

**MASTER**

**Marketing MiPlaza**

**market orientation & market segmentation**

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# MARKETING MIPLAZA

*Market orientation &  
Market segmentation*

Jeroen Frissen

In cooperation with:



Student identity number 0590012

in partial fulfilment of the requirements for the degree of

**Master of Science**

**in Innovation Management**

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## Abstract

This thesis is the primary deliverable of a business problem driven graduation project that was carried out at MiPlaza, which is situated in Eindhoven, The Netherlands. The graduation project was carried out as the conclusion of the Innovation Management Master's degree program at Eindhoven University of Technology's Technology Management faculty.

As MiPlaza was only recently externalized by Philips Research, its market(ing) competences are still largely underdeveloped. Therefore, this thesis proposes that MiPlaza adopts a pro-active market orientation, which requires the organization to both implement a set of specific market oriented behaviours, as well as change the organization's mindset to focus on fulfilling customer's current and future needs.

When focusing on customer needs, it is important that MiPlaza knows which type of customers need to be served and how these different types should be handled. Hence, this thesis additionally proposes that MiPlaza adopts a discrimination between Multi-National Corporations (MNC), Small & Medium Enterprises (SME) and Knowledge Institutes (KI). Altogether, this thesis provides MiPlaza with guidelines on developing its market(ing) competences, and takes an initial operational step by proposing a pragmatic and meaningful market segmentation scheme.

## **Personal note**

During my time as a student, I have always enjoyed working in teams, which I hope to continue to do during my professional career. Working in teams is a way for me to excel at my strong points, while being able to profit and learn from other team members' complementary skills. Moreover, as key decisions and elements of a project are thoroughly discussed and reflected on, the eventual outcome of the team-effort often significantly exceeds the mere sum of individual contributions. Looking back on my graduation project, I must admit that it was the absence of teamwork that formed the biggest challenge for me. Naturally, I could always turn to my TU and MiPlaza-supervisors if I had any question or required specific input. But that is not the same as making a team-effort on doing a project in which all members are equally familiar with the project's current state and specifics, and make a joint effort to successfully concluding finishing the project. So the constant reflection and dialog I had grown accustomed to during the past few years was not present as extensively as I would have initially liked, nor was the compensation for my sometimes slightly polychronic mindset. However, the absence of team-mates also forced me to be even more critical on my own work and decisions; and more importantly: guard the status of my own progress and planning. Especially when the emphasis of the project was changed completely in the middle of the project from solely market segmentation to market orientation with market segmentation as an additional operational step, the project was significantly delayed. Here, a valuable lesson in project planning & management was learned and I was able to re-think my approach, complete my project and keep the total delay at an acceptable level. In that context, I would like to end this personal note by stating that I am grateful for the additional skills I have been able to acquire during this graduation project that are not directly related to this thesis' academic content, as it is fair to say that my project management and planning skills have been improved significantly.

## **Acknowledgements**

Taking on three more years of studying Innovation Management at the TU/e after receiving my Bachelor's degree at Hogeschool Zuyd was one of the best decisions I have made in my life so far. The friendly and cooperative atmosphere at the faculty of Technology Management and the like-minded friends I met here have enabled me for a large extent to become who I am today.

For the past 7 months, I have been working on my graduation project, of which this thesis is the main result. The final presentation of this project marks the end of a personal era, as I will not be a student anymore soon; on the other hand, it also gives rise to the next phase of my life, to which I am looking forward to initiating.

Although I will be individually assessed for this thesis and the project as a whole, successful completion had not been possible without the input and help I received from others. I would therefore like to take to opportunity to express my gratitude to all who contributed to this project, but also to those who contributed to other courses and programs that preceded this final exercise.

I would like to thank my supervisor at MiPlaza: Dr Gerjan van de Walle, for providing me with an interesting research topic, insights and feedback, as well as taking the role of sparring-partner every now and then. I would also like to thank the rest of the colleagues at MiPlaza, in particular Ercan Sengil and Jean Louis Steevensz, for their valuable input and for making the project a very positive experience.

I would like to express my gratitude to Prof Geert Duysters, who acted as my primary TU/e supervisor, for his inspiring insights, comments, and suggestions. I would also like to thank Dr Myriam Cloudt for providing me with valuable feedback as my secondary TU/e supervisor. I would additionally like to thank Prof Wim Vanhaverbeke for initiating contact with MiPlaza and providing highly appreciated insights and suggestions throughout the course of the project.

Without the collaborations with my fellow students, I would never have made it this far. I would therefore like to thank all of my university friends for their friendship and inspiration; so thank you Bob, Michiel, Jeroen, Sander, Maarten, Joost and Ben.

Last, but certainly not least, I would like to thank my friends and family for always supporting and believing in me. Especially Sharon, the sweetest girl in the world and my best friend, thanks for being there for me in all the ways imaginable!

Enjoy reading my master thesis!

Jeroen Frissen

*Tilburg, November 2008*

## Summary

### Introduction & project objectives

This graduation project was carried out at MiPlaza, which is a high-tech B2B R&D facilities and services provider located at the High Tech Campus, Eindhoven, the Netherlands. MiPlaza has only recently been externalized by Philips Research and consists of three former internal Philips departments. As a consequence of this heritage, marketing competences are largely underdeveloped. In order to approach this problem, the following research question was formulated:

*“What approach should MiPlaza take in developing its marketing competences?”*

As strengthening market competences will require MiPlaza to have a valid overview of which types of clients need to be served, an additional operational step is taken by addressing the following additional research question:

*“How can the client base of a high-tech B2B R&D services firm, such as MiPlaza, be segmented in a meaningful and practical way?”*

The rest of this executive summary will be structured in accordance with these research questions.

### Competence development

A literature review that covers management-, marketing-, and strategy literature, as well as several other areas of research was carried out and revealed that the adoption of a proactive market orientation will be the best approach for MiPlaza to develop its market competences. Such an approach encompasses changes in both organizational culture and behaviours and processes (Narver *et al*, 2004). After all, unless a certain attitude towards market orientation (MO) exists, behavioural initiatives will never emerge, or will not be effective at the least (Avlonitis & Gounaris, 1997; Gounaris & Avlonitis, 2001; Beverland & Lindgreen, 2007; Kaynak & Kara, 2004). On the other hand, without the skills and structural arrangements to collect market intelligence and disseminate them

through the organization, the firm will be unable to respond to customer needs and satisfy them (Kohli & Jaworski, 1990; Narver *et al*, 2004). This interrelatedness explains to a large extent why organizations attempting to institute an MO fail so often (Beverland & Lindgreen, 2007; Gounaris & Avlonitis, 2001); as these companies' managers generally try to fit the MO into either the company's existing system of beliefs (culture) or the company's existing structural arrangements (behaviours) (Beverland & Lindgreen, 2007; Avlonitis & Gounaris, 1997).

Kohli & Jaworski (1990) argue that adopting a MO is only useful when the benefits exceed the cost of required resources. By examining relevant literature, it is concluded that MiPlaza is likely to profit from implementing MO; although it is debatable to what extent knowledge workers –who are generally not trained marketing-professionals– should have an active part in the undertaking (Leenders & Wierenga, 2002).

Several issues presented in literature should be taken into account when adopting MO. For instance, the most important enabler of a successful MO implementation is the commitment of the firm's senior management (Narver *et al*, 1998; Kohli & Jaworski, 1990). Literature also presents two additional best practices, which instruct companies to institute knowledge management (Hislop, 2005; Norman, 1994), and setup MO as a continuous process (Kennedy *et al*, 2003; Narver *et al*, 2004).

Although in general, organizations that implement MO are likely to perform better, have more satisfied clients, and more satisfied employees than the organizations that do not; simply engaging in MO does not ensure superior performance (Kohli & Jaworski, 1990, Narver & Slater, 1990). After all, the quality of market intelligence itself may be poor, the effective dissemination of the intelligence throughout the company may be lacking, the quality of execution of the programs designed to respond to it may be poor, or the organization's culture may not sufficiently support MO activities (Kohli & Jaworski, 1990; Narver *et al*, 2004; Hooley *et al*, 1990; Gounaris & Avlonitis, 2001); which are all likely to result in the MO not producing the desired benefits and functional consequences.

Altogether, implementing a market orientation appears to be MiPlaza's prerequisite for becoming ready for the future. Literature clearly reveals that implementing and maintaining MO may require significant resources, but more importantly, it requires the dedication of everyone in the organization in order to make it successful and effective. Whereas the balance seems fragile, complementary literature also discusses some best practices and principles to provide practitioners with some guidance. Conclusively, being market oriented is likely to become a prerequisite for any successful large business of the future, not just MiPlaza.

## Segmenting MiPlaza's client base

When changing the organizational culture to focus on fulfilling customer needs, one of the first operational steps is to identify what types of customers actually need to be served. Hence, to address the second objective of this project, a client segmentation scheme was proposed, by means of analyzing currently available client data. After all, the marketing concept states that all customers are different (Smith, 1956; van Raaij & Stroeker, 1997) and that they all derive a different amount of value from the same product (Drucker, 1973; van Raaij & Stroeker, 1997; Kotler & Keller, 2006). In fact, no two customers are exactly alike (Kotler & Keller, 2006), insinuating that there would be as many products as there are customers to entirely fulfil everyone's needs. A widely utilized approach to this challenge is segmenting the organization's clientele and target customers in each segment with a tailored offering (Mohr *et al*, 2005). This is essentially what market segmentation is all about: creating a number of homogeneous groups out of one heterogeneous group (Kotler & Keller, 2006).

Criteria for discriminating between groups could relate to commonly desired product features, but also to service offerings, geographical location, or communication strategy (Croft, 1994; Mohr *et al*, 2005). Criteria used in this project were put forward by MiPlaza's management team and comprise client handling (i.e. creating a number of homogenous groups in terms of performance determinants with regard to client handling) and client communication (i.e. creating a number of homogenous groups in terms of applicable communication strategy).

Ultimately, quantitative and qualitative arguments posited that dividing MiPlaza's clientele into multi-national corporations (MNC's), small & medium enterprises (SME's) and knowledge institutes (KI's) would provide the best basis for creating homogeneous client segments out of MiPlaza's heterogeneous client base.

## Summarizing conclusions

MiPlaza has only recently been externalized by Philips Research and due to its history as an internal service department, market(ing) competences are largely underdeveloped.

This project set out to investigate what approach MiPlaza should take in developing its market(ing) competences and concluded that a proactive market orientation is the way to go. Adopting a market orientation comprises both the institutionalization of market oriented behaviours and processes, as well as changing the organization's prevailing system of beliefs and assumptions (organizational culture).



Also an important operational first step towards implementing such an orientation was taken by segmenting MiPlaza's client base on the basis of relevant criteria. The conclusion of this elaborate segmentation exercise was that MiPlaza's customer base should be divided into three main groups: multi-national corporations (MNC's), small & medium enterprises (SME's) and knowledge institutes (KI's).

Overall, this project provides MiPlaza with a strong case in favour of adopting a market orientation as the ultimate strategy to strengthen its market(ing) power. Additionally, it provides MiPlaza with insight into its current customer base by providing an analysis of their clientele as well as proposing a validated segmentation scheme. These outputs may form the basis for MiPlaza's newly set strategic goals and planning and may ultimately provide the foundation for MiPlaza's long-term survival.

### **Scientific and practical value of the project**

This thesis does not only have value for MiPlaza, but does also contribute to both practice and science in general. For example, this thesis provides implications for MiPlaza as well as other practitioners as it presents a strong case in favour of adopting a market orientation as a strategy to strengthen a high-tech B2B R&D facilities and services provider's market(ing) power and improve its long-term prospects. However, the reader is cautioned that the concept of market orientation is not necessarily applicable in any business' situation (Kohli & Jaworski, 1990). Therefore, the concept is critically reviewed and several issues are presented that need to be taken into account when assessing the applicability of a market orientation (Beverland & Lindgreen, 2007; Gounaris & Avlonitis, 2001; Narver *et al*, 2004; Gresham *et al*, 2006; Leenders & Wierenga, 2002; Kohli & Jaworski, 1990). Consequently, also practitioners that are not high-tech B2B R&D facilities and services providers will value these issues as a guideline to assess the applicability of market orientation in their specific context.

Also the segmentation exercise explicated in this thesis provides implications for MiPlaza as well as other practitioners. Naturally, the exercise provides MiPlaza with insight into its current customer base by providing an analysis of their clientele as well as proposing a validated segmentation scheme. Moreover, the universally applicable approach to market segmentation taken in this project provides additional implications for practitioners in general as it is well-documented and may serve as an inspirational and educative example of the process of market segmentation (Croft, 1994).

The project also contributes to organization science. As discussed in Section 4.2, literature on market orientation generally takes a rather philosophical view on the

subject (Narver *et al*, 2004; Blankson *et al*, 2006). Not only by regarding market orientation as a business philosophy; but also when discussing market oriented behaviours, academics remain on a relatively superficial level (Kohli & Jaworski, 1990; Narver *et al*, 2004, Day, 1999). In other words, although market orientation is defined as the implementation of the marketing concept, strong pragmatic ‘how-to’ research is relatively scarce (Kohli & Jaworski, 1990; Slater & Narver, 1998; Beverland & Lindgreen, 2007, Narver *et al*, 2004; Kaynak & Kara, 2004; Blankson *et al*, 2006; Kohli *et al*, 1993; Gounaris & Avlonitis, 2001; Day, 1999). From that perspective, an important academic contribution of this thesis is therefore considered to be the identification and explication of best practices and principles that were derived from the earlier mentioned fields of research, as this contributes to filling the aforementioned application-gap in literature. This also shows that becoming market oriented is a complex undertaking and although the basic concept is relatively straightforward, the actual implementation requires vision, thoughtful (strategic) planning and tremendous effort by all organizational members.

Also in market segmentation literature, a B2C perspective is generally taken (Kotler & Keller, 2006). The exemplary case of MiPlaza’s market segmentation exercise will contribute to literature as it provides insights in the perspective of a knowledge intensive high-tech R&D environment, an industrial offset market, and a facilities and service provider.

Finally, this thesis also makes a valuable contribution to literature by identifying and explicating the large gap between rigorous and relevant publications in extant market segmentation literature (Wood, 2002; Croft, 1994; Kotler & Keller, 2006; Shrivastava, 1987), which prevents practitioners from deriving high value from rigorous research and provides academia from deriving high value from relevant research.

Altogether, this thesis makes a number of valuable contributions to both science and practice. And at the same time provides MiPlaza with the instruments to strengthen its market(ing) power and ultimately ensure its long-term survival.

## Table of Contents

<b>1</b>	<b>Introduction</b> .....	<b>3</b>
1.2	Towards becoming one company.....	5
1.3	Towards a market oriented organization?.....	6
<b>2</b>	<b>Project Approach</b> .....	<b>8</b>
2.1	Current situation at MiPlaza.....	8
2.2	Problem definition.....	9
2.3	Project objectives.....	11
2.4	Contribution to academics and practice.....	13
<b>3</b>	<b>Strengthening MiPlaza's marketing competences</b> .....	<b>14</b>
3.1	Introduction to literature.....	14
3.2	Two opposing perspectives.....	17
3.3	What does a market orientation comprise?.....	21
3.4	Measuring market orientation.....	26
3.5	Applicability of market orientation in a B2B high-tech R&D services and facilities provider.....	28
3.6	Best practices for a high-tech B2B R&D services and facilities provider.....	39
3.7	Literature review conclusions.....	44
<b>4</b>	<b>Market Segmentation</b> .....	<b>46</b>
4.1	Why a should company segment its market.....	46
4.2	Applicability of a universal segmentation scheme (a concise philosophical meta reflection on segmentation literature).....	47
4.3	Segmentation for MiPlaza.....	49
<b>5</b>	<b>Criteria formulation &amp; Data preparation</b> .....	<b>52</b>
5.1	Segmentation criteria.....	52
5.2	The data-set.....	60
5.3	Data pollution.....	60
5.4	Data build-up.....	63

<b>6</b>	<b>Analysis results</b> .....	<b>64</b>
6.1	General statistics & findings.....	<b>Error! Bookmark not defined.</b>
6.2	Philips dependency .....	65
6.3	'Large customer' –dependency .....	66
6.4	Proposed segmentation criteria's statistics .....	66
6.5	Proposed segmentation scheme .....	72
6.6	Segmentation conclusions.....	72
<b>7</b>	<b>Conclusions, Implications &amp; Suggestions for future research</b> .....	<b>73</b>
7.1	Developing MiPlaza's market(ing) competences .....	73
7.2	Segmenting MiPlaza's client base .....	75
7.3	Summarizing conclusions .....	76
<b>8</b>	<b>Recommendations &amp; Reflection</b> .....	<b>77</b>
8.1	Recommendations based on segmentation scheme.....	77
8.2	Recommendations based on literature review .....	78
8.3	The implementation of cultural change .....	80
8.4	Reflections .....	84
	<b>References</b> .....	<b>88</b>
	<b>Appendix A: Measurement schemes</b> .....	<b>98</b>

## 1 Introduction

This master thesis project was carried out within MiPlaza (an abbreviation of 'Microsystems Plaza'), which is a high-tech R&D services and facilities provider that consists of three business groups and employs about 300 engineers, researchers and staff in total. These

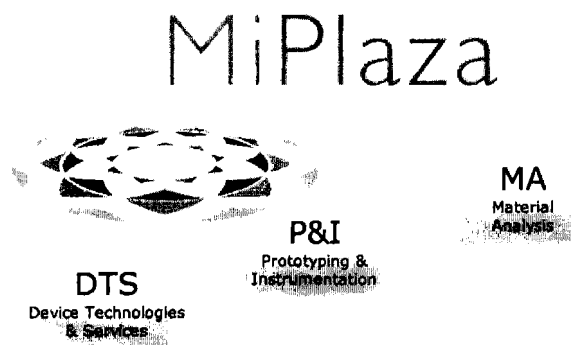


Figure 1: The three groups that make up MiPlaza

groups used to be internal R&D support departments of Philips Research: *Device Technologies & Services* (DTS), *Materials Analysis* (MA), and *Prototyping & Instrumentation* (P&I). In 2005, these groups were externalized by Philips Research to aggregately form a new business entity: MiPlaza (Figure 1) and although MiPlaza became an autonomously operating organization, it is still wholly owned by Philips Research (Figure 2).

The facilities and services MiPlaza offers range from simple 'dry hire' of laboratory space and equipment, through the facilitation of MiPlaza's clients' R&D processes, to long-term co-development partnerships between MiPlaza and a number of clients in an open-innovation setting. This broad range of activities is an immediate heritage of the different groups' internal Philips activities. Although integration initiatives are well under way, each group still has its own character and business model. For example, whereas DTS and P&I have a strong focus on R&D (i.e. the early stages of the product development cycle), MA has a more evaluative nature that plays a role in all stages of the product development cycle as well as after the products have been brought to market. Currently, Philips Research still represents more than half of MiPlaza's turnover, other Philips affiliated MiPlaza customers are considered to be external clients rather than internal (Figure 2); meaning that all clients except Philips Research are regarded as an external customer. In addition to this additional Philips clientele, MiPlaza also serves an entirely non-Philips market, which mainly consists of R&D laboratories at a wide variety of industrial organizations.

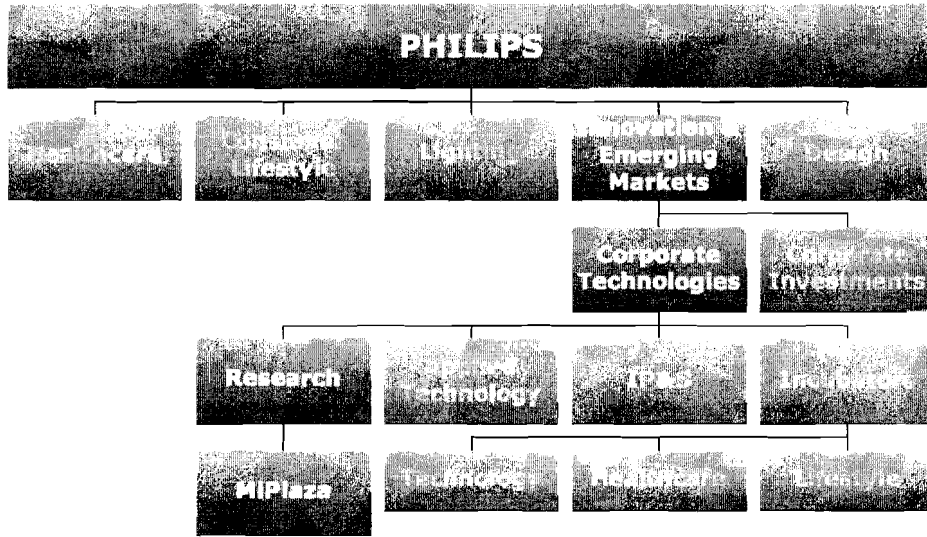


Figure 2: An overview of the relevant parts of the Philips organization and the position of MiPlaza

### 1.1.1 High Tech Campus Eindhoven

MiPlaza is located at the Philips High Tech Campus (HTC) in Eindhoven (The Netherlands). The HTC evolved out of Philips’ *Natlab* facility, which was the embodiment of the cutting edge research Philips had been carrying out for the last century. For Philips, an atmosphere of collaboration proved to be a critical success factor for many technological breakthroughs. Since 1999, Philips has therefore been actively working on the creation of an environment that revolved around this atmosphere of collaboration and knowledge sharing. This effort resulted in the first version of the HTC, which, initially, was a ‘Philips-only’ site. Since 2002, also non-Philips companies were allowed to establish their business on the campus if their local R&D efforts were closely related to that of the local Philips offices. As from the beginning of 2003, the HTC is an open campus where business- as well as non-business visitors are allowed to enter and leave as they please (High Tech Campus Eindhoven website, 2008).

The groundwork for the facilities that are currently MiPlaza has already been done during the Philips Natlab era as part of Philips Research as described earlier. The HTC provides



High Tech Campus Eindhoven

Figure 3: HTC Logo

MiPlaza with a central location for serving the domestic market, as well as maximally profiting from the regional aggregation around this HTC. As a matter of fact, MiPlaza’s facilities are presented as a key element of the High Tech Campus’ own value proposition.

## 1.2 Towards becoming one company

So, MiPlaza has an interesting Philips-related history that brings some advantages as well as disadvantages. For instance, converting MiPlaza from three separately operating service departments into a well-oiled and totally integrated company is not done overnight, neither without problems. In that context, MiPlaza has only just begun to take the necessary actions and the strategic alignment is therefore still 'work in progress'. A holistic approach is the best way to reach such a full integration, so changes in one form or another are inevitable at practically all levels, groups and departments. However, MiPlaza appears to be on the right track, as a number of internally focused operational 'points of attention' seem well defined and, in general, are adequately acted upon. At an operational level, for example, MiPlaza is currently carrying out several improvement projects, largely based on 4 themes:

### **Integrated key account management**

*A number of external key clients have been identified on the basis of annual turnover and strategic importance. These key clients' accounts will now be managed and maintained company-wide (versus management per group or activity) by account managers.*

### **Customer centred organization**

*MiPlaza is taking a more pro-active approach towards fulfilling customer needs and intensifying the relationship with clients; i.e. 'commercializing' MiPlaza's mindset. A TNS NIPO study has already been carried out; a follow-up project is being initiated.*

### **Business excellence**

*MiPlaza's operations are still largely based on the three groups' different business models and ways of working. Enormous effort is put into the integration of the groups' business processes on an operational level. By doing so, the company will get its own uniform identity, processes are aligned and overhead costs are significantly reduced.*

### **Confidentiality & IPR Management**

*As many of the activities MiPlaza carries out for its clients are concerned with (the co-creation of) strategically important technologies, customers are concerned with MiPlaza's handling of their intellectual property. Active programs concerning intellectual property rights management and confidentiality have been instituted.*

### 1.3 Towards a market oriented organization?

Altogether, MiPlaza's view on the internal organization has already resulted in the identification of the aforementioned key themes for improvement, so the integration process is well under way. However, MiPlaza's view on the outside world, in terms of marketing strategy and -competences, may still be regarded as largely under-developed, which is also being referred to by the focus on the aforementioned *customer centered organization*. Although this absence of strong marketing competences may not come as a surprise, given the organization's internal Philips history, it may potentially pose a threat to MiPlaza's long-term continuity and survival. Luckily, also this issue has been on the management team's radar screen and some initial short-to-medium-term steps were taken in the form of the formulation of four potential business growth areas:

#### **Solar**

*Research concerned with the collection of solar power is on the rise. The fundamental technologies that are required for producing and developing solar cells have a tight fit with technologies and competences already present within MiPlaza. Competences related to solar cells are therefore regarded as one of the future pillars of MiPlaza, so competence- and business development in that field has therefore received high priority.*

#### **Regional expansion**

*Several studies discuss the 'Eindhoven-Leuven-Aachen-triangle' as an important high-tech region. Currently, however, MiPlaza does not seem to fully profit from this. Hence, an initiative was launched to investigate the business growth potential of actively approaching potential clients in this region.*

#### **HTC expansion**

*Whereas formerly, every new employee that came to work at the HTC was introduced with the key facilities on the site (including those that are now MiPlaza), the HTC's massive expansion eroded this tradition. Nowadays, it is estimated by MiPlaza's management team that only 35-40% of the workers at the HTC know what facilities and services are available at MiPlaza. By actively approaching new HTC residents, MiPlaza believes to realize short-term growth.*



### Engineering firms

*Although many of MiPlaza's clients outsource certain parts of their R&D to 3<sup>rd</sup> party engineering firms, these firms do not yet make use of MiPlaza's facilities and services; although there are strong indicators that they could profit from that. So, engineering firms might be a market segment that could provide interesting business growth for the near and distant future.*

These four business development areas have been identified by MiPlaza's management team on the basis of personal insight and experience and are aimed at the short to medium term. Up till now however, no specific plans or approaches have been formulated, nor had any extensive market research been carried out to validate these target areas. In other words, 'the stage is set' and now 'the show needs to be produced'.

To structurally build MiPlaza's marketing competences and to engage the growth areas mentioned above, two senior sales managers and an experienced marketing manager have recently been recruited. Although this addition to MiPlaza's staff is a valuable first step in the process of developing a strong marketing competence, additional steps are needed as the organization still largely operates as it did inside Philips Research; i.e. with a strong *inside-out* mindset (Narver & Slater, 1990), comparable to a *technology push* mindset (Burgelman *et al*, 2004). Basically, MiPlaza's management team believes that the prevailing mindset throughout MiPlaza should become more market oriented (i.e. *market pull*) (Narver & Slater, 1990; Kotler & Keller, 2006; Burgelman *et al*, 2004); these beliefs, however, have not been validated through neither qualitative, nor quantitative research; so there is an important gap to fill. Nonetheless, such a transformation should be carried out without undermining the integrity of purely technical interactions (Narver & Slater, 1990; Kohli & Jaworski, 1990) and the basis for radical innovation a technology-push context provides (Burgelman *et al*, 2004). Only recruiting marketing staff will therefore not suffice, MiPlaza's entire organization must be committed to this change of mindset (Beverland & Lindgreen, 2007).

Altogether, the situation of MiPlaza being a high-tech *business-to-business* (B2B) R&D service provider makes determining the most appropriate marketing competence development strategy not a simple exercise. Hence, this project focuses on providing MiPlaza with a number of guidelines for building its marketing competences and will even make a start by providing MiPlaza with a market segmentation scheme. The following section will provide an overview of the approach taken to this project.

## 2 Project Approach

In short, this project will address the development of MiPlaza's marketing competences by discussing the most appropriate course of action based on a descriptive (Yin, 2003) review of extant literature in Section 3. Additionally, an important initial operational step is taken by dividing MiPlaza's clientele in homogenous groups in a meaningful and practical manner, resulting in the segmentation scheme that is presented in Section 6.

The following sections will explicate the approach taken in this project by describing the current situation at MiPlaza in Section 2.1, defining the problem in Section 2.2, discussing the project's objectives and research questions in Section 2.3, and mentioning the project's contribution to practice and academics in Section 2.4

### 2.1 Current situation at MiPlaza

As mentioned earlier, MiPlaza is currently expanding its marketing and sales staff. Naturally, also these staff-members are busy setting up initiatives to strengthen MiPlaza's marketing competences in addition to the research carried out for this project. As a result of this, there is no absolute starting point for the project; meaning that the current situation is comparable to a 'moving target'. Nonetheless, although several initiatives have been introduced, a clear strategy on how to approach the marketing competence development has not yet been formulated, so the key contribution of this project remains valid. Throughout the remainder of this report, the current situation is often referred to; this situation may be regarded 'as is' at the moment of publication of this report on November 22, 2008.

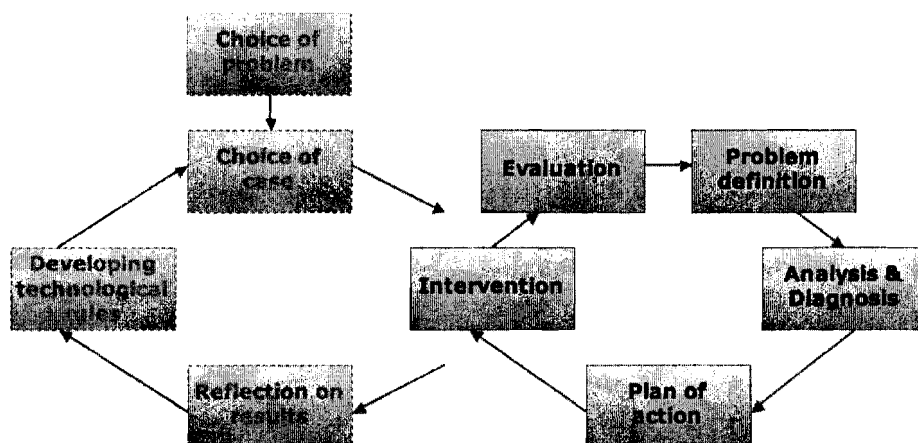


Figure 4: Van Aken *et al's* (2007) reflective cycle

## 2.2 Problem definition

The project at MiPlaza is design-oriented, as the main focus is proposing an approach to competence development. One framework that can provide useful guidelines is van Aken's (2007) reflective cycle, which is depicted in Figure 4 and will merely be used for some general guidelines. The cycle consists of van Strien's (1975) regulative cycle, which is a model for deriving rigorous value from relevant projects (van Aken *et al*, 2007), to which some evaluative steps were added. These evaluative steps form the basis of this project's approach. Consequently, this project approach can be loosely set up after a five step approach, in which the first step is to come up with a so called *problem mess* (van Aken *et al*, 2007) in which different existing issues in the organization are tied together. Out of this problem mess, a more specific problem is chosen that will provide the primary focus of the project, based on several selection criteria. For instance, selecting a business problem that is more to the 'result' side of the problem mess usually results in a higher relevance of the project, on the other hand, the feasibility of the study decreases. As a result, a trade-off is involved in the selection of the project's primary focus. The analysis of the chosen business problem results in a more detailed problem definition and cause of the existing primary issue. It is important to note that the selected project focus is on a preliminary problem mess, as organizations are dynamic, the problem can also be changed during the project if necessary.

When this project was initiated in February 2008, an initial problem mess (Figure 5) was constructed, based on information provided by MiPlaza's management team and staff during a number of initial interviews. As MiPlaza only recently became an external and autonomously operating company, the problem mess reveals many issues that are related to this development. For instance, the organizational structure seems not to be geared to fulfil the new requirements that come with full autonomy. As a result of that, market strategy and marketing competences are somewhat underdeveloped. The combination of a broad range of activities and no true company-wide go-to-market approach yields an unclear message towards (potential) customers, making it altogether difficult for MiPlaza to extend its customer base and formulate a concise but clear value proposition. Although MiPlaza has already begun to take mitigating actions on many of the issues in this problem mess, the issues of underdeveloped market strategy, marketing competence and the resulting difficulties of extending the customer base and developing a medium to long-term marketing strategy may threaten MiPlaza's long-term continuity in a worst-case scenario nonetheless.

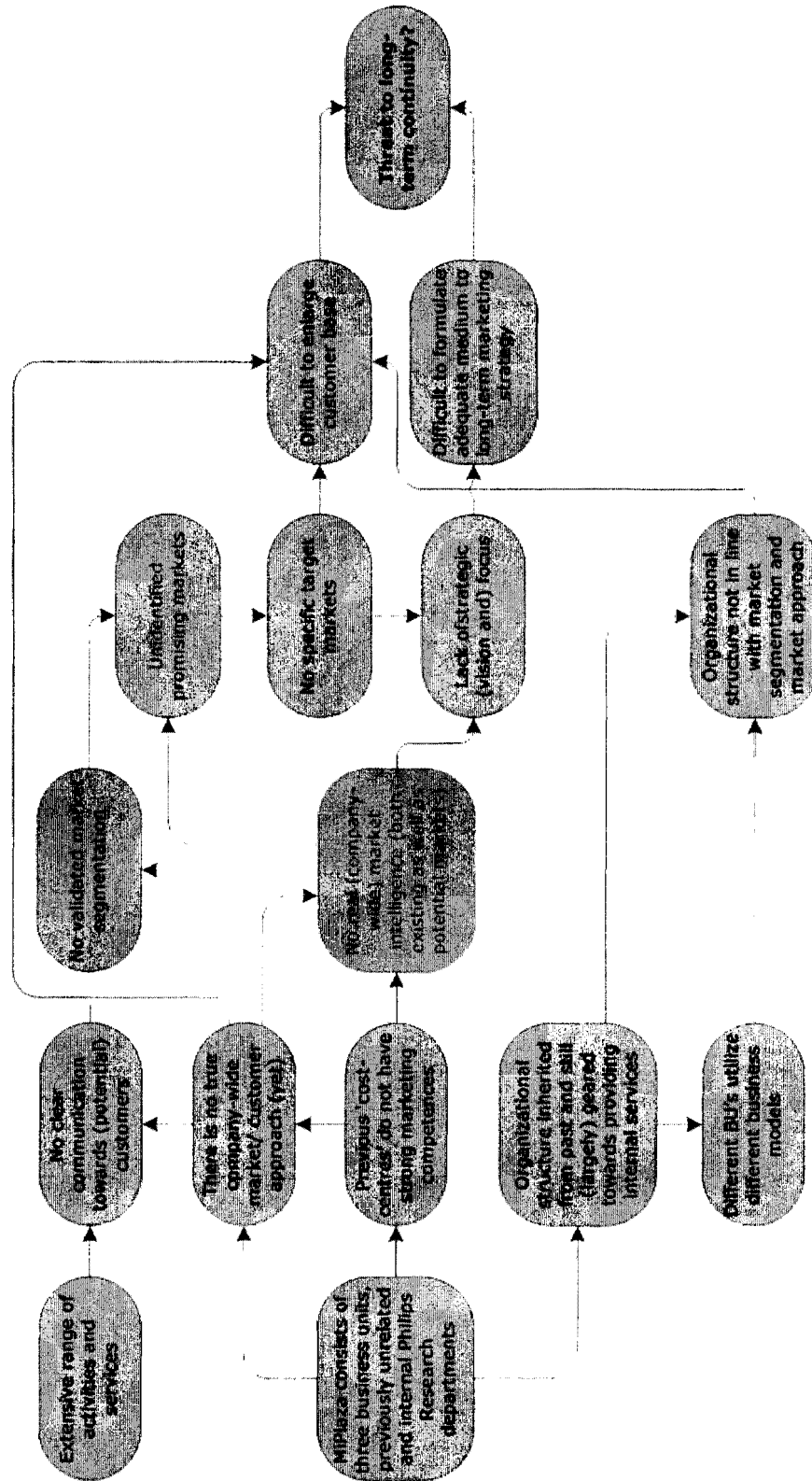


Figure 5: Initial problem-mess

So, the problem mess provides a context for the selection of this project's main focus. Several of the most urgent issues, however, lay on the operational level and are already being addressed, as discussed earlier. One major issue that could indeed provide an interesting focus problem is the difficulty MiPlaza has to develop a proper and well-founded long to medium-term marketing strategy, which is attributed to several main causes.

As a natural result of the former internal focus of MiPlaza's BU's, marketing competences are underdeveloped, as a result of which MiPlaza is often unable to fully understand and fulfil customers' needs for example. This issue provides an interesting topic for this project, as recommendations on how to approach the *development and strengthening of marketing competences* will provide MiPlaza with the instruments that may eventually be critical for its long-term survival. In developing these recommendations, Levitt's (1960) business philosophy that is generally referred to as the *marketing concept* -and emphasizes on customer needs- will be used as a guideline. Naturally, when emphasizing on customer needs, it is essential to be able to identify these customers. Hence, another element that will provide an interesting additional topic here is the *segmentation of MiPlaza's market/ customers* as it has important consequences for the strategy issue mentioned earlier and constitutes an important first step in emphasizing on customer needs (Kotler & Keller, 2006).

So, altogether, this project will address the *development of MiPlaza's marketing competences* as well as the *meaningful segmentation of MiPlaza's clientele*.

### 2.3 Project objectives

As discussed earlier, the primary objective is making a long-term contribution by explicating how MiPlaza should develop its marketing competences, so that MiPlaza's marketing power becomes structurally sound and the company becomes more market oriented. These recommendations are largely made on the basis of a quantitative literature review concerning the implementation of Levitt's (1960) *marketing concept* (please refer to Section 3 for a detailed description). The research question that addresses this objective is formulated as:

***“What approach should MiPlaza take in developing its marketing competences?”***

Some sub-questions that should be answered are:

*What best practices and principles are relevant to MiPlaza becoming more market oriented?*

*What issues are relevant in assessing whether market orientation is applicable for MiPlaza?*

As discussed earlier, the second objective of this project is defined as designing an appropriate customer segmentation scheme for MiPlaza as well as formulating additional recommendations based on that segmentation; as this represents the important first step in becoming 'customer needs' oriented (Kotler & Keller, 2006). The research question that addresses this objective is formulated as:

***“How can the client base of a high-tech B2B R&D services firm, such as MiPlaza, be segmented in a meaningful and practical way?”***

Sub-questions of this research question include:

*Why should MiPlaza's market be segmented?*

*Which types of customers can be differentiated?*

*Using which criteria should MiPlaza differentiate between different types of customers?*

By addressing these questions, this project significantly contributes to MiPlaza's view on the outside world and consequently enforces MiPlaza's short-term marketing and sales strength. Since this project is design-oriented, the output of the project is not an answer in the form of an evaluation of tested hypotheses, but rather a solution design. In the case of business problem solving van Aken *et al* (2007) argue that actually two designs have to be developed: first, the actual (re)design; and second, a change plan to guide the implementation of the (re)design. In the context of developing market competences, the former will consist of the proposed competence development approach, whereas the latter will be formulated in the form of best practices and principles. As far as the subsequent segmentation exercise is concerned, the design will include the segmentation scheme itself; and the change plan includes the strategic implications of the scheme and some recommendations for an organizational redesign. Considering the limited duration of the project, the actual implementation will not take place during the project itself.

## 2.4 Contribution to academics and practice

The project is evidently set-up as *business problem driven* (van Aken *et al*, 2007). Being primarily design-oriented, but also theory-based, the project will yield both practical and (limited) academic contributions. On the practical side, the redesign should aid MiPlaza in the process of becoming an independent organization with an expanding marketing competency and improve its long-term prospects. By restructuring the market approach it will become more market-oriented and more attractive to both existing as well as new customers on the one hand; and will be better able to identify and respond to future customer needs on the other hand as well. Moreover, the proposed segmentation scheme will provide MiPlaza with instant additional insight in its offset market, enabling the firm to more adequately cater for the specific segments' needs on the short term; enhancing MiPlaza's attractiveness as the prime R&D services and facilities provider of choice.

The project will also contribute to organization science. The extant literature on the topic of market orientation focuses heavily on *business-to-consumer* (B2C) markets as well as manufacturing and trading organizations. However, the perspective of a high-tech R&D service and facilities provider in an industrial market is has not been studied extensively. This project provides some insights from this neglected perspective as well.

Altogether, the situation of MiPlaza being a *business-to-business* (B2B) R&D service provider makes determining the most appropriate marketing competence development strategy not a simple exercise. Hence, the following section will discuss relevant literature and focuses on providing MiPlaza with a number of guidelines for building its marketing competences.

### 3 Strengthening MiPlaza's marketing competences

One of the basic goals of any commercial business –not just MiPlaza- is to earn money; to earn money structurally, customers need to be satisfied; and the only way of satisfying customers in a durable manner, is to fulfil their needs now and in the future (Levitt, 1960). Extant literature reveals that whereas the traditional paradigm of 'listening to your customers' may provide a basis of successfully fulfilling customers' expressed wants on the short term; such responsive attitudes do not provide a good foundation for the organization's marketing power and eventual survival on the long term (Kotler & Keller, 2006; Levitt, 1960). Levitt's (1960) marketing concept emphasizes on customer needs and has become a widely adapted philosophy as well as a highly regarded cornerstone of modern day marketing (Narver & Slater, 1990; Kaynak & Kara, 2004).

This literature review sets out to research the perspective of a business-to-business (B2B) high-tech research & development (R&D) service provider –such as MiPlaza- on the implementation of this marketing concept (Levitt, 1960; Houston, 1986); as it is this perspective in particular that has received only limited attention in extant literature (Kohli & Jaworski, 1990; Slater & Narver, 1998; Beverland & Lindgreen, 2007, Narver *et al*, 2004; Kaynak & Kara, 2004; Blankson *et al*, 2006; Kohli *et al*, 1993; Gounaris & Avlonitis, 2001). First, general literature on market orientation is reviewed and key elements and perspectives are discussed. After that, a number of relevant issues of the concept are evaluated from a high-tech B2B R&D service provider's perspective by means of discussing the exemplary case of MiPlaza. In the subsequent section, a number of best practices and principles are discussed, before conclusions are drawn and a reflection on the literature is given in the final section of this review.

#### 3.1 Introduction to literature

The *marketing concept* argues that to be more effective and efficient than competitors in identifying and in satisfying the needs of target markets and customers is the key to achieving organizational success (Kotler & Keller, 2006; Levitt, 1960). Although this business philosophy (MacNamara, 1972) had already been a widely utilized management philosophy since Levitt (1960) first introduced the concept over 40 years ago (Houston, 1986; Kotler & Keller, 2006; Blankson *et al*, 2006) and is even regarded as the cornerstone of modern day marketing (Kohli & Jaworski, 1990, Narver & Slater, 1990; Beverland & Lindgreen, 2007); Kohli & Jaworski (1990) were the first academics to



thoroughly discuss the actual implementation of it (Slater & Narver, 1998, Kennedy *et al*, 2003; Beverland & Lindgreen, 2007; Narver *et al*, 2004; Kohli *et al*, 1993).

Kohli & Jaworski (1990) proposed to use the term *market orientation* to refer to the implementation of the marketing concept; making a *market oriented firm* an organization that acts consistent with the marketing concept (Slater & Narver, 1998; Kohli *et al*, 1993). *Market orientation* was chosen over Payne's (1988) original term *marketing orientation* for three reasons: [1] By using *market*, Kohli & Jaworski (1990) seek to emphasize that the behaviours and activities associated with being market oriented are to be carried out by all organizational members, instead of only workers in the *marketing* department; [2] using *marketing* would suggest that the marketing department would get more power and importance, which – of course - is not the case; and [3] the term *market* draws attention to not only the exogenous market factors, including the customers, but additional environmental forces that affect the organization as well (Kohli & Jaworski, 1990, Beverland & Lindgreen, 2007).

Although many authors largely adopted Kohli & Jaworski's (1990) reasoning and terminology, many different definitions of a *market orientation* are found in literature. Gounaris & Avlonitis (2001) argue that extant literature either takes a *behavioural* or *cultural* perspective on market-orientation. Deshpande & Farley (1998), for instance, emphasized on its effect on the firm's behavioural processes at the functional level by defining market orientation as a set of "*cross-functional processes and activities directed at creating and satisfying customers by continuously assessing the needs of customers*". Additionally, Becherer *et al* (2003) define a market orientation as "*a culture in which organizations strive to create superior value for their customers (and superior performance for the business) by focusing on customer needs and long-term profitability*" (Blankson *et al*, 2006). Moreover, Mavondo & Farrell (2000) argue that Narver & Slater's (1990) conceptualization of a market orientation as an "*organizational culture that effectively and efficiently creates behaviours*" elevates market orientation to the level of strategy. Kotler (1997), on the other hand, focuses on customer satisfaction by arguing that a market-oriented company "*seeks to put together its entire organization in a unified and consistent system [...] so that the company as a whole is mobilized in order to produce satisfied customers*" (Day, 1998; Gounaris & Avlonitis, 2001). In this review, Kohli & Jaworski's (1990) original definition of *market orientation* as: "*the organization wide generation of market intelligence pertaining to current and future needs of customers, dissemination of intelligence horizontally and vertically within the organization, and organization wide action or responsiveness to*

*market intelligence*” will be adopted, as it provides good insight of the critical elements involved (Kohli *et al*, 1993).

For the last two decades, market orientation had received much attention in academic literature (Narver *et al*, 2000; Han *et al*, 1998; Day, 1999) and considerable research has shown that adopting a market orientation fosters success (Kennedy *et al*, 2003; Day, 1999; Deshpande *et al*, 1993; Han *et al*, 1998; Jaworski & Kohli, 1996; Narver & Slater 1990; Narver *et al*, 2000; Slater & Narver 2000), as positive links to several areas of organizational performance and strategy have been empirically validated (Blankson *et al*, 2006; Narver & Slater, 1990; Sinkula *et al*, 1997; Dickson, 1992; Day, 1999). Illustratively, market orientation was found to be positively related to, for instance, *return on assets* (e.g. Narver & Slater, 1990; Day, 1994), *ability to rapidly respond to environmental changes* (e.g. Sinkula *et al*, 1997), *organizational learning* (e.g. Dickson, 1992; Day, 1999), and *new product innovation* (e.g. Lukas & Ferrell, 2000; Blankson *et al*, 2006).

In contrast, the market orientation philosophy has also received some criticism as some authors validly argue that listening too carefully to customers in an era of radical technological change (Christensen, 1992; Burgelman *et al*, 2004) often results in losing a company’s leading edge (Christensen & Bower 1996; Slater & Narver, 1998; Hamel & Prahalad, 1994). This is due to the presumption that customers are often only able to express their current *wants* and unable to articulate their future *needs* (Christensen & Bower, 1996; Narver *et al*, 2004); rendering a market orientation in such a context short-term focused and therefore undesirable or even counterproductive (Christensen & Bower, 1996; Hamel & Prahalad, 1994). So, in fact, even though both practitioners and academics are unanimously convinced of the *marketing concept’s* validity, the extant literature suggests that researchers do not seem to agree on the most appropriate implementation of it (Slater & Narver, 1998; Narver *et al*, 2004). Hence, one might conclude that a controversy concerning the implementation of the marketing concept exists in the academic world (Christensen & Bower 1996; Slater & Narver, 1998; Hamel & Prahalad, 1994). Slater & Narver (1998) discuss this observation and conclude that, without realizing it, academics are “*talking about two separate management philosophies*”, that are both referred to as *market orientation* (Narver *et al*, 2004).

### 3.2 Two opposing perspectives

Therefore, Slater & Narver (1998) proposed to discriminate between customer-led, which is a short-term philosophy where organizations respond to customers' expressed wants; and market-oriented, which represents a long-term commitment to understanding customer needs – both expressed and latent- and to producing superior customer value (Slater & Narver, 1998). Day (1999) discussed the notion of customer compelled, which is very similar to customer-led. Narver *et al* (2004) refined this point of view by making a distinction between a responsive- and a proactive market orientation (MO), being based on customer-led and market-oriented respectively. Narver *et al*'s (2004) distinction between responsive MO and proactive MO is adopted in this review and will be explicated and discussed in the following section.

So, it is vital not to confuse responsive MO with proactive MO (Slater & Narver, 1998), as they refer to entirely different management philosophies (Narver *et al*, 2004). Table 1 illustrates typical differences between the two constructs. Expressed needs, expressed wants and expressed solutions are defined here in accordance with Narver *et al*'s (2004) definition as “the needs and solutions of a customer of which the customer is aware and, therefore, can express”. Also Narver *et al*'s (2004) definition of latent needs and latent solutions as “needs and solutions of which the customer is unaware” is adopted in this review.

#### 3.2.1 Responsive Market Orientation

Responsive MO is similar to the notion of customer led in Slater & Narver (1998) and customer compelled in Day (1999) (Narver *et al*, 2004). In a responsive market oriented organization, discovering, understanding, and satisfying the expressed needs of customers takes a central role; i.e. the goal is customer satisfaction (Narver *et al*, 2004, Slater & Narver, 1998, Day, 1999) (Table 1, Figure 6). In general, such businesses use focus groups and customer surveys to enhance their understanding of customer wants (Slater & Narver, 1998), as well as methods such as concept testing and conjoint analysis to guide the development of new products and services (e.g. Leonard & Rayport, 1997). Additionally, responsive MO organizations often develop close relationships with important customers to gain deeper insight into those customers' desires (e.g. Timewell, 1994) (Table 1).

	<b>Responsive MO</b>	<b>Proactive MO</b>
Strategic Orientation	Expressed wants	Latent needs
Adjustment style	Responsive	Proactive
Temporal focus	Short-term	Long-term
Objective	Customer satisfaction	Customer value
Learning type	Adaptive	Generative
Learning process	Customer surveys Key account relationships Focus groups Concept testing	Customer observation Lead-user relationships Continuous experimentation Selective partnering

**Table 1: Key features of responsive- and proactive market oriented organizations; based on Slater & Narver (1998) and Narver *et al* (2004).**

All of these practices are generally regarded as positively related to organizational performance (Leonard & Rayport, 1997; Timewell, 1994); so one may regard responsive MO as not a bad philosophy at all (Narver *et al*, 2004). The biggest issue, however, is that a responsive MO mindset is merely reactive and strongly focused on the short term, which fosters adaptive learning, instead of generative learning (Hislop, 2005; Slater & Narver, 1998) (Table 1). This results in the firm always being ‘one step behind’, instead of on the leading edge of development (Hamel & Prahalad, 1994; Christensen & Bower, 1996). Hamel & Prahalad (1994) refer to this negative consequence of responsive MO as the ‘tyranny of the served market’, in which the market is only seen through the eyes of the current customers in their current environment. Moreover, Christensen & Bower (1996) argue that as a result of this, customers can even undermine an organization’s innovative ability as innovation may destroy the customers’ current way of doing business (Slater & Narver, 1998; Lynn *et al*, 1996). Hamel & Prahalad (1994) explain that core competences can become core rigidities when managers are unwilling to risk displeasing important current customers in a situation where technological innovations ‘cannibalize’ (Christensen & Bower, 1996) the current market. In such cases, organizations lose their leading edge due to emphasizing and relying too much on the lacking foresight of their current customers (Hamel & Prahalad, 1994; Christensen & Bower, 1996). Another issue that arises with a typical responsive MO is that the traditional marketing tools mentioned earlier have little or no value when it comes to the development of innovative services and products (Hamel & Prahalad, 1994; Slater & Narver, 1998; Lynn *et al*, 1996) (Table 1). After all, such tools rely on customers to be

able to express their needs as well as plausible solutions to fill those needs (Narver *et al*, 2004); unfortunately, latent needs can not be expressed (Leonard & Rayport, 1997), so alternative marketing tools must be developed and put to practice (Lynn *et al*, 1996; Slater & Narver, 1998).

In conclusion, although striving for increased customer satisfaction appears sensible, it evidently brings a significant set of challenges (Hamel & Prahalad, 1994; Christensen & Bower, 1996; Narver *et al*, 2004; Slater & Narver, 1998), resulting in the management being likely to focus only on the short term (Christensen & Bower, 1996). This, in turn, is likely to reduce the willingness to take risk in both product, technology and process development, fostering only incremental innovation (Burgelman *et al*, 2004); instead of the radical innovations that are believed to be essential for a technology firm's long term survival (Burgelman *et al*, 2004; Christensen & Bower, 1996).

As the implementation of those methods typically utilized in a responsive MO is easily recognizable, the construct appears to be the prime focus of empirical analysis in the academic literature (Narver & Slater, 1998).

### 3.2.2 Proactive market orientation

Probably the most important cause of the controversy in literature concerning many academics' mix-up between responsive MO and proactive MO is the fact that at first sight, proactive MO businesses seem very similar to responsive MO firms (Slater & Narver, 1998). Therefore, although responsive MO firms might merely occasionally exhibit initiatives and behaviours explicated below, they are structural and essential elements of a proactive MO business (Slater & Narver, 1998; Narver *et al*, 2004).

At the heart of a proactive market oriented business is its commitment to "understanding both the expressed and latent needs of their customers, and the capabilities and plans of their competitors through the processes of acquiring and evaluating market information in a systematic and anticipatory manner" (Narver *et al*, 2004; Slater & Narver, 1998) (Table 1). In addition to this, a proactive MO organization's goal is to produce superior (future) customer value, in contrast to satisfying (current) needs in a systematic and efficient manner (Slater & Narver, 1995) (Table 1). An organization that solely relies on customers' expressed wants for product development will not be able to create new insights into value-adding opportunities (Kohli & Jaworski, 1990). As a consequence, such a business creates little or no customer dependence and foundation for customer loyalty (Kohli & Jaworski, 1990).

As referred to earlier, customers have a notoriously bad foresight (Lynn *et al*, 1996), so future needs have to be identified using more advanced marketing tools; enabling the business to deliver this superior customer value (Hamel & Prahalad, 1994). While proactive MO businesses may utilize many of the same traditional market research methods (hence the confusion in literature referred to earlier) as a typical responsive MO organization, these methods are combined with additional techniques in order to identify latent needs (Leonard & Rayport, 1997; Slater & Narver, 1998). Examples of such techniques include observation of customers' normal routines, lead-users and marketing experiments (Leonard & Rayport, 1997; Slater & Narver, 1998); which will be discussed more elaborately in Section 3.6 of this review.

From that perspective, proactive MO firms scan the environment and market in a broader sense than their responsive MO counterparts, as Figure 6 illustrates; they also have a longer-term focus and pursue generative learning more (Slater & Narver, 1998; Leonard & Rayport, 1997). Senge (1990) argues that particularly generative learning is critical to successful innovation: "No information is more important to a technology-based firm than information flowing in from the market, as this information shapes science into commercial product or service" (Leonard & Rayport, 1997; Hamel & Prahalad, 2004). The important role for proactive market orientation in new-product success seems obvious, but is empirically supported by only a few publications (Narver *et al*, 2004).

Simply stated, the main difference between the two MO approaches is the degree of understanding the company's environment and market (Slater & Narver, 1998). Although generally, the proactive MO should be pursued, situations exist where the responsive MO will suffice (Kohli & Jaworski, 1990; Slater & Narver, 1998; Beverland &

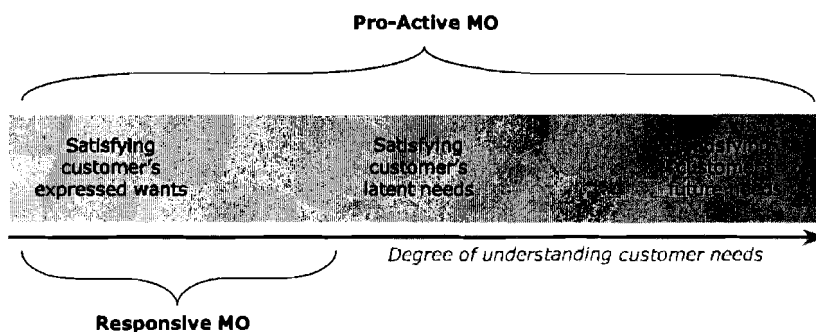


Figure 6: Illustration of the degree of understanding customer needs in a responsive vs. proactive MO (based on Narver *et al*, 2004)

Lindgreen, 2007, Narver *et al*, 2004; Blankson *et al*, 2006). Implementing a proactive MO obviously requires resources; for example, in a situation where the benefits of the proactive MO do not exceed the cost of those resources, implementing the proactive MO will not be beneficial for the business (Kohli & Jaworski, 1990). Particularly under conditions of limited competition, stable market preferences, technologically turbulent industries, and booming economies, a market orientation may not be related strongly to organizational performance (Slater & Narver, 1998; Kohli & Jaworski, 1990). Managers of businesses operating under these conditions should therefore pay close attention to the cost-benefit ratio of a market orientation (Kohli & Jaworski, 1990). However, in a dynamic environment, being customer led seldom leads to extending a company's competitive advantage, as the pure short-term focus causes the company to remain 'one step behind' (Slater & Narver, 1998; Christensen & Bower, 1996).

### 3.3 What does a market orientation comprise?

Altogether, academics agree that the proactive MO should be pursued by the majority of organizations (Kohli & Jaworski, 1990; Slater & Narver, 1998; Beverland & Lindgreen, 2007; Narver *et al*, 2004; Blankson *et al*, 2006). And although researchers have not adopted a unified perspective on the key elements of a MO, a pattern emerges from the extant literature in which authors take either a behavioural or a cultural approach towards describing key MO elements (Gounaris & Avlonitis, 2001; Beverland & Lindgreen, 2007; Kohli & Jaworski, 1990; Narver *et al*, 2004; Narver & Slater, 1990). Whereas the cultural perspective may provide a more extensive insight in the MO concept (Narver *et al*, 1998; Avlonitis & Gounaris, 1997); the behavioural perspective provides practitioners with a more detailed description of how to initiate a transformation to a MO (Kohli & Jaworski, 1990; Kohli *et al*, 1993). Hence, before focusing on the cultural perspective, the behavioural elements will be discussed first. Several models can be found in literature that discusses the key elements of MO from a behavioural perspective (Beverland & Lindgreen, 2007; Avlonitis & Gounaris, 1997; Narver *et al*, 2004; Kennedy *et al*, 2003; Gounaris & Avlonitis, 2001). Although the authors' terminology is not always the same; these models certainly have many common elements focusing on growing insight on the market, meaningfully dispersing this knowledge throughout the company and adequately acting on it. Kohli & Jaworski's (1990) model, which makes a distinction between intelligence generation, intelligence dissemination and responsiveness addresses these most prominent elements and is therefore adopted in this review.

### 3.3.1 Behavioural perspective

#### 3.3.1.1 Intelligence generation

The 'front desk' of MO is concerned with the generation of market insight (Kohli & Jaworski, 1990) and is considered as the primary behavioural prerequisite for a proper MO, or any marketing practice for that matter (Beverland & Lindgreen, 2007; Kennedy *et al.*, 2003; Gounaris & Avlonitis, 2001; Narver *et al.*, 2004; Gresham *et al.*, 2006; Senge, 1990). The concept of market intelligence does not only encompass customer's verbalized needs and preferences (Senge, 1990; Le Bon & Merunka, 2006), but also includes a deep understanding and analysis of exogenous factors that influence those needs (Kohli & Jaworski, 1990), monitoring of competition (Webster, 1994; Kennedy *et al.*, 2003), technological trends (Maltz & Kohli, 1996) and the monitoring of trends in government policies and regulations (Kohli & Jaworski, 1990; Narver *et al.*, 2004) for example. Market intelligence generation is also not always done by the marketing department, nor done via purposely-deployed marketing tools (Gresham *et al.*, 2006). Often, intelligence is generated by non-marketing employees' informal relations with external parties (Gresham *et al.*, 2006).

#### 3.3.1.2 Intelligence dissemination

Marketing academics unanimously agree with Webster (1994), who emphasizes that intelligence is worthless without having it dispersed throughout the entire organization adequately (e.g. Gresham *et al.*, 2006; Kennedy *et al.*, 2003; Kohli & Jaworski, 1990; Narver *et al.*, 2004; Beverland & Lindgreen, 2007; Avlonitis & Gounaris, 1997). Responding effectively to a market need requires the participation of virtually all departments in an organization: R&D to design and develop a new product, manufacturing to gear up and produce it, purchasing to develop vendors for new parts and materials, finance to fund activities, and so on (Gresham *et al.*, 2006; Kohli & Jaworski, 1990; Narver *et al.*, 2004). For sure, marketing researchers agree that market intelligence is by no means knowledge intended solely for the marketing department, but should rather form the basis for the company's long-term strategic planning (Kennedy *et al.*, 2003; Kohli & Jaworski, 1990). So, effective dissemination of market intelligence is essential since it provides a shared basis for rigorous actions by different departments (Gresham *et al.*, 2006; Kohli & Jaworski, 1990; Narver *et al.*, 2004; Beverland & Lindgreen, 2007; Avlonitis & Gounaris, 1997). Therefore, the intelligence generated should be disseminated as efficiently as possible throughout the organization (Kohli & Jaworski, 1990). As an example, several marketing managers interviewed by researchers



indicated to use monthly newsletters to facilitate the dissemination of market intelligence throughout the entire company (Kohli *et al*, 1993; Kohli & Jaworski, 1990). In that context, Anderson (1982) interestingly argued that the marketing department's most important role was 'selling within the firm', referring to getting market intelligence and the interpretation of it spread throughout the organization (Kohli & Jaworski, 1990); both by formal as well as informal means and both laterally as well as vertically (Kennedy *et al*, 2003; Kohli & Jaworski, 1990; Maltz & Kohli, 1996).

Also a number of barriers to effective dissemination are discussed in literature. For instance, in line with innovation academics' argumentation that –due to an emphasis on rigid rules, job descriptions and formal authority- bureaucracy negatively influences innovative behaviour (Narver *et al*, 2004; Gresham *et al*, 2006), Jaworski & Kohli (1993) argue that rigidity typical for a highly bureaucratic environment poses a barrier to the generation and dissemination of market intelligence. Furthermore, it is suggested that to operate in a complex and dynamic market, organizations typically adopt an organic form, in which extensive communication processes emerge (Gresham *et al*, 2006; Narver *et al*, 2004; Burns & Stalker, 1961). In such an innovative organization, it is necessary to break down any structural constraints on information flows (Narver *et al*, 2004), as they pose a barrier to effective intelligence dissemination (Narver *et al*, 2004; Gresham *et al*, 2006).

Altogether, informal structures that offer employees more flexible work roles increase their freedom to make decisions and to develop relationships, consequently facilitating innovative and market-oriented behaviours (Gresham *et al*, 2006; Narver *et al*, 2004). Maltz & Kohli (1996) found that the perceived quality of market intelligence received by workers is a function of the dissemination frequency and the channel's formality through which the intelligence is received (Narver *et al*, 2004). Additionally, they found a mere formality effect, which means that intelligence received through informal channels appears to be used more elaborately than that obtained through formal channels (Maltz & Kohli, 1996; Narver *et al*, 2004). In addition to this, following the argumentation that although informal communications may provide greater openness and clarification opportunities, formal communications tend to be more credible and verifiable; Maltz & Kohli (1996) argue that an even mix of intelligence received through informal and formal channels yields an optimal perceived intelligence quality, which is supported by their empirical analysis (Maltz & Kohli, 1996).

Moreover, Maltz & Kohli (1996) found that the frequency of dissemination was strongly related to the sender's positional power, the receiver's organizational commitment,

receiver's trust in sender, and inter-functional distance between sender and receiver (Moorman *et al.*, 1993); which is consistent with findings in knowledge management literature (e.g. Hislop, 2005). Interesting to note here is that Maltz & Kohli (1996) found that an increased frequency of sharing market knowledge (intelligence) indeed enhances the perceived quality of that knowledge (Kohli & Jaworski, 1990), but point out that their study shows that learning only takes place beyond a certain threshold; which was approximately 125 interactions within a 3-month period (Maltz & Kohli, 1996), suggesting that a certain momentum in the extent of MO must exist before intelligence is valued appropriately. Furthermore, Maltz & Kohli (1996) found that increased frequency becomes detrimental for the perceived quality after a certain threshold as well; suggesting an inverted U-shaped curve for the dissemination frequency variable (Maltz & Kohli, 1996); illustratively, in Maltz & Kohli's (1996) research, the positive relationship between perceived intelligence quality and dissemination frequency peaked at 525 interactions in a 3-month period (Maltz & Kohli, 1996).

In all, literature suggests that the dissemination of intelligence is where organizations are often unable to realize the full potential of MO (Narver *et al.*, 2004; Malt & Kohli, 1996), as they fail to utilize the market knowledge readily available (Maltz & Kohli, 1996; Gresham *et al.*, 2006). The essence of managing the dissemination process is keeping dissemination frequency and formality at optimum levels (Maltz & Kohli, 1996). This provides an incentive for giving knowledge management a central role when discussing the implementation of MO, as an organization's competitive advantage appears to be directly related to its ability to disseminate knowledge (and market intelligence); rather than the access to that knowledge itself (Maltz & Kohli, 1996; Moorman *et al.*, 1993; Narver *et al.*, 2004).

### 3.3.1.3 Responsiveness

Responsiveness to market intelligence refers to adequate actions in the context of designing, producing, distributing and promoting products and services to the customer on the basis of the market intelligence generated and disseminated (Gresham *et al.*, 2006; Kohli & Jaworski, 1990) and is the final step of a pre-product-launch-MO by 'harvesting' the company's market intelligence generation and dissemination efforts (Kohli & Jaworski, 1990). Without responding adequately to the intelligence gathered and spread, little to nothing is accomplished, and the MO will fail to fulfil its promise (Kohli & Jaworski, 1990; Narver *et al.*, 2004; Gresham *et al.*, 2006; Beverland & Lindgreen, 2007). During their interviews, Kohli & Jaworski (1990) learnt that, in practice, responsiveness often comprises the selection of target markets, designing

products to cater for these markets' needs and producing, distributing and promoting the products in a manner that yields a positive end-user response. Quite similar to Narver *et al*'s (2004) notion of "developing and implementing internal processes that enhance customer need understanding and product development". Thus, in general, responsiveness refers to the adequate execution of 'traditional' marketing activities, based on gathered and spread market intelligence. Therefore, a business attains and sustains leadership in its target markets only by superior execution in understanding and by meeting the customers' needs (Narver *et al*, 2004).

Whereas these behaviours certainly add critical value to a company's MO efforts, they fail to provide the firm with a guiding philosophy, organizational goals and vision (Narver *et al*, 1998, 2004). Therefore, MO is approached from a cultural perspective in the following section.

### 3.3.2 Cultural perspective

In consensus with several other authors (Houston, 1986; Deshpande *et al*, 1993; Hooley *et al*, 1990; Day, 1999), Narver *et al* (1998) argue that MO should be regarded as a culture, rather than a set of behaviours, as culture is considered to act as a mediator between strategy and its implementation (Beverland & Lindgreen, 2007). As such, Kennedy *et al* (2003) argue that the cultural transformation process is difficult to investigate. Also other researchers state that the understanding of implementing a MO culture is largely inadequate (Day 1999; Narver *et al*, 1998), as management literature discusses generic cultural transformation processes (Schneider *et al*, 1996) but does not specifically explore the transformation to a customer orientation, the subtleties of which are important to marketers (Kennedy *et al*, 2003). A culture is defined by Deshpande & Farley (1998) as "the pattern of shared values and beliefs that help individuals understand organizational functioning and thus provide them norms for behaviour in the organization" (Beverland & Lindgreen, 2007); and therefore represents a deeper and more philosophical approach towards MO (Deshpande & Farley, 1998; Kennedy *et al*, 2003). In that context, Narver *et al* (1998) propose to regard MO as a culture in which employees are committed to the continuous creation of superior value for customers (Beverland & Lindgreen, 2007). This means that an organization that is implementing MO is effectively changing the organization's culture (Kennedy *et al*, 2003; Deshpande & Farley, 1998, Narver *et al*, 1998).

Overall, there are a number of studies that have regarded MO as a set of behaviours (e.g. Kohli & Jaworski, 1990); as well as a number of studies that regarded MO as a set of attitudes; i.e. as a culture (e.g. Narver *et al*, 1998). Considering this disassociation between the two perspectives on MO in literature, the question rises which approach should be preferred. As one may already intuitively expect, a number of authors argue that the behavioural and cultural perspective on implementing MO are inseparable (Avlonitis & Gounaris, 1997; Narver *et al*, 2004); after all, unless a certain attitude towards MO exist, behavioural initiatives will never emerge, or will not be effective at the least (Avlonitis & Gounaris, 1997; Gounaris & Avlonitis, 2001; Beverland & Lindgreen, 2007; Kaynak & Kara, 2004). On the other hand, when emphasizing purely on the company's attitudes by manipulating the existing prevailing system of beliefs; people may start thinking in terms of satisfying customer needs, but lack the knowledge about what these needs are and how they can be satisfied at best (Avlonitis & Gounaris, 1997). After all, without the skills and structural arrangements to collect market intelligence and disseminate them through the organization, the firm will be unable to respond to customer needs and satisfy them (Kohli & Jaworski, 1990; Narver *et al*, 2004). This interrelatedness explains for a large extent why organizations attempting to institute an MO so often fail (Beverland & Lindgreen, 2007; Gounaris & Avlonitis, 2001); as these companies' managers generally try to fit the MO into either the company's existing system of beliefs (culture) or the company's existing structural arrangements (behaviours) (Beverland & Lindgreen, 2007; Avlonitis & Gounaris, 1997). Therefore, the optimal perspective here is believed to include both behavioural as well as cultural elements.

### 3.4 Measuring market orientation

For an organization to remain successful in any field of business, the monitoring of position and progress is of paramount importance (Gresham *et al*, 2006). Several authors have proposed measurement schemes from both a cultural (e.g. Hooley *et al*, 1990; Gounaris & Avlonitis, 2001), as well as a behavioural perspective (e.g. Kohli & Jaworski, 1990; Gresham *et al*, 2006; Narver *et al*, 2004); and without explicitly making the differentiation, these authors have also addressed either proactive or responsive MO (Narver *et al*, 2004; Gresham *et al*, 2006; Hooley *et al*, 1990; Gounaris & Avlonitis, 2001). For the purpose of this review, it is desirable to include both cultural and behavioural elements as well as typical responsive and proactive practices. Furthermore, given the context of this review, the need for an elaborate quantitative measurement

Hooley *et al* (1990) argue that the first three orientations suggest a natural progression of MO within an organization that transforms from sales support through departmental MO into MO as the guiding philosophy for the entire organization. This categorization scheme caters for both responsive as well as proactive MO, as it does not explicitly refer to any behaviour (Avlonitis & Gounaris, 1997) (please refer to Appendix A for statistics on the different groups).

In terms of measurement of behavioural attributes, Narver *et al*'s (2004) research provides an interesting addition to Hooley *et al*'s (1990) aforementioned scheme. Narver *et al* (2004) explicitly differentiate between responsive and proactive behaviours and base their measurement of responsive behaviours on Deshpande & Farley's (1998) synthesis of three earlier publicized measurement schemes (Deshpande *et al*, 1993; Jaworski & Kohli, 1993; Narver & Slater, 1990) (Appendix A). By using a similar process, Narver *et al* (2004) additionally developed and validated a measurement scheme for proactive MO as well (Appendix A). Narver *et al*'s (2004) scheme consists of 8 behaviours for proactive and 7 behaviours for responsive MO, with which the respondents have to agree –or disagree– on a 5-point Likert-scale. The added scores reveal the degree in which the respondent behaves in accordance with a responsive and proactive MO, whereas the ratio between the two measures reveals whether the respondent is primarily responsively or proactively market oriented (Narver *et al*, 2004).

### **3.5 Applicability of market orientation in a B2B high-tech R&D services and facilities provider**

As the goal of this review provides an incentive for explicating and discussing the specific issues that play a significant role when assessing an MO's applicability in the context of a high-tech R&D services provider; the following sections are dedicated to discussing these points of attention. To further clarify the issues, the case of MiPlaza will therefore be used as an example.

#### **3.5.1 B2B vs. B2C MO implementation**

Although authors such as Fern & Brown (1984) argue that there are no grounds for discriminating between industrial (B2B) and consumer (B2C) markets (Coviello & Brodie, 2001); it is interesting to see that whereas some academics show that the relationship between market orientation and business performance is stronger in B2B firms, than it is in B2C firms (Avlonitis & Gounaris, 1997; Gounaris & Avlonitis, 2001; Kaynak & Kara, 2004); the same research points out that B2B firms are less likely to adopt a market

scale is low, especially in the cultural sense. Therefore, as a starting point, Hooley *et al*'s (1990) empirically validated four-way classification scheme in which organizations were classified according to their degree of market orientation adoption will be used (Avlonitis & Gounaris, 1997) (Figure 7; Appendix A):

**Marketing Philosophers**

*Companies that have fully embraced marketing orientation as a company-wide philosophy*

**Sales Supporters**

*Companies that conceive the marketing concept as a tool for supporting the sales effort*

**Departmental Marketers**

*Companies that perceive that the concept of marketing orientation is confined in what the marketing and/or the sales departments do*

**Unsuers**

*Companies that are still confused about the meaning of the marketing concept.*

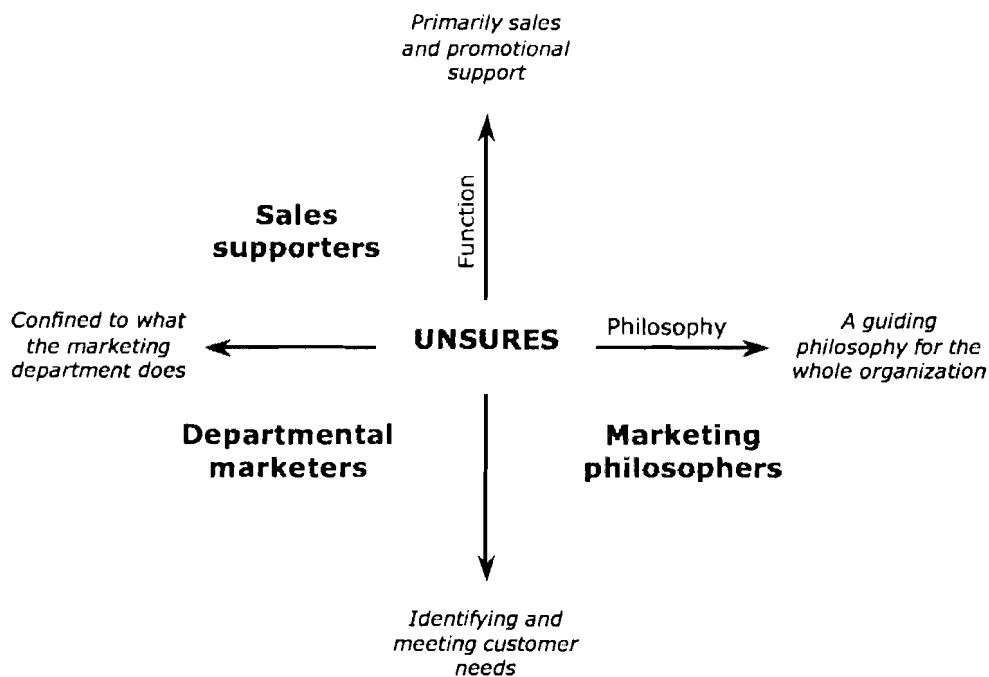


Figure 7: Different MO approaches (adapted from Hooley *et al*, 1990)

orientation (Beverland & Lindgreen, 2007; Kaynak & Kara, 2004); as most B2B firms are found to be notorious sales supporters (Figure 7) (Hooley *et al*, 1990; Avlonitis & Gounaris, 1997; Gounaris & Avlonitis, 2001; Kaynak & Kara, 2004). Several authors argue that there are in fact valid reasons to support the dichotomy between B2C and B2B markets (Kotler & Pfoertsch, 2006; Avlonitis & Gounaris, 1997; Gounaris & Avlonitis, 2001; Beverland & Lindgreen, 2007). However, only few researchers have attempted to empirically validate this dichotomy (e.g. Parasuraman *et al*, 1983; Cummings *et al*, 1984; Deshpande & Zaltman, 1987; Avlonitis & Gounaris, 1997; Gounaris & Avlonitis, 2001; Andrus & Norvell, 1990, Turley & Kelley, 1997; Kelly & Hise, 1979; Zeithaml *et al*, 1985; Dawes & Patterson, 1988); and only half of these authors find empirical evidence to fully support it in the context of marketing patterns. Moreover, this empirical research had often been carried out many years ago and the validity of the findings in the modern day economy is arguable (Coviello & Brodie, 2001). It is therefore particularly surprising to see that the differences in actual implementation of MO between B2B and B2C firms have received so little attention in extant literature (Beverland & Lindgreen, 2007; Kaynak & Kara, 2004) and additional empirical validation appears to be absent. Overall, the many authors that support the dichotomy in marketing patterns between B2B and B2C markets primarily base their case on conceptual arguments that come from validated differences in buying behaviour between industrial and consumer clients (Coviello & Brodie, 2001; Beverland & Lindgreen, 2007; Avlonitis & Gounaris, 1997). However, the contradictive empirical findings suggest that firms in fact do not necessarily practice marketing in an entirely different way in B2B or B2C markets (Coviello & Brodie, 2001). So essentially, there is no rationale for taking an entirely different approach towards implementing MO for B2C versus B2B firms (Coviello & Brodie, 2001); nonetheless, there are some elements that should be taken into account when considering a B2B market, which will be discussed in the following section.

### 3.5.2 Relevant B2B market characteristics

As mentioned earlier, it is important to note that there are in fact some characterizing differences between B2B and B2C markets (Kotler, 1997); although the basic marketing principles still apply (Kotler & Keller, 2006; Coviello & Brodie, 2001; Gounaris & Avlonitis, 2001). In an industrial context, for instance, a firm usually deals with less -but larger- buyers (Kotler *et al*, 2002; Kotler, 1997) that make more complex purchases in the sense of amounts of money involved as well as more elaborate technical and economic considerations that have to be made (Kotler *et al*, 2002). This results in a purchasing process that generally takes longer to reach a decision, in comparison with a

typical consumer transaction (Kotler & Keller, 2006). Another important difference is that industrial buyers generally take a more professional approach towards purchasing (van Weele, 2005; Kotler *et al*, 2002; Kaynak & Kara, 2004); and in most cases, purchasing at the buyer's firm is done by well-trained, experienced and specialized purchasing personnel (Kotler & Keller, 2006; van Weele, 2005). Consequently, industrial purchasing efforts are usually more formalized, including product specification and performance measures (van Weele, 2005; Mohr *et al*, 2005; Kotler *et al*, 2002). Similarly, many authors have argued that industrial buyers make purchasing decisions more rationally than consumers (van Raaij & Stroecker, 1997; Kotler & Keller, 2006; Croft, 1994; Mohr *et al*, 2005), as they are less sensitive to emotional value of a product (Kaynak & Kara, 2004) and have a very low rate of impulse buying (Coviello & Brodie, 2001) for instance. One way or another, the supply demand in industrial markets is ultimately derived from consumer demand (Kotler & Keller, 2006; Kotler *et al*, 2002), one potential consequence of this is an enormous fluctuation in industrial demand as a result of a relatively small fluctuation in consumer demand (Kotler *et al*, 2002). On the other hand, short-term demand in industrial markets is also fairly inelastic (Kotler *et al*, 2002), as industry-wide price fluctuation will not automatically increase or decrease short-term demand (Kotler & Keller, 2006; Kotler *et al*, 2002). An additional element that is specific for industrial markets is reciprocity, which refers to clients of a firm being suppliers to that firm as well (Kotler *et al*, 2002). One other observation that is receiving an increasing amount of attention in academic literature is that industries have the tendency to agglomerate geographically (Cantwell & Iammarino, 2003; Kotler *et al*, 2002), this observation will be elaborated on further in Section 3.5.3. Finally, in the context of the high-tech B2B R&D service provider examined here, the most important characterization of an industrial service and knowledge market is the typical interdependence between buyer and seller (Coviello & Brodie, 2001; Kotler & Keller, 2006); fostering a long-term relationship in which the seller is not only concerned with the buyer's current needs, but is also actively involved with the buyer's future needs (Kotler *et al*, 2002; Coviello & Brodie, 2001). Similarly, industrial buyers are found to be remain more loyal to their sellers, compared to consumers, who often exhibit variety-seeking behaviour, regardless of brand or product satisfaction (Gounaris & Avlonitis, 2001) This provides an additional incentive for B2B firms to institute active programs in the field of partnerships and alliances (Gounaris & Avlonitis, 2001; Kim & Inkpen, 2005, Duysters & Hagedoorn, 2000); as well as exploration of the benefits of relationship marketing (Price & Arnould, 1999; Morgan & Hunt, 1994).



*For MiPlaza, the considerations discussed above support the implementation of an MO, but provide some guidelines for additional points of attention. Interesting to note is that MiPlaza's market does not have all the characteristics that are typical for a B2B environment. For instance, as MiPlaza's services and knowledge are generally applied in early stages of a product development process or in fundamental research, product (or deliverable) specifications are often particularly vague. Hence, project agreements are not merely based on rigid product specifications, but on a basis of collaborative effort as well.*

Altogether, the basic philosophy behind the implementation of MO within either a B2C or B2B firm does not change (Coviello & Brodie, 2001). The actual choice of instruments in the lower level aspects of that MO, however, is typically different in B2B versus B2C firms (Kotler, 1997; Kotler & Keller, 2006). One final note here is the argument that since clients in a B2B market are businesses themselves, a good chance exists that they also practice MO, given the current trends (Narver *et al*, 2004). This makes identifying clients' needs and clients' clients' needs an easier task (Beverland & Lindgreen, 2007).

One particularly important aspect of typical B2B markets in the case of MiPlaza is the geographical agglomeration of organizations in the same industry, which will be discussed in the following section.

### **3.5.3 Geographical agglomeration of high-tech industries**

Kotler *et al* (2002) state that industrial markets are often geographically concentrated; also other authors have observed the phenomenon that related high-tech business, or businesses in a network, often geographically agglomerate; consequently forming Regional Systems of Innovation or Technopoles (e.g. Cantwell & Iammarino, 2003; Malerba, 2002). Literature provides four basic drivers for firms to engage in such regional agglomeration, which will be discussed in the following paragraphs.

Particularly in a high-tech context, the most important driver concerns (geographically bounded) knowledge spillovers, as these spillovers contribute both to the firm's competence acquisition, transformation and extension (Lei, 1997; Malerba, 2002). From a multi-national's perspective, these spill-overs provide a means of profiting from local 'pockets of knowledge' as well as local organizational learning that complements organizational learning by other affiliates in other environments of agglomeration (Cantwell & Iammarino, 2003; Doz *et al*, 2001). Similarly, indigenous firms profit from the multinational's local spillovers as well, via indirect access to the MNC's

complementary streams of knowledge being developed in other regions (Cantwell & Iammarino, 2003).

Also, by collaborating with other firms, either in the form of an alliance, co-development project or joint venture, both participants profit from the other's R&D expenditures (de Man & Duysters, 2005). Enabling the participating to spread its risks by exploring more technological opportunities (Cloudt *et al*, 2006; Man & Duysters, 2005) as well as to develop new technologies faster due to the dedication of additional resources to the project (Hofmann & Schaper-Rinkel, 2001). Furthermore, these R&D scale benefits is also likely to increase the focal firm's ability to engage research projects that neither of the partners would be able to fund separately (Man & Duysters, 2005, Hagedoorn & Duysters, 2002), resulting in additional R&D scope benefits. Moreover, by tapping into the partner's knowledge base, the participating firm will be able to view some issues from a different perspective and recognize the value of new external knowledge, which can help to develop a richer knowledge base (Ahuja & Katila, 2001; Cloudt *et al*, 2006). Also, the overall efficiency of R&D processes is likely to be enhanced, as no firm can excel in all business aspects on its own (de Man & Duysters, 2005). One important issue that comes to play when considering R&D scale and scope in context of regional innovation systems is the similarity between the participating firm's competences and the competences it seeks to acquire (Cloudt *et al*, 2006; Lettrie, 2006). Positive effects of such similarities in technological knowledge include economies of scale and scope of R&D (Hagedoorn & Duysters, 2002). This is based on the idea that a firm's absorptive capacity depends mainly on its level of knowledge in a specific field (Cohen & Levinthal, 1990; Duysters & Hagedoorn, 2000; Cloudt *et al*, 2006). If the knowledge base of the focal firm is not sufficiently adapted to the acquired knowledge, the absorption process becomes very difficult (Duysters & Hagedoorn, 2000). This knowledge similarity is an issue to be taken into account when assessing benefits of local knowledge spin-overs in a regional innovation system, as it explains why such systems are often fairly industry-specific (Cantwell & Iammarino, 2003; Lettrie, 2006). If, on the other hand, technological competences are too similar to the existing knowledge in the focal firm, this will contribute little to the organizational learning (Lettrie, 2006; Cloudt *et al*, 2006). One other important drawback of knowledge similarity is that firms in a partnership sometimes race towards the creation and commercialization of similar end products (de Man, 2004). This description fits well with the pharmaceutical industry in which a winner-takes-all situation often exists for new developments (de Man, 2004). In a rapidly evolving field of knowledge such as high-tech environments, the speed with

which firms turn over technologies will impact their ability to remain abreast of innovative technological developments (Muthusamy & White, 2005). Altogether, it may be concluded that learning performance will be optimal when the object of learning is related to what is already known and when there is a common language as the basis for interpreting experience (Kim & Inkpen, 2005; Cloudt *et al.*, 2006; Lettrie, 2006).

A driver that holds for all types of industries is that geographical agglomeration also brings operational scale and scope benefits (Cantwell & Iammarino, 2003), which include local availability of human capital and dedicated production facilities in the proximity of a regional innovation system (RIS) for example (Cantwell & Iammarino, 2003). Key difference between the R&D and operational scale and scope benefits is that the former are found within the RIS itself (technology exploration and R&D projects), whereas the latter is found around RIS (technology exploitation) (Cantwell & Iammarino, 2003; Doz *et al.*, 2001).

The final major driver for firms to participate in RIS is concerned with the ability of inter-firm collaborations' ability to target a fairly specific piece of knowledge (de Man & Duysters, 2005). Enabling the focal firm to scan its environment for promising new technologies at relatively low cost as the firm is able to monitor a variety of technological opportunities without fully committing to them (Duysters & Hagedoorn, 2000; de Man, 2004). After evaluation, the most promising technology may be internalized by the participating firm by means of a more integrated form of inter-firm collaboration; e.g. a joint R&D project (de Man & Duysters, 2005; Cloudt *et al.*, 2006, Lettrie, 2006). Less promising technologies can be abandoned without having invested in them. This benefit of RIS is very similar to the concept of a radar function that is often found in alliance-literature, and provides firms with an additional incentive for participating in RIS (Cantwell & Iammarino, 2003; de Man, 2004).

As an additional note, Lettrie (2006) argues that firms that may potentially collaborate with the participating firm share a common technological regime. In fact, firms that already belong to the network or regional system in which a firm participates are usually less costly partners to develop because trust between the members facilitates further collaboration (Gulati, 1999). The cost of searching for new partnerships within the existing network or system is lower as well (Gulati, 1999), inferring that RIS are self-reinforcing systems (Cantwell & Iammarino, 2003). However, the disadvantage of such ties is that members of a system also progressively become less attractive candidates to collaborate with as the information they are able to exchange becomes increasingly similar and less unique (Lettrie, 2006).

Altogether, geographical agglomeration of firm activity, as is the case in RIS for example, is unique for an industrial market and should be taken into account when implementing MO; after all, alliances and networks can provide a promising source of both intelligence as well as clientele.

*MiPlaza is situated at the High Tech Campus (HTC) in Eindhoven (The Netherlands), which may be regarded as a typical example of an RIS. The HTC originates from Philips and the facilities that are now MiPlaza have been at the HTC since the beginning. Consequently, MiPlaza has a key position at the HTC and within the Philips network that can be utilized to generate business, further develop technical competences as well as generate market intelligence. So, the geographical agglomeration that is typical for industrial markets strengthens arguments for MiPlaza to implement MO.*

#### **3.5.4 High-tech vs. Low-tech**

Narver *et al* (1998) argue that low-tech production constitutes the opposite of a MO; as in a low-tech market, the rate at which breakthrough developments are realized lays much lower than is the case in high-tech markets (Beverland & Lindgreen, 2007). Obviously, low-tech markets are much less knowledge intensive than high-tech markets; and are usually concerned with fulfilling basic, well understood, customer needs (Gresham *et al*, 2006). Therefore, the need to be MO and to commit large resources to become MO is very low; as the benefits of MO do not outweigh the costs (Slater & Narver, 1998). In high-tech industries, the needs that need to be fulfilled are much more complex, more dynamic and less well understood (Slater & Narver, 1998); rendering the benefits of being MO outweighing the costs (Gresham *et al*, 2006).

*As MiPlaza is active in a high-tech R&D market, implementing MO would generally be recommendable. Especially in the projects where MiPlaza has to take over (part of) clients' R&D efforts, it is critical to know which output is desired and which underlying need is to be fulfilled.*

#### **3.5.5 Services vs. Knowledge (Technology) vs. Trade vs. Manufacturing**

A firm's core offering may be centered around services, trade, manufacturing or knowledge (Kotler & Keller, 2006); and although the applicability of MO may not necessarily depend on this nature of a firm's business (Kohli & Jaworski, 1990; Narver *et al*, 2004), differences in the implementation of MO often emerge as a result of it (Beverland & Lindgreen, 2007).

The first difference stems from the short-term flexibility of the organization's offering itself and the R&D process involved in creating it (Beverland & Lindgreen, 2007; Avlonitis & Gounaris, 1997). For a manufacturing organization, incorporating the needs of the clients in the product offering is done in the R&D stages (Menon *et al*, 2002; Mohr *et al*, 2005; Narver *et al*, 1998); after all, once a product is launched, it is fairly difficult to make adjustments or changes on the short term (Mohr *et al*, 2005; Kotler & Keller, 2006); for the longer term, naturally, user input will be used for further development and new product lines (Kohli & Jaworski, 1990; Mohr *et al*, 2005). The product offerings of service providers, on the other hand, are much more flexible as they are produced and consumed at the same time (Kotler & Keller, 2006; Kotler & Pfoertsch, 2006). Although the offering itself has been developed and launched, the actual way of providing the service can be altered to fit clients' needs best relatively easy (Kotler & Keller, 2006; Kotler & Pfoertsch, 2006). Although they work with physical products, also trading organizations are fairly flexible in altering offering to clients' needs on short notice, since may be able to find an alternative source for products that fit their clients' needs best (van Weele, 2005; Kotler & Keller, 2006). For companies whose core offering is knowledge and expertise, the service provided often takes the form of consultancy and short term flexibility is an integral part of the company's service offering (Baaken, 2007). On the other hand, the short-term flexibility of the knowledge or technology itself is similar to that of physical products discussed above, as it takes a long time to be developed (Mohr *et al*, 2005). So, the short-term flexibility of an organization's product offering should be taken into account when implementing MO.

From literature, another element influencing MO implementation that stems from differences in the nature of firms can be inferred (Hislop, 2005; Kotler & Keller, 2006; Mohr *et al*, 2005; Narver *et al*, 2004; Baaken, 2007; Menon *et al*, 2002; Muthusamy & White, 2005): organizations' typical interactions with their clients. Although numerous initiatives emerge to include customer interactions in all stages of a product creation process and all departments in a manufacturing organization (Narver *et al*, 1998; Menon *et al*, 2002), traditionally, clients' purchasing staff primarily interacts with marketing and sales staff at the manufacturer; and not with actual operational staff or workers (van Weele, 2005; Kotler & Keller, 2006). Generally, the same goes for trading organizations (van Weele, 2005; Kotler & Keller, 2006). In service providing organizations, additional interactions take place between workers at all levels of the clients' organizations (as they consume the service) and the operational workers of the service provider themselves (Kotler & Keller, 2006). Naturally, the type of service dictates the type of interactions

and the more knowledge-intensive the service becomes (e.g. consultancy), the more intense interactions will get (Hislop, 2005; Kotler & Keller, 2006). Similarly, the typical interactions in a knowledge provider are of such an intense nature (Baaken, 2007) and include interactions between workers in all levels of both organizations, as they work in a combined effort to make a project successful (Muthusamy & White, 2005). Altogether, also the typical interactions with clients have to be taken into account when implementing MO; as not only marketing and sales staff will interact with purchasing staff, but more elaborate interactions between other levels and departments throughout both organizations (which member may not be as articulated in 'the art of marketing' and the aforementioned) are initiated.

Altogether, as short-term flexibility and typical client-interactions have implications for a successful MO implementation, the nature of an organization should be taken into account.

*MiPlaza's offerings almost cover the entire spectrum: dry-hire of laboratory space and machines, co-development of technologies, prototyping, material analysis and R&D subcontracting are just a few examples of MiPlaza's portfolio. However, the core offering at MiPlaza clearly is knowledge and expertise; therefore, particular attention must be given to enabling the knowledge workers to effectively identify customer needs and ways to fulfil them; an issue that will be elaborated on in the following section. Overall, also the arguments based on a firm's core offering provide an incentive for MiPlaza to implement MO.*

### **3.5.6 Non-marketing staff in an MO**

Although the basic issue is relevant for any business; in a high-tech knowledge intensive organization, the workers actually interacting with clients by supporting them with their technical expertise are typically not trained marketing professionals, nor do they typically have well-developed commercial skills (Leenders & Wierenga, 2002). Consequently, the front end of MO that lays with these workers -and is concerned with a significant portion of the total intelligence generation and dissemination- may not be as effective as intended (Kohli & Jaworski, 1990). Naturally, these technicians' commercial skills can be trained and formal programs can be initiated to boost the MO's effectiveness (Narver *et al*, 1998; Leenders & Wierenga, 2002), but these knowledge workers' core task remains with the application of their technical expertise, and not with marketing related tasks nonetheless (Leenders & Wierenga, 2002), so MO behaviours will only be

supported to a limited extent (Kohli & Jaworski, 1990; Narver *et al*, 2004; Leenders & Wierenga, 2002).

These front-end knowledge workers will be perfectly able to adapt to MO in their ways of thinking (Hooley *et al*, 1990; Beverland & Lindgreen, 2007; Leenders & Wierenga, 2002). However, the behavioural aspect of MO may provide the aforementioned hurdles that may render the front-end ineffective (Beverland & Lindgreen, 2007; Narver *et al*, 2004; Leenders & Wierenga, 2002). Hence, arguments can be made not to rely too heavily on this front-end workers, and to make MO a part of account and project managers' tasks (Leenders & Wierenga, 2002).

*MiPlaza's organization is relatively flat as the management team consists of only 10 people. As a result of this, most of the interactions with clients are done by front-end knowledge workers, as described earlier. So, it is vitally important that these workers fully support MO. On the other hand, MO behaviours are not related to such workers' core competencies, it is therefore unrealistic to expect such a front end to be fully effective. A solution to mitigate this issue is to make project managers and account managers responsible for effectively carrying out MO behaviours.*

### 3.5.7 Small vs. Large firm

Also, some elementary differences exist between the applicability of MO in small and large firms (Blankson *et al*, 2006). In large firms, the process of marketing a product is typically a formal and deliberate pre-designed process; as activities such as the careful identification of customer needs involve fairly formal research with a purposeful and goal-driven subsequent development of new products or services (Stokes & Blackburn, 1999). Whereas this deliberation in small businesses primarily involves informal and unplanned activities that heavily relies on the intuition, efforts and entrepreneurial vision of an individual (generally the owner/ manager of the business) to make things happen (Blankson *et al*, 2006; Stokes & Blackburn, 1999). Furthermore, Porter's (1998) focus strategy may be the most applicable for small firms (Blankson *et al*, 2006). The benefits of many elements of an MO do not apply in such ventures (Blankson *et al*, 2006; Stokes & Blackburn, 1999), as it is simply against their nature and strength to institute elaborate formal programs (Burgelman *et al*, 2004).

*In this context, the case of MiPlaza is not typical. Since MiPlaza is a divestment of Philips Electronics, a high degree of formality exists, even though MiPlaza is a medium-size enterprise, employing only just over 300 workers. So, in the case of*

*MiPlaza, no counterarguments for implementing MO that are based on the reasoning described above exist.*

Moreover, the reader should note that the aforementioned reasoning may only be applicable for small start-up technology firms that rely on a product or service offering that is fairly radical in nature (Burgelman *et al*, 2004); after all, many small firms exist that have a relatively stable clientele and product offering, which could very well profit from MO (Blankson *et al*, 2006).

### **3.5.8 MiPlaza's market orientation**

*Altogether, the case of MiPlaza is not as straightforward, as it is not a typical company by any standard. For instance, MiPlaza does not produce any products itself, nor does it develop products or technologies in the traditional sense; these activities effectively lay in the hands of its clients. However, MiPlaza provides high-tech R&D facilities and services, meaning that the activities taking place are, in fact, almost the same as in any of its client's R&D departments; inferring that, in order to maintain its competitive advantage, MiPlaza's technological competences must be up-to-date with the cutting-edge at all time. And as these competences take a long term to be developed or internalized; it is essential for MiPlaza to identify future opportunities and technological trends in an early as possible stage. Therefore, although MiPlaza's clients are the companies that need to adequately identify the future needs of the actual users of the technology and focus their R&D efforts accordingly; MiPlaza needs to have insight in these future needs as well to be able to sustain its position as a high-tech R&D services and facilities provider. So, in the context of MiPlaza's long-term survival, implementing a proactive MO seems applicable, although it is debatable to what extent the knowledge workers themselves should be included in this initiative.*

*On the other hand, MiPlaza's recent externalization also puts emphasis on a short-term responsiveness to client's expressed wants, as MiPlaza's commercial competences are still in development. Consequently, also certain elements of a responsive MO approach (which are typically also part of a pro-active MO) therefore appear to have additional value for filling the void that is left between MiPlaza's externalization and the future impact of its long-term proactive MO.*

Literature also discusses a number of MO best practices, high-tech B2B R&D service providers such as MiPlaza can profit from. The following section will discuss a number of those best practices.



### 3.6 Best practices for a high-tech B2B R&D services and facilities provider

As discussed earlier, becoming market oriented encompasses a change in both organizational culture, as well as adopting a set of behaviours (Avlonitis & Gounaris, 1997; Narver *et al.*, 2004). In literature, several references have been made to best practices, principles and enabling factors in the field of marketing, knowledge management, and change management (Kohli & Jaworski, 1990; Narver & Slater, 1990; Narver *et al.*, 2004; Beverland & Lindgreen, 2007; Gounaris & Avlonitis, 2001). A number of these best practices may be adopted by a high-tech B2B R&D services & facilities provider that is implementing MO; hence, several examples of such practices, principles and factors are briefly discussed in the following sections.

#### 3.6.1 Senior management commitment

The most important enabling factor that often determines the actual success of the MO implementation is senior management's commitment to MO (Kohli & Jaworski, 1990; Narver *et al.*, 1998). Senior management's commitment has been discussed by numerous authors (Kohli & Jaworski, 1990; Narver *et al.*, 1998; Webster, 1994; Beverland & Lindgreen, 2007; Gounaris & Avlonitis, 2001) and its relevance is well illustrated by the following example, which was adopted from Kohli & Jaworski's (1990) interview with a senior vice-president at an industrial services company:

*We'll do almost a \$100 million worth of sales this year. We have a customer that bought a mere \$10,000 worth of services. He calls the president and launches into a long tirade of complaints. The president writes down what he says and responds to him in writing. He investigates the difficulty. He gets back to him. In that process, if you are a junior engineer who just worked on a \$10,000 project and the president calls you up and says "let's talk about this and work out some kind of response to him," the word spreads throughout the base of the company that we're a customer-oriented company, we're market- place oriented, we want to satisfy customer needs.*

Several authors even argue that senior management's commitment is a prerequisite for MO (Webster, 1994; Beverland & Lindgreen, 2007; Gounaris & Avlonitis, 2001), as the decision to implement MO is made in the boardroom (Kohli & Jaworski, 1990) and

senior management has the momentum to change an organization's culture according to organizational goals and vision (Kennedy *et al*, 2003; Senge, 1990). After all, such goals and vision are set by the CEO and other senior managers (Webster, 1994; Day, 1994). At first, new employees will be motivated by senior management to adopt new (MO) assumptions in their day-to-day work behaviours (Day, 1994); but will eventually operate on those assumptions subconsciously (Beverland & Lindgreen, 2007; Kennedy *et al*, 2003).

### 3.6.2 MO as a continuous process

Unavoidably, market oriented behaviours and best practices – especially those that have a responsive nature – can and will eventually be imitated successfully (Narver *et al*, 2004; Kennedy *et al*, 2003). Several authors therefore argue that MO – and particularly responsive aspects of MO – will prolong to be utilized more widely (Narver *et al*, 2004), continuing the trend that had emerged during the past decade (Kennedy *et al*, 2003; Narver *et al*, 2004). Therefore, since a company's superior customer benefits will eventually become mediocre, or even parity benefits over time (Narver *et al*, 2004); an organization needs to continually improve its MO behaviours and practices in order to sustain its competitive advantage (Kennedy *et al*, 2003; Narver *et al*, 1998, 2004; Porter, 1998). In other words, a company should dedicate itself to constantly finding more effective and efficient ways of generating and disseminating market intelligence, and responding to that intelligence (Kohli & Jaworski, 1990; Narver *et al*, 2004); so superior solutions to customers' needs can be offered in a sustainable manner (Narver *et al*, 2004).

### 3.6.3 Knowledge Management

Nonaka (1994) argues that in an economy where the only certainty is uncertainty, the only sure source of lasting competitive advantage is knowledge; particularly market knowledge. This illustrates the growing importance of effective knowledge management in companies (Hislop, 2005) and the strategic importance of it (Norman, 1994); both in the sense of internal (technical) knowledge, but also strategic and marketing knowledge (Mulholland *et al*, 2005; Hislop, 2005). Moreover, the literature that has already been discussed in earlier sections of this review suggests that it is the absence of adequate management of this knowledge is where organizations are often unable to realize the full potential of MO (Narver *et al*, 2004; Maltz & Kohli, 1996), as they fail to utilize the market knowledge readily available (Maltz & Kohli, 1996; Gresham *et al*, 2006). This provides an incentive for giving knowledge management a central role when discussing

the implementation of MO, as an organization's competitive advantage appears to be directly related to its ability to disseminate knowledge (and market intelligence); rather than the access to that knowledge itself (Maltz & Kohli, 1996; Moorman *et al*, 1993; Narver *et al*, 2004). Adequate knowledge management can therefore be regarded as a critical prerequisite for effective MO (Maltz & Kohli, 1996; Moorman *et al*, 1993; Narver *et al*, 2004; Mulholland *et al*, 2005; Norman, 1994).

#### 3.6.4 Keeping dissemination frequency and -formality at the optimum level

As discussed earlier, Maltz & Kohli (1996) found that the perceived quality of market intelligence received by workers is a function of the dissemination frequency and the channel's formality through which the intelligence is received (Narver *et al*, 2004). Maltz & Kohli (1996) use two criteria for classifying a dissemination event as either *formal* or *informal*: *verifiability* and *spontaneity* (Narver *et al*, 1998). *Verifiability* refers to the ability of a third person to verify that indeed a certain piece of knowledge was transmitted during a dissemination event (Maltz & Kohli, 1996); e.g. meetings with three or more participants or written memos are high in verifiability. *Spontaneity* refers to the degree to which a dissemination event is planned before hand (Maltz & Kohli, 1996). Thus, dissemination during an unexpected meeting in the hall is spontaneous, whereas dissemination during a monthly review meeting is non-spontaneous (Maltz & Kohli, 1996). Dissemination events that are either verifiable, non-spontaneous, or both are considered to be formal; whereas events that are both spontaneous and not verifiable reflect informal dissemination (Maltz & Kohli, 1996; Narver *et al*, 1998). Dissemination formality refers to the ratio of formal dissemination events to the total number of dissemination events during a given time period (Maltz & Kohli, 1996).

So, Maltz & Kohli (1996) demonstrated that the formality of dissemination determines the perceived quality of market intelligence. In that context, they found a mere formality effect, which means that intelligence received through informal channels appears to be used more elaborately than that obtained through formal channels (Maltz & Kohli, 1996; Narver *et al*, 2004). In addition to this, following the argumentation that although informal communications may provide greater openness and clarification opportunities, formal communications tend to be more credible and verifiable; Maltz & Kohli (1996) argue that an even mix of intelligence received through informal and formal channels yields an optimal perceived intelligence quality, which is supported by their empirical analysis (Maltz & Kohli, 1996).

Moreover, Maltz & Kohli (1996) found that the other determinant for perceived intelligence quality - frequency of dissemination - was strongly related to the sender's positional power, the receiver's organizational commitment, receiver's trust in sender, and inter-functional distance between sender and receiver (Moorman *et al*, 1993); which is consistent with findings in knowledge management literature (e.g. Hislop, 2005). Interesting to note here is that Maltz & Kohli (1996) found that an increased frequency of sharing market knowledge (intelligence) indeed enhances the perceived quality of that knowledge (Kohli & Jaworski, 1990), but point out that an increased frequency of dissemination becomes detrimental for the perceived quality after a certain threshold as well; suggesting an inverted U-shaped curve for the dissemination frequency variable (Maltz & Kohli, 1996); illustratively, in Maltz & Kohli's (1996) research, the positive relationship between perceived intelligence quality and dissemination frequency peaked at 525 interactions in a 3-month period (Maltz & Kohli, 1996).

Altogether, Maltz & Kohli's (1996) empirical research suggests that keeping dissemination *formality* and *frequency* at optimal levels will enhance behavioural MO aspect's success (Narver *et al*, 1998; 2004).

### 3.6.5 Creating momentum for the MO

Another interesting finding by Maltz & Kohli (1996) that has already been discussed earlier is that their empirical research confirms that an increased frequency of sharing market knowledge (intelligence) indeed enhances the perceived quality of that knowledge (Kohli & Jaworski, 1990), but also reveals that learning only takes place beyond a certain threshold; which was approximately 125 interactions within a 3-month period (Maltz & Kohli, 1996). This suggests that MO related behaviours require a certain momentum before becoming effective, which in turn provides support for a phased introduction of MO; possibly in the form of a pilot project around the key accounts.

### 3.6.6 Lead user involvement

A market oriented company's lead users are not at all similar to Christensen & Bower's (1996) reference to customers that are only able to express their current *wants* and unable to articulate their future *needs* (Christensen & Bower, 1996; Narver *et al*, 2004). Listening too carefully to such customers is likely to render a market orientation in such a context short-term focused and therefore undesirable or even counterproductive (Christensen & Bower, 1996; Hamel & Prahalad, 1994). Rather than merely being large

customers that currently are very important to the business (Narver & Slater, 1998), lead users are customers, or potential customers, who have needs that are advanced compared to other clients and who expect to benefit significantly from a solution to those needs (von Hippel, 1986; Slater & Narver, 1998). Hamel & Prahalad (1994) argue that in order to push out the boundaries of current product concepts, it is necessary to put the most advanced technology possible directly into the hands of the world's most sophisticated and demanding users (Narver & Slater, 1998; Hamel & Prahalad, 1994), as this type of exploration often leads to the discovery of new solutions to unexpressed needs (Hamel & Prahalad, 1994; Narver & Slater, 1998). Thus, a true lead user should be a window into the future and not an anchor in the past (Narver & Slater, 1998).

### 3.6.7 Market experiments

A best practice that could be complementary to the aforementioned lead user involvement is *conducting market experiments* (Slater & Narver, 1998). In such experiments, early prototypes are released for beta-testing by, for example, lead users (Slater & Narver, 1998). Such a prototype will then become the foundation for subsequent, more-refined generations that follow (Lynn *et al*, 1996; Slater & Narver, 1998). Of course, this requires both financial and managerial commitment (Hamel & Prahalad, 1994). An MO business would typically conduct market experiments, learn from the results of those experiments, and modify their offerings based on the new knowledge and insights (Hamel & Prahalad, 1994; Slater & Narver, 1998). Illustratively, Lynn *et al* (1996) describe how companies such as Motorola, General Electric, and Coming maintain strong market positions by utilizing the 'probe and learn process'; in which the initial product is only the first step in the development process, not its culmination (Slater & Narver, 1998).

### 3.6.8 Technology roadmaps

Similarly to the way a traditional roadmap reveals the path that is to be travelled in terms of geographical space and position, technology roadmaps reveals the time dimension of technological progress (Kappel, 2001). Roadmaps serve a dual purpose as they are forecasts of what is possible (or likely) to happen on one hand, as well as plans that articulate a certain course of action (Kappel, 2001). This duality often creates tension in understanding roadmaps (Kappel, 2001). Although roadmaps can be used to align organizations in times of predictable change, they provide only limited insight into disruptive change (Kappel, 2001). The most influential roadmaps originate as responses to perceived threats, and link the technical storyline to organizational and personal

concerns (Kappel, 2001). Nonetheless, technology road-mapping has become an extensively applied technique across virtually all industries (Kappel, 2001). Considering these characteristics of technology road-mapping, arguments can be made that the activity could provide a useful addition to a market oriented business' set of behaviours (Narver *et al*, 2004; Kohli & Jaworski, 1990).

In industrial markets however, it may very well be that a business' clients are engaged in technology road-mapping themselves (Kappel, 2001; Kaynak & Kara, 2004), the organization could additionally profit from this by exploring its client's roadmaps and subsequently adjusting their own roadmap to cater for the clients' future needs (Kappel, 2001).

### 3.6.9 Real-time market intelligence

LeBon & Merunka (2006) stress that market information systems enable marketing and sales managers to identify, interpret, and react to developments in a organization's business environment and are therefore key elements leading to efficient marketing strategies and actions (Deshpande & Zaltman, 1987). Such a system comprises a set of procedures and sources to obtain information about events, trends and developments in a business' environment (Kotler *et al*, 2002; Kotler & Keller, 2006). Instituting an (partly) automated market intelligence system will provide an MO organization to have close to real-time insights in their business environment (LeBon & Merunka, 2006). Key issue when implementing such a system is that merely collecting data does not automatically result in distilling market information (Hislop, 2005; LeBon & Merunka, 2006). Ideally, a piece of market research information corresponds to a defined goal and focused objectives (LeBon & Merunka, 2006). Therefore, such a system must be designed to collect precise, carefully measured, controlled and analyzed data that can be used to answer specific research questions or test specific hypotheses (LeBon & Merunka, 2006), so that the results obtained enable managers to reduce decision-making uncertainty (Deshpande & Zaltman, 1987; LeBon & Merunka, 2006).

## 3.7 Literature review conclusions

A pro-active market-oriented organization is committed to understanding its customers' current as well as future needs (Narver *et al*, 2004). Such a company will then anticipate future trends, develop its competences accordingly, and will consequently be able to sustain its superior position by fulfilling those needs now, and in the future (Narver *et al*, 2004). Kohli & Jaworski (1990) argue that adopting a MO is only useful when the

benefits exceed the cost of required resources. By examining relevant literature and assessing MiPlaza's characteristics, it is concluded that MiPlaza is expected to profit from implementing MO; although it is debatable to what extent knowledge workers –who are generally not trained marketing-professionals- should be have an active part in the undertaking (Leenders & Wierenga, 2002).

For MiPlaza, becoming pro-actively market oriented (MO) encompasses a change in both organizational culture, as well as adopting a set of behaviours (Avlonitis & Gounaris, 1997; Narver *et al*, 2004). After all, unless a certain attitude towards MO exists, behavioural initiatives will never emerge, or will not be effective at the least (Avlonitis & Gounaris, 1997; Gounaris & Avlonitis, 2001; Beverland & Lindgreen, 2007; Kaynak & Kara, 2004). On the other hand, without the skills and structural arrangements to collect market intelligence and disseminate them through the organization, the firm will be unable to respond to customer needs and satisfy them (Kohli & Jaworski, 1990; Narver *et al*, 2004).

When MiPlaza decides to implement MO, it should take several issues presented in literature into account. For instance, the most important enabler for successfully implementing MO is the commitment of the firm's senior management (Narver *et al*, 1998; Kohli & Jaworski, 1990). Literature also presents two additional best practices, which instruct companies to institute knowledge management (Hislop, 2005; Norman, 1994), and setup MO as a continuous process (Kennedy *et al*, 2003; Narver *et al*, 2004).

Although in general, organizations that implement MO are likely to perform better, have more satisfied clients, and better satisfied employees than the ones that do not; simply engaging in MO does not ensure superior performance (Kohli & Jaworski, 1990, Narver & Slater, 1990). After all, the quality of market intelligence itself may be poor, the effective dissemination of the intelligence throughout the company may be lacking, the quality of execution of the programs designed to respond to it may be poor, or the organization's culture may not sufficiently support MO activities (Kohli & Jaworski, 1990; Narver *et al*, 2004; Hooley *et al*, 1990; Gounaris & Avlonitis, 2001); which are all likely to result in the MO not producing the desired benefits and functional consequences.

Nonetheless, implementing a pro-active market orientation appears to ensure MiPlaza's future market power and is found to be the most applicable approach towards developing MiPlaza's marketing competences. Of course, when emphasizing on customer needs, one of the first essential operational steps that need to be taken is identifying and segmenting these customers. Hence, the following section will discuss the segmentation of MiPlaza's customer base.

## 4 Market Segmentation

Now it is clear that MiPlaza will profit from adopting a market orientation, one important initial step to institutionalizing MO mechanisms is identifying what types of customers MiPlaza serves (Kotler & Keller, 2006). As MiPlaza's clientele is particularly heterogeneous by any standard, this project will also make an operational contribution by dividing MiPlaza's heterogeneous clientele into homogeneous segments in a meaningful and practical manner.

This market segmentation exercise will cover three chapters; first, a concise overview of relevant literature as well as the segmentation objectives for MiPlaza will be given in the following sections. Section 5 will then elaborate on the data preparation and measurement criteria formulation, after which the results of the analysis and the recommendations, based on the analysis, will be discussed in Section 6. Please note that in the public version of this report, most of Section 6 will be omitted, as it contains classified information. Nevertheless, the conclusions remain the same.

### 4.1 Why a should company segment its market

If all customers had the same set of needs, why would there be different products to fulfil those needs? The marketing concept states that customers are different (Smith, 1956; van Raaij & Stroecker, 1997) and that they all derive a different amount of value from the same product (Drucker, 1973; van Raaij & Stroecker, 1997; Kotler & Keller, 2006). In fact, no two customers are exactly alike (Kotler & Keller, 2006), insinuating that there would be as many products as there are customers to entirely fulfil everyone's needs. Naturally, it is virtually impossible (at least not economically feasible) to produce a tailored product for every customer in most areas of business (Narver & Slater, 1990; Croft 1994). Several authors (Croft, 1994; Kotler & Keller, 2006; van Raaij & Stroecker, 1997) discuss the continuum that exists between these two extremes (Figure 8). The appropriate tactics at the continuum's extremes may metaphorically be referred to as a



Figure 8: The segmentation continuum (Croft, 1994)

*shotgun* at the left end or *rifle* approach at the right end; based on Croft's (1994) argumentation. Using the shotgun approach, a manufacturer sets out to include as many features as



possible to satisfy as many customers' needs as possible (Croft, 1994, Kotler & Keller, 2006); i.e. to conquer the biggest part of the market as possible. Under the assumption that all customers are different (Smith, 1956; Drucker, 1973; van Raaij & Stroecker, 1997; Kotler & Keller, 2006), result of the shotgun tactic is that only a part of the potential market is being addressed (Kotler & Keller, 2006; Croft, 1994) and many customers' needs are fulfilled just enough to buy the product; although their needs are only partly fulfilled (Croft, 1994). The rifle approach, on the other hand, offers customers exactly what they need by tailoring the product to their wishes (Kotler & Keller, 2006; Croft, 1994; van Raaij & Stroecker, 1997). The downside of this approach is that 'every single customer needs to be individually fired at' and only very small parts of the potential market are addressed in one shot (Croft, 1994). Besides the evident impact on the level of customer satisfaction, the two tactics also have important economic consequences as customers derive more value from offerings that fit their needs better (Porter, 1998; van Raaij & Stroecker, 1997; Kotler & Keller, 2006). Consequently, customers are willing to pay more for custom products, inferring that "*the more tailored a product is to customers' needs, the higher margin can be retained*" (Porter, 1998; Croft, 1994). Taking all these universal arguments into consideration, practically all academics unanimously argue that finding the right balance between 'generic product offerings' and 'custom products' is an essential part of any marketing strategy (Kohli & Jaworski, 1990; Raaij & Stroecker, 1997; Kotler & Keller, 2006; Wood, 2002).

Smith (1956) was one of the first authors to propose searching for groups of customers with similar needs and subsequently develop an offering that is fitted to those groups' needs (Croft, 1994; van Raaij & Stroecker, 1997). Or, in the context of the aforementioned tactics: "*using the same weapon to target a subset of customers with approximately the same needs.*" This is essentially what market segmentation is all about: creating a number of *homogeneous* groups out of one *heterogeneous* group (Kotler & Keller, 2006).

## **4.2 Applicability of a universal segmentation scheme (a concise philosophical meta reflection on segmentation literature)**

Since Smith's (1956) publication, the field of market orientation research has been intensively publicized, and authors have discussed the subject from numerous perspectives (van Raaij & Stroecker, 1997; Kotler & Keller, 2006). Both operational and strategic perspectives can be found for example (van Raaij & Stroecker, 1997; Wood, 2002; Croft,

1994); likewise, most academics have addressed the issue from a relevant (i.e. case-specific) (Shrivastava, 1987) point of view (e.g. Croft, 1994; Wood, 2002); whereas others have attempted to take a more rigorous (i.e. universally applicable) (Shrivastava, 1987) approach to the topic (e.g. Kotler & Keller, 2006). Relevant (i.e. design driven) studies are typically *goal driven, meaningful, operationally valid* and provide *prescriptive statements* (Shrivastava, 1987); whereas rigorous (i.e. science driven) research is characterized by *empirical evidence*, a high degree of *conceptual adequacy*, a high level of *methodological rigor*, high *verifiability* and provides *descriptive statements* (Shrivastava, 1987). Although academic literature in general has traditionally been struggling heavily to mitigate these opposing forces of *rigorous* versus *relevant* research (van Aken *et al*, 2007, Shrivastava, 1987); the debate seems particularly applicable to the field of market segmentation (Kotler & Keller, 2006; Porter, 1998; Mohr *et al*, 2005).

The concept of market segmentation is straightforward: creating a number of homogeneous groups out of a heterogeneous group in order to better cater for customer needs (Kotler & Keller, 2006). However, the best way to do this, or the criteria that should be used for the segmentation scheme appear to depend on so many factors that segmentation literature virtually always takes a relevant perspective when discussing the actions involved in segmenting (Croft, 1994; Wood, 2002). It almost holds that academics either describe market segmentation on such a philosophical level that practitioners are unable to derive value from it; or researchers address market segmentation in such a specific context that academia are unable to derive appropriate value from it. Similarly, some authors imply that it may be possible to develop one universal segmentation model that is applicable to any type of business (Mohr *et al*, 2005; Kotler & Keller, 2006). Extant literature, however, provides evidence that such a universal segmentation model will be either too rigorous to be of any use to practitioners, or too relevant to be truly universally applicable (Wood, 2002; Croft, 1994). As mentioned earlier, the most applicable segmentation scheme depends on so many factors that making one universal scheme will be impossible, or not feasible at the least. Therefore, seems implausible that such a universal segmentation model will ever be developed.

On the other hand, the philosophy behind market segmentation is certainly universally applicable (van Raaij & Stroecker, 1997). From that perspective, arguments can be made that a universal approach to finding the most appropriate segmentation scheme in a specific situation may in fact be feasible. Moreover, some academics have already

proposed such approaches (Croft, 1994). Here, not the actual segmentation scheme itself is the core of the model, but rather the process of determining the most appropriate scheme (Croft, 1994; Mohr *et al*, 2005); consequently, this approach may be able to bridge the gap between relevance and rigor in market segmentation literature. Although it is an important and interesting subject for discussion, the debate of relevance versus rigor does not have strong immediate implications for this project, as this project's segmentation exercise is specific to the case of MiPlaza.

### 4.3 Segmentation for MiPlaza

Croft's (1994) universal approach to market segmentation will be used as a guideline in the following section. Croft (1994) implies that to determine the most applicable segmentation scheme in a certain situation, first and foremost the objective of that segmentation scheme must be clear. During interviews with members of MiPlaza's management team (MT), a primary and secondary objective of the segmentation have been identified:

#### **Client handling**

*The nature of the relationship between MiPlaza and its individual clients often shows more resemblances with a partnership or alliance<sup>ii</sup> than it does with a conventional customer-supplier relationship (Duysters & Hagedoorn, 2000; Norman, 2004, Gulati, 1998) There are a number of key determinants for the performance of such a partnership. Several publications (e.g. Norman, 2004; Duysters & Hagedoorn, 2000; de Man, 2004; Hislop, 2005; Contractor & Ra, 2002) imply that these determinants may be different for different market segments and MiPlaza should consequently handle clients in different segments in another way.*

Therefore, the primary objective is to create a number of homogenous groups in terms of performance determinants with regard to client handling.

### **Communication with client**

*Different types of clients require different approaches when it comes to communication, especially in the context of marketing and sales (van Dijk et al, 2007; Croft, 1994; Kotler & Keller, 2006; Cooper & Kleinschmidt, 1994; Baker et al, 1986).*

A secondary objective for the segmentation is therefore to find segments that divide the MiPlaza clientele into homogenous groups in terms of applicable communication strategy.

#### **4.3.1 Format**

In addition to these objectives, the MT also expressed a number of wishes concerning the information they want to be available from the data-analysis itself:

##### **Monitoring of performance in segments**

*One objective is that the company's performance in the different segments must be measurable in terms of turnover and number of clients.*

##### **Identification of profitability of segments**

*In order to better address the question "which segments to focus on?", the profitability per segment is desired as an output measure as well.*

##### **Identification of average client size in segments**

*It may be expected that there are certain segments that contain MiPlaza's 'big clients'. Being able to measure the average client size identifies these segments.*

It is necessary to note here that a low performance in a certain segment does not necessarily mean that the segment is not interesting. It could also very well be an indication that there is room to grow in that segment; i.e. the segment is a promising business opportunity.

The data-analysis format discussed in Section 5 will partly cater for these demands, although the implementation of some of the desired elements would require additional input by MiPlaza's financial administration (e.g. profitability of clients), as will be discussed in the following section that covers the data-set and analysis approach.

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*In the context of the following sections, it is important to understand why clients come to MiPlaza, instead of going to competitors. What makes MiPlaza a unique service and facilities provider is the level of expertise embedded in MiPlaza's staff. Combining this with the fact that MiPlaza operates in a knowledge intensive research environment, it is fair to say that customers primarily come to MiPlaza for its knowledge and expertise. One distinction that has important implications for several elements in this project is the distinction between different types of knowledge. Naturally, knowledge comprises the knowledge of facts and laws such as knowing how to assemble an automobile. However, knowledge also comprehends certain skills and abilities such as being able to design, develop and produce a car for instance (Hislop, 2005). A clear distinction is made between those two types of knowledge (Polanyi, 1956): whereas the former type described is referred to as explicit knowledge, the latter is referred to as tacit knowledge.*

*Organizations rely on both explicit as well as tacit knowledge (Kim & Inkpen, 2005). Explicit knowledge may be found in organizations in the form of specific and codified knowledge (Hislop, 2005; Kim & Inkpen, 2005). When, for example, a firm has patented a technology or innovation, the technology itself becomes explicit, since it has been codified (Hislop, 2005). On an organizational level, a firm's core competences may refer to the existing tacit knowledge in a firm, as these competences illustrate the activities the firm excels at and receives long-term sustainable competitive advantage from (Teece et al, 1997; de Man & Duysters, 2005). Illustratively, Cohen & Levinthal (1990) argue that innovative technologies often have a tacit dimension that is derived from internal firm-specific learning processes. Such technologies can never be copied exactly from other firms, due to this characteristic development path within firms (Kim & Inkpen, 2005). They could, however, be learned through experiencing and sharing with partners (Doz & Hamel, 1997). This perspective, which regards advanced and innovative technologies as tacit and explains the accumulation of technologies as path dependent, provides a rationale for technology learning of MiPlaza's clients through intensive partnerships or alliances. (Kim & Inkpen, 2005; de Man & Duysters, 2005; Norman, 2004; Hamel 1991; Vanhaverbeke et al, 2002).*

## 5 Criteria formulation & Data preparation

To form the input data for determining what sort of segmentation scheme MiPlaza should maintain, an analysis of MiPlaza's current customer base is made to gather more insights in the composition of the company's clientele and turnover. Secondary data (Kotler *et al*, 2002) in the form of a database-file that contains turnover-data per client served as the raw-data input for the analysis. Additional primary (Kotler *et al*, 2002) data was collected by means of assessing clients' scores on the basis of a number of suggested discrimination criteria.

The segmentation exercise is both exploratory as well as descriptive in nature (Yin, 2003). It is exploratory since hypotheses are developed in terms of proposed discrimination criteria, which are then used in an empirical analysis (Yin, 2003). It is also descriptive as the composition and trends of MiPlaza's current clientele is merely described (Yin, 2003). The segmentation activity's nature is qualitative in finding the relevant criteria, which is done on the basis of literature and bilateral semi-structured interviews; and quantitative when analyzing the data. The segmentation scheme eventually proposed in Section 0 is based on a combination of both these qualitative as well as quantitative arguments, so it is therefore considered to exhibit both exploratory as well as descriptive characteristics (Yin, 2003).

In the following section, the criteria for discriminating between segments and the identification process to find these criteria are explicated. In the subsequent section, the data preparation and data pollution issues are discussed.

### 5.1 Segmentation criteria

As stated earlier, a natural result of the nature of MiPlaza's business is that its customer relations often share more characteristics with alliances than they do with traditional dyadic customer-supplier relationships. Therefore, the primary objective of the segmentation exercise is to segment MiPlaza's market into homogeneous segments in terms of "*what must be done to ensure a successful relationship*"; i.e. *client handling*. If this first objective is met, the secondary objective of creating homogeneous groups in terms of appropriate communication strategy will determine the segmentation scheme that is eventually most appropriate. So, the primary criteria for discriminating between segments will be based on determinants for alliance/ partnership success.

Several steps were taken to determine what set of criteria should be assessed in the data analysis. First, some initial suggestions for criteria were derived from academic literature. For example, the partner's *desired level of formality*, the *level of trust between partners* and the *distance between partners* were found to have a strong influence on partnership performance (Norman, 2004; Gulati, 1999; Robson *et al*, 2006; Saxton, 1997; Kim & Inkpen, 2005). Then, these suggestions were used as input for bilateral semi-structured interviews with MiPlaza's MT that were aimed at constructing a long-list, somewhat similar to grounded theory (Thomas & James, 2006). Subsequently, several criteria that were very similar were combined and it was determined which of the proposed criteria on the long-list could in fact be assessed to a satisfactory degree. For instance, the *level of trust between partners* was one of the criteria that were omitted because it would be virtually impossible to assess them to a satisfactory degree without interviewing or surveying the partners. In that context, MiPlaza had emphasized that a customer-base-wide survey would not be desirable. The desired *formality of the partnership* was another criterion that would be virtually impossible to assess adequately; however, in this particular instance, another measure that is strongly related to formality was found (please refer to Section 5.1.2). Another key element of a segmentation scheme that needed to be taken into account is that the segments have to be 'mutually exclusive' (Croft, 1994; Kotler *et al*, 2002; Wood, 2002); i.e. it must be impossible for a client to fit more than one segment. Finally, a limited set of bilateral semi-structured interviews with part of MiPlaza's MT was used to validate the final set of criteria, before proceeding with the analysis itself. The validity of the proposed criteria was used to determine whether to include them or not; both validity and reliability will be discussed in the relevant sections in the following part of this report.

Now the format of the raw input data has been adapted to the demands for this project and the process of finding the selection criteria has been explicated, the next step towards describing and segmenting MiPlaza's current customer base is classifying the clients on those selection criteria. The approach chosen to engage the segmentation exercise comprises the examination of the individual clients' characteristics on the basis of the criteria that are explicated below. As stated earlier, these criteria have been proposed during bilateral discussions with MiPlaza's MT and have been validated through academic literature.

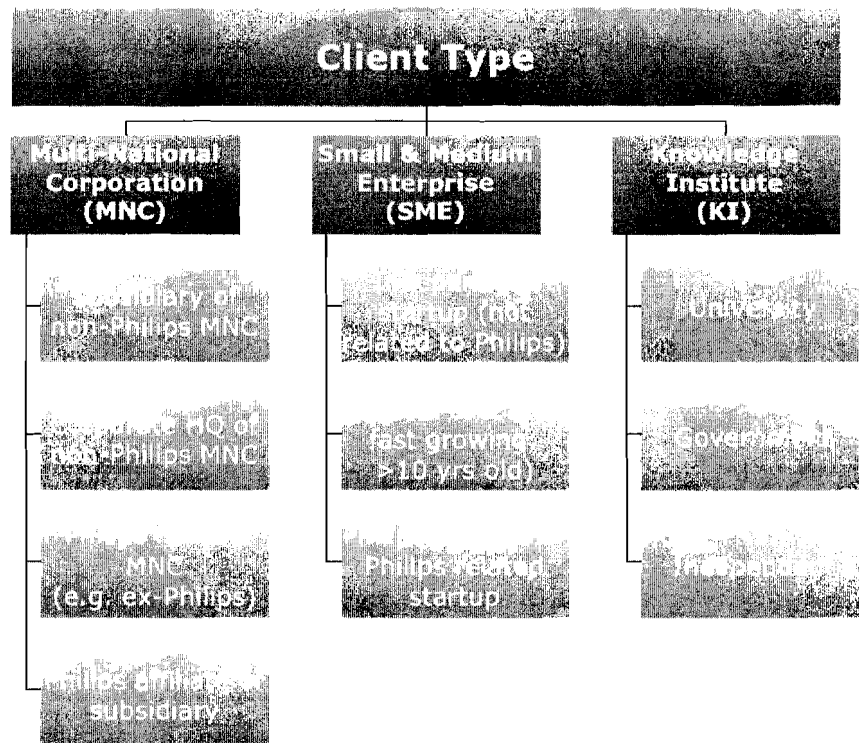


Figure 9: breakdown of the client-type criterion

### 5.1.1 Region

Alliance literature suggests that the geographical distance between the partners in an inter-firm collaboration influences the nature of that partnership (de Man, 2004; Gulati, 1998; Kim & Inkpen, 2005). Also Knowledge-Management literature emphasizes the importance of distance in knowledge transfer (Hislop, 2005; Kim & Inkpen, 2005); particularly when it comes to the transfer of tacit knowledge; which is the type of knowledge clients come to MiPlaza for (Kim & Inkpen, 2005). Furthermore, different communication strategies may be applicable when clients are located at a large distance (van Dijk *et al.*, 2007; Lindberg-Repo & Gronroos, 2004; Kotler & Keller, 2006). Therefore, a criterion that reflects the client’s geographical location is included in the form of the ‘country of residence’ as well as the ‘distance to MiPlaza’. This criterion also immediately visualizes the level of geographic concentration in terms of MiPlaza’s turnover and number of clients. Please note that, in case of doubt, the location of the client’s headquarters is used as the point of reference. Both reliability as well as validity of this measure is high, after all, location and distance are measured correctly very easy; although the location of the headquarters will not always be the same as the location of the R&D departments that is doing business with MiPlaza.



### 5.1.2 Client type

Several authors address differences between determinants for alliance performance in partnerships with different types of partners (de Man, 2004; Lane & Lubatkin, 1998; Saxton, 1997; Robson *et al.*, 2006). Often mentioned is the size of the partner firms, which is related to the level of formalization within the partners themselves (Chesbrough, 2006; Kotler & Keller, 2006; Hislop, 2005). Generally, the larger the firm, the higher the level of formalization will be. This has implications for the way MiPlaza should handle its clients, since relationships with small firms will thrive in a flexible and informal setting (Shane, 2000; Chesbrough, 2006), whereas partnerships with large firms require a high degree of formalization to be successful (Robson *et al.*, 2006; de Man, 2004).

In terms of communication strategy, several authors argue that the type of client is an important determinant for performance; moreover, the appropriate communication



Figure 10: European Commission's 2005 definition of an SME (European Commission, 2003)

channel appears to be dependent on the client type (van Dijk *et al.*, 2007; Lindberg-Repo & Gronroos, 2004; Kotler & Keller, 2006).

Therefore, a criterion is included that addresses the client's size and type; characterizing it as a *Multi-National Corporation* (MNC), *Small & Medium Enterprise* (SME), or *Knowledge Institute* (KI), as shown in Figure 9.

#### 5.1.2.1 Definitions of MNC, SME and KI

The first distinction that must be made is that between KI and manufacturing enterprises (i.e. MNC and SME in this case). The latter is concerned with delivering and manufacturing products or services, whereas the former is primarily concerned with the development of knowledge and its fundamental applications (Hoppe, 2008). The subsequent distinction is then made between MNC's and SME's. The European Union's definition of an SME (European Commission, 2003) serves as the basis for this evaluation. The commission's definition encompasses three threshold-elements: *number of employees*, *balance sheet total* and *annual turnover*, as explicated in Figure 10

(European Commission, 2003). Unfortunately, this data is not available for all customers under survey in the data file. Nevertheless, the definition was used as much as possible. In case of doubt, the client's status was based on website information. Please note that the objectives formulated earlier also played a role when qualifying clients under the absence of objective (financial) data; after all, the assumed differences in client handling and communication approach were the prerequisite for proposing the MNC/ SME/ KI - division in the first place. Therefore, as literature suggests that MNC profit from a high degree of formalization, whereas SME's profit from low levels of formalization (de Man, 2004; Robson *et al*, 2006; Shane, 2000), the level of formalization is attempted to be assessed and brought into the equation when evaluating a client being a SME or not.

#### 5.1.2.2 Sub categorizations

As Figure 9 illustrated, an additional layer of sub-categories has been added to further enrich the analysis. For instance, a 'Philips affiliate' is a Philips-department that is not considered as internal (i.e. not part of Philips Research), whereas a 'Philips related' MNC is (historically) related to Philips. So, the main element that the sub-categories under MNC have to clarify is the client's relatedness to Philips on the one hand and whether the client is the head office, or a local office of an MNC on the other hand. The key elements that the subcategories under SME attempt to clarify are whether or not the client is a start-up; and, again, the level of relatedness to Philips. For KI, the subcategories attempt to further clarify whether the client is a university, independent or government sponsored knowledge institute.

In all, also this 'client type' categorization scheme will be able to contribute to describing MiPlaza's current customer base, as it will be able to reveal agglomeration of MiPlaza's turnover in terms of client types. The validity of this criterion is relatively high, which has been demonstrated in literature and has been further strengthened through discussions with MiPlaza's MT. However, a cautionary note must be made, as the classification on the basis of size does not perfectly reflect the optimal level of formality. After all, some small firms may thrive under a high degree of formality and some large firms may thrive under a low degree of formality. Nonetheless, the general rule certainly applies and has been demonstrated in literature. The reliability of this criterion may be considered only moderate to high. Although the definitions of SME, MNC and KI are fairly specific, still some room for personal interpretation and judgement by the assessor remains as not all the required information was available to make the distinction between SME and MNC.

### 5.1.3 Network-relation

As briefly mentioned in the paragraph above, the relatedness to Philips and the Philips/ HTC network is regarded as an important criterion for potential segmentation. For instance, Inkpen (1998) argues that previous experience with both a specific partner as well as with partnerships in general are important determinants for partnership success. Therefore, also the client's position in the Philips/ HTC network is assessed, as its previous experience with the network's core partners (e.g. MiPlaza) may moderate the appropriate communication and handling strategies. The core partners in the Philips/ HTC network are either explicitly named Philips partners or HTC residents.

The validity of this criterion is relatively high, as had been demonstrated in literature. The reliability, however, is moderately low as evaluating clients in the context of network position is particularly difficult on the basis of the data available. It is fairly straightforward to check whether a client is part of the HTC business community; but it is extremely difficult to determine whether or not a client is related to the Philips/ HTC network in a less extensive degree. For example, if a customer does not have any relation to the HTC / Philips network in any way, but the new CEO had previously been working for Philips (and therefore knows what MiPlaza is able to provide). This client should be classified as 'network related', but will probably be classified as 'unrelated', because it is virtually impossible to discover this ambiguous situation on the basis of the available information and data. Nonetheless, as the validity of the criterion is high and it provides a strong basis for segmenting MiPlaza's market, it will still be included in the analysis.

### 5.1.4 Technology maturity

For MiPlaza, it is important to answer the question "exactly how high-tech are our customers?", as the company targets the cutting edge R&D market. Literature presents several models that may be applicable here. Moore (1991) presented the well-known technology adoption lifecycle model that divides the user-market in innovators, early adopters, early majority, late majority and laggards when adapting a new product or technology. This model is clearly constructed from a market point-of-view and does not regard the 'state-of-the-art' of the technology at hand. A model that was written from a technology-management point of view and has some similarities with the technology adoption cycle is the *technology S-curve*, depicted in Figure 11 (Christensen, 1992; Burgelman *et al*, 2004). This model may provide the measure for *technology maturity* sought here and is able to give insight in the state-of-the-art of the technology concerned, which will be regarded here as a reliable indicator for 'high-tech-ness'. Key

elements of the technology S-curve are the subsequent *eras*, that each has its own characteristics. A technology starts with a fundamental discovery or a radical innovation, initiating its infancy stage (Burgelman *et al*, 2004). Then, as time and development progresses, several organizations may develop competing technology designs during an era of ferment; resulting in the emergence of a dominant design and an era of consolidation. Finally, as the technology reaches maturity, the dominant design is developed further on the basis of incremental change and suppliers increasingly compete on price (Burgelman *et al*, 2004). Figure 12 emphasizes on the successive nature of technologies, which is another typical element of the technology S-curve model. The example is based on the development of visual media and clearly illustrates their ‘follow-up’ character.

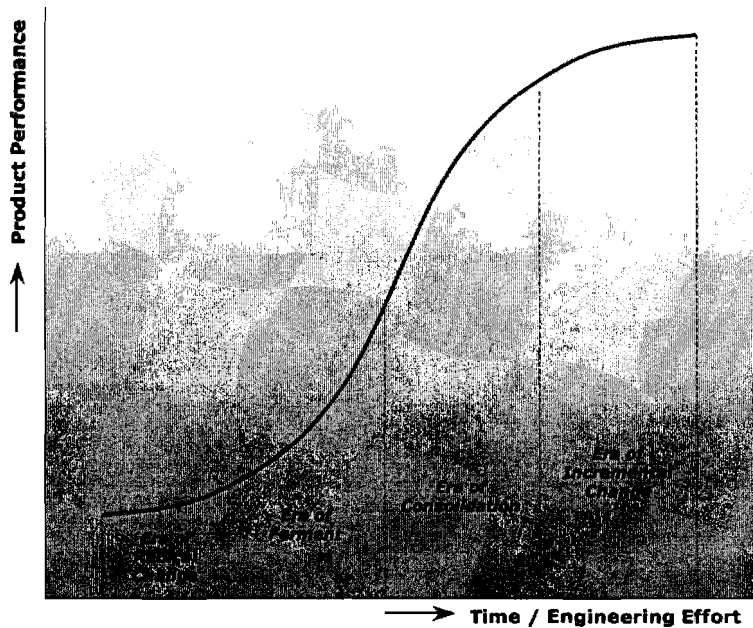


Figure 12: The technology S-curve, a technology maturity-indicator (Burgelman *et al*, 2004; Christensen, 1992)

Figure 12 emphasizes on the successive nature of technologies, which is another typical element of the technology S-curve model. The example is based on the development of visual media and clearly illustrates their ‘follow-up’ character.

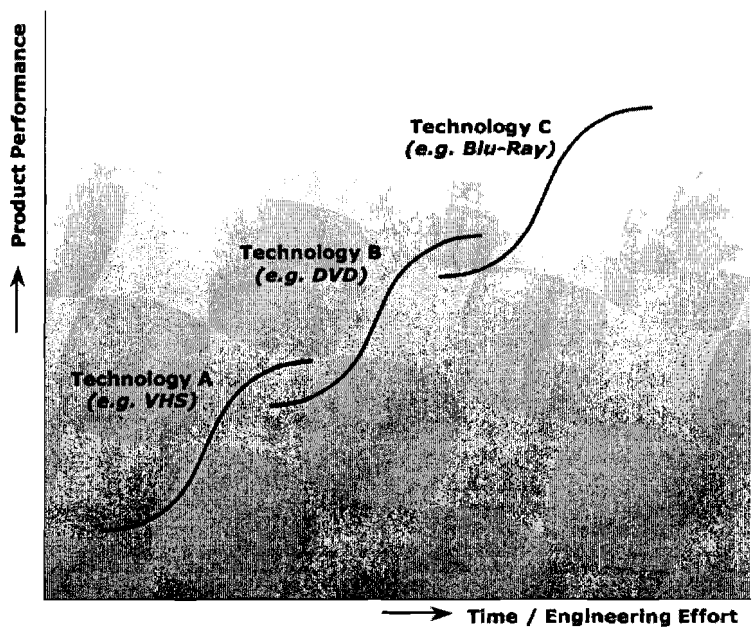


Figure 12: The sequence of disruptive technologies (Burgelman *et al*, 2004)

On the basis of the available data, it is difficult to determine how an individual client's R&D would score in terms of this S-curve. Therefore, only the client's primary technologies are assessed and characterized as either:

### **Old School / Commodity**

*Old school technologies are characterized by a high maturity level, heavy price competition, widespread availability and low economic impact for its users (i.e. commodity-quadrant in the Kraljic purchasing matrix) (Kraljic, 1983; van Weele, 2005). As a guideline, technologies that have been available for the end-user for more than 5-10 years are considered old school.*

### **Recent Development**

*A recent development is either still in its consolidation stage, or in its early time of incremental change. Key is that competition is not yet primarily on price. As a guideline, technologies that have only recently (or in the near future) become available for end-users are considered recent developments.*

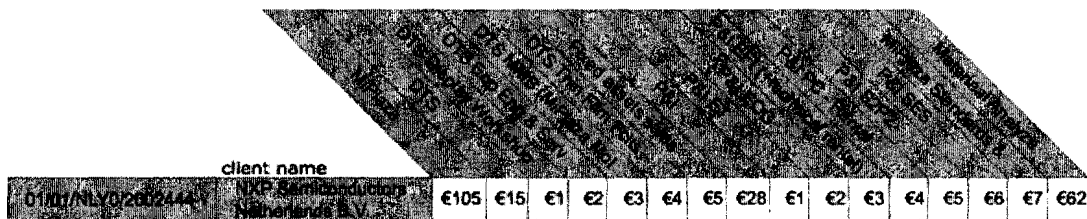
### **Cutting Edge**

*Cutting edge technologies are either in their era of radical change, ferment or consolidation (Burgelman et al, 2004). As a guideline, technologies that will only become available for end-users in the future are considered cutting edge. Please note that (fundamental) research activities theoretically form the very starting point of the technology S-curve, as this is where discoveries are made and technologies are 'born'. Hence, also research activities are considered to be cutting-edge.*

The validity of the argument is moderately high, as MiPlaza aims at high-tech clients and high-tech clients typically require other services than low-tech clients. The reliability of the criterion is moderately high, as the assessment of the client's state-of-the-art is done according to the characteristics of its main products/ technologies.

## 5.2 The data-set

Now the segmentation criteria have been adapted to the demands of this project, the next step towards describing and segmenting MiPlaza's current customer base is scoring the clients on a number of relevant selection criteria. This scoring will be done using secondary data (Kotler *et al*, 2002) in the form of a database-file that contains turnover-data per client, per MiPlaza group, and even per department (for DTS and P&I); as is depicted in Figure 13 below; served as the raw-data input for the analysis. This database is an export dump from MiPlaza's SAP administrative software into Microsoft Excel and was provided by MiPlaza's financial controller for 2006, 2007 and the first half of 2008.



client name	€105	€15	€1	€2	€3	€4	€5	€28	€1	€2	€3	€4	€5	€6	€7	€62
0100/NL/02602444																

Figure 13: File format of original database (turn-over figures are illustrative)

The first column contains the client's SAP number, the second column contains a descriptive name for the client and the remaining columns contain the turnover data. Figure 14 illustrates the breakdown structure of the turnover data and clearly shows the individual departments of P&I and DTS. No department-level data for MA is available as every type of analysis conducted at MA is effectively a separate department. To avoid overcomplicating the data by a vast amount of separate MA departments, only the group-level data had been made available by the financial controller.

## 5.3 Data pollution

### 5.3.1 Turnover pollution

As this exercise is aimed at providing MiPlaza with an appropriate segmentation scheme, certain parts of the data are omitted; as they pollute the data. These omitted parts are represented by the red coloured boxes in Figure 14.

#### Fixed asset sales

*Sale of fixed assets within DTS pollutes the data, as it does not relate to any of MiPlaza's operations.*

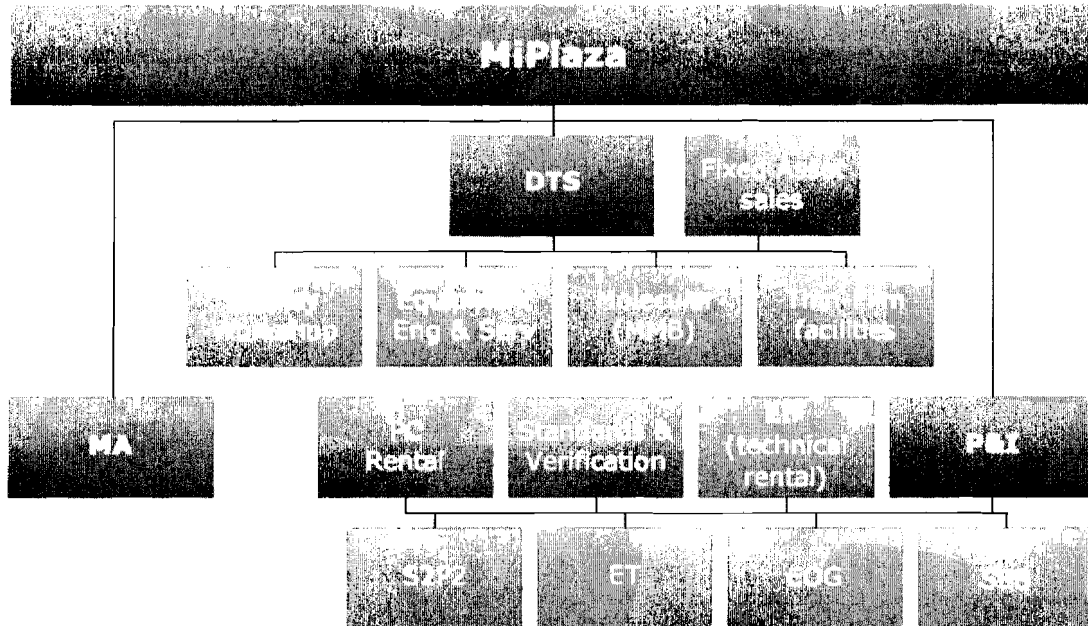


Figure 14: Breakdown of MiPlaza turnover data. Turnover in the red boxes will be omitted from the analysis.

### PC rental

*P&I's PC rental department was a heritage from P&I's internal Philips Research past and is not considered to be related to any of the core activities within P&I. Therefore, the PC rental department was externalized in 2007. The PC Rental figures are, however, still present in the 2006 and 2007 data and will therefore be omitted.*

### Standards & Verification

*The Standards & Verification department within P&I also is a heritage from P&I's internal Philips Research past. The department is concerned with the technological aspects of licensing agreements for Philips Research. As this department is not concerned with MiPlaza's core business (i.e. R&D services and facilities), it is omitted from the data.*



**5.3.2 Client name pollution**

In terms of the cases in the original data-file, SAP numbers relate to clients; although it is no exception for one client to have multiple SAP numbers. This issue is a manifestation of the ongoing integration of the three business groups not being done yet. It also

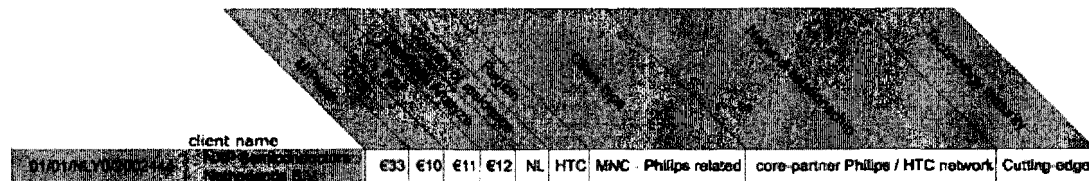
01/01/NLY0/802781	Philips Electronics Nederland BV
01/01/NLY0/110750	Philips Electronics Nederland BV
01/01/NLY0/803428	PHILIPS ELECTRONICS NEDERLAND B.V.
01/01/NLY0/804819	PHILIPS ELECTRONICS NEDERLAND B.V.
01/01/NLY0/801833	PHILIPS ELECTRONICS NEDERLAND B.V.
01/01/NLY0/804820	PHILIPS ELECTRONICS NEDERLAND B.V.
01/01/NLY0/672409	PHILIPS ELECTRONICS NEDERLAND B.V.
01/01/NLY0/673104	PHILIPS ELECTRONICS NEDERLAND B.V.
01/01/NLY0/673053	Philips Electronics Nederland B.V.
01/01/NLY0/804630	Philips Electronics Nederland B.V.
01/01/NLY0/802893	PHILIPS ELECTRONICS NEDERLAND B.V.
01/01/NLY0/672407	PHILIPS ELECTRONICS NEDERLAND B.V.

Figure 15: Sample from original data set illustrating double naming

stems from having different departments of a big client that individually and independently come to MiPlaza and are subsequently awarded with their own SAP number. Having several SAP numbers for the same client is difficult, as this compromises the scoring on the criteria discussed in Section 5.1. Especially the descriptive names that were coupled to SAP numbers were ambiguous; for instance, there were 12 different SAP numbers that were all described as “Philips Electronics Nederland BV”, as Figure 15 illustrates. To mitigate this issue as much as possible, the file was cleaned with the help of MiPlaza’s central Business Support Desk and correct descriptions of the clients were inserted so that the clients can be rated more accurately. Nevertheless, this issue pollutes ‘average client size’ data, as discussed in Section 6.



## 5.4 Data build-up



client name	€33	€10	€11	€12	NL	HTC	MNC	Philips related	core-partner Philips / HTC network	Cutting-edge
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Figure 16: File format including segmentation criteria

The criteria were incorporated in the data set in a straightforward manner, as illustrated in Figure 16. The analysis carried out only comprises descriptive statistics. These, however, will provide the necessary insights for making quantitative arguments to determining the most appropriate segmentation scheme nonetheless.

### 5.4.1 Trend analysis

As stated earlier, an elementary trend analysis is carried out; as data from 2006, 2007 and the first half of 2008 are available for analysis, they will be compared with each other. For 2006, 172 active clients were analyzed; 210 clients were included for 2007 and for the first half of 2008, 145 clients were taken into account. Naturally, as the 2008 figures only comprise the first two quarters, the results may be somewhat distorted. Nevertheless, valid conclusions can be drawn from the trend analysis.

### 5.4.2 Data analysis: turnover and client counts

Overall, two measures are used: *turnover* in a certain segment and *the number of active clients* in that segment. Only clients that actually have generated turnover are considered relevant for the analysis and are referred to as active clients. The two measures are then expressed in their real values, as well as their relative value (i.e. their percentage of the total). Complemented by the average client size in the segment, these output variables form the basis for the descriptive statistics presented in the following section, which also makes recommendations on the basis of the results.

### 5.4.3 Validity, reliability, controllability

The validity and reliability of the criteria have already been discussed. The controllability of the analysis is guaranteed by making the Excel-file in which the analysis is made available for review and clearly stating the analysis steps in that file.

## 6 Analysis results<sup>iii</sup>

The statistical analysis comprises basic descriptive statistics, on the basis of which valuable conclusions may be drawn.

**As the analysis discussed in this chapter contains specific turn-over and client information, pages 64-71 are omitted from this public version of the report.**

## 7 Conclusions, Implications & Suggestions for future research

One of the basic goals of a commercial business is to earn money; and to make money, customers need to be satisfied; and the only way of satisfying customers in a durable manner, is to fulfil their needs now and in the future (Levitt, 1960). Whereas the traditional paradigm of 'listening to customers' may provide a basis of successfully fulfilling customer's expressed wants on the short term; such responsive attitudes do not provide a good foundation for the organization's marketing power and eventual survival on the long term (Kotler & Keller, 2006). This project therefore focused on identifying the most applicable approach to developing MiPlaza's marketing competences on the one hand, as well as taking an initial operational step by proposing a client segmentation scheme on the other hand.

### 7.1 Developing MiPlaza's market(ing) competences

A literature review that covers management-, marketing-, and strategy literature, as well as several other areas of research was carried out and revealed that the adoption of a proactive market orientation will be the best approach for MiPlaza to develop its market competences. Such an approach encompasses changes in both organizational culture and behaviours and processes (Narver *et al*, 2004). After all, unless a certain attitude towards market orientation (MO) exists, behavioural initiatives will never emerge, or will not be effective at the least (Avlonitis & Gounaris, 1997; Gounaris & Avlonitis, 2001; Beverland & Lindgreen, 2007; Kaynak & Kara, 2004). On the other hand, without the skills and structural arrangements to collect market intelligence and disseminate them through the organization, the firm will be unable to respond to customer needs and satisfy them (Kohli & Jaworski, 1990; Narver *et al*, 2004). This interrelatedness explains to a large extent why organizations attempting to institute an MO fail so often (Beverland & Lindgreen, 2007; Gounaris & Avlonitis, 2001); as these companies' managers generally try to fit the MO into either the company's existing system of beliefs (culture) or the company's existing structural arrangements (behaviours) (Beverland & Lindgreen, 2007; Avlonitis & Gounaris, 1997).

Kohli & Jaworski (1990) argue that adopting a MO is only useful when the benefits exceed the cost of required resources. By examining relevant literature, it is concluded that MiPlaza is likely to profit from implementing MO; although it is debatable to what extent knowledge workers –who are generally not trained marketing-professionals– should be have an active part in the undertaking (Leenders & Wierenga, 2002).

## 6.4 Proposed segmentation scheme

Actually, there is no good or bad segmentation, as MiPlaza sets its own objectives for discriminating between segments. Naturally, an assessment can be made whether the proposed segmentation schemes are able to meet those objectives. Therefore, based on the qualitative arguments presented in Section 5.1 and the quantitative arguments in the previous section, it is recommended that MiPlaza divides its clientele in accordance with the client type criterion. From a quantitative perspective, the different segments would ideally be similar in size, nicely dividing MiPlaza's turnover. Although the *MNC*, *SME* and *KI* –segments differ in size, the client type criterion still offers the best distribution in that respect. From a quantitative perspective, the basis for discriminating between clients in terms of handling and communication approach on the basis of client type is far superior to the other suggested segmentation approaches. Particularly the formality argument that is found in alliance literature (Robson *et al*, 2006, de Man, 2004) provides strong support for a segmentation scheme based on client type. Moreover, the emerging trend that *KI* and *SME* make a growing contribution to MiPlaza's annual turnover provides additional support for segmenting on the basis of client type.

## 6.5 Segmentation conclusions

Whereas earlier sections in this report already revealed that MiPlaza should adopt a proactive market orientation, the previous sections have addressed an initial operational question of such an orientation in the form of proposing a customer segmentation scheme. Both qualitative and quantitative arguments support segmenting MiPlaza's customer base into three main groups: *multi-national corporations* (*MNC*'s), *small & medium enterprises* (*SME*'s) and *knowledge institutes* (*KI*'s).

With the conclusion of the segmentation exercise, the main part of the project has effectively been finished. The following section will continue with making a summation of the most important elements of this project's research as well as making a number of recommendations for MiPlaza on how to interpret the results, what the implications of the results are, and how to proceed from here.

## 7.2 Segmenting MiPlaza's client base

When changing the organizational culture to focus on fulfilling customer needs, one of the first operational steps is to identify what types of customers actually need to be served. Hence, to address the second objective of this project, a client segmentation scheme was proposed, by means of analyzing currently available client data. After all, the marketing concept states that all customers are different (Smith, 1956; van Raaij & Stroecker, 1997) and that they all derive a different amount of value from the same product (Drucker, 1973; van Raaij & Stroecker, 1997; Kotler & Keller, 2006). In fact, no two customers are exactly alike (Kotler & Keller, 2006), insinuating that there would be as many products as there are customers to entirely fulfil everyone's needs. Naturally, it is virtually impossible (at least not economically feasible) to produce a tailored product for every customer in most areas of business (Narver & Slater, 1990; Croft 1994), but at the same time, offering only one product will yield unsatisfied customers (Kotler & Keller, 2006). Hence, practically all academics unanimously agree that finding the right balance between 'generic product offerings' and 'custom products' is an essential part of any marketing strategy (Kohli & Jaworski, 1990; Raaij & Stroecker, 1997; Kotler & Keller, 2006; Wood, 2002). A widely utilized approach to this challenge is segmenting the organization's clientele and target customers in each segment with a tailored offering (Mohr *et al.*, 2005). This is essentially what market segmentation is all about: creating a number of *homogeneous* groups out of one *heterogeneous* group (Kotler & Keller, 2006).

Criteria for discriminating between groups could relate to commonly desired product features, but also to service offerings, geographical location, or communication strategy (Croft, 1994; Mohr *et al.*, 2005). Criteria used in this project were put forward by MiPlaza's management team and comprise *client handling* (i.e. creating a number of homogenous groups in terms of performance determinants with regard to client handling) and *client communication* (i.e. creating a number of homogenous groups in terms of applicable communication strategy).

Ultimately, quantitative and qualitative arguments posited that dividing MiPlaza's clientele into *multi-national corporations* (MNC's), *small & medium enterprises* (SME's) and *knowledge institutes* (KI's) would provide the best basis for creating homogeneous client segments out of MiPlaza's heterogeneous client base.

Several issues presented in literature should be taken into account when adopting MO. For instance, the most important enabler of a successful MO implementation is the commitment of the firm's senior management (Narver *et al*, 1998; Kohli & Jaworski, 1990). Literature also presents two additional best practices, which instruct companies to institute knowledge management (Hislop, 2005; Norman, 1994), and setup MO as a continuous process (Kennedy *et al*, 2003; Narver *et al*, 2004).

Although in general, organizations that implement MO are likely to perform better, have more satisfied clients, and more satisfied employees than the organizations that do not; simply engaging in MO does not ensure superior performance (Kohli & Jaworski, 1990, Narver & Slater, 1990). After all, the quality of market intelligence itself may be poor, the effective dissemination of the intelligence throughout the company may be lacking, the quality of execution of the programs designed to respond to it may be poor, or the organization's culture may not sufficiently support MO activities (Kohli & Jaworski, 1990; Narver *et al*, 2004; Hooley *et al*, 1990; Gounaris & Avlonitis, 2001); which are all likely to result in the MO not producing the desired benefits and functional consequences.

Altogether, implementing a market orientation appears to be MiPlaza's prerequisite for becoming ready for the future. Literature clearly reveals that implementing and maintaining MO may require significant resources, but more importantly, it requires the dedication of everyone in the organization in order to make it successful and effective. Whereas the balance seems fragile, complementary literature also discusses some best practices and principles to provide practitioners with some guidance. Conclusively, being market oriented is likely to become a prerequisite for any successful large business of the future, not just MiPlaza.

On a final note, Kohli & Jaworski (1990) emphasize that, although MO initiatives will be successful overall, the implementation of MO is likely to produce a limited number of programs that fail as well. Hopefully, MiPlaza will be able to mitigate the causes of those failures, remain committed to the key principles of proactive market orientation nonetheless and consequently build a strong foundation for its long-term survival.

## 8 Recommendations & Reflection

As MiPlaza has only recently been externalized by Philips Research, the prevailing mindset among the organization's knowledge workers is still inward focused. Also, the institution of marketing processes and behaviours is currently still in its infancy stage. It is clear that MiPlaza aims at strengthening its market(ing) power, therefore this project has addressed the following two research questions:

*“What approach should MiPlaza take in developing its marketing competences?”*

*How can the client base of a high-tech B2B R&D services, such as MiPlaza, be segmented in a meaningful and practical way?*

The qualitative literature review in Section 3 has addressed the first question from a strategic, cultural and behavioural perspective; whereas Sections 4, 5 and 6 attempted to take a first operational step by addressing the second research question. However, merely discussing relevant literature and proposing a segmentation scheme does not provide MiPlaza with a concrete set of proposed actions. Hence, this section makes some recommendations that are based on the results of the aforementioned sections. Before proceeding to the more elaborate and longer-term recommendations based on the qualitative literature review, recommendations based on the proposed segmentation scheme will be discussed first.

### 8.1 Recommendations based on segmentation scheme

One of the first steps that need to be taken when instituting a market orientation is identifying which customers make up MiPlaza's client base and consequently using this information to create homogeneous groups out of MiPlaza's heterogeneous clientele in terms of client handling and communication. The proposed segmentation scheme divides MiPlaza's clientele into three main groups: *multi-national corporations* (MNC's), *small & medium enterprises* (SME's) and *knowledge institutes* (KI's).

### 7.3 Summarizing conclusions

MiPlaza has only recently been externalized by Philips Research and due to its history as an internal service department, market(ing) competences are largely underdeveloped.

This project set out to investigate what approach MiPlaza should take in developing its market(ing) competences and concluded that a proactive market orientation is the way to go. Adopting a market orientation comprises both the institutionalization of market oriented behaviours and processes, as well as changing the organization's prevailing system of beliefs and assumptions (organizational culture).

Also an important operational first step towards implementing such an orientation was taken by segmenting MiPlaza's client base on the basis of relevant criteria. The conclusion of this elaborate segmentation exercise was that MiPlaza's customer base should be divided into three main groups: *multi-national corporations* (MNC's), *small & medium enterprises* (SME's) and *knowledge institutes* (KI's).

Overall, this project provides MiPlaza with a strong case in favour of adopting a market orientation as the ultimate strategy to strengthen its market(ing) power. Additionally, it provides MiPlaza with insight into its current customer base by providing an analysis of their clientele as well as proposing a validated segmentation scheme. These outputs may form the basis for MiPlaza's newly set strategic goals and planning and may ultimately provide the foundation for MiPlaza's long-term survival.



important note that has not been discussed earlier is that, like any other business philosophy, a market orientation is almost certain to lead to a few projects or programs that do not succeed. In such cases, MiPlaza should research what caused the failure, but continue to pursue a market orientation.

Some best practices and principles have already been discussed from both a behavioural as well as cultural perspective (Section 3.6). The most important recommendations based on those best practices are discussed in the following sections.

### **8.2.1 Senior management's commitment**

As senior management has the momentum to change an organization's culture and behaviours according to organizational goals and vision, senior management's commitment to MO is regarded as a prerequisite for an MO implementation. The discussion of senior management's commitment therefore exceeds the level of recommendations, as it is clear that without the full commitment of senior management, an implementation of MO is deemed to fail.

### **8.2.2 Knowledge management**

As Section 3.6.3 clearly illustrates, the adequate management of available market intelligence is vital for a successful MO. Furthermore, in the case of MiPlaza (being an organization which core offering is largely tacit knowledge and expertise) the proper management of knowledge throughout the organization becomes a vital element of effective and efficient business operation; not to say that knowledge management may be a critical determinant for MiPlaza's long term survival. Hence, it is recommended that MiPlaza sets up active knowledge management program in order to facilitate the flow of information and expertise between groups, departments and overhead staff.

### **8.2.3 Continuous process**

Once an MO has successfully been introduced at MiPlaza, it is important to continue to actively work on improving the MO. After all, market oriented behaviours will eventually be imitated successfully, reducing MiPlaza's potential lead on its direct competitors.

### 8.1.1 Re-organization of sales force

As mentioned earlier, MiPlaza has recently recruited two sales managers. This sales force is organized in parallel with MiPlaza's internal group-structure, meaning that one sales manager focuses on generating business for P&I and the other for DTS; MA currently does not have an overhead sales manager. This approach is certainly not uncommon; however, it is questionable whether this approach fits the market oriented organization MiPlaza strives to be. In fact, this approach contradicts MiPlaza's own strategic vision. Therefore, this projects recommends that MiPlaza re-organizes its sales force by assigning one sales manager to SME and KI clients and the other to MNC clients; complementary generating business for both P&I, DTS and MA. This would yield an optimum utilization of handling -approach and -experience as well as efficient communication -channels and -strategy.

### 8.1.2 Information richness of business administration

During the quantitative phase of the segmentation exercise (i.e. sorting and analyzing the available data) it became apparent that the data currently available from MiPlaza's *business support desk* does not contain any useful market information. The opinion prevails that, with only minor adjustments, the current way of business administration should be enriched to cater for the inclusion of market related data as well. For example, characterizing the clients on the basis of criteria such as *geographical location*, *network position* and *technology maturity* (Section 3.5) is a simple, yet valuable addition to the current purely financial administration.

However, although it is tempting to recommend enhancing the richness of MiPlaza's business administration right away; the close relation to the overall market orientation implementation in the behavioural sense should not be disregarded. It is therefore recommended to prioritize the adaptation of current processes and behaviours to MO when setting up market orientation behaviours.

## 8.2 Recommendations based on literature review

The qualitative literature review in Section 3 clearly reveals that MiPlaza is expected to profit from a market orientation and should adopt MO behaviours, as well as initiate change in the company's prevailing system of beliefs (culture). Section 3.5 explicates the specific issues at hand when evaluating MO from a high-tech R&D services and facilities provider's perspective (e.g. MiPlaza); obviously, it is recommended that MiPlaza takes these issues into account when designing their MO implementation approach. An

### 8.3.1 Lewin's (1951) three-stage change theory

Lewin's (1951) force field model of change characterizes change as a "*state of imbalance between driving forces (pressures for change) and restraining forces (pressures against change)*" (Beverland & Lindgreen, 2007). Lewin (1951) argues that to initiate change, managers must change the equilibrium between driving and restraining forces by creating pressure in favour of change (Burnes, 2004). As Narver *et al* (1998) argue, unlearning of past practices and beliefs is critical for the development of an MO. Likewise, the first step in Lewin's (1951) three stage model is *unfreezing* long-held cultural assumptions concerning 'the right way to do things' (Beverland & Lindgreen, 2007). Then, the second step is to *move* the organization to a new set of assumptions (Lewin, 1951, Wilson, 1992; Burnes, 2004) and *refreeze* the organizational culture by institutionalizing assumptions and practices consistent with a market orientation (Lewin, 1951; Beverland & Lindgreen, 2007). The following sections will concisely the three stages in Lewin's (1951) force field model in the context of implementing a market orientation.

### 8.3.2 Unfreeze

As mentioned earlier, unfreezing requires managers to challenge the organization's current cultural assumptions on 'how things are done the right way' (Beverland & Lindgreen, 2007). Such assumptions are often sub-consciously held and they should be resurfaced through a change intervention before organizational members will be able to challenge them (Beverland & Lindgreen, 2007; Wilson, 1992). Often, unfreezing and resurfacing the organizational culture fuels restraining forces that oppose change and consequently involve heated debates (Wilson, 1992; Kohli & Jaworski, 1990). Therefore, it is vital that all organizational members are convinced of the necessity of the cultural change (Kennedy *et al*, 2003; Narver *et al*, 2004), which may be achieved in part by structurally communicating senior management's commitment to change and MO (Kohli & Jaworski, 1990). In short, *unfreezing* comprises resurfacing and challenging past assumptions and practices (Beverland & Lindgreen, 2007).

### 8.3.3 Move

The subsequent phase in Lewin's (1951) three stage model is *moving* the organization towards a new set of assumptions (Beverland & Lindgreen, 2007). Embracing MO and supporting the need to become market oriented merely resembles the start of the change process (Narver *et al*, 1998; Beverland & Lindgreen, 2007). Narver *et al* (1998) argue that moving will involve: *deliberating role modelling; paying attention to, measuring*

#### 8.2.4 Reward systems

The final recommendation on a behavioural level is that MiPlaza should adapt their reward systems to MO. That way, everybody in the organization is motivated to keep MiPlaza's long term interests in mind and focus on structurally satisfying customer needs.

### 8.3 The implementation of cultural change

As stated earlier in this report, both the behavioural and cultural elements of an MO are a prerequisite for success. Without having a certain attitude towards MO, behavioural initiatives will never emerge, or will not be effective at the least. Likewise, when emphasizing purely on the company's attitudes by manipulating the existing prevailing system of beliefs; workers may start thinking in terms of satisfying customer needs, but lack the knowledge about what these needs are and how they can be satisfied at best. In the previous section, several behavioural recommendations had been made; in this section, the cultural aspects will be highlighted, as the current mindset throughout MiPlaza is still largely inward-focused. This *inward focus* and *technology push* mindset are still a heritage from MiPlaza's internal Philips Research past. Although some additional staff had been recruited to form an overhead sales- and marketing team, the prevailing mindset throughout MiPlaza's knowledge workers remains largely the same as it was within Philips Research. As discussed earlier, the degree to which MiPlaza's knowledge workers should actively participate in MiPlaza's MO activities remains to be determined. Nonetheless, all organizational members should understand and support the market orientation philosophy, so a cultural change is inevitable.

Whereas the institution of new processes and routines may not be uncommon in most companies, the adoption of a whole new system of beliefs, such as the transformation towards an MO culture; is not an exercise that is carried out regularly. Moreover, many businesses are not even actively involved with managing their organizational culture. Therefore, to complement the behavioural recommendations made earlier, the following section is dedicated to providing MiPlaza with a framework for changing the prevailing mindset towards an MO culture by means of a concise literature review around Lewin's (1951) force field model of change; which is regarded as the most applicable model to describe cultural change to a market orientation by several authors (Beverland & Lindgreen, 2007; Burnes, 2004; Wilson, 1992)

Interestingly, Narver *et al* (1998) state that senior management is likely to play a lesser role in driving change during the refreezing phase, as employees must reinforce market-oriented assumptions through practice (Baker & Sinkula, 1999; Beverland & Lindgreen, 2007). In short, the *refreezing* stage comprises institutionalizing assumptions and practices that are consistent with a market orientation.

### 8.3.5 MiPlaza's cultural transformation

It appears difficult to determine at which stage of Lewin's (1951) three-stage force field model MiPlaza is at the moment. One might argue that since the need for developing market has already been identified and acted on -albeit to only a limited extent- MiPlaza has surpassed the *unfreezing* stage and has already progressed into the *move* stage. As the research questions in this report illustrate, however, no clear strategy on how to develop MiPlaza's market competencies has been formulated; and without such a clear strategy and end-goal, attempting to move towards that goal is a pointless exercise. Also, not all levels of the organization have been included in the MO activities yet, so there is certainly no organization-wide change process under way. Based on these arguments, it is concluded that MiPlaza is still in the *unfreezing* stage.

### 8.3.6 Recommendations on approaching cultural change

Based on the arguments presented in the previous sections, it is recommended that MiPlaza first starts to generate organization-wide support for MO implementation, partly by communicating and expressing senior management's commitment to MO. Then, a clear change strategy, end goals and a new set of basic (MO) assumptions must be formulated and communicated throughout the organization. Subsequently, new behaviours and processes that are consistent with MO should be instituted; and constantly improved using instruments such as market-back learning and pilot projects.

Altogether, the recommendations presented here provide MiPlaza with explicit guidelines for developing its market(ing) competences and changing its organizational culture. The project's practical and scientific contributions, limitations and suggestions for future research are discussed in the final section of this thesis.

and *controlling organizational phenomena; reacting to critical incidents and crises; and creating creative tension.*

Many academics posit that inter-functional coordination of work processes is essential to induce cultural transformation (Kohli & Jaworski, 1990; Kennedy *et al*, 2003; Maltz & Kohli, 1996). These academics often focus on fulfilling customer needs as the top priority throughout all organizational activities and thus serve to coordinate the alignment required for transformation (Maltz & Kohli, 1996; Narver & Slater 1990; Webster 1994); resulting in internal processes that are designed and managed to ensure responsiveness to customer needs and maximum efficiency in value delivery as well as every organizational member's job being defined in terms of "*how it helps to create and deliver value for the customer*" (Beverland & Lindgreen 2007; Kennedy *et al*, 2003).

In short, *moving* towards a new set of assumptions starts out with the identification of the desired new set of beliefs -i.e. market orientation- and then focuses on changing the organization's behaviours and processes accordingly (Beverland & Lindgreen, 2007; Avlonitis & Gounaris, 1997; Kennedy *et al*, 2003).

#### 8.3.4 Refreeze

After the *move* phase had been completed successfully, managers must *refreeze* the new set of cultural assumptions as a *market oriented learning organization* (Lewin, 1951; Beverland & Lindgreen, 2007). Becoming a learning organization is posited to be essential for successfully refreezing the market orientation's set of assumptions (Beverland & Lindgreen, 2007). In a learning organization, all organizational members have 'learnt how to learn' and constantly reflect on past strategies and approaches to business rather than just learning through adaptation (trial and error) (Kennedy *et al*, 2003; Beverland & Lindgreen, 2007). Furthermore, Baker & Sinkula (1999) propose that the adoption of such a learning process will result in superior MO outcomes (Beverland & Lindgreen, 2007).

This phase also comprises the organization-wide implementation of behaviours and processes developed and initiated during the *move* phase (Wilson, 1992; Burnes, 2004). Although *refreeze* may imply that the hard work is done, it only represents the cultural change that was made (Burnes, 2004; Beverland & Lindgreen, 2007). The behavioural MO elements still need further developments. Therefore, concepts such as *pilot programs* and *market-back learning* (learning from doing) will provide MiPlaza with useful tools to further strengthen their market orientation during and after the refreezing stage (Day, 1994; Slater & Narver, 1998; Kennedy *et al*, 2003).

#### 8.4.2 Contribution to literature

The project also contributes to organization science. As discussed in Section 3.1, literature on market orientation generally takes a rather philosophical view on the subject (Narver *et al*, 2004; Blankson *et al*, 2006). Not only by regarding market orientation as a business philosophy; but also when discussing market oriented behaviours, academics remain on a relatively superficial level (Kohli & Jaworski, 1990; Narver *et al*, 2004, Day, 1999). In other words, although market orientation is defined as the implementation of the marketing concept, strong pragmatic ‘how-to’ research is relatively scarce (Kohli & Jaworski, 1990; Slater & Narver, 1998; Beverland & Lindgreen, 2007, Narver *et al*, 2004; Kaynak & Kara, 2004; Blankson *et al*, 2006; Kohli *et al*, 1993; Gounaris & Avlonitis, 2001; Day, 1999). From that perspective, an important academic contribution of this thesis is therefore considered to be the identification and explication of best practices and principles that were derived from the earlier mentioned fields of research, as this contributes to filling the aforementioned application-gap in literature. This also shows that becoming market oriented is a complex undertaking and although the basic concept is relatively straightforward, the actual implementation requires vision, thoughtful (strategic) planning and tremendous effort by all organizational members.

The extant literature on the topic of market orientation also focuses heavily on B2C markets as well as manufacturing and trading organizations. However, the perspective of a high-tech R&D service and facilities provider in an industrial market is has not received much attention (Avlonitis & Gounaris, 1997). This thesis contributes to filling this gap by examining the specific issues that need to be taken into account when assessing the applicability of a market orientation in the context of a knowledge intensive high-tech R&D environment, an industrial offset market, and a facilities and service provider.

Also, the specific exploration and interconnection between *pro-active* versus *responsive* market orientation and the *cultural* versus *behavioural* perspective, contributes to extant literature, as these subjects have not yet been explicitly combined and integrated in one research (Narver *et al*, 2004; Beverland & Lindgreen, 2007, Gresham *et al*, 2006; Kennedy *et al*, 2003).

Also in market segmentation literature, a B2C perspective is generally taken (Kotler & Keller, 2006). The exemplary case of MiPlaza’s market segmentation exercise will contribute to literature as it provides insights in the perspective of a knowledge intensive high-tech R&D environment, an industrial offset market, and a facilities and service provider.

## 8.4 Reflections

### 8.4.1 Implications for practitioners

This thesis provides implications for MiPlaza as well as other practitioners as it presents a strong case in favour of adopting a market orientation as a strategy to strengthen a high-tech B2B R&D facilities and services provider's market(ing) power and improve its long-term prospects. However, the reader is cautioned that the concept of market orientation is not necessarily applicable in any business' situation (Kohli & Jaworski, 1990). Therefore, the concept is critically reviewed and several issues are presented that need to be taken into account when assessing the applicability of a market orientation (Beverland & Lindgreen, 2007; Gounaris & Avlonitis, 2001; Narver *et al*, 2004; Gresham *et al*, 2006; Leenders & Wierenga, 2002; Kohli & Jaworski, 1990). Consequently, also practitioners that are not high-tech B2B R&D facilities and services providers will value these issues as a guideline to assess the applicability of market orientation in their specific context.

Practitioners attempting to research the implementation of a market orientation will value this thesis as it combines and summarizes best practices and principles in the context of market orientation that are found in several fields of research; e.g. management-, marketing-, alliance-, knowledge management-, and strategy literature (e.g. Narver *et al*, 1998; Hislop, 2005; Day, 1994; Kennedy *et al*, 2003; Christensen & Bower, 1996). Also the explication of key elements of the concept, such as pro-activity and behavioural as well as cultural change, will aid practitioners in implementing market orientation successfully.

Also the segmentation exercise explicated in this thesis provides implications for MiPlaza as well as other practitioners. Naturally, the exercise provides MiPlaza with insight into its current customer base by providing an analysis of their clientele as well as proposing a validated segmentation scheme. Moreover, the universally applicable approach to market segmentation taken in this project provides additional implications for practitioners in general as it is well-documented and may serve as an inspirational and educative example of the process of market segmentation (Croft, 1994).

Not just the approach to market segmentation, but also the specific results of the exercise in this project provides implications for practitioners. Undoubtly, firms that operate in a context that is similar to MiPlaza's will derive value from the validated segmentation scheme proposed here, or will be able to use it as an input for their own segmentation exercises at the least.



Other general limitations of this project stem from its primarily qualitative nature. The applicability of a market orientation in the context of a high-tech B2B R&D facilities and services provider, such as MiPlaza, has not been empirically validated. Similarly, no empirical validation of the segmentation scheme exists, neither is there empirical support for the approach towards determining a market segmentation, or any validated methodology for assessing the applicability of a specific segmentation. Also these limitations provide further support for more empirical research in both the field of market segmentation and market orientation.

Overall, this project is fairly case specific and has a low level of methodological constraint. This makes generalization of the results fairly difficult. For example, the arguments for adopting a pro-active market orientation presented in this thesis have a high internal validity, as they are catered to the specific situation at MiPlaza. However, the external validity of the arguments remains uncertain and further (empirical) research on the applicability of market orientation in a knowledge intensive high-tech R&D environment, an industrial offset market, and a facilities and service provider is needed before the results of this project may be generalized.

Likewise, the proposed approach to market segmentation and the proposed segmentation scheme itself have a high internal validity, as they are catered to MiPlaza's (strategic) objectives. Also here, further (empirical) research is needed, before results may be generalized. Moreover, given the argumentation in Section 4.2, both qualitative and quantitative research on a universal approach to market segmentation would make a particularly valuable contribution to extant literature.

Nonetheless, this thesis makes a number of valuable contributions to both science and practice. And at the same time provides MiPlaza with the instruments to strengthen its market(ing) power and ultimately ensure its long-term survival.

Finally, this thesis also makes a valuable contribution to literature by identifying and explicating the large gap between rigorous and relevant publications in extant market segmentation literature (Wood, 2002; Croft, 1994; Kotler & Keller, 2006; Shrivastava, 1987), which prevents practitioners from deriving high value from rigorous research and provides academia from deriving high value from relevant research.

#### **8.4.3 A note on market orientation research**

As discussed earlier, literature on market orientation generally takes a rather philosophical view on the subject (Narver *et al*, 2004; Blankson *et al*, 2006) and strong pragmatic ‘how-to’ research is relatively scarce (Beverland & Lindgreen, 2007, Narver *et al*, 2004). Without doubt, market orientation has enormous practical value and many organizations have already embraced the concept; some successfully, some unsuccessfully (Gounaris & Avlonitis, 2001). It is therefore interesting to find that, in the two decades the subject has already been researched, only very few authors attempted to take market orientation research to an empirical level; or at least to the level of ‘learning-from-practice’ by performing case studies (Kennedy *et al*, 2003; Kaynak & Kara, 2004). After all, as many organizations have embraced the concept of market orientation, certainly different approaches to the implementation of it will exist. So there will be at least a limited basis for empirical research and case studies. From this reasoning, it is proposed that researching, identifying and empirically testing the different approaches found in practice will provide an interesting and extremely valuable addition to extant market orientation research.

#### **8.4.4 Limitations & Suggestions for future research**

Although strong supportive qualitative and quantitative arguments were found, the most important general limitation of this study is that, due to time constraints, it has not been researched whether the proposed changes in terms of market orientation and market segmentation actually produce the desired results or not. Only extending this research to a longitudinal level will reveal whether the proposed changes in fact strengthen MiPlaza’s market(ing) competences and whether the proposed segmentation scheme actually is meaningful. Extending this study to a longitudinal level and including additional companies in the analysis is a promising area research that would make a valuable contribution to extant literature.

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**Measurement of MO as a set of behaviours**

Questions adapted from Narver *et al*, 2004

**Proactive MO:**

*We help our customers anticipate developments in their markets.*

*We continuously try to discover additional needs of our customers of which they are unaware.*

*We incorporate solutions to unarticulated customer needs in our new products and services.*

*We brainstorm on how customers use our products and services.*

*We innovate even at the risk of making our own products obsolete.*

*We search for opportunities in areas where customers have a difficult time expressing their needs.*

*We work closely with lead users who try to recognize customer needs months or even years before the majority of the market may recognize them.*

*We extrapolate key trends to gain insight into what users in a current market will need in the future.*

**Responsive MO:**

*We constantly monitor our level of commitment and orientation to serving customer needs.*

*We freely communicate information about our successful and unsuccessful customer experiences across all business functions.*

*Our strategy for competitive advantage is based on our understanding of customers' needs.*

*We measure customer satisfaction systematically and frequently.*

*We are more customer focused than our competitors.*

*I believe this business exists primarily to serve customers.*

*Data on customer satisfaction are disseminated at all levels in this business unit on a regular basis.*

## Appendix A: Measurement schemes

### Measurement of MO as a culture

Adapted from Hooley *et al*, 1990:

	<i>Total Sample</i>	<i>The Unsuers</i>	<i>The Sales Supporters</i>	<i>The Departmental Marketers</i>	<i>The Marketing Philosophers</i>
<b><i>The role of marketing in the company's strategic planning</i></b>					
<i>None or limited</i>	32,5 %	45,0 %	67,4 %	38,9 %	13,7 %
<i>A Major input</i>	46,3 %	47,1 %	25,0 %	48,6 %	49,2 %
<i>Marketing leads strategic planning</i>	21,1 %	7,9 %	7,6 %	12,5 %	37,2 %
<b><i>The extent of formal marketing planning in the company</i></b>					
<i>Little or none</i>	17,6 %	22,4 %	42,4 %	18,2 %	8,9 %
<i>Limited to annual budgeting</i>	26,3 %	30,4 %	27,2 %	31,4 %	20,5 %
<i>A separate annual marketing plan</i>	21,7 %	24,1 %	18,5 %	18,6 %	22,9 %
<i>Annual and longer term plans</i>	34,5 %	23,2 %	12,0 %	31,8 %	47,6 %
<b><i>The company's approach to new product development</i></b>					
<i>We do not do any</i>	11,2 %	16,2 %	17,4 %	9,1 %	8,2 %
<i>We watch the competition (if new products are successful, we imitate)</i>	22,6 %	23,1 %	34,8 %	28,1 %	16,2 %
<i>We actively develop new products to lead the market</i>	66,2 %	60,7 %	47,8 %	62,8 %	75,6 %

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- ': High-tech firms are those firms that are engaged in the design, development, and introduction of new products and/or innovative manufacturing processes through the systematic application of scientific and technical knowledge (Mohr *et al.*, 2005).
  - ": This report adopts the definition of an alliance by de Man & Duysters (2005), who refer to alliances as: "cooperative agreements in which two or more separate organizations team up in order to share reciprocal inputs while maintaining their own corporate identities." An alliance is considered to be strategic if they aim at improving the long-term perspective of the product-market combinations of at least one of the companies involved (Duysters & Hagedoorn, 2000).
  - ": The time-axis in the graphs also includes 2009 although no 2009 data is available yet. Mitigating this issue takes an extremely large investment in time and is therefore left as it is. So, for now, 2009 should be ignored.