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Mastering the Human Barriers in Knowledge Management

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Abstract: "New" essential resources and success factors keep being invested and provide fertile grounds, not only in the consultancy industry, for ever more glossy brochures to create success. The production factor of knowledge is currently at the focus of many theories and numerous publications. It remains to be seen whether we are seeing real innovations. Knowledge has always been prerequisite to creating products or services, an essential input, a "silent production factor".
The modern, complex environment has also made products and processes more complex and extensive. The ability to adapt to changing conditions increasingly determines success or failure. All aspects of enterprises are affected, even the "smallest units", the human element. In this context, it is becoming increasingly important to be able to share knowledge with colleagues. Knowledge transfer is basically characterised by a question-and-answer principle. The focus is on the incalculable human factor. This causes more or less distinct transfer barriers.

Prejudices, fear of criticism, lack of confidence, constant time pressures and other factors are some barriers to transfer caused by the individual. Besides organisations may create barriers, too, through rigid hierarchies, red tape, and outdated procedures.
By means of the barrier matrix and the barrier cube we have presented eight different constellations from the scientist's view. At a very theoretical level we have also touched briefly on how to solve these problems.
Knowledge management does not yet seem to attach enough importance to the issue of communication, particularly to internal communication. In addition to individual and organisational transfer barriers, communication media can also contribute to problems and barriers in knowledge transfer.

Categories: H.5, H.m

1 Introduction

"New" essential resources and success factors keep being invested and provide fertile grounds, not only in the consultancy industry, for ever more glossy brochures to create success. The production factor of knowledge is currently at the focus of many theories and numerous publications. It remains to be seen whether we are seeing real innovations. Knowledge has always been prerequisite to creating products or services, an essential input, a "silent production factor". What has changed is the amount of awareness and attitudes towards this issue.

The extraordinary men of the sixteenth and seventeenth centuries were academies in their own right, ... As knowledge is now taking over, private individuals have joined forces to achieve what individuals found beyond their reach.

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The modern, complex environment has also made products and processes more complex and extensive. This fact has changed life. Both in our professional as well as in our private lives we keep facing innovations. Today's major challenge is to keep pace with current trends. This is essential for individuals as well as for organisations. The ability to adapt to changing conditions increasingly determines success or failure. All aspects of enterprises are affected, even the "smallest units", the human element. In this context, it is becoming increasingly important to be able to share knowledge with colleagues.

1.1 What is Knowledge?

The original sin of knowledge management is to behave as if we knew what knowledge is. [cf. Schneider, 2001]. It seems an insurmountable task to talk about knowledge and reach general consensus about it. Since human individuals have written all the literature, in other words, individual knowledge has created knowledge, all access is individual in turn. Publications of the past 8 to 10 years lack general consensus on the definition of knowledge management. By contrast, different patterns of definitions originate from different academic disciplines, such as organisational theory, information science, psychology and sociology. What these definitions share is that they reflect more or less clearly two distinct but essential perspectives for the future. On the one hand there is *human oriented* knowledge management, while on the other there is *technology oriented* knowledge management [cf. Schüppel, 1996]. Central to the human oriented perspective is the endeavour to motivate individuals to share individual knowledge with other members of the organisation. Besides sharing knowledge, staff should also feel encouraged to keep developing and learning. On the other hand, by implementing hardware and software components, *technology oriented* knowledge management aims at creating conditions under which information can be collated, stored, prepared, disseminated, used and updated. Publications in recent years also clearly show attempts to formulate integrated approaches to knowledge management. The objective is to merge human and technology oriented approaches. In concrete terms these publications try to describe attempts to combine the individual human carrier of knowledge with the means of information and communication technologies.

Knowledge consists of data and information; data are symbols or strings of symbols which are coded in some way. When data can be integrated into a meaningful context by an individual, they become information [cf. Willke, 1998]. Knowledge is more complex than information as it enables actions. Knowledge is often classified as implicit knowledge, the part of our knowledge we are not aware of, and explicit, documented knowledge, in other words, the visible part, the tip of the iceberg [cf. Nonaka/Takeuchi, 1997] Know-how is knowledge required to perform and create goods and services.

Knowledge needs to be considered in connection with an individual who keeps processing data and information by experiences, insights and skills into knowledge and know-how. So if the terms knowledge and knowledge management are applied to refer exclusively to preparing, storing and perhaps retrieving data, then in fact we had rather call this data or information management. This has as yet little to do with knowledge.

2 Knowledge Transfer

In what follows we will use the term "knowledge transfer" even though we are aware that transferring knowledge from A to B is practically impossible. This would require identical experiences of the world and knowledge bases for both sender and receiver. It would be more suitable to use the term knowledge induction [cf. Sammer, 1999, Schneider, 2001]. Information transfer can be considered as a preliminary step in knowledge induction.

"Knowledge transfer" is characterised by two facts. Firstly, the incalculable human factor is always involved; secondly we always face a question-and-answer exchange. Observation and imitation follow the same principle. The starting point of knowledge transfer is usually a question, an observation, and occasionally an incident. We could list many reasons to justify why projects of knowledge management fail, why questions remain unanswered or are left unspoken.

After this brief introduction to the topic of knowledge management we will attempt to show some barriers of knowledge transfer. We are fully aware that this is a selective rather than a comprehensive discussion.

In addition we will include some approaches to these barriers that may not overcome them but perhaps lower them. Due to the issue at hand we cannot discuss universally applicable recipes, nor can we explain how knowledge transfer is to work. We are rather dealing with abstractions sketching out potential pathways. We have to leave it to readers to deduce concrete measures to implement solutions.

In order to reach the goal of reducing barriers to transfer and to help mutual exchange by intervention, in any case two essential elements are required: creativity and innovation.

3 Barriers in Knowledge Transfer

"Knowledge is the only factor of production which does not decrease through use but actually increases!" This claim can be found in many publications dedicated to the issue of knowledge management. Yet there are many barriers, most of them due to human nature: distrust, lack of understanding and reluctance to change are only some

of the numerous barriers making knowledge transfer difficult if not impossible. Due to the huge number of barriers it makes sense to start by getting an overview and some structure. This is to distinguish between barriers created by the individual and those created by the environment the individual works in. In an organisation these barriers can be created by other staff or by the organisation itself. We will use a simple "barrier matrix" to illustrate various scenarios.

3.1 Individual Barriers in Knowledge Management

Extensive procedures for advertising jobs and selecting staff are designed to guarantee that the person who is best qualified gets the job. For example, hobbies and interests of candidates should match required profiles. However, if we assume that individual staff's objectives and interests also change over time, we need to ask how they can be employed according to their interests in the long term. Studies assessing staff satisfaction consider the collective but hardly ever consider any individual change. And they are completely ignored when the data collected is "processed" and filed without implementing any change. All the frustration and demotivation could lead to barriers in knowledge transfer. Staff typically manage fairly complex projects such as having a house built and acquire very specific knowledge and know-how. Many organisations are unable to tap into these resources. Staff are hardly ever encouraged to contribute private knowledge and know-how to relevant organisational processes. Some of the barriers of knowledge transfer mentioned by individuals are: *prejudices, too much concern for other people's opinions, fear of criticism, bad experiences in* the past, lack of confidence, apparent lack of communication skills, lack of sensitivity in dealing with others, worries of losing out as others *will exploit and benefit from your ideas, fear of superiors, lack of time, general reluctance to invest time for the sake of the knowledge, and occasionally lack of humour among colleagues*. We could continue this list. As we can see, there are numerous individual barriers. That's not all though. Individual barriers are often complemented by organisational, collective barriers.

3. 2 Organisational Barriers in Knowledge Transfer

If staff are willing and able to overcome their individual barriers in knowledge transfer, there are a number of organisational barriers that can still get in the way: *closed corporate cultures, rigid hierarchies, red tape, tedious search routines without appropriate support, no or insufficient dissemination of information among staff, no available contacts, constant time pressures, quick-fix solutions prevailing, outdated procedures being left unchanged, management lacking understanding and procedures* being kept vague.

Last but not least, we face a well-established collection of barriers to transfer which are renowned for having brought down many projects of knowledge management in the past, and which are likely to carry on doing so in future. We will attempt to describe them by means of a barrier matrix and a barrier cube.

3.3 Barrier Matrix and Barrier Cube

The starting point in the barrier matrix is the distinction between individual and organisational barriers of knowledge transfer. As can be seen in Figure 1, basically we can identify four constellations to describe transfer barriers.

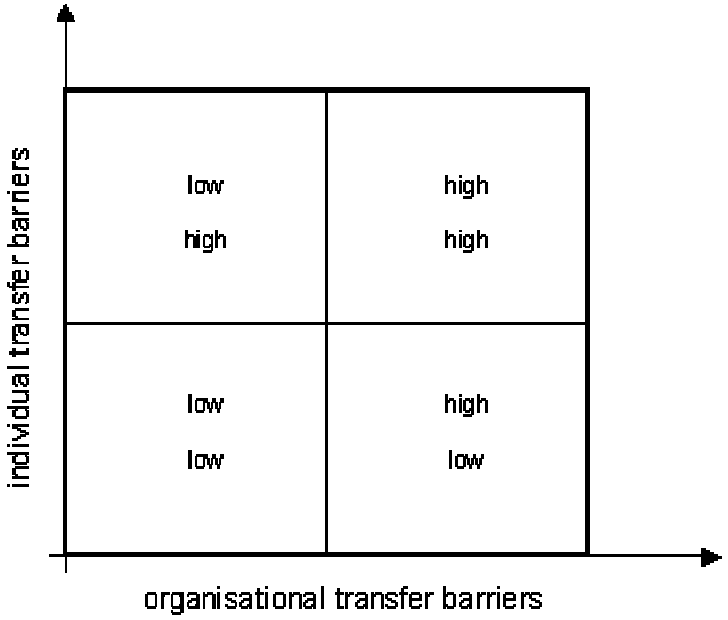

Figure 1: „Barrier Matrix“

Figure 2 expands the basic principle of the barrier matrix by the dimension of knowledge providers and knowledge consumers.

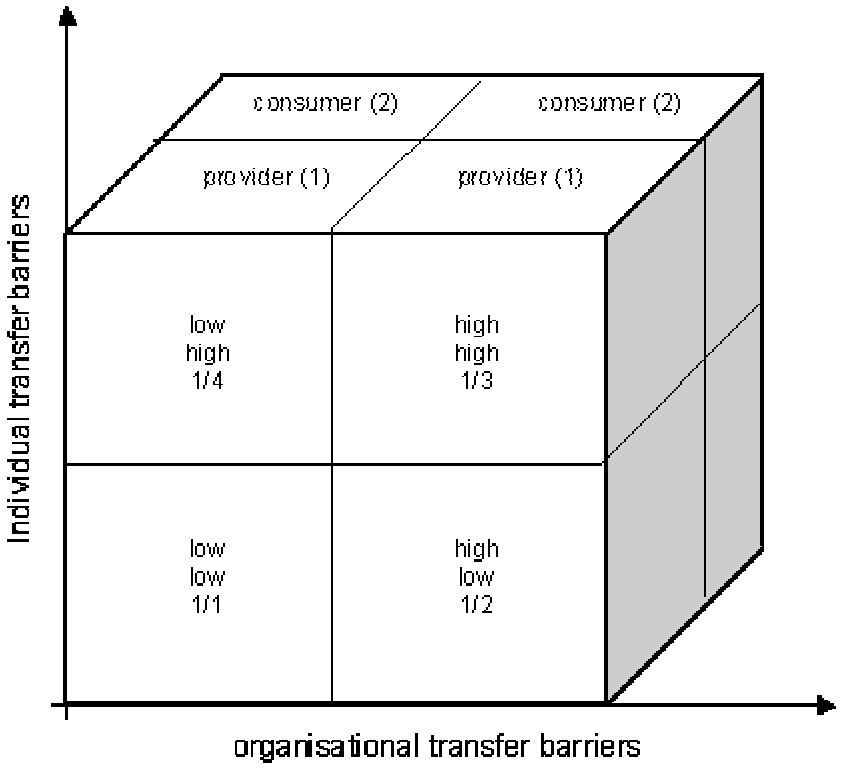

Figure 2: „Barrier Cube"

This leads to 8 states of the cube, which we will describe and discuss in detail. We will start by considering knowledge providers first.

3.3.1 Knowledge providers

Cube 1/1: This constellation might be considered ideal by knowledge providers as well as by organisations. It is characterised by staff managing to think and act in networks beyond their own scope of jobs. Sharing experiences and knowledge is the normal state of affairs, which does not require sophisticated sensitivity in order to work. Knowledge providers accept potential weaknesses among their consumers and can cope with them. They master basic methodology and techniques for such situations. The degree of staff participation meets their needs. Documentation of complex affairs is based on simple and clear routines. Little hierarchy and appropriate user-friendly communication media popular among users favour constellation 1/1.

Cube 1/2: In principal, staff are willing to share, to relinquish their knowledge and experiences with others. In this state, it is the organisational framework that inhibits knowledge transfer for providers. This framework creates and, without

knowing, forces barriers ranging from red tape to complicated user interfaces that are difficult to use. Often an appropriate architectural setting to promote knowledge transfer and communication is lacking. For instance, it would be relatively easy to implement measures to provide an ambience where staff feel comfortable, some space not near the water-cooler that invites informal communication. In more formal words, measures that enable immediate access to key staff could help. The organisation is meant to initiate a trial and error process, which unfortunately is prone to lead to frustrating comments from staff like *"Whatever next?"*

Cube 1/3: This constellation dissatisfies both the individual as well as the organisation. Organisational barriers mentioned above for cube 1/2 are aggravated by individual barriers of information providers. *Why would anyone in the organisation benefit from my experiences and knowledge [organisational barrier]? Why should I give away the fruits of my labour for free to others here [individual barrier]? How could I make my documented experiences easily accessible to others [organisational barrier]? As much as I would like to pass on my knowledge, how could I possibly find the time to do it [individual/organisational barriers]? ...* Carrying on would sooner or later raise the question of what came first, the hen or the egg? It's a Catch-22: there is no doubt that individual and organisational transfer barriers can cause each other. A dissatisfactory organisational framework for transfer instantly creates individual barriers. The organisation, on the other hand, may claim that staff are unlikely to co-operate anyway. It is doubtful whether the organisation can work its way out of this dilemma on its own. Buying in expertise by referring to sound consultants is one possible solution. This requires however that the organisation is capable of properly defining the consultant's brief in terms of effective and long-lasting knowledge transfer.

Cube 1/4: By and large the features of individual transfer barriers above for cube 1/3 described apply here as well. In spite of organisational measures to promote transfer, staff are likely to be reluctant or unable to share their knowledge. A crucial point in time occurs when individuals become aware of the fact that specific patterns of behaviour, activities, reactions etc. can contribute to individual benefits. It is at this point in time that such behaviour can be accepted and internalised. For example, an individual who has experienced the benefits of sharing their knowledge and received credit and recognition is more likely to share their knowledge again in future. By contrast, more barriers can also go up.

When it comes to making new technologies accessible, for example information and communication technologies, incredibly creative as well as destructive attitudes and tactics come to the fore. Many organisations are familiar with this phenomenon. Over the years, consulting activities have found two relatively distinct patterns of behaviour. On the one hand, there are those members of staff opposed to change in principle who will do anything to avoid change. On the other hand, staff display behaviour ranging from healthy scepticism to slight euphoria. The latter group are essential for an organisation and for their own benefit to experience and understand the positive effects of innovation. Admittedly not any innovation will be beneficial.

Consequently, a simple solution for cube 1/4 could be as follows: an organisation needs to succeed at making transparent the benefits of sharing knowledge among all

individual staff members with all their opportunities, diversity and creativity. However, there is no simple recipe to implement this solution. Organisational leaders bear the responsibility to lead by example.

3.3.2 Knowledge Consumers

Cube 2/1: Knowledge transfer is often initiated by more or less concrete questions. Cube 2/1 favours the situation of knowledge consumers by appropriate organisational measures taken to promote transfer. Consumers have access to easy-to-use and reliable search tools; the layout of the organisation's knowledge centres allows staff to find the right source of knowledge quickly and efficiently – how and where am I most likely to find the best answer. Besides, staff members can trust colleagues and superiors, which makes them more likely to ask questions. Investigating, understanding and questioning are essential characteristics of knowledge consumers, who are motivated mainly by personal interest – something the organisation needs to assess and promote. Successful knowledge consumers in turn become knowledge providers.

Cube 2/2: Many know this situation of desperately searching for competent answers. Database entries are out-of-date: the results are useless. The expert you normally contact moved to a new job, and what remains is the sense of certainty that there must be someone who can help, but how can you find them? In this scenario, a member of staff asking questions is quickly considered unqualified by superiors or the organisation. There is little or no assistance for a member of staff in their research, yet they depend on organisational support. There are neither user-friendly technologies nor personal contacts available. Solutions might be implementing buddy- or mentor systems, and user groups. Moreover, "human software" can help.

Cube 2/3: If we assume that knowledge transfer tends to start with questions, the constellation of cube 2/3 is even more critical for knowledge providers than in cube 1/3. Monotonous work procedures characterised by high degrees of standardisation favour such situations. It is easy to explain and argue why organisations build barriers to transfer in terms of information lockouts. It may be in line with corporate and industry goals. Yet this constellation can only be justified in terms of motivation if the needs of staff are characterised by many individual transfer barriers regardless of whether they are aware or unaware of them.

Cube 2/4: This constellation characterises the situation of an organisation trying to satisfy the needs for knowledge by appropriate support and infrastructure and motivate knowledge consumers. However, individuals have built high barriers to transfer. Many projects in knowledge management are characterised by this situation. Enormous funds are invested in technology. Extensive database systems are designed to make sure no knowledge is lost, and many other measures are taken. At the end of the day, however, many members of staff fail to accept and use the tools made available. This leads to even more investment in trying to convince staff members of the usefulness of the tools offered. Yet often what has been forgotten is the fact that staff members may have little time to learn how to use the new knowledge support tools [cf. Schneider, 2001]. Daily operations keep staff too busy to bother.

It is worth mentioning that literature in knowledge management takes little or no account of the notion of communication. Many projects dedicated to knowledge management would however benefit from starting by reviewing internal communications in the organisation. Organisations offer their staff a range of communication media to select depending on size and location. There are various communication media, ranging from face-to-face conversations, intranet and Internet, to business TV, which are able to communicate suitable content. Lessing called this the "Laokoon problem". Basically this refers to the question of which medium is best suited to transfer which kind of content – an essential question of knowledge transfer. So in addition to individual and organisational transfer barriers we may find barriers inherent in communication media.

How do staff communicate in an organisation? What media do they use primarily? What media that the organisation makes available meet resistance among staff? In order to design knowledge transfer to work and to avoid barriers at the drawing board stage, starting by analysing internal communications can make a major contribution to the success of many projects in knowledge transfer.

4 Conclusion

Knowledge transfer is basically characterised by a question-and-answer principle. The focus is on the incalculable human factor. This causes more or less distinct transfer barriers.

Prejudices, fear of criticism, lack of confidence, constant time pressures and other factors are some barriers to transfer caused by the individual. Besides organisations may create barriers, too, through rigid hierarchies, red tape, and outdated procedures.

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