A Conceptual Model Proposal to Explicit and Reuse at the Transfer of Tacit Knowledge

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Abstract: Organizations face a number of major transformations. These transformations can have different causes, such as technological, cultural or even demographics. From organization point of view, one of the most important is that all have been suffering from growing employee turnover. This turnover as two different perspectives: employer or employee. Whatever the case, organization loses not only potential but also customer relationships, image, routines, and other more subtle issues. This problem is even more relevant when business processes are less depending from machinery and heavily rely on human relationships, being real estate business one such good example. Additionally, if we consider the increase time needed to sell real estate propriety after recent subprime worldwide crisis, sometimes the broker who initiates the process is not the one who finalizes it. It is easy to retain in the organization information about activities we performed (the "what" and "when"; that we may collectively consider as explicit knowledge). However, we cannot say the same about the way those activities are performed (the "how"; that can consider more of tacit knowledge). To solve this situation, organizations must promote ways to retain tacit knowledge, in a way that it can be stored and disseminated through the organization. This paper discusses such issues taking into consideration real estate professionals, forms of action against this phenomenon. Assess the contribution of Information and Communication Technologies (ICT), formulating a conceptual model for the capture and knowledge transfer, using Grounded Theory to inform the model.

Keywords: Knowledge Management, Tacit Knowledge, Explicit Knowledge, ICT, Turnover, Learning Organization, Real Estate business.

I. INTRODUCTION

In recent years, the organizational context has been characterized by constant transformations and innovations, resulting from the actual social and economic reality. Globalization has contributed in an important way to this situation, and leads organizations to a constant search for mechanisms to improve a differential to its peers, to obtain competitive advantages. Advances in information and communication technology, provide faster and better ways to manage and deliver information, supporting social, but also digital worlds. Also the recognition of knowledge as an important organizational asset, and some

authors state that knowledge is the most important of all assets (1), (2), (3), (4), (5), (6). This recognition promoted the need to manage it in a structured and systematic way, making it a competitive advantage and safeguard its loss due to current high turnover rate. Since these horizontal issues in all organizations, are of vital importance in which work mainly depends on personal interactions rather than mechanical processes, a segment where the Real Estate Business.

These phenomena are on the agenda, and that is worth being studied.

Until a few decades ago employment was considered as relationship for life, from organizations and employee point of view. Nowadays in Portugal, this duration is in most cases greatly reduced. With reference to the data compiled by the Ministry of Employment (MTSS), in his Collection Statistics – QuadroPessoal, we can see in Table I, more than half of the working population in Portugal, is linked to an organization, less than 4 years.

Table I. Workers Seniority (In Years) In Portuguese Organizations (7), (8), (9), (10)

Year	Total Workers	Less than 1 year	1 to 4 years	4 to 9 years	10 to 14 years	15 to 19 years	More than 20 years
2007	2967559	713897	883286	633051	272900	221758	242667
		24%	30%	21%	9%	7%	8%
2008	3016571	696045	954170	606046	294669	213196	252445
		23%	32%	20%	10%	7%	8%
2009	2877582	598191	936391	568187	315035	198026	261175
		20%	31%	19%	10%	7%	9%
2010	2599114	536112	831589	497780	308842	172705	252086
		21%	32%	19%	12%	7%	10%

These issues are critically in organizations where the business processes are less depending from machines, and mostly from direct human contact, Real Estate organizations represent a good example. If we focus our attention analysing seniority organizations data,

considering the special case of real estate, we see that the values are even more significant (Table II).

Reflect about these issues is even more important when we realize that there is no evidence about activities to create and sharing knowledge actually in real estate organizations in Portugal. To minimize the loss of organizational memory caused by this level of turnover, this paper presents the problem and proposes a knowledge management approach to retain tacit knowledge in order to cope with employee turnover.

Table II. Real Estate Workers Seniority (In Years) In Portuguese Organizations (7), (8), Invalid Source Specified., (10)

Year	Total Worker	Less than 1 year	1 to4 years	4 to 9 years	10 to 14 years	15 to 19 years	More than 20 years
2007	2967559	713897	883286	633051	272900	221758	242667
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II. A Brief Literature Review

Knowledge management is an interdisciplinary field. Have contributions from various scientific fields, particularly information science, computer science and management (11).

The most important activities are no longer the ones that produce or distribute objects, but those who produce and distribute information and knowledge (12). Value of the products is increasingly dependent on the efforts of innovation, technology and embedded intelligence to them. Learning organizations, according to Garvin, must possess skills in five main activities: solving problems in a systematic way, testing new approaches, learning from their experiences, learning from the experiences and best practices of others, and transferring knowledge quickly and efficiently throughout the organization (13).

In recent years organizations faces very deep changes. Like open markets, the emergence of a knowledge-based society (14)(15)(16). Organizations are made of people and knowledge of its human resources is your most valuable resource (Fialho& Serrano, 2003).

The creation of knowledge is not a simple matter of processing objective information (Nonaka, 1991). Information management deals with explicit elements and knowledge management has a strong tacit component.

When it comes to knowledge management often has a tendency to make associations to abstract concepts, implementation of a difficult and complex. Sometimes the conversation tends to abstract and philosophical issues, but the big concern is that there is a real world of knowledge management - a world with budgets, deadlines, policies and organizational leaders who need practical and objective solutions (Davenport &Prusak, 1998). Knowledge management is governed by simple questions, objective and measurable. Criteria for measuring the value of new knowledge is quantifiable data - greater efficiency, lower costs, better return on investment (Nonaka, 1991). Garvin introduces what he calls "3 M's". The first is the question of the significance (meaning). We need an organization that learns, with a mission and objectives perceived by all and capable of being actionable. The second is the management (management) are needed clearer guidance on practical issues involving operational issues rather than big aspirations. Finally, the measurement (mesurement), we need better tools for that, systemically, it is possible to assess levels of organizational learning, and thus ensure the effective gains (Garvin, 1993). Argyris systematizes saying that when they develop appropriate attitudes and commitment, learning is the consequence (Argyris&Schön, 1996).

At a time when the economy is experiencing difficulties, often the tendency in organizations is exclusively performing cuts, evaluating the success of these actions end in a short period and only in the financial aspect. But from the point of view of knowledge management these criteria are others - ability to respond quickly to customers, create new markets develop new products with speed and mastering emerging technologies (Nonaka, 1991).

Knowledge management arises from the increasing importance given to knowledge. An economy based on knowledge and information has unlimited resources (Sveiby, 1998).

III. Methodology

You cannot just look for consistency and validity in structured data, quantitative data. When the paradigm points to the importance of the person as a guarantee of success - Knowledge Society - is increasing, the need for analyzing texts, interviews, speeches, among others, that is, pursue a qualitative analysis (17). Qualitative research is devoted to the analysis of specific cases, in its particularities of time and space, from the demonstrations

and activities of people in their own contexts (18). A qualitative methodological approach was used in this project - Grounded Theory, with the data obtained through interviews, observations, documents, publications or a combination of these techniques. Analysis occur parallel to the collection, using a method comparison constant. Investigator makes use of the observation and any associated literature and in conjunction with selection of an initial case - and generates a theoretical basis (Figure 1).
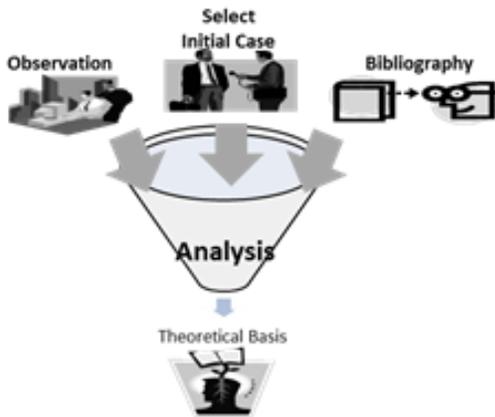

Fig. 1 Grounded Theory Method – Theoretical Base

Then iteratively new observations and literature together with new data was collected - new interviews, the investigator conducts analyzes and comparisons successive refining the basic theory, with new elements found. This process ends when it reaches theoretical saturation - that occurs when new data collected do not contribute to any change to the theory (Figure 2).
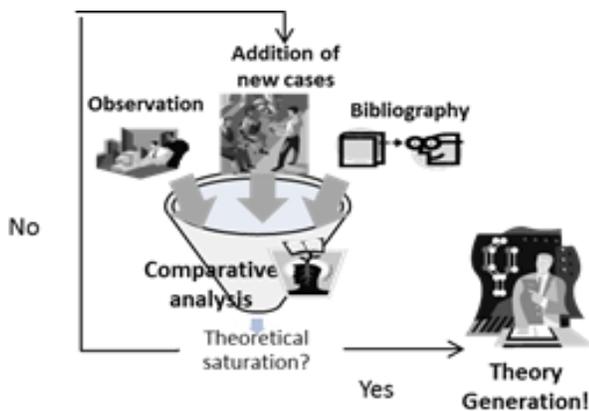

Fig. 2 Grounded Theory Method – Theoretical Saturation

The respondents choice, followed the Criterion Sampling strategy (19), indicating that cases must meet certain criteria, previously defined, to ensure data quality. In this regard have been defined a set of criteria that are in Table III.

Table III. Criteria for Interviewees

Criterion Code	Total Workers
C1	Management experience in real estate business (greater than or equal to 3 years)
C2	Experience in real estate key activities (Property recruiting, Visit, Sell - more than 100, at least in one activity)
C3	Longevity at the job (greater or equal than 5 years)
C4	Longevity at the organization (greater or equal than 3 year

To guarantee the quality of the collected data, respondents should meet at least two of the criteria.

IV. RESULTS ANALYSIS

Data were collected using recorded interviews for later transcription and analysis. These interviews allow the researcher to understand how respondents interpret their experiences; use the language of the interviewee, allowing theresearcher the perception of how they interpret aspects in their day-to-day.

According to the Grounded Theory codification method and based on the information collected, we built a conceptual framework in order to give visibility to the concepts found (Figure 3).
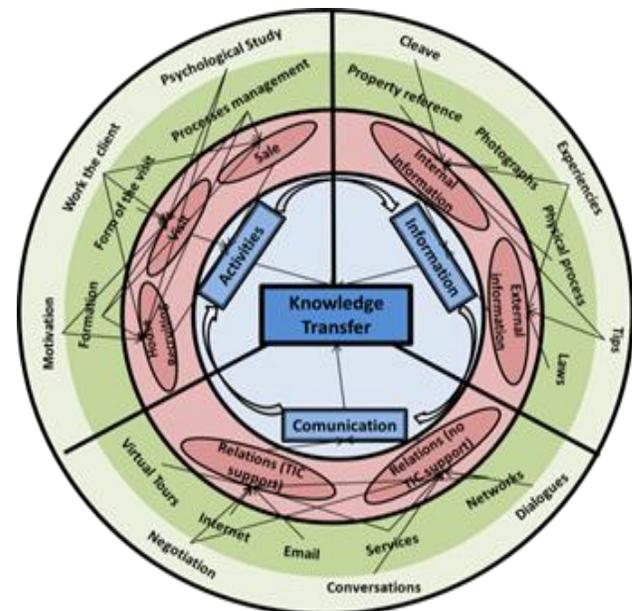

Fig. 3 Conceptual Schema

We used a representation as a "target" in order to stress the contribution that more abstract concepts (outermost rings), were successively taking the broader definition of concepts (innermost ring). This type of representation also contributes to a widening of the coding phases of Grounded Theory, making a parallel between each ring and their coding phase (Open – Key Words / Concepts; Axial – Concepts / categories; Selective – Main Category). In addition, the first ring was chosen by an internal subdivision, representing the contribution level of knowledge, given the size and the tacit dimension explicit.

In this first ring were placed set of keywords/concepts. Result of further analysis, it was found that this representation could be split, with a more significant result. This represents the two dimensions of knowledge, tacit and explicit. To clarify this division, we opted for a colour coding, and the light green colour corresponding to the tacit dimension (outer) and dark green colour corresponding to the explicit dimension (innermost). In the next ring, we group keywords/concepts in order to obtain more general concepts. The result was a set of concepts "House Recruiting, Visit, Sell, Internal Information, Information External Relations, Communication having IT support and Communication not having IT support". Associations were also included, in order to emphasize the contribution of keywords/concepts appearing in the first ring for the construction of these new general concepts. Based in more analysis and constant comparison of the data, a new set of concepts emerged, which can match the level of the categories of Grounded Theory, "Activity, Information and Communication". Again associations were used to illustrate the contribution of existing elements. Moreover the fact that only at this stage were added links between these new concepts (categories) illustrating dynamic between them. The conceptual schema was completed as we achieved the central concept, the "Knowledge Transfer". Similarly to the previous ring, and based on the Grounded Theory, also here we make a parallel between this and selective coding phase of the methodology, which introduces us to the main category. This representation aims to show the relationship between different elements relating to coding phases, from the initial stages, with key words and the initial concepts, through refining concepts, categories and subcategories, to the core category.

V. PROPOSED MODEL

One of the objectives of this work was to propose a conceptual model. It is the result of this proposal that we present. A conceptual model is a high-level description of how a system is organized. The conceptual model TatEK – Tacit to Explicit Knowledge (Figure 4), which now

present, intended to be a contribution to knowledge management in Real Estate Business.

Each of the sides represents the result obtained in the categories that emerged from the Grounded Theory. As for the colour gradient used on the faces, lighter shades on top and darker below, symbolizes the content related.
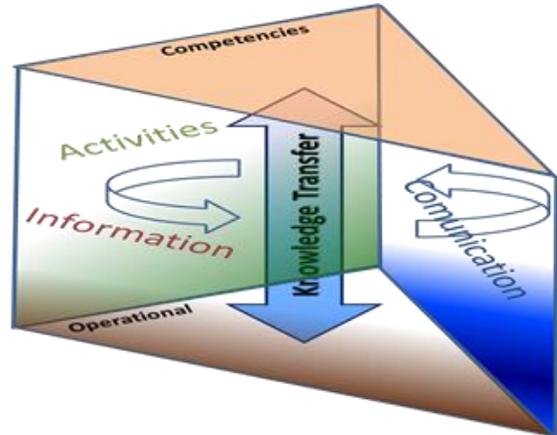

Fig. 4 TatEK - Tacit to Explicit Knowledge

The darker colours in the bottom shows a relation with explicit dimension of knowledge, something more define, stronger, more objective. As examples, we consider the systems that support activities, which allow the recording of information from these activities, as well as the communication channels that allow the organization to spread ("What to do", eg IMOGUIA Platform is an example of Examples of solutions operating at this level). The upper base completes the picture of the prism that served as the basis for conceptual model presented. Also within the logic used color gradient on the faces of activities, the lightest shade used in the upper parts of the side faces symbolizes the contribution of tacit dimension, more informal, more subjective in each of the respective moments, both in terms of activity, information and communications. The base represents the higher level of skills, where we find evidence that would support the tacit dimension, what skills are needed to perform the tasks ("How to do"). We verified the existence of the formal requirements for day-to-day Real Estate professional, identifying systems belonging to the operational dimension that support those needs. But beyond these requirements, there are others, that the professional needs the level of skills. Similarly to the systems and information technology and communication, supporting the operational dimension, others should also exist that support the skills dimension. Capturing, coding, storing and disseminating the organization, elements that could constitute an organizational memory, and contribute to the ongoing development of individual skills on the one hand and to minimize those losses when people leave the

organization as in the case of high turnover with that the sector faces.

The analysis of the categories presented in the previous point that emerged from the data, and how they interact and integrate, made possible the construction of this model, which allows us to apprehend the meaning of the movement undertaken by professionals throughout the experiment Realtor.

The theoretical model is the trajectory and dynamics of the professional in the course of their day-to-day. The theoretical model explains the concepts and their properties in a process that reflects the movement of professionals over time emphasizing the context, conditions, strategies and consequences that define your experience.

The KNOWLEDGE TRANSFER symbolizes actions and strategies of the organization aimed at conciliate the individual knowledge and organizational knowledge, and, thus, preserving the elements that constitute the world of online real estate.

The model developed represents an advancement of knowledge of the subject real estate by explaining how these elements influence the dynamics of the profession in the face of knowledge management.

VI. FINAL REMARKS

Nowadays the world is characterized by a globalized economy facing constant scientific and technological advances. We live a time where changes systematically transforming the means of production, communication and interaction, in which people interact on the Internet, even while being geographically dispersed and from different cultures. Several authors refer to the present time as "Knowledge Society", placing knowledge as the most important organizational asset.

Employee also faces constant changes, the connections between people and organizations are increasingly ephemeral, and workers are connected to organizations for smaller periods. This situation known as organizational turnover causes losses to the level of organizational knowledge, which must be managed with special care, otherwise constitute irreparable damage to the image level, relationships and productivity of organizations that do not beware.

The Conceptual Model TatEK proposed constitutes the main contribution of this work. With it, we intend to provide a high-level description for engaging the organization in relation to the objectives for Knowledge Management, supporting the view to the gains in knowledge:

- Maximize gains in knowledge of the organization through the alignment and integration of sustained efforts from all categories presented, focusing on activities, information and communication.

Based on the conceptual framework proposed, it is intended that:

- All workers in the organizations should be involved directly or indirectly in knowledge management;

- Real Estate organizations should recognize, promote, collaborate and participate in Knowledge Management, aligning objectives, strategies, actions and resources around the identification of contributions to organizational memory;

- Promoted in a systematically way and monitoring processes that contribute to knowledge management, and assess the results from the application of the model, interventions with measurable impact and corresponding gains in knowledge.

We believe that using a conceptual model using systems and information and communication technologies will enable the reuse of explicit and tacit knowledge. Thus, this model represents an approach to development cooperation initiatives and developing competitive advantages from these same initiatives can serve as a basis for exploring and framing some of the theories that address the issue of knowledge management, with the element of guidance the development of competitive advantages and development of organizational knowledge.

VII. REFERENCES

[1] Nonaka, Ikuhiro e Takeuchi, Hirotaka. Criação de Conhecimento na Empresa – Como as empresas Japonesas geram a dinâmica da inovação. 20ª Edição. s.l. : Editora Campus, 1997.

[2] Davenport, Thomas H. e Prusak, Laurence. Conhecimento Empresarial – Como as organizações gerenciam o seu capital intelectual. 8ª Edição. s.l. : Editora Campus, 1998.

[3] Sveiby, Karl Erik. A Nova Riqueza das Organizações. Rio de Janeiro : Editora Campus, 1998.

[4] Stewart, Thomas A. Capital Intelectual – A nova riqueza das Organizações. s.l. : Editora Silabo, 1999.

[5] Quinn, James Brian, Anderson, Philip e Finkelstein, Sydney. Gerenciando o Intelecto Profissional – Gestão do Conhecimento 13ª Ed. Harvard Business Review. Rio de Janeiro : Campus, 1996.

[6] Edvissone, Leif e Malone, Micheal S. Capital Intelectual-descobrindo o valor real de sua empresa pela identificação de seus valores internos. São Paulo : Makron Books do Brasil, 1998.

[7] MSST. Ministério do Trabalho e da Solidariedade Social: Colecção Estatísticas – Quadros de Pessoal 2007. Web Site do Ministério do Trabalho e da Solidariedade Social. [Online] 2007. [Citação: 12 de Setembro de 2010.] http://www.gep.mtss.gov.pt/estatistica/gerais/qp2007pub.pdf.

[8] Ministério do Trabalho e da Solidariedade Social: Colecção Estatísticas – Quadros de Pessoal 2008. Web Site do Ministério do Trabalho e da Solidariedade Social. [Online] 2008. [Citação: 12 de Setembro de 2010.] http://www.gep.mtss.gov.pt/estatistica/gerais/qp2008pub.pdf.

[9] Ministério do Trabalho e da Solidariedade Social: Colecção Estatísticas – Quadros de Pessoal 2009. [Online] 2009. [Citação:] http://www.gep.msss.gov.pt/estatistica/gerais/qp2009pub.pdf.

[10] Ministério do Trabalho e da Solidariedade Social: Colecção Estatísticas – Quadros de Pessoal 2010. Web Site do Ministério do Trabalho e da Solidariedade Social. [Online] 2010. [Citação: 10 de 7 de 2012.] www.gep.msss.gov.pt/estatistica/gerais/qp2010pub.pdf.

[11] Dalkir, Kimiz. Knowledge Management in Theory and Practice. s.l. : Elsevier. Butterworth Heinrmann., 2005.

[12] Druker, Peter F. O Advento da Nova Organização – Gestão do Conhecimento 13ª Ed. Harvard Business Review. Rio de Janeiro : Editora Campus, 1998.

[13] Garvin, D. A. A empresa criadora de conhecimento – Gestão do Conhecimento 13ª Ed. Harvard Business Review. Rio de Janeiro : Editora Campus., 1993.

[14] Castells, M. A sociedade em rede. São Paulo : Paz e Terra, 1999.

[15] Benkler, Y. The Wealth of Networks: How Social Production Transforms Markets and Freedom. London : Yale University Press, 2006.

[16] Gouveia, L. e Gaio, S. Readings in Information Society. Porto : Edições Universidade Fernando Pessoa, 2004.

[17] O impacto da rotatividade na Gestão do Conhecimento Organizacional. A rotatividade nas actividades imobiliárias em Portugal. Fidalgo, F. e Gouveia, L. Chaves : s.n., 2011. CISTI 2011 - 6ª Conferência Ibérica de Sistemas e Tecnologias de Informação. pp. 459-464.

[18] Flick, Uwe. Métodos Qualitativos na Investigação Cientifica. s.l. : Editora Monitor, 2005. 19. Miles, MB. e Huberman, AM. Qualitative Data Analysis (2nd edition). s.l. : Sage Publications., 1994.