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## Elements of Individual Knowledge : a Practitioner's Perspective

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## Elements of Individual Knowledge: A Practitioner's Perspective

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### Abstract:

The current smart economy has defined new rules for economic leadership where Intellectual Capital (IC) has become the foundation of wealth creation. The ability of organisations to compete in today's complex business climate relies on effective management of intangibles and the development of strategies to leverage and exploit knowledge assets. Yet, knowledge is intrinsically linked to individuals and their exclusive capabilities to execute knowledge processes, such as creation and sharing in addition to their competence in utilising available IC to drive organisational performance. Knowledge-holding employees are key knowledge assets which lead the organisation's efforts to create value, overcome challenges, and confront uncertainty. However, despite the fundamental role of individuals in firm knowledge dynamics, the IC and Knowledge Management (KM) literature often addresses organisational knowledge holistically, seldom focusing on its individual-based origins. The purpose of this study is thus to investigate the concept of individual knowledge and explore its underlying constructs based on the views of both practitioners and researchers. Moving from a literature review, the industry perspective is introduced through the findings gleaned from semi-structured interviews of a number of senior managers from various industries. Interviews explored managers' conceptualisations of the individual knowledge notion and their perceptions of the unique attributes of knowledge holders. Qualitative interview responses are interpreted through thematic analysis of the data to identify themes and gain practicable insights. Managers highlighted a number of elements of knowledge that contribute to IC and KM and practice. The identified dimensions of individual knowledge are summarised in the proposed *IK Model*, which offers a simple yet comprehensive framework to operationalise the individual knowledge concept in organisational contexts.

**Keywords:** Knowledge Management, Individual Knowledge, Knowledge Creation, Knowledge Sharing

## 1. Introduction

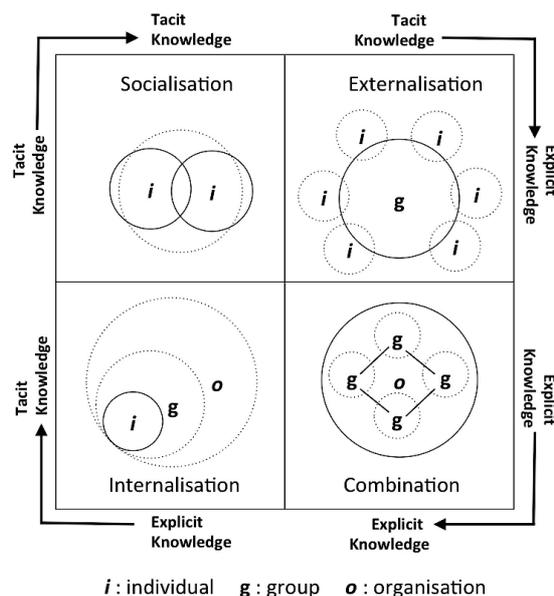
The knowledge-based view of organisations envisages the firm as an ever-changing system of organisational knowledge production and application (Spender, 1996). The nature of this system is multifaceted and comprises complex interactions between individual knowledge held in people's minds and organisational knowledge embedded in systems, culture and practices. It is, however, primarily dependant upon the vital participation of individuals to sustain and fuel the intra-firm knowledge dynamic. At a fundamental level, knowledge is created solely by individuals based on their unique capabilities to add meaning to information, identify patterns, and draw conclusions from experiences in different situations. Only through the contribution of individuals in explicating and transferring knowledge does knowledge become institutionalised within the firm. Moreover, knowledge sharing mainly occurs during social interactions between individuals in a process that can be mediated by technology, but cannot be enforced. When seeking to utilise knowledge, organisations ultimately rely on the exclusive human ability to act upon existing knowledge and to facilitate its integration into decision-making to drive organisational performance. Despite the pivotal role of individuals in the organisational knowledge ecosystem, review of the literature indicates that this role has been under investigated by many of the previous KM and IC studies. There is a tendency of research to adopt a holistic view of organisational knowledge often overlooking its individual roots, which suggests that more research efforts should be directed towards individual knowledge workers. This proposition supports the recommendations of recent studies, which advocate the need for the integration of an individual perspective in KM research (Rechberg and Syed, 2014). The purpose of this study is, hence, to explore the notion of individual knowledge and examine its core components. After an introductory theoretical background, this paper presents a number of themes identified from a series of interviews with top executives. The outcomes of the study are discussed in light of the extant KM/IC literature and are used to construct the proposed *IK Model* as a representational multidimensional framework of the elements of individual knowledge in a business context.

## 2. Literature Review

Within the KM/IC literature, an organisation is viewed as the sum of its financial capital (monetary and physical assets) and its IC, both of which it can exploit to create value and enhance organisational performance (Stewart, 1998). IC includes all the firm's knowledge resources (Schiuma et al., 2008) and is divided into Human Capital (HC), the combined knowledge of employees, and Structural Capital (SC). SC comprises Relational Capital (RC), which is the collective value of an organisation's external relationships with stakeholders, and Organisational Capital (OC), which includes knowledge embedded in the firm's processes and systems (Edvinsson, 1997). Within the different modes of IC, knowledge exists as series of *stocks and flows* as described by the theory proposed by Machlup (1979). Knowledge stocks occur as reservoirs at both the individual and the organisational level while streams of knowledge flow between the individual and the firm and among individuals (Becerra-Fernandez, 2000). Knowledge flows are governed by a number of knowledge processes that occur simultaneously within the firm starting by *creation and acquisition*, including *sharing and transfer*, followed by *codification*, and ending in *knowledge application* (Alavi and Leidner, 2001; Heisig, 2009). In such a complex and dynamic organisational knowledge environment, individuals play a crucial role that builds the firm's knowledge and underpins its development. Initially, individuals accumulate knowledge stocks by generating new knowledge within the organisation or acquiring knowledge from external sources. This knowledge is mostly tacit and embodied in their minds, which makes it non-transferable unless individuals actively and willingly interact with the organisation's knowledge processes (Davenport and Prusak, 1998). Intra-firm knowledge sharing between individuals is vital for organisations because it empowers workers to confront challenges of uncertainty and complexity and enables the leveraging of knowledge between different parts of the firm to avoid 'reinventing the wheel' (Connelly et al., 2014). The knowledge codification

process underpins knowledge flows between individuals and the firm whereby employees transfer their knowledge to organisational “knowledge items,” such as systems, business processes and intellectual properties (Bolisani and Oltramari, 2012). The explicit component of knowledge becomes embodied in organisational objects, which enables the assimilation of new knowledge into the firm’s stocks and facilitates its dissemination (Schulz, 2001). This process is entirely dependant upon the exclusive ability of individuals to externalise part of their knowledge from a tacit to an explicit form (Jakubik, 2007). Reciprocally, other individuals may retrieve knowledge by exploiting existing organisational stocks, for example by reading the company’s process manual. Knowledge that is acquired from interaction with organisational objects is the result of “feedback learning flows” that occur between SC and HC (Bontis, 2001). Similarly, RC is essentially built by individuals who acquire new contacts with different stakeholders and transfer them to the organisation. Finally, the ultimate objective of KM is knowledge application, which can be described as the aggregation of individuals’ knowledge to create value (Grant, 1996). It is the process in which knowledge is used in business decision making to enhance organisational performance and achieve competitive advantage, and is mostly based upon the sound judgements of individuals (McKenzie et al., 2011).

Although knowledge is often discussed as an organisation resource, most KM scholars agree that knowledge is primarily created by and resides in individuals (Erden et al., 2008). In their seminal book, Davenport and Prusak (1998) indicate that knowledge “originates and is applied in the minds of knowers” and Nonaka and Takeuchi (1995) affirm “an organisation cannot create knowledge without individuals.” Myers (1996) describes knowledge as an “innately human quality, residing in the living mind of a person.” Lam (2000) describes individual knowledge as the component of a firm’s knowledge that exists in the minds and physical skills of individuals and could be applied to execute tasks and resolve problems. Nonetheless, the KM concept mostly operates at firm level and aims to manage organisational knowledge. This implies the existence of a complex dynamic between individual and organisational knowledge and a mechanism by which the former is transformed to the latter. The prominent SECI model (Figure 1), formulated by Nonaka and Takeuchi (1995), offers a widely cited theory of organisational knowledge creation. The model depicts the creation of organisational knowledge by simultaneous processes of “amplifying” knowledge created by individuals, and converting knowledge from a tacit to an explicit form through four conversion modes: *Socialisation*, *Externalisation*, *Combination* and *Internalisation*.



Source: Nonaka and Konno (2005)

Figure 1: SECI Model

In summary, individual employees are the common denominator in most aspects of an organisation's knowledge ecosystem and the most significant component of knowledge work. Individuals are critical actors in the development of IC due to their ability to create, acquire and codify knowledge. They are the primary knowers of a firm's knowledge and stock-holders in which it is embedded. They also drive organisational knowledge flows by acting as knowledge agents through which it is shared and transferred, and by being the sole executors of knowledge processes within the firm. Individual knowledge is, hence, the root of most organisational knowledge and an important construct in understanding organisational knowledge dynamics.

### 3. Methodology

The inductive and exploratory nature of the research suggested that it should be addressed using a qualitative methodology to produce rich and insightful results and provide a profound understanding of the complex and idiosyncratic concept of knowledge within the local context of the firm (Johnson and Onwuegbuzie, 2004; Saunders et al., 2009). Accordingly, interviews were held with sixteen senior managers from different industrial sectors. A diverse sample of purposefully selected companies was used in order to nominate particularly informative and experienced individuals who would enrich the data collection process providing a panoramic view of the current status of individual knowledge in the business world. Respondents had varied profiles that included both small and medium enterprises (SME) and large enterprises (LE), as listed in Table 1. Semi-structured interviews were selected as the data collection instrument to enable respondents to express their ideas in an unobstructed manner while maintaining a general framework of inquiry to provide a degree of comparability between responses. An interview schedule that provided an overall structure for the interviews was developed and sent to the managers in advance with a concise brief on the objectives of the study. Open-ended question were mostly used where respondents were encouraged to freely elaborate on their answers and were probed for further explanation when necessary. Thematic analysis was employed to interpret interview data and synthesise the main findings by discerning common patterns and examining how different interviewees responded to the same questions. Using the qualitative analysis software *NVivo*, interview transcripts were coded to identify themes within the data and glean insights. Emergent concepts were reviewed and refined in the subsequent cycles of coding to establish the study's findings.

**Table 1: Respondent Profiles**

#	Size	Industry	Job Title	#	Size	Industry	Job Title
1	SME	Technology	Content Manager	9	LE	Consulting	Managing Director
2	SME	Consulting	Managing Director	10	LE	Education	Vice-President
3	SME	Consulting	HR Consultant	11	LE	Manufacturing	Marketing Manager
4	SME	Technology	Chief Scientist	12	LE	Education	Head of School
5	SME	Healthcare	VP Business Development	13	LE	Logistics	Director of Strategy
6	SME	Pharmaceuticals	Sales Manager	14	LE	Manufacturing	Supply Planning Manager
7	SME	Education	Department Chair	15	LE	Oil & Gas	Account Manager
8	LE	Healthcare	Business Development	16	LE	Manufacturing	Operations Manager

## 4. Findings

When asked about the significance of individual knowledge, managers responded with strong assertions that they believed the mass value of their company's knowledge was held by employees. They also emphasised the importance of this knowledge to lead the organisation's performance and create competitive advantage. Interview questions then steered the managers towards the elements of individual knowledge and asked what characteristics and factors defined knowledge-holders in their organisations. Managers provided an interesting and diverse array of views on what constitutes individual knowledge in their companies' contexts. They can be summarised in the themes discussed below.

### 4.1 Learning

The notion of learning was identified by most of the interviewees as an overarching theme of individual knowledge. The majority of comments by managers in this regard seemed to define knowledge of their employees as "*prior learning*" or "*lessons learnt*." Respondents described the types of learning as being either *formal* or *experiential* by defining the sources of learning as: "*qualifications and experience*," "*experiences and studies*," "*education and training*," and "*learning from previous success and failure stories*." One senior manager emphasised the importance of experiential learning by stating, "*I believe knowledge in business is mainly learning from experience. The more experience you gain, the more knowledgeable you are.*"

Knowledge and learning are two strongly linked concepts within the KM literature and are often regarded as two sides of one coin (Kogut and Zander, 1996). Knowledge is defined as the outcome of a learning process that occurs primarily at the individual level through study or experience (Loermans, 2002; Schulz, 2001). In contrast, learning is basically described as a knowledge acquisition process (Moustaghfir and Schiuma, 2013). The dependence of knowledge creation on experience in particular is widely acknowledged in the classic works of KM theorists. For example, Michael Polanyi (1967) states that knowledge is developed by "*indwelling*", which he describes as the assimilation of knowledge by living through an experience and Nonaka (1991) refers to this process as "*internalisation*" which he describes as *learning by doing*, echoing the phrase used by renowned economist Kenneth Arrow (1962) in his description of knowledge acquisition as "*a product of experience.*"

Managers who are working in educational institutions and/or those who pursued postgraduate studies had a strong belief that formal education is a valuable source of learning as well and often enriches individual knowledge. They described education as "*a structured way of gaining knowledge*" and "*the best investment to gain knowledge.*" Other respondents, in contrast, made no reference to education in their discourse of learning. They distinctively differentiated between the relevance of knowledge acquired by going through formal education and the knowledge gained in the business environment. In this discussion, reference was given that in many cases an individual's performance at work is not correlated to prior performance in academic contexts. It is worth noting that training was commanded as a source of knowledge by the majority of senior managers and seemed to be perceived as learning with applied nature. Managers also believe that training is the best way to "*transfer knowledge to new-comers*" and "*develop knowledge and upskill employees.*"

Generally, experience, training and education were all cited by several managers as the principal sources of learning and were thus used as the main criteria for candidate selection in HR recruitment processes. They are also recognised as human capital measurement constructs in a considerable number of IC measurement models (Edvinsson and Malone, 1997; Roos et al., 1998; Sveiby, 1993).

## 4.2 Social Interactions

Another theme that came through strongly in most interviews was the contribution of social interaction to the development of individual knowledge. Socialisation within the workplace was viewed as a key driver of knowledge creation and sharing. The KM literature highlights the role of social activities in enriching individual knowledge by supporting the knowledge creation process. According to social learning theory, learning is a social activity that emerges from interactions between individuals to achieve a shared understanding of an idea or a concept (Wenger, 1999). Consequently, knowledge is constructed by individuals who participate in social processes and assimilate their outcomes (Spender, 2006). Participants assume the interchangeable roles of *knowledge-providers* and *knowledge-seekers* through a dynamic process that occurs in both formal and informal settings (Jakubik, 2011). Nonaka's SECI model represents this process by the *socialisation* mode, which he defines as the conversion of tacit knowledge to other forms of tacit knowledge through discussion and dialogue. Socialisation can also result in new knowledge being created when a person obtains a new insight triggered by interacting with another (Alavi and Leidner, 2001). This is reflected by the ability of employees to be more innovative when they are part of a team than when they work individually (El Sawy et al., 1998).

Social interaction is also considered as one of the main enablers of knowledge sharing processes, which drive knowledge flows between individuals and facilitate leveraging knowledge stocks within the firm. Managers pointed out to three main factors which they believe contribute to the effectiveness of social interaction in nurturing knowledge sharing:

### 4.2.1 Communication

A major attribute of knowledge-holders that was widely recognised by interviewees was their "ability to communicate with others" or simply their "communication skills." Research has also acknowledged the significant role of face-to-face and technology-mediated communication in enhancing knowledge sharing among organisational members and its ultimate impact on organisational performance (Vorakulpipat and Rezgui, 2008). As Davenport and Prusak (1998) clearly state, "*In a knowledge-driven economy, talk is real work.*"

### 4.2.2 Social Ties

Discussion of social ties in the context of knowledge sharing echoed the findings of Hansen (1999) and Cross and Parker (2004) in their studies of organisational social networks. They state that, when seeking knowledge, employees rely upon their network of relationships and request help from people they know in the same company or in other organisations. In such cases, their ability to acquire knowledge to overcome challenges becomes highly dependant upon their network structure and tie strength i.e. the quality and frequency of interaction between the sender and the receiver (Wang et al., 2006; Zhou et al., 2010). As stated by one interviewee, "*Sometimes it is not about knowing it all, but rather knowing whom to talk to when you are looking for answers.*"

### 4.2.3 Willingness / Motivation

The vast majority of managers agree that the benefit an organisation would derive from an individual's knowledge is highly reliant upon their attitude towards the contribution to the firm's knowledge processes. The participation of knowledge workers in the firm's knowledge dynamics originates from a personal drive to engage in knowledge sharing and codification processes. This element, referred to by managers as "willingness," "motivation," "eagerness," and "engagement," was strongly emphasised as a core determinant of effective management of individual knowledge within the organisation. One manager warned, "*If you cannot overcome the 'Knowledge is Power' mentality, you will run into all kinds of problems.*"

Acknowledging the importance of the attitudinal aspect of KM, recognisable research efforts attempted to unveil motivational factors that contribute to knowledge sharing behaviour among employees. The most prominent factors identified include (1) recognition and reward, (2) empowerment, (3) reputation building, (4) trust, (5) corporate culture, (6) management support, (7) leadership, and (8) IT infrastructure (Evans, 2012; Witherspoon et al., 2013).

### 4.3 Procedure

Several managers stressed the *process* aspect of knowledge, which includes the “*know-how*” or “*mode of operation*” of work practices and procedures implemented to achieve organisational goals, both formal and informal. Knowledge-holders are believed to have deep understanding of the business of their companies and equally an ability to improve process capabilities, a dimension the literature refers to as *procedural knowledge* (Singley, 1989). Procedural knowledge is the knowledge of business processes and best practices adopted in a firm to do the required tasks (Guzman, 2009). Considering that knowledge stocks are embedded not only in individuals, but also in organisational routines and practices (Jakubik, 2007), the utilisation of business processes is also a source of individual knowledge. According to Davenport and Prusak (1998), the interaction with business processes requires knowledge of *how* and *why* they are used to execute business activities. Such interaction increases employees’ understanding of the work’s dynamics and enhances their knowledge of the business.

### 4.4 Capability

When executives were asked how they identified knowledge holders, results-based, or judgement-based performance appraisals seemed to be the most commonly used approaches. This suggested an underlying perceived correlation between individual knowledge and individual performance, which stemmed from the implied notion of measuring knowledge through its effects. During the interviews, senior managers emphasised the ability of knowledge to enhance “*performance,*” “*competence,*” and “*capability*” and it was apparent that they shared a common belief that is best represented by the following statement, “*Superior performance is definitely an indication of knowledge. The ones that have the most knowledge are usually the best performers.*”

Based on this view, in many cases performance appraisal was taken as a proxy measure of knowledge. Aligned with KM theory, the relationship between knowledge and capability is deeply rooted in the literature and evolves from the ability of knowledge to empower effective action (Senge et al., 1999; Zeleny, 2002) and support sound decision-making (Webb, 1998).

Innovative capability was also highlighted as another key outcome of holding knowledge. One manager indicated: “*Innovation is at the heart of our strategy and everything we do. We define knowledge-holders as the individuals who know how to use their knowledge to be innovative.*” Innovation is the generation, development and implementation of new ideas to create value for business. It is traditionally conceptualised as a process of accumulation and recombination of knowledge (Darroch, 2005; Al-Laham et al., 2011). Innovation emerges as one of the main outcomes of individual knowledge in organisations. Respondents considered knowledge as “*a requirement for creativity*” and a key enabler of “*generating new ideas.*” Inline with the view of managers, the relationship between knowledge and innovation is well established in KM writings. Put in simpler terms, Du Plessis (2007) describes innovation as the use of existing knowledge to create new knowledge. Knowledge is thus an antecedent of innovation and a core component of innovative capability (Von Krogh et al., 2000).

#### 4.5 IK Model

The aforementioned findings of this study are summarised in the *IK Model* framework shown below. The model depicts the different dimensions of individual knowledge discerned from the analysis of managerial interviews (Figure 2).

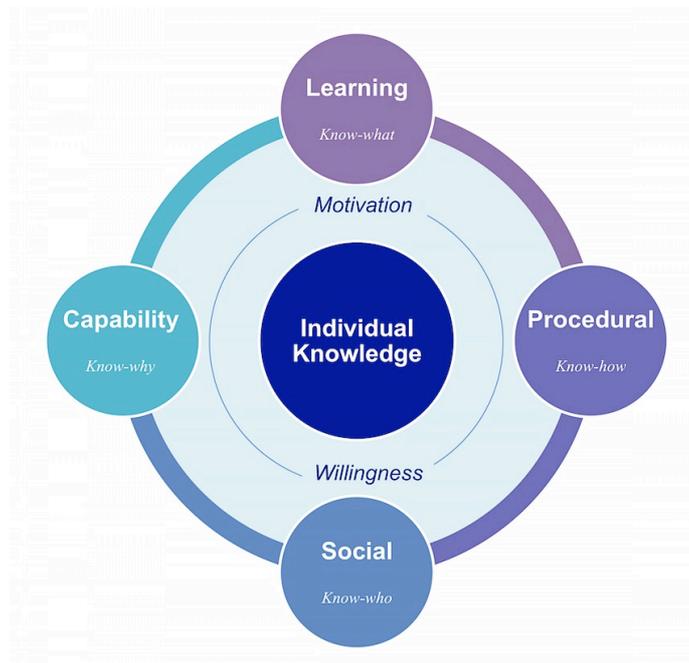


Figure 2: IK Model

#### 5. Discussion and Conclusion

The operationalisation of the individual knowledge concept within the KM and IC domain requires identification of its underlying constructs, factors that contribute to knowledge accumulation, and the effects of knowledge on individual aptitudes. This paper analyses the notion of individual knowledge in organisational contexts from the perspective of practitioners by exploring manager's conceptualisation of knowledge and the attributes they associate with individuals whom they envisage as knowledge holders. Four dimensions of individual knowledge were identified:

- *Learning Dimension* - includes knowledge that is acquired by experience, study and training.
- *Social Dimension* - reflects knowledge that is inspired by social interactions or shared through interpersonal communication. It also includes the relational aspect of knowledge.
- *Procedural Dimension* - comprises knowledge of practices and processes required to accomplish work tasks and activities.
- *Capability Dimension* - represents individuals' exploitation of their knowledge to enhance their innovation and performance capabilities by creating new knowledge and using their knowledge in enhancing corporate performance and realising their organisation's goals.

Furthermore, the willingness and motivation of individuals to contribute to knowledge processes was identified as a major determinant of the value an organisation would derive from the knowledge of its employees. It is depicted in the centre of the *IK Model* because it empowers knowledge acquisition, sharing and application processes that contribute to all dimensions of individual knowledge. Unless individuals are willing to engage and contribute to organisational knowledge dynamics, such processes would not take place.

The findings of this study contribute to both KM theory and practice. For researchers, it proposes a framework that elucidates different aspects of individual knowledge based on practitioner view and supported by extant KM literature thus setting a foundation for further research. Moreover, it provides managers with a number of factors that clearly contribute to the acquisition of individual knowledge and thus could be supported by organisational initiatives seeking to develop the knowledge of individual employees e.g. training programs, socialisation events, etc. The identified parameters could also be used to evaluate and benchmark the knowledge of employees for knowledge management and appraisal purposes.

Although outcomes of this study offer useful insights, the relatively small size of the respondent sample does not permit generalisation of results, a common limitation of interviews (Boyce and Neale, 2006). A large-scale questionnaire is hence conducted in the subsequent research phase to examine the validity of the findings and produce statistically significant results from which generalisable conclusions are inferred.

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