ENABLING KNOWLEDGE-WORKERS COMMITMENT TO ORGANIZATIONAL INTELLIGENCE ACTIVITIES

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Session I-5

Abstract

Organizational intelligence refers to the process of turning data into knowledge and knowledge into action for organizational gain. Technology makes information sharing almost limitless, but human ability to take in and process information have not developed in pace with the amount of information available. One important obstacle for cognitive individual development is the increasing lack of attention. This paper proposes that effective and efficient organizational intelligence has its roots in individual attention, and that this attention can be managed. All environmental scanning builds on individual attention. This research aims at investigating factors that motivates ordinary knowledge workers to focus attention to signals in the organizational environment, signals to be interpreted in organizational intelligence processes.

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Suggested track:
I Knowledge work

1. Introduction

Organizational Intelligence is about the systematic processing of information from external sources in order to enhance the ability to foresee the future and to adapt to the changing environment (Gilad and Gilad 1988; March 1999). But new capabilities provided by advanced information technology, and the exceedingly faster pace by which organizational environments change, put new demands on Intelligence processes in organizations (Huber 1984). Organizational Intelligence is related to the concept of Knowledge Management, regarded as a matter of individual processes rather than the managing of knowledge as an object. A common misinterpretation is that a formal Organizational Intelligence system is needed, and can only be undertaken by large organizations. Small and medium-sized organizations, as well as divisions of

larger organizations, need to know about environmental factors just as much as large companies. The resources they may be able to invest might be limited but that does not mean that an organizational intelligence system is impossible to implement. Regarding to Gilad and Gilad (1988), an effective system can be based on simple measures such as allocating an existing clerk to the job on a part-time basis, and raising every employee's awareness to Organizational Intelligence needs (Gilad and Gilad 1988). This work takes its departure in the proposal that organizational intelligence activities and outcomes can be enhanced by planning and by implementing elementary supporting structures.

The concept of information overload is well established within the field of Information Systems. But it is a myth that all information needs can be picked up from the information flow provided by different media channels (Frankelius 2001). There must be a systematic and organized plan for providing information to the organization. It is not enough to just trust or expect one or a few persons in top management to be attentive to signals from the environment. Or trusting that top management's social network is enough to cover the whole spectrum of information sources relevant for the organization.

One basic assumption underpinning the presented approach to Organizational Intelligence is that activities planned for are preferable to ad hoc or casually performed actions. The main reason for this assumption is that planned activities give a reference frame upon which reflections are possible.

Another basic assumption is that intelligence processes in organizations build on individual scanning of the environment. General organizational units performing intelligence work or implementation of Business Intelligence software packages can be useful and even regarded as highly effective but without proper managing of the individual knowledge-workers actionable environments and attention, it will be less efficient. Attention is the currency of future business (Davenport and Beck 2001). In general most organizations scan their environment in an informal and unsystematic way. They tend to recognize the environment as given and only respond when a crisis occurs.

A third basic assumption is that a growing part of employees in organizations can be described as knowledge-workers (Scarbrough 1999), and that they have the potential to develop their skills and attention in order to contribute in organizational intelligence activities as part of their daily work. Friedman, Friedman, Chapman and Baker (1997) suggests that people in the company who are likely to be collecting information on a

routine basis should be identified and encouraged to think more clearly about what they are finding.

This paper proposes that effective and efficient organizational intelligence has its roots in individual attention and that this attention can be managed. Management efforts should start by understanding the motivating factors of individual members in organizations. The question addressed could be formulated as:

> *What are the factors for motivating employees to focus their attention to information about events in the environment? Information that is useful for the organization?*

2. Theoretical background

2.1. Knowledge Management

*"Thus far, the primary emphasis has been on building **professional** capabilities*

*…the focus must shift to the **amateurs"*** (Davenport and Völpel 2001)

The trend expressed by Davenport and Völpel points towards a shift in focus on the concept of Knowledge Management. The focus on building professional capabilities, that is, knowledge management specialists, tends to shift to the amateurs. The roles of *"amateurs"* in organizations are not primarily knowledge management oriented, but focused on accomplishing their organizational missions. But by building motivation around knowledge, designing knowledge activities into everyday roles, and creating a culture in which every worker views knowledge management as part of his/her job, Knowledge management can be fully institutionalized. Broadly construed, knowledge work involves solving problems. This definition implies human analysis of information, synthesis of new information expressing implications and solutions, and authoring of new artifacts to communicate solutions to colleagues. An organizations real knowledge is often embodied in the experience, skills, knowledge and capabilities of individuals and groups. It is shaped by beliefs and metaphors (Bertels and Savage 1998).

2.2. Definition of an organization

Organizations are goal-directed, boundary-maintaining, and socially constructed systems of human activity (Aldrich 1979). Organizations are purposive systems in which members behave as if their organizations have goals, although individual participants might personally feel indifferent toward those goals or even alienated from them. Organizations have activity-systems for accomplishing work. Activity systems consist of bounded sets of interdependent role behaviors and sets of routines. Many routines are inter-personal, but many others require that humans interact with non-

humans (e.g. machines and other artifacts). The division of labor between activities in organizations leads to role differentiation and specialization of functions. Arrangements have been generated for allocating resources or integrating the flow of work. These internal structures affect the perceived meaning and satisfaction of individual participants. Control structures shape the way participants are directed, evaluated and rewarded. These structures are constrained by participants' multiple external social roles. Some complement but others conflict with organizational roles.

Organizations need resources from their environment. This makes them subject to diverse uncertainties, and vulnerable to exploitation or external control. Organizations are strongly embedded in environments and environmental influences penetrate organizations in many ways (Aldrich 1999).

2.3. Knowledge enablers

Given the fragility of knowledge, knowledge development in organizations should not be left to occur at random and unsystematic. To avoid this situation organizations should have knowledge enablers. Five examples of knowledge enablers is demonstrated by Ichijo, von Krogh and Nonaka (1998).

- **Creating Knowledge Intent** – The process of developing organizational knowledge out of individual or collective experiences is stated to be impossible if the importance of knowledge as one of the key competitive advantages of a firm is not well established, and shared by its members.
- **Developing Organizational Conversations** – Firms should focus on the role of language played in knowledge creation, and find the way to facilitate communication by language. And to use language which will be commonly shared and understood by organizational members.
- **Developing Organizational Structure Facilitating Knowledge Development** – Firms' structures should be organized so that they are close to the context for knowledge creation and are able to act for knowledge creation. Firms' should know were they can contribute to customers, penetrate into this context and work with them in co-innovation.
- **Managing Care Relationships** – In order to grasp certain tacit knowledge, interactions between individuals are prerequisite. Social knowledge development of the organization cannot be taken for granted, and relationships in the organization must be given attention. Care characterizes a process of

interaction between receiver and provider, and should be understood as a quality of a relationship. Care has the attributes of patience, tolerance, emotional forbearance and so forth.

- **Developing Knowledge Managers** – Those managers who value knowledge and its management should be intentionally developed (Ichijo, Krogh et al. 1998).

2.4. Conceptions of Intelligence

The discipline of intelligence is relatively new to business. At least in the sense of a formal recognizable discipline where personnel are recruited, trained and developed, and where operational output makes distinct contributions to business functions. There are a number of concepts comprising roughly the same phenomena.

Competitive Intelligence

Michael Porter (Porter 1985) laid down the groundwork for the emergence of a Competitive Intelligence (CI) discipline for industry and helped to define its scope. Porter suggested that competitive forces beyond the established combatants existed. Customers, suppliers, potential entrants and substitute products are all competitors. The pharmaceutical industry was an early adapter of CI as a formal discipline. Availability of and access to data and information in the pharmaceutical industry created an environment for the discipline to grow and mature. It is difficult to demonstrate the success of CI but one indication could be stated in the fact that the length of product-exclusivity have declined over the last few decades. Data from the Pharmaceutical Research and Manufacturing Association illustrate this decline. In 1965 *Inderal* had a period of 13 years of exclusivity compared to *Prozac* in 1988 with a 4 year period of exclusivity to *Celebrex* in 1999 who remained exclusive for 4 months (Little 2003).

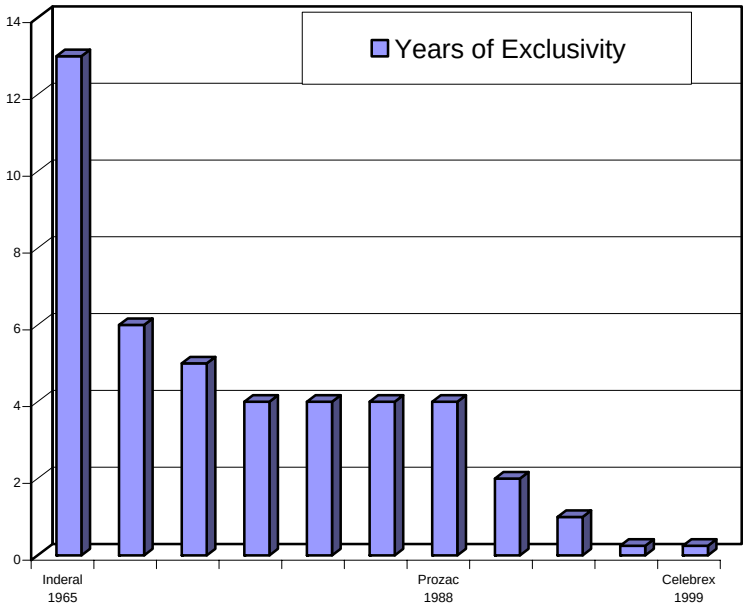

Figure 1: The declining time of pharmacological exclusivity
(Source:PhRMA published in Critical Eye Review dec 2003)

Organizational Intelligence

A definition that in a generic way can function as a guide of thought in order to frame what Organizational Intelligence is about can be expressed as follows. *"Business Intelligence is the activity of monitoring the environment external to the firm for information that is relevant for the decision-making process in the company."* (Gilad and Gilad 1988). In this definition the expression *Business Intelligence* is used instead of *Organizational Intelligence* and firm or company is used instead of organization. This shows that concepts used can differ but the fundamental essence from this quotation is still valid. By using the concepts Organizational Intelligence rather than Business Intelligence and organization rather than firm or company we want to stress the more generic applicability of our research. Not limiting us to businesses or firms but addressing organizations at large.

The issues are not whether or not to engage in organizational intelligence, but rather whether you will do it casually or meticulously ad hoc or systematically. In organizations where people are involved will concepts like motivation, culture and attention be significant. In the industrial era we have implemented a culture of distrust into our companies. A culture where people do not feel valued for what they know or what they can do, focusing on hands rather than heads and hearts. Moving into the

knowledge era we are faced with more than things. Ideas begin to take on major business significance (Bertels and Savage 1998).

2.5. The scope of Organizational Intelligence

Organizational Intelligence activity seeks to provide information about the organizations' external environment. This information is an integral part of the organization's total information system. It augments the internal information generated by the routine operation of the organization. The scope of intelligence operations depends upon both the needs of the organization and the allocation of resources to the intelligence activity. This is analogue with the way an organization defines the scope of its accounting system in accordance with its control requirements.

Gilad and Gilad (1988) provide a list of possible areas of intelligence coverage. The suggested domains are:

Current competitors	Economic environment
Potential competition	Social community environment
Growth opportunities	Demographics
Technological environment	Suppliers
Markets	Acquisition candidates
Political and regulatory environment	

Table 1: Scope of Organizational Intelligence

Each of these areas entails the collection of different kinds of information. Determining the scope of the organizational intelligence system is important because the system has to provide information to support decision-making in the organization. A system that follows conventions and try to emulate what everyone else does may miss its mission. Deciding on the scope should be the first consideration in setting up an intelligence operation. From that will follow the choosing of specific intelligence collection targets and the planning of the collection and analysis functions (Gilad and Gilad 1988).

Opportunities and Threats

Labeling an issue as a threat or opportunity has powerful influence on how a situation is looked upon. Describing an issue as a threat or an opportunity generates different reactions from individuals. Opportunities are associated with projected positive

outcomes and expectations of gain. Threats are associated with negative outcomes and expectations of loss. Individuals withdraw from threats while opportunities are attractive. These differences in individual perception influence the process by which the two types of issues are resolved. Threat issues have implications for managers to constrict control by reducing participation and increasing centralized decision-making. Opportunities lead managers to seek involvement in the process of resolving the issues and participation occurs at lower levels of the organization (Howell and Shea 2001). It has been stated (Hamrefors 1999) that a prerequisite for effective organizational intelligence is to regard events in the organizational environment as opportunities.

2.6. Environmental Scanning

Scanning the environment for information is critical in order to identify promising opportunities to be exploited. One important personality characteristic of individuals who engage in environmental scanning is breadth of interest. Broad general knowledge and experience in a wide range of domains promotes individual scanning involvement (Howell and Shea 2001).

Organizational impact on environmental scanning

Organizational units performing environmental scanning have a tendency to collect information of the kind that the organization is aquatinted to and have some previous knowledge about. Individuals as well as organizations tend to seek information supporting existing beliefs (Yasai-Ardekani and Nystrom 1996). The effect of organized environmental scanning can therefore be regarded by decision makers as useful and efficient while it confirms their established view of the organizational environment. This may even result in efficient decisions, but only as long as the environment does not change to dramatically. Paradoxically this might underpin an extended vulnerability in relation to environmental change.

It can be difficult to establish and legitimize environmental scanning functions in organizations. If the function acts nice and delivers information that matches previous, existing knowledge it might survive but if it fulfills its ultimate objective and challenges organizational truths it probably will be absorbed by other functions and eventually disappear (Sutton 1988; Ghoshal and Westney 1991).

Organizational Intelligence is related to strategic planning. The concept of strategy has its roots in military contexts and can be interpreted as the ability to interpret the landscape you are located in and to successfully navigate in this landscape. This builds on the assumption that there is a landscape that is stable enough over time and that

can be described. In fast changing environments there is a risk for organizations to adjust to others. This can not be considered an efficient strategy. Efficient strategies in the network economy comprise the ability, not to describe the current landscape, but to be able to foresee possible landscapes to be. To create images of the future that is likely to emerge as a consequence of successful building of network relations. These images should be hypothetical and inspiring in guiding decision makers when suggesting possible paths of action in the landscape to be considered.

But environmental scanning also produces knowledge about the business environment. And this knowledge is one of the two important categories of information which the strategy formulation is based upon. The other is knowledge about the resources and capabilities of the organization (Herring 1992). The success of centralized efforts of organizational intelligence is reported to be hard to assess. The link between organizational performance and intelligence efforts has not been demonstrated in terms of success. One hypothesis could be that modern organizations and their environments are so complex that it is not possible for just a few people to cover and interpret all aspects of the business environment (Hamrefors 1999).

2.7. Levels of Intelligence activities

Intelligence activities can be divided into two different levels. *The individual level* stating that every employee is performing environmental scanning. The efficiency of this scanning is influenced by a number of variables. Individual cognitive ability, attention, the design of personal and general working conditions, and organizational environment, these conditions can be designed to direct attention to different kinds of scanning, The different kinds of scanning can be defined as *private*, *anarchistic*, *by principle* and *goal-driven* (Hamrefors 2002). People making the daily operational decisions usually do not have the resources to demand the information needed. As a consequence, these decisions are rarely based on facts, but mostly on experience, accumulated knowledge and rules of thumb. To some degree, all organizations scan their external and internal environments for information about problems or opportunities. Yet sometimes managers do not learn about problems or opportunities in time to act with effectiveness. In many cases the alerting message is delayed as it moves through the sequential nodes in the communication network (Huber 1990).

Intelligence activities can also be regarded as ‘organized intelligence’. This puts the function of scanning to *an organizational level* addressing questions like, in what organizational unit should the function be located and what resources should be allocated defining the organizational ambition of the function.

Increased environmental complexity generally leads to the need for more information exchange (Huber 1984). One approach to a resolution of this situation is the use of advanced information technologies in the decision processes. Relying on the software companies vision of building up good quality organizational intelligence obviously comprises the danger of a “one-size-fits all” approach. One common mental image and assumption of this kind of solutions is that of a large warehouse that contains all knowledge. This involves of course building a central electronic database. But experiences reported (Dixon 2000) states that the effects are not as good as expected. Neither contributions nor retrievals occur with much enthusiasm. An incentive system is often implemented in order to compensate for the lack of contributing and retrieving. Although incentives work to some extent, they are not reported to deliver the hoped-for results.

3. Research Approach

Today qualitative research is accepted as being able to provide important insights into information systems phenomena (Kaplan and Duchon 1988; Galliers 1991; Orlikowski and Baroudi 1991; Walsham 1995; Järvinen 2000; Mingers 2001). Qualitative research involves the use of qualitative data, such as interviews, documents and participant observation, to understand and explain social phenomena. In information systems research there has been a general shift away from issues that are purely technological to issues that additionally include the managerial and organizational, hence an increasing interest in the application of qualitative research methods.

3.1. Interpretive research approach

One approach within the qualitative research area is described as interpretive. Interpretive research methods have gained prominence and been increasingly accepted by the Information Systems (IS) community. Interpretive approaches adopt the stance that knowledge is a social construction, and that our theories concerning reality provide ways of making sense of the world rather than discoveries about the world which represent absolute truth. The growth of interpretive research includes a shift in IS research away from technological to managerial and organizational issues. And it includes a desire to study problems in the richness of their real-life setting. Interpretive research does not predefine dependent or independent variables, but focuses on the complexity of human sense making as the situation emerges. It attempts to understand phenomena through the meanings that people assigns to them (Klein and Myers 1999).

This research;

- takes a social-constructivist stance.
- is focusing on individual's perceptions of their organization and organizational role.
- is aiming at investigating individual motivating factors by elicitation of individual's normally non expressed views and beliefs.
- will analyze current and proposed organizational actions and events influenced by cultural analysis in revealing conceptions, values and beliefs beyond the superficial organizational behaviors.

Considering these statements we suggest that an interpretative research approach is appropriate in achieving the research objectives.

3.2. Critical hermeneutics

Hermeneutics is the science of interpretation concerned with analysis of the meaning of a text or text-analogue. The idea of a hermeneutic circle refers to the dialectic between the understanding of the text as a whole and the interpretation of its parts, in which descriptions are guided by anticipated explanations. Hermeneutics is a recognized framework for the analysis of organizations, in particular when looking at organizational culture, and has been applied to the analysis at socio-technical interactions. Critical hermeneutics has emerged. There is a potential tendency to view interpretation as a closed and exact form, but critical hermeneutics recognizes that the interpretive act is one which can never be closed as there is always a possible alternative. In critical hermeneutics the interpreter constructs the context as another form of text, which can then, of itself, be critically analyzed so that the meaning construction can be understood as an interpretive act. In this way, the hermeneutic interpreter is simply creating another text on a text, and this recursive creation is potentially infinite. Every meaning is constructed, even though the very constructive act of seeking to deconstruct, and the process whereby that textual interpretation occurs, must be self-critically reflected on (Harvey and Myers 2002).

3.3. The Knowledge Worker

In focus of this research project is the *"Knowledge Worker*. Knowledge workers are presented as a new type of occupation which is qualitatively different from the occupational groups at the old industrial economy. One source of criticism of the concept of Knowledge-worker is the tendency to lump a variety of occupational groups

under the heading of Knowledge-workers. This tendency not only makes it extremely difficult to discriminate between different forms of work, but taking the term literally might lead us to see all workers as knowledge workers(Scarbrough 1999).

It is entirely possible to see knowledge as central to firms' competitive success without implying a special status for knowledge workers. Much of the knowledge in an organization is embedded in routines and procedures or encoded in systems. In some firms the specialist knowledge of individuals may be much less important than the know-how built into structure, culture and practices.

In our definition of Knowledge-workers we attribute this label to employees involved in the process of codification of knowledge and its commodification. That is processes in which knowledge is translated into symbolic form and consequently becomes more readily marketable as a commodity. It is recognized by worker autonomy and high variability in performance across individuals and time (Scarbrough 1999).

3.4. The Intelligence Audit

The method of interviewing is used in many organizations in order to identify the information needs of the employees. Together with checklists this might be tone of the most common methods used to direct information retrieval and environmental scanning (Frankelius 2001). Ruth Stanat (1990) describes a method based on interviews to chart an organizations information needs reflecting relevant elements in the organizational environment. The method is called *Strategic Information Audit*. By asking carefully selected persons within the organization it is possible produce an image of both the information regarded as important by the individuals and how well the internal information systems provides for this information. Gilad och Gilad (1988) describes a similar method called *The Intelligence Audit*. The problem with "asking the employee" is that it only highlights and maps existing states of minds rather than contributing to change of minds. Individuals communicate their interest. The method doesn't support them to reflect upon what they ought to be interested in. The method doesn't provide any enticement to creative or systemic thinking.

One special effect is that the employees often enough indicate things that they already on a regular basis is informed about rather than pointing at factors that is out of their present information provision but that ought to be included. The reason for this is simple. It is hard to point at things you know nothing about or even don't know that exists.

The intention using a variant of Intelligence Audit is not to normatively chart the information needs of the organization under investigation. The purpose is to create a dialogue round perceived needs of environmental scanning through the interviews focused on the perceived information needs. This dialogue is expected to bring forward a framework of motivators for knowledge-workers to engage in and contribute to an improved and structured organizational intelligence process and enhanced organizational ability to navigate an increasingly complex and volatile environment.

4. Expected Results

The research project is supposed to put forward some issues on management of knowledge workers as a step towards some formal organizational intelligence activities. This is supposed to come forward by identifying factors that motivates knowledge working employees to direct their attention to information and information sources that are perceived as useful to the organization. By conducting a field/case study based on critical hermeneutic principles patterns of existing and future intelligence activities and elicitation of knowledge-workers perceived needs and abilities will contribute to point out motivating factors. The research is not aiming at theory testing but some outcomes can be anticipated, relating to reports from literature.

Motivation by Knowledge

- Attention is guided by perspectives. And perspective builds on individual cognitive schemes and individual memories. We do not pay attention to signals or situations that we can not associate to, that we do not recognize in some sense. Information acquisition can be stated as knowledge dependent (Choudhury and Sampler 1997). A program for personal and competence development could be seen as a motivating factor.

Motivation by Incentive Programs

- Reports from information retrieving in centralized databases reports that incentive programs work to some extent. But experiences (Dixon 2000) states that the effects are not as good as expected. Neither contributions nor retrievals occur with much enthusiasm. An incentive system is often implemented in order to compensate for the lack of contributing and retrieving. Although incentives work to some extent, they are not reported to deliver the hoped-for results. Some kind of incentive program could be seen as a motivating factor.

Motivation by Personal Recognition

- Maybe one of the most significant motivating factors reported are personal recognition. From studies of teamwork and other forms of cooperation it is reported that personal recognition is very important. In problem-solving situations or innovative thinking it is important to be recognized as the person who solved the problem or came up with the new, brilliant idea. This might even be more important than differentiated salaries. Some kind of organizational structure for recognizing effective scanning and good intelligence work might be a motivating factor.

Motivation by Information Access

- Being trusted with access to information concerning the organization might be one way of recognition. Different organizational functions have different access to information. Often enough it might be for security reasons and fear of misuse. By valuating employees performance in intelligence work and environmental scanning and implementing organizational routines for making it possible to qualify for access to higher level information sources and analyzed reports might be a motivating factor.

Motivation by personal fringe benefit Information Access

- Results from a pilot study performed by the author indicate that fulfillment of private information desires might be e motivating factor. If organizations allow for personal information needs to be explored motivation on development of information retrieval skills might be enhanced. One example to illustrate this comes from an interview where the intelligence analyst in one organization declared that he used an Internet agent service. This service delivered results from daily internet scanning. The subscription allowed for ten search strings to be defined. The intelligence analyst had nine of them defined based on keywords strictly related to his work concerning infrastructure issues in the South of Sweden, but the tenth keyword was “Elvis Presley”

5. Discussion and Conclusions

Organizations are social units, of many shapes and sizes, but most of them are overlooked by the field of organization studies (Aldrich 1999). Contemporary books and journals tend to focus heavily on publicly traded firms. The large numbers of organizations that are not listed on any stock market appear infrequently. This research aims at being applicable to organizations in all their diversity. The aim is to develop

generic principles describing organizational knowledge workers potential to provide benefits to organizational intelligence and thereby ultimately to organizational prosperity and survival.

In supporting Knowledge-workers in their intelligence efforts some implications on organizations and management styles are to be considered.. A prerequisite for any formal structure of Organizational Intelligence in organizations is though the participation of its employees. This paper states that this OI function will benefit from encouraging individual efforts. The Knowledge-worker is proposed to be able to make a significant contribution. This contribution requires motivation. A framework of motivating factors is proposed comprising competence development, incentive programs, personal recognition and trusting employees with formal information access and fulfillment of personal information desires. This paper recognizes the need for empirical verification of the framework. The outcome of such research will probably affect and redesign some aspects.

Building on this framework implementing some simple organizational principles and routines are proposed. In order for these routines to function as knowledge enablers they should constitute the establishment of knowledge intent and support communication arenas focusing established critical information needs. These arenas should be characterized by care about personal relations and by engaging operational personnel in the intelligence efforts they should ensure context close to actions facilitating knowledge creation. These principles and routines needs active support in engaging, developing, and recognizing skillful managers who value knowledge and its management.

In supporting Knowledge-workers in their intelligence efforts some implications on organizations and management styles are to be considered. By applying a model of differentiated environments of the Knowledge-worker one can state that the enacted environment must be supported in generating constructive perspectives and the organization should be perceived as the contextual environment making Knowledge-workers attentive to useful information in the organizational environment. A prerequisite for any formal structure of Organizational Intelligence in organizations is though the participation of its employees. This paper states that this OI function will benefit from encouraging individual efforts. The ordinary Knowledge-worker is proposed to be able to make a significant contribution. This contribution requires motivation. This research aims at developing a framework of motivating factors.

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