UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Universiteit van Pretoria
University of Pretoria

GORDON INSTITUTE
OF BUSINESS SCIENCE

Barriers and facilitators to knowledge management in multi-national companies: the case of Nissan

Rynhardt Rall
Student no.: 97031306

A research project submitted to the Gordon Institute of Business Science, University of Pretoria in partial fulfilment of the requirements for the degree of Master of Business Administration.

13 November 2008

ABSTRACT

Financial markets are in crises mode due mainly to the American credit crunch, based on the sub-prime lending fiasco. Due to globalisation and the global economy, the diverse impacts of the crises are felt almost everywhere. Global competition is not something that is limited to certain countries or economies – it is everywhere. This is the environment where multi-national companies operate in, on a daily basis.

Organisations are exploring many possibilities in order to attain a competitive advantage in the global markets – in order to survive. KM has the capability of supplying companies with this advantage, by enabling the fast and effective transfer and sharing of important knowledge/information globally throughout the company.

KM is not a new concept, yet it is perceived that KM does not yield the desired business results required to be competitively advantageous. Previous literate is used as part of this research in identifying the barriers and facilitators that have an impact on the success of KM. Simultaneously, the barriers in Nissan South Africa (NSA) are explored through focus group interviews, while the facilitators were ranked for their perceived effectiveness (by NSA employees) through the completion of an online questionnaire.

Applying the case study research method, this study aims to identify the lingering barriers to successful KM that exist in NSA. Further, the study will categorise these barriers into main categories for future action. This study will also rank facilitators to KM for their perceived affectivity in breaking the identified barriers.

As outcome, this research provides a view of the barriers to KM that currently exist in a multi-national company, as well as an indication towards the possible methods (and their perceived importance) that can be used to overcome these barriers. It is possible to attain a competitive advantage in the global economy through successful KM.

DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Masters of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

_____   _____

Rynhardt Rall   **Date**

ACKNOWLEDGEMENTS

List of Figures

List of Tables

Table of Contents:

Chapter 1: Introduction to Research Problem

This chapter will clearly define the research problem. In order to do so, a brief discussion of the knowledge economy and possible economic motivators that facilitate Knowledge management (KM) follows in this chapter. The aim and usefulness of this research topic forms part of the closing discussion in this chapter.

1.1. Definition of problem

Business and academia are debating whether globalisation is shrinking the distance between countries, economies and competitors (Desai, 2001). Multi-national companies (MNCs) are already present in most economies (Desai, 2001), and it can be argued that that they will become ever more prevalent as globalisation continues. Within the countless national divisions of the MNCs, there are vast amounts of knowledge (gained over time in various countries) that currently have no value – since this knowledge is not effectively communicated and absorbed throughout the entire organisation. Summarised, Powell (2006) describes knowledge-acquisition as a process that involves complex cognitive processes: perception, learning, communication, association and reasoning. The term *knowledge* is also used to indicate the confident understanding of a subject with the ability to use it for an appropriate and specific purpose.

Using the summarised description of knowledge (as above), it is clear that the existing knowledge databases and repositories could be more valuable than any natural resource, once successfully transferred throughout the entire MNC. Knowledge transfer and application in a different environment is essential for any company, since it enables the company to learn from itself (Gold, Malhotra and Segars, 2001). Around the globe, countries and multi-national businesses are competing directly with each other in order to satisfy a growing global demand, with ever-decreasing supply and availability of natural resources. This is not a recent change in the business environment. This is the direct result of globalisation (Desai, 2001) and the ensuing global economy, coupled with an increasing global population and individual demand for goods/services.

This is the business environment in which all MNCs and economies find themselves daily. In an economy where competition is fierce and unlimited, it is near impossible to sustain a competitive advantage over a long period (Szulanski, 1996; Davenport and Prusak, 1998; Gold *et al.*, 2001).

Figure 1: IMD World Competitiveness Scoreboard (2008)

THE WORLD COMPETITIVENESS SCOREBOARD 2008

Index	Economy
100.000	(1) USA 1
99.330	(2) SINGAPORE 2
94.964	(3) HONG KONG 3
89.656	(6) SWITZERLAND 4
84.405	(4) LUXEMBOURG 5
83.852	(5) DENMARK 6
83.500	(12) AUSTRALIA 7
82.852	(10) CANADA 8
82.464	(9) SWEDEN 9
80.476	(8) NETHERLANDS 10
79.516	(13) NORWAY 11
77.638	(14) IRELAND 12
77.359	(18) TAIWAN 13
75.028	(11) AUSTRIA 14
75.025	(17) FINLAND 15
74.735	(16) GERMANY 16
73.758	(15) CHINA MAINLAND 17
73.374	(19) NEW ZEALAND 18
73.199	(23) MALAYSIA 19
72.408	(21) ISRAEL 20
71.904	(20) UNITED KINGDOM 21
70.028	(24) JAPAN 22
69.648	(22) ESTONIA 23
68.746	(25) BELGIUM 24
66.012	(28) FRANCE 25
64.173	(26) CHILE 26
63.096	(33) THAILAND 27
62.247	(32) CZECH REPUBLIC 28
60.625	(27) INDIA 29
59.365	(34) SLOVAK REPUBLIC 30
58.884	(29) KOREA 31
57.904	(40) SLOVENIA 32
57.515	(30) SPAIN 33
56.725	(37) JORDAN 34
56.284	PERU 35
56.234	(31) LITHUANIA 36
54.657	(39) PORTUGAL 37
52.932	(35) HUNGARY 38
51.392	(41) BULGARIA 39
50.478	(45) PHILIPPINES 40
50.396	(38) COLOMBIA 41
48.761	(36) GREECE 42
48.576	(49) BRAZIL 43
47.986	(52) POLAND 44
47.549	(44) ROMANIA 45
46.921	(42) ITALY 46
45.736	(43) RUSSIA 47
45.535	(48) TURKEY 48
45.203	(53) CROATIA 49
43.825	(47) MEXICO 50
41.520	(54) INDONESIA 51
40.205	(51) ARGENTINA 52
39.054	(50) SOUTH AFRICA 53
38.170	(46) UKRAINE 54
31.143	(55) VENEZUELA 55

The World Competitiveness Scoreboard presents the 2008 overall rankings for the 55 economies covered by the WCY. The economies are ranked from the most to the least competitive and the results from the previous year's scoreboard (2007) are shown in brackets. The Scores shown to the left are actually indices (0 to 100) generated for the unique purpose of constructing charts and graphics.

IMD WORLD COMPETITIVENESS YEARBOOK 2008

The IMD World Competitiveness Scoreboard (2008) substantiates this argument through their comparative competitive rankings of the 55 economies that form part of their study (see Figure 1). The rankings indicate that South

Africa's competitiveness has decreased from 2007 to 2008, where the respective rankings were 50th and 53rd – out of 55 economies.

As a result, businesses (and economies in general) are looking inward towards their own unique competencies and knowledge basis when trying to attain an advantage over competitors.

This research aims to investigate, compare and study the known (existing base of literature on the subject) as well as real life (as part of case study) barriers and facilitators KM.

An organisation that is capable of managing its internal knowledge successfully has the potential to unleash a new resource of high value. It is therefore all the more important, considering the current global economic condition, to effectively identify and overcome the barriers to successful KM activities - in order to capitalise on the valuable resource of knowledge.

MNCs have the added advantage of having many 'clones' of the same company in different countries (Ellis, 2000). Having access to various different business operations, each conducting business in a unique environment - while still a part of one global company - must be advantageous when it comes to experience, processes, capabilities and problem solving. However, in many instances this regional knowledge (Bastian, 2006), is successfully captured and assimilated within the region, but never successfully transferred throughout the global company. Not transferring already captured and processed knowledge successfully within a MNC is an opportunity that should have been explored. An opportunity lost pertaining to learning from oneself, continuous improvement and increased competitiveness.

Why are MNC's not capitalising on the existing knowledge that is clearly of high intrinsic value? This research investigates the perceived barriers and facilitators that affect the success of KM activities within MNC's. The following two sections will explore why knowledge has become such a valuable commodity in modern time.

1.1.1. The knowledge economy

The research conducted by Hodgetts, Luthans and Lee (1994) on one-hundred of the largest firms in the US, clearly highlighted the challenges in maintaining a competitive advantage over a long period. This research tracked the performance of the companies over a twelve-year period. Research found that 82% of the companies experienced a decline in performance, or disappeared from the list completely.

It is possible to pose that the remaining competitive weapons available to businesses do not relate to their products at all (Ulrick, 1998; Ellis 2000; Malairaja and Zawdie, 2004). The remaining competitive edge relates to an organisations ability to manage its value chain better than competitors do. This implies that, all other factors being equal, one company can have an advantage over their competition by simply organising their work/operations better or more efficiently, than their rivals organise. Successful KM is the key to increasing operational efficiency through knowledge sharing within a company. Unfortunately, in most cases this type of knowledge is highly sought after and possibly very expensive to obtain. It is therefore a logical expectation for companies to jump at the chance of obtaining this knowledge from within their own ranks (Malairaja and Zawdie, 2004).

1.1.2. Economic motivators

The study conducted by O'Dell and Grayson (1998) highlight the possible economic gains that can result from successful KM implementation. In their study, there were two separate classifications of economic gain, achieved through the implementation of a KM system. Texas Instruments and Buckman Laboratories experienced substantial gains in their revenues, while Chevron and Dow Chemical reported huge cost savings. Based on these results, KM undoubtedly adds value to an organisation.

Additionally, a study conducted by the Economist Intelligence Unit (2006), revealed that KM rates as the area with greatest potential for productivity improvement. This implies a higher rating for KM, compared to customer

service, support, operations, production processes, strategy, business development and marketing/sales activities.

Combining the above information with globalisation, higher interest rates, decreasing natural resources to satisfy growing consumer demand and dramatic growth in the third world countries, leave no room for doubt regarding the importance of an effective KM system.

The current stormy conditions prevailing in the world economy, as discussed by the World Economic Forum (WEF) on Africa (2008) poses a great risk as well as opportunity to some participants in the global economy. Referring to Figure 2, it can be seen that the "downside scenario" for the global economy (due to a deeper financial shock in the United States) has a common trend across the world. GDP growth, inflation, interest rates, government deficits and current account balances all follow similar trends that vary in intensity.

Figure 2: Downside World Economic Outlook – Financial Shock

Based on a multicountry general equilibrium model, a downside scenario has been developed to illustrate the possible impact of a deeper financial shock than incorporated in the *World Economic Outlook* baseline projections. The shock has the greatest impact on the U.S. economy but also has substantial spillovers on the euro area and the rest of the world.
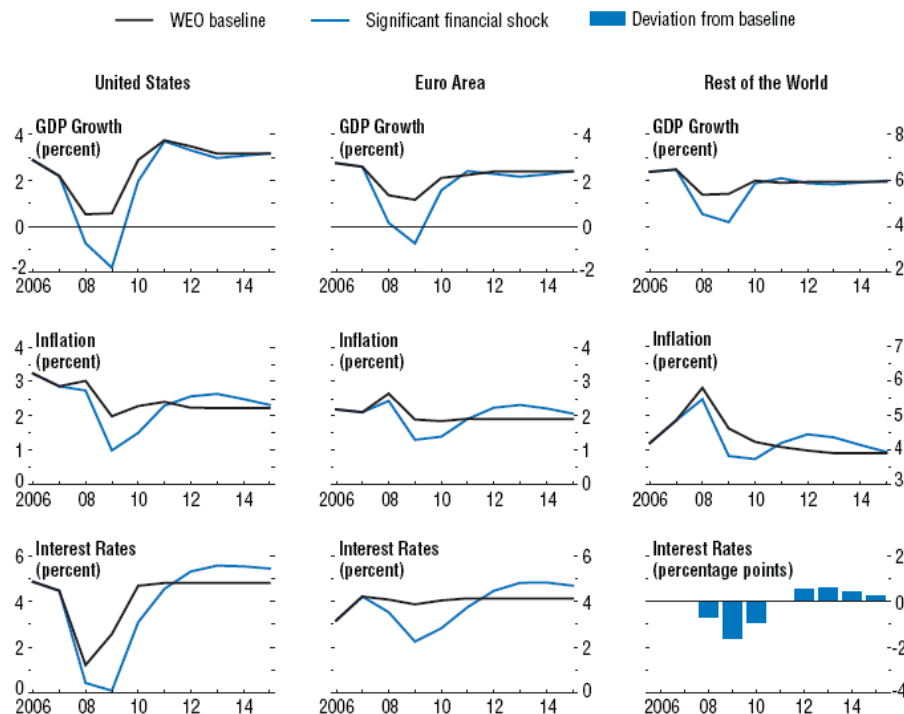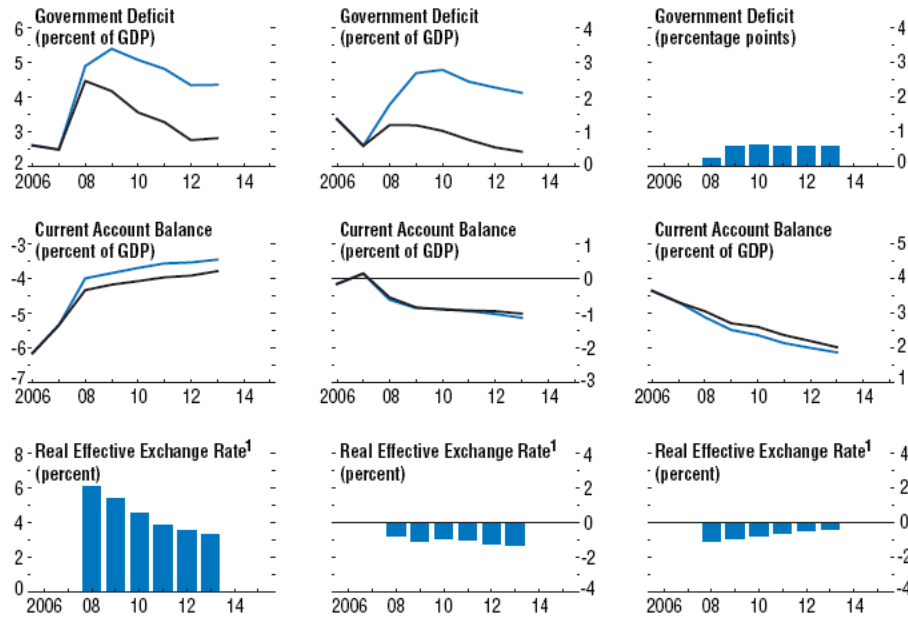
Source: IMF staff estimates.
[1]A positive value represents a depreciation.

In the global economy, no single economy can argue that it is truly isolated and unaffected by the financial crises. MNCs are therefore affected in all their international divisions – there are no divisions that are immune to the global crises.

Additionally, the WEF on Africa (2008) summarised the increasing role of the developing economies (including South Africa) in the global economy. As per Figure 3, the developing economies have:

- contributed nearly two thirds of the growth in output (purchasing-power-parity terms),
- more than one half of the growth in import volumes and
- registered current account surpluses.

From the statistics, it can be agreed that there is indeed a global economy, in which all economies take part. It is also possible to speculate that the developing economies will continue to flex their economic muscle. Successful knowledge

Figure 3: The increasing role of developing economies in the global economy

Emerging and developing economies have contributed about two-thirds of growth in output (in purchasing-power-parity terms) and more than one-half of growth in import volumes since the recent upswing in 2002. These economies have also registered large current account surpluses, in contrast to the usual collective deficit prior to 2000.

Legend:
- United States
- Euro area
- Japan
- Other advanced economies
- China
- India
- Other emerging and developing economies

Contribution to Global GDP Growth, PPP Basis (percent)

Contribution to Import Volume Growth (percent)

Current Account Balance (percent of global GDP)
- Middle East oil exporters

management activities between developing economies as well as developing economies and developed economies will again receive close attention in order to help the global economy recover from the current financial crises.

1.2. Aim

This research will join the current academic debate regarding KM. Examples of this debate include arguments regarding the role of incentives in changing KM

behaviour (Husted and Michailova, 2002), as well as the important role of organisational culture in creating a learning company (Lucas, 2006).

This research will compare and study the barriers and facilitators to KM that are known from existing literature and prior research, with the perceived (real life) barriers and facilitators towards KM activities.

The research will be conducted from the perspective of Nissan South Africa (NSA), looking outwards towards Nissan Europe (NTCE), Nissan Thailand (NTCSEA) and Nissan Japan (NML). More specifically, the focus will be on KM activities within the global Nissan group and the perceived barriers that impede the success of KM. Secondly, possible recommendations (to overcome the identified barriers to KM) will be summarised from existing literature sources. These recommendations will be ranked, by NSA staff, for their perceived validity and their perceived effectiveness in overcoming the barriers to KM within Nissan.

1.3. Usefulness

The aim of the research is to compare the theoretical barriers and solutions, within the KM sphere, with real life findings as part of the case study research method. This will contribute to the current body of knowledge within the context of KM.

All companies will face difficulties in managing their knowledge assets – as a necessity for survival - if they plan to operate competitively in the global knowledge economy. The findings of this research will shed light on real life experiences and lessons learnt – which is a valuable source of knowledge for other companies who might be considering taking the KM plunge.

In South Africa, the outcome of this research will be valuable to all businesses that currently operate or plan to operate within our multi-cultural and diverse country. More importantly, South Africa is a developing nation with many attractive resources and opportunities seen as investment opportunities by global companies

Although based on a business case study and research conducted within a MNC, this research will also contribute to the understanding of general KM activities and the concerns that might surface as part of actual KM implementation. This research will be useful for any MNC that have already implemented, or plan to implement KM over various divisions and cultures.

1.4. Chapter Summary

Globalisation is not a force that can be controlled due to the dynamism of open trade and modern business conduct. Companies must decide whether they are going to compete for survival in the current global economy. If they do not, over time they will simply be over-run by companies who have decided to take part in the global economy, despite the current risks that are exasperated by the current financial crises. With this increase in global competition – affecting local businesses – companies must maximise their existing resources. These resources include knowledge that is stored within the employees and databases. If focussed KM activities are successful, the results will improve the company's profits and performance.

This report endeavours to explore the barriers and facilitators to KM within the global business environment. Because of this report, it would be possible to ascertain whether KM activities between NSA and their global counterparts are facing known theoretical problems, as well as how possible improvements are perceived to be more/less successful by the NSA employees.

Chapter 2: Literature review

2.1. Introduction

The current theoretical body of knowledge documented the influence of a plethora of aspects in business, on KM systems. During the literature review, the author will inform the scientific environment on the main factors that could influence multi-cultural KM.

As part of the literature review, the following influences on KM will be explored:

- KM approach

  As a starting point, the different aspects of knowledge, the applicable KM approaches, and the correlations between these two aspects is discussed. The relevant literature (Alavi and Leidner, 2001; Elmholdt, 2004; Bastian, 2006) will form the basis for this research.

- People

  Included in this part of the research is the identification of people barriers/facilitators to successful KM. Research on KM is abundant, and it is widely recognised that various people related factors could have an influence on KM (Damodaran and Olphert, 2000; De Long and Fahey, 2000; Boreham and Morgan, 2004; Caulkins, 2004; Finestone and Snyman, 2005). Since the knowledge transfer transaction takes place only between people (currently), it is important to try to understand why people do what / how they do.

- Organisation

  Due to the different geographical areas that the global Nissan group covers, it is understandable that not all the regional divisions will have exactly the same approach relating to KM. However, within the global Nissan group, there should be a distinct drive towards sharing knowledge that will guide all the regional divisions in their KM activities. It is

essential for any company to adapt to the ever-changing environment in which it finds itself (Collins and Montgomery, 2005). It is imperative for any company to maintain a match between its strategy (future direction) and their dynamic business environment. It should be fair to assume that companies must adapt their KM system/approach towards these same factors, in order to maintain the correct level of relevant knowledge within the company.

The output of the literature study will enable the author to understand the different aspects of KM as well as the possible barriers/facilitators to successful KM.

2.2. Knowledge management approach

2.2.1. Knowledge defined

For the purpose of this research, the four knowledge categories (as developed by Lundvall and Johnson, 1994) will be employed to differentiate between skills, development and knowledge. Refer to Table 1 for these categories.

Table 1: The four knowledge categories

	Skills	Knowledge
Required Knowledge categories	Know What Know Why	Know What Know Why Know How Know Who
How can it be obtained?	Reading books Attending lectures Accessing databases	Mainly through Practical experience

Development

Source: Adapted from Lundvall and Johnson (1994)

To clarify the distinction between skills, development and knowledge, the different knowledge categories requires a brief discussion.

- **Know what** refers to knowledge about facts.

  Example: How many people are currently living in Johannesburg?

- **Know why** refers to scientific knowledge of principals and laws of motion in nature, in the human mind and in society.

  Example: Why does a ball (thrown up in the air) always return to the ground?

- **Know how** refers to skills (the capability to do something).

  Example: How to fasten a shoelace.

- **Know who** refers to a mixture of skills - including social skills – in order to know who knows what, and who knows how to do what (becoming evermore important in modern business).

Skills can be classified as the combination of know why and know what. Developing those skills, mainly through practical experience, will lead to knowledge (the know how and know who).

2.2.2. Types of Knowledge

What does KM mean? What are the processes inside KM? What is actually being managed? Lin, Geng and Whinston (2005) summarise the outcomes of any KM system as knowledge creation, knowledge retention and knowledge transfer. For the purpose of this research, any activity that yields any of the above outcomes will be classified as KM.

Organisations fall into distinct groups, categorised by their view of knowledge. Their view of knowledge will directly determine their view on KM. Alavi and Leidner (2001) define three major approaches towards knowledge – and KM. The first view of knowledge, simplifies the concept of knowledge. Knowledge is seen as something that can be captured and accessed through a database. Knowledge is then treated as an object, or as access to relevant information. Companies with this view should focus their KM activities on capturing, expanding and managing their knowledge stocks - Alavi and Leidner (2001).

The second view addresses knowledge as a process. In this case, the KM activities should focus on knowledge flow as well as the creation, sharing and distribution of knowledge within the organisation - Alavi and Leidner (2001).

The final view poses knowledge as a capability. KM activities should aim to improve the core competencies within the organisation. Additionally, the organisation must pursue the understanding of the strategic advantage of their expertise, while creating additional intellectual capital - Alavi and Leidner (2001).

Bastian (2006) and Elmholdt (2004) adds to the conversation by splitting knowledge into explicit and tacit knowledge bases. According to Bastian (2006), explicit knowledge can be successfully transferred through customised KM instruments. Tacit knowledge however, can only be transferred by physically moving the owner of the knowledge, since tacit knowledge cannot be captured in its entirety.

Knowledge can clearly be categorised into various groups. Based on the assumption that the type of knowledge will drive a specific KM approach, is safe to assume that there are also various KM approaches to be followed. From the literature, as reviewed briefly above, the below table has been generated. (Table 2: Knowledge classification).

Table 2: Knowledge classification

| View of knowledge[1] | KNOWLEDGE BASE | | | | | |
| | TACIT[2] | | | EXPLICIT[2] | | |
	Low	Medium	High	Low	Medium	High
Object	O					O
Process		O			O	
Capability			O	O		

[1] = Alavi and Leidner (2001)

[2] = Bastian (2006) and Elmholdt (2004)

Source: Adapted from Alavi and Leidner (2001); Bastian (2006); Elmholdt (2004)

This matrix summarises the Tacit/Explicit knowledge base for each of the three different views of knowledge. As an example: The view of knowledge as an

object (as above), implies that the tacit knowledge base is low, while the explicit knowledge base is high.

Combining the research conducted by Alavi and Leidner (2001), Elmholdt (2004) and Bastian (2006), it is possible to deduct that there is a clear correlation between the type of knowledge (knowledge base) and the different views of knowledge.

2.2.3. Use of knowledge

From the above review, it is ascertainable that there are two distinctly different types of knowledge (explicit and tacit) that can be shared within an organisation. Smith (2001) also indicates these differences regarding the types of knowledge. According to this study, there are also different uses for the different types of knowledge within the organisation. (Table 3)

Table 3: Use of explicit and tacit knowledge in the workplace

Explicit knowledge	Tacit knowledge
Academic knowledge or "know-what" that is described in formal language, print or electronic media, often based on established work processes, use people-to-documents approach.	**Practical, action orientated knowledge or "know-how" based on practice, acquired by personal experience seldom expressed openly, often resembles intuition.**
Work process: Organised tasks, routine, orchestrated, assumes a predictable environment, linear, reuse codified knowledge create knowledge objects	**Work practice:** Spontaneous, improvised, web-like, responds to a changing, unpredictable environment, channels individual expertise, creates knowledge
Learn: On the job, trial-and-error, self-directed in areas of greatest expertise, meet work goals and objectives set by organisation.	**Learn:** Supervisor or team leader facilitates and reinforces openness and trust to increase sharing of knowledge and business judgment.
Teach: Trainer designed using syllabus, uses formats selected by organisation, based on goals and needs of the organisation, may be outsourced.	**Teach:** One-on-one, mentor, internships coach, on-the-job training, apprenticeships, competency based, brainstorm, people-to-people.
Type of thinking: Logical, based on facts, use proven methods, primarily convergent thinking.	**Type of thinking:** Creative, flexible, unchartered, leads to divergent thinking, develop insights.
Share knowledge: Extract knowledge from person, code, store, and reuse as needed for customers, e-mail, electronic discussions, forums.	**Share knowledge:** Altruistic sharing, networking, face-to-face contact, videoconferencing, chatting, storytelling, personalise knowledge.
Reward: Tied to business goals, competitive within the workplace, compete for scarce rewards, may not be awarded for information sharing.	**Reward:** Incorporate intrinsic or non-monetary motivators and rewards for sharing information directly, recognise creativity and innovation.
Relationship: May be top-down from supervisor to subordinate or team leader to team members.	**Relationship:** Open, friendly, unstructured, based on open, spontaneous sharing of knowledge.
Technology: Related to jobs, based on availability and cost, invest heavily in IT to develop professional library with hierarchy of databases using existing knowledge.	**Technology:** Tool to select personalised information, facilitate conversations, exchange tacit knowledge, invest moderately in the framework of IT, enable people to find another.

Source: Adapted from Smith (2001)

From the above matrix, it can be gleaned that managing tacit knowledge is much more people intensive compared to managing explicit knowledge. There is also a definite 'creative' facet to tacit knowledge, compared to the structured 'data' that drives explicit knowledge. In planning for a KM approach within an organisation, it is advised to study the types of uses for the knowledge that is to be managed. This will have a direct impact on the choice of management system and approach that will be required to manage the correct type of knowledge.

2.2.4. Distributive needs (Why share?)

Trust is an essential requirement for the sharing of any piece of equipment, motor vehicle or even golf clubs. It is even more prevalent in the sharing of valuable – and in many cases, unique knowledge that has been gathered through years of on-the-job experience. Without a mutual sense of trust, successful KM systems cannot support the sharing of knowledge. People simply will not trust that their future is safe when their unique knowledge becomes generally available. People will not share experiences if they do not trust that they will not lose their status (De Long and Fahey, 2000). As a starting point, people will only share knowledge if they are sure it will be to their benefit – this includes trust, reward, recognition and their own development. Trust on the individual level can be directly expanded into trust on the group/corporate level.

The study conducted by Davenport and Prusak (1998) see knowledge being exchanged in both internal and external markets. This implies an open market for knowledge – just like the existing market for natural resources. Trading knowledge internally will add value to the organisation (increased efficiency, less mistakes, standardisation, and cost reduction) and will allow the organisation to learn from itself. Trading knowledge externally will enable organisations to market their unique knowledge and capabilities – to the financial benefit of the organisation.

Davenport and Prusak (1998) suggest that there are three conditions that should act as enablers for people to share their valuable knowledge:

1. Reciprocity

    Resources are not unlimited within any organisation. The availability of the required personnel, time and energy is bounded by reality.

    The result of this condition is that people will share their valuable knowledge, if they trust that they will receive knowledge in return – either now or somewhere in the future. (Davenport and Prusak, 1998)

2. Repute

    It is human nature to strive towards being called an expert in any subject. This gives the person access to a source of power within the organisation.

    Human nature will thus only allow people to share their expert knowledge, if they trust that the original source of the information will be acknowledged. The credit for the knowledge remains with the originator, and not the end user. (Davenport and Prusak, 1998)

3. Altruism

    There is no need to explain that some subjects generally are more interesting than others are. These fascinating subjects intrigue people. Therefore, people might be more eager to share knowledge on these subjects, even if it could be seen as self-gratifying. The result is still the sharing of knowledge. (Davenport and Prusak, 1998)

Referring to the above discussions on KM approaches, the following is a brief summary:

1. There are different kinds of knowledge that must be managed.

    Knowledge can be either explicit or tacit and can be classified as an object, process or capability. Due to these differences, the KM approach must be well thought through and targeted at the correct knowledge to be managed.

2. The different kinds of knowledge have different uses within the organisation.

This enables knowledge workers to classify knowledge by its use in the organisation and manage the sharing of knowledge accordingly.

3. Trust – on an individual, group and corporate level – is the basis for any successful KM system. People will act to protect themselves (if there is no trust) by hoarding knowledge. This will disable any further knowledge sharing activities.

2.3. People barriers

2.3.1. Culture

Kaweevisultrakul and Chan (2007) identified four ways in which culture influences knowledge-related behaviour.

1. Culture influences the perceived usefulness, importance or validity of knowledge within an organisation.
2. Culture determines whether knowledge remains within the control of individuals or subunits, or if knowledge belongs to the organisation.
3. Culture creates a context for social interaction. It is the ground rules and the playing field used for everyday interactions.
4. The creation and adoption of new knowledge is shaped by culture.

Ardichvili, Maurer, Li, Wentling and Stuedemann (2006) complicate the debate further by stating that studies on cognitive strategies suggests that there are differences in methods of learning and knowledge generation across different national and ethnic cultures. This implies that different KM approaches will also be required to support the transfer of knowledge between the different cultures.

Lucas (2006) argues strongly that the cultural dimensions of power distance, individualism / collectivism, uncertainty avoidance and masculinity / femininity has in impact on successful KM between different cultures. While Hofstede (1980) initially identified these cultural dimensions, they remain relevant for this study.

Based on the preceding portion of the literature reviewed, it is possible to compile a schematic figure reflecting the influence of cultural differences in a

successful KM approach. Figure 4 depicts an adaptation of the work done by Hofstede (1980) as well as Kaweevisultrakul and Chan (2007). The figure depicts the discussed influence of culture as "filters" that are acting on the knowledge transfer process. These "filters" are influenced by culture and, in some instances, are a direct result of culture. It is clear that the effectiveness of KM decreases dramatically if the cultural differences are not respected and catered for during the implementation of the KM approach.

Figure 4: Cultural filters during knowledge transfer / learning
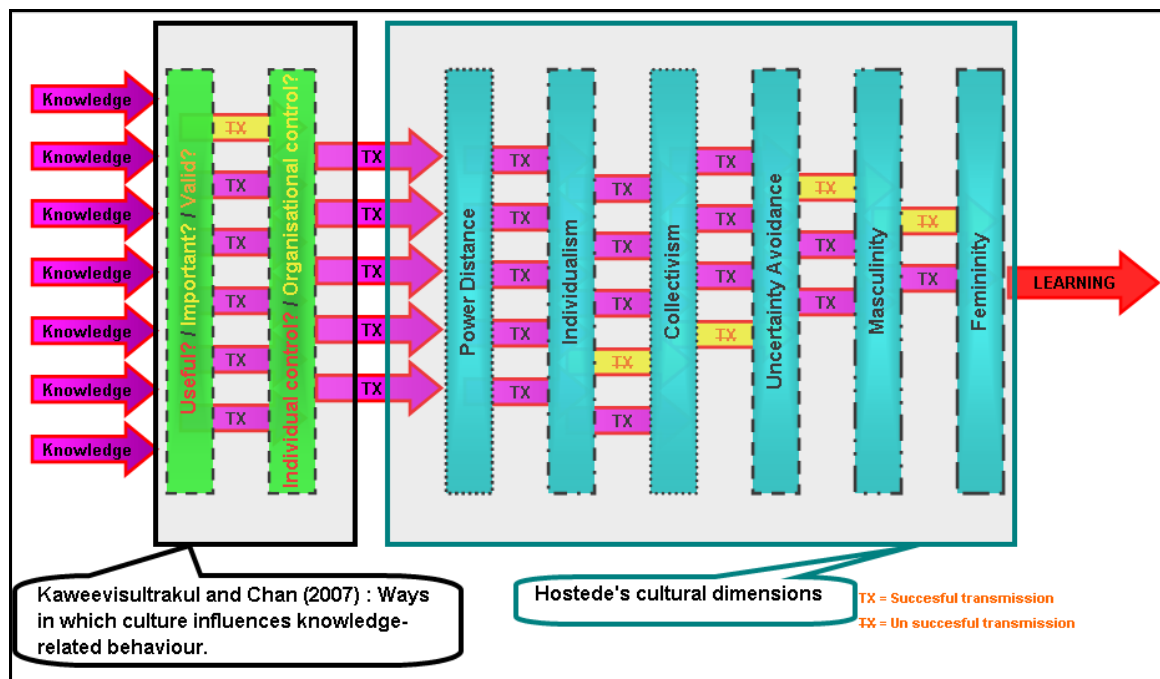
Source: Adapted from Hofstede (1980) and Kaweevisultrakul and Chan (2007)

2.3.2. Use of Technology/Systems

Modern KM systems, especially those implemented across international boundaries, are heavily dependant on technology/information systems. In many cases, these systems are used as dumps of information. Without further processing, structure and sorting/categorising, this information is not useful to anyone. Davenport & Prusak (1998) identified this condition as a barrier to successful KM. There is simply too much information available on an overloaded information system – which of the information is useless and which could be useful is not clear. People do not want to make sense of the confusion

in information systems. They simply want to get in, obtain the required knowledge, and get out.

2.3.2. Time

This concern is linked by Davenport and Prusak (1998) directly to the amount of time spent on setting up (capturing the information) and maintaining the information stored in a KM system. Time available to employees is limited to such an extent that they do not have enough time to capture the relevant information correctly (Tiwana, 2002), not enough time to identify people that need access to the relevant knowledge and enough time to share the information with other employees.

Nonaka and Takeuchi (1995) together with Probst, Raub, and Rombhardt (2000), expand on the time constraint element through the argument that people spend their time on activities that relate directly to their pre-defined function in an organisation. The ideal situation can be found where employees are employed in the function of KM and their job descriptions are directly related to activities within the KM process. If this is not the case, people who do not feel responsible for the task of KM, will be responsible for the activity. In such instances, the process of KM will be seen as additional work (not part of their pre-defined function within the organisation). This will result in an ineffective KM system.

2.3.3. Tacit knowledge and trust

Another set of people barriers relate to the value of the knowledge that lie within the experience of employees. This type of knowledge (see Matrix 2) can be classified as tacit knowledge. Due the nature of this knowledge, it is not a simple process that can be easily captured or mapped out in a knowledge system. This type of knowledge must be 'extracted' from the employees that have built up these knowledge repositories through on the job experience. Davenport and Prusak (1998, p. 4) capture the core of this people barrier:

"For the knowledge market to operate, mutual trust must be established in a visible and ubiquitous manner. The knowledge market – with no written

contracts and no court of appeals – is very much based on credit instead of cash. What is more, trustworthiness must start at the top."

In essence, the employees with a large tacit knowledge basis feel safe in their employment – they will continue to be employed until they decide differently. If they share this valuable and tradable commodity that only they posses, they must trust that the organisation will not see them as less valuable after the knowledge is made freely available. Husted and Michailova (2002) also debated the topic of trust in their research on KM systems successes in Russian businesses. Because of their research, the following possible barriers were identified:

- It is not natural to share valuable knowledge freely.
- People are too scared of making mistakes.
- Who will receive the credit for the knowledge – once it is shared and available for all (trust)?
- A strong social network is required for successful KM (in Russia, there is very little cross-functional/departmental cooperation, so strong social networks are required).

2.3.4. Value identification

How do we decide if a specific piece of knowledge is valuable and worth sharing? Davenport and Prusak (1998) explores the perceived value/benefit of knowledge to a great extent. Using an example, it can be easily explained:

The knowledge – used in the every-day functionality by an employee for many years – might not seem valuable at all to the employee that possesses the knowledge. However, if other employees within the same global company, at the opposite side of the world had access to the same knowledge, they might see it as incredibly valuable – since they did not previously possess such knowledge. The value and benefit of existing knowledge is often not realised by the owner – so why try to capture and share this knowledge. If any piece of knowledge has the capability of gaining a globally agreed to value, knowledge can be traded as a commodity in the 'knowledge market' within a MNC - to the advantage of the MNC.

2.3.5. Language

Compounding the barriers against successful KM are the different languages (Nonaka & Takenuchi, 1995) that can exist within an organisation. A company like the Global Nissan group can easily have ten different languages spread over the different regions that should all contribute towards managing the knowledge inside Nissan. We rightly associate different languages with different cultures – which ads another barrier to the equation. Nonaka & Takenuchi (1995) investigate this barrier from the perspective of Japanese culture. Their research indicates that poor communication skills and interpersonal skills can have a negative impact on the success of KM systems. This is of particular relevance to Nissan, since all countries (irrespective of home language) must be able to converse in English - the official business language inside Nissan. Without the required proficiency in English, it is possible for any KM activity to be doomed - not because of a lack of knowledge, enthusiasm, support, capability or skill, but because none of these were successfully translated across the language/cultural barrier.

2.3.6. Preferential sharing

The language barrier extends itself into other areas indirectly. It is understandably much easier to share explicit knowledge, since the need to explain (across the language barrier) is much less. It is possible to capture the full extent of the knowledge in a process flow or diagram. The language barrier could lead to preferential sharing (Riege, 2007) of knowledge, where a certain type of knowledge is shared more often and regularly. As a worst-case example - all regions within a MNC speak the same language, except for one. It is possible that the region, not capable of speaking the common language, will be at a disadvantage due to increased difficulties to translate all knowledge across the language barrier. Initially, the preferred knowledge that will be transferred would almost certainly be process flows, standard operations and other 'maps' of knowledge.

Managing knowledge between peers (equally qualified/experienced) is also deemed easier than managing knowledge between parties with different levels of experience, education and qualification. Argote, Beckman and Epple (1990),

Riege (2007) and Tiwana (2002) – each in a different way, debate this argument. It boils down to having the ability to be a teacher or student of knowledge, depending where you are in the food chain of that specific knowledge type. Teaching and learning on the job is a hard task in itself. When it is complicated by teaching or learning across language barriers, the resulting learning decreases due to the natural tendency to apply preferential sharing.

2.4. Organisational barriers

Making a success of KM activities does not depend on people and information systems in isolation. The barriers and facilitators to KM can also exist at an organisational level. Even if the people are willing, able and ready to share/learn new knowledge, and all the information systems are state-of-the-art and designed to handle vast amounts of knowledge – if the organisation is not focused on making a success of KM, it would most probably fail (McDermott and O'Dell, 2001).

2.4.1. Strategy alignment

As part of this section, the requirement for alignment between the KM strategy and the business strategy of the MNC will be explored.

Collins and Montgomery (2005) accurately explain the logic that should drive a successful corporate business strategy. Their whole body of work is centred on how a business should align its limited resources to an ever-changing environment through the iterative process of strategy formulation. It features prominently that there are usually two strategies (as corporate business strategy) within companies. One of the strategies is defined by what a business states as its strategy in corporate communications, business reports and shareholder discussions. The other strategy is defined through the movement of resources within a business.

Supporting this statement by Collins and Montgomery (2005), they argue that any business will only spend money, move people, invest or develop new products in a space where the business foresees a potential for increased

revenues. Any sizable movement of resources, within a business, in a new direction could indicate a change in the business strategy. However, strategy should be focussed on the longer term; therefore, it is logical to evaluate a business strategy by the movement of company resources over time.

The above analogy of strategic alignment will be used to determine the degree of alignment between the KM and business strategies. Further, this research will also explore whether an alignment of knowledge/business strategies is required for successful KM activities.

2.4.2. Reward and recognition

As identified earlier in the literature, people do not share valuable knowledge easily. The organisation should therefore make sharing knowledge attractive to people – almost supporting an internal knowledge market within the organisation. In many instances, organisations have tried to palm the reward function off to its existing reward and recognition systems. In some instances, there is no reward and recognition system at all. Husted and Michailova (2002), as part of their research, found that Russian workers would not share knowledge or information with each other if there were no gain to them from the transaction. McDermott and O'Dell (2001) identified a successful and functioning reward and recognition system as a visible manifestation of the organisational culture. Extrapolating from these two separate pieces of literature, the following argument could be constructed: An organisation that is successful at KM realises that a learning culture must be instilled in all employees. To support quality involvement in the KM system, such a company would tailor a reward and recognition system towards rewarding and recognising the valuable knowledge that is shared by its employees.

2.4.3. Allocation of resources

In turn, a strategic decision to pursue successful KM and reward/recognise the people that contribute must also include the strategic allocation of the limited resources available within an organisation. Companies that fail to either align the business strategy and the KM strategy (McDermott & O'Dell, 2001), or allocate sufficient resources to the KM activities (Szulanski, 1996), will in most

instances fail in their KM venture. It is crucial to make sharing/managing knowledge within the organisation visibly important to the organisation. Strategic alignment (business strategy and KM strategy) will initially not be an easy task, since the cost of capturing, processing and transferring 'sticky' knowledge (Szulanski, 1996) can be a barrier to KM in itself. When an organisation is successful in managing all the knowledge that it can access, the strategic alignment of KM strategy and business strategy enters a new paradigm. According to Gold *et al.* (2001), such companies can attain a unique competitive advantage by allowing its organisational knowledge to drive/direct the organisational (business) strategy.

2.4.4. Top management support

However, without the active and visible support from top leadership positions within the organisation, KM activities will not get the support of the employees. Where leaders have clearly communicated the direction of an organisation down to all levels of employees, and enforced the value of sharing knowledge personally, KM activities yielded better results (Connelly and Kelloway, 2003). Ford (the motor company) is a prime example for successful leadership involvement in knowledge-management awareness campaigns. According to McDermott & O'Dell (2001), Ford's leaders took the initiative and personally (face-to-face) addressed more than 25 000 people over a period of a year regarding their revised intranet strategy and new knowledge tools. Instead of pushing KM towards their staff, the management of Ford simply indicated the value, time saving and easy access to information that is attainable for all through the use of the new systems. This direct approach fits in well with the hierarchical organisational structure that is part of Ford.

2.4.5. Organisational structure

Hierarchy does have a direct impact on the success of KM activities. McDermott (1999) found that informal connections are very important for keeping the communication channels open at all times. Informal communication negates the need to wait for the next official meeting before information/ communication is initiated. At first glance, it seems as if McDermott in two separate pieces of research argue both for and against the effect of hierarchy in an organisation on

KM. This is not the case. The two pieces of research are not mutually exclusive – in some organisations, the hierarchical structure is used to the benefit of KM, while in other organisations the hierarchical structure completely negates any KM activities. The research simply implies that any organisation should be aware of what their structure looks like (and the effect thereof) in order to tailor KM activities around these structures.

2.4.6. Staff turnover

Even when all the newest systems and company-wide support are available to facilitate KM activities, things can still go wrong. After investing time and effort in some/specific employees in order to develop their capability to support the organisations strategy, the people are free to leave at all times. There is no hold that an organisation can legally have over an employee that will keep him there for the rest of his life. Staff turnover has a direct impact on KM activities (Sveiby, 1997). As discussed previously, it is relatively easier to capture and manage extrinsic knowledge. It is also far more difficult to accurately and successfully capture and manage tacit knowledge. When people leave an organisation, the knowledge they take with them relates to their experiences, training, learning, gut-feel and general knowledge. These types of knowledge cannot be captured – and really is lost to the company when employees leave. To overcome this barrier to KM, Knott (2001) argues that organisational knowledge must be able to survive high levels of staff turnover through the correct capturing, storing and accessing of the information. Knott does not distinguish between tacit and explicit knowledge as such, but sees the combination of these two knowledge types as organisational knowledge.

2.4.7. Organisational culture

Successfully managing knowledge in an organisation calls for the organisational culture to support such an activity. Where the organisational culture is not aligned with the drive for knowledge, it will act as a barrier towards KM (O'Dell and Grayson, 1998). O'Dell and Grayson found that internal benchmarking as the most tangible manifestation of KM. Nonaka and Konno (1998) also looked at the influence of internal benchmarking on performance. Their study found that the organisational culture of certain companies would not allow internal

benchmarking to take place at all. In cases where the organisational culture is a barrier to KM, it is crucial that the culture be addressed before KM activities are launched. Without the change in organisational culture, knowledge will not be shared, and therefore KM will be in effective.

2.4.8. One directional KM

KM should be a two, or three, or four way communication stream. Inter-team and interdepartmental communication is essential for accessing new knowledge repositories. Hansen (1999) identified the barrier of one-way KM in his research. When the balance of communication is skewed – no communication from certain team players or certain departments, the organisation runs the risk of making the partaking members too inward or outward focussed. Either they will generate the knowledge by themselves and for themselves, or they will find the required knowledge outside the organisation. This results in a completely un-balanced KM system.

2.4.9. Competition

Linking to one-way knowledge transactions, Knott (2001) discussed the importance of healthy competition. Competition – both internally and externally – is healthy to a certain extent. Healthy competition can increase the performance of employees, and might even lead to a sense of belonging between team members. However, if competition (internally in an organisation or externally between different divisions), exceed the natural threshold, the results can be disastrous. People will not want to share knowledge, teams will not function across divisions and the organisation will cannibalise on itself.

2.4.10. Power of management

Nonaka and Konno (1998) identified another barrier to KM within an organisation, which is influenced by people. Importantly, this barrier can also act as a facilitator in solving some of the barriers to KM – once it is successfully utilised. They argue that managers should have both positional power and social power at their disposal. Managers should facilitate/ initiate more frequent interpersonal communications with staff in order to open communication channels in an informal way.

2.5. Facilitators of KM

As reviewed earlier in this chapter, barriers to KM activities can be broadly grouped into two main areas:

- People and
- Organisational related barriers.

2.5.1. People related facilitators

2.5.1.1. Culture

Culture is identified as a barrier to successful KM activities. Damodaran and Olphert (2000) propose that a new culture be developed – one that is more open to sharing information and KM. The aim should be to develop a learning culture within the organisation, parallel to the development of the KM system for the organisation.

However, it is possible that the difference in cultures across the organisation result in sub-cultures that can be identified in business units, departments and even individual sections. Massey, Montoya-Weiss and O'Driscoll (2002) highlight and discuss the dangers of these sub-cultures for successful KM activities. In these cases, it would be advised to try to create a new (more encompassing) sub-culture – possibly a culture of knowledge-participant vs. non-participant.

2.5.1.2. Dual commitment

People barriers to KM are heavily dependant on their perception of mutual trust between the organisation and themselves. This is a continually changing relationship, which is based on the perceived treatment of the employee by the employer (Damodaran and Olphert, 2000). Trust also affects the communication relationships between the different divisions/regions of a business. Since there is no employer/employee relationship that can influence these communications, it is important to base all communications on a sense of mutual trust (Damodaran and Olphert, 2000). Through continuous interaction, the trust levels can either grow or diminish over time.

In most cases, it was found that as soon as top management took leadership in KM activities and actually applied to them what they say others should be doing (walking-the-talk), the success of KM activities increased. Damodaran and Olphert (2000) also found that in order for people to support the corporate vision and business strategy, they needed to believe in these business drivers.

Organisations must realise that employees require the delivery of tangible benefits from the implementation of KM activities (Dyer and Nobeoka, 2000; Damodaran and Olphert, 2000). Employees will not continue to support new KM initiatives if the activities do not make a positive difference to their normal functions. Only effective (and beneficial) KM activities have the possibility of being institutionalised into normal working practice. Damodaran and Olphert (2000) identified institutionalisation of KM activities as important, since institutionalisation will create willingness for training in the new KM activities.

2.5.1.3. Perception changes

In many cases, people have pre-conceived perceptions of what KM activities should entail, what results to expect or how effective it might be. Based on these perceptions, KM activities run the risk of failure before they start. Changing perceptions is not an easy task. Dyer and Nobeoka (2000) propose that staff/management involved in KM activities use both their strong and weak social ties in order to bridge knowledge, organisational and hierarchical gaps. The aim is to communicate knowledge informally and in doing so, changing the perceptions towards KM initiatives. Massey *et al.* (2002) found value in shifting the way people think. Instead of the normal Go/No go decisions, people should be moved to a new perspective where the choices should rather be Why/Why not?

Probst *et al.,* (2000) recommend that people aim to understand the perceived reality of other's experiences. This implies a perception change within individuals, pertaining to the way they view others. One should rather try to understand, acknowledge and respect the various differences compared to denying, ridiculing and condemning these differences. Damodaran and Olphert

(2000) also urge KM initiatives to change the transaction-base used during KM activities. With the aim of disintermediation of the individual knowledge from the organisation, the transactions should be changed from individual transactions (person-person) to collective transactions (person-organisation-person). This change will facilitate a perception of organisational knowledge ownership, which in turn could motivate members to openly share their knowledge. This is based on the understanding that it is more advantageous to be part of the collective organisational knowledge, compared to the individual little pieces of knowledge (Dyer and Nobeoka, 2000)

2.5.2. Organisation related facilitators

2.5.2.1. Business alignment

Before any organisation starts down the road of KM, there are careful considerations that must be thought through. Most importantly, KM activities must be aligned to directly support organisational goals (Riege, 2007). This requires a clear corporate vision and business strategy for the organisation, which result in, and are linked to specific KM activities. KM works best where value is created as part of business process (Massey *et al.*, 2002). It is therefore advised to target these specific areas of the organisation for focussed KM activities.

Organisations must determine the value (if any) focussed KM activities can add to the bottom line. Organisations should carefully define clear parameters for the KM activity under study. Simple aspects such as what, at what costs and at what time are important factors to define for any KM project (Massey *et al.*, 2002). These simple questions should enable the organisation to establish a basic idea of cost, time, resource requirements and scope of the KM activity. Once this is clear and quantified, the KM activity should be motivated accordingly (Damodaran and Olphert, 2000). Once an organisation decides to proceed with a KM activity, the allocation of adequate resources such as funding and investment in human and technology resources has a great impact on the success of the activity (Massey *et al.*, 2002). It is therefore advised to clearly scope any KM activity at inception and to stick to the scope during the

course of the activity. This pragmatic approach is advised, since many KM activities are launched for the wrong reasons, were not completed due to funding issues or do not yield in the required results.

Through integrating KM activities with other company initiatives and linking KM to the organisations' business drivers, it would be relatively easy to recognise that commercial success depends on the organisations' ability to manage and leverage its existing knowledge (Damodaran and Olphert, 2000).

Massey et al. (2002) echo this viewpoint because of their study on disparate knowledge sources that linked a value creating business process within the organisation. Their findings indicate that given the above, it is also advisable to measure and reward the employees according to their performance on the KM activities that are linked to the business drivers. To accomplish this, organisations should consider their own internal supporting strategy. Where KM activities are required, the organisation's supporting strategy should allow individuals to develop new ways of operating (Gold et al., 2001). This will enable those employees to create new knowledge and a personalised strategy for achieving their (and the organisation's) goals.

Finally, KM activities must be made operational through the alignment in the business drivers, in order to contribute directly to organisational goals (Wijnhoven, 2003).

2.5.2.2. Structural changes

KM activities drive, and are linked to, the innovation process inside the organisation as well as the organisational structure (Massey *et al.*, 2002). It is therefore important to align the organisational structure with KM activities.

There are relatively easy ways to adapt the organisational structure towards facilitating KM activities:

- Create a shared purpose/team identity (Dyer and Nobeoka, 2000). Without changing the physical structure within the organisation, special teams can be formulated for specific KM related activities. This will lead

to a feeling of belonging within the team, and could ultimately lead to a KM identity.

- Implement structural changes in order to remove conflict. For example, an organisation is selling the virtues of KM and knowledge sharing to employees, while still operating a reward/recognition system based on competition (Damodaran and Olphert, 2000). It is clear that these two aspects are not aligned within the structure of the company, since the measures completely oppose the goals.

- An organisation can develop knowledge infrastructure. This infrastructure can take the form of skills databases and/or a list of organisational knowledge members (Wijnhoven, 2003). This will enable participants in KM to easily access other KM members within the organisation. Direct benefits for all participants can be maximised.

- The organisation could structure and apply incentives for sharing, while making the possible consequences of engaging in the KM activities clear to all employees. Without changing the organisational structure, this will influence employee behaviour through informal/formal feedback from peers and organisation (Massey et al., 2002).

2.5.2.3. Organisational culture

As applicable to People barriers and facilitators, culture has previously been identified as barrier to successful KM activities. Damodaran and Olphert (2000) propose that a new culture be developed – one that is more open to sharing information and KM. The aim should be to develop a learning culture within the organisation, parallel to the development of the KM system for the organisation.

However, it is possible that the difference in cultures across the organisation result in sub-cultures that can be identified in business units, departments and even individual sections. Massey, Montoya-Weiss and O'Driscoll (2002) highlight and discuss the dangers of these sub-cultures for successful KM activities. In these cases, it would be advised to try to create a new (more encompassing) sub-culture – possibly a culture of knowledge-participant vs. non-participant.

These aspects of cultural change must be supported by the organisation through training and supporting employees in preparation for and during their various KM activities. (Damodaran and Olphert, 2000).The organisation must aim to create and facilitate a synergetic environment for KM activities, aimed at maximising the return for each employee from other employee's expertise within the KM initiative (Wijnhoven, 2003).

2.6. Chapter Summary

During this chapter, we have reviewed the basic principals involved during KM activities. These include the types of knowledge and KM systems. We have also explored the various barriers and facilitators towards KM, based on existing empirical research. Because of the literature review, it can be summarised that two main groups of barriers to KM have been identified:

- People related barriers

  They are related to culture, time, tacit knowledge and trust, value identification, language and preferential sharing.

- Organisational related barriers

  These are related to strategy alignment, reward and recognition, allocation of resources, top management support, organisational structure, staff turnover, organisational culture, one directional KM, competition and the power of management.

Figure 5 graphically represents these barriers to the success and permeation of KM activities within the MNC.

Figure 5: Barriers to Knowledge management
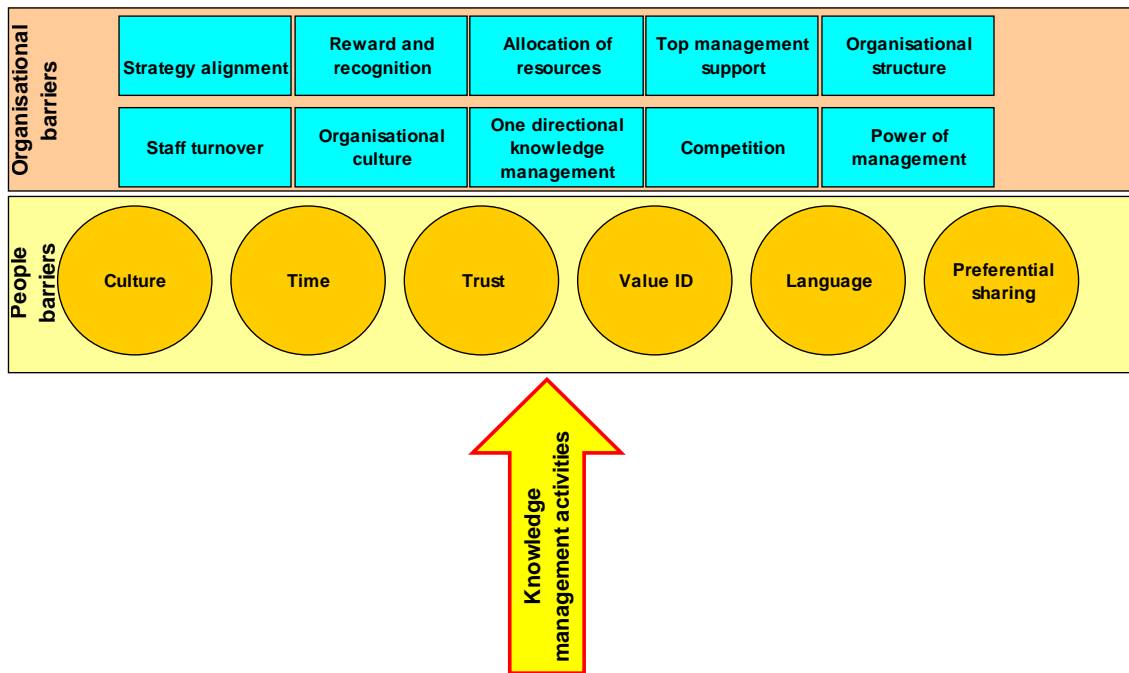
Within people and the organisation, there have also been certain facilitators to KM identified through previous research. These facilitators can be summarised briefly:

- People related facilitators
    - Culture
    - Dual commitment
    - Perception changes
- Organisation related facilitators
    - Business alignment
    - Structural changes
    - Organisational culture

Figure 6 indicates how KM activities can enter and permeate throughout the MNC and the people within the MNC through the six main facilitators to KM.

Figure 6: The effect of facilitators on the barriers to Knowledge management
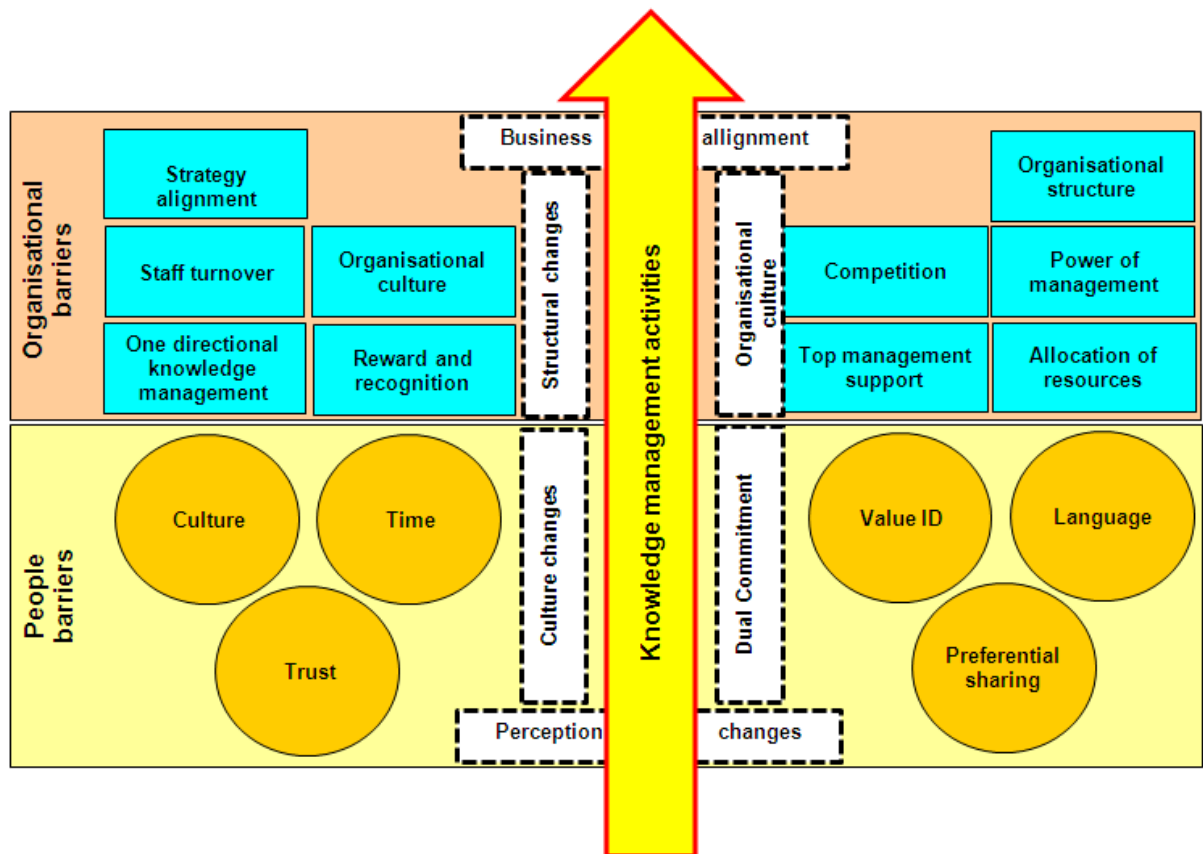
It is important to note that the barriers and facilitators to KM are discussed in general during this literature review, as well as in the existing literature. In their generality, they are very powerful, but in order to implement some of the facilitators in any organisation will require some degree of tweaking and customisation, since all organisations and people will not respond in the same way to the same solutions.

Based on the reviewed literature, it is abundantly clear that there is a requirement for this report. In order for MNC's to access their internal knowledge banks – especially during the current trying economic times – barriers and facilitators to KM should be continuously investigated and addressed.

Chapter 3: Research questions

3.1. Introduction

This chapter formulates the core questions to be addressed in this study. The research questions were formulated in a logical and structured manner through exploring the research problem as decomposed in chapter 1 and reviewing the selected literature in chapter 2.

Taking the problem statement (chapter 1) as basis and broad definition of the required research, the following core issues emerged:

- The current global financial crises, as well as the increased importance of developing economies in the global economy, calls for more successful KM activities.
- KM activities are not yielding the expected results for MNCs, or MNCs are not successful in KM activities.
- Unsuccessful KM activities will cause involved MNC's to fall behind in the competitive global markets.

Expanding these issues during the literature review (chapter 2) yielded more focussed areas of interest for the research:

- Barriers to KM activities have been identified in existing literature and previous research.
- Barriers to KM activities could be classified in two main categories, namely People and Organisation.
- Facilitators to KM activities have been identified by existing literature and previous research.
- Facilitators are general in description, but require tailoring to solve specific problems.

3.2. Research Questions

The literature review in the preceding chapter framed the problem statement around the barriers and facilitators that are at play in a KM system. The following question articulates the research focus: Are there different perceived

35

barriers to knowledge sharing, and what are the most effective ways of breaking these barriers?

3.2.1. Research Question 1

What are the perceived barriers to KM (from a NSA outwards perspective) when knowledge is shared to and from NTCE, NTCSEA, and NML?

3.2.2. Research Question 2

Which solutions will have the most perceived value in breaking these barriers to KM?

3.3. Summary

Through the application of deductive reasoning, as part of the Phenomenological research philosophy employed by this study, the above questions were condensed from the problem statement and literature review. It is possible to formulate many more questions other than the selected two. However, the question selection was done with the purpose of exploring the problem as broadly as possible, since no information is available on this specific case study, pertaining to KM. Future studies might be able to focus more precisely on some of the results of this research.

The following chapter will describe the research method and design that will be employed during the research (chapter 4), in order to answer the above questions.

Chapter 4: Research methodology

4.1. Introduction

This chapter communicates the way in which empirical data was gathered, processed into information and meaningful connections to the existing literature were established. Through the application of deductive reasoning and logic on existing theory, this research proposed to explore the theoretical barriers and facilitators to KM, through both qualitative and quantitative methods, to the perceived barriers and facilitators as part of a case study.

4.2. Research philosophy

Tobin (2006) accurately summarises the major differences between the Positivist (scientific) and the Phenomenological (social) research paradigms - refer to Table 4 for this summary.

Table 4: Research paradigms

	Positivist Paradigm	**Phenomenological Paradigm**
Basic beliefs	The world is external and objective	The world is socially constructed and subjective
	Observer is independent	Observer is part of what observed
	Science is value-free	Science is driven by human interests
Researcher should	Focus on facts	Focus on meanings
	Look for causality and fundamental laws	Try to understand what is happening
	Reduce phenomenon to simplest elements	Look at the totality of each situation
	Formulate hypotheses and test them	Develop ideas through induction from data
Preferred methods include	Operationalising concepts so that they can be measured	Using multiple methods to establish different views of
	Taking large samples	Small samples investigated in depth or over time

Source: Easterby-Smith, Thorpe and Lowe (1991)

The research was framed by the problem definition, as in chapter 1. Through applying the above framework, it was clear that the problem would be best addressed through the application of the Phenomenological research paradigm.

4.3. Research approaches

During the course of the research, active choices were made regarding the research approaches that were employed. The basic choices were related to the following:

- Qualitative/quantitative methods
- Deductive/inductive reasoning
- Subjective/objective data gathering.

4.3.1. Qualitative/quantitative methods

The research questions posed in chapter 3 were different in nature. Question 1 lent itself more towards a common opinion of the group, or a deeper feeling within the walls of NSA or something that is difficult to translate through a 'true or false' question/answer – almost like tacit knowledge. The choice was made to apply the qualitative research approach in order to explore and answer research question 1 (Zikmund, 2007).

Question 2, on the other hand, lent itself to a more pragmatic approach. To answer this question, a 'true or false' question will yield more accurate information than can be gained from an hour-long group discussion – almost like explicit knowledge. Here, the choice was made to apply the quantitative research approach in order to explore and answer research question 2 (Zikmund, 2007).

4.3.2. Deductive/inductive reasoning

Deductive reasoning is the logical process of deriving conclusions about specific instances based on something that is known to be true, or a generally accepted premise. On the other hand, Inductive reasoning is the logical process of establishing general propositions based on observations of particular facts (Zikmund, 2007). This research applied existing empirical research as a basis for the analysis of a case study. It was clear that deductive reasoning would best suit the stated research aim – it was selected as the most appropriate research approach during this research.

4.3.3. Subjective/objective data gathering

Traditionally, it is the assumption that an author must remain independent from the actual research – in order for the research to be valid (Easterby-Smit *et al.*, 1991). However, the Phenomenological research paradigm is characterised by its acceptance of the subjectivity that exists in the world. Due to the smaller sample size and deeper discussion/understanding required by this paradigm, the author is sometimes involved and immersed in the real world under study.

This report used both the subjective data gathering approach for the qualitative portion of the report, as well as the objective approach for the quantitative portion of the report. It is important to note that there was some subjectivity as part of this report, since the author had to be able to recognise the limitations (if any) and influence of the subjectivity on the research results, analysis and findings.

4.4. Research design

A case study design was used in order to address the research problem as identified in chapter 1. Yin (2003, p10) articulates the case study methodology in a very understandable way:

> *"The short answer is that case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes. In this sense, the case study, like the experiment, does not represent a 'sample', and in doing a case study, your goal will be to expand and generalize theories (analytical generalization) and not to enumerate frequencies (statistical generalization)"*

There were various types of case study research types that could have been applied to this research, but the author chose to employ the snapshot case study method. By implication, this study was an in-depth analysis of an entity, at a specific point in time. Tobin (2006) supplies clear guidelines regarding the process of case study based research:

a. Determine the present situation: Achieved through semi-structured interviews as part of this research.

b.   Gathering information (background to present): Achieved in this research through interviews and referring to reports and other sources available from/about global Nissan.

c.   Gathering more specific data: Conducted by reviewing relevant literature and the completion of a questionnaire by NSA staff.

d.   Presenting an analysis of findings and recommendations for action: The outcome of the research report will not yield recommendations for action. This research aims to analyse the similarities and differences between barriers and facilitators to KM (as identified in the literature and existing research) and perceived real life barriers and facilitators to KM.

4.5. Unit of analysis

This study aimed to identify the barriers to KM, from an NSA outwards perspective towards NTCE, NTCSEA and NML – all of them international divisions of the global Nissan group.

The unit of analysis was therefore defined as international divisions operating within the MNC, global Nissan. The selected unit of analysis was applied to both the qualitative and quantitative portions of this study.

4.6. Population

Ideally, the population must define all the "population elements that are relevant to the research project" (Zikmund – 2007, p. 373). Logically, that implies that the population used for this research had to actively partake in KM practices between NSA and NTCE and/or NTCSEA and/or NML. NSA could be broken down into it various departments. As a result, the population for this study was defined as departments within NSA that are involved with knowledge transfer between the related countries. The selected unit of analysis was applied to both the qualitative and quantitative portions of this study.

4.7. Sampling

Within NSA, there were only selected departments that are directly involved in the knowledge transfer between the international divisions of the global Nissan group. Within these departments, the author had access to the product

engineering and purchasing departments for the group focus sessions, and all departments inside NSA for the questionnaire.

It was the choice of the author to employ a non-probability sample for the purpose of this research. According to Tobin (2006), this sampling method can be labelled as a purposive sample, where the author may choose to select a sample from the target population entirely based on his knowledge of the population and the objectives of the research. It was also the choice of the author to apply different samples for the quantitative (smaller and focussed) and qualitative (larger and more general) portions of the research.

This sampling choice could possibly limit the number of participants, and could influence the validity and transferability of the quantitative part of the research. However, a large percentage of the total available sample took part in the study and the validity and transferability of the quantitative findings increased accordingly.

4.8. Data gathering

4.8.1. Secondary Data

As basis for this research, reviews of existing literature on the subject of KM and related topics were studied. These sources of secondary data were used to guide the semi-structured discussions, as well as identify theoretical barriers to KM (and their related solutions) that were used during the structured data gathering activities. The secondary data gathering and analysis processes were especially critical for a successful outcome of this research, since the author was not an expert on culture or KM processes. Having access to abundant previous research on these subjects did enable the author to "extract specific trends and common factors" that were of direct bearing on this research. (Zikmund - 2007, p115).

4.8.2. Group interviews

To support the previously selected research method of qualitative research, separate semi-structured interviews with the staff employed within Product engineering and Purchasing were conducted.

The structure of these interviews was similar to the structure of "focus group interviews" (Zikmund – 2007, p117) – where the discussion was semi-structured to facilitate a free-flow of open communication between all participants. The author conducted these group interviews with himself as facilitator and guide for the ensuing discussion. Admittedly, this could have decrease the objectivity of the research, but it was required for the author to guide the conversation along the lines of the reviewed literature in order to add value to the academic debate – rather than highlight the concerns of individuals. The free and open format of the group interview did allow variety of points to emerge and for the group to respond and discuss these issues.

As part of this activity, each participant created a unique "Rich Picture" (Checkland & Scholes, 2001) as part of the focus group sessions. "Rich Pictures" are a part of Peter Checkland's Soft Systems Methodology (SSM). This technique can be applied when trying to analyse problem-situations that are rich in human (social, political and cultural activity) components. It is a valuable qualitative research method, since it has the possibility of applying systems thinking to a human-interaction system. Additionally, the pictures as created by each participant, did act as a catalyst for further discussion during the group interviews.

4.8.3. Questionnaire

To support the previously selected research approach of quantitative research, NSA employees completed a fully structured questionnaire. Employees were located within all the departments within NSA that are currently communicating with Nissan's global divisions.

A short questionnaire was designed for this research – refer to Appendix 1 for the full questionnaire. It contained the applicable theoretical solutions to the

barriers impeding successful KM. For each question, three separate options (as possible facilitators to KM) were generated. Each option was based on solutions that were previously discussed (refer to section 2.5.1. and section 2.5.2.) in the literature review. Additionally, the possible facilitators to KM were purposefully grouped into the six main categories of facilitators that affect people and organisational barriers (refer to section 2.6.).

The participants ranked each of the possible solutions, regarding their perceived degree of effectiveness in solving the barriers (as identified in the preceding group interviews), on a six point Likert scale.

The survey was a self-completion type document, and was shared with all participants using an internet website. Each participant received an informative e-mail one week before the questionnaire was sent out. One week later, the official web-address was supplied to all through e-mail, requesting them to complete the web-survey. The survey was easy to understand, and relatively short (no more than seventeen items to rank on a 6-point scale).

4.8.4. Recording Data

Creswell (2002) recommended that researchers compile a full record of an interview as soon as it is completed. If the data capturing is delayed, the full meaning (including observations) might be lost to the study. Notes were taken during the group interview sessions. The interviews were also recorded for repeated reflection and deeper listening as part of the research.

Additionally, the "Rich Pictures" that were generated during the group interviews, were also used as a source of data (refer to Appendix 3). During this part of the research, the participants recorded the data in their pictures, while the author compiled a record of the ensuing discussions. The above processes of data recording supported the Phenomenological paradigm or Qualitative research method.

4.9. Data analysis

The analysis of the qualitative data was conducted in line with the method as supplied by Dey (1993):

- The first step relates to developing a thorough and comprehensive description of the subject under study. Dey (1993, p27) calls this "finding the focus" of the research. In this research, the focus will be found through the study of secondary data study.

- Secondly, the data collected through the group interviews (discussions, rich pictures and observations) will be classified into different categories and finally into common trends. Here Dey (1993) strains the use of interactive reading of the data (asking yourself questions based on the data in order to explore it deeper) while also making notes of these questions and the ensuing mental debate.

- Analysing the data can only follow once you are able to identify separate bits of data that can be grouped together. This grouping can be based on commonality, similarity or pre-defined criteria.

The qualitative data, gathered during the group interviews, were grouped based on similarity. After the initial focus group interviews, the collected data was roughly processed and grouped into common categories.

The author employed two iterative feedback sessions in order to feedback to the NSA purchasing group and NSA engineering group individually on the output of the rough data analysis. The purpose of these iterative feedback sessions was to ensure that all information was accurately captured as well as grouped/categorised. The participants also had the opportunity to fine-tune/change/refine any information supplied previously.

Following the individual feedback sessions, the author conducted a more extensive data analysis through the identification of common trends between the two different focus group sessions. As a result of this analysis, a combined feedback session with the NSA purchasing and NSA engineering groups was arranged. The purpose of this feedback session was to ensure that the common

trends that have been identified are true to the original inputs, as well as minimise the possible subjectivity-bias from the perspective of the author.

These common trends were then compared to the previously identified (literature and prior research – see chapter 2) barriers to KM, as identified in chapter two. This enabled the author to draw parallels between the existing literature and the case study reality, calculate a "hit-rate" (how many of the theoretical barriers are perceived in reality), identify possible differing barriers that exist between the different Nissan divisions (from an NSA outwards perspective) and possibly add information to the existing literature.

Data analysis of the quantitative data was based on a statistical tool, namely frequency analysis. By the completion of the fully structured questionnaire, the respondents have ranked the deliberately created facilitators (based on the previously discussed facilitators – see chapter 2) to overcome barriers to KM. This was done to measure their perceived effectiveness in reality on a six point Likert scale. The ranking of each possible solution was summated across all respondents in order to calculate the over-all score for each of the theoretical solutions. As a result, the author was able to indicate which theoretical solutions were perceived to be more successful in breaking the barriers to KM. Additionally, the author was able to identify and quantify the perceived effectiveness of the six main theoretical facilitators to KM.

4.10. Limitations to this research

- Due to the case study research design, the findings of the research are generalisable to a limited extent. Further research, possibly on a more extended basis and on a broader empirical base can be conducted to verify the possible success of theoretical solutions in real-life KM applications.
- The author is part of the global Nissan organisation, and although triangulation was used during this research to minimise the effect of self-bias, it cannot be ignored.
- The literature reviewed as part of this study, certainly does not cover the complete body of knowledge regarding KM and the possible

barriers/facilitators to KM. It is therefore possible that other factors influence KM, and that these factors are not present in this study.

4.11. Chapter Summary

During the preceding chapter, specific choices were made (pertaining to how the research will be conducted) in order to best answer the research questions – as identified earlier in Chapter 3.

These choices included:

- Research philosophy : Phenomenological
- Research approach : Qualitative first, then quantitative
- Research design : Case study
- Unit of analysis : International divisions within global Nissan
- Population : Departments within NSA that take part in global KM activities
- Sampling : Non-probability sample
- Data gathering : Focus groups, then online questionnaire
- Data analysis : Qualitative data - Grouping, categorising, common trends

    Quantitative data – Frequency analysis.

The following chapter (chapter 5) will report the data that was obtained through conducting the research in the manner described above.

Chapter 5: Results

5.1. Introduction

As part of this chapter, the sample used and the results obtained through the qualitative and quantitative parts of the research will be presented. As identified in chapter 3, two research questions required exploration during this research. They are the following:

Research Question 1

What are the perceived barriers to KM (from a NSA outwards perspective) when knowledge is shared to and from NTCE, NTCSEA, and NML?

Research Question 2

Which solutions will have the most perceived value in breaking these barriers to KM?

Research question 1 was explored through the facilitation of the focus group sessions. We will therefore discuss the results under the heading of Focus group interviews (see section 5.2. below).

NSA employees explored research question 2 through the completion of the online questionnaire. We will therefore discuss the results under the heading of Questionnaire (see section 5.3. below).

5.2. Focus group interviews

During the focus group sessions, the actual sample sizes were identified to be the following:

NSA purchasing sample size : N = 7

NSA engineering sample size : N = 13

As part of the first individual focus group sessions with NSA purchasing and engineering, the participants each had to draw a "Rich picture". The purpose of the "Rich picture" was to capture the barriers of towards KM activities that are perceived by the individual participants. Each participant had to discuss his/her "Rich picture" with the group and the ensuing discussions were facilitated by the author.

The results, as discussed below, are

- the common trends that have been identified (between NSA purchasing and NSA engineering) as
- the outcome of the iterative individual feedback sessions, as well as the final combined feedback session.

For a summary table of the focus group interview, please refer to Appendix 2.

5.2.1. People barriers

Culture

It is generally perceived by NSA employees that it is easier to conduct KM activities between West/West culture (Europe and NSA), compared to West/East culture (NSA and Japan). Comments such as the following were common: *"…different ways of thinking and approaching problems. E.g. Japanese men find it difficult to stand on equal footing (from a business perspective) with SA woman".*

Western culture is perceived to be more spontaneous (when compared to Eastern cultures) by NSA employees. It is also possible for the Western culture to hamper KM, since *"…often emotions cloud the real knowledge or learning that can be taken out of a KM process".*

Language

All Nissan staff are aware of the fact that English is the official business language for Nissan. However, this knowledge does not make international communication any easier. As with culture, NSA employees perceive that the communication between West/West is easier *("English capability")* when compared to East/West communication. Since NSA mainly reports to Japan, the following comments were relevant for the study:

"…documents are normally derived from Japanese forms. Translations are not always 100% complete or accurate".

"….. it is difficult to make sense of garbled pieces of translated information…."

Fear - Asking / Sharing

NSA employees perceive that it is possible for eastern cultures to have a fear of making the wrong knowledge available to others, while In NSA incorrect knowledge has been shared without too much of a consequence. General comments from the focus group sessions can be captured by *"…losing face amongst peers…"* specifically relating to the Eastern cultures.

Due to the history of NSA, NSA employees perceive themselves to be "preconditioned" not to communicate directly with their counterparts in NML. Historically, communication was very ineffective and had to be coordinated through a manager or project leader. Recent operational changes pertaining to the functions of regions inside the global Nissan group, requires NSA employees to share knowledge directly with their global counterparts. There is a general fear of asking questions to NML, since it could be possible to expose a less developed understanding or knowledge on the subject at hand.

Experience / Training / Skills

Experience is perceived to be related closely to tacit knowledge, since it *"…is difficult to transfer/learn experience through documents and flow charts…"* This opinion of NSA employees is substantiated by the following example collected during the focus group sessions: *"Japan has On-The-Job-Training (OJT) for their staff to transfer experience. NSA is not so experienced, so we do not know all the history and why's".*

Knowledge is usually gained from other regions by sending selected people from NSA to those regions for specialised training. Once trained, the NSA employee is seen as the subject matter expert and is expected to educate other NSA staff through sharing the new knowledge. The focus group coined the phrase of *"multi-stage knowledge transfer"* for this type of activity. It is perceived to be unfair to expect the newly trained staff member to be an expert on the subject as well as capable of teaching other employees.

The focus group pointed out that there are differences between learning and training. *"Training can be seen as a new skill, while learning can be seen as attaining new knowledge".* It was also the opinion of the focus group that NSA staff are currently experiencing more training than learning, as part of their daily functions. General perception by NSA staff also indicates that people in corresponding job levels in the international divisions are higher qualified than NSA staff – *"linked to intake requirements".* Difference in general schooling levels are perceived - higher standard internationally compared to local.

One-directional sharing

NSA employees feel that they are reporting their knowledge/information to NML (mother company), but they are not getting the transaction returned in the form of knowledge sharing/transfer from NML back to NSA. *"…we keep on reporting our design note status for our parts…....receive no design notes or information for the parts they are responsible for…"*

Selective sharing

During the focus group sessions, both NSA purchasing and engineering highlighted that they practice selective sharing of information between themselves and their global counterparts. However, the motivations behind this choice differ between the departments.

Purchasing found it much *"easier and more relevant"* to share explicit knowledge, so the scales are constantly tipped to that side.

When engineering communicate with international divisions, selected knowledge/information is shared with the purpose of *"keeping the focus"* on the problem at hand and *"limiting the scope"* of investigation/answer. It is perceived that people belonging to the Eastern culture want to have all knowledge/information available for their study before they try to answer or get involved. Selective sharing of knowledge/information is perceived to cause friction.

Trust - differing levels

Various issues related to trust were identified during the focus group sessions. These issues were mainly concentrated around trusting people with information, rather than trusting people to take part in KM activities. *"… who is the new guy? (under job rotation conditions) Can I trust his information?"* and *"…. Who is this supplier? I do not trust his capability….."* are relevant comments from the sessions.

However, it is recognised that trust takes a long time to develop and that mutual trust is required to facilitate KM activities.

Job protection - not natural to share valuable knowledge

Participants perceive that it is possible for individuals to try to keep their knowledge for themselves. The accepted argument is that that person should remain *"important"* to the company as long as he/she is the sole owner of that specific knowledge, i.e. "*once the knowledge is shared, I can be replaced"*. The focus group also discussed the possibility of this occurring on an individual level as well as the extension of this occurrence to divisional/regional level.

Time

Due to the time zone differences that exist between the regions within Nissan, it is perceived that KM activities between these regions take up too much time – *"especially with time zone differences, KM is difficult…"* This perception is dependant on the differences in time zones – so it is not too critical for KM activities between NSA and NTCE.

Another factor affecting time and KM activities is linked to *"not sharing the same goals"* and not understanding the *"urgency of information"* that is required.

5.2.2. Organisational barriers

High levels of competition (inter departmental and regional)

NSA employees perceive that the old Nissan business plan "*called for huge savings/financial performance*". Financial targets caused internal (within global Nissan) competition, which can be good for business but not so good when it comes to KM activities.

The latest Nissan business plan states growth and trust to be the main pillars for Nissan continued growth, but NSA employees have questions regarding "*…how to make it happen?*" as well as "*How will performance be measured?*" Even within NSA, there is internal competition for performance. "*Why share knowledge?*"

Incentive scheme - not used / in effective

Discussions centred on measurements and performance areas. NSA staff are of the opinion that they will focus their performance on the areas where they are measured. "*KM - or even increase in knowledge - is difficult to measure. How will incentive scheme reward/recognize performance?*" The opinion is shared that an applicable reward/recognition system will necessarily change their behaviour towards KM.

Tools/Technology/Company directory

Tools:

There are global tools in use by NSA employees. However, feedback from the group sessions indicate that, "*Some tools exist, but not used effectively due to lack of training*". Additionally, global information tools exist inside Nissan, but they are mostly not applied to NSA – possible due to language/cost issues.

Information databases (also referred to as "*knowledge dumps*") and existing data portals are overpopulated with "*old and useless*" information. *There is no clear responsibility for maintaining the information or keeping the information relevant. It is hard to* "*sort the value from the garbage*" *and access the correct knowledge at the correct time.*

Knowledge transfer from the global counterparts occasionally are mismanaged and results in the dumping of knowledge to NSA without any explanation of the purpose of the information or transfer of the know-why. *"How can you teach yourself?"* is a valid question that was discussed from/within the group. NSA employees realise that the successful roll out of knowledge is critical - but not managed properly *("G2B roll-out was much smoother and more complete when compared to the ANPQP roll-out"*).

Technology:

Since geographical distance (resulting in a time difference) has been identified as a problem for successful KM, it is the opinion of the focus group that technological tools can be employed to make KM activities easier. *"…possibly use face-to-face discussions to transfer knowledge through using the internet."* This comment referred to alternative ways of knowledge transfer – other than the normal data-portals or knowledge repositories.

Company directory:

In general, NSA employees seem to use the company yellow pages when they need to find specific contact information. However, it is *"Difficult to find exactly what you are looking for if you do not know the exact name and division of the person".* Also, the comment of *"company directory is good - needs specialist area for each person"* indicates a requirement for a company database that is more focussed on areas of expertise or knowledge clusters.

Systems

In many cases, the official systems are perceived to hinder successful KM. Comments like, *"Global systems for information/knowledge should be standardised"* point to current mismatch in applied information systems throughout Nissan. The general opinion is that common systems already exist in Nissan, but are not employed in NSA. A comment by one of the participants was of extreme relevance: *"What will NSA get out of these systems without a drive for KM?"* The relevance of this question will surface as part of the following chapter. Additionally, it is the opinion that the various organisations and

organisational objectives are structured in a silo manner, without employing "*common processes or procedures*".

Trust - differing levels

Various issues related to trust were identified during the focus group sessions. These issues were mainly concentrated around trusting people with information, rather than trusting people to take part in KM activities. *"… who is the new guy? (under job rotation conditions) Can I trust his information?"* and *"…. Who is this supplier? I do not trust his capability….."* are relevant comments from the sessions.

However, trust can be developed or halted at a regional or even divisional level. It is therefore important for the organisation to lead the way to mutual trust on a macro level.

Time

Due to the time zone differences that exist between the regions within Nissan, it is perceived that KM activities between these regions take up too much time – *"especially with time zone differences, KM is difficult…".* This perception is dependant on the differences in time zones – so it is not too critical for KM activities between NSA and NTCE.

Company complexity

NSA faces local leadership changes (at various levels) on a constant basis. *"When a new leader puts down a new direction, it is difficult to keep focus on KM"*, ringed true for all participants in the focus group. Since the new direction of leadership might be different from your current direction, *"…you must now also change your direction".* The perception is that if the global business plan is to measure KM (or anything else), the performance of the company will move the focus to that measurement area.

Due to the complexity and various different development phases of the regions, it is perceived that *"experienced regions have access to much more knowledge than NSA".* In these more experienced regions, the value of their existing knowledge (to other less developed regions) is often not realised by the owners - so why try to share this knowledge with the other regions.

Expectations - What do you want to achieve? Is it shared?

In most cases, NSA employees are of the opinion that knowledge is required to meet a certain objective. These objectives are seldom common across the various internal/international divisions – so the urgency to achieve the objectives is not shared. Each region has own set of performance related goals and measures. These goals are not always in synchronisation or matching in scope or scale. *"Why support certain request with urgency if we do not know the reason…"* is a comment repeated by NSA staff after hearing it from some of the other region's employees.

Organisational structure

There exists a general feeling that other regions have more staff at their disposal in order to do the same amount of work. The perception is that these employees therefore have more time available to them towards attaining new knowledge. Selected other regions have *"dedicated departments for training/knowledge access"* that support the departments' core functions.

Employees have voiced the opinion that the hierarchical structure of Nissan divisions sometimes makes it difficult to *"access to relevant knowledge without getting the approval of some higher authority"*. There are obvious reasons for the chain of command and information security, but in most cases, these rules should not apply for shared and common KM activities.

5.2.3. Qualitative observations

Both initial focus group sessions with NSA purchasing and NSA engineering were held in the same venue. The group sizes were slightly different (N= 7 for purchasing and N = 13 for engineering), but facilitation of the sessions were not compromised by this.

In both group discussions, the use of "Rich pictures" resulted in some sense of surprise from the participants. After an explanation of the rationality behind the method, the participants enjoyed drawing the pictures as well as the ensuing discussions based on the various different aspects that were highlighted in the pictures.

During the initial data analysis of the individual group sessions, it became apparent that there were definite common themes that were identified by both purchasing and engineering. However, subtle differences exist in the underlying motivations for specific common trends. It is important to note these differences for later discussion as part of chapter 7.

Generally, the atmosphere of the discussions was different between purchasing and engineering. The group session with purchasing had a more open, enquiring atmosphere that facilitated good group participation, and stimulating discussions.

On the other hand, the group discussion with engineering had a more subdued and defensive atmosphere. This resulted in the perception of the author that the discussions were not as open and stimulating, when compared to the purchasing discussion. This is possibly due to the daily involvement of the author in the engineering department and engineering related matters. None the less, both engineering and purchasing group focus sessions contributed valuable pieces of information for further exploration as part of the questionnaire. The common trends that were identified during the initial qualitative part of the research (as discussed above), formed the basis for the following discussion on the questionnaire.

5.3. Questionnaire

After the online completion of the questionnaire, the following sample size was achieved:

Highest sample size for any question   :   N = 81
Lowest sample size for any question   :   N = 52

The raw data from the completion of the questionnaire was processed to yield the below results. A frequency analysis for each answer-option was conducted per individual question. This analysis was combined with an average rating for each of the answer-options to yield the below summary information per question.

5.3.1. General information

Table 5: Departmental participation

I am employed in the following department inside NSA:		
Answer Options	**Response Percent**	**Response Count**
Product Engineering	28.4%	23
Purchasing	28.4%	23
Finance	8.6%	7
SCM	6.2%	5
Manufacturing	2.5%	2
Quality	7.4%	6
Human Resources	9.9%	8
DCC	1.2%	1
Program Office	2.5%	2
Marketing	3.7%	3
Other	1.2%	1
answered question		81
skipped question		2

Table 5 indicates the results of the first question in the questionnaire. Participation spreads over eleven departments in NSA. This question was completed by 81 employees and had a forced ranking setting, whereby each participant in the research could only choose a single department as the direct employer. NSA product engineering and NSA purchasing (46 people) employ the majority of participants.

Question 2 in the questionnaire related to the KM activity levels of the employee – specifically to the countries that are involved in the employee's KM activities. This question was open for more than one answer, since it is possible to communicate with more that one of the divisions simultaneously. Table 6 indicate that the most KM activities are communicated between NML and NSA.

Table 6: Communication regions

I communicate / have communicated with the following international Nissan regions:		
Answer Options	**Response Percent**	**Response Count**
Nissan Thailand (NTCSEA)	27.5%	22
Nissan Japan (NML)	88.8%	71
Nissan Europe (NTCE)	48.8%	39
NONE	11.3%	9
answered question		80
skipped question		3

Eleven percent of the participants did not take part in any KM activities between the international divisions that form part of this study. At the end of question four in the questionnaire, these participants were thanked for their participation and exited the questionnaire automatically. This was done in order to minimise any data that could affect the results of the actual questionnaire.

Table 7 indicate the answers regarding the frequency of communication between the participants and the selected divisions (as in Table 6). Again, participants that did not communicate with any divisions were eliminated from the rest of the questionnaire.

Table 7: Frequency of communication

I communicate with the above selected regions at least:		
Answer Options	Response Percent	Response Count
Once a day	13.6%	11
Once a week	42.0%	34
Once a month	27.2%	22
Once a quarter	3.7%	3
Once a year	3.7%	3
NEVER	9.9%	8
answered question		81
skipped question		2

5.3.2. People barriers

Each of the tables below reflects the answers to questions 4 to 12 of the online questionnaire. Each of the answers/facilitators was generated from the reviewed literature (as per section 2.5. in this document). The rating average (minimum of 1 and maximum of 6) for each of the facilitator options was calculated and is reported in the tables below.

Table 8 reflects the answers of question 4 as part of the questionnaire.

Table 8: Cultural barrier

Different cultures seem to have different ways of thinking and problem solving. Some cultures are perceived to be more spontaneous/emotional, while others might be more conservative/un-emotional. These differences impacts on knowledge management activities. Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the CULTURAL barrier:								
Answer Options	**Will make things a lot worse**	**Will make things slightly worse**	**No change**	**Slight improvement**	**Improvement - but not fixed**	**Completely fixed the problem**	**Rating Average**	**Response Count**
Creating a new (globally common) culture – based on the "Nissan Way"	0	1	8	10	36	6	4.622951	61
Fostering a global culture on divisional level. I.e. a culture for global finance and another culture for global HR.	5	6	12	13	23	2	3.803279	61
All different cultures should understand/acknowledge/respect each other rather than deny/ridicule/condemn each other	0	0	2	14	32	13	4.918033	61
						answered question		61
						skipped question		22

- Table 8 indicates that NSA employees perceive that a better understanding and awareness of cultural differences will have the greatest impact (rating = 4.92) in breaking the cultural barrier to KM.

- The second greatest impact (rating = 4.62) on the cultural barrier is perceived to be the creation and adoption of a global Nissan culture for all divisions.

Table 9 reflects the answers of question 5 as part of the questionnaire.

- This table indicates that NSA employees perceive that the building of relationships with their global counterparts will almost solve (rating = 5.18) the language barrier to KM.

- Understanding and recognising the cultural differences that do exist within the various divisions are perceived to be the second most effective facilitator to KM - within the sphere of culture as a barrier to KM.

Table 9: Language barrier

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
Dealing with different people around the world, you have to deal with various languages. *Language has been identified as a barrier to knowledge management.* *Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the LANGUAGE barrier:*								
Training yourself, or arrange to be trained, in a foreign language	1	4	4	25	22	4	4.25	60
Understanding/recognising the differences in language capabilities and adjusting your activities accordingly	0	1	7	15	31	4	4.517241	58
Building a relationship with your counterpart that could facilitate more informal communication	0	0	0	2	46	13	5.180328	61
answered question								61
skipped question								22

Table 10 reflects the answers of question 6 as part of the questionnaire. This question addressed the fear barrier to KM. The perceived effectiveness of all three possible facilitators was ranked close together:

- Mutual trust was ranked as the top barrier breaker (rating = 4.79) and
- Clear company guidelines were ranked as a close second (rating = 4.73).

Table 10: Fear barrier

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
People use knowledge in different ways and with different motivations. Some fear to share because their knowledge is their power, while others fear to share because they are afraid of making a mistake. *Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the FEAR barrier:*								
Building all knowledge management activities on the basis of mutual trust	0	2	3	11	31	11	4.793103	58
Establishing clear company guidelines as to what/when/how/how much knowledge to share	1	2	3	12	30	12	4.733333	60
Sharing knowledge first with local organisation, and only make globally available if accepted	1	3	12	9	28	7	4.35	60
answered question								61
skipped question								22

Table 11 reflects the answers of question 7 as part of the questionnaire. NSA employees ranked the possible facilitators towards breaking the Experience/Training/Skills barrier to KM.

- NSA employees perceived that through taking part (and increasing their competency levels) in KM should be the best solution for this perceived barrier to KM (rating = 4.86)
- The perceived value in changing their own (NSA employees) perception about their skill levels was ranked as the second most effective facilitator.

Table 11: Experience/Training/Skills barrier

Within the global Nissan group, people have attained different levels of experience, training and skills. It is generally perceived by NSA staff that our global counterparts are more qualified, experienced and trained compared to us. This perceived mismatch has a negative impact on knowledge management.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the EXPERINCE/TRIANING/SKILLS barrier:

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
Using knowledge management as a tool to change these perceptions	0	0	4	20	29	5	4.603448	58
Attaining the same level of experience, through access to global knowledge	0	0	4	13	28	13	4.862069	58
Changing the way we think about ourselves. Instead of seeing us as "behind" regarding experience, possibly see ourselves as "in training"	0	0	8	14	25	13	4.716667	60
						answered question		60
						skipped question		23

Table 12 reflects the answers of question 8 as part of the questionnaire. This question related to the barrier of single direction KM activities.

- NSA employees ranked the building of ties with their global counterparts, to be perceived as the most effective facilitator for this barrier to KM.
- The second most effective facilitator was perceived to be a change in the internal perception of themselves (NSA employees).

Table 12: Single direction KM barrier

NSA staff perceive that they "report" to NML/THI/NTCE regarding their activities and performance, but no real value is returned from these regions to NSA - in the sense of knowledge that will assist NSA staff. This occurrence could lead to one directional knowledge management activities.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the SINGLE DIRECTION KNOWLEDGE MANAGEMENT barrier:

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
Changing our internal perception from "reporting" to others to "a learning opportunity" with others	0	0	6	22	24	7	4.542373	59
Aligning "reporting" and "learning" in our knowledge related activities	0	1	8	26	20	3	4.275862	58
Building ties with reporting window persons globally, in order to use these ties later for access to knowledge	0	0	3	7	40	8	4.913793	58
						answered question		59
						skipped question		24

Table 13 reflects the answers of question 9 as part of the questionnaire.

- NSA employees ranked strong management of the KM process to be perceived as the most effective facilitator to the barrier of selective sharing.
- Supporting the new Nissan business plan of growth and trust is perceived to be the second most effective facilitator.

Table 13: Selective sharing barrier

Global staff generally seems to find it less cumbersome to share "easy" knowledge (processes, tables, flow-charts). People also tend to limit the information shared between international regions - in order to limit scope and investigations. Selective sharing has a direct impact on the success of knowledge management.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the SELECTIVE SHARING barrier:

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
Sharing all information freely – supporting the new business plan (GT2012) of growth and trust	0	1	4	9	33	11	4.844828	58
Realising that our opportunity for learning is limited by the sharing of limited or selective pieces of information – and changing our actions	0	1	9	15	28	5	4.465517	58
Strong management/leadership at both sides of the knowledge transaction is required to make full knowledge sharing possible	0	0	1	9	29	20	5.152543	59
						answered question		59
						skipped question		24

Table 14 reflects the answers of question 10 as part of the questionnaire. This question specifically addressed trust in KM activities.

- Perceived to have the greatest impact on overcoming the trust barrier, focused group activities was ranked to be the most effective.
- Institutionalising all KM activities as part of the daily operations was perceived to be second most effective in breaking the trust barrier.

Table 14: Trust barrier

Mutual trust is essential for successful knowledge management. Can international regions be trusted with sensitive knowledge? Is the information I have received true/accurate/valid? Successful knowledge management cannot take place without mutual trust.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the TRUST barrier:

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
Institutionalising all knowledge management activities – it must happen	0	3	3	17	29	6	4.551724	58
Sharing knowledge – as part of a dedicated focus group – will make trust grow much faster	0	1	2	10	36	9	4.862069	58
Sharing knowledge first with local organisation, and only make globally available if accepted	1	5	10	14	25	4	4.169491	59
						answered question		59
						skipped question		24

Table 15 reflects the answers of question 11 as part of the questionnaire. In rating the perceived effectiveness of breaking the Job protection barrier to KM, NSA staff ranked internal perception changes as the most effective barrier breaker.

Table 15: Job protection barrier

Sharing hard earned and valuable knowledge is not perceived as a natural activity. Many people will not share their knowledge, since knowledge = power. Through not sharing their knowledge with others, they seem to think that they protect their job. This unwillingness to share valuable knowledge stops successful knowledge management activities.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the JOB PROTECTION barrier:

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
Trusting that the organisation is aware of your actual value, even after you have shared all you knowledge	2	2	6	16	26	6	4.37931	58
Seeing the possibility of building your own knowledge by sharing/learning with/from others that take part in knowledge management activities	0	0	3	15	33	8	4.779661	59
Realising that through taking part in knowledge management activities, your status in the organisation would change (positive or negative)	1	1	8	11	27	10	4.586207	58
						answered question		59
						skipped question		24

Table 16 reflects the answers of question 12 as part of the questionnaire.

The perceived effectiveness of all three the proposed facilitators were quite evenly rated by NSA employees.

- The alignment of all regions commitments and targets by top management was ranked the most successful, with
- Time management and planning adaptation to the status quo as a close second and
- Implementing KM as a standard performance measure (globally) in a close third place ranking.

Table 16: Time barrier

Staff perceive that there is not enough time to conduct successful knowledge management. This is amplified by the time-zone differences between the various regions. Since there is perceived to be a limited alignment of regional goals, the urgency to support a request (at a specific time) is also not shared.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the TIME barrier:

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
Making knowledge management a standard performance measure on a global level	1	3	8	16	26	4	4.293103	58
Top management aligning the commitments and targets for all regions that are dependant on each other for support/knowledge	1	2	3	18	27	8	4.559322	59
Changing your time management style and expectations from global support and planning accordingly	0	4	8	19	20	7	4.310345	58
						answered question		59
						skipped question		24

5.3.3. Organisational barriers

Each of the tables below reflects the answers to questions 13 to 21 of the online questionnaire. Each of the answers/facilitators was generated from the

reviewed literature (as per section 2.5.). The rating average (minimum of 1 and maximum of 6) for each of the facilitator options was calculated and is reported in the tables below.

Table 17 reflects the answers of question 13 as part of the questionnaire. The facilitator with the highest ranking of perceived success relates to Nissan becoming a learning company.

Table 17: Competition barrier

Previous Nissan Business plans called for high financial performance from all regions. This caused a feeling of competition between regions - and even internally to NSA. Competition is good for financial performance, but not so good for knowledge management (people/divisions are perceived to maintain their competitive advantage though not sharing their knowledge).

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the COMPETITION barrier:

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
Aligning regional goals to facilitate externally focussed competition – rather Nissan vs. Toyota than NSA vs. NTCSEA	1	2	4	10	25	9	4.627451	51
Nissan becoming a "learning" company	0	1	4	9	28	9	4.784314	51
Management creating a synergetic environment for knowledge management – each employee would have access to the maximised return of all employees' knowledge	1	0	2	14	29	5	4.666667	51
						answered question		51
						skipped question		32

Table 18 reflects the answers of question 14 as part of the questionnaire. The most effective facilitator to KM was perceived to be the recognition of any training or experience gained through KM activities as part of the company's incentive scheme.

Table 18: Incentive barrier

It is perceived that people will perform in the areas that they are measured. NSA does have a staff incentive scheme, but it does not seem to be effective. I.e. how to measure the success of knowledge management? How does our incentive scheme recognise and reward my knowledge performance?

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the INCENTIVE barrier:

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
Clearly stating incentives and possible consequences/rules for taking part in knowledge management activities	1	2	4	19	21	5	4.384615	52
Linking/Aligning knowledge management activities to business drivers	0	0	4	16	26	5	4.627451	51
Training/Experience gained from taking part in knowledge management to be recognised by the organisation	0	2	1	11	31	7	4.769231	52
						answered question		52
						skipped question		31

Table 19 reflects the answers of question 15 as part of the questionnaire. The adequate allocation of resources/tools/technology for the purpose of KM by top management was perceived to be the best facilitator for KM – within the sphere of the tools/technology barrier.

Table 19: Tools/Technology barrier

Tools and technology are used to a great extent to maximise knowledge management results. However, in NSA it is perceived that we have limited access to the global information tools and technology. A global company directory does exist (in order to access the people with relevant information) but is not seen as useful unless you know the full [name+surname+division] of the employee you want to contact.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the TOOLS/TECHNOLOGY barrier:

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
Top management allocating adequate resources to support knowledge management with the latest tools and technology	0	0	2	13	30	8	4.830189	53
Aligning knowledge management with organisational goals/strategy	0	0	5	11	29	7	4.730769	52
The organisational structure making room for a dedicated knowledge management section	1	1	6	14	22	8	4.519231	52
						answered question		53
						skipped question		30

Table 20 reflects the answers of question 16 as part of the questionnaire. To overcome the time barrier, NSA employees ranked the institutionalising of KM into their daily activities as the best facilitator.

Table 20: Time barrier

Many people feel that the organisation does not support them regarding the amount of time available for them to extend their knowledge base.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the TIME barrier:

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
Organisation clearly defining the scope/cost/time to spend on knowledge management – with the expected results	0	1	8	20	20	3	4.307693	52
Only taking part in knowledge management activities when real value can be expected as a result – allocating resources according to value	0	2	4	20	22	4	4.423077	52
Making knowledge management part of my normal function and institutionalising the activities globally	0	0	2	19	24	8	4.716981	53
						answered question		53
						skipped question		30

Table 21 reflects the answers of question 17 as part of the questionnaire. NSA employees perceive two facilitators to be of equal importance in order to overcome the systems barrier to KM. These two facilitators are:

- Global alignment of goals and systems and
- Dedicated departments in each region that should be responsible for KM activities.

Table 21: Systems barrier

In many cases, the "official" system is perceived as a negative influence on knowledge management. These systems are not common to all regions and information must be moved from the local system to the global system (if available at all). We do not seem to use common processes and procedures to set goals amongst regions (silos).

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the SYSTEMS barrier:

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
Top management aligning goals and employing common systems on a global level	0	1	4	14	24	6	4.612245	49
Each region having its own department that is responsible for knowledge management – all using common systems	0	1	5	12	25	6	4.612245	49
Building your own friendship-ties (strong/weak) globally in order to use these people as key contacts, instead of the system	0	3	6	11	27	5	4.480769	52
						answered question		53
						skipped question		30

Table 22 reflects the answers of question 18 as part of the questionnaire. The most successful (perceived) facilitator towards KM (under the umbrella of the organisational trust barrier) was ranked to be a consistent drive and leadership from the organisation towards KM.

Table 22: Organisational trust barrier

Trust - at an organisational level - is perceived to influence the success of knowledge management. The new Nissan BP (GT2012) calls for Trust to be one of the main pillars for Nissan's continued success globally. NSA is a new player in the global field, and trust takes a long time to earn from others.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the ORGANISATIONAL TRUST barrier:

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
The structure/incentive scheme of the organisation is to be changed	0	0	7	21	20	4	4.403846	52
Management "walking-the-talk"	0	0	0	18	27	8	4.811321	53
The organisation to lead in a consistent and collaborative drive towards knowledge management	0	0	1	14	28	9	4.865385	52
						answered question		53
						skipped question		30

Table 23 reflects the answers of question 19 as part of the questionnaire. When trying to overcome the Company culture/complexity/leadership barrier, NSA employees perceive that the most effective facilitator would be to link KM objectives strategically to the organisation's business plan.

Table 23: Company complexity/Leadership barrier

Top management in NSA changes on a regular basis (approximately every 4 years). With new leaders, comes new directions and areas of focus. The global structure and culture of the Nissan organisation is perceived to be very complex. These changing directions, the company culture and complexity could have an impact on the success of knowledge management activities.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the COMPANY CULTURE/COMPLEXITY/LEADERSHIP barrier:

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
Organisational goals/direction remaining unchanged through leadership change	1	6	9	13	18	5	4.076923	52
Knowledge management objectives linking directly to the strategy supporting the organisational business plan	0	0	6	16	28	3	4.528302	53
A dedicated knowledge management	1	2	6	15	21	7	4.423077	52
						answered question		53
						skipped question		30

Table 24 reflects the answers of question 20 as part of the questionnaire. Here NSA employees perceive that common and focussed KM activities have the ability to overcome the mismatched expectations barrier to KM.

Table 24: Mismatched expectations barrier

Due to the perception of non-matching goals and targets between global divisions, the expectations pertaining to the results from knowledge management activities, differ greatly. This mismatch causes a misalignment of priorities, which can lead to limited knowledge management success.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the MISMATCHED EXPECTATIONS barrier:

Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
Developing a global knowledge management strategy to support the new GT2012 business plan	0	0	4	21	20	8	4.603774	53
Matching goals and incentives for regional knowledge management departments	0	0	5	17	25	5	4.576923	52
Developing common/focussed knowledge management activities, rather that broad/general activities	0	0	1	16	24	10	4.843137	51
						answered question		53
						skipped question		30

Table 25 reflects the answers of question 21 as part of the questionnaire. An organisation that is open to employees with new ways of operating is perceived to be the best facilitator to KM when referring to the barrier of organisational structure.

Table 25: Organisational structure barrier

| It is generally perceived that the global Nissan structure is very complicated. The hierarchical structure is also perceived as an impediment to successful knowledge management (permissions and approvals required). Other regions have dedicated people responsible for knowledge maintenance and training.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the ORGANISATIONAL STRUCTURE barrier: | | | | | | | | |
Answer Options	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem	Rating Average	Response Count
Building informal professional relationships (external/internal) to open knowledge channels	0	0	3	13	32	4	4.711538	52
Managing knowledge as a stated and measured activity inside Nissan	0	0	5	14	29	4	4.615385	52
An organisation that is open to employees with new ways of operating	0	0	2	11	31	7	4.843137	51
						answered question		52
						skipped question		31

Figure 7 and Figure 8 summarise the perceived effectiveness of the six main categories of facilitators – as discussed in section 2.5.1. and section 2.5.2. Each of the three possible solutions per individual question was directly linked to one of the six main facilitator categories. The highest-ranking answer per question received a score of three, the second highest ranked solution received a score of two and the lowest ranking facilitator received a score of one. Through the summation of these scores for each of the six main facilitator groups, Figure 7 was created for the three main people related facilitators and Figure 8 was created for the three main organisational related facilitators.

Figure 7: The perceived importance of the three main people related facilitators

68
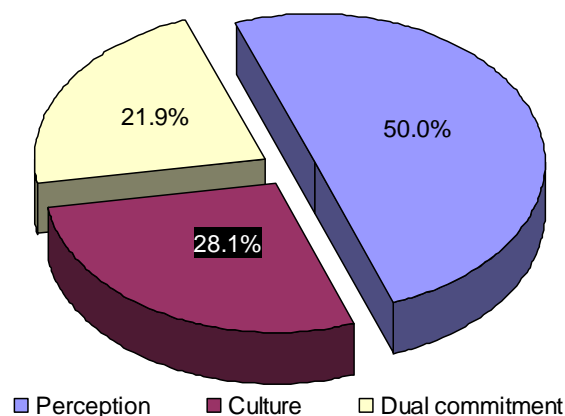
Figure 8: The perceived importance of the three main organisational related facilitators
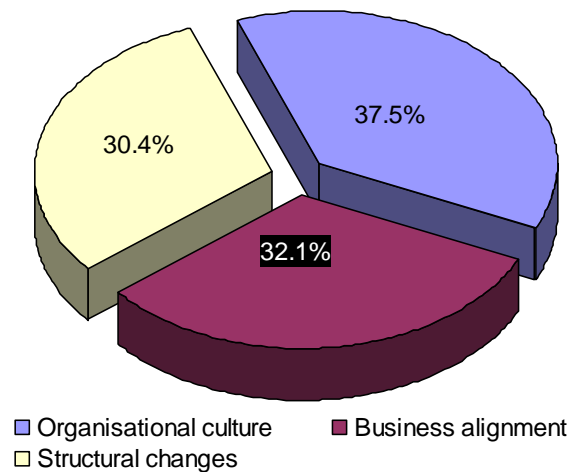
The above data clearly illustrates the different levels of perceived effectiveness of the six main facilitators in breaking the barriers towards more successful KM activities.

5.4. Chapter Summary

During this chapter, the gathered data was reviewed. The data exist in two main forms, namely qualitative data (focus group sessions) and quantitative data (the questionnaire). These two separate forms of data support the two research questions (as per section 3.2.1. and section 3.2.2.) and successfully identify the barriers and perceived facilitators to KM from the perspective of NSA employees.

The following chapter will discuss the results in more detail – specifically addressing the two research questions.

Chapter 6: Discussion of results

6.1. Introduction

This chapter aims to discuss the relevance of the acquired data (chapter 5) in relation to the reviewed literature (chapter 2). The discussion has the definite purpose to answer the two research questions, as posed in section 3.2.1. (Research Question 1) and section 3.2.2. (Research Question 2). During this discussion, the process of deductive reasoning (as discussed in chapter 4) will be employed in order to facilitate a clear understanding of the real content of the captured data.

6.2. What are the perceived barriers to Knowledge management?

In order to answer this research question, separate focus group sessions were arranged with employees from the NSA product engineering and NSA Purchasing departments. The focus group discussions were semi-structured and centred around the "Rich pictures" that each participant had to draw during the session.

As a result, the following discussion is based on qualitative data, author notes combined with an in depth qualitative study of the information through trend, category, content and frequency analysis.

6.2.1. People related barriers

Following the analysis and comparison of the people related barriers, as identified in the literature review as well as the group focus sessions, the Table 26 was formulated.

At first glance, Table 26 seems to represent a large degree of commonality between the literature review/previous research and the focus group sessions discussions.

Table 26: People related barriers (literature vs. group sessions)

NSA Staff people related barriers	Literature people related barriers
Culture	Culture
Language	Language
Time	Time
Selective sharing	Preferential sharing
Trust - differing levels	Trust
One-directional sharing	Literature classifies as organisational related barrier, but can also be people barrier
Job protection - not natural to share valuable knowledge	Value identification
Fear - Asking / Sharing	-
Experience / Training / Skills	-

In reality, the barriers to KM, as identified by the NSA employees, match all of the people barriers as identified in existing literature and prior research. However, NSA employees have identified two additional barriers that do not match with the reviewed literature.

During the analysis of the qualitative data as well as the relevant literature, two main categories were identified that encapsulate the remaining seven barriers (nine people barriers in total). The following discussion will focus mainly on these two major categories.

6.2.1.1. Culture

It is possible to write a complete research report on the impact of culture on KM activities alone. This is not the aim of this research report. However, culture has been identified as an important barrier to successful KM activities and has an impact on many of the other barriers to KM. As examples, culture will have an indirect influence on the language (Nonaka & Takenuchi, 1995), time (Probst *et al.*, 2000) and value identification/job protection (Davenport and Prusak, 1998) barriers to KM, since all these aspects are influenced by the culture of the individual.

The focus group sessions highlighted a distinct difference between the cultures of the employees at NSA, when compared the cultures of the Eastern Nissan divisions. The factors that influence KM activities and relate to culture (see Figure 4), can be brought into the discussion with a high degree of accuracy. As

per the work done by Hofstede (1980) as well as Kaweevisultrakul and Chan (2007), there are various factors within culture that can be different from one country to another.

They are:

- The influence of culture on the perceived usefulness/importance/validity of the knowledge.
- Individual/Organisational control of knowledge
- Power distance
- Individualism
- Collectivism
- Uncertainty avoidance
- Masculinity/Femininity

It is noteworthy that the NSA employees did not experience the same cultural barriers when conducting KM activities with employees in/from NTCE.

Based on the group discussions, informal separate discussions and the qualitative data analysis the opinion was formed that culture also played a role in the development if the two unique NSA (not reviewed in the literature) related barriers – namely the barriers of fear and experience/training/skills. During the group discussions (see section 5.2. - Focus group interviews), comments in the general discussion formed this opinion. NSA employees perceive themselves to be "preconditioned" not to communicate directly with their counterparts in NML. Historically, communication was very ineffective and had to be coordinated through a manager or project leader. Recent operational changes pertaining to the functions of regions inside the global Nissan group, requires NSA employees to share knowledge directly with their global counterparts. From the group discussions, it became apparent that there is still a lingering fear (barrier) of asking questions to the international division, since it could be possible to expose a less developed understanding or knowledge on the subject at hand. This fear is not necessarily real, but could be a remaining artefact of the previous culture that was imposed on individual employees. The same argument can be applied to the perceived barrier of Experience/training/skills.

6.2.1.2. Trust

Another major barrier to KM activities relates to trust (Husted and Michailova, 2002) and mutual understanding of reciprocity Davenport and Prusak (1998). Trust takes a long time to develop (De Long and Fahey, 2000) and it is not always possible to spend the required resources and time to develop trust over long distances. Based on the common trends that were identified during the group sessions, trust is perceived to have an effect on the levels of preferential/selective sharing, as well as the prevalence of one-directional sharing of knowledge.

When there is an absence or even undeveloped trust involved in KM activities, people are perceived to choose what kind of knowledge will be safe/acceptable for sharing. Not all knowledge can be shared freely under these conditions. In other cases where trust levels are not developed equally, knowledge sharing will most likely transpire from the participant where trust is more developed. The participant with a lower level of trust will share less knowledge freely. This leads to one-directional sharing of knowledge – and can be likened to reporting knowledge, rather than sharing knowledge.

To summarise, the research have identified all the reviewed theoretical people barriers as part of the case study on NSA. The focus group discussions and the literature review guided the arguments towards the identification of two main classifications of the people barriers to KM activities (see Figure 9). The ideal conditions for KM is indicated to be the place and time where there are none of the people related barriers to KM present. Of course, this is the ideal situation and it is not always attainable, but the model clearly indicates what aspects must be addressed to aim for this ideal condition.

Figure 9: People barriers (model)

Ideal required conditions for
succesful KM activities
(no people barriers present)
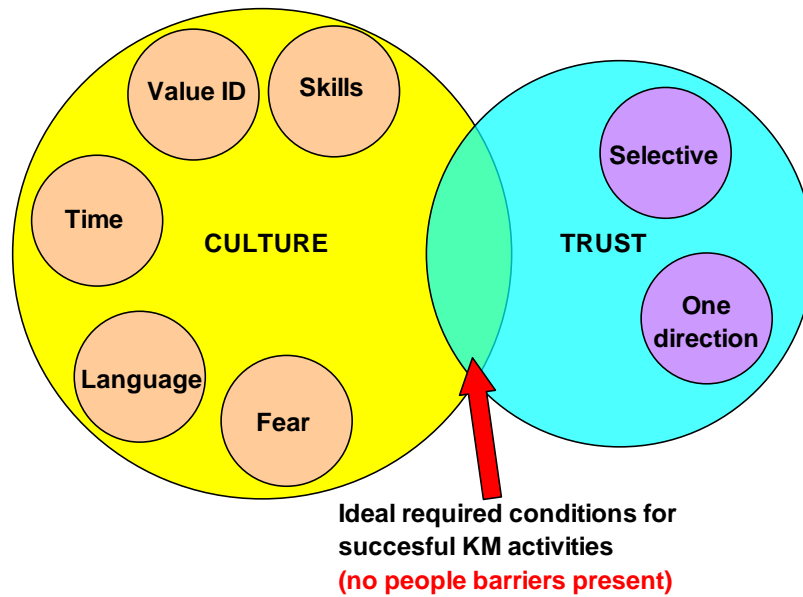
6.2.2. Organisational related barriers

Following the analysis and comparison of the organisational related barriers, as identified in the literature review as well as the group focus sessions, the below table (Table 27) was formulated.

Table 27 represents a complete match between the literature review and the focus group sessions discussions.

Table 27: Organisational related barriers (literature vs. group sessions)

NSA Staff organisational related barriers	Literature organisational related barriers
Organisational structure	Organisational structure
High levels of competition	Competition
Culture complexity	Organisational culture
Incentive scheme	Reward and recognition
Leadership complexity	Top management support
Company complexity	Strategy alignment
Time	Allocation of resources
Systems	Allocation of resources
Tools/Technology/Company directory	Allocation of resources
	Staff turnover
Identified as people related barrier by NSA employees	One directional knowledge management
Non matching expectations	The power of management.

During the analysis of the qualitative data as well as the relevant literature, two main categories were identified that encapsulate the remaining ten barriers

(twelve organisational barriers in total). The following discussion will focus mainly on these two major categories.

6.2.2.1. Strategy alignment

Throughout the research, both the literature review as well as the focus group sessions, the importance of the alignment of the organisation's business strategy and the KM strategy has surfaced on a frequent basis. Based on the qualitative analysis applied to the focus group sessions (including the "Rich pictures"), the organisational barrier of strategy alignment lies as foundation for seven other organisational barriers. By implication, the importance of the correct alignment of the business and KM strategies (as identified by Collins and Montgomery, 2005) is reinforced.

The alignment of strategies is perceived to have a direct impact on the following organisational barriers to KM activities:

- Organisation complexity
- Leadership complexity
- Incentive scheme
- Time
- Tools/Technology/Company directory
- Systems
- Organisational structure

The argument that still prevails from the group discussion is worth quoting:
"…..show me how you measure me, and I'll show you how I perform…"
Expanding on the argument, the perception becomes clear that resources will only successfully be allocated to tasks that are measured on the company's business plan. Considering the current global financial conditions (see section 1.1. Definition of the problem), this argument becomes more powerful. Why would a business spend any money on something that does not contribute towards meeting its business plan objectives?

The alignment of the KM strategy and the organisations business strategy is perceived to ensure the resolution of nearly two-thirds of the organisational

related barriers to KM activities. It is important to note that the business strategy should therefore contain a measurable outcome from the supporting KM activities. The more important the outcome for the organisation, the more resources will be allocated to the KM activities.

6.2.2.2. Organisational culture

As with the culture barrier on a people-level, the organisational culture barrier can also be explored for a long time. As part of this research, organisational culture has been identified as a main organisational barrier to KM activities. Culture and the ensuing artefacts take a long time to develop and therefore take a long time to change.

However, the perception is that the whole culture does not need to change in order for KM activities to be more successful. Of course, the end goal is for all organisations to be classified as learning organisations, but it is highly unlikely. The focus group discussions highlighted the fact that the organisation's culture should simply be open to experiencing new ideas and new processes from within.

Organisational culture is perceived to have an indirect impact on the following organisational related barriers to KM activities:

- The power of management
- Staff turn-over
- Competition (internal and external)

To summarise, the research have successfully identified all the reviewed theoretical people barriers as part of the case study on NSA. The focus group discussions and the literature review guided the arguments towards the identification of two main classifications of the organisational barriers to KM activities (see Figure 10). The ideal condition for KM is indicated to be the place and time where there is none of the organisational related barriers to KM present. Of course, this is the ideal situation and it is not always attainable, but the model clearly indicates what aspects must be addressed to aim for this ideal condition.

Figure 10: Organisational barriers (model)
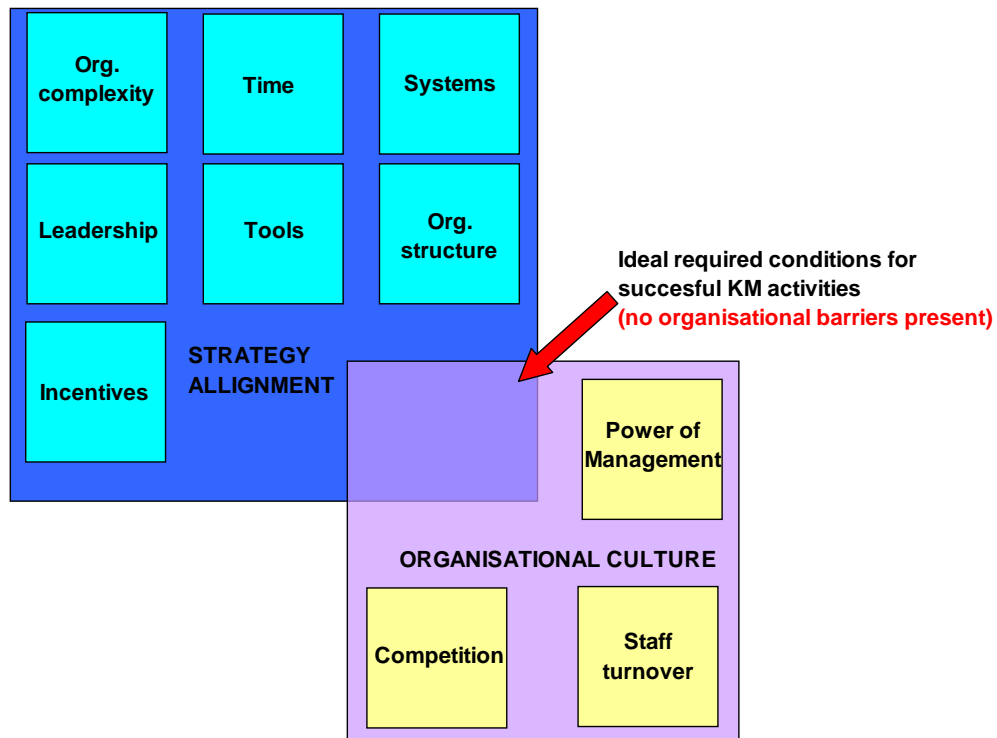
6.2.3. Conclusion

It is possible to summarise from the above that there is a strong correlation between the reviewed literature and the findings as part of the qualitative data gathering process. The barriers that SA employees perceive towards KM activities can be clearly grouped into

- people related barriers and
- organisational related barriers.

Nine clearly defined people related barriers could be grouped into two main categories (see Figure 9 above).

There are twelve clearly identified organisational related barriers, which can also be grouped into two main categories (see Figure 10). The successful identification and discussion of these barriers supplies the required answer to research question 1.

6.3. *Which solutions will have the most perceived value in breaking these barriers?*

In answering this question, the data collected from the questionnaires was processed as per chapter 4 and reported in chapter 5. During the analysis – relevant literature and content analysis of the qualitative interviews combined with the quantitative data gathered from the questionnaire – two simplified models for facilitators to KM were generated. The following discussion will focus mainly on the simplified models – see figure 7 and figure 8 for these models.

6.3.1. People related facilitators

The results obtained from the quantitative research conducted through the completion of the questionnaire by NSA employees yielded valuable information. These results were reported in Tables 8 -16 as part of chapter 5. As mentioned, each barrier to KM (as identified during the group sessions) was paired with three possible facilitators to KM by the author. Each of the facilitator options were created specifically for the application to NSA employees and purposefully represented each of the previously identified main facilitator groups (see section 4.8.3. - Questionnaire and section 6.2.1. - People related barriers). The scores obtained for the three main facilitator groups are summarised in figure 7.

It must be noted that the three main facilitator groups should be common from one organisation to another, but the importance rating of each of these facilitator groups should vary between organisations. This is mainly due to the various and countless differences inherent to the make-up of different organisations.

In the application to the conditions and circumstances of NSA, the questionnaire reflected the following importance ratings:

- Perception change : 50.0%
- Culture (individual) : 28.1%
- Dual commitment : 21.9%

A brief discussion on the findings for each main facilitator group follows.

6.3.1.1. Perception change

Due to the unique history of NSA, the importance rating of this main facilitator group is not surprising.

In brief, NSA was South African owned until 1997. At this time, NML had the opportunity to either buy NSA or allow NSA to close down due to financial problems. NML decided to buy NSA back from the South African owners and the ensuing ownership was part-and-parcel with strict rules, regulations, procedures and power plays. NSA employees were not allowed to deviate from the NML way of doing business and no local creativity was allowed. Over the years, NSA have grown and the global conditions have changed considerably (see section 1.1. Definition of problem). Following these changes, the roles of NSA employees have also changed. NSA employees are now expected to communicate frequently with various global counterparts and contribute value to these communications.

NSA employees have to realise that things around them have changed – including what is expected from them as part of the global Nissan group. According to the questionnaire results, NSA employees are completely aware of the changes around them and understand the benefit of changing their perception towards their changing environment.

The high importance ranking for this facilitator indicates that NSA employees are able to conduct KM activities 50% more successful by changing their perceptions regarding KM, regarding themselves and their capabilities and regarding their global counterparts (Massey *et al.*, 2002).

So, why are their perceptions still aged and out-dated? This question will be answered as part of the organisational related facilitators that will be discussed shortly.

6.3.1.2. Culture

A change in culture was ranked as the second most important facilitator to KM activities. The literature review clearly decomposed culture at an individual level and the impact it could have on KM activities (Ardichvili *et al.*, 2006). It is also understood that culture is extremely difficult to change in an organisation and even more so in individuals.

It is a healthy sign to see that NSA employees are aware of the cultural aspect of KM as well as the value in shaping the individual culture towards KM activities. However, changing any culture is a long-term activity and must be supported by the organisation from within.

6.3.1.3. Dual commitment

Dual commitment implies that there is a similar amount of commitment towards a specific goal between the parties that are involved in attaining the goal (Damodaran and Olphert, 2000). Based on the results of the completed questionnaire, NSA employees perceive that dual commitment pertaining to KM activities will have the least impact (of the three main facilitator groups) on the success of KM activities.

This does not imply that KM activities will be successful in the absence of dual commitment. Consider the example of organisational support for KM activities: If the organisation is not committed to the activity, it will not support the employee with enough time, resources or training to successfully conduct the KM activity – no matter how committed the employee might be to conduct the activity. Similarly, KM activities cannot be successful if the involved parties are not committed to the success of the KM activity.

Based on the research, it is more possible to argue that NSA employees already receive dual commitment from their organisation, as well as other knowledge stakeholders, during KM activities – NSA employees possibly do not realise this, or they do not fully appreciate the value of the existing dual commitment.

6.3.2. Organisational related facilitators

The results obtained from the quantitative research conducted through the completion of the questionnaire by NSA employees yielded valuable information. These results were reported in Tables 17 - 25 as part of chapter 5.

It must be noted that the three main organisational facilitator groups should be common from one organisation to another, but the importance rating of each of these facilitator groups should vary between organisations. This is mainly due to the various and countless differences inherent to the make-up of different organisations. The scores obtained for the three main organisational related facilitator groups are summarised in figure 8.

In the application to the conditions and circumstances of NSA, the questionnaire reflected the following importance ratings:

- Organisational culture : 37.5%
- Business alignment : 32.1%
- Structural changes : 30.4%

A brief discussion on the findings for each main facilitator group follows.

6.3.2.1. Organisational culture

Organisational culture was ranked as the most important organisational related facilitator group. O'Dell and Grayson (1998) have studied organisational culture and its impact on KM activities. Changing culture is not a short term solution, since organisational culture develops over a long period of time – and requires a long time to be shaped or changed.

The implications for business are quite important. When a decision is made to change/shape the culture of an organisation in a specific direction, many employees will resist or the organisation itself might be too entrenched in the current culture and returns to this culture as the default culture – even after some changes have been successful.

In order for any organisation to successfully shape its culture in a new or different direction, the realisation must be made that it will not be a short process, it might not be a pleasant process and it is sure to be an expensive process. The expenses relate mostly to the supporting changes in business alignment and the structure of the organisation, since the organisational culture can be driven by these factors.

NSA has been in the process of instilling an organisational culture change over the last three years. This is inline with the global drive to change the culture of Nissan employees. However, the cultural diversity and differences are of such a nature that this process will take a long time to complete.

6.3.2.2. Business alignment

As an organisation, specific decisions must be made regarding the activities that are to be pursued and those that or not to be pursued. This argument is built on the understanding that there are limited resources at the disposal of any organisation – so choices have to be made regarding the most effective way of utilising those resources. When the business drivers and the drivers for KM are aligned, the limited resources within the organisation must be utilised for the KM activities (Riege, 2007).

NSA employees do realise the importance of business alignment, since this facilitator group was ranked as second most important. However, keeping in mind the current economic turmoil (and the effect thereof on the automobile sales in general), this is a tough time to change the business alignment in any organisation. Business alignment is not something to be taken lightly, since it will cause the allocation of resources to change over time – it is not instantaneous.

6.3.2.3. Structural changes

Structural changes do not have to be big, bold and expensive. As part of the questionnaire and the prior group discussions, it became apparent that the employees that have taken part in previous cross-functional team activities are perceived to be more open to activities related to KM. It is the opinion of the

author that this can be ascribed to the fact that they have experienced some sort of temporary structural change through their participation in a cross-functional activity. Dyer and Nobeoka (2000) also use this reasoning when they pose that working in different teams and even job-rotation, can be seen as a structural change. In many cases this would be difficult for NSA employees, since they are either experts in their respective fields, or too busy with their normal operations to take time for a temporary structural change. Without the conscious actions of support from the organisation, this behaviour will most likely not change.

6.3.3. Conclusion

All three the main organisational related facilitators to KM were rated almost equally in importance by the NSA employees. Through conducting the research, the opinion was formed that this is an important statistic, since it could imply that the organisation (as a whole) should be responsible for creating a nurturing environment for KM activities. All the organisational related facilitators should be present or addressed for the success of KM activities to increase. Linking back to chapter 6.3.1.1. (Perception change); it is possible that the high importance of perception change, in individual employees, can be explained at the hand of the organisation creating/not creating a nurturing environment for KM activities. This possibility creates a tentative link between the organisational and people related facilitators.

The successful identification and discussion on the importance of the three groups of organisational related facilitators to KM, supplies the required answer to research question 2.

6.4. Chapter Summary

This chapter reviewed and discussed the results of the research on barriers and facilitators to KM. More pertinently, this chapter answered the two research questions that were posed in chapter 3:

1. What are the perceived barriers to KM?
   - Refer to Figure 9 (People barriers) and Figure 10 (Organisational barriers)

2. Which solutions will have the most perceived value in breaking these barriers?

- People related facilitators to KM can be summarised as: Perception change, culture (individual), dual commitment (see figure 7).

- Organisation related facilitators to KM can be summarised as: Organisational culture, business alignment and structural changes (see figure 8).

Chapter 7: Conclusion

7.1. Introduction

The last chapter of this report aims to collect the main findings and conclusions achieved during the development of each one of the stages of the study. It also discusses possible recommendations and future research ideas.

In order to frame the findings, conclusions and recommendations, it might be useful to refresh the aim of the research briefly. As in *Chapter 1. Problem Definition*, This research aimed to investigate, compare and study the theoretically known as well as real life (as part of case study) barriers and facilitators to KM (KM). An organisation that is capable of managing its internal knowledge successfully has the potential to unleash a new resource of high value. It is therefore all the more important, considering the current global economic condition, to effectively identify and overcome the barriers to successful KM activities in order to capitalise on the valuable resource of knowledge within MNCs.

7.2. Findings

1. Barriers to KM activities have been identified in the reviewed literature (see chapter 2). The same barriers were identified (in NSA) as part of the qualitative data collection and analysis on based on the NSA case study.
2. Barriers to KM can be separated into two different areas: People related barriers and organisational related barriers.
3. The identified people related barriers are: culture, language, time, selective sharing, trust, one-directional sharing, job protection, fear, experience/training/skills.
4. Due to the perceived interdependency of certain individual barriers, it is possible to group the nine people related barriers into two main categories. The two main categories are: Culture and trust.
5. The identified organisational related barriers are: high levels of competition, culture complexity, incentive scheme, leadership complexity,

company complexity, time, systems, tools/technology/company directory and non-matching expectations.

6. Due to the perceived interdependency of certain individual barriers, it is possible to group the twelve organisational related barriers into two main categories. The two main categories are: Strategy alignment and organisational culture.

7. Facilitators to KM activities have been identified in the reviewed literature (see chapter 2). The same barriers were identified (in NSA) as part of the qualitative data collection and analysis on based on the NSA case study.

8. People related facilitators are (in descending order based on their perceived importance to NSA employees): Perception change, culture and dual commitment.

9. Organisational related facilitators are (in descending order based on their perceived importance to NSA employees): Organisational culture, business alignment and structural changes.

10. Throughout this study, it became apparent that it should be possible for an organisation to attain an advantage over their competitors, if KM activities were completed more successfully.

11. Organisations must lead and facilitate the KM activities through the creation of a KM friendly environment. This can be done by aligning the KM strategy and the business strategy, structuring the organisation accordingly and allocating the required resources.

12. KM activities can be more effective if the correct perceptions pertaining to KM, the supporting activities, capabilities, abilities, relationships and culture are fostered within the organisation and its employees. It is perceived to be possible to increase KM performance by 25% through perception change alone – this will not cost a lot of money to implement.

13. All KM activities transact between two (as a minimum) different parties. The barriers and facilitators towards KM will most likely differ between the parties that take part in the KM activities.

14. KM barriers must be identified within all global counterparts. Facilitators must be tailored to solve any unique barriers that might appear.

7.3. Recommendations

In order to maintain a definite link between the recommendations (below) and the findings of the research, all recommendations will be based on, or derived from, the findings (above) of this research.

7.3.1. Multi-national companies

- At a high level, the leaders within a MNC make important strategic decisions on a regular basis. To increase the possibility of success for KM activities, the most important strategic decision that a MNC can make, will be to purposefully align the KM strategy with the MNC's business strategy.

- This alignment will ensure that the required resources are allocated to KM activities and it will cause the organisational structure to form around the newly aligned KM strategy. These changes should create a friendly environment for KM activities.

- KM is perceived to have a high value when organisations link KM activities to the existing company initiatives that contribute to the business drivers.

- MNC's must clearly scope and quantify all KM activities as well as the expected results. This will force an alignment of KM activities and business activities, while ensuring an accurate forecast of costs and lead times. Conducting successful KM activities in this way will enhance the competitiveness of the MNC. This competitive edge will be a high value during the current global economic conditions.

- Organisations should be specific in targeting KM activities – KM activities yield the best results where value is created as part of the business process.

- The focus should not only be on creating a friendly environment for KM activities. The focus should include the employees of the organisation and their vital importance in the KM transactions.

- The development of a new organisational culture starts with the organisation. At the same time as the organisation starts allocating

resources and aligning strategies, the change in organisational culture should also be planned and implemented in parallel.

- An organisation, through a renewed structure and culture that is open to KM activities, should also try to change the perceptions of the employees regarding the importance and validity of KM activities to achieve business gains.

- Motivate employees to share their knowledge with the organisation, rather than other employees – this will facilitate a perception of organisational knowledge ownership, which in turn could motivate members to share their knowledge more openly.

7.3.2. Managers

- As a manager, the allocated responsibility (from the MNC) requires the facilitation of an environment that is friendly and open to KM activities, while supporting the employees regarding the three main people related facilitators and their KM activities.

- Managers are the first/final contact point between the MNC and the employees. Managers are also more able to influence their subordinates directly or indirectly. Through the realisation that the people related facilitators to KM activities are indirectly in their control, they can influence the employees regarding perception change, culture and dual commitment, in order to increase the success of KM activities. Increased KM success will lead to increase business results.

- Lead KM activities through actions (taking part), and employees will most likely follow. This will build the required trust in KM activities as well as managements commitment towards KM activities.

- Shift the way your staff think: Try to move from a *Go / No Go* type of mentality and thinking, to a *Why / Why not* approach. This will open many additional and valuable informal ways of discussion and KM activities. This should result in a perception change from the employees towards KM and KM activities.

- The application of interpersonal skills to foster strong/weak ties with employees will create a new, more open forum for knowledge related discussions. This can be used to close the hierarchical gap in the

organisation. Perception change from the employees will most likely follow suit.

- Integration of KM activities into the daily operations is important at this level.

- Employees must be measured (and rewarded) based on their performance in KM activities. This requires an alignment of the business drivers and the KM strategy that is to be followed by employees within the control of departmental management.

- Create a shared purpose/team identity for your employees. Without changing the physical structure within the organisation, special teams can be formulated for specific KM related activities. This will lead to a feeling of belonging within the team, and could ultimately lead to a KM identity.

- Managers should develop knowledge infrastructure that is to the benefit of their employees. This infrastructure can take the form of skills databases and/or a list of organisational knowledge members combined with their specific area of expertise. This will enable participants in KM to easily access other KM members within the organisation. Direct benefits for all participants can be maximised.

- Trust (between employee and manager) should be built over time through formal and informal methods. Managers should act consistently and fair in all dealings in general, but specifically when KM activities are involved.

7.3.3. Employees

- The most important facilitator to the barriers to KM is related to perception change. This realisation should enable the employee to understand/identify which perceptions are important for more successful KM activities.

- Increase knowledge through the participation in KM activities. An increase in personal successes based on KM activities will result in a competitive advantage over other employees. Employees are urged to take part in cross-functional teams, group discussions, review sessions

and general knowledge sharing activities. This will increase the acquired knowledge.

- Interact socially (at least on a less official basis) with other employees and even management. Informal discussions are effective ways of transferring knowledge, as well as changing the overall perception towards KM and KM activities.

- Employees should try to realise the value of their knowledge and also realise the value-add to the organisation that is possible if the knowledge is shared.

- Employees would be wise to shift, on a personal level, their way of thinking from *Go / No Go* approach to a *Why / Why not* approach. As a team, or individual, learning and knowledge gain is facilitated by this change in approach.

- Employees are aware of where value is created in their processes – target KM activities on these processes and instigate KM activities that might be taken over by management at a later stage.

- Making an active decision to include KM activities in the daily operations will be advantageous to all employees.

- Build formal and informal ties with global counterparts – it is a successful way of bridging the culture gap to KM activities.

7.4. Future research ideas

- The aim of this research was to explore the stated problem as broadly as possible, since no information was available on this specific case study, pertaining to KM. Future studies might be able to focus more precisely on some of the results/outcomes of this research.

- The barriers and facilitators to KM activities should differ for Tacit and Explicit knowledge types and was not addressed as part of this research.

- This study was conducted in a business environment, but it is the opinion of the author that the findings should be repeatable in a more academic environment (successful KM is quite important for universities).

- The report clearly indicates how the research was conducted and it should be possible to repeat the research within other MNCs. Future research can investigate the commonality of the findings amongst various MNCs.

- Within Nissan, this research can be repeated in other international divisions, as well as longitudinally within NSA, in order to gauge the health/status/barriers/facilitators to/of KM activities.

7.5. Final Summary

As was discussed in chapter 6, this research does answer the research questions posed as part of chapter 3. Additionally, the problem statement (as framed in chapter 1) successfully supplied an excellent platform for the applied research, data collection, data analysis, conclusion and recommendations.

During the research, it was found that the case study findings (see chapter 5 and chapter 6) are completely supported by the existing literature (see chapter 2) on the barriers and facilitators to KM. Through data analysis (both qualitative and quantitative methods – see chapter 4) the identified barriers where successfully grouped into two main categories and the facilitators where ranked for their perceived effectiveness.

As a conclusion, KM does seem to have the capability of supplying a MNC with a sustainable competitive advantage in the global economy – even in the current financial turmoil. However, it requires an alignment of business/KM strategies, the creation of a suitable environment in/by the organisation and employees who are open and motivated to participate in KM activities.

Reference list

Alavi, M., and Leidner, D.E. (2001) Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. *MIS Quarterly*, 25(1), 107-136.

Ardichvili, A., Maurer, M., Li, W., Wentling, T. and Stuedemann, R. (2006) Cultural influences on knowledge sharing through online communities of practice. *Journal of Knowledge Management,* 10(1), 94 – 107.

Argote, L., Beckman, S.L. and Epple, D. (1990) The persistence and transfer of learning in industrial settings. *Management Science*, 36(2), 140 - 54.

Bastian, D. (2006) Modes of Knowledge Migration: Regional Assimilation of Knowledge and the Politics of Brining Knowledge into the Region. *European Planning Studies*, 14(5), 601 – 619.

Boreham, N. and Morgan, C. (2004) A sociocultural analysis of organisational learning. *Oxford Review of Education*, 30(3), 307 – 325.

Caulkins, D.D. (2004) Identifying culture as a threshold of shared knowledge. *International Journal of Cross Cultural Management*, 4(3), 317 – 333.

Checkland, P. and Scholes, J. (2001) *Soft Systems Methodology in Action*. Great Britain: Biddles Ltd.

Collins, D.J. and Montgomery, C.A. (2005*) Corporate Strategy. A resource based approach*. New York: McGraw-Hill/Irwin

Connelly, C.E. and Kelloway, E.K. (2003) Predictors of employees' perceptions of knowledge sharing culture. *Leadership & Organization Development Journal*, 24(5), 294 - 305.

Creswell, J.W. (2002) *Research Design: qualitative, quantitative, and mixed methods.* Thousand Oaks: SAGE. ISBN: 0761924426

Damodaran, L. and Olphert W. (2000) Barriers and facilitators to the use of Knowledge Management systems. *Behaviour & Information Technology*, 19(6), 504 – 413.

Davenport, T.H. and Prusak, L. (1998) *Working Knowledge: How Organisations Manage What They Know*. Harvard Business School Press, Boston, MA

De Long, D.W. and Fahey, L. (2000) Diagnosing cultural barriers to knowledge management. *The Academy of Management Executive*, 14(4), 113 – 127.

Desai, M. (2001) Globalisation: Neither Ideology nor Utopia. *Cambridge review of International   Affairs*, 14(1), 16-31.

Dey, I. (1993) *Qualitative Data Analysis.* London: Routledge

Dyer, J.H. and Nobeoka, K. (2000) Creating and Managing a High-Performance Knowledge-Sharing Network: The Toyota Case. *Strategic Management Journal*, 21(3), 345 – 367.

Easterby-Smith, M., Thorpe, R. and Lowe, A. (1991) *Management Research: An Introduction.* London: Sage Publications.

Economist Intelligence unit (2006) *Foresight 2020 - Economic, Industry and Corporate trends*. A report from the Economist Intelligence Unit sponsored by Cisco Systems.

Ellis, K.M. (2000) Strategic contexts, knowledge flows, and the competitiveness of MNC's: A procedural justice approach. *Competitiveness Review*, 10(1), 9 – 35.

Elmholdt, C. (2004) Knowledge management and the practice of knowledge sharing and learning at work: a case study. *Studies in Continuing Education*, 26(2), 327 – 339.

Finestone, N. and Snyman R. (2005) Corporate South Africa: making multicultural knowledge sharing work. *Journal of Knowledge Management*, 9(3), 128 – 141.

Gold, A.H., Malhotra, A. and Segars, A.H. (2001) Knowledge Management: an organizational capabilities perspective. *Journal of Management Information Systems*, 18(1), 185 - 214.

Hansen, M. (1999) The search-transfer problem: the role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly*, 44(1), 82 -111.

Hodgetts, R., Luthans, F. and Lee, S. (1994) New paradigm organisations: From total quality to learning to world class. *Organisational Dynamics*, Winter

Hofstede, G. (1980) *Culture's consequences: International Differences in Work-Related Values*. Beverly Hills: Sage.

Husted, K. and Michailova, S. (2002) Knowledge sharing in Russian companies with Western participation. *Management International*, 6(2), 17 - 28.

IMD World Competitiveness Yearbook (2008) Available from: http://www.imd.ch/research/publications/wcy/World-Competitiveness-Yearbook-2008-Results.cfm (accessed 27 October 2008)

Kaweevisultrakul, G. and Chan, P. (2007) Impact of Cultural Barriers on Knowledge Management Implementation: Evidence from Thailand. *The Journal of American Academy of Business*, Cambridge, 11(1), 303 - 308.

Knott, A.M. (2001) The dynamic value of hierarchy. *Management Science*, 47(3), 430 - 48.

Lin, L., Geng, X. and Whinston, A.B. (2005) A Sender-Receiver Framework for Knowledge Transfer. *MIS Quarterly,* 29(2), 197 – 219.

Lucas, L.M. (2006) The role of culture on knowledge transfer: the case of the multinational corporation. *The Learning Organisation*, 13(3), 257 – 275.

Lundvall B.A. and Johnson B. (1994) The Learning Economy. Journal of Industrial Studies 1(2), 23 - 42.

Malairaja, C., Zawdie, G. (2004) The 'black box' syndrome in technology transfer and the challenge of innovation in developing countries - The case of international joint ventures in Malaysia. *International Journal of Technology Management & Sustainable Development*, 3(3), 233 - 251,

Massey, A.P., Montoya-Weiss, M.M. and O'Driscoll, T.M. (2002) Knowledge Management in Pursuit of Performance: Insights from Nortel Networks. *MIS Quarterly*, 26(3),269 – 289.

McDermott, R. (1999) Why information technology inspired but cannot deliver Knowledge management. *California Management Review*, 41(4), 103 - 17.

McDermott, R. and O'Dell, C. (2001) Overcoming culture barriers to sharing knowledge. *Journal of Knowledge Management,* 5(1), 76 – 85.

Nonaka, I. and Konno, N. (1998) The concept of 'Ba': building a foundation for knowledge creation. *California Management Review*, 40(3), 40 - 54.

Nonaka, I. and Takeuchi, H. (1995) *The Knowledge Creating Company*. Oxford: Oxford University Press.

O'Dell, C. and Grayson, C.J. (1998) If only we knew what we know: identification and transfer of internal best practices. *California Management Review*, 40(3), 154 - 74.

Powel, M. (2006) Which knowledge? Whose reality? An overview of knowledge used in the development sector*. Development in Practice*, 16(6), 518 – 532.

Probst, G., Raub, S. and Rombhardt, K. (2000) *Managing Knowledge*. Chichester: John Wiley & Sons.

Riege, A. (2007) Actions to overcome knowledge transfer barriers in MNCs. *Journal of Knowledge management*, 11(1), 48 - 67.

Smith, E.A. (2001) The role of tacit and explicit knowledge in the workplace. *Journal of Knowledge Management*, 5(4), 311 - 321.

Sveiby, K.E. (1997) *The New Organisational Wealth.* San Francisco CA: Berrett-Koehler.

Szulanski, G. (1996) Exploring internal stickiness: impediments to the transfer of best practice within the firm. *Strategic Management Journal*, 17(Winter), 27 – 43.

Tiwana, A. (2002) *The KM Toolkit*. Upper Saddle River NJ: Prentice-Hall.

Tobin, P.K.J. (2006) The use of stories and storytelling as knowledge sharing practices: a case study in the South African mining industry

Ulrick, D. (1998) The Mandate for HR. *Harvard Business Review*, 124-134

World Economic Forum on Africa. 4-6 June 2008. Available from http://www.weforum.org/pdf/summitreports/africa2008/ - accessed 30/10/2008

Wijnhoven, F. (2003) Operational knowledge management: Identification of Knowledge Objects, Operation Methods, and Goals and Means for the Support Function. *The Journal of the Operational Research Society,* 54(2), 194 – 203.

Yin, R.K. (2003) *Case Study Research: Design and Methods*. Thousand Oaks: SAGE

Zikmund, W.G. (2007) *Business Research Methods – 7th Edition*. Ohio: South-Western.

Appendix 1 – Questionnaire

Barriers and Facilitators to Knowledge Management

1. INTRODUCTION

Thank you for deciding to take part in a research survey. This survey will be used as part of research on Barriers and Facilitators to successful Knowledge management activities between NSA and our global partners - specifically NTCE (Nissan Europe), NML (Nissan Japan) and NTCSEA (Nissan Thailand). By selecting to proceed, you agree that your inputs can be used as part of this research.

Please note: There will be complete anonymity during and after the completion of this survey. No names, positions or employee numbers are requested at any stage.

If you have any questions, please feel free to contact me:

Rynhardt Rall
e-mail : rynhardtr@nissan.co.za
Tel : 012 529 6478

or alternatively you can contact my research supervisor:

Dr. Peter Tobin
e-mail : tobinp@gibs.co.za
Tel : 011 771 4138

THANKS

Barriers and Facilitators to Knowledge Management

2. General Information

On this page, you will be asked to supply limited demographic information about yourself. This information will not be made public as part of the research. It will be used to track responses as well as during data processing.

1. I am employed in the following department inside NSA:

○ DCC   ○ Marketing   ○ Purchasing

○ Finance   ○ Other   ○ Quality

○ Human Resources   ○ Product Engineering   ○ SCM

○ Manufacturing   ○ Program Office

2. I communicate / have communicated with the following international Nissan regions:

☐ Nissan Europe (NTCE)

☐ Nissan Japan (NML)

☐ Nissan Thailand (NTCSEA)

☐ NONE

3. I communicate with the above selected regions at least:

○ Once a day

○ Once a week

○ Once a month

○ Once a quarter

○ Once a year

○ NEVER

Barriers and Facilitators to Knowledge Management

3. Perceived People Barriers

Knowledge Management can be classified as any activity that results in:
- The creation of new knowledge.
- The retention (capture) of knowledge.
- The transfer of knowledge.

There are various barriers that will not allow knowledge management to succeed. This page will address the "PEOPLE" related barriers to knowledge management.

Please rank each solution according to YOUR OPINION on how effective it would be to solve the relevant PEOPLE barrier in Knowledge management

4. Different cultures seem to have different ways of thinking and problem solving.
Some cultures are perceived to be more spontaneous/emotional, while others might be more conservative/un-emotional.
These differences impacts on knowledge management activities.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the CULTURAL barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Fostering a global culture on divisional level. I.e. a culture for global finance and another culture for global HR.	○	○	○	○	○	○
All different cultures should understand/acknowledge/respect each other rather than deny/ridicule/condemn each other	○	○	○	○	○	○
Creating a new (globally common) culture – based on the "Nissan Way"	○	○	○	○	○	○

5. Dealing with different people around the world, you have to deal with various languages.
Language has been identified as a barrier to knowledge management.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the LANGUAGE barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Training yourself, or arrange to be trained, in a foreign language	○	○	○	○	○	○
Understanding/recognising the differences in language capabilities and adjusting your activities accordingly	○	○	○	○	○	○
Building a relationship with your counterpart that could facilitate more informal communication	○	○	○	○	○	○

Barriers and Facilitators to Knowledge Management

6. People use knowledge in different ways and with different motivations. Some fear to share because their knowledge is their power, while others fear to share because they are afraid of making a mistake.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the FEAR barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Building all knowledge management activities on the basis of mutual trust	◯	◯	◯	◯	◯	◯
Establishing clear company guidelines as to what/when/how/how much knowledge to share	◯	◯	◯	◯	◯	◯
Sharing knowledge first with local organisation, and only make globally available if accepted	◯	◯	◯	◯	◯	◯

7. Within the global Nissan group, people have attained different levels of experience, training and skills. It is generally perceived by NSA staff that our global counterparts are more qualified, experienced and trained compared to us. This perceived mismatch has a negative impact on knowledge management.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the
EXPERINCE/TRIANING/SKILLS barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Using knowledge management as a tool to change these perceptions	◯	◯	◯	◯	◯	◯
Attaining the same level of experience, through access to global knowledge	◯	◯	◯	◯	◯	◯
Changing the way we think about ourselves. Instead of seeing us as "behind" regarding experience, possibly see ourselves as "in training"	◯	◯	◯	◯	◯	◯

Barriers and Facilitators to Knowledge Management

8. NSA staff perceive that they "report" to NML/THI/NTCE regarding their activities and performance, but no real value is returned from these regions to NSA - in the sense of knowledge that will assist NSA staff. This occurrence could lead to one directional knowledge management activities.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the **SINGLE DIRECTION KNOWLEDGE MANAGEMENT** barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Changing our internal perception from "reporting" to others to "a learning opportunity" with others	○	○	○	○	○	○
Aligning "reporting" and "learning" in our knowledge related activities	○	○	○	○	○	○
Building ties with reporting window persons globally, in order to use these ties later for access to knowledge	○	○	○	○	○	○

9. Global staff generally seems to find it less cumbersome to share "easy" knowledge (processes, tables, flow-charts). People also tend to limit the information shared between international regions - in order to limit scope and investigations. Selective sharing has a direct impact on the success of knowledge management.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the **SELECTIVE SHARING** barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Sharing all information freely – supporting the new business plan (GT2012) of growth and trust	○	○	○	○	○	○
Realising that our opportunity for learning is limited by the sharing of limited or selective pieces of information – and changing our actions	○	○	○	○	○	○
Strong management/leadership at both sides of the knowledge transaction is required to make full knowledge sharing possible	○	○	○	○	○	○

Barriers and Facilitators to Knowledge Management

10. Mutual trust is essential for successful knowledge management. Can international regions be trusted with sensitive knowledge? Is the information I have received true/accurate/valid? Successful knowledge management cannot take place without mutual trust.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the TRUST barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Institutionalising all knowledge management activities – it must happen	○	○	○	○	○	○
Sharing knowledge – as part of a dedicated focus group – will make trust grow much faster	○	○	○	○	○	○
Sharing knowledge first with local organisation, and only make globally available if accepted	○	○	○	○	○	○

11. Sharing hard earned and valuable knowledge is not perceived as a natural activity. Many people will not share their knowledge, since knowledge = power. Through not sharing their knowledge with others, they seem to think that they protect their job. This unwillingness to share valuable knowledge stops successful knowledge management activities.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the JOB PROTECTION barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Trusting that the organisation is aware of your actual value, even after you have shared all you knowledge	○	○	○	○	○	○
Seeing the possibility of building your own knowledge by sharing/learning with/from others that take part in knowledge management activities	○	○	○	○	○	○
Realising that through taking part in knowledge management activities, your status in the organisation would change (positive or negative)	○	○	○	○	○	○

Barriers and Facilitators to Knowledge Management

12. Staff perceive that there is not enough time to conduct successful knowledge management. This is amplified by the time-zone differences between the various regions. Since there is perceived to be a limited alignment of regional goals, the urgency to support a request (at a specific time) is also not shared.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the TIME barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Making knowledge management a standard performance measure on a global level	○	○	○	○	○	○
Top management aligning the commitments and targets for all regions that are dependant on each other for support/knowledge	○	○	○	○	○	○
Changing your time management style and expectations from global support and planning accordingly	○	○	○	○	○	○

Barriers and Facilitators to Knowledge Management

4. Perceived Organisation Barriers

Knowledge Management can be classified as any activity that results in:
- The creation of new knowledge.
- The retention (capture) of knowledge.
- The transfer of knowledge.

There are various barriers that will not allow knowledge management to succeed. This page will address the "ORGANISATIONAL" related barriers to knowledge management.

Please rank each solution according to YOUR OPINION on how effective it would be to solve the relevant ORGANISATIONAL barrier in Knowledge management

13. Previous Nissan Business plans called for high financial performance from all regions. This caused a feeling of competition between regions - and even internally to NSA. Competition is good for financial performance, but not so good for knowledge management (people/divisions are perceived to maintain their competitive advantage though not sharing their knowledge).

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the COMPETITION barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Nissan becoming a "learning" company	○	○	○	○	○	○
Management creating a synergetic environment for knowledge management – each employee would have access to the maximised return of all employees' knowledge	○	○	○	○	○	○
Aligning regional goals to facilitate externally focussed competition – rather Nissan vs. Toyota than NSA vs. NTCSEA	○	○	○	○	○	○

14. It is perceived that people will perform in the areas that they are measured. NSA does have a staff incentive scheme, but it does not seem to be effective. I.e. how to measure the success of knowledge management? How does our incentive scheme recognise and reward my knowledge performance?

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the INCENTIVE barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Clearly stating incentives and possible consequences/rules for taking part in knowledge management activities	○	○	○	○	○	○
Linking/Aligning knowledge management activities to business drivers	○	○	○	○	○	○
Training/Experience gained from taking part in knowledge management to be recognised by the organisation	○	○	○	○	○	○

15. Tools and technology are used to a great extent to maximise knowledge management results. However, in NSA it is perceived that we have limited access to the global information tools and technology. A global company directory does exist (in order to access the people with relevant information) but is not seen as useful unless you know the full [name+surname+division] of the employee you want to contact.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the TOOLS/TECHNOLOGY barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Top management allocating adequate resources to support knowledge management with the latest tools and technology	○	○	○	○	○	○
Aligning knowledge management with organisational goals/strategy	○	○	○	○	○	○
The organisational structure making room for a dedicated knowledge management section	○	○	○	○	○	○

Barriers and Facilitators to Knowledge Management

16. Many people feel that the organisation does not support them regarding the amount of time available for them to extend their knowledge base.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the TIME barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Organisation clearly defining the scope/cost/time to spend on knowledge management – with the expected results	○	○	○	○	○	○
Only taking part in knowledge management activities when real value can be expected as a result – allocating resources according to value	○	○	○	○	○	○
Making knowledge management part of my normal function and institutionalising the activities globally	○	○	○	○	○	○

17. In many cases, the "official" system is perceived as a negative influence on knowledge management. These systems are not common to all regions and information must be moved from the local system to the global system (if available at all). We do not seem to use common processes and procedures to set goals amongst regions (silos).

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the SYSTEMS barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Top management aligning goals and employing common systems on a global level	○	○	○	○	○	○
Each region having its own department that is responsible for knowledge management – all using common systems	○	○	○	○	○	○
Building your own friendship-ties (strong/weak) globally in order to use these people as key contacts, instead of the system	○	○	○	○	○	○

Barriers and Facilitators to Knowledge Management

18. Trust - at an organisational level - is perceived to influence the success of knowledge management. The new Nissan BP (GT2012) calls for Trust to be one of the main pillars for Nissan's continued success globally. NSA is a new player in the global field, and trust takes a long time to earn from others.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the ORGANISATIONAL TRUST barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
The structure/incentive scheme of the organisation is to be changed	○	○	○	○	○	○
Management "walking-the-talk"	○	○	○	○	○	○
The organisation to lead in a consistent and collaborative drive towards knowledge management	○	○	○	○	○	○

19. Top management in NSA changes on a regular basis (approximately every 4 years). With new leaders, comes new directions and areas of focus. The global structure and culture of the Nissan organisation is perceived to be very complex. These changing directions, the company culture and complexity could have an impact on the success of knowledge management activities.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the COMPANY CULTURE/COMPLEXITY/LEADERSHIP barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Organisational goals/direction remaining unchanged through leadership change	○	○	○	○	○	○
Knowledge management objectives linking directly to the strategy supporting the organisational business plan	○	○	○	○	○	○
A dedicated knowledge management department	○	○	○	○	○	○

20. Due to the perception of non-matching goals and targets between global divisions, the expectations pertaining to the results from knowledge management activities, differ greatly. This mismatch causes a misalignment of priorities, which can lead to limited knowledge management success.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the MISMATCHED EXPECTATIONS barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Developing a global knowledge management strategy to support the new GT2012 business plan	O	O	O	O	O	O
Matching goals and incentives for regional knowledge management departments	O	O	O	O	O	O
Developing common/focussed knowledge management activities, rather that broad/general activities	O	O	O	O	O	O

21. It is generally perceived that the global Nissan structure is very complicated. The hierarchical structure is also perceived as an impediment to successful knowledge management (permissions and approvals required). Other regions have dedicated people responsible for knowledge maintenance and training.

Please rank the following solutions (IN YOUR OPINION) according to their ability to overcome the ORGANISATIONAL STRUCTURE barrier:

	Will make things a lot worse	Will make things slightly worse	No change	Slight improvement	Improvement - but not fixed	Completely fixed the problem
Building informal professional relationships (external/internal) to open knowledge channels	O	O	O	O	O	O
Managing knowledge as a stated and measured activity inside Nissan	O	O	O	O	O	O
An organisation that is open to employees with new ways of operating	O	O	O	O	O	O

Appendix 2 – Focus group discussion summary

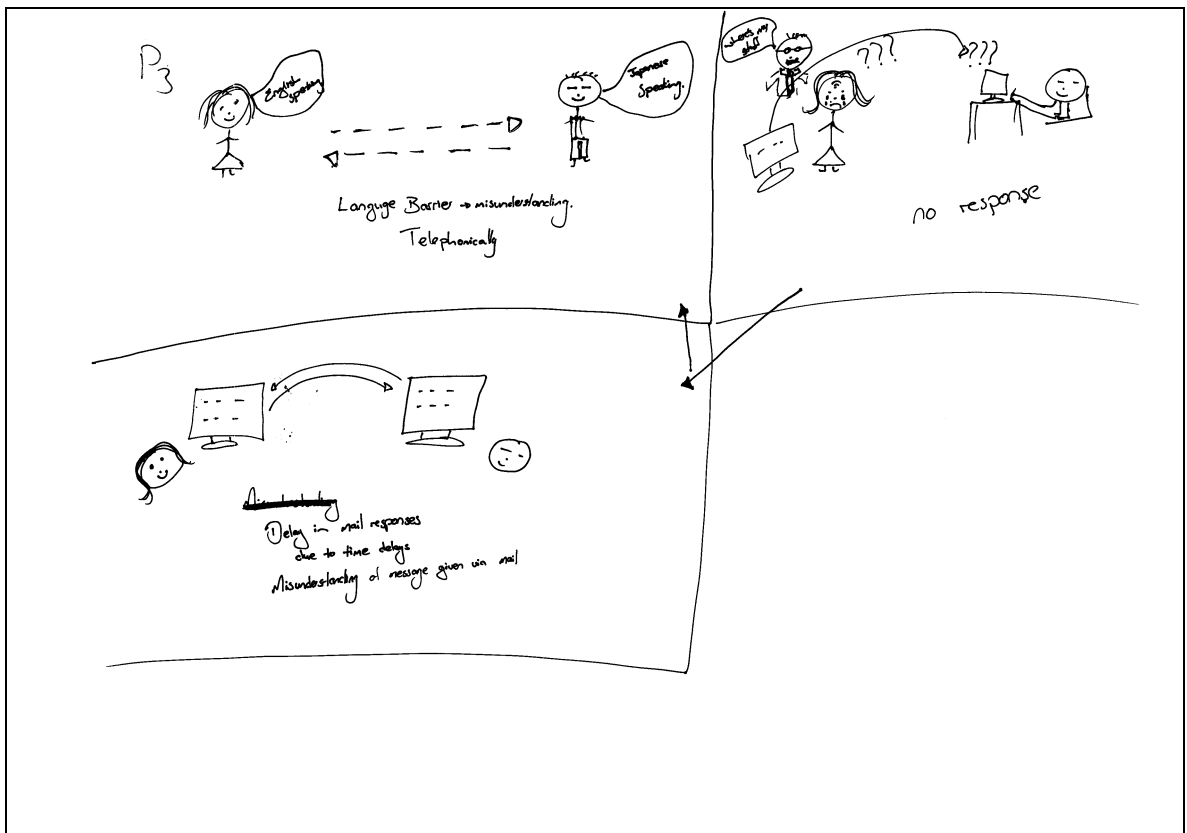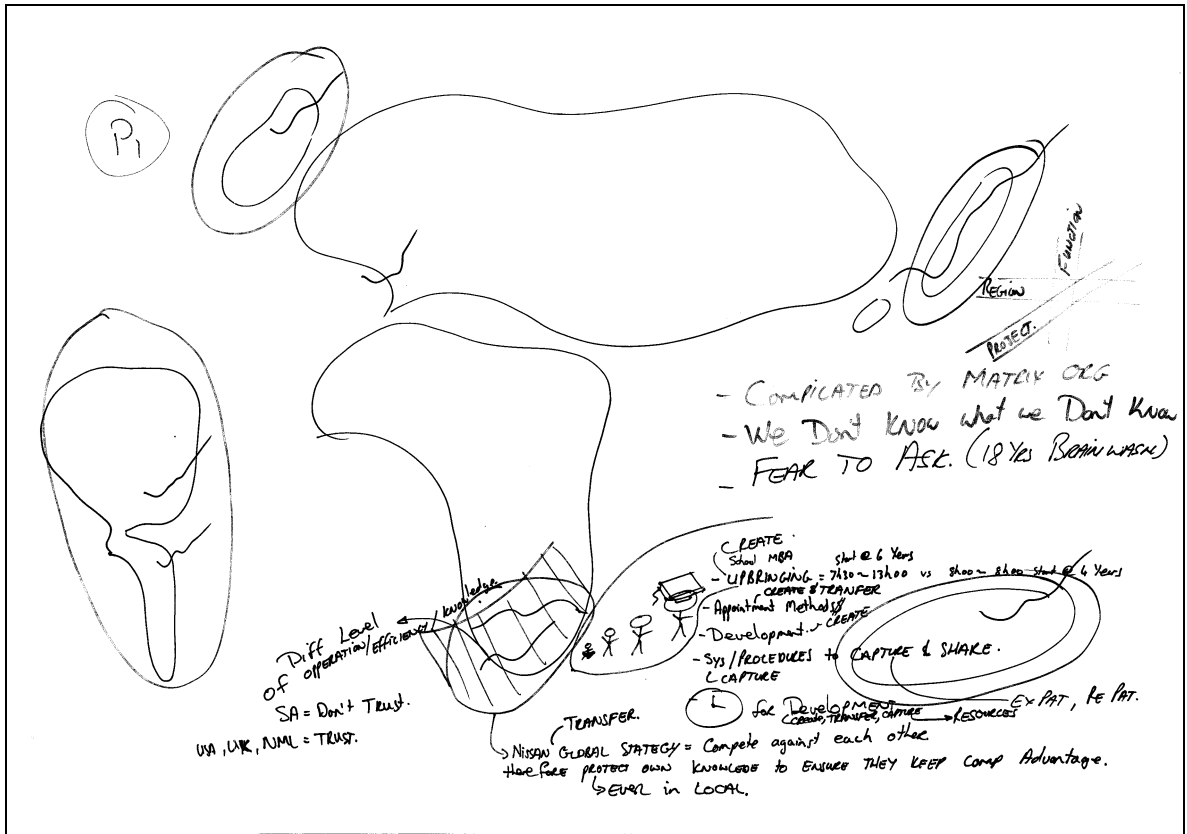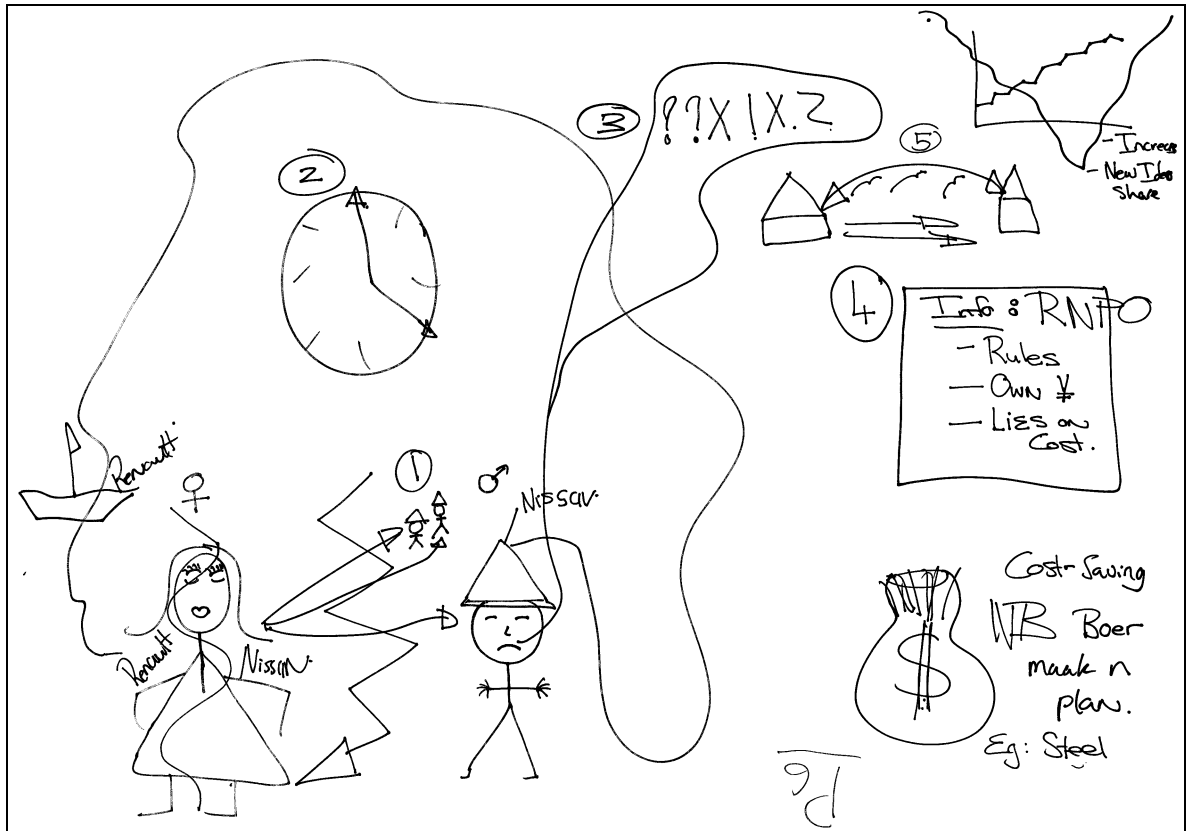|	Common trends	Unique trends
	Combined	**Combined**
PEOPLE RELATED BARRIERS	**Culture** Easier to conduct knowledge management activities between West/West culture, compared to West/East culture. Different ways of thinking and approaching problems. E.g.. Japanese men apparently find it difficult to stand on equal footing with SA woman. Western culture is perceived to be more spontaneous by NSA staff.	**Learning vs. training (P)** There is a difference between learning and training. Training can be seen as a new skill, while learning can be seen as attaining new knowledge. Mostly NSA is training staff.
	Language Knowing that Nissan has English as official business language does not make communication easier. Same problem with West/West vs. East/West communication regarding english capability.	**Multi-stage knowledge transfer (P)** Knowledge is transferred through non-experts - someone who had some training is expected to know everything and teach others.
	Fear - Asking / Sharing Possible that eastern cultures have a fear of making the wrong knowledge available to others. In NSA it has happened without too much of a consequence. Losing face? Fear of asking due to risk of looking not smart - preconditioned (12 years). Nature of the people. We are not scared of making mistakes - no direct result. Other cultures might be scared of sharing knowledge, since it could be wrong/old/not the right knowledge.	**How to interpret new knowledge? (P)** Knowledge is "dumped" from global partners on to NSA. No explain/transfer. How to teach yourself?
	Experience / Training / Skills Experience: Relates to tacit knowledge - difficult to transfer/learn experience through documents and flow charts. As example, Japan has OJT to transfer experience. NSA is not so experienced, so do not know all the history and why's. Training / Education / Skills: It is generally perceived (by NSA staff) that people in corresponding job levels in the international divisions are higher qualified than the SA staff (linked to intake requirements). Difference in general schooling is perceived to be of higher standard international.	**Emotion (P)** Often emotions cloud the real knowledge or learning that can be taken out of a knowledge management process.
	One-directional sharing NSA feel that they are "reporting" their knowledge to Japan (mother company), but are not getting the transaction returned in the form of knowledge sharing/transfer from Japan.	**Documents - Language + Understanding (P)** Document are normally derived from Japanese forms. Translations are not always 100% complete or accurate. Difficult to make sense of garbled pieces.
	Selective sharing **Purch:** Much easier to share explicit knowledge - so the scales are constantly tipped to that side. **Eng:** When communicating to international divisions, selected knowledge is shared - purpose is to keep the focus on the problem at hand, and limit the scope of investigation/answer. Eastern people want to know the whole picture before they try to answer. Causes friction.	**1st world vs. 3rd world (P)** Perceived attitude that sometimes comes across - from both the 3rd and the 1st worlds. We are better than you OR we are so far behind them....
	Trust - differing levels **Purch:** Especially when job rotation takes place- who is the new guy, can I trust his information. From Japan's side - who is the SA supplier? I do not have any knowledge? Also - can we trust regions with sensitive information - or do we only share selective information with them until the trust is earned? **Eng:** Can we trust the information that we are given (is it false/untrue?)? Trust is essential for KM, but takes along time to develop. How to earn, or must we just take?	**Value of knowledge is not recognised (E)** Experienced regions have a access to much more knowledge than NSA. Often the value of the existing knowledge is not realised by the owners - so why try to share with other regions. NSA engineers are generalists, while other regions are specialists - mismatch!
	Job protection - not natural to share valuable knowledge Keep knowledge to self - since you will remain "important" to the company. Once knowledge is shared, I can be replaced. Possible personal level, but can also be extended to divisional/regional level.	
	Time Knowledge management takes up too much time - especially with time zone differences. Not too bad with UK. Not sharing the same goals and urgency of information availability also impacts time.	

Common trends	Unique trends
Combined	**Combined**
High levels of competition (inter departmental and regional)	**Mismatch of available resources (P)**
Nissan old business plan called for huge savings/financial performance - or you are at risk. Financial targets caused internal competition - good for business, but not so good for open knowledge management. New business plan states growth and trust to be main pillars, but how to make it happen + measure? Even within NSA there is internal competition for performance. Why share knowledge?	General feeling that other regions have more staff to do the same amount of work - so more time to attain new knowledge. Dedicated departments for training/knowledge access.
Incentive scheme - not used / in-effective	**Too much knowledge available - cannot distinguish value from non-value (P)**
Knowledge management - or even increase in knowledge - is difficult to measure. How will incentive scheme reward/recognize performance? People will perform according to the measurement tool. How to measure successful KM? NSA staff opinion is that applicable reward will necessarily change their behaviour towards KM.	Knowledge dumps - data portals- no one responsible for maintenance or keeping knowledge relevant. Over populated with old/useless garbage.
Tools/Technology/Company directory	**Geographical distance (P)**
Tools: Some tools exist, but not used effectively due to lack of training. Global information tools exist, but not applied to SA. (language/cost). **Techn:** Since geographical distance and time is a problem for successful KM< tools must be employed to make KM easier. Possible use face-to-face discussions to transfer knowledge through internet (VIOP Skype) - cheap? **Comp directory:** Company directory is good - needs specialist area for each person. Difficult to find exactly what you are looking for if you do not know the exact name.	Easy for Japan guys to visit THI or CHI. Advantageous when to comes to tacit knowledge transfer. SA is too far - even for UK, although much easier.
Systems	**Hierarchical structure impacts negatively. (P)**
In many cases the "official" systems hinder successful knowledge management. Global systems for information/knowledge should be standardised. They already exist, but are not employed for SA. Too expensive? What will NSA get out of these systems without a drive for KM? Objectives and organisations are structured in silo manner. Not common processes or procedures.	Sometimes difficult to get access to relevant knowledge without getting the approval of some higher authority.
Trust - differing levels	**Job rotation (E)**
Especially when job rotation takes place- who is the new guy, can I trust his information. From Japan's side - who is the SA supplier? I do not have any knowledge? Also - can we trust regions with sensitive information - or do we only share selective information with them until the trust is earned? Can we trust the information that we are given (is it false/untrue?)? Trust is essential for KM, but takes along time to develop. How to earn, or must we just take?	Specifically applicable to NML - Job rotation increased internal knowledge stocks for a region. However, if another region needs to access the knowledge, the person that previously had the knowledge is no longer there. New guy needs time to build up knowledge base - and then he/she will possibly respond.
Time	**Staff T/O (E)**
Knowledge management takes up too much time - especially with time zone differences. Not too bad with UK. Not shared the same goals/urgency regarding why knowledge is required.	High engineer T/O is definitive impact on knowledge - specifically the tacit knowledge that leaves a company with people.
Global strategy /BP	
OLD: Each region competes against another - therefore deliberately holds information to keep competitive advantage. **New** Nissan BP focus on Growth and Trust. Easy to state in BP, but takes long time to develop trust between regions in order for knowledge management to be successful. Global growth is only possible when all knowledge is freely available.	
Company complexity/Leadership change	
When a new leader puts down a new direction, it is difficult to keep focus on KM. You must now also change your direction. If global BP will measure KM (or something else) performance will move to that measurement area.	
Expectations - What do you want to achieve? Is it shared?	
In most cases knowledge is required to meet a certain objective. These objectives are seldom common across the various international divisions - so urgency is not shared. Each region has own set of performance related goals. These goals are not always in sync or matching. Why support certain request with urgency - we do not know the reason - linked to selective sharing.	

ORGANISATIONAL RELATED BARRIERS

Appendix 3 – Rich pictures
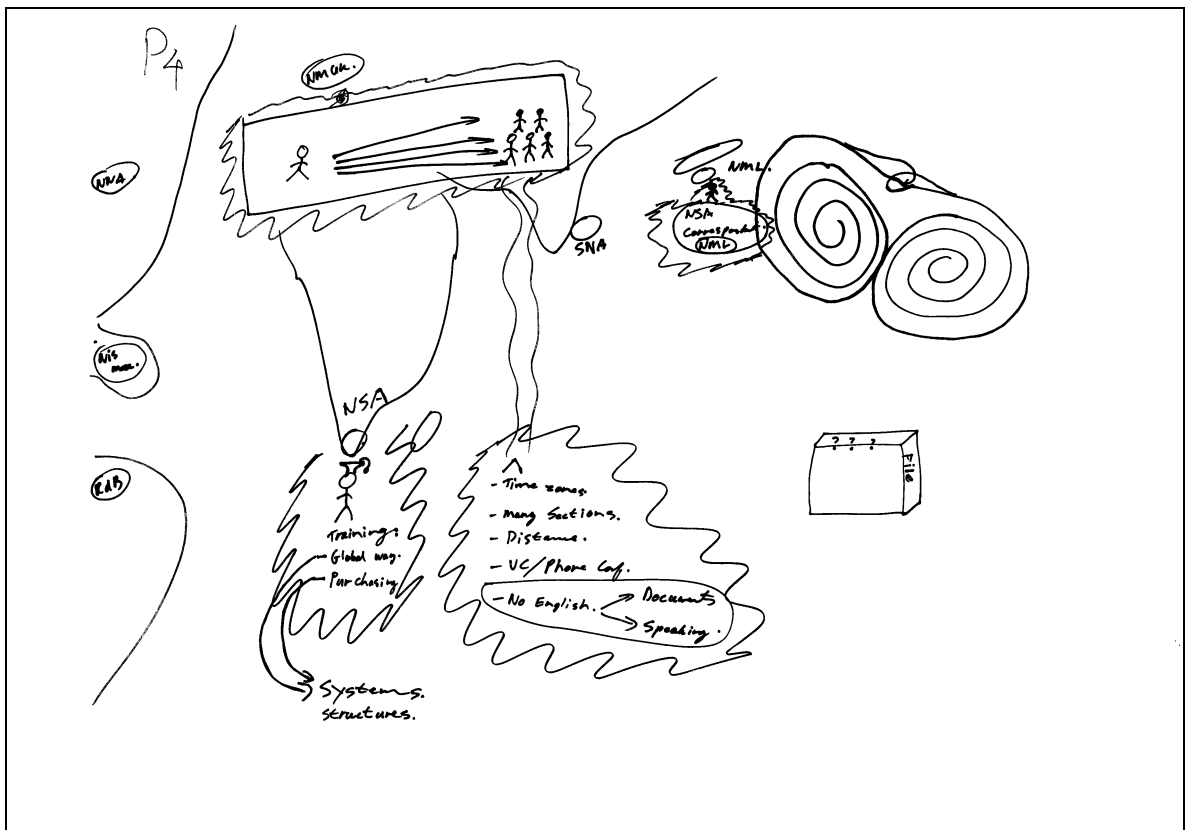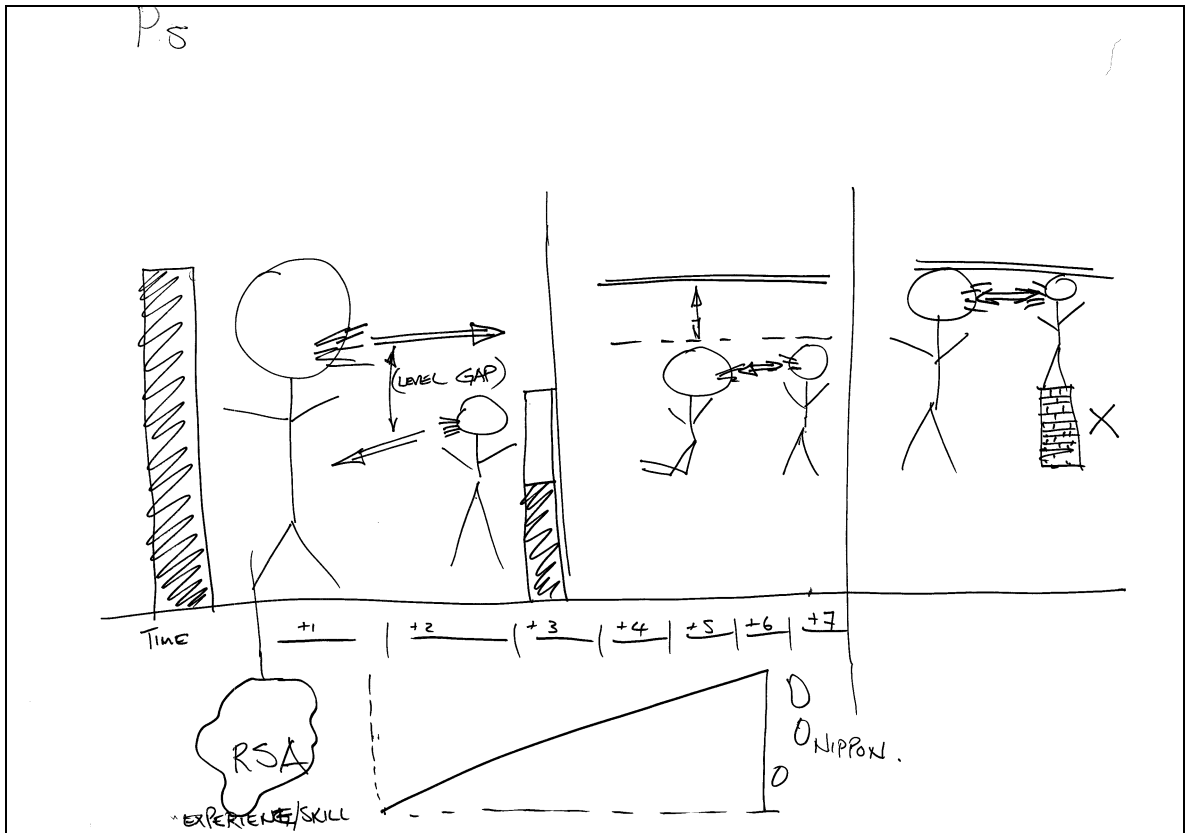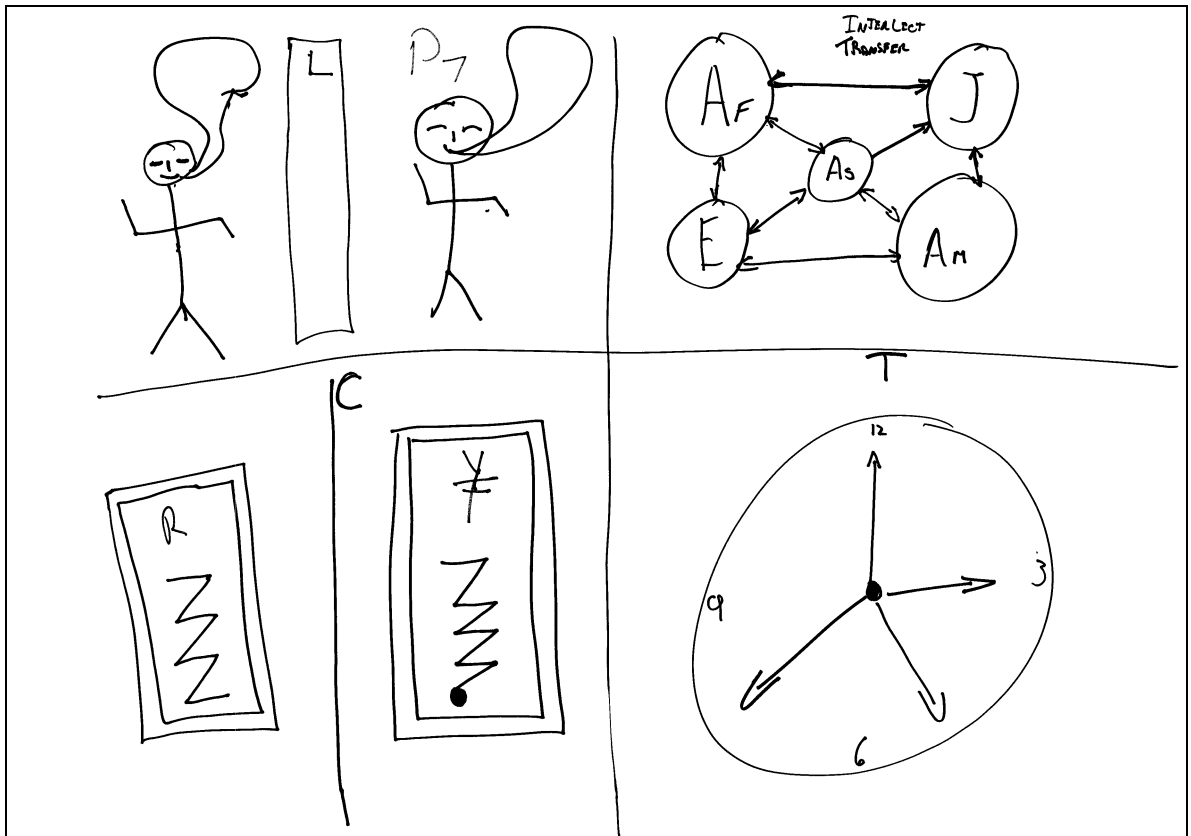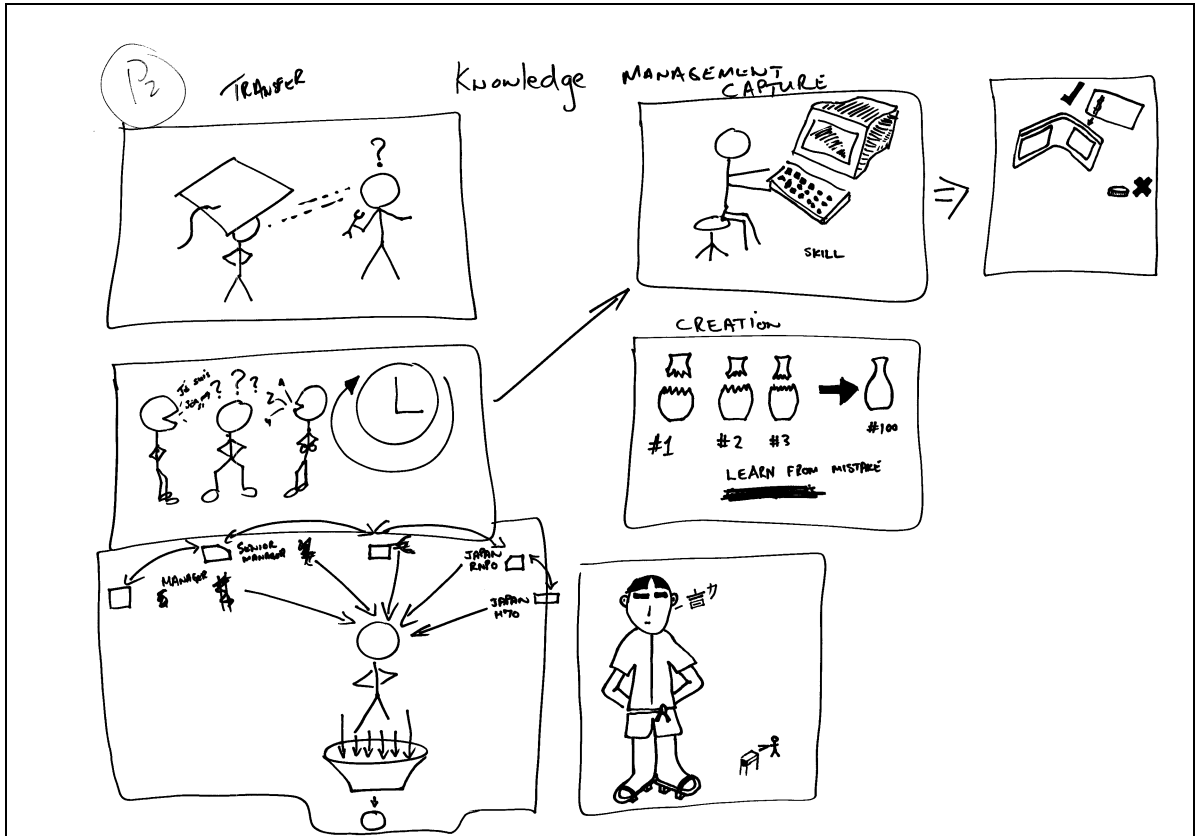
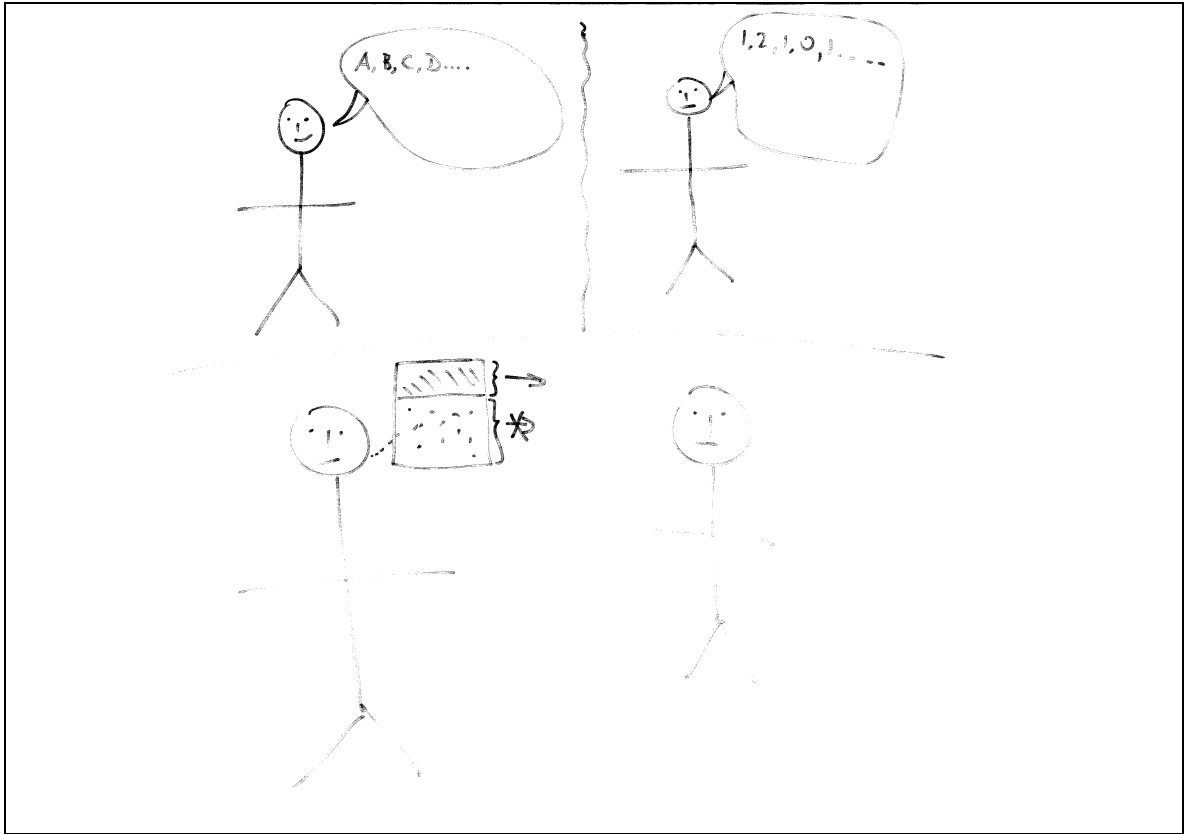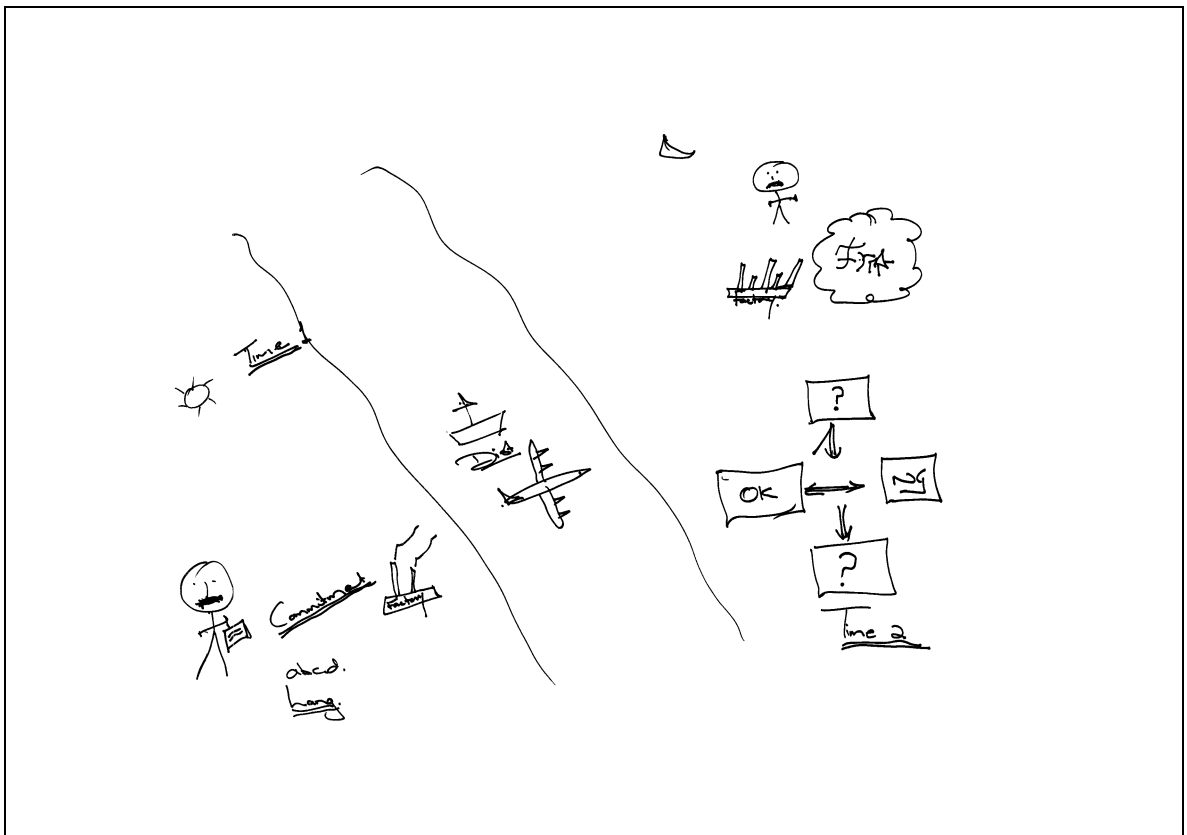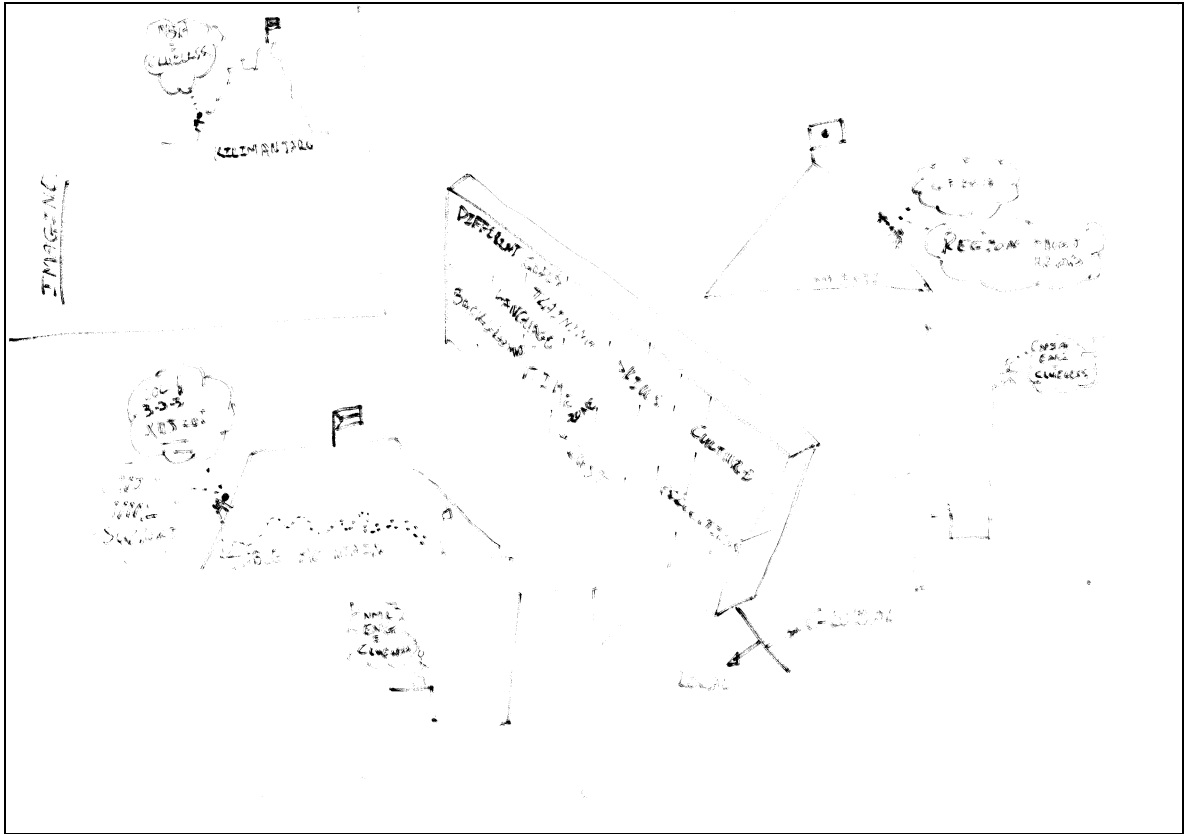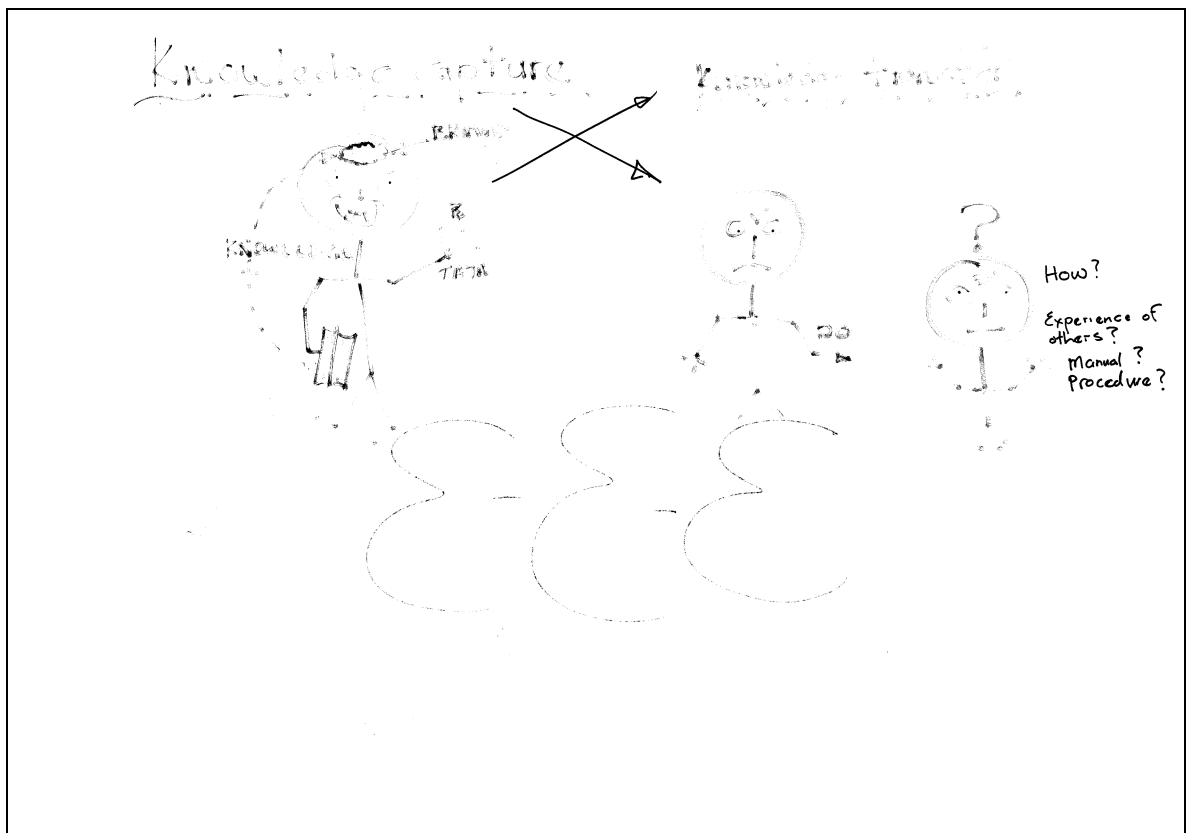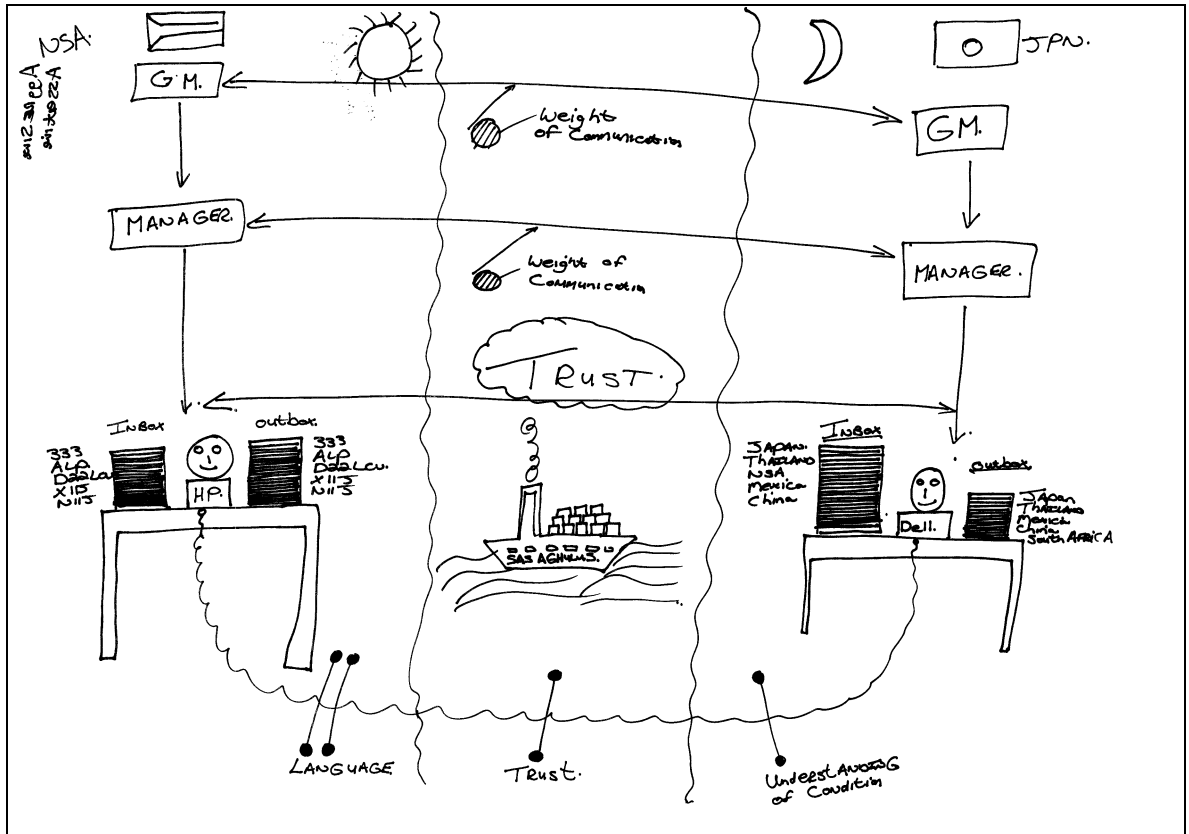| Step	NML	NTCE	THI/CHI	Result
1. Email/Phone D-Notes example. Door Panels	- 6 Weeks leadtime - Do Not Understand Questions	- 2 Hour lead time - Resolve Questions	- N/A - N/A	Delay ALP
2. Data Request (3D Data for Body Side Trim)	- 8 Weeks leadtime - Not allowed to share. With ASC was allowed to share.	- 3 Day's. (Info only) - N/A	- N/A -	Also Part of COP Delay 8 Weeks
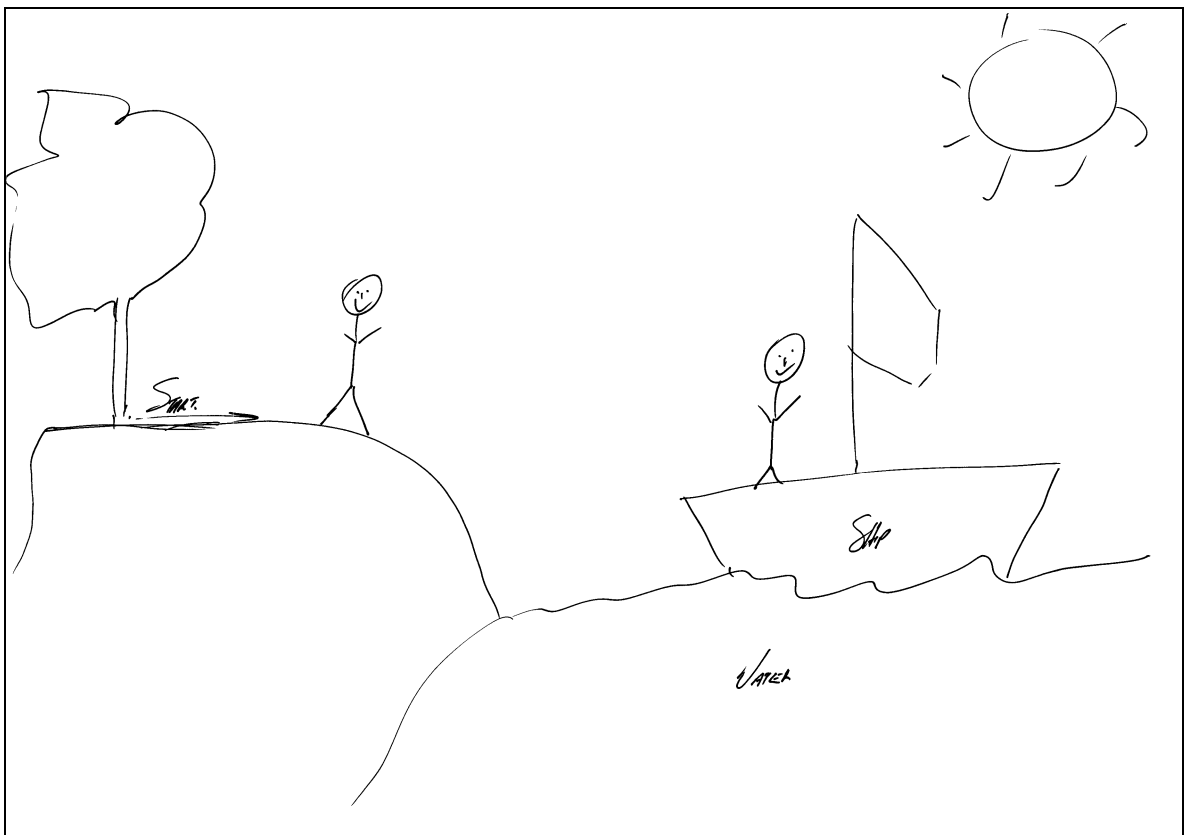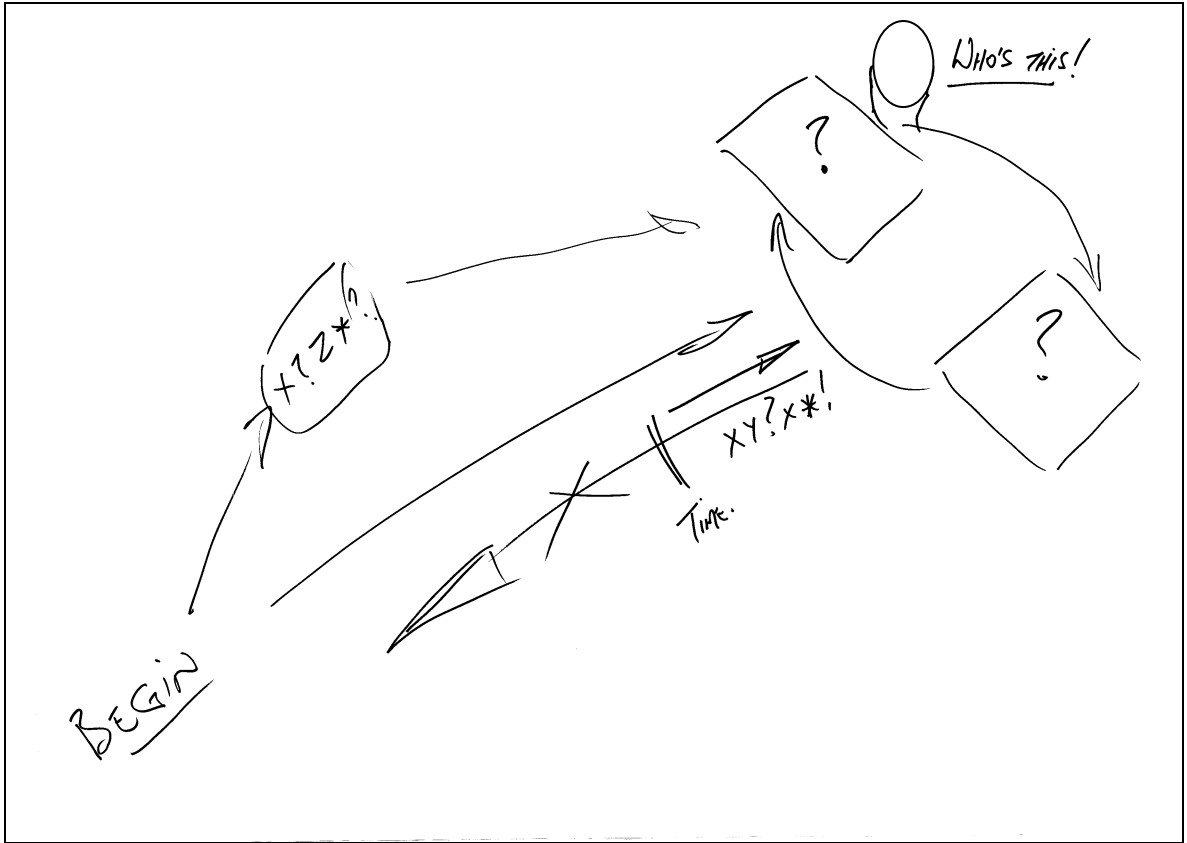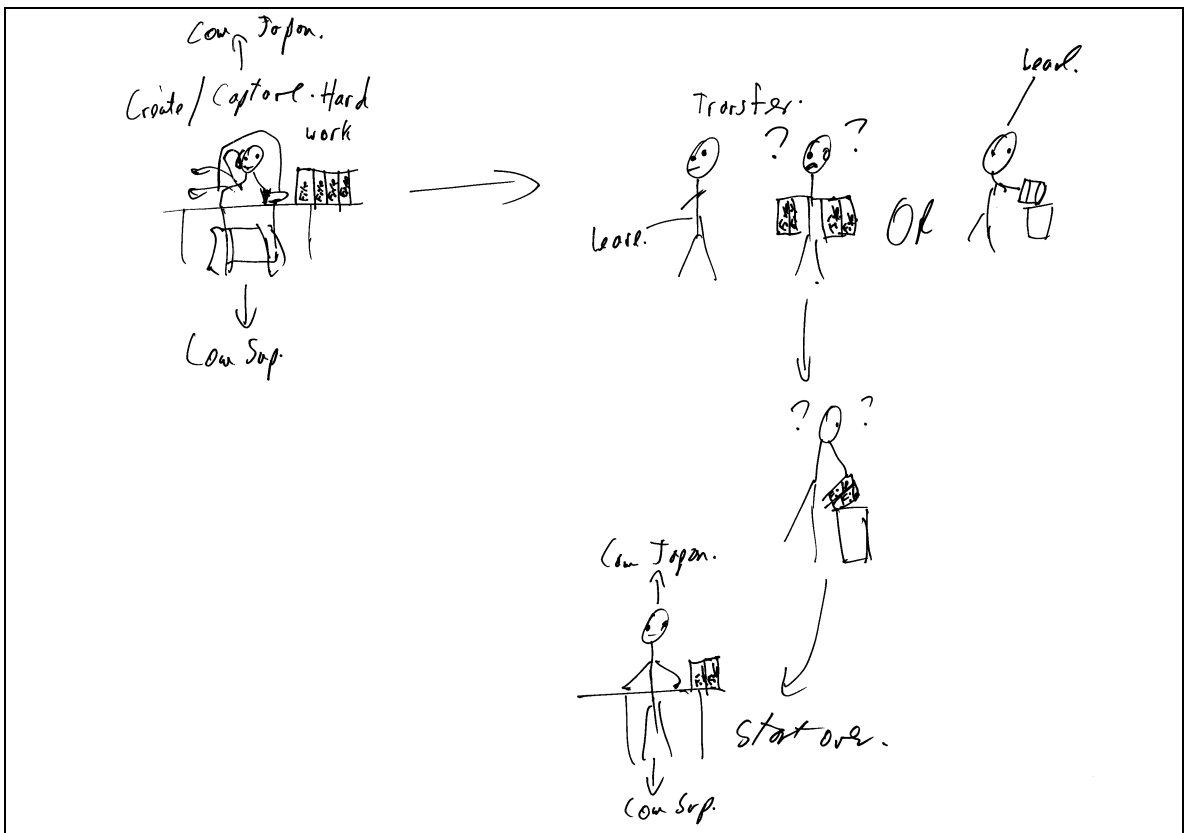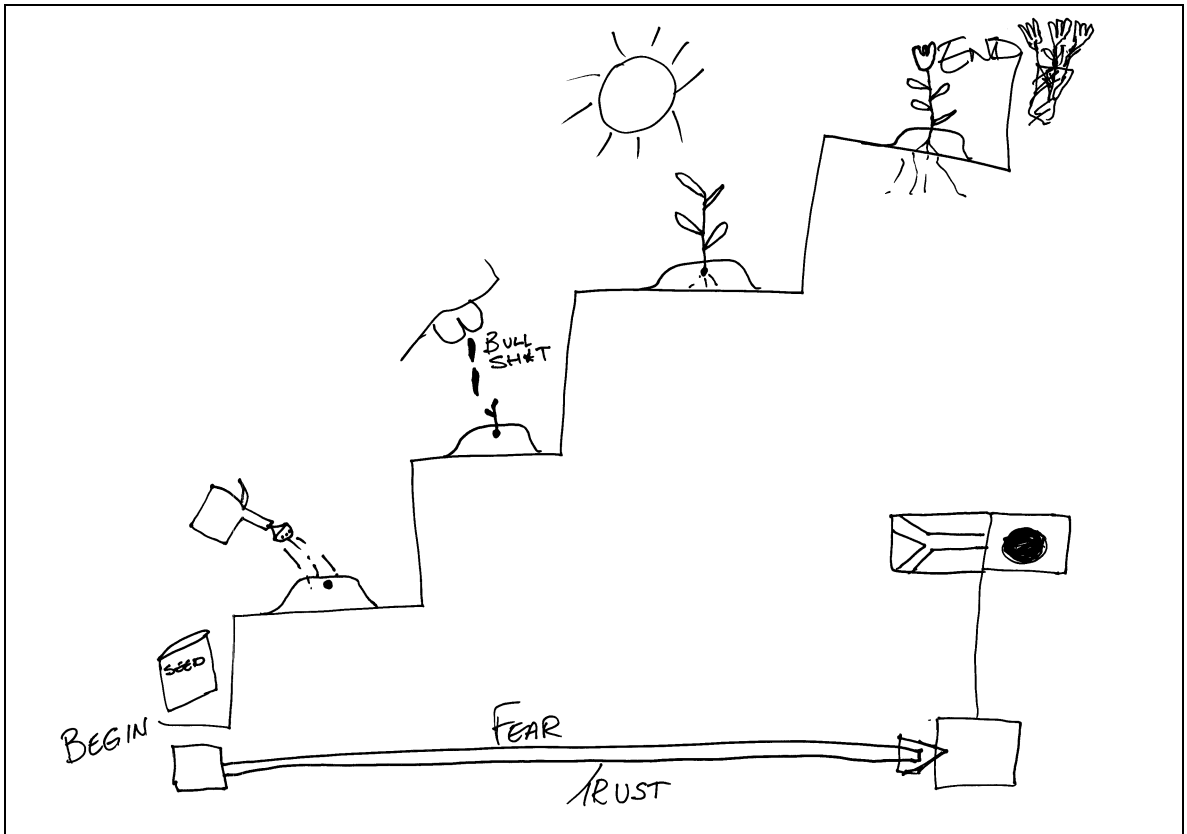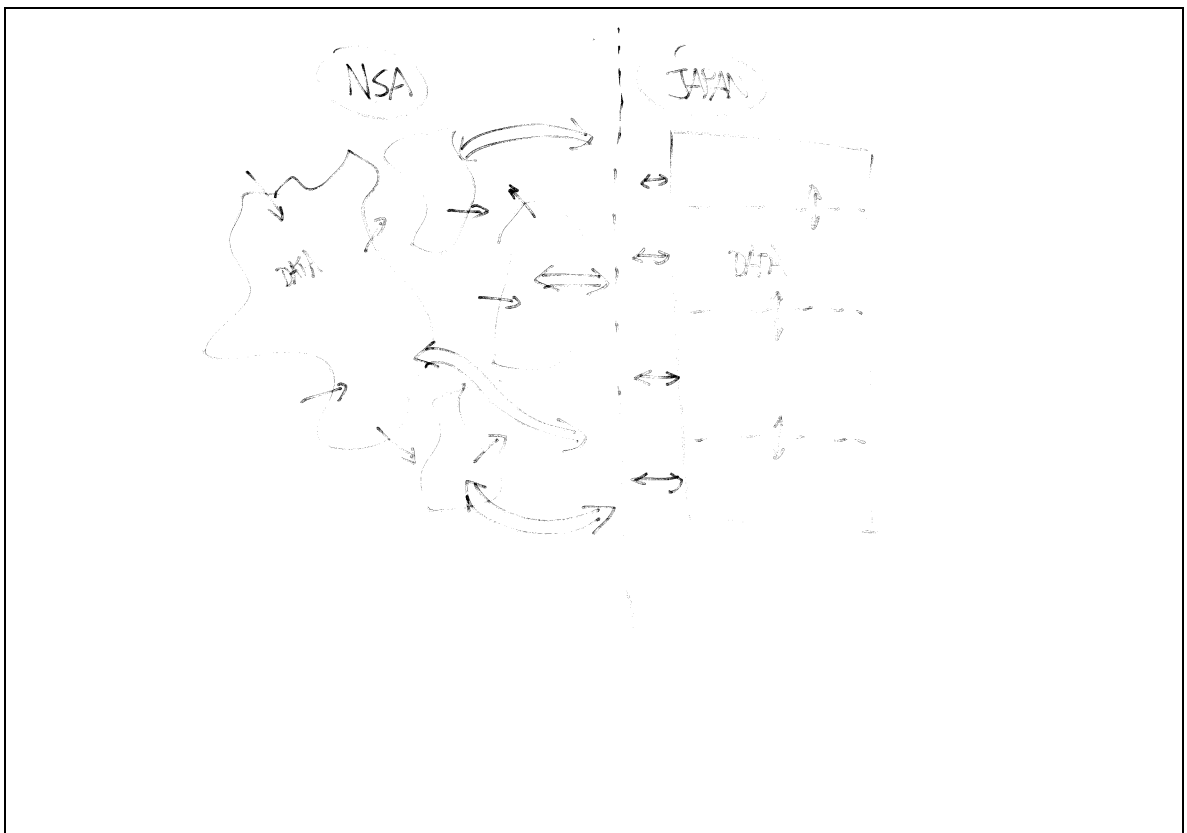
Current Track Time = 18 Months.

Which Eng.?
Japan - Ingies
UK - English

Pits 1

Pits 2

Japan culture ⎫ Trend
Europe culture ⎬ & styling

Culture Chicane

Time junction

Go

Fin

Communication Corner.

Better info sooner.

Pits 3