enlargement in the program's range. Besides, two case studies involving a larger scale are already running. **Originality/value:** the need for quick responses to the intricacy of the ever-changing environment leads organisations to greatly rely on individuals' knowledge and competencies, which has being increasingly considered key resources for competitive advantage. The model may help companies under the pressing need for foster human and organisational competencies development, mainly service firms which product is human knowledge itself.

Keywords: knowledge management, competency, competency-based management, case study, law service firm.

1. THEORETICAL FUNDAMENTALS

1.1. Competencies

The debate on competencies was intensively fomented by Prahalad & Hamel (1990) with the publication of *The core competence of the corporation*. However, according to Fleury (2002), the topic began to be discussed by American psychologists and administrators in 1973 with the publication of

Testing for competence rather than intelligence by D. McClelland, who defines competencies as personal characteristics that can lead to higher performance. These characteristics are aptitudes (natural talent, susceptible to improvement), abilities (the practical application of a talent) and knowledge (necessary information for task achievement). Since then, other studies and contributions to the construction of a competency definition have been found in the literature.

Zarifiam (2001) defines competency as an individual's capacity to take initiative, to reach beyond what is prescribed, to understand and control new situations encountered at work and to take on responsibility for them, thus achieving recognition. A competent professional shows practical understanding based on knowledge acquired from previous experiences, and such knowledge is changed and increased as situational diversity occurs. He is capable of mobilising a network of authors and make them share actions and responsibilities surrounding the same situations.

To Le Boterf (2000), competency is an abstraction; it does not show material existence and is dependent on an individual's competent action. Thus, competency is not a state, but rather an action resulting from the combination of personal resources (knowledge, abilities, qualities, experiences, cognitive capacities, emotional resources, etc.) and environmental resources (technology, databases, books, relationship networks, etc.). In the environmental resources, one can search for complements to his personal resources whenever he lacks all the knowledge necessary to perform his competent action. Professional competency consists in being able to combine such resources in order to produce competent action. "Combinative knowledge is the core of all competencies" (Le Boterf, 2003, p.12). The author points out four sets of competency elements which he considers to be inseparable from an individual's personality: **knowledge; know-how**; **aptitudes** and **emotional and physiological resources**.

The **knowledge** set includes theoretical knowledge (necessary to understand a phenomenon, an object, a situation, an organisation or a process), environmental knowledge (related to the context, comprises knowledge regarding systems, processes, materials and products, strategies, organisational structure and culture, etc.) and procedural knowledge (describes how an action must be conducted, involves procedures, methods, adequate operational modes; involves a set of actions performed in an established order).

know-how comprises formalised know-how (knowing how to use procedural knowledge), empirical know-how (includes learning from practical experiences and involves the senses – sight, discernment, reflexes, intuition, sensitivity, etc.) and cognitive know-how (concerning the intellectual operations necessary for the formulation, analysis and resolution of problems, conception and conduction of projects, decision-making, creation, invention, generalisations, analogical reasoning, etc.).

Aptitudes or qualities are related to knowing-how-to-be, and have been conventionally referred to as behavioural competencies, such as the abilities for relationships, flexibility, pro-activity, etc., which have been increasingly required in organisational contexts. **Emotional and physiological resources** are related to knowing how to control emotional reactions that may pose as obstacles and risks or advantage and help in problem resolution.

As observed, the definitions are complementary and converge to a common point: organisational competencies are only materialised through people and their competencies. The need to quickly respond to the complexities of an ever- changing environment requires that leaders greatly rely on individuals' capacity of adaptation, initiative and creativity. In order to face such environmental challenges, organisations need professionals who can reach beyond what is prescribed, who make choices, take initiative and make decisions instead of individuals who are restricted to the performance of tasks pre-defined in a job description (LeBoterf, 2003). Firms need people who know how to act and react to situations, who are able to continuously learn and relearn. Constant learning capacity is a condition for organisational survival (Senge, 1990).

In this context, the concept of competencies is seen as a more adequate basis for people management systems. Le Boterf (2000) points out that an organisation's key competency results from a combination of individuals' competencies and professionalism. Dutra (2001) describes the tight relationship between individual and organisational competencies. He places them in an interdependence condition, in a feedback system, whose result is mutual contribution. The company lends people its competency assets, thus providing them with the conditions to face different situations. People return the company with their learning, thus giving it survival and development conditions. Individual competencies must be linked to organisational competencies, which, in their turn, must sustain organisational strategy. In order to achieve such alignment, it is of utmost importance for the organisation to identify the location of essential competencies, to investigate the quantity and quality of people who incorporate them (Prahalad; Hamel, 1990).

According to the various definitions approached, competency can be regarded as a set of different types of knowledge: knowing, knowing how to be, knowing how to do, (McClleland, 1973); knowing how to act, empirical knowledge, knowing how to learn, knowing how to mobilise resources (Zarifian, 1999); theoretical knowledge, environmental knowledge, procedural knowledge, formal know-how, empirical know-how, cognitive know-how, emotional knowledge (Le Boterf, 2003). The knowledge involved in the competency concept can be considered to be either **explicit knowledge** – theoretical knowledge, environmental knowledge, procedural knowledge, formal know-how – or **tacit knowledge** – empirical knowledge (abilities) cognitive knowledge, knowing how to be (attitudes and behaviours) emotional resources, etc. (Le Boterf, 2003). Therefore, the knowledge that characterises competencies

comprises different types of knowledge classified between the tacit or explicit levels, according to concepts presented in the following section.

1.2. Knowledge in the organisational context

Knowledge is an intricate question that has been vigorously discussed in the field of philosophy for thousands of years; however, as regards knowledge in the extent of organisations, the interest lies not in keeping a philosophical approach, but rather a managerial one. Considering the aspects inherent to the organisational context, knowledge must *involve the act of knowing revealed in the solution of problems and in the productive practices of individuals and groups within an organisation* (Spender, 2001 p. 37).

To Davenport; De long and Beers (1998), knowledge is a highly valuable resource which is ready to be applied in actions and decisions. It results from a combination of information, experience, context, interpretation and reflection. Information is regarded as the fundamental element in knowledge organisation (Choo, 1998) as it is the basis for the production of human and organisational knowledge.

Nonaka & Takeuchi (1995) proposed their own theory for organisational knowledge development. In order to explain knowledge creation, those authors established two dimensions: epistemological and ontological. In the epistemological dimension, explicit knowledge and tacit knowledge are distinguished. Explicit knowledge is expressed in words, numbers, codes, formulas and is, therefore, easily shared. Tacit knowledge, due to its subjective and intuitive nature, is difficult to be formalised and shared. In the ontological dimension, knowledge creation begins in the individual level, extends to the group, and later to the organisation. It can also reach inter-organisational levels (Nonaka & Takeuchi, 1995; Kogut & Zander, 1992).

To Nonaka & Takeuchi (1995) the interaction between individuals' tacit and explicit knowledge is the major dynamics in organisational knowledge creation represented in the Knowledge Conversion Model, which is composed of four modes: socialisation, externalisation, combination and internalisation. From the interaction among the four conversion modes, the knowledge spiral arises.

Socialisation is the conversion of an individual's tacit knowledge to the tacit level of another by sharing. This means that without which it is extremely difficult for an individual to project himself in the other's form of reasoning. This is learning by observation, imitation and practice. In **externalisation**, tacit knowledge is converted into explicit knowledge by the use of metaphors and analogies that are, many times, inefficient to accurately reproduce knowledge, thus causing dialogue and collective reflection, which are the bases for externalisation. **Combination** is the passage of an individual's explicit knowledge to the explicit level of the other. It is the exchange of codifiable knowledge occurring by means of documents, lectures, meetings, telephone communication, the

Internet, etc. Through **internalisation** – conversion of explicit into tacit knowledge – explicit knowledge is incorporated to the individual's bases of tacit knowledge under the influence of his mental model.

The spiral of knowledge is the basis for the organisational knowledge creation theory. As regards organisational knowledge management, Von Krogh; Ichijo; Nonaka (2000) consider that the term "management" would be inadequate as it implies the control of processes that may be uncontrollable. Hence, those authors coined the expression "knowledge enablement". However, the term "manage" would not be completely inappropriate, since it involves other meanings that are beyond control, such as planning, organising and evaluating (Fleury, 1997). Admitting that it is difficult to control knowledgeprocesses, KM must involve management practices that will foster the processes of knowledge creation, transfer, sharing, dissemination and application in the organisation. KM depends on adequate contexts in order to be efficient, according to Nonaka & Takeuchi (1995), Leonard-Barton & Swap (1999), Perez-Bustamente (1999), Von Krogh, Ichijo and Nonaka (2000) and Wang & Ahmed (2003). The ideal context for organisational knowledge creation can be organised in three dimensions:

- **Environments and relationships**: a solicitude environment (trust, empathy, condescendence in judgement, accessible help and stimulus to courage); adequate level of informality; freedom atmosphere; interactive relationships; openness to knowledge sharing.
  - **Structures:** horizontal, few hierarchical levels, without departmental barriers, with a communication infra-structure that will support and facilitate the flow of information and ideas.
  - **Managerial policies and actions**: promoting information dissemination; sharing future visions, goals and strategies; sharing understanding of the necessary knowledge to reach goals; providing stimulus to risk and lenience to errors; flexible policies; adequate autonomy level; promoting easy flow of ideas, group learning conditions and situations that foster knowledge creation and sharing, managing conversation; encouraging systemic reasoning; valuing diversity; disseminating knowledge to all organisational levels; create and implement adequate procedures for knowledge creation processes.

1.3. KM System Conceptual Model

The model presented in this section takes into account that individual knowledge is the starting point for organisational knowledge creation (Nonaka & Takeuchi, 1995), and since information is the raw material from which individual knowledge stems (Sarvary, 1999), it comprises the basis of knowledge organisation (Choo, 1998). Davenport, De Long and Beers (1998) complement that individuals' knowledge arises from the combination of information, interpretation, reflection and experience within a certain context. On must consider also the importance of connecting new

information with existing knowledge (Zarifian, 1999) and combining different sorts of know-how (Le Boterf, 2003).

Hence, an individual's knowledge is created when information goes through an internal process involving interpretation, reflection and connection between new information and his existing knowledge so as to be applied in a new situation or context. -

In order to encourage individuals to process information to create knowledge, such learning process must be meaningful. According to Perez-Bustamente (1999), Von Krogh, Ichijo and Nonaka (2000), a clear view of the knowledge to be developed is necessary to stimulate commitment to its creation and operationalisation. A shared view works as a mental map that guides individuals in three correlated areas: a) the world in which they live, b) the world in which they must live, and c) knowledge that needs to be developed in order to follow the pathway between these two worlds.

To create organisational knowledge, individual knowledge (located in two dimensions, a tacit dimension and an explicit dimension) must be externalised. Organisational knowledge creation occurs through the combined conversion of such two dimensions, according to Nonaka & Takeuchi (1995), thus promoting group learning (Senge, 1990) and dissemination to all organisational levels. The process of transforming information into knowledge takes place in the individual's internal levels, involving reflection, interpretation and connection for later practical experimentation in a certain context (Davenport, De Long & Beers, 1998). The organisation's endeavours to collect and provide information do not ensure individual access and processing. However, actions that stimulate access and induce information processing are essential to turn such practices into natural attitudes to be incorporated by the organisational culture.

Individual knowledge must be transferred to other individuals and groups in order to promote organisational knowledge. To be transferred, knowledge must be externalised by those possessing it and internalised by those lacking it, which particularly applies to tacit knowledge, as its imitation by competitors is difficult. As previously mentioned, the transformation of individual knowledge into organisational knowledge occurs by socialisation, externalisation, internalisation and combination (Nonaka & Takeuchi, 1995). Such process may take place from person to person, from a person to groups, or intra-groups. The two latter forms are more efficient as they make knowledge dissemination more agile. Once created, organisational knowledge depositories will contribute to the development of more individual knowledge, thus composing a virtuous circle. The result of this process must be the combination and transformation of generated knowledge into competent actions.

Admitting that individual knowledge and competencies are difficult to control, the organisation must align strategies, policies and actions with organisational goals. It will, then, be able to create adequate structures and co-operative environments as well as to stimulate favourable relationships for

developing the necessary knowledge to achieve such goals. The purpose of KM is, therefore, to implement actions in order to supply the bases for organisational knowledge, thus promoting the achievement of the process described in Figure 1, which is the basis for the KM conceptual model presented in this section.

The KM conceptual model contemplates the six phases of the knowledge course represented in Figure 1: i) meaning creation or shared vision of the purposes of knowledge development; ii) information provision; iii) induction to internal processing for individual knowledge creation; iv) conversion of individual knowledge into group learning; v) knowledge dissemination to other organisational levels, and vi) practical application of knowledge – competency materialisation, according to Le Boterf (2000).

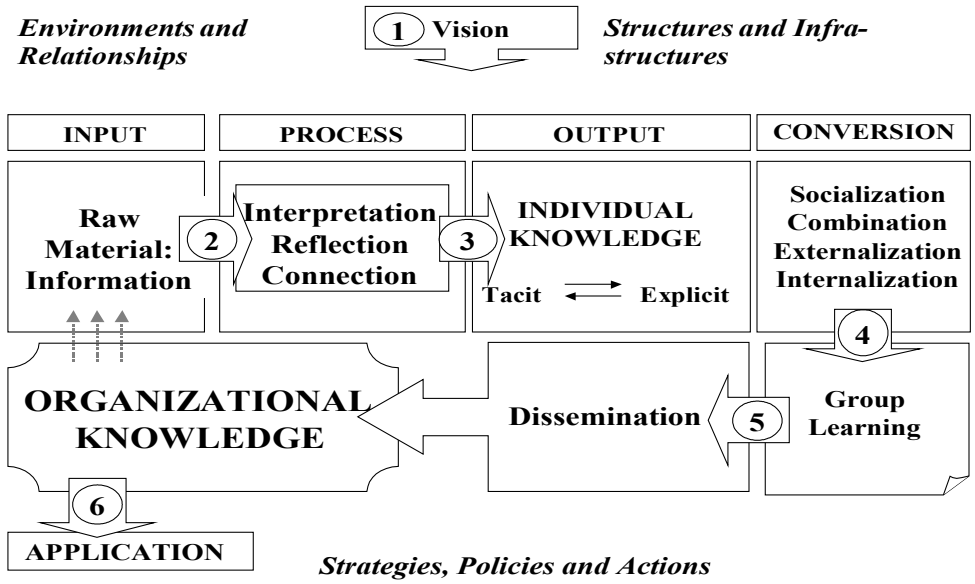

Figure 1: From individual knowledge to organisational knowledge.

These actions are structured into four spheres around a nucleus (Figure 2). The KM spheres represent the levels in which managerial actions must be implemented for knowledge creation processes within the organisation. Ideally, in this context, the environment, relationships, strategies, managerial actions, organisational policies and structures and goals should be aligned to effectively foster KM practices.

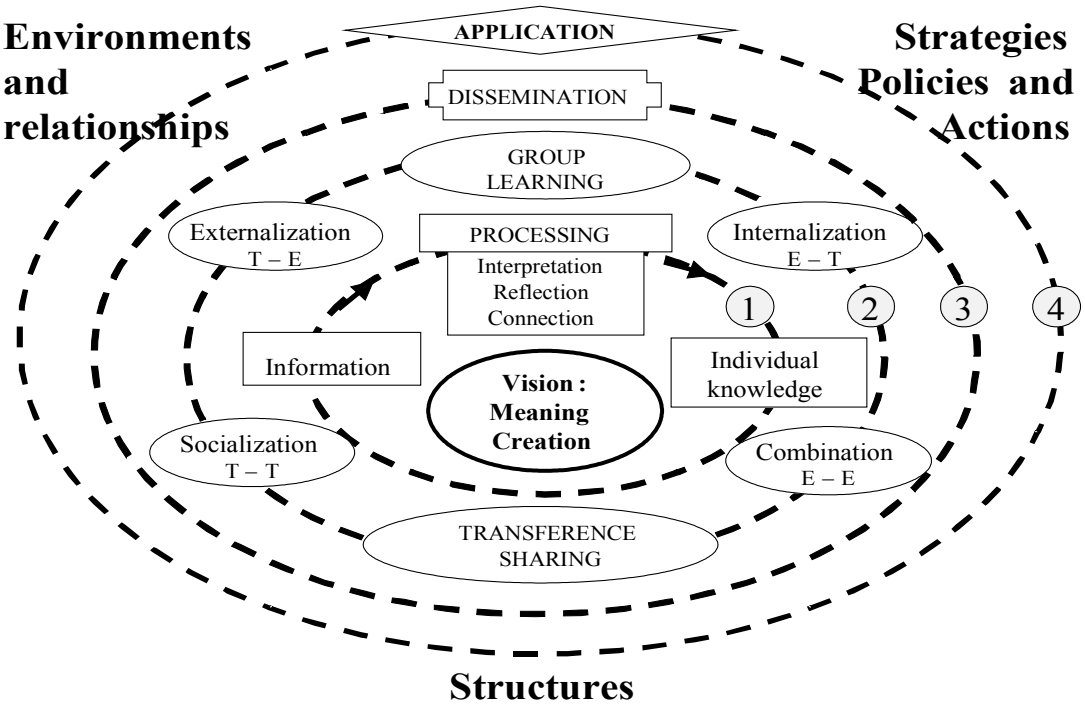

Figure 2: A knowledge management system conceptual model.

The **nucleus** represents the shared vision. Nucleus concentrates the actions leading to shared vision of the knowledge to be developed. Meanings must be created, that is, persons ought to be aware of what type of knowledge is to be developed. They must understand the reasons for such development so that commitment and concentrated efforts towards goal achievement can arise.

The **first sphere** represents an internal production process: individual knowledge creation. It involves the provision of raw material through actions intended to stimulate the information flow (Choo, 1998), facilitate communication among individuals and the access to relationship networks, libraries, databases, the Internet etc. It also involves actions that stimulate reflection, interpretation and connection of information for concept creation.

The **second sphere** concentrates actions to stimulate the four knowledge conversion modes by Nonaka & Takeuchi (1995): externalisation (T-E: conversion of tacit into explicit knowledge), internalisation (E-T: conversion of explicit into tacit knowledge), combination (E-E: conversion of explicit into explicit knowledge) and socialisation (T-T: conversion of tacit into tacit knowledge). It aims at fostering the transfer and sharing of existing knowledge, creating new knowledge and promoting group learning. These actions must promote contacts among persons, manage conversations, provide conditions for mental model combination and exchange knowledge, experiences and practices.

In the **third sphere**, knowledge dissemination occurs. It is necessary to create mechanisms so that individual and group knowledge can be transferred to the other organisational levels. The model values contact among persons as a knowledge dissemination strategy since it is through it that tacit knowledge and explicit knowledge are transferred. Knowledgeable persons must be encouraged to participate in sharing programs and to externalise their knowledge so as to foster group learning.

The **fourth sphere** focuses on actions aiming at the collective use of organisational knowledge as well as on those encouraging knowledge application in problem solving and in product development and innovation. It involves support during exposure to risks and leniency to errors.

Based on this conceptual model, the firm under study implemented its knowledge management system for the development of individual and organisational competencies, which is reported in the following section.

2. PRACTICAL APPLICATION OF THE KM CONCEPTUAL MODEL

The conceptual model is the basis of the program denominated by the firm as Competency Development Academy – CDA (the unit of analysis in this study), which has been implemented in a Brazilian law firm – BLF (fictitious name).

The case-study method employed was according to Yin (2003). The data presented below were collected from the following sources: interviews with six CDA members, accounts by professionals invited to participate in the CDA program, direct and participant observation, in addition to the analysis of documents and records, such as: the competency-based management system project; materials produced in workshops; mission dissemination documents, future vision and organisational goals documents; the CDA program project, sharing meetings reports, internal memoranda and mail; reports on results from the competency mapping process; reports on the CDA performance indicators as well as other reports and memoranda related to the subject.

The CDA program intended to develop individual competencies considered strategic to achieve organizational goals (Chart 1). Such competencies (listed below) are considered competitive advantage in law services industry in Brazil, since until the beginning of 90's, the segment were composed by very small and familiar offices with very few business administration practices, no marketing or customer orientation. Also, lawyer's education in Brazil is court process oriented and focuses individualism rather than teamworking productivity, as per the research involving Brazilian law firms developed by one of the biggest Brazilian business newspaper – Gazeta Mercantil (2002). Besides, Ethic Code of Brazilian Lawyers Association does not allow advertisements and other marketing actions commonly used in business administration. Active sales or customer relationship management are a kind of a taboo among this professional category, which may offer conditions for the growth of

barriers against these competencies development. The CDA were a new attempt to effective develop these competences, since the traditional training programs running for around four years (classroom, lectures and seminars) have not presented any substantial result up to that moment.

Strategic organisational competencies	Corresponding individual competencies focused on by the CDA program
Competencies for Business and Product Development Customer and Market Orientation	▪ Knowledge concerning its products, customers and markets. ▪ Ability to identify opportunities for product and businesses development and conversion of opportunities into businesses. ▪ Communication skills (self-exposure and oratory out of court environment). ▪ Service quality (creativity and agility in creating valuable solutions). ▪ Excellence relationships with clients

Chart 1 – Organisational and individual competencies addressed by CDA
Source: CDA Project (internal document of the firm under study)

Evidences of those competencies development should be reflected by the improvement of the following indicators: results of performance and development evaluations; number of visits to current and prospective clients; number of proposals made; number of proposals converted into businesses; number of media exposures (interviews, articles, etc.); number of lectures, classes and presentations delivered; results of client satisfaction surveys and revenue development. The process of composition of the CDA program is described below.

2.1. Composition of the Competency Development Academy-CDA

Three *model professionals or mentors* (BLF lawyers identified as bearing the competencies focused by the program) were selected to participate in the CDA and guide the development of three *trainees* (BLF lawyers with potential to develop the competencies focused by the program). The group also comprised *invited professionals* (other BLF lawyers and partners with distinguished maturity, knowledge and experience about market and customer relations to be shared). The *invited professionals* participate basically in the bi-weekly meetings and practical activities – part of the second sphere of the model explained in the following item 2.2.

The program's content and goals were presented and discussed with the mentors. In order to create a competency- development environment, such professionals were given detailed and permanent guidance on how to act as developers.

2.2. The model spheres in practice

The nucleus: Two series of workshops focused on vision sharing. The studied material (slides, texts, dynamics, etc.) showed that a more in-depth work was carried out with the leadership group as compared to that performed with the teams. The larger number of hours for the leadership group in both the first and second cycles of workshops reinforced this difference. This is an evidence of the importance of the leadership playing disseminators role. These actions (aiming at sharing the vision of the knowledge or competencies to be developed) continued to be performed in the programs for integration of each collaborator hired by the firm after completion of the two workshops.

In the **first sphere**, the CDA's goals are: i) to present concepts related to the competencies focused on by the program (business development competencies and customer / market-oriented competencies), following the traditional teaching style for classroom presentations, and ii) to stimulate

interpretation, reflection and connection of information by means of panels, group discussion and experimental activities.

Information provision consisted of two modules: one introductory and one advanced module. The introductory module dealt with concepts associated with customer service and relationship, service quality standards, presentation techniques, relationship with the media, dissemination of the service areas composing the firm, dissemination of the products/services offered by each area and the characteristics of their target clients. The advanced model consisted of the following subjects: market analysis, organisational analysis, business management, finance, strategic planning, consultancy techniques and skills. The introductory module was taught by professionals of acknowledged maturity and experience working for the firm, including managers and partners. The advanced module was taught by a specialised consultancy firm.

The **second sphere** concentrated on actions geared at individual knowledge conversion for transfer and sharing, particularly that of tacit knowledge. It consisted of two events: bi-weekly meetings and practical activities.

The bi-weekly meetings aimed at enabling the group to discuss and exchange experiences and knowledge associated with the competencies to be developed by the program. It involves the participation of experienced professionals, other than the mentors, especially invited to contribute with the presentation of cases that would enhance the trainees' learning. The situations reported and discussed in the meetings as well as the information on those giving the accounts were recorded and made accessible to other professionals in order to reinforce the sharing stimulus.

The bi-weekly meetings were also used for creation. The program members during the studied period designed a manual containing service and customer relationship excellence standards. Such manual resulted from discussions and information exchange, in addition to the study and analysis of other materials on the subject. It must now be incorporated to the organisational knowledge base and used as teaching material in the training of other professionals by CDA members (mentors and trainees).

In the practical activities, each trainee must accompany his mentor during relationship visits to clients, negotiation visits, prospective visits, among others; during the presentation of new services, seminars, lectures and during general presentations delivered by mentors or invited professionals, in addition to court situations. On those occasions, the trainees must observe their mentors' performance, reflect on aspects perceived as important contributions to their development and give an account of such experiences during the bi-weekly meetings. Mentors must act as examples, make comments on their own practical demonstrations and point out to them the following items: the importance of preparation, articulation of ideas, objectivity, synthesis and persuasion capacity; presentation and communication techniques; resources to awaken the interest and keep the involvement of clients and other listeners; strategies to achieve clients' respect and inspire confidence in their problem solving capacity; other relevant factors related to their performances.

The **third sphere** concentrates knowledge dissemination actions. It is estimated that in 24 months the current trainees will be able to act as mentors. So that the current mentors team consisting of three professionals would count on six people to work on the development of six (or more) other professionals. In this way, they will be able to disseminate the knowledge created through the CDA activities to an increasingly higher range. Additionally, CDA members are stimulated to act as internal instructors in trainings for other less experienced professionals, thus transmitting the acquired knowledge to other groups.

In the **fourth sphere**, which focuses on actions aiming at knowledge use, the application of competencies under development is part of the CDA's practical activities. The trainees must pay their own visits to clients and non clients, do businesses, make presentations on the firm, give lectures, give interviews, produce articles for the media and act as internal instructors. The executive staff's contacts and relationships are used to enable these professionals' performances during the presentation of lectures, courses, classes, interviews, etc. The professionals are stimulated and demanded from. Their

performance in the practical application of the competencies developed by the CDA is bi-annually assessed. All of these activities should lead to improvement of the indicators defined to reflect the "delivery" or competent action, which must result from the combination of individuals' knowledge and environmental resources.

2.3. Result indicators

Chart 2 shows the results of indicators measured at two moments: T0 (beginning of the program) and T1 (twelve months later). Promotions based on development or performance were added to the chart since, whenever occurring, they impacted the results of other indicators. This is due to the fact that, on each level of a lawyer's career, totalling seven (trainee, junior, full, senior 1, senior 2, manager 1 and manager 2), the complexities of the activities developed and their corresponding competencies increase.

INDEXES OF INDICATORS AT T1 AS COMPARED TO T0										
Trainees	Develop-ment	Visits to clients and pros-pection	Proposals made	Proposals converted	Invoicing	Media Exposure	Lectures/ Seminars	Performanc e evaluation mean	Client satisfaction	Promotions
P1	%	118.2	128.6	700	90.4	100	250		Satisfaction	Double
	Times	2.2	2.3	8	1.9	2	3.5	44	maintained	Jr-Fu-Sr1
P2	%	154.2	25	100	19	100	150		Satisfaction	Single
	Times	2.5	1.3	2	1.2	2	2.5	31	maintained	Fu - Sr1
P3	%	300	1200	4	55.3				1 Dissatisf.	Single
	Times	4	13	4	1.6	Kept	Kept	26	0 Dissatisf.	Fu - Sr1

Chart 2: Indicators index
Source: Firm's document (CDA indicators report)

It is noteworthy that P3's development was highly positive considering a risk pregnancy between T0 and T1 which forced her to take some leaves of absence until childbirth in the last month of the period under analysis. Clarification is also necessary for the fact that no changes or interventions significantly influencing performance improvement took place in the firm, as such improvement was mainly attributed to the program and to the managerial actions reported in the case.

Evidence of contributions from the program to competency development and progress of indicators results was reinforced by CDA members' perceptions. A series of focused interviews was carried out: individual interviews with trainees in order to assess their perceptions of the contributions from the CDA program to their development and performance; collective interviews with mentors to assess their perceptions regarding the role of the program in the trainees' development, in addition to accounts by other participants reporting their impressions concerning the contributions from the program to participants' performance and development. By separately exploring the perceptions

conveyed by the three groups, an attempt was made at complementing the indicators results, thus providing more consistency to the study findings.

3. ANALYSIS

Based on the results shown by the selected indicators, progress was found in the professionals' performances, which leads to the assumption that competency development occurred, and that such development positively interfered in their performances. Therefore, the results of the study indicated that the KM conceptual model has achieved its goal: the development of individual competencies for organisational competency creation. KM positive outcomes in competency development was distinguished not only by the positive results of indicators, but also by the interviewees' accounts, since they acknowledged the program's significant contribution to the development of competencies by the trainees in the achievement of such results.

The fact that the program achieved additional results to those firstly proposed for the trainees is also noteworthy. Both the mentors and the invited professionals claimed to have benefited from the program by improving their own competencies. The knowledge developed at the CDA has already formed an organisational knowledge base, since the topics discussed have been recorded and those responsible for them have been mapped in the system, thus being accessible to other professionals in the organisation. This base is still small, but the ascending curve of indicators suggests that the multiplication of mentors enables the dissemination of knowledge in all levels for consistently creating strategic competencies.

The model's practical application provided subsidies for its re-evaluation and consolidation as a management instrument. The analysis of results made it possible to conclude that the concatenation of actions in the system (creation of meaning for the knowledge to be developed – provision of information for individual knowledge creation – conversion of individual knowledge to group learning – dissemination of group knowledge to other organisational levels – practical application of the knowledge created) has enabled individual competency development for organisational competency creation, which can be observed by the analysis presented below of each one of the spheres of the KM conceptual model applied in practice.

Nucleus: sharing the planned future vision, understanding what is necessary for its achievement and what the responsibility of each one is in this course of events are the starting points for a successful group undertaking, particularly as regards organisational competency creation. By taking part in the workshops, the participants were able to learn about the competencies to be developed and understand where and how such competencies should be applied. These actions were the basis for CDA participants' involvement and commitment in the organisational competency creation endeavour. The

results and the group's perceptions concerning the actions for sharing the meaning creation vision corroborate the theoretical concepts by Senge (1990), Nonaka; Takeuchi (1995), Perez-Bustamente (1999) and Von Krogh; Ichijo; Nonaka (2000).

First sphere: information provision showed to be of great importance for the process. It represented a key factor in the preparation for the following phases. As stated by Leonard-Barton; Swap (1999), knowledge and creativity only germinate when the "mental soil" is well prepared. Also Choo (1998) considers that receiving and processing information is the basis for knowledge creation; it is the preparation of the "mental soil". This is also emphasized by Davenport, De Long and Beers (1998) to whom individuals' knowledge arises from the combination of information interpretation and reflection, experienced within a certain context. The case under study confirmed such statement as it involved Law professionals with very little or no information on marketing concepts, markets, clients, competitors, etc. These concepts had to be presented, demystified by means of discussions, debates and various clarifications for a professional category whose culture presents signs of rejection to sales activities, client prospection, market development and other marketing actions due to the restrictions posed by their code of ethics.

Second sphere: The actions in this sphere, created on basis of many authors concepts such as: g*roup learning*, one of the five disciplines of learning organization (Senge, 1990), as per which the interaction of different mental models instigate discussion and learning arises; *creative abrasion* by Leonard-Barton and Swap (1999, p.20) – what means that sharing different opinions, point of views, knowledge and experiences encourage the members of a group to "think outside the box", to "challenge one another and welcome differences in intellectual background"; *analogical connection,* as per Sarvary (1999) one shared experience will generate a learning that can be applied to other situation different form the original one and *conversation management* by Von Krogh; Ichijo; Nonaka (2000), to whom people must be encouraged to discuss ideas, opinions, experiences and such discussions must be stimulated and managed by organizations that want to be knowledge oriented. All these concepts showed their weight in the conversion of knowledge into group learning by means of the dialogues and collective reasoning observed during the sharing meetings. Although the participants acknowledged the importance of information provision for individual knowledge creation (1st sphere), the interviewees showed much greater enthusiasm towards the activities developed in the second sphere – group sharing. This fact reveals the supremacy of the group's strength in relation to individual strength for knowledge creation and organisational competency development.

In addition to the propitious atmosphere for group learning, this system phase provided excellent conditions for saving time in the search for solutions to clients' problems. In the studied case, this favoured the creation of the image by which the firm wants to be recognised on the market (providing

valuable solutions with agility and creativity). The program's participants deal with different problems and solutions for a wide range of clients from various segments. The experiences found in these diverse situations promote the creation of knowledge that can be adapted and reused in other contexts as well as in order to solve other types of problems, thus confirming the analogical connection concepts by Sarvary (1999).

The importance of the trainees' accompanying their mentors was also evident. Had they not had the opportunity to experience certain situations and observe their mentors in action, they would not have developed skills or tacit knowledge, whose learning takes place only by means of observation, imitation and practice.

In the **third sphere**, the performance of the model professionals as mentors proved to be effective and gained recognition from the group of trainees as an essential factor for their development. The expectation to train new mentors in order to multiply organisational knowledge and competencies tends to be fulfilled in the estimated 24 months. The results from interviews and accounts, added to the increasing results of performance indicators, confirm such statement. Dissemination is reinforced by the CDA professionals' performance as internal instructors. This reinforced that people must be encouraged to put their knowledge available to the group, creating an environment of solicitude, favourable to knowledge transfer as per Von Krogh; Ichijo; Nonaka (2000).

As regards the **fourth sphere**, it was confirmed the importance of an environment of solicitude (Von Krogh, Ichijo; Nonaka, 2000), stimulus to risk, leniency to errors and provision of necessary guidance for the trainees to be able to apply their knowledge to get results and added value, consolidating their competencies. The concepts by Le Boterf (2000) that competency is not a state, but rather an action, were corroborated. It is in this sphere that the knowledge repository developed at the CDA is combined and used in order to produce competent action (Le Boterf, 2003) or higher performance (McClelland, 1973).

Additionally, the recording of all the activity that demanded application of the competencies focused by the program worked as a stimulating element. The periodical presentation and discussion of the results - the competencies indicators also promoted stimulus and guidance for the team competencies development. The establishment of relations between knowledge creation and economic performance or organisational value, according to Davenport; De Long; Beer, (1998), is associated with the success of KM projects.

By adding the contributions from the literature to the results from the model application analysis, it was concluded that, in order to foster knowledge application, the fourth sphere in the KM system must include a set of actions that proved to be efficient in stimulating the trainees to use the knowledge addressed by the CDA.. This set of actions involves the existence of a **support rearguard** –

combination of stimulus and risk, leniency to errors, support from mentors and other participants, added to a **challenge atmosphere** – caused by the use of indicators that measured the activities requiring the competencies focused on by the program and goals to be achieved.

4. CONCLUSIONS:

The expectations were that the current practices would generate the same poor performance that has been presented in the last four years, during which the firm worked with usual training programs. In other words, with the KM method after 12-month period the group presented performance improvements not registered in four years of traditional training practices. The experience showed that the method can accelerate time for competencies development. Also, in the business unit were the model was implemented any other professional have presented distinguished performance improvement such as the CDA members in the period studied.

None of the actions involved in the KM model is new. They have already been addressed in the literature or implemented by organisations, but disconnectedly. The efficacy of the system lies in its structured and integrated sequential character as well as in the connection of such actions to generate knowledge and competencies. The course of knowledge, from its individual creation, was represented in a linear fashion for explanatory effects; however, the process does not occur linearly. People relate to each other, exchange information and develop knowledge all the time. KM structures and organises the process in order canalise efforts towards knowledge creation and strategic competency development for organisations, thus shortening the time period necessary for development.

This study provides another tool for the practice of competency-based management and knowledge management. The constructed model presents versatility aspects for use in the creation of various types of knowledge (theoretical, practical, technical or cognitive), including that located in individuals' more subjective levels, that is, tacit knowledge. The results from the indicators surveyed in the field research evince this possibility. Although the model has been tested in a law firm, it can also be used by other firms from various sectors and segments. The ease of application and the relatively low costs of implementation and maintenance facilitate its adoption by firms in any development phase. Additionally, it can be applied for both strategic competency and operational competency development.

In this way, the KM system model designed in this investigation provides another contribution to competency-based management and knowledge management studies. It can also contribute to studies on the creation of a favourable culture to knowledge creation for organisational competency development. The fact that the studied group developed aspects of such culture evinces the possibility

of creating it through the application of the constructed model, which can be investigated in future studies.

The application in a small and more easily controlled group may have favoured the positive results. Studies must continue to analyse the program's performance and results over a longer period of time during which it will be possible to evaluate the current trainees in mentor positions as well as to evaluate the enlargement in the program's range. The results achieved through CDA encouraged BLF to extend the programme to a larger number of professionals in the firm. The results will be measured after another 12-month period.

Evidences that the method can be used in a larger scale is being studied in two cases in which is being identified many structured actions very similar to those composing the KM Model for competencies development proposed in this paper: 1) Brazilian branch of an international auditing firm (one of the big four) that uses programs similar to KM model involving about 1.500 professionals and 2) the teaching/apprenticeship method of one the most important Brazilian Med School. These two cases ate the focus of the new studies. Investigation is now in preliminary data collection phase.

From the theoretical point of view, most of the investigated literature concerning knowledge creation focuses on creativity and innovation, which differs from this study, whose focus is on the development of organisational competencies, considering that competencies are composed by the combination of different knowledge types, in different levels, resulting in competent actions.

Additionally, further quantitative studies can be developed on basis of this exploratory study.

The literature review on competencies and knowledge management, which was conducted in a parallel fashion, enabled the analysis of how integrated and complementary they are. If competencies consist of combined types of knowledge resulting in competent action, and if such knowledge types can be located either in more subjective or more objective levels (tacit or explicit), then individual competencies consist in a set of combined types of knowledge put into practice in favour of the organisation in order to generate valuable results for stakeholders. Organisational competency is the capacity to connect individuals into a network of collective competencies that is capable of creating competitive advantage, thus effectively generating valuable results for the organization and its stakeholders.

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