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REFLECTING ON THE NATURE OF INFORMATION, KNOWLEDGE AND LEARNING

How can we better understand what information, knowledge and learning really mean and how they relate to each other? What exactly is knowledge? Why do we talk about Knowledge Sharing rather than Knowledge Management at Helvetas? The following pages examine these questions in more detail, but in a nutshell we can say that:

• Information is data that is organized in a certain way which helps give meaning to what would otherwise be a collection of unconnected 'facts' or 'objects'

• Knowledge is something more complex and dynamic as it relates directly to human beings who create, use and convey it

• Learning is a process that takes place at the individual and collective level which transforms information and experience into knowledge

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One can find a variety of positions on the meaning of **information**, but one common and relatively simple line of thinking characterizes information as data that is organized in some way. Such organisation helps to give meaning to what would otherwise be a collection of unconnected 'facts' or 'objects'.

Knowledge, on the other hand, is a more complex thing, and one that is not so tangible or static. In their consideration of information versus knowledge, Terra and Angeloni (2005: 2, 3) suggest:
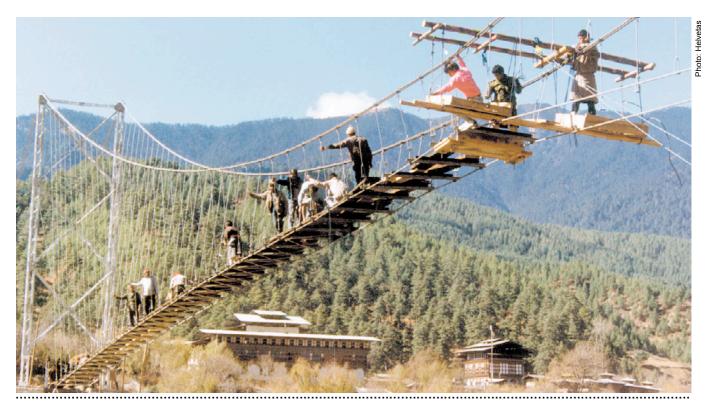
> The key difference can be summarized by the role played by human beings. In the case of knowledge, as simple as it may seem, individuals play a prominent role as creators, carriers, conveyors and users. In contrast, in the case of information, these same functions can happen "outside" humans and without their direct influence.

Similarly, from the Helvetas perspective, knowledge is very much about people and the environments within which they live and work, and a strategy to promote more effective use, sharing and generation of knowledge must therefore focus on these things. This does not mean there is no interest in information, or in technology, but that each of these must be approached strategically, and each is secondary to considerations of person-to-person interaction in different contexts.

Like information and knowledge, **learning** can be defined in various ways, but one compelling conception put forward by Keating, Robinson and Clemson (1996) considers knowledge as a 'state' and learning as a 'flow'. In other words:

> A person or organisation has a certain measure of knowledge which creates the potential for action and decision. Learning indicates some change in the state of knowledge (...) Learning must involve an increase in knowledge or a change in something previously known (i.e. we correct an error or change from one theory to another).

From this point of view, the difference between knowledge and learning points to the fact that individuals and organisations need to be changing if they are to learn. In other words, if one only needed to rely on knowledge that one already had – or in corporate terms, that already existed within the organisation - there may not be a great need to pursue learning as an objective. On the other hand, if one is in a dynamic and changing environment, then having the necessary knowledge is important, but being able to learn is also crucial.

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Trail bridge construction in Bumthang, Bhutan

Information versus Knowledge in Bridge Building: The Trail Bridge Sub-Sector Program (TBSSP) in Nepal

The TBSSP has developed a set of 16 manuals - based on 25 years of experience - which provides comprehensive guidelines around trail bridge technology and implementation modalities. These represent state-of-the-art materials around implementing trail bridge construction projects.

If someone were to read through all 16 manuals, they would no doubt learn a lot about trail bridge construction, but a community would be forgiven for not trusting its own bridge-building project to such a person!

Put this way, it is easier to understand how information and knowledge can be profoundly different. Diffusing information about bridge building can be greatly assisted by such manuals, but the knowledge cannot be created without training, working with others who have experience, talking through challenges and a host of other ways to arrive at a sufficient level of capacity around trail bridge construction.

A CLOSER LOOK AT KNOWLEDGE

> " In the village, from time immemorial, the elder, the traditional healer and the midwife have been the living repositories of distilled experience in the life of the community. Even in highly sophisticated modern knowledge organisations, the most valuable knowledge – the know-how in terms of what really gets results and what mistakes to avoid – often resides mainly in people's minds. "

(Denning 1998)

Differences of opinion around definitions of knowledge have existed from the beginnings of the use of the word. The rise of Knowledge Management (KM) seems to have done little to diminish the frequency or intensity of such debates. Although it is neither necessary nor advisable to try to settle the definitional debate over knowledge here, it would be helpful to elaborate on the current Helvetas use of the term.

The Helvetas conception of knowledge is informed by the recent shift away from relatively mechanistic to more holistic views of knowledge (See figure 1). The latter are informed by a more sophisticated approach to knowledge and its production, sharing and use, while the former tend to treat knowledge as a mere commodity or object.

Since its appearance in the late 1980s, Knowledge Management has come a long way. Early efforts to apply KM focused very much on *document management* and database building in the belief that knowledge could be readily captured, manipulated and distributed in such forms.
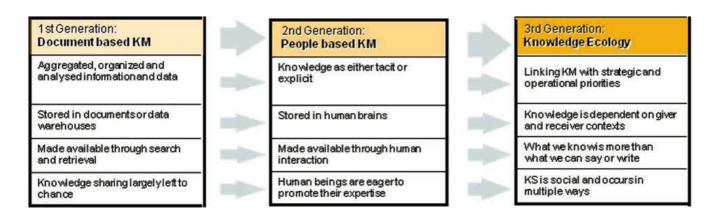
1st Generation: Document based KM	2nd Generation: People based KM	3rd Generation: Knowledge Ecology
Aggregated, organized and analysed information and data	Knowledge as either tacit or explicit	Linking KM with strategic and operational priorities
Stored in documents or data warehouses	Stored in human brains	Knowledge is dependent on giver and receiver contexts
Made available through search and retrieval	Made available through human interaction	What we know is more than what we can say or write
Knowledge sharing largely left to chance	Human beings are eager to promote their expertise	KS is social and occurs in multiple ways

Figure 1: Three Generations of Knowledge Management Thinking

Following several years, large amounts of funding and a number of disappointments, KM practitioners began to recognize that much crucial knowledge was not only in people's heads, but that it could not easily be written down or captured in some kind of electronic or physical medium. Such knowledge became known as *tacit knowledge* and was distinguished from explicit knowledge, the latter being what could in fact be codified in some way (Nonaka and Takeuchi 1995).

This seemed to solve the problem of thinking of knowledge as a commodity, but in fact it could not fully take account of the complex nature of knowledge. One aspect of this complexity was characterised by Dave Snowden - a pioneer of third generation knowledge management in this way:

> " ... we always know more than we can say and we will always say more than we can write down. "

(Snowden 2005)

We can infer two things from this statement:

Some knowledge is not only implicit, but it is in fact *not expressible*. In other words, some knowledge can be gained through experience, but not fully conveyed to others in the absence of similar experience.

The degree to which knowledge can be expressed depends on the *way it is expressed*. When one tries to communicate knowledge, it becomes transformed; as the nature of knowledge changes with the medium of its expression. This can be attributed to both the medium itself and to the fact that knowledge is not only something that is in peoples' heads, but its use and transmission depends very much on the contexts of the giver and the receiver.

Photo: Helvetas

Knowledge Sharing at a workshop on Coffee Production in Guatemala

………............................

A daughter learns from her mother on a daily basis in Senegal

………............................

In fact, we could go further and say that knowledge itself can be – to a certain extent – ***dependent on context***, and therefore not fixed. If we think of two different hypothetical situations within which a knowledgeable person might be found, he/she may have a slightly different perspective in one situation than in the other, which could lead to his/her knowledge being expressed in different ways. Perhaps even different elements of that knowledge would be drawn upon. One could make a similar observation about someone who is gaining knowledge from someone else. The role of knowledge recipient will be played out differently in different circumstances. Thus, knowledge must be seen as existing in complex, dynamic and partially ambiguous ways if it is to be fully appreciated.

A further distinction can be made between knowledge that is held and exercised at the ***individual level*** and that which exists ***collectively***. Examples of the latter include knowledge that is embedded in practices and beliefs based not on experiences of individuals, but on those of an entire community. Such knowledge can be powerful and represent more than what is held or exercised by any single member of a community, but be a kind of 'collective intelligence'.

These kinds of conceptualization have informed the move from thinking in terms of knowledge 'management' to thinking in terms of knowledge 'ecologies' within organisations, networks, communities, etc. They have also promoted and validated perspectives that transcend individuals and look as well at institutional and social environments within which knowledge is applied, generated, shared, etc.

WHY KNOWLEDGE SHARING?

As the 'state-of-the-art' in the KM field changed from a view which tended to place a great deal of emphasis on knowledge as something that could be captured, refined, distributed and consumed, to one which recognized the importance of people and processes, so too did the terms used by practitioners to describe their craft.

One outcome of these processes was a movement by some organisations away from the use of the term Knowledge Management to the use of other terms such as **Knowledge Sharing** (KS). The motivation was KM as a terminology evoked images of knowledge as something tangible, as something that could readily be manipulated, stored and moved around – and could therefore be subject to 'management' – whereas emerging conceptions looked at knowledge much more in terms of its existence being closely tied with human interaction and social processes.

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Helvetas' Perspective

From the Helvetas perspective it makes more sense to think about **knowledge sharing** and ways to support it and to support learning more generally, than it does to think about KM. The emphasis on KS is reinforced by our interest in learning as a key element to ensure organisational and individual knowledge within Helvetas is continually refined and renewed. The fundamental underpinning of the emphasis on knowledge sharing at Helvetas is the recognition of three conditions surrounding knowledge and its potential for transfer:

1) Much of the most valuable knowledge in an organisation or community rests **with the people** who work within it, and;

2) Knowledge is not so much a product or object, but more a **kind of process**, manifesting itself through human action ('action' here is conceived as human activity, both physical and mental);

3) Knowledge is 'sticky', that is, it is **not easily transferred** from one individual or group to another. Thus, emphasizing and supporting knowledge sharing is of great importance (E.g. Wenger, et al., 2002).

The Helvetas KS strategy therefore consists of four elements:
- Promoting a KS Culture
- Strengthening Learning
- Informing Helvetas ICT Policy and Practice
- Playing a lead KS role in the Development Community

For more information in Knowledge Sharing at Helvetas, see the issue sheet "Helvetas Knowledge Sharing Strategy 2009 - 2012: an Overview".

Figure 2 provides an illustration of how information, knowledge and learning can be conceived of as part of a dynamic whole where various activities serve to contribute to one or another of the three. The outer ring of arrows illustrates how various activities support transformation from information to knowledge, knowledge to learning, and learning to information. In addition, the inner ring of arrows shows the transformations from information to learning, learning to knowledge and knowledge to information. The 'idea clouds' show examples of some outputs/ changes associated with each of the concepts information, knowledge and learning.

The transformations from one to another take place at two broad levels:

- the **individual level**: if we follow the arrows in the inner ring starting from 'information', we can describe that a person can read a document (information), and in the process of reflecting on that document (and comparing it to his/her own experience), learn something new. Such learning is a process which becomes solidified as the development of the individual's expertise (i.e. the transformation of learning to knowledge).

- the **collective level** (including project teams, communities, the organisation, etc.). We can think about a similar process, where a document is introduced to a community by a member of that community. The introduction may initiate a dialogue among a number of community members and lead to a new shared understanding of the topic covered by the document. Hence, a collective learning experience follows a collective process of reflection, and results in new expertise within the community. This learning process is substantially different from individual learning because

  - It involves a dialogue among a number of different people, each of whom brings different experience and different ways of expressing knowledge to bear on the reflection process

  - It can result in a new consensus about the knowledge created through the collective learning process
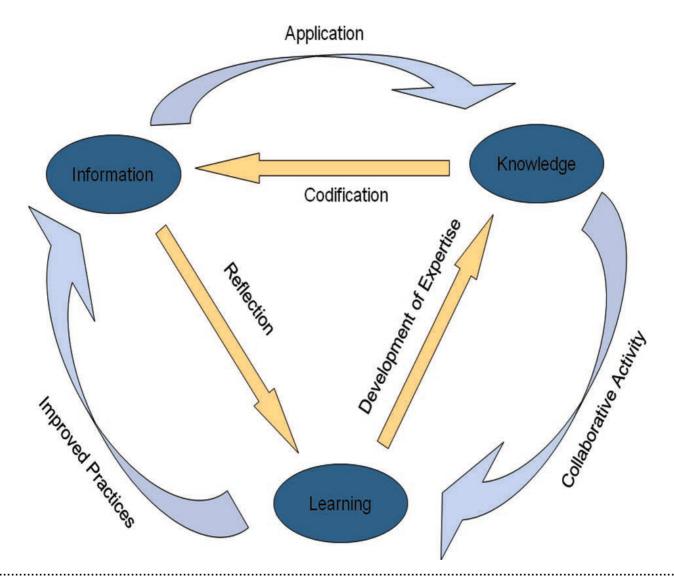

Figure 2: The Information, Knowledge, Learning Nexus

In this paper we have conceptually separated individual learning from collective learning, but in reality there is a subtle and constant interaction between the two. Individuals learn from their own experience, but that experience is mediated by others:

- Much individual experience is gained while working with others.

- Individual opinions, ideas, thoughts are influenced by received 'wisdom' (e.g. what a respected individual, community, organisation, claims as 'fact')

- Much learning and assimilating knowledge is done either through being trained by others or receiving guidance from those with greater expertise

Similarly, if we think about collective learning, it is not always clearly distinguishable from individual learning, because:

- Individuals sometimes produce the outputs of collective learning

- Communities are often driven by a small number of individuals who tend to be the arbiters of what is legitimized as community knowledge.

- A core group of individuals can be crucial in influencing changes in organisational culture.

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Thus, in practice it may not be so easy to distinguish individual and collective learning, but one can search for different kinds of evidence associated with each. For example, organisational policies or well-defined procedures represent a crystallization of collective learning. At the individual level, we can observe changes in a person's reputation for a certain kind of expertise as evidence of individual learning and its transformation into knowledge. An alternative indicator would be an information output produced by an individual illustrating such learning, as well as its conversion first into expertise and then (through the 'writing-down' process) its further conversion into information.

References

Denning, Stephen, n.d, 'What is Knowledge Management?' A background paper to the *World Development Report 1998*. Available online at: http://www.stevedenning.com/Find_what_is_km.html

Keating, Charles, Thomas Robinson and Barry Clemson. *A Method for Organisational Learning*. Norfolk, Virginia, Old Dominion University, 1999, p. 1-12, as quoted in Terra and Angeloni.

Nonaka Ikujiro and Hirotaka Takeuchi, 1995 *The Knowledge Creation Company: How Japanese Companies Create the Dynamics of Innovation*. Oxford: Oxford University Press.

Snowden, David, 2005. *From Atomism to Networks in Social Systems*, The Learning Organisation, Special Issue "Knowledge Sharing", Vol. 12, No. 6.

Terra, Jose Claudio and Terzinha Angeloni, 'Understanding the Difference between Information Management and Knowledge Management', 2002. Available online at:
http://www.providersedge.com/docs/km_articles/Understanding_the_Difference_Between_IM_and_KM.pdf

Wenger, Etienne, Richard McDermott, and William M. Snyder, 2002.Cultivating Communities of Practice: a Guide to Managing Knowledge. Boston: Harvard Business School Press.