



Chapter 3 - Knowledge Transfer

3.1 Introduction

As defined for the purpose of this investigation, knowledge transfer forms a part of technology transfer. As we move further into the knowledge age, organisations that can most effectively leverage their knowledge assets are the organisations that will stay competitive. Because of its growing importance two models will be presented on knowledge transfer. Knowledge is that part of technology that resides in the minds of people. The key to success is the harnessing and successful application of this very important asset. There is a factor of tacitness when dealing with knowledge. This factor complicates the transfer and management of knowledge, because of its strategic impact. It however plays a very important role in any organisation and it is receiving more and more attention from organisations, which realise the importance of knowledge.

“Companies inability to manage, focus and apply knowledge sources, will cost them dearly.¹¹” This is according to the research group International Data Co-operation (IDC). The IDC estimates that the Fortune-500-companies will loose in the region \$12 billion due to sub-standard intellectual performance and not identifying and tapping the right sources of knowledge. The IDC expects this trend to continue into 2003. Corporate knowledge sources are in danger, because of a lack of instruments and processes to manage these sources. The IDC estimate that 3.2% of knowledge becomes obsolete each year. They further estimate that 4.5% of knowledge is not accessible due to the high turnover in workforce, the mismanagement of information and the strategic retaining of knowledge. The group says that American companies are realising that proper management of knowledge is a core ability in the company that wants to survive in the information age. It is a prerequisite for dealing with customers, innovation and dealing with workers. In a recent study, more than half of the companies with 500 or more workers, indicated that they plan implementing systems in order to manage knowledge in their

companies. This percentage is far greater for larger companies. The IDC also estimate that the money invested in the management of knowledge will rise from \$2 billion to \$12 billion in the year 2003. Products and services designed for the management of knowledge will bring forth work environments in which the creation, accumulation, focusing and mixing of knowledge will be an inherent part

“Knowledge is power and shared knowledge is powerful to companies.¹²” This is a statement made by Ian McNairn one of Lotus’s experts on knowledge management. In order to leverage knowledge successfully in any organisation, you need the tools to share, find and update the knowledge base of the company. Opportunities and infrastructure must be developed in order to aid the transfer of knowledge inside an organisation. Communication must be promoted and a ‘open communication’ culture must be established in companies.

3.2 Knowledge Transfer

3.2.1 Model proposed by O’Doll and Jackson Grayson¹³

The managing and transferring of knowledge brings dramatic results to companies large and small. Some examples are:

- Chevron has reduced its operating cost structure by more than \$2 billion in the last seven years, due to their sharing best practice policy.
- Texas instruments generated \$1.5 billion in annual increased fabrication capacity by comparing and transferring best practices among its thirteen fabrication plants
- Skandia has leveraged internal know-how to dramatically reduce start-up time for new ventures to seven months, compared to an industry average of seven years.

In their paper: “Knowledge Transfer: Discover Your Value Position”, O’Dell and Jackson Grayson¹³ propose the following model for transferring knowledge.

The model consist of three main components:

- Strategic value position
- Four enablers
- A four-step change process.

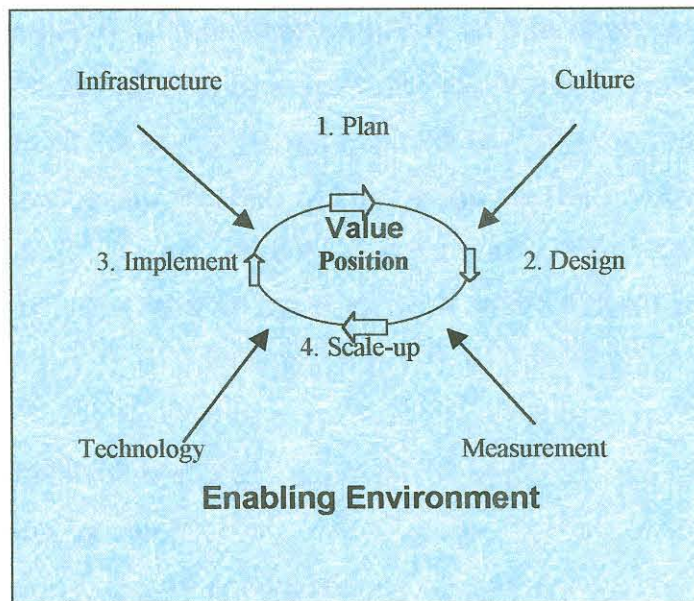


Figure 3.1: Knowledge Transfer Model
(Adapted from: O’Dell and Jackson Grayson¹³)

The value position focuses on capturing knowledge in a specific area of interest. The value position, therefore, defines the area in which you concentrate your efforts. This for instance can be one business unit or one aspect of the business. Examples of defined value positions are: the increase of revenue, to reduce the cost of selling or increase customer satisfaction and retention. With this value position the organisation will focus on capturing knowledge about a customer’s needs and preferences and transferring the knowledge to the relevant people in the organisation. The four enablers of transfer are as follow:

- Culture
- Technology
- Infrastructure
- Measurement

Organisational culture is one of the most difficult aspects to face when transferring new knowledge. Culture is the combination of previous experience, perceived ideas, shared history and unwritten rules that governs an organisation. Culture is something that you cannot alter overnight and if there is new knowledge entering the organisation that challenges the culture, it will not be accepted. Knowledge and the sharing thereof are social activities and one of the social barriers, is culture. Therefore the importance of culture in the successful transfer of knowledge cannot be stressed enough. If sharing knowledge is not part of a company's policy then O'Dell and Jackson Grayson¹³ suggest that one must work on the following aspects in the company:

- Believe people want to share
- Prepare to lead by doing
- Rely on the twin forces of capitalism and democracy
- Develop collaborative relationships
- Install personal responsibility for knowledge creation and sharing
- Create a collective sense of purpose

Technology plays an important role in any aspect of business. It even plays a role in the transfer of itself and the underlining knowledge. One of the technologies that are pertinent in the transfer process is information technology (IT). Nowadays information channels are connecting people and it sets up the ideal environment for the transfer of knowledge between people.

A well-developed infrastructure can aid in the successful transfer of knowledge. O'Dell and Jackson Grayson¹³ describe three design approaches for creating infrastructure that will support transfer. The first is the 'self

directed' approach. What this approach boils down to is 'here it is, now go out and find what you are looking for'. This infrastructure is in the form of databases or libraries found in companies. The information is there, but there are no incentives to change it into knowledge. The second approach is 'knowledge services and networks'. This is a step further than the first approach and knowledge management services are there to assist in the transfer process. The third approach is 'facilitated transfer'. This approach is a 'full service' approach and often includes a business unit looking after the whole transfer process. The final enabler is measurement. This is the evaluation of the transfer of knowledge process. This is a difficult aspect to measure and there is no clear way of doing it. One method is to measure the success of projects as a whole.

O'Dell and Jackson Grayson¹³ suggest a four-phase process for transfer projects as shown in the model. The four phases are as follows:

Phase 1: Plan, assess and prepare

- Assess current opportunities for knowledge sharing
- Define your value position
- Find a champion for the initial project
- Inform and prepare the organisation
- Define the business case

Phase 2: Design the transfer project

- Decide the scale of the initiative
- Benchmark. Use the learning's from others in similar projects
- Create an action plan. Marshall all resources

Phase 3: Implementation

- Launch project
- Provide support for both content and process
- Observe and learn
- Achieve results

Phase 4: Transition and Scale-up

- Capture progress and publicise results
- Use knowledge gained to expand scale-up
- Create a new organisation structure to oversee the ongoing process.

3.2.2 Model proposed by Inkpen and Dinur¹⁴

Inkpen and Dinur¹⁴ propose the following knowledge transfer classification framework.

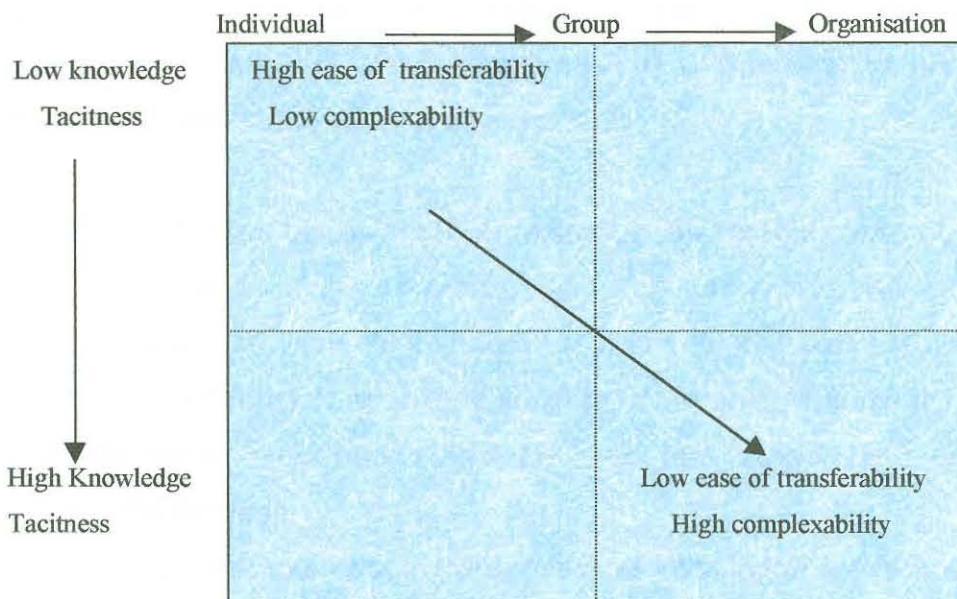


Figure 3.2: Knowledge Transfer Model
(Adapted from: Inkpen and Dinur¹⁴)

In this framework the organisation is seen as a repository of various kinds of knowledge types, in different organisational locations. The vertical dimension refers to the tacitness of the knowledge and the horizontal dimension indicates the location in the organisation. Inkpen and Dinur's¹⁴ model imply that the more tacit knowledge becomes the more difficult it becomes to teach and transfer it.

3.3 Culture

As we have indicated, the culture of an organisation plays a big role in the transfer of knowledge. Culture may be the greatest barrier to the transfer of knowledge. Perez-Bustamante gave a few pointers in his article “Knowledge management in agile innovative organisations¹⁵”, on how one can go about developing and implementing a knowledge culture. One must keep in mind that a culture cannot really be ‘implemented’ nor can it happen overnight.

People can rather be steered in a way the company would like them to go. This is a long process and may take years to accomplish. Perez-Bustamante¹⁵ suggest that companies pay attention to the following characteristics in their internal environment:

- Establish at all levels of the organisation a strategic intent of acquisition, creation, accumulation, protection and exploitation of knowledge.
- Encourage the worker’s autonomy so that they may express their opinions and share the knowledge they possess, in a free environment
- Establish communication infrastructures that support and enhance the transfer of ideas.
- Enhance and encourage overlapping of knowledge ideas in the internal environment by introducing workers into new areas.
- Encourage assimilation of external knowledge with internal thoughts and experiences.

3.4 The Knowledge manager

As mentioned in the introduction of Chapter 3, a business unit may assume the responsibility for looking after the aspects concerning knowledge, and as we move further into the knowledge age, we will find that more and more people are employed with the aim of managing knowledge. One such person is the Knowledge Manager who’s responsibilities will include the following:



- Audit the knowledge present and accessible to the organisation. Managers should know what knowledge exist, where it is located, where it is created and how it can be maintained and improved.
- Knowledge managers will decide on which investments will be made in order to improve the management of knowledge function. This may include investments in communication infrastructure or information handling.
- Knowledge managers will control the external flow of knowledge and information with all the pertaining legal aspects.
- Knowledge managers will act as knowledge creation catalysts.
- Obtain from top management the consideration of knowledge as the key competitive weapon.
- Monitor that human recourse policies have a strategic dimension towards knowledge.
- Provide both an internal and external communication infrastructure within the company.
- Plot and maintain the organisational knowledge map.
- Determine a clear knowledge management policy.
- Be the chief manager and leader of technological gatekeepers.
- Develop knowledge reservoirs and facilitate their success.
- Incorporate into financial statements the investment made in intellectual capital.

Chapter 3 covered a very important component of technology, the area of knowledge. In future this will become an increasingly important aspect of technology and the proper management of this component is very important. The following chapter is an overview of the aviation industry. Chapter 4 looks at the role maintenance play and introduces some of the technologies used in this function. Thereafter some trends and developments in the industry are highlighted.