

Full Length Research Paper

The relationship between strategic processes of knowledge management and organizational intelligence

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This paper aims to discuss the strategic processes of knowledge management in order to study the impact of these processes on organizational intelligence in 3 public organizations in Shiraz, Iran. This paper has identified strategic processes of knowledge management based on research done in the literature. For this purpose, a comprehensive questionnaire based on American productivity and quality center (APQC) knowledge management diagnostic and Albrecht organizational intelligence questionnaire was applied. This research found meaningful positive relationship between strategic processes of knowledge management and organizational intelligence. Also, it finds that almost 59.2% of existing changes in organizational intelligence are defined by strategic processes of knowledge management.

Key words: Knowledge management, strategic processes, organizational intelligence, Iran.

INTRODUCTION

The world in general and the business world in particular, are experiencing a paradigm shift: a shift toward knowledge-based organizations in a knowledge-based society (Holsapple et al., 2000). The terms knowledge and knowledge management have been “the hype” for quite some time now. The simple (and much used) argument that knowledge management is “the step after” information management leads to certain delusions. If we expect otherwise, then it may not be long before someone coins the term “wisdom management” and this becomes the focal point of future research and development (Kazi et al., 2002). In an article that appeared in the Harvard Business Review, Nonaka (1998) began with the simple introductory words: “In an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge”. Nowadays, mature governments have also understood the importance of knowledge and management of it, so the related

activities are led by top levels and ranks in those countries, especially in advanced and developed countries (Akhavan et al., 2006). In today’s highly volatile competitive environment, organizations are beginning to recognize the need to tap into knowledge assets diffused around the organization in order to remain agile (Khatibian et al., 2010).

As Peter Drucker stated, knowledge is information that changes something or somebody – either by becoming grounds for actions, or by making an individual (or an institution) capable of different or more effective action (Liebowitz, 1999). In today’s competitive market, uncertainty is its main feature. There are competitions among companies that develop new knowledge, distribute and transform it into services and products. Thus, knowledge creates competitive privilege for organization and gives the organization the ability to resolve problems and gain new opportunities. Hence, knowledge becomes not only a competitive resource, but also the only resource for it (Alipour et al., 2010). In the information era, knowledge and information are the most significant resources that each enterprise can gather and

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exploit for self-preservation. Thus, the active and dynamic implementation and management of knowledge are critical to enabling organizational performance enhancements, problem solving, decision making (Liebowitz, 1999). Knowledge can be classified into personal, shared and public, practical and theoretical, foreground and background, internal and external, hard and soft, structured and unstructured, knowing how and knowing that, and procession perspective and structural perspective (Abdul-Rahman et al., 2010). Knowledge management consists of a special systematic and organizational process in which one is allowed to acquire, organize, maintain, apply, distribute, publish and recreate both explicit and implicit knowledge for the staff to promote the organizational performance and value creation (Alavi et al., 2001). The spectrum of KM is so ample, encompassing both organizational aspects and technical factors (Kang et al., 2003).

The increasing use of information and knowledge called for the creation of a totally different breed of corporate creatures. The new form of corporations must be able to process information fast, learn fast, use knowledge effectively, adapt to competition and changing environment swiftly, and evolve successfully. Basically, these organizations must be intelligent enough to survive the totally re-defined battle. Hence, the flesh strategic approach that focuses on structuring and managing organizations around intelligence has certain advantages. In order to behave, compute and grow like intelligent biological organisms, human organizations have to optimize their intrinsic, collective and artificial intelligence. These new corporate creatures must therefore possess an orgmind with high collective intelligence.

Concurrently, a deeper understanding of information and knowledge, and their interactions, is crucial. In human thinking systems, a knowledge structure is altered only when a piece of information is consumed, a process known as internalization. In order for this process to be activated, intelligence must be present. In this respect, intelligence is the energy that drives all intelligent organizations/structures. Again, this evidence reinforces the individual mind and the org mind as the most important entities in the new era. As the impetus of the dynamic in and among all human systems is initiated and sustained by intelligence, the new strategy that human organizations must adopt is to organize around intelligence (Liang, 2002).

The notion of organizational intelligence is an important one, and it subsumes many of the other partial paradigms, which include organizational learning and knowledge management. Taking a general perspective, it will be able to deal with a variety of problems, including communications problems and quality issues. The idea that organizations fail because of human error is a defense that does not address the real problem that organizations are just not intelligent. Dealing with inadequate structures and collective processes is part

and parcel of addressing the needs of developing that intelligence (Yolles, 2005). From a cybernetic point of view, the basic faculties that distinguish intelligent organizations are the abilities:

1. To adapt to changing situations, that is, to change as a function of external stimuli;
2. To influence and shape their environment;
3. If necessary, to find a new milieu ("playing field") or to reconfigure themselves anew within their environment, and finally
4. To make a positive net contribution to the viability and development of the larger wholes in which they are embedded (Schwaninger, 2006).

The concept of organizational intelligence quotient (OIQ) was first developed by Haim Mendelson and other researches, which conducted a questionnaire survey of firms in Silicon Valley and used the results to analyze the relationship between OIQ and firm performance (Mendelson et al., 1999). OIQ is a quantitative measure of an organization's effectiveness in information distribution, decision making and execution (Iijima et al., 2008).

As mentioned by Synesis (2001), none of the OIQ principle was revolutionary, or new. However, OIQ was the ability to quantitatively measure the degree to which those principles are being implemented in organization. The five factors in OIQ are: effective decision making (EDA), external information awareness (EIA), internal knowledge dissemination (IKD), organizational focus (OF) and continuous innovation (CI) (Iijima et al., 2008).

Knowledge management (KM) definition

Sousa and Hendriks (2006) define knowledge management in the following way: "Knowledge management addresses policies, strategies, and techniques aimed at supporting an organization's competitiveness by optimizing the conditions needed for efficiency improvement, innovation, and collaboration among employees." Sabherwal and Sabharwal (2005) defines it as "doing what is needed to get the most out of knowledge resources." Hult (2003) states that "it is the organized and systematic process of generating and disseminating information, and selecting, distilling, and deploying explicit and tacit knowledge to create unique value that can be used to achieve a competitive advantage in the marketplace by an organization" (Chan et al., 2007).

O'Dell and Grayson (1998) says "it is a conscious strategy of getting the right knowledge to the right people at the right time by putting information into action that strives to improve performance" (Daud et al., 2011).

In order to maintain the effectiveness of the knowledge management process (KMP), being just in time is a key and a very important element and consequently it was frequently referred and emphasized in KM studies within the framework of four aspects: (right) knowledge, (right)

time, (right) place and (right) person (Afrazeh, 2010).

Organizational intelligence definition

Wilensky (1967) says organizational intelligence is the problem of gathering, processing, interpreting, and communicating the technical and political information needed in the decision-making process. Choo (1995) defines it as the organization's ability to deal with complexity, that is, its ability to capture, share, and extract meaning from marketplace signals (Haeckel and Nolan, 1993). Based on the three directions, connection - for attracting knowledge, interaction- for sharing knowledge, and structuring - for extracting meaning, the intelligence quotient of the organization can be computed.

Nonaka (1995) defines it as the intelligent behavior of the organizations, as a function of their design. McMaster (1996) says it is that capacity for computation which can be applied to information that is externally gained or internally generated to meet survival challenges (Lefter et al., 2008).

LITERATURE REVIEW

To categorize the knowledge processes, the seven processes described by Bukowitz and Williams (1999) and the American productivity and quality centre (APQC) (1996) are used. Bukowitz and Williams (1999) broadly divided the KM processes into tactical and strategic ones. The tactical side of the framework is concerned with the process of gathering the information needed for daily work, using of knowledge to create value, learning and contributing back into the system to make knowledge available to others. The strategic process involves realizing value from the tactical process where the organization's knowledge strategy is harnessed with the goals of the organization. These processes require assessment and evaluation of the knowledge assets for future use. Building and sustaining knowledge sources is also of strategic importance in organizations (Okunoye, 2003; Sanghani, 2009).

Assess

Organizations assess their knowledge assets through learning and annual appraisal.

Build and sustain

Collaboration is a good means to sustain knowledge, and keep it in use. It does not depend on ICT.

Divest

Sabbatical leave and changing to another research

institute are used as a form of knowledge divestment. Organizational intelligence may be defined as the 'total' intellectual problem-handling capability of an organization. The task of an organization would seem to be successively grappling with the series of problems which come up one after another. That is, an organization, as a whole, must 'handle' the problems (Liebowitz, 1999). KM seems to be caught in a paradox. On the one hand, we have convinced people that knowledge is of great value—yet we ask them to voluntarily share it with others. This runs counter to human nature (Halal, 1998).

Halal (1998) does not think he can address such troubling issues without understanding the broader framework within which KM must operate—the “intelligent organization”. One of the biggest management challenges today is how to create a new breed of intelligent corporations that is specifically designed for a knowledge economy (Halal, 1998).

Organizations today are intelligent learning systems composed of educated people using complex information networks to adapt to a turbulent world. Halal's approach to understanding OI builds on the same approach used to characterized human intelligence (Halal, 1998). It's now generally understood that human problem-solving is derived not simply from “rational intelligence” but also from other facets such as “emotional intelligence”. Similarly, Halal found that the problem-solving capacity of organizations is a function of more than one cognitive subsystem. The five organizational subsystems include:

- i. Organizational structure (who is authorized to make what decisions);
- ii. Organizational culture (values and norms that guide action);
- iii. Stakeholder relationships (the extent to which information is exchanged between diverse groups);
- iv. Knowledge management (the type and amount of knowledge available); and
- v. Strategic processes (how this information leads to understanding and action).

All these subsystems serve essential purposes in the organization's cognitive functioning, and collectively they create organizational intelligence (Halal, 1998). One subsystem involves KM, but the other four are equally crucial, and some are perhaps more important (Halal, 1998). Halal's model is illustrated in Figure 1.

Albrecht (2002) claimed that: “I have spent much of the past 30 years of my professional life in the midst of organizational craziness—keeping company with confusion, frustration, and anger; comforting those in a state of despair. I have watched too many intelligent, enthusiastic, well-motivated people turn into cynical burn-out cases after years of struggling against mindless bureaucracies. He proposed Albrecht's law: “Intelligent people, when assembled into an organization, will tend toward collective stupidity”.

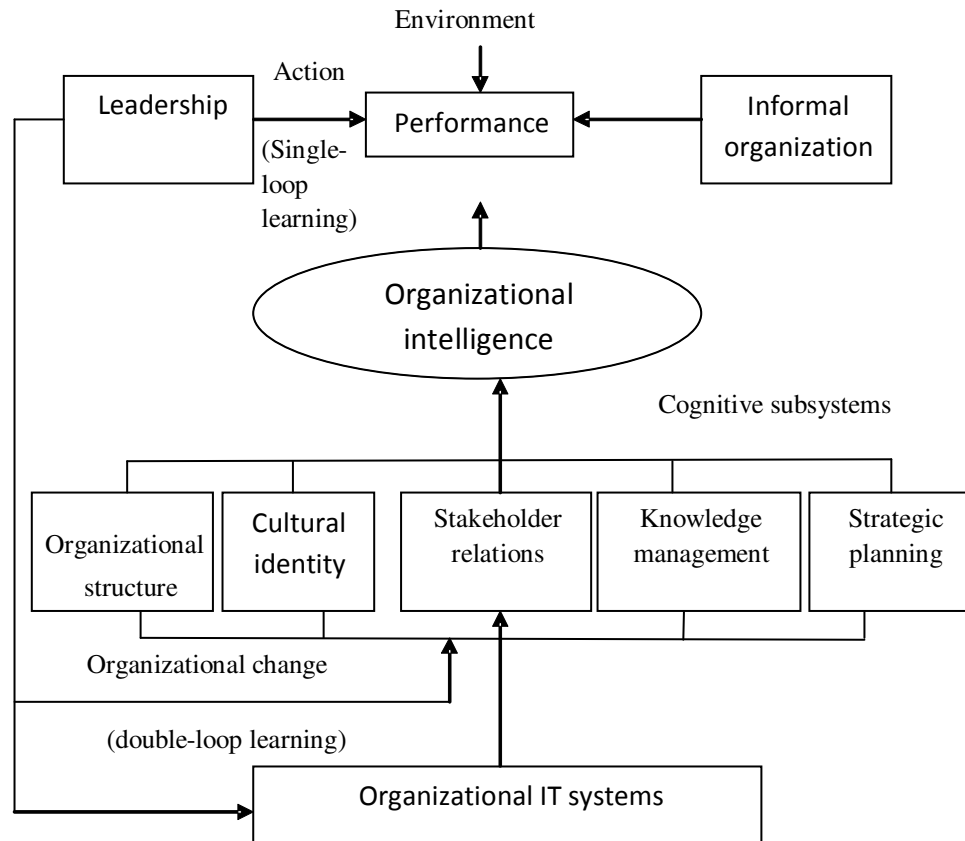


Figure 1. Organizational intelligence model by Halal (1998).

This collective incapacity is not a necessary or inevitable part of the life of an enterprise. It is optional to the extent that intelligent people allow it to happen. It is optional to the extent that leaders show by their behavior that they accept and condone it.

The antidote to collective stupidity is collective intelligence, or brain power "writ large." We can define the concept of organizational intelligence as: the capacity of an enterprise to mobilize all of its available brain power, and to focus that brain power on achieving its mission. Harvard psychologist and researcher, Howard Gardner argues that we have a half-dozen or more "intelligences." These various ways of being smart, according to Gardner, include the traditionally recognized abstract intelligence, as well as social, practical, emotional, aesthetic, and kinesthetic.

Similarly, Albrecht (2002) argues that organizations have - or lack - a number of intelligences, or dimensions of competence. Indeed, he has observed a corresponding complement of some seven intelligences in his work with enterprises of various kinds.

It should be born in mind that each of the seven dimensions of OI which will be explored is a trait, not a set of behaviors, a structural characteristic, a process, or a particular way of operating. Each of these traits, or intelligences, has various antecedents, or causal factors.

Antecedents can include sensible organization structures, competent leadership, products and processes suited to the demands of the business environment, coherent missions, clear goals, core values, and policies that determine the rights and treatment of employees. In each dimension, various antecedents can be identified which can contribute to maximizing that element of intelligence (Albrecht, 2003, 2002).

These dimensions are discussed thus.

1. Strategic vision: Every enterprise needs a theory—a concept, an organizing principle, a definition of destiny it seeks to fulfill. Note that strategic vision refers to the capacity to create evolve, and express the purpose of the enterprise and not to any particular vision, strategy, or mission concept in and of itself. The OI dimension of strategic vision presupposes that the leaders can articulate and evolve a success concept and that they can reinvent it when and as necessary (Albrecht, 2003).
2. Shared fate: When all or most of the people involved in the enterprise, including associated stakeholders like key suppliers and business partners and in some cases even the families of its members, know what the mission is, have a sense of common purpose, and understand their individual parts in the algebra of its success, they can act synergistically to achieve the vision. This sense that "We

are all in the same boat" creates a powerful sense of community and esprit de corps. Without a sense of shared fate, the psychological tone of the culture degenerates into a "Look out for number one" spirit (Albrecht, 2003).

3. Appetite for change: Some organizational cultures, usually led by their executive teams, have become so firmly set in their ways of operating, thinking, and reacting to the environment that change represents a form of psychological discomfort or even distress. In others, change represents challenge, opportunity for new and exciting experiences, and a chance to tackle something new. People in these environments see the need to reinvent the business model as a welcome and stimulating challenge and a chance to learn new ways of succeeding (Albrecht, 2003).

4. Heart: Separate from the element of shared fate, the element of heart involves the willingness to give more than the standard. Organizational psychologists refer to discretionary effort as the amount of energy the members of the organization contribute over and above the level they have "contracted" to provide (Albrecht, 2003).

5. Alignment and congruence: Any group of more than a dozen people will start bumping into one another without a set of rules to operate by. They must organize themselves for the mission, divide up jobs and responsibilities and work out a set of rules for interacting with one another and for dealing with the environment. In the intelligent organization, the system, broadly defined, all comes together to enable the people to achieve the mission (Albrecht, 2003).

6. Knowledge deployment: More and more these days, enterprises succeed or fail because of the effective use of knowledge, information and data. Almost every business organization these days depends heavily on the acquired knowledge, know-how, judgment, wisdom and shared sense of competency possessed by its people, as the wealth of operational information that flows through its structure every minute. Knowledge deployment deals with the capacity of the culture to make use of its valuable intellectual and informational resources. OI must include the free flow of knowledge throughout the culture and the careful balance between the conservation of sensitive information and the availability of information at key points of need. It must also include support and encouragement for new ideas, new inventions and an open-minded questioning of the status quo (Albrecht, 2003).

7. Performance pressure: It is not enough for executives and managers to be preoccupied with the performance of the enterprise, that is, its achievement of identified strategic objective and tactical outcomes. In the intelligent organization, everyone owns the performance proposition, that is, the sense of what has to be achieved and the belief in the validity of its aims. Leaders can promote and support a sense of performance pressure, but it has the most impact when it is accepted by all members of

the organization as a self-imposed set of mutual expectations and an operational imperative for shared success (Albrecht, 2003).

Conceptual framework and hypotheses

From among the existing models, APQC knowledge management framework and Albrecht's organizational intelligence model were used in this paper. The APQC framework consists of 7 dimensions that were categorized into tactical and strategic processes and were explained in the previous section, from which just strategic processes were used in this paper. Albrecht model includes 7 components. So the research model is shown in Figure 2.

The variables of the study will be: knowledge management (predictor variable) - strategic processes of KM involving assess knowledge, build/sustain knowledge and divest knowledge. Organizational intelligence (criterion variable), includes strategic vision, shared fate, heart, appetite for change, alignment and congruence, knowledge deployment and performance pressure. In this study, the following hypotheses will be addressed:

H₀: there is no statically significant relationship between strategic processes of knowledge management and organizational intelligence.

H₁: There is no statically significant relationship between assess knowledge from strategic processes of knowledge management and organizational intelligence.

H₂: There is no statically significant relationship between build/sustain knowledge from strategic processes of knowledge management and organizational intelligence.

H₃: There is no statically significant relationship between divest knowledge from strategic processes of knowledge management and organizational intelligence.

Research question

The main question of this paper is: "how much is the contribution of each strategic process of knowledge management to organizational intelligence?"

RESEARCH METHODOLOGY

This research was descriptive-correlational. Organizations which would use knowledge management were needed. To this end, 3 organizations including Shiraz Agricultural Organization, Fars Regional Electricity Company and Shiraz Telecommunication Company in Shiraz, Iran were chosen. The sample was drawn from these organizations' members. A total of 645 respondents were selected via simple random sampling. Respondents were submitted to the central offices of these 3 organizations to collect data. Finally, 542 questionnaires were returned all of which were included in the study.

Albrecht's organizational intelligence scale consists of 49 items and seven components. The questionnaire's validity was accepted by a few professors and the tool reliability was established in

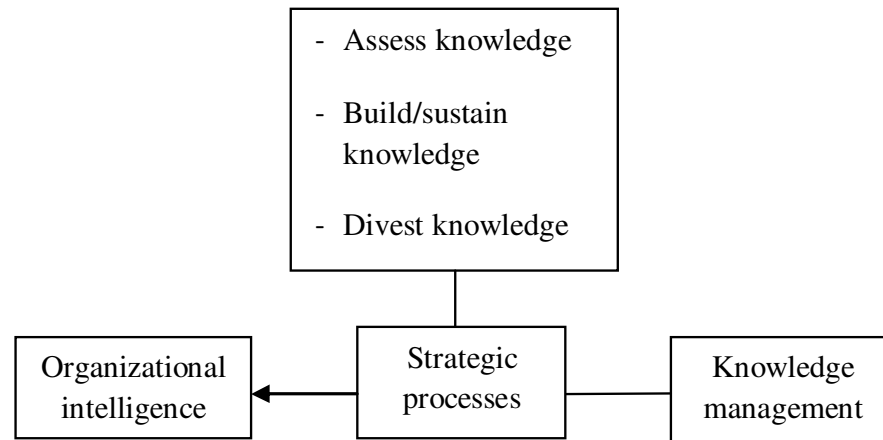


Figure 2. Conceptual framework of the paper.

previous research as being equal to 0.86 using Cronbach's alpha. Cronbach coefficient for the present study was also calculated ($r = 0.91$), which shows the desired reliability of this survey.

Tactical processes of knowledge management were assessed by part of KMD questionnaire that APQC constructed. This part of KMD questionnaire has 80 items. After calculating Cronbach's Alfa coefficient in the present study, a reliability coefficient of 0.94 was reached, which shows the desired reliability of this survey.

Both of these questionnaires are in 5 point Likert-type scale, ranging from "I strongly disagree" to "I strongly agree". Additional demographic data including age, sex, level of education, years of work experience and the type of organization were collected.

Data analysis was carried out by using the statistical program SPSS. P-value equal to or lower than 0.05, was considered statistically significant.

RESEARCH RESULTS

The participants were male (65.31%) and female (32.47%) with a mean age of 38 ranging from 20 to 72 years old. According to the results, 21.8% of the participants had degrees below bachelor, 64.4% were bachelor holders, and 12.5% had masters or Ph.D. The participants were the members of agricultural organization (29%), regional electricity company (30.3%) and telecommunication company (40.6%). They have been working in these organizations for an average of 8 years.

The means of strategic processes of knowledge management were shown in Table 1.

The main hypothesis (H_0)

For examining the relationship between strategic processes of KM as a predictor variable and OI as a criterion variable, simultaneous multiple regression test was used.

The results show that 0.59% of variation in OI is determined by strategic processes of KM. It means that

there is a linear relation between strategic processes of KM and OI in this sample. So, the strategic processes of KM can predict the variations and changes in OI.

According to the results in Table 2, assess knowledge can predict OI with standard regression coefficient $\beta = 0.24$, so if assess knowledge increases by 0.24, organizational intelligence will increase by 0.24 too. Then build/sustain knowledge with standard regression coefficient $\beta = 0.28$ and finally divest knowledge with $\beta = 0.31$ can predict OI.

To examine the other hypotheses, Pearson's coefficient was used. According to the results in Table 3, each of the processes has a meaningful relationship with OI.

Research question

How much is the contribution of each strategic process of knowledge management to organizational intelligence? To answer this question, regression analysis test with Enter method (stepwise regression) was used. Results on the 3 strategic processes are as follows: considering the obtained results, almost 59.2 % of existing changes in OI are defined by strategic processes of KM. According to results; the contribution of each strategic process to OI is as follows:

- i. Build/sustain knowledge (0.282)
- ii. Divest knowledge (0.311)
- iii. Assess knowledge (0.249)

DISCUSSION

The assessment of KM efforts revealed that the research organizations generally performed poorly in adapting and applying the practices to new situations. That is, the organizations performed reasonably averagely weak in the strategic processes of KM. According to Bukowitz and

Table 1. The means of strategic processes of KM.

Variable	Mean	Standard error
Assess knowledge	14.02	4.25
Build/sustain knowledge	14.16	4.31
Divest knowledge	13.78	4.60

Table 2. Regression coefficient of strategic processes of KM and OI.

Index variable	B	Beta	t	P
Assess knowledge	1.65	0.24	5.75	0.000
Build/sustain knowledge	1.95	0.28	5.55	0.000
Divest knowledge	2.03	0.31	6.66	0.000

Table 3. Relationships between strategic processes of KM and OI.

Predictor variable	Criterion variable	Correlation coefficient	Sig
Assess knowledge	Organizational intelligence	0.679	0.000
Build/sustain knowledge	Organizational intelligence	0.716	0.000
Divest knowledge	Organizational intelligence	0.709	0.000

Williams (1999), this can be interpreted as indicating that the case organizations put less effort into the long-range process of matching organizational knowledge assets to strategic requirements. This result is similar to the results of the Okunoye and Karsten's studies two of which were in sub-Saharan Africa and the other one in Nigeria, Gambia and India in 2002 (Okunoye, 2002a, b, c), Balachandran and Foo's (2002) research in an international bank in Singapore, the one by Costa and Gouvinhas (2005) in Brazil and Mittal's (2008) in India.

Assessment required the organization to define its mission-critical knowledge and map current knowledge-based assets against future knowledge needs that was missing in these organizations.

One of the reasons for poor assessment is the lack of tools capable of storing all the knowledge created inside of the department, which makes it difficult for the search and recuperation of the knowledge in some places of the organization, a gap due registered knowledge. Also, lack of the knowledge manager and deficiency of a system to register explicit to inexistence of a responsible person for doing that: a knowledge manager.

These organizations periodically assess their knowledge-based assets indirectly through a comprehensive annual appraisal which covers training needs assessment and the skills acquired over a period. But this period is too long. It can be shorter to be more useful and effective.

Building and sustaining knowledge is a process that involves building knowledge through relationships with employees, suppliers, customers and the community in which they operate, even with competitors and collaborators, and subsequently deriving value from it. The knowledge assets of the organizations are not built and sustained through collaboration with other employees and institutions.

Staff movement to similar research organizations is a normal practice through which researchers sustain their knowledge that is too little therein. It also serves as a form of divestment, with the hope of gaining more benefit in the future. In the case of the step divest, it is concluded that is a simple task.

When the knowledge is useful, it needs to be stored in some place previously selected, and then analyzed, classified and formalized. However, when the knowledge is considered to be useless, it has to be eliminated from the knowledge base.

Finally, according to the obtained results, almost 59.2% of the existing changes in organizational intelligence are defined by strategic processes of knowledge management.

Considering the results shown in Table 4, the final regression line equation for predicting OI in this population is as follows:

$$OI = 66.28 + 1.95 (\text{build/sustain knowledge}) + 2.03 (\text{divest knowledge}) + 1.75 (\text{assess knowledge}).$$

Table 4. Multiple stepwise regression variance analysis for predicting OI.

Model	Predictor	R	R ²	B	Beta	t	F	P
Step 1	Build/sustain knowledge	0.716	0.512	4.97	0.716	23.779	565.46	0.000
Step 2	Build/sustain knowledge	0.753	0.566	2.88	0.415	8.923	350.626	0.000
	Divest knowledge			2.48	0.380	8.168		
Step 3	Build/sustain knowledge	0.769	0.592	1.95	0.282	5.552	258.734	0.000
	Divest knowledge			2.03	0.311	6.661		
	Assess knowledge			1.75	0.249	5.751		

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