

**University of Twente**  
**School of Management and Governance**

Topic: **A critical review of the megatrends and their implications for procurement**

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## **List of abbreviations**

CEO	Chief Executive Officer
CPO	Chief Procurement Officer
MBV	Market-based view
RBV	Resource-based view
BCG	Boston Consulting Group
CSR	Corporate Social Responsibility
R&D	Research and Development
MNC	Multinational Corporation
S&P 500	Standard and Poor's 500
GrSCM	Green supply chain management
OECD	Organisation for Economic Cooperation and Development
CIC	China Investment Corporation
SIC	SAFE Investment Company
BRIC	Brazil, Russia, India, and China

# **1 Introduction: Need to prepare firms' procurement in order to deal successfully with future challenges indicated by the megatrends of the next decade**

It is impossible to predict the future, but long-lasting trends or megatrends, which affect all areas of life on a global basis, can be identified, analysed and used economically. When firms develop strategies in due consideration of megatrends, they are in the position to gain competitive advantage by identifying potential market risks and chances at an early stage. Based on the long-lasting and global impact of megatrends it is expected that societies, organisations and governments have to deal with the consequences of megatrends for a long time.<sup>1</sup> Thus megatrends are a relevant topic in the strategy building of many companies.<sup>2</sup> The requirements of firms for being fit for the future are on the one hand continuously observing the external environment and on the other hand consciously reflecting the own design of the future.<sup>3</sup>

In recent times a wide range of studies deals with the phenomenon of megatrends and shows the growing importance and relevance of the issue.<sup>4</sup> When considering the studies about megatrends in detail, it becomes obvious that the majority of the studies are of non-academic nature. Whereas megatrend studies with a scientific and empirical background are rather rare. Based on the outcome of expert panels and an extensive literature review, five megatrends for procurement have been determined and will be analysed scientifically. Firstly, the importance of the five procurement megatrends for firms will be examined. Thus, the first research question is:

## *I. What is the importance of the procurement megatrends for firms?*

Further, it will be analysed if the perceived importance of the megatrends for procurement influences the actions of firms. Therefore, the second research question reads:

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<sup>1</sup> See Steria Mummert Consulting AG (2007), p. 3.

<sup>2</sup> See Z-punkt (2008), p. 3.

<sup>3</sup> See Minx (2008), p. 3.

<sup>4</sup> See Carter/Narasimhan (1996); Trent/Monczka (1998); Carter (2007); Schneider/Wallenburg (2012); James (1997); Sheth (1984); h&z consulting (2011); Roland Berger Consulting (2011); Kerkhoff Consulting (2010); Naisbitt (1982); UN HABITAT (2012); European Environment Agency (2011); Ernst & Young (2009); Deutsche Bank Research (2007); Gundlach Consulting (2008); Deutsche Post AG (2009); Steria Mummert Consulting & F.A.Z. Institut (2007); Credit Suisse (2011), Boston Consulting Group (2010), Z-punkt (2008), Gordon (2005).



*II. To what extent does the perceived importance of the megatrends for procurement influence firms' actions?*

Finally, it will be tested if firms' actions in order to prepare for the procurement megatrends have an influence on their performance. Hence, the third research question is:

*III. To what extent does the implementation of firms' actions in order to prepare for the megatrends influence firms' market performance?*

Following a quantitative approach, the first research question will be answered by means of descriptive statistics. With the support of regression analyses, the second and the third research question will be answered.

First of all, the theory of megatrends will be introduced and linked to the field of strategic management. Further, the five procurement megatrends will be illustrated and discussed as well as hypotheses and propositions will be developed. Subsequently, the megatrends will be linked to the sourcing process. Followed by the explanation of the method, the statistical results will be presented and discussed. In the end literature contributions, managerial implications, limitations and suggestions for further research will be illustrated.

## 2 Megatrend theory: Enduring multi-disciplinary trends

### 2.1 Megatrend theory: Its origins, introduction of the terminology and a classification of different trend types

The term megatrend has been coined by John Naisbitt in his book 'Megatrends' that was first published in the year 1982. In his work Naisbitt identified ten megatrends for the next decades.<sup>5</sup> Generally speaking, trends consist of two different sources of input. On the one hand they emerge based on facts, data and serious information, but on the other hand they are created by estimations, wishes and speculations of individuals.<sup>6</sup> Trend researchers divide trends in four main categories which are metatrends, megatrends, socio-cultural trends and consumer trends. The succession of these four categories is determined by relevance, longitude and intensity.<sup>7</sup>

- Metatrends

Metatrends are large-scale and universal trends such as the basic rules of nature and evolutionary laws.<sup>8</sup>

- Megatrends

Megatrends can be described as major changes of societal and technological as well as economical and political conditions.<sup>9</sup> They show three main characteristics:

1. The development of megatrends is gradually but once they are established their influence lasts at least for 25 years or even longer.<sup>10</sup>
2. Megatrends have an impact on several different areas of life.<sup>11</sup>
3. Megatrends are characterised by a global character; however this global character can be more distinctive in one area than in another.<sup>12</sup>

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<sup>5</sup> See Naisbitt/Aburdene (1990), p. 9-10.

<sup>6</sup> See Pillkahn (2007), p. 127.

<sup>7</sup> See Horx et al. (2007), p. 30-31.

<sup>8</sup> See Horx et al. (2007), p. 30.

<sup>9</sup> See Naisbitt/Aburdene (1990), p. 9-10.

<sup>10</sup> See Naisbitt/Aburdene (1990), p. 9-10.

<sup>11</sup> See Horx (2011), p. 72-73.

<sup>12</sup> See Horx et al. (2007), p. 33.

- Socio-cultural trends

Socio-cultural trends express the sense of life and the human desires.<sup>13</sup>

- Consumer trends

Consumer trends occur parallel to market cycles, societal change as well as to changes regarding products and fashions.

It is important to clearly distinguish between different types of trends. A trend can be defined as “(...) a tendency, a direction or flow (...)”<sup>14</sup>, whereas a megatrend is “(...) one that can bring along with many underlying themes or events.”<sup>15</sup> In the next paragraph the megatrend logic will be explained in detail.

## 2.2 Core elements

### 2.2.1 *Micro movements: Each megatrend is formed out of several micro trends*

Megatrends embrace several smaller trends, which are considered to form a megatrend together.<sup>16</sup> These underlying themes or events of which megatrends consist are so called micro trends or micro movements which comprise changes of small extent that are sometimes solely regionally distinctive.<sup>17</sup> Therefore, megatrends can rather be defined by their “(...) degree of distribution than their severity of short-term impact.”<sup>18</sup> For procurement organisations this means that megatrends should be considered separately from short-term impacts such as currency fluctuations or natural calamities.<sup>19</sup>

In Figure 1 the megatrend logic is illustrated demonstrating its consistence of several micro trends, which taken together, define a megatrend.

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<sup>13</sup> See Horx et al. (2007), p. 31; also in the following.

<sup>14</sup> James (1997), p. 453.

<sup>15</sup> James (1997), p. 453.

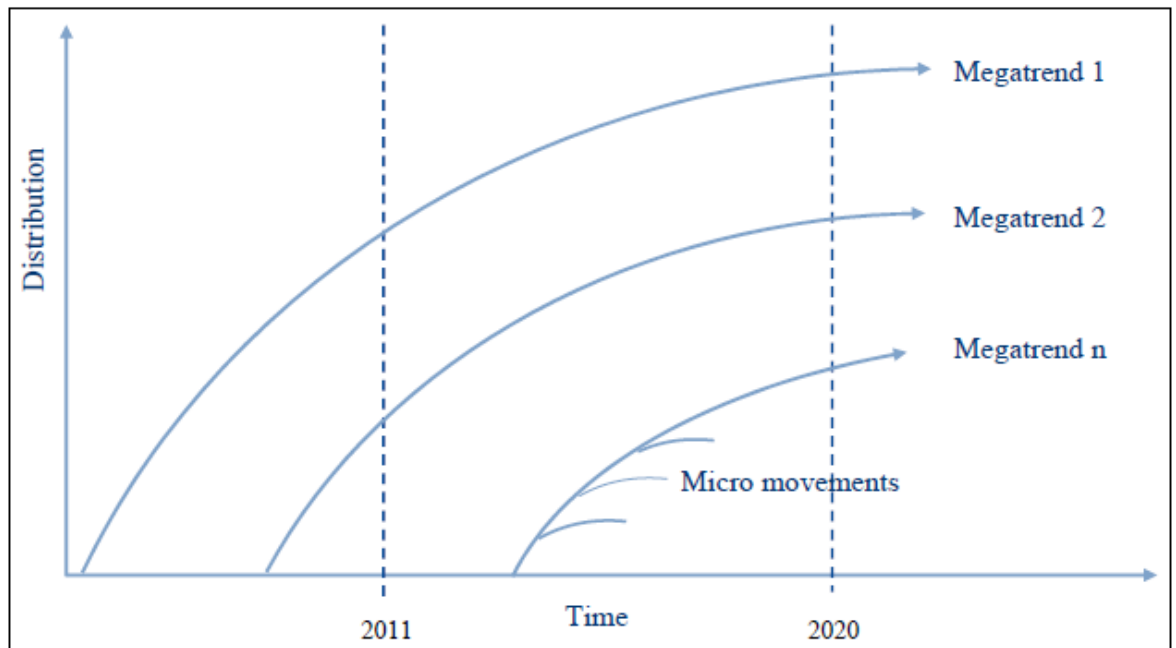
<sup>16</sup> See Procurement Intelligence Unit (2010), p. 1.

<sup>17</sup> See Pillkahn (2007), p. 127.

<sup>18</sup> Procurement Intelligence Unit (2010), p. 1.

<sup>19</sup> See Procurement Intelligence Unit (2010), p. 1.

**Figure 1: The megatrend logic**



Source: Procurement Intelligence Unit (2010; Naisbitt (1982)).

### 2.2.2 Identification of trends: Literature reviews, expert panels and scenarios

The variety of methods in trend- and future research implies an element of confusion. In many trend- and future studies an undifferentiated method-mix is used due to a lack of criteria for the application of methods.<sup>20</sup> Based on a sample, which contained 886 foresight studies, Popper identified the frequency of use of 25 foresight methods. The results of the study illustrate that literature reviews, expert panels and scenarios are the most used methods in trend- and future research. The complete list of foresight methods and their level of use are outlined in Figure 2.<sup>21</sup> In general, trend- and future research projects utilise more than one method for the identification of trends.<sup>22</sup>

In the following, the three most used methods to identify trends are introduced. The method which is used in more than 50 percent of future studies is the literature review. A literature review contains the analysis of journals, books, reports and websites. Most often an expert from the particular field is required in order to find relevant contributions to the

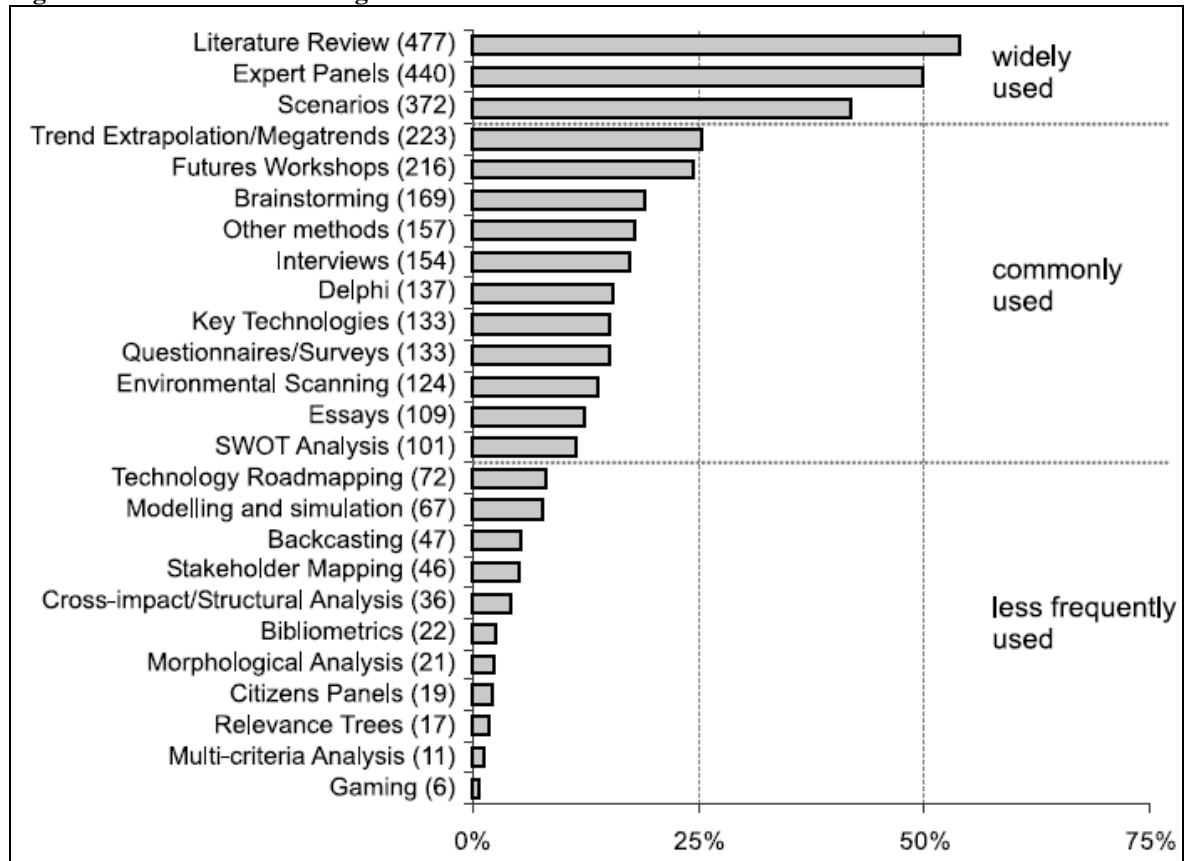
<sup>20</sup> See Steinmüller (1997), p.29.

<sup>21</sup> See Popper (2008), p. 69.

<sup>22</sup> See Popper (2008), p. 70.

topic at hand. Good literature reviews are structured around themes as well as theories and are labelled by their discursive style of writing.<sup>23</sup>

**Figure 2: Level of use of foresight methods**



Source: Popper (2008), p. 69.

According to the findings of Popper, expert panels are used the second most common in order to identify trends. Expert panels are groups of people that combine and analyse their knowledge to a particular topic. The participants can be local, regional, national or even international.<sup>24</sup>

The third most used trend analysis method is the scenario technique that has been applied in several fields for more than thirty years.<sup>25</sup> Scenarios do not forecast the future but instead they provide the decision makers with several different scenarios of the future. Therefore, military analysts, managers and government planners have used this technique as a tool to get in control of prospective developments.<sup>26</sup> An advantage of scenarios is that they are able to simplify a mass of data into a limited number of states. Thus, each scenario illustrates how different elements might interact in the future. All in all scenarios aim at

<sup>23</sup> See Georghiou et al (2008), p. 58.

<sup>24</sup> See Georghiou et al (2008), p. 57.

<sup>25</sup> See Bradfield et al. (2005), p. 795.

<sup>26</sup> See Mietzner/Reger (2005),p. 220-221.

including the variety of possibilities and shape these possibilities in a textual form that is easier to understand than large volumes of data.<sup>27</sup> Although the method seems to be analytically and scientifically correct, many firms do not use scenario techniques anymore, since the development of scenarios is complex and expensive and results are mostly vague and general.<sup>28</sup>

### 2.3 Application of megatrends: Illustration of elder studies of academic and non-academic nature

It is to observe that several megatrend studies of non-academic nature have been conducted, but the number of academic studies about megatrends, especially about megatrends for procurement, is rather limited. In Figure 3, a selection of megatrend studies of academic and non-academic nature is presented. Seven of the described megatrend studies in Figure 3 are related to procurement and in the following five of these studies which have been published within the last five years will be explained in detail.

#### Lena Schneider & Carl Markus Wallenburg - 50 Years of research on organising the purchasing function: Status quo and suggestions for future research

In this study ten megatrends have been identified that are expected to influence the purchasing organisation in the future. By means of a literature review the following megatrends have been found:

- Process organisation instead of functional silos increases importance of cross-functional team collaboration
- Global production and local consumer needs result in increased organisational complexity
- Demographic change and skills shortage in workforce result in ‘war for talents’
- Multipolar world and increasingly scarce resources
- Increased worldwide competition as well as market dynamics and volatility in sales and supply markets

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<sup>27</sup> See Schoemaker (1995), 26-27.

<sup>28</sup> See Horx et al. (2007), p. 30.

- Increasing stakeholder scrutiny, consumer awareness and regulation of corporate sustainability efforts and impact of climate change
- Global sourcing on local level
- Alliance management/relevance of supply networks
- Outsourcing and high relevance of suppliers
- ‘Online society’ based on information & communication technologies

CAPS Research: Institute for supply management & A.T. Kearney, Inc. - Succeeding in a dynamic world

The study, published in 2007, was based on a survey as well as on interviews with supply managers of more than 260 companies. Within the scope of the study the following external trends have been identified:

- Global competition
- Mergers, acquisitions and supply market consolidation
- Increased governmental regulation
- Technology advances
- Customer and channel dynamics
- Increased product variety and shorter life cycles
- Social responsibilities
- Environmental responsibilities

Further, the study highlights strategies for supply management in order to deal with the expected external trends.

h&z consulting - Challenges in Procurement 2021

In this study, which was published in 2011, five megatrends have been identified by means of expert workshops in Europe, America and Asia. Moreover, implications for procurement have been discussed. The five megatrends, which are also the basis of this work, are:

- Increase in environmental and social responsibility
- Acceleration of technological progress
- Changes in the political and macro-economical environment
- Shift of economic growth centres
- Demographic change

Furthermore, based on the outcome of the discussion in the expert panels, h&z consulting illustrated how firms can prepare their procurement for the challenges of the megatrends in the next decade.

#### Roland Berger strategy consultants - Purchasing excellence study

More than ten years ago Roland Berger conducted the first “Purchasing excellence study”. In the current and fourth version of the study, published in 2011, fifteen trends in purchasing have been identified by means of interviewing more than 500 Chief Executive Officers (CEOs), Chief Procurement Officers (CPOs) and purchasing managers. In the following the fifteen key trends for procurement will be outlined:

- Purchasing is treated as a true business partner
- Purchasing drives cross-functional cost optimisation
- Continuous risk management minimises product and supplier risks
- Continuous risk management minimises raw material, currency and price risks
- Sustainability forms a key part of the purchasing strategy
- Supply chain financing
- Suppliers are involved in development processes
- Cost improvements in collaboration with suppliers
- Extensive product cost optimisation using complex levers
- Best cost country sourcing – trend toward global sourcing continues
- Purchasing functions are centralized and coordinated
- Purchasing performance is measured in full
- Purchasing is involved early on in project-related and strategic tasks
- Purchasing staff are becoming increasingly professional
- Advanced technologies are used (tools & systems)

#### Kerkhoff Consulting - Einkaufsagenda 2020

In the book “Einkaufsagenda 2020”, published by the German business consultancy Kerkhoff Consulting in 2010, four megatrends for procurement have been identified.

- Increasing importance of purchasing as an allocative function in firms
- Establishment of sustainability as a key factor in procurement
- Increasing competition for experts in procurement
- Accelerating struggle for energy and scarce resources



The basis of the study is the identification of five trend categories of human life (Society, markets/politics, ecology, technology/communication and personnel), which are expected to have an impact on procurement in the next decades. However, the compilation of the five trend categories is solely based on the experiences and level of knowledge of the authors.

In the aftermath of the compilation of the trend categories, the consequences of the trends for procurement are determined in five steps. Firstly, by means of a top-down analysis the general conditions of the market environment in which a firm is situated are determined. Followed by a bottom-up analysis of the procurement management in which strengths and weaknesses of procurement are identified. In the third step, a trend matrix combines the findings from the top-down analysis and the bottom-up analysis. Fourthly, based on the information gained in the steps one to three, branch-specific scenarios are developed. In the last step, based on the outcome of the scenarios, roadmaps for procurement are generated.

**Figure 3: Illustration of megatrend studies of academic and non-academic nature**

<b>Academic studies</b>					
<b>Published in</b>	<b>Name and Results</b>	<b>Field</b>	<b>Time</b>	<b>Participants</b>	<b>On behalf of</b>
International Journal of Purchasing and Materials Management	Purchasing and supply management: Future directions and trends → Identification of ten megatrends	Procurement	1996	Purchasing executives, academic experts, purchasing personnel	Joseph Carter & Ram Narasimham
International Journal of Purchasing and Materials Management	Purchasing and supply Management: Trends and changes Throughout the 1990s → Identification of 18 megatrends	Procurement	1998	Executive managers	Robert J. Trent & Robert M. Monczka
Book	Succeeding in a dynamic world → see detailed description on p. 8	Procurement	2007	More than 260 practitioners	CAPS Research-Institute for supply management & A.T. Kearney, Inc.
IPSERA 2012 Conference	50 years of research on organising the purchasing function: Status quo and suggestions for future research → see detailed description on p. 7	Procurement	2012	Based on literature review	Lena Schneider & Carl Markus Wallenburg
Human Resource Management	HR megatrends → Identification of seven megatrends	HR	1997	Based on literature review	Ron James
Journal of Consumer Marketing	Marketing megatrends → Identification of seven megatrends for marketing	Marketing	1984	Based on literature review	Jagdish N. Sheth
<b>Non-academic studies</b>					
-	Challenges in Procurement 2021 → see detailed description on p. 8	Procurement	2011	Academic experts, CPOs and trend researchers	h&z Consulting
-	Purchasing excellence study → see detailed description on p. 9	Procurement	2011	more than 500 CEOs, COOs and purchasing managers	Roland Berger Consulting
Book	Einkaufsagenda 2020 → see detailed description on p. 9	Procurement	2010	Consultants from procurement	Kerkhoff Consulting
Book	Megatrends → Identification of ten megatrends	overlapping	1984	Based on literature review	John Naisbitt
-	The need for UN-Habitat → Identification of four megatrends	overlapping	2012	Based on literature review	UN-Habitat
-	State and outlook 2010-Assessment of global megatrends → Identification of eleven megatrends	overlapping	2010	Based on literature review	European Environment Agency

	Global megatrends 2009 → Identification of seven megatrends	overlapping	2009	Based on literature review	Ernst & Young
-	Megatrends in der globalen Wirtschaft → Identification of four megatrends	overlapping	2007	Based on literature review	Deutsche Bank Research
-	Megatrends und Trends, Sammlung und Interpretation → Identification of six megatrends	overlapping	2008	Based on literature review	Gundlach Consulting
-	Delivering tomorrow-Customer needs in 2020 and beyond → Identification of ten megatrends	overlapping	2009	1. Delphi study with experts from the fields of economics, logistics and futurology 2. Survey including 900 industry experts	Deutsche Post AG
-	Megatrends → Identification of five megatrends	overlapping	2007	Managers of German firms	Steria Mummert Consulting & F.A.Z. Institut
	Megatrends - Chance und Risiken → Identification of five megatrends for innovation	overlapping	2011	1799 small and medium sized enterprises	Credit Suisse
-	Megatrends - Tailwinds for growth in a low -growth environment → Tracking of 78 identified megatrends	overlapping	2010	Strategy consultants	Boston Consulting Group
-	Der Trend zum Megatrend → Identification of 10 megatrends	overlapping	2008	Strategy consultants	Z-Punkt: The Foresight Company
-	Seven megatrends that will reshape logistics → Identification of seven megatrends for logistics	Logistics	2005	literature review	Benjamin Gordon

Source: Carter/Narasimhan (1996); Trent/Monczka (1998); Carter (2007); Schneider/Wallenburg (2012); James (1997); Sheth (1984); h&z consulting (2011); Roland Berger Consulting (2011); Kerkhoff Consulting (2010); Naisbitt (1982); UN HABITAT (2012); European Environment Agency (2011); Ernst & Young (2009); Deutsche Bank Research (2007); Gundlach Consulting (2008); Deutsche Post AG (2009); Steria Mummert Consulting & F.A.Z. Institut (2007); Credit Suisse (2011), Boston Consulting Group (2010), Z-punkt (2008), Gordon (2005).

## 2.4 Firms' reactions on megatrends: Strategic relevance of megatrends

### 2.4.1 *Strategic management: Achievement of competitive advantage through trend identification*

This paragraph aims at identifying whether firms are gaining competitive advantage by reacting on megatrends through adapting their business practices or not. Thereby, the relevance of megatrends for strategic management is expected to be determined.

In this work, two contrary theories that are widely discussed in the literature of strategic management in order to explain why some firms perform better than others are analysed.<sup>29</sup> In the first theoretical approach, the market-based view (MBV) of the firm, competitive advantage "(...) is due to barriers to competition arising from the structure of the market."<sup>30</sup> The MBV adopts two assumptions: Firstly, resources and strategies are homogeneous among firms in an industry and secondly, these resources are highly mobile.<sup>31</sup> According to Porter, the profitability of a firm depends on the attractiveness of the industry in which a firm is positioned.<sup>32</sup> The attractiveness, concomitant the profitability, of a particular industry can be determined by the overall power of five competitive forces: the threat of new competition, the threat of substitute products or services, the bargaining power of customers, the bargaining power of suppliers and the intensity of competitive rivalry.<sup>33</sup> The strength of these five forces defines whether firms in an industry are on average in the position to earn more than they invested, meaning being profitable. Moreover, the power of the five forces and therefore, the profitability of an industry differs between branches of industries. Within the MBV, Porter determined two basic strategies in order to gain competitive advantage: cost leadership and differentiation.<sup>34</sup> The findings of Schmalensee, who found that industry effects exist and account for "at least 75 percent of the variance of industry rates of return on assets"<sup>35</sup> are in line with the reasoning of the MBV.

A contrary position to explain the origin of competitive advantage can be found in the resource-based view (RBV). As a proponent of the RBV, Rupert claims that business-

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<sup>29</sup> See Makhija (2003), p. 433.

<sup>30</sup> Makhija (2003), p. 433.

<sup>31</sup> See Priem/Butler (2001), p. 29.

<sup>32</sup> See Porter (2008), p. 197.

<sup>33</sup> See Porter (2000a), p. 28-29; also in the following.

<sup>34</sup> See Porter (1985), p. 3.

<sup>35</sup> Schmalensee (1985), p. 349.

specific factors are far more important sources of economic rents than industry-specific factors.<sup>36</sup> In the RBV, it is assumed that firms' resources are heterogeneous and immobile.<sup>37</sup> A resource can be considered as heterogeneous and immobile if it has the following four attributes: "(...) a) it must be valuable, in the sense that it exploits opportunities and/or neutralizes threats in a firm's environment, b) it must be rare among firm's current and potential competition, c) it must be imperfectly imitable, and d) there cannot be strategically equivalent substitutes for this resource that are valuable but neither rare or imperfectly imitable."<sup>38</sup> It can be distinguished between three different types of firm resources: Physical capital resources, human capital resources and organisational capital.<sup>39</sup> Examples for resources are capital, employment of skilled personnel, efficient procedures, brand names, machinery, trade contacts, in-house knowledge of technology etc..<sup>40</sup> According to Barney, a firm gains competitive advantage "(...) when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitor."<sup>41</sup> Further, a firm obtains sustained competitive advantage "(...) when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitor and when these other firms are unable to duplicate the benefits of this strategy."<sup>42</sup>

Models such as the Boston Consulting Group (BCG)-matrix and the General Electric multi factoral analysis are based on the assumptions of the MBV, in which the industry/market attractiveness is responsible for the profitability of firms. Further, the matrices are used to determine prospective market potentials in order to generate growth.<sup>43</sup> In respect of the MBV and trends, it can be assumed that if all firms follow the trends which generate the most promising growth rates, no one would be able to achieve competitive advantage through uniqueness. Alternatively, only focussing on internal resources and excluding the environment also does not lead to competitive advantage. For example, a firm that produces a product of highest quality for the lowest price will not succeed if a market for this product does not exist. Finally, it is to conclude that the achievement of competitive advantage based on the identification of trends can neither be explained completely from a market-based perspective, nor from a resource-based perspective.

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<sup>36</sup> See Rumelt (1991), p. 167.

<sup>37</sup> See Barney (1991), p. 105; Peteraf (1993), p. 179.

<sup>38</sup> Barney (1991), p. 105-106.

<sup>39</sup> See Barney (1991), p. 101.

<sup>40</sup> See Wernerfelt (1984), p. 172.

<sup>41</sup> Barney (1991), p. 102.

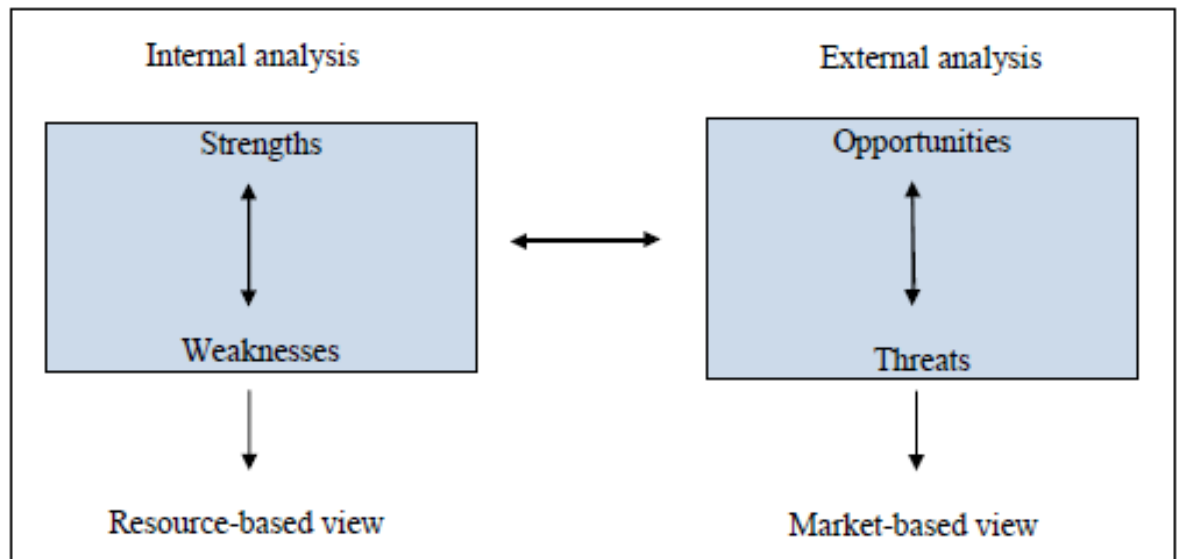
<sup>42</sup> Barney (1991), p. 102.

<sup>43</sup> See Olbrich (2006), p. 82.

#### 2.4.2 Trends and strategic advantage: Strategic foresight as a tool to achieve competitive advantage

According to the RBV internal capabilities of a firm are responsible for the generation of competitive advantage. Contrary to the RBV, in the MBV external conditions influence superior performance of firms (see Figure 4).

**Figure 4: Resource-based view vs. market-based view**



Source: Barney (1991), p. 100.

Christensen states that the achievement of competitive advantage is based on a set of conditions that exclusively “(...) exist at a particular point in time for particular reasons.”<sup>44</sup>

In order to keep competitive advantage, companies have to closely observe changes in its environment and upcoming trends that have the potential to affect the way of doing business in the future.<sup>45</sup>

In times of continuous change, firms are forced to identify upcoming trends early in order to successfully integrate them in their strategy formulation and stay competitive in the market.<sup>46</sup> The early identification of trends can be achieved by strategic foresight. According to Slaughter strategic foresight can be defined as “(...) the ability to create and maintain a high-quality, coherent and functional forward view and to use the insights arising in organisationally useful ways.”<sup>47</sup> Strategic foresight can be seen as a mixture of

<sup>44</sup> Christensen (2001), p. 109.

<sup>45</sup> See Bullinger et al. (2000), p. 1469.

<sup>46</sup> See Fink et al. (2005), p. 360.

<sup>47</sup> Slaughter (2002), p. 1.

strategic management and future methods<sup>48</sup> and an increasing number of firms use strategic foresight as a tool to prepare their business for the future.<sup>49</sup> Firms such as Nokia, Siemens, Philips, BASF, Daimler, Shell and Morgan Stanley have implemented strategic foresight practices a long time ago and use it as a strategic tool in their strategy formulation.<sup>50</sup> In general, firms can view megatrends as a “(...) starting point to see where it moves the world.”<sup>51</sup> Once the usefulness of megatrends has been appreciated by firms, institutions and governments, the future predictions of megatrends are taken into account for strategic planning and the realisation of long-term goals.<sup>52</sup>

## 2.5 Conclusion: Need to identify and critically reflect megatrends

Based on the elaborations of the former paragraph, in which the achievement of competitive advantage has been related to the identification of trends, it can be concluded that there is a need for firms to identify megatrends at least to keep their current position in the market. Minx goes even further and claims that identifying potential developments earlier than competitors is one of the success factors of entrepreneurial acting.<sup>53</sup> Organisations that actively scan their environment to identify changes can be able to gain precious outcomes. By following this approach in which companies are “(...) developing the right capacities, asking the right questions and nurturing the right people (...)”<sup>54</sup>, problems caused by environmental changes can be avoided and promising opportunities for the future can be grasped.<sup>55</sup> In recent times, the complexity and interdependency between economical, political, environmental and technological sectors is growing and “(...) cloud the predictability of future events and augment the uncertainty about the causes, drivers, and consequences of human action.”<sup>56</sup>

Above all, firms need to be able to assess the strategies that lead to their current position objectively, and then future strategies can be determined.<sup>57</sup>

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<sup>48</sup> See Slaughter (2002), p. 1.

<sup>49</sup> See Daheim/Uerz (2008), 322.

<sup>50</sup> See Vecchiato/Roveda (2010), p. 1528.

<sup>51</sup> Güemes-Castorena (2009), p. 2391.

<sup>52</sup> See Güemes-Castorena (2009), p. 2391.

<sup>53</sup> See Minx (2008), p. 3.

<sup>54</sup> Slaughter (2002), p. 11.

<sup>55</sup> See Slaughter (2002), p. 11.

<sup>56</sup> Habegger (2010), p. 49.

<sup>57</sup> See Samli (2004), p. 266.

### 3 Global megatrends: Five megatrends for procurement of the next decade

#### 3.1 The h&z megatrend study: Five megatrends as the outcome of the round table sessions “Challenges in Procurement 2021”

In May 2011, the study ‘Challenges in Procurement 2021’ has been published by the German business consultancy h&z. Since procurement links companies and the supply side of the market, it is significantly influenced by external proceedings. Therefore, the overall goal of the h&z study is to discover external trends that will influence firms’ procurement until 2021. Furthermore, an internal perspective has been highlighted by h&z, including the functional trends in procurement of “(...) stronger cross-functional work to increase strategic visibility.”<sup>58</sup>

With support of academics from the procurement field, trend researchers and Chief Procurement Officers, h&z hosted three round table sessions in Europe (Munich), America (New York), and in Asia (Shanghai) to define megatrends for procurement of the next decade, discuss the resulting challenges and try to find solutions how firms should deal with the megatrends in order to stay competitive.

These are the megatrends that have been determined during the round table sessions:<sup>59</sup>

1. Increase in environmental and social responsibility

‘Corporate Social Responsibility (CSR) will be of greater importance as organizations face challenges in consumption patterns with regards to green, social and health’

2. Acceleration of technological progress

‘Information technologies and innovations will become a key success factor’

3. Changes in political and macro-economic environment

‘Fundamental market changes will be more frequent and access to raw materials will become more critical’

4. Shift of economic growth centres

‘Demand in traditional industries (and mature markets) will slow down, but developing markets will experience strong growth’

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<sup>58</sup> h&z consulting (2011), p. 3.

<sup>59</sup> h&z consulting (2011), p. 3.



## 5. Demographic change

‘Demographic change will highly impact availability of skilled and also low cost labor’

The h&z study ‘Challenges in Procurement 2021’ has been chosen as basis for this work because of several reasons. The trends have been identified in expert panels. Expert panels are among the most accepted methods in trend- and future research.<sup>60</sup> Further, the roundtable sessions took place on three different continents with internationally accepted CPOs, academics from the procurement field and trend researchers, which secured a global coverage of expert knowledge. Additionally, the participants of the three economic regions independently identified the same five megatrends for the next decade, which supports the relevance of these five megatrends.

In the following, firstly, key facts of each megatrend of the h&z study are illustrated and supported by academic literature including relevant data and figures. Secondly, the megatrends are critically reflected in view of their correctness. Based on an extensive literature review some outcomes of the h&z study can be challenged. Thirdly, based on the illustration and critical reflection of the megatrends, hypotheses and propositions are being developed and the megatrends will be linked to procurement.

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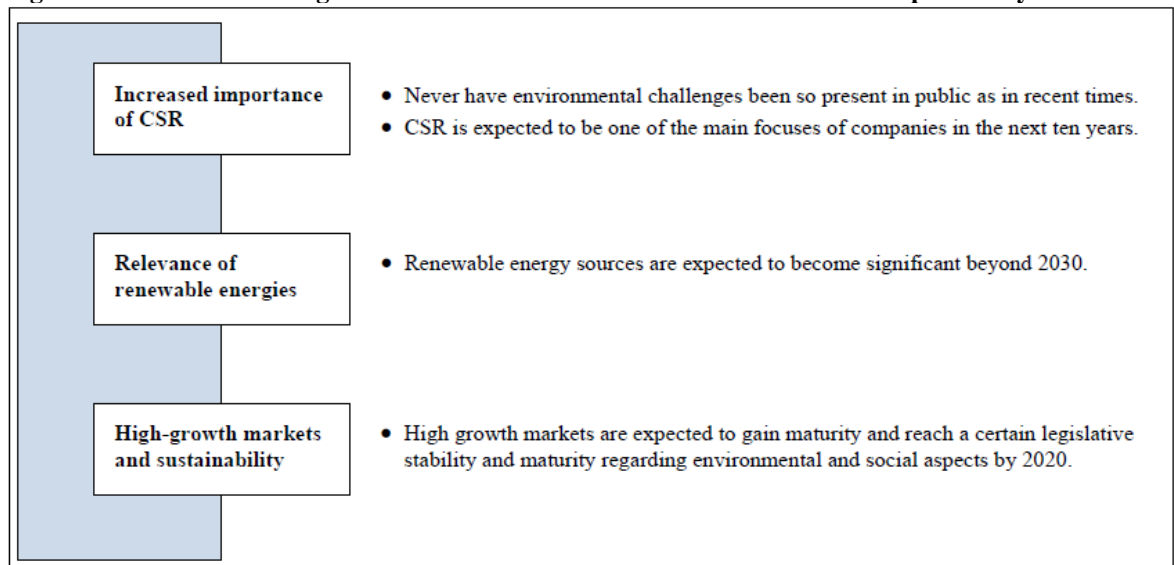
<sup>60</sup> See Popper (2008), p. 69.

## 3.2 The five megatrends for procurement: Future perspectives

### 3.2.1 Megatrend 1 - Increase in environmental and social responsibility

#### 3.2.1.1 Illustration of megatrend 1: Resource scarcity and highly sophisticated consumers demanding sustainable behaviour of companies

Figure 5: Illustration of megatrend 1 – Increase of environmental and social responsibility



Source: Based on h&z consulting (2011), p. 4-5.

It is difficult to find one uniform definition of the concept of CSR, because the concept itself is content-less, and its definition is only possible by using normative ideas about the societal role of organisations.<sup>61</sup> Therefore some different definitions are given to illustrate the concept comprehensively. First of all, the World Business Council for Sustainable Development defined CSR as “(...) the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large.”<sup>62</sup> Hopkins describes CSR as “(...) treating the stakeholders of the firm ethically or in a responsible manner, whereby ‘ethically or responsible’ means treating stakeholders in a manner deemed acceptable in civilized societies. Social includes economic responsibility. Stakeholders exist both within a firm and outside. The wider aim of social responsibility is to create higher standards of living, while preserving the profitability of the corporation,

<sup>61</sup> See Curbach (2009), p. 28.

<sup>62</sup> World Business Council for Sustainable Development (2000), p. 8.

for peoples both within and outside the corporation.”<sup>63</sup> According to the Commission of the European Communities, CSR “(...) is essentially a concept whereby companies decide voluntarily to contribute to a better society and a cleaner environment.”<sup>64</sup>

Formal writing about the concept of CSR started in the 1950s.<sup>65</sup> In the 1970s researchers and practitioners started to widely discuss the topic and the CSR-concept gained more and more importance within the business community. In recent times, CSR still gains a high level of attention<sup>66</sup> and it is to expect that the concept of CSR becomes even more relevant in the future since it is the basis for many other theoretical concepts. Further, the high level of public awareness and requirements of the public are expected to force the business community to integrate CSR-related aspects in their actions.<sup>67</sup> Driven by the pressure of ethical consumers that are demanding a sustainable handling of the environment and a social economic development<sup>68</sup> as well as a vast number of newly introduced laws in many countries and the emergence of international environmental agreements among countries, the importance of CSR increased in the last ten years.<sup>69</sup> Firms deal in different ways with the increasing importance of CSR. Companies with a negative environmental performance try to hide their unfavourable results, whereas companies with a positive environmental performance voluntarily publish their figures with regard to environmental issues to optimise their reputation.<sup>70</sup>

In developing countries such as China, sustainability aspects are not widespread yet, but even there, the government is introducing more and more laws to protect the environment.<sup>71</sup>

In Figure 6 the significant difference between environmental conditions in Europe or the United States of America (USA) and Asia becomes clear. Especially developing economies such as India and China have the largest increase of carbon dioxide emissions from 1975 to 2008.

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<sup>63</sup> Hopkins (2003), p. 2.

<sup>64</sup> Commission of the European Communities (2001), p. 4.

<sup>65</sup> See Carroll (1999), p. 269; also in the following.

<sup>66</sup> See Adeyeye (2011), p. 107; See Wanderley (2008), p. 369.

<sup>67</sup> See Carroll (1999), p. 292.

<sup>68</sup> See van Kenhove et al. (2003), p. 273.

<sup>69</sup> See Yang/Percival (2009), p. 615.

<sup>70</sup> See Dawkins/Fraas (2011), p. 303.

<sup>71</sup> See Wong (2009), p. 129.

**Figure 6: Carbon dioxide emission from fossil fuel combustion from 1975 to 2008**

Carbon dioxide emissions 1975-2008 (thousand metric tons of carbon)						
	1975	1990	2000	2005	2008	Change 1975-2008 (%)
USA	1,220,709	1,326,725	1,565,925	1,593,086	1,547,460	21.1
Germany	273,917	276,425	225,605	219,177	210,48	-23.2
France	121,877	108,576	100,126	107,631	103,845	-14.8
Brazil	41,224	56,966	90,028	95,441	110,833	168.9
India	68,786	188,344	323,647	388,321	479,039	596.4
China	312,46	658,554	928,868	1,534,244	1,922,687	515.3

Source: Based on Mongabay (2011).

Another micro movement within this megatrend is the decreasing availability of fossil fuels and raw materials and the consequent chances for renewable energies. The demand for renewable energies is expected to increase within the next ten years. For example, in the EU-27 countries the renewable energies' share of final energy was 11.6 percent in 2009 and the target for 2020 is to increase this share up to 20 percent.<sup>72</sup> As a consequence of the nuclear incident in Fukushima, in March 2011, a further acceleration of this development can be expected.<sup>73</sup> However, it can be assumed that the use of renewable energy sources only increases when they become more competitive in terms of prices as compared to fossil fuels. There are two ways to improve the position of renewable energy sources: The first option is to actively strengthen the position of renewable energies through the introduction of research and development (R&D) policies by governments, in form of financial subsidies. The second option is to weaken the situation of fossil fuels by claiming additional taxes.<sup>74</sup>

Although, bio fuels would have the potential to become an environmental-friendly substitute for fossil fuels, biomass is expected to be used primarily to satisfy the rising food demand of the growing human population in the next years.<sup>75</sup> Whereas in China and India most of the natural resources to grow biomass (land and water) are already used for agriculture, in South America and Sub-Saharan Africa resources for both, bio-energy production and agriculture are available.<sup>76</sup> Additionally, bio fuel production of the second generation does allow a coexistence with food production, but “(...) even if all crops, forests and grasslands currently not used were used for biofuels production it would be impossible to substitute all fossil fuels used today in transport.”<sup>77</sup>

<sup>72</sup> See Renewables 2011 (2011), p. 76.

<sup>73</sup> See Mondello (2011), p. 2.

<sup>74</sup> See Chow et al. (2003), p. 1530.

<sup>75</sup> See Moriarty/Honnery (2011), p. 2751.

<sup>76</sup> See Müller et al. (2007), p. 2.

<sup>77</sup> Ajanovic (2011), p. 2070.

### **3.2.1.2 Critical reflection of megatrend 1: The importance of CSR, the global increase of investments in renewable energies and potential risks in emerging economies**

The megatrend about the increase in environmental and social responsibility stresses the increasing importance of environmental and social issues that companies will have to cope with in order to stay competitive in the future. In the last years, companies invested more money in CSR activities as ever before.<sup>78</sup> Many multinational corporations (MNCs) adopted CSR departments which are responsible for writing CSR reports and introducing CSR-related aspects into their firms' strategy. However, these intense investments often did not pay off, because significant improvements stayed away and consequently MNCs such as Shell, British American Tobacco and the Coca Cola Company had to accept harsh setbacks. Amongst others, these companies faced problems as a reaction to their CSR activities "(...) from investors, who cry misuse of shareholders' money and from consumers and interest groups who criticise companies for promising more than they deliver."<sup>79</sup>

Moreover, about 50 percent of the executives of Standard & Poor's 500 (S&P 500) companies consider environmental sustainability as a major fear regarding shareholder value.<sup>80</sup> Despite the fact that the executives are evaluating the negative effects of climate change as serious problems with far-reaching consequences,<sup>81</sup> only 24 percent of the companies listed in the S&P 500 mention this issue in their 'U.S. Securities and Exchange Commission filings' for 2008.<sup>82</sup>

The globally growing energy consumption has been identified as another micro movement of this megatrend that led to problems such as "(...) increasing greenhouse gas emissions, growing energy dependency and supply insecurity"<sup>83</sup>. Especially the issue of energy dependency causes a problem for companies, due to the fact that most fossil fuels are imported from countries in which the political situation is unstable.<sup>84</sup>

To counteract against both, the energy dependency from political unstable countries and the global climate change, a vast number of researchers recommend to rapidly change the

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<sup>78</sup> See Blomqvist/Posner (2004), p.33; also in the following.

<sup>79</sup> Blomqvist/Posner (2004), p. 33.

<sup>80</sup> See Bonini et al. (2008), p. 5.

<sup>81</sup> See Business Roundtable (2007).

<sup>82</sup> See Doran et al. (2009).

<sup>83</sup> Ajanovic (2011), p. 2070.

<sup>84</sup> See Ajanovic (2011), p. 2070.

supply of energy from fossil fuels to renewable energies.<sup>85</sup> Renewable energies would generate safe and clean energy with zero carbon emissions and a high level of sustainability.<sup>86</sup> In 2009, the share of renewable energies of the global energy consumption was 16.2 percent, whereas fossil fuels generated 81 percent and nuclear energy 2.7 percent.<sup>87</sup> The worldwide investment in renewable energies increased from US \$ 130 billion in 2008 to US \$ 160 billion in 2009 to finally US \$ 210 billion in 2010.<sup>88</sup> These numbers illustrate the increasing relevance of renewable energies in the global arena. In Figure 7 the distribution of the global renewable energy sources is illustrated.

**Figure 7: Distribution of global renewable energy resources**

	Share of the global renewable energy (%)
Wind/solar/biomass/geothermal power generation	0.7
Biofuels	0.6
Biomass/solar/geothermal hot water/heating	1.5
Hydropower	3.4
Traditional biomass	10.0
Total	16.2

Source: Based on Renewables (2011), p. 17.

Although, global investments in renewable energy sources are increasing, in countries such as China the introduction of renewable energies is difficult to realise. The fact that 90 percent of China’s energy consumption is generated by fossil fuels qualifies China as the worldwide leader in terms of sulphur dioxide and carbon dioxide emissions and stresses China’s dependence on this source of energy. As a consequence the Chinese government defined the goal to generate 15 percent of its total energy consumption by renewable energies until 2020.<sup>89</sup> Since China is in for “(...) a period of high-speed development of its economy and the rising demand for energy is irreversible (...)”<sup>90</sup> the realisation of the sustainability goals could be problematic when the pace of the technological development of renewable energies in China cannot keep up with its growth in demand.<sup>91</sup>

To summarise the critical reflection of the megatrend about the increase in environmental and social responsibility, the growing usage of renewable energy sources to counteract the dependency on fossil fuels and to satisfy the demand of sophisticated customers that are

<sup>85</sup> See Moriarty/Honnery (2011), p. 2748.

<sup>86</sup> See El Chaar/Lamont (2010), p. 570.

<sup>87</sup> See Renewables 2011 (2011), p. 17.

<sup>88</sup> See Renewables 2011 (2011), p. 15.

<sup>89</sup> See Shi (2009), p. 95.

<sup>90</sup> Shi (2009), p. 94.

<sup>91</sup> See Shi (2009), p. 94.

claiming a sustainable treatment of the environment and a responsible handling of social aspects seem to be the main drivers of this megatrend. Based on the outcome of the two former paragraphs an increasing importance of social and environmental issue can be expected in the next decade.

### **3.2.1.3 Integration of CSR-aspects in supplier development and supplier evaluation**

For a long time ongoing debates and movements about CSR continuously apply pressure on companies.<sup>92</sup> Firms are forced to adapt their environmental behaviour to this steady pressure of “(...) environmental advocacy groups, consumers, regulators and neighbors.”<sup>93</sup> To meet the environmental requirements firms can implement more sustainable supply chain management practices. The main goal of green supply chain management (GrSCM) is minimising environmental pollution by choosing adequate suppliers that are able to stick to environmental standards.<sup>94</sup> Examples of GrSCM practices contain “(...) reducing packaging and waste, assessing vendors on their environmental performance, developing more eco-friendly products and reducing carbon emissions associated with transport of goods.”<sup>95</sup>

Purchasing managers are expected to have a strong impact on the implementation of these practices, because they are “(...) in a critical position to influence the size of the overall environmental footprint of a company.”<sup>96</sup> The realisation of the environmental-friendly practices depends on the commitment and engagement of firms’ management.<sup>97</sup> For a long time it has been assumed that top management support is a moving power in terms of realising a more sustainable and environmental-friendly purchasing.<sup>98</sup> Carter et al. found that especially middle management does have a positive influence on the development of a more sustainable purchasing.<sup>99</sup>

The electronic equipment manufacturer Electroment introduced a ‘Suppliers’ Social and Environmental Responsibility’ programme in which rules with regard to social and environmental as well as health and labour practices are stated. All suppliers are obliged to

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<sup>92</sup> See Foerstl et al. (2010), p. 118.

<sup>93</sup> Hall (2000), p. 456.

<sup>94</sup> See Kuo et al. (2010), p. 1161.

<sup>95</sup> Walker et al. (2008), p. 69.

<sup>96</sup> Walton et al. (1998), p. 9.

<sup>97</sup> See Walton et al. (1998), p. 2.

<sup>98</sup> See Carter et al. (1998), p. 29.

<sup>99</sup> See Carter et al. (1998), p. 34

stick to these rules in all dealings with the company.<sup>100</sup> Furthermore, actively developing suppliers' "(...) focus on environmental process improvements within their facilities is one high-leverage area where purchasing can significantly influence"<sup>101</sup> the development of more sustainable purchasing.

Since empirical research about the influence of suppliers as being an important force in implementing a more environmental-friendly and sustainable supply chain is lacking,<sup>102</sup> this research focuses on the influence that the increasing awareness and importance of CSR has on the introduction and implementation of CSR-aspects in supplier development and evaluation programmes. This line of reasoning leads to the following hypothesis:

***Hypothesis 1.** The perceived importance of the megatrend about the increase in environmental and social responsibility positively influences the integration of CSR-aspects in supplier development and supplier evaluation.*

Further, it is to be observed that ethical behaviour can have positive effects on the image and reputation of firms and mitigate negative publicity.<sup>103</sup> As a consequence of these developments CSR has developed the ability to improve the performance of firms, in terms of market share and sales revenue, by positively changing the customer's perception of a particular organisation.<sup>104</sup> Based on this reasoning the following propositions have been developed:

***Proposition 1a.** Integration of CSR-aspects in supplier development and supplier evaluation positively influences firms' market profit.*

***Proposition 1b.** Integration of CSR-aspects in supplier development and supplier evaluation positively influences firms' market share.*

***Proposition 1c.** Integration of CSR-aspects in supplier development and supplier evaluation positively influences firms' market growth.*

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<sup>100</sup> See Walker et al. (2008), p. 77-78.

<sup>101</sup> Walton et al. (1998), p. 7.

<sup>102</sup> See Walker et al. (2008), p. 70.

<sup>103</sup> See Carter (2000) a, p. 191; See Peloza (2006), p. 68.

<sup>104</sup> See Salam (2009), p. 355.



Supply chains in particular have the potential for innovative and sustainable development<sup>105</sup> and in many firms there is a huge potential to become more environmental-friendly by minimising resource inefficiencies in material utilisation and by improving process controls.<sup>106</sup> Since many resources are limited, organisations are asked to find ways to use these resources more efficiently during the complete value chain starting from the first supplier to the final customer.<sup>107</sup> The members of sustainable supply chains are forced to fulfil social and environmental criteria in order to stay within the supply chain. Nevertheless the competitiveness and economic power of the supply chain members is expected to be maintained.<sup>108</sup>

In recent times, most firms innovate either through corporation with their partners in trade or with other external organisations, indicated by the relation between buyers and suppliers that is becoming more intense.<sup>109</sup> The increased level of interaction between buyers and suppliers has mainly been driven by cost savings which led to many innovations, technical and organisational ones. The majority of environmental innovations started with demanding customers that forced the companies to address environmental issues with their suppliers. This leads to the following proposition:

***Proposition 1d.*** *Integration of CSR-aspects in supplier development and supplier evaluation positively influences firms' market innovativeness.*

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<sup>105</sup> See Isaksson et al. (2010), p. 425.

<sup>106</sup> See Porter/van der Linde (1995), p. 122.

<sup>107</sup> See Isaksson et al. (2010), p. 425.

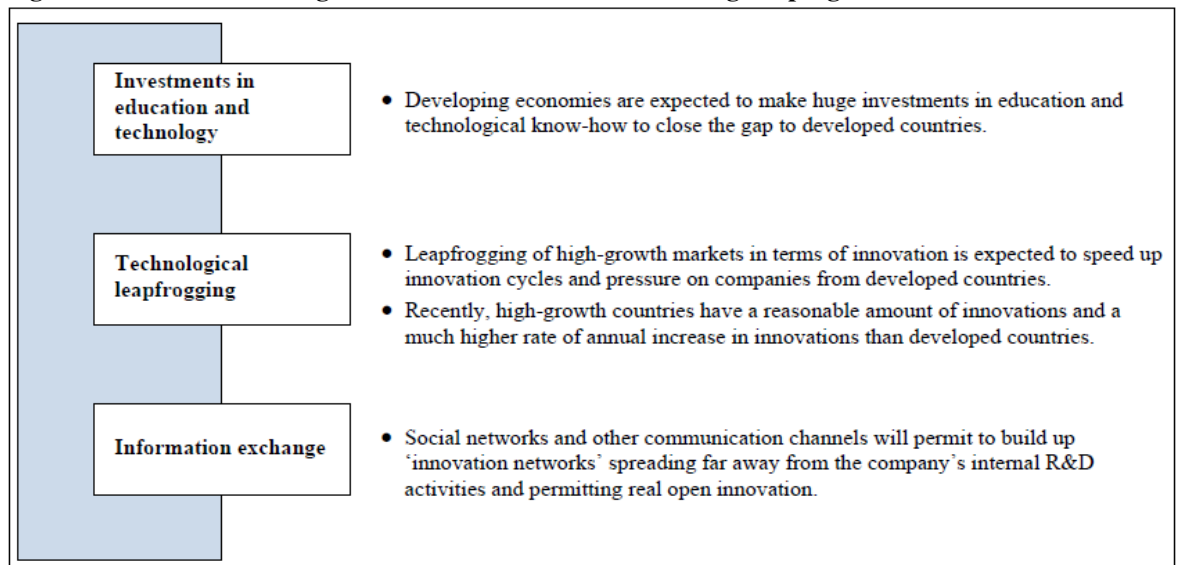
<sup>108</sup> See Seuring et al. (2008), p. 1545.

<sup>109</sup> See Hall (2000), p. 456.; also in the following

### 3.2.2 Megatrend 2 - Acceleration of technological progress

#### 3.2.2.1 Illustration of megatrend 2: Technological leapfrogging, growing investments in education and increasing numbers of innovations in high-growth markets

Figure 8: Illustration of megatrend 2 – Acceleration of technological progress



Source: Based on h&z consulting (2011), p. 11.

Technological innovation and the development of new products are key drivers of economic development in our current time of ongoing globalisation.<sup>110</sup> In developing countries increasing investments in educational institutions are expected to be made in the next years to catch-up with the developed countries. Figures 9 and 10 support this assumption. Figure 9 indicates the development of investments in education as a percentage of the Gross Domestic Product (GDP) of a selected number of countries. Figure 10 shows that the generation of knowledge increases globally, but the number of researchers and scientific publications in high-growth countries such as China, India and Brazil has increased stronger than in developed nations.

<sup>110</sup> See Ling (2011), p. 1352.

**Figure 9: Expenditure on educational institutions as percentage of GDP**

	2000	2008	Change (%)
USA	6.9	7.2	0.3
Japan	5.0	4.9	-0.1
Germany	4.9	4.8	-0.1
Brazil	3.5	5.3	1.8
Russia	2.9	4.7	1.8
OECD-countries	-	5.9	-
EU 21-countries	-	5.5	-

Source: Based on OECD (2011a), p. 229.

**Figure 10: Number of researchers and scientific publications**

	Researchers (thousands)			Number of publications		
	2002	2007	Change 2002-2007 (%)	2002	2008	Change 2002-2008 (%)
World	5,810.7	7,209.7	24.1	733,305	986,099	34.5
USA	1,342.5	1,425.5*	6.2	226,894	272,879	20.3
Japan	646.5	710.0	9.8	73,429	74,618	1.6
European Union	1,197.9	1,448.3	20.9	290,184	359,991	24.1
Germany	265.8	290.9	9.4	65,500	76,368	16.6
Brazil	71.8	124.9	74.0	12,573	26,482	110.7
Russia	491.9	469.1	-4.9	25,493	27,083	6.2
India	115.9**	154.9***	33.6	18,911	36,261	91.7
China	810.5	1,423.4	75.6	38,206	104,968	174.7

\* Data from 2006  
\*\* Data from 2000  
\*\*\* Data from 2005

Source: Based on UNESCO (2010), p. 8-10.

Besides the increasing investments in education and the growing number of researchers and scientific publications, also the number of patent applications in developing countries is growing and accelerates the pressure on industrialised nations. Figure 11 shows the development of patent applications in a selected number of countries from 1995 to 2010.

**Figure 11: Patent applications from 1995 to 2010**

	1995	2000	2005	2010	Change 1995-2010 (%)
World	1,047,766	1,377,466	1,701,331	1,979,133	88.9
USA	228,142	295,895	390,733	490,226	114.9
Japan	368,831	419,543	427,078	344,598	-7.0
European Patent Office	60,559	100,692	128,713	150,961	149.3
Germany	46,158	62,142	60,222	59,245	28.4
Brazil	7,448	17,376	20,005	22,686	204.6
Russia	24,444	32,337	32,253	42,500	73.9
India	6,566	8,538	24,382	34,287*	422.2
China	18,699	51,905	173,327	391,177	1992.0

\* Data from 2009

Source: Based on World Intellectual Property Organisation (2011).

Especially in China and India the number of patent applications increased much more than in developed countries that are being seen as leaders of innovations such as USA, Japan and European countries.

Further, consumers in emerging markets are highly sophisticated, since they are demanding high quality for prices below the average due to their low per capita income. Therefore, the high-quality/low-price commodity developed to a strategic need for MNCs in order to satisfy consumer needs in developing countries.<sup>111</sup>

An opportunity for emerging economies to accelerate the catch-up process with the developed countries is leapfrogging. Leapfrogging can be described as jumping over and skipping several steps in the development process of technologies.<sup>112</sup> Sometimes the leapfrogging process can even go further and bring the benefiting firm in the position of a technological leader. For instance, in China the wide implementation of mobile phones is an example for the first sort of leapfrogging, because Chinese companies directly jumped to the use of wireless networks by skipping over the technology of wire-based communications. The Korean steel industry overtook its competitors by technological leapfrogging and became a leader in this particular industry, which is an example of the second kind of leapfrogging.

Especially by considering environmental aspects, technological leapfrogging could be a chance for developing countries to avoid the way “(...) through the dirty stages of industrial growth that marred the past of today’s developed countries.”<sup>113</sup>

The developing countries would be able to handle their environmental and health problems as well as the increasing demand for raw materials, improve their infrastructure and participate in one of the major markets for the future with growth rates of five to eight percent in “(...) energy supply, energy efficiency, transport, water technologies and material efficiency.”<sup>114</sup> It is expected that the strongly increasing global demand in environmental technologies leads to a market volume above € 2,000 billion until 2020.<sup>115</sup>

Another micro trend is the increased exchange of information between organisations in open innovation networks. Recently, the concept of open innovation has been widely discussed among practitioners and academics.<sup>116</sup> To be clear, the concept of open innovation means “(...) that valuable ideas can come from inside or outside the company

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<sup>111</sup> See Chang/Horng (2010), p. 37.

<sup>112</sup> See Gallagher (2006), p. 384; also in the following.

<sup>113</sup> Perkins (2003), p. 177.

<sup>114</sup> Walz (2010a), p. 248.

<sup>115</sup> See Roland Berger (2007), p. 19.

<sup>116</sup> See Gassmann et al. (2010), p. 213.

and can go to market from inside or outside the company as well.”<sup>117</sup> If an open innovation network has been established in an industry once, companies that do not participate in the network are expected to face competitive disadvantages compared to the participating companies, because companies within the network have access to a large inter-organisational pool of knowledge.<sup>118</sup> For example, Procter and Gamble could increase their product success rate by 50 percent and improved the efficiency of their R&D activities by 60 percent. In addition, Siemens launched a corporate open innovation programme and also Phillips began to develop an open innovation environment.<sup>119</sup>

The collaboration in networks also increases due to the growing number of people having access to the Internet all around the globe. In 2000, 361 million people had access to the Internet worldwide, whereas in 2011 this figure increased to 2.1 billion people being able to go online. The largest increase of Internet users could be observed in Africa where only 4.5 million people had access to the Internet in 2000 and the number increased to 118 million in 2011. Further, the African continent has the most promising growth potential in terms of prospective Internet users, since momentarily, despite the increase of users within the last decade; only 11.4 percent of the total African population (1,038 billion) are using the Internet.<sup>120</sup>

### **3.2.2.2 Critical reflection of megatrend 2: Limited potential of technological leapfrogging and members of the Organisation for Economic Co-operation and Development are still leading in terms of patent applications**

The megatrend about the acceleration of technological progress shows the catch-up of developing countries with industrialised countries indicated by a shift of innovations from developed markets to high-growth markets. However, by considering the numbers and facts of current patent applications, the arrival of this shift seems to be uncertain within the next ten years.

The conditions for innovation are completely different in developed and emerging countries. Whereas in most developed countries innovation is included into national programmes as a factor that is “(...) leveraging competitiveness, economic growth, and

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<sup>117</sup> Chesbrough (2003), p. 43.

<sup>118</sup> See Enkel et al. (2009), p. 311.

<sup>119</sup> See Enkel et al. (2009), p. 312.

<sup>120</sup> See Internet World Stats (2011).

social development”<sup>121</sup>, in the majority of emerging countries appropriate conditions for innovation are not yet developed, mainly caused by a lack of laws that protect intellectual property rights.<sup>122</sup> Furthermore, in developing countries a common approach is to import new technologies and to transfer knowledge with MNCs, because of a lack in domestic innovative capabilities.<sup>123</sup> Currently, member states of the Organisation for Economic Co-operation and Development (OECD) are leaders in innovative activities compared to non-OECD countries.<sup>124</sup> To measure innovation and technological capabilities the number of patent applications is one of the most frequently used indicators.<sup>125</sup> It can be observed that in 2009, 94 percent of the patent applications all around the globe have been made in countries which are ranked within the Top 20 list in terms of patent applications. The USA is leading with regard to patent applications with 490,226 registrations. China is leading in terms of patent applications among the non-OECD countries with 391,177 registered listings in 2010.<sup>126</sup>

Besides, a strong growth of China’s innovation capacity can be observed, caused by investments in R&D expenditures and governmental efforts, in particular, the creation of incentives for a close cooperation between the business sector and the science sector.<sup>127</sup> Nevertheless, in general a strong dependency of emerging countries on developed countries regarding the import of technologies can be monitored and the innovative capacities of China, India and Malaysia should therefore be considered as positive exceptions.<sup>128</sup>

Especially in China and India much knowledge has been built up with regard to material efficiency,<sup>129</sup> which is particularly important in view of the increasing importance of green products that are expected to “(...) dominate the future major international goods markets.”<sup>130</sup>

With regard to technological leapfrogging as a catch-up chance for developing countries with developed countries some conditions for technological leapfrogging need to be considered. On the one hand, a strong interest of firms in developing countries and their

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<sup>121</sup> Scheel/Parada (2008), p. 572.

<sup>122</sup> See Scheel/Parada (2008), p. 572.

<sup>123</sup> See Wignaraja (2011), p. 1.

<sup>124</sup> See Ulku (2007), p. 291.

<sup>125</sup> See Walz (2010a), p. 251.

<sup>126</sup> See World Intellectual Property Organization (2011), p. 12.

<sup>127</sup> See Fan (2011), p. 49.

<sup>128</sup> See Walz (2010a), p. 262.

<sup>129</sup> See Walz (2010a), p. 261.

<sup>130</sup> Ling (2011), p. 1354.

ability to use the state-of-the-art sustainability technologies are required,<sup>131</sup> and on the other hand, the willingness of companies in developed countries to disclose their technological knowledge is an inevitable requirement for successful leapfrogging.<sup>132</sup> It is possible, that firms in developed countries lose their dominant position in the market on the short-term basis by leapfrogging technical innovations to developing countries. However, in the long-term the emerging economies will probably become dependent on the imported technologies, because in many cases they ignore the development of own innovation facilities.<sup>133</sup>

To sum up the megatrend about the acceleration of technological progress, it becomes clear that the main drivers of innovation are still the OECD countries with an advance compared to non-OECD countries. Further, technological leapfrogging is a promising opportunity for emerging countries to catch up with developed countries, but the realisation of the process seems to be difficult in practice. Based on this analysis, a speeding up of the technological progress can be expected.

### **3.2.2.3 Preferred customer**

As described in the illustration and critical reflection of the megatrend about the acceleration of technological progress, several external changes regarding technology are expected to influence firms in their way of doing business in the next decade. For procurement organisations these trends are in particular “(...) increased globalisation, technological advances in internet based systems and accessibility to complex computational programmes.”<sup>134</sup> In Figure 12, the acceleration of the technological progress in procurement in the last 30 years is illustrated.

In a study with procurement managers, Tassabehji and Moorhouse identified technology as one of the most impacting factors for purchasing managers.<sup>135</sup> Besides the increased usage of technological tools as a consequence of the acceleration of the technological progress, closer cooperation with key suppliers can be a reaction of procurement organisations in order to deal with the effects of this megatrend.

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<sup>131</sup> See Walz (2010a), p. 267.

<sup>132</sup> See Perkins (2003), p. 178.

<sup>133</sup> See Chen/Li-Hua (2011), p. 107.

<sup>134</sup> Tassabehji/Moorhouse (2008), p. 56.

<sup>135</sup> See Tassabehji/Moorhouse (2008), p. 62.

**Figure 12: The evolution of technology tools in procurement**

Area	1980s	1990s	2000-2007
Spend Management		<ul style="list-style-type: none"> <li>• Data Cube</li> </ul>	<ul style="list-style-type: none"> <li>• Visibility</li> <li>• Analytics</li> <li>• Reporting</li> </ul>
E-Sourcing		<ul style="list-style-type: none"> <li>• Auctions</li> </ul>	<ul style="list-style-type: none"> <li>• RFx</li> <li>• Optimisation</li> <li>• Expressive Bidding</li> </ul>
Contract Management		<ul style="list-style-type: none"> <li>• Document Management</li> <li>• Collaborative Documents</li> </ul>	<ul style="list-style-type: none"> <li>• Collaborative Documents</li> <li>• Supplier Compliance Monitoring</li> <li>• Regulatory, SOX and Transaction Compliance Enablement</li> </ul>
Procurement Transaction Processing		<ul style="list-style-type: none"> <li>• Requisitioning</li> <li>• Catalogs</li> </ul>	<ul style="list-style-type: none"> <li>• Catalogs</li> <li>• Multi-Tenant Architecture</li> <li>• Configurable Compliance Processes</li> <li>• Enabled 3-Way Match</li> <li>• Process Status Visibility</li> <li>• Settlement</li> <li>• Forecasting</li> </ul>
Supplier Management	<ul style="list-style-type: none"> <li>• EDI</li> </ul>	<ul style="list-style-type: none"> <li>• XML/HTML Order Management</li> </ul>	<ul style="list-style-type: none"> <li>• Self-Administered Administration</li> <li>• Performance Monitoring and Tracking</li> <li>• Capability Mapping</li> </ul>

Source: Based on Carter et al. (2007), p. 71.

Current research found that becoming a preferred customer of important suppliers becomes a strategic need to take advantage from their innovative power; especially in situations in which appropriate suppliers are scarce.<sup>136</sup> By definition a company has achieved the status of being a preferred customer of a supplier “(...) if the supplier offers the buyer preferential resource allocation.”<sup>137</sup>

To achieve the preferred customer status of a supplier, the buyer firm has to become attractive for the supplier as a customer to benefit from its resources. This high level of customer attractiveness can be reached by high business volumes with the supplier, a good image or innovative product ideas. The way a manufacturer deals with a supplier influences the willingness of the supplier to cooperate in collaborative projects.<sup>138</sup> When a firm has reached a higher customer attractiveness level than other customers, this firm gets the status of being a preferred customer.<sup>139</sup> It ensures the buyer more competitive products and low expenses as well as better relationships with key suppliers.<sup>140</sup>

<sup>136</sup> See Steinle/Schiele (2008), p. 11.

<sup>137</sup> Steinle/Schiele (2008), p. 11.

<sup>138</sup> See Wynstra et al. (2003), p. 74.

<sup>139</sup> See Schiele et al. (2011), p. 7.

<sup>140</sup> See Christiansen/Maltz (2002), p. 188.



In the last decade more companies relied on external sources of technology in new product development.<sup>141</sup> For example, the number of technology-intensive companies that heavily relied on external sources of technology increased from 10 percent in 1999 to 85 percent in 2000.<sup>142</sup> As a result of the acceleration of technological progress the importance of key suppliers for buying firms increased, because of the higher complexity of new product development processes and the establishment of the approach of open innovation in firms. The number of innovations that happens outside of companies' laboratories is increasing<sup>143</sup> and in a UK innovation study, suppliers have been identified as the most important source for co-operation.<sup>144</sup> These developments lead to the following hypothesis:

***Hypothesis 2.** The perceived importance of the megatrend about the acceleration of technological progress positively influences achieving preferred customer status.*

The preferred customer status of a supplier offers buying firms several benefits. The supplier may "(...) dedicate its best personnel to joint new product development, customise its products according to the customer's wishes, offer innovations or even enter into exclusivity agreement."<sup>145</sup>

Additionally, the collaboration and partnership between key suppliers and buyers, which have achieved preferred customer status, "(...) may represent a viable means of gaining access to their innovation resources in the context of new product development."<sup>146</sup> The line of reasoning leads to the following propositions:

***Proposition 2a.** Preferred customer status positively influences firms' market profit.*

***Proposition 2b.** Preferred customer status positively influences firms' market share.*

***Proposition 2c.** Preferred customer status positively influences firms' market innovativeness.*

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<sup>141</sup> See Wagner/Hoegl (2006), p. 936; See Schiele (2010), p. 138.

<sup>142</sup> See Roberts (2001), p. 31.

<sup>143</sup> See Schiele (2006), p. 925.

<sup>144</sup> See Stones (2001).

<sup>145</sup> Steinle/Schiele (2008), p. 11.

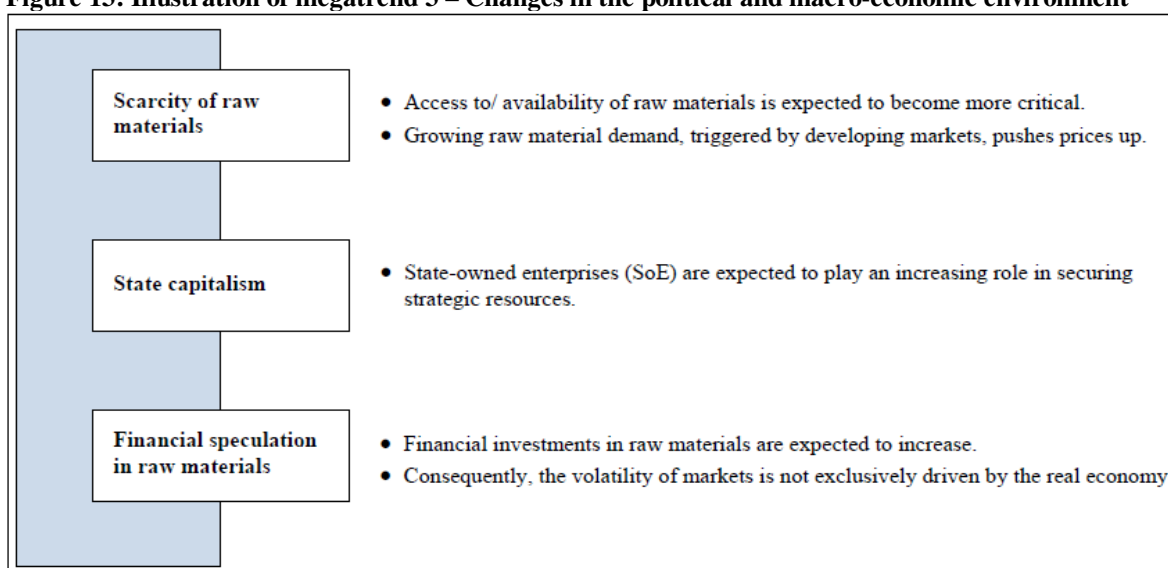
<sup>146</sup> Schiele et al. (2011), p. 8.

*Proposition 2d. Preferred customer status positively influences firms' market growth.*

### 3.2.3 Megatrend 3 - Changes in the political and macro-economic environment

#### 3.2.3.1 Illustration of megatrend 3: Increasing execution of state-capitalism, the risk of raw material shortages and the rising number of financial investments in raw materials

**Figure 13: Illustration of megatrend 3 – Changes in the political and macro-economic environment**



Source: Based on h&z consulting (2011), p. 16.

A key development of the megatrend about changes in the political and macro-economic environment is the availability of raw materials. In the years from 2002 until 2008 the world economy grew and especially in emerging economies, which have been the main drivers of this growth, the demand for raw materials strongly increased. This increasing demand is boosted by the ongoing industrialisation and urbanisation in emerging countries such as China, Brazil and India. For instance, from 2000 to 2011 China's partial demand for copper of the global reserves increased from 12 to 40 percent.<sup>147</sup>

Moreover, the European Commission classifies fourteen raw materials as critical resources. These fourteen raw materials are categorised as critical, since the consequences for the economy, in case of a supply bottleneck, would be larger compared to other raw materials. Additionally, the high risk of a supply bottleneck is justified by the fact that the generation

<sup>147</sup> See Europäische Kommission (2011), p. 2.

of these raw materials is limited to a small number of countries and substitutes are not available yet. The raw materials classified as critical are namely platinum group elements (Russia), cobalt and tantalum (Republic of the Congo), niobium and tantalum (Brazil), as well as antimony, fluorite, gallium, germanium, graphite, indium, magnesium, rare earth elements and tungsten (China).<sup>148</sup>

The market entry of several emerging nations pushed the price of raw materials to high levels. Since the share of raw material prices in total procurement costs increased recently, the growing demand of raw materials has significant consequences for firms.<sup>149</sup>

Another micro movement contains the increasing involvement of governments in economic activities and can be considered as a substantial element of this megatrend. Fortified by the last global economic crisis in 2008, governments all around the globe spent huge amounts of money in their particular economies to boost growth and to get in control of the fear of moving into a recession.<sup>150</sup> In some cases states even took ownership of companies. This new form of state capitalism brings along a power shift from “(...) capitals of finance to capitals of political power.”<sup>151</sup> State capitalism can be defined as “(...) a system in which the state dominates the markets primarily for political gain (...)”<sup>152</sup>, which implicates a danger for the security of free-market democracies when the world economy does not grow at an appropriate level to additionally satisfy the demands of the new players in the market.<sup>153</sup> However, it is expected that these Keynesian macro-economic programmes can bring the world economy back to sustainable growth only to some extent.<sup>154</sup>

Regarding state capitalist activities China is the most important player. At the end of 2009, China owned foreign exchange reserves of about US \$ 2.4 trillion of which 20 percent were placed into two sovereign wealth funds in 2007, one formal fund, the China Investment Corporation (CIC), which is controlled by the Government and an unofficial fund, initiated by China’s State Administration of Foreign Exchange, the SAFE Investment Company (SIC).<sup>155</sup> These two funds heavily invested in listed companies from foreign countries to secure strategic resources. The CIC purchased 9.9 percent of the Blackstone

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<sup>148</sup> See Europäische Kommission (2011), p. 25.

<sup>149</sup> See Arnold et al. (2009), p. 353.

<sup>150</sup> See Bremmer (2010), p. 249.

<sup>151</sup> Bremmer (2010), p. 249.

<sup>152</sup> Bremmer (2010), p. 250.

<sup>153</sup> See Bremmer (2010), p. 251.

<sup>154</sup> See Lane/Maeland (2011), p. 41.

<sup>155</sup> See Thomas/Chen (2011), p. 467-468.

Group in 2007 and the SIC invested in companies such as British Petroleum (US \$ 2 billion), Total (US \$ 2.8 billion) as well as in three Australian banks (US \$ 531 million).<sup>156</sup> Another example for the interventions of the Chinese government in the world economic system can be given from the year 2007, in which China faced a shortage of the most important raw material for producing solar panels, polycrystalline silicon. Since firms from foreign countries dominated the market they were able to pass on high prices to China. The Chinese government rapidly responded to the developments by investing in domestic manufacturers with money from banks and companies owned by the state. Further on, the founding process of new facilities to produce polycrystalline silicon has been accelerated.<sup>157</sup>

A further key development of this megatrend is the increasing influence of the financial sector indicated by an increase of investments in raw material derivatives. From 2003 until 2008 investments in raw material markets increased from € 13 billion to € 205 billion.<sup>158</sup> As a consequence, raw material prices are strongly influenced by developments of the financial markets. Due to the increased involvement of the financial sector, raw material prices are expected to be more influenced by economic crises, such as “(...) the stock market crash in 1987, the Asian currency crises in July 1997, the Mexican currency crisis in 1994 and the subprime crisis of 2007-2008” which in the end led to a high volatility in these markets.<sup>159</sup>

### **3.2.3.2 Critical reflection of megatrend 3: Increase of material efficiency to counteract against the scarcity of raw materials**

As a result of technological change the material intensity has been reduced and substitute materials have been developed.<sup>160</sup> For example, 50 percent of material input has been saved through “(...) powder metallurgy, thin casting, ion beam implantation and directional solidification as well as other techniques including drop forging, cold automatic

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<sup>156</sup> See Thomas/Chen (2011), p. 475-476.

<sup>157</sup> See Dean et al. (2010).

<sup>158</sup> See Europäische Kommission (2011), p. 2.

<sup>159</sup> Walid et al. (2011), p. 272.

<sup>160</sup> See Bernardini/Galli (1993), p. 439.

heating, cold forging and extruding.”<sup>161</sup> Continuing improvements of material intensity and further developments of substitutes are expected in the next years.<sup>162</sup>

A short-term solution to counteract against the scarcity of raw materials and fossil fuels would be to postpone the final exhaustion of these resources. For instance, peak oil predictions are differently, depending on the publisher. While the International Energy Agency states that oil will peak between 2013 and 2037, the oil firm British Petroleum attests oil reserves for at least the next 40 years.<sup>163</sup>

The predictions are not very clear and to be able to use oil and other limited raw materials as long as possible, it is strongly recommended to also increase the material efficiency of supply chains.<sup>164</sup> Material efficiency can be defined as “(...) the amount of primary material that is needed to fulfil a specific function.”<sup>165</sup>

The benefits of increasing the level of material efficiency are, on the one hand the reduced demand for resources and consequently the resulting energy savings and on the other hand the reduction of waste volumes.<sup>166</sup>

In principle the consumption of raw material can be optimised in all levels of the supply chain. Examples for a more sustainable usage of raw materials are “(...) recycling strategies, material efficient production processes, substitution of materials, life time extension of products, light-weight construction and new business models such as production on demand or product service systems, which sell the use of a product instead the product itself.”<sup>167</sup>

Further, it is recommended to integrate waste industries into the process. The reflow of materials from the disposal site back to the base material production would offer significant savings in material usage. By using renewable energies for the recovery of these materials also sustainability aspects would be incorporated.<sup>168</sup>

Another option to get in control of the problem of scarce resources would be to limit the usage of resources. However, from an ethical or normative point of view the developed countries are not considered to be in the position to take away the right of the developing

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<sup>161</sup> Bernardini/Galli (1993), p. 438.

<sup>162</sup> See Bernardini/Galli (1993), p. 439.

<sup>163</sup> See Vidal (2005).

<sup>164</sup> See Mocker et al. (2010), p. 1887.

<sup>165</sup> Worrell et al. (1995), p. 216.

<sup>166</sup> See Worrell et al. (1995), p. 215.

<sup>167</sup> Walz (2010b), p. 805.

<sup>168</sup> See Mocker et al. (2010), p. 1887.

countries to catch up, unless the reduction of emissions on a global basis is inevitable to secure the ecological well-being of the planet.<sup>169</sup>

To summarize the megatrend about changes in the political and macro-economic environment, the increasing demand of raw materials and fossil fuels can be counteracted by postponing the final exhaustion of both and by improving material efficiency. The increased level of state-capitalist activities can be seen as process with possibly profound consequences as well as the increasing intervention of the financial sector in raw material markets. Therefore, this megatrend seems to affect procurement organisations in the next decade.

### **3.2.3.3 Risk management programmes**

Based on the illustration and discussion of the megatrend about changes in the political and macro-economic environment it can be expected that this megatrend brings along consequences for procurement organisations. For procurement organisations the ongoing trend of globalisation implies longer and more complex supply chains, which consequently embark more risks than supply chains in the domestic market.<sup>170</sup>

The management of risks in complex and more global supply chains has developed to an issue of major importance in recent years,<sup>171</sup> but the field of research is relatively unexplored.<sup>172</sup> To be clear, supply chain risk management is defined as “(...) the management of supply chain risks through coordination or collaboration among the supply chain partners so as to ensure profitability and continuity.”<sup>173</sup>

Contrary to the production in early years, which was simple and contained single flows of goods from raw material suppliers to manufacturers and then to end markets, recently supply chains are more complex and complicated due to higher demands and shortened product life-cycles.<sup>174</sup> Further, driven by competitive pressures and higher customer demands, in recent times firms are aware of the need to restructure themselves for being able to take advantage of international capital, product and factor markets.<sup>175</sup>

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<sup>169</sup> See Mocker et al. (2010), p. 1889.

<sup>170</sup> See Wang/Yang (2007), p. 1150.

<sup>171</sup> See Narasimhan/Talluri (2009), p. 114; See Pfohl et al. (2010), p. 33.

<sup>172</sup> See Wang/Yang (2007), p. 1150.

<sup>173</sup> Tang (2006), p. 453.

<sup>174</sup> See Tang/Musa (2011), p. 25.

<sup>175</sup> See Manuj/Mentzer (2008), p. 133.

External risks in global supply chains are, besides the possible contact with wars in low-cost sourcing countries, “(...) strikes, epidemics, natural disasters, government actions that prohibit contract fulfillment or currency transfer, freezing of bank accounts, confiscation of assets, terrorism, export license restrictions, nonpayment by public sector entities, and other political events.”<sup>176</sup>

Examples from the past support the increasing importance of extensive supply risk management programmes and indicate the impact on the short-term and also on the long-term performance of firms. The Swedish company Ericsson, provider of telecommunication and data communication systems, lost € 400 million in 2000, because the production facility of their semiconductor supplier burnt down. Also Apple was hit by a supply shortage of computer chips in 1999, caused by an earthquake in Taiwan, where production facilities of suppliers have been affected.<sup>177</sup> Especially, after the financial crisis in 2008, which reached almost all industries all around the globe and led to bankruptcies of a large number of companies, risk management developed to an “(...) absolute necessity for firms.”<sup>178</sup>

Based on this line of reasoning the following hypothesis has been developed:

***Hypothesis 3.** The perceived importance of the megatrend about changes in political and macro-economic environment positively influences the application of extensive risk management programmes.*

Additionally, risk management in supply chains can be viewed as “(...) a strategic management activity in firms given that it can affect operational, market and financial performance of firms.”<sup>179</sup> This rationale leads to the following propositions:

***Proposition 3a.** Application of extensive risk management programmes positively influences firms’ market profit.*

***Proposition 3b.** Application of extensive risk management programmes positively influences firms’ market share.*

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<sup>176</sup> Wang/Yang (2007), p. 1152.

<sup>177</sup> See Tang (2006), p. 452.

<sup>178</sup> Blome/Schoenherr (2011), p. 43.

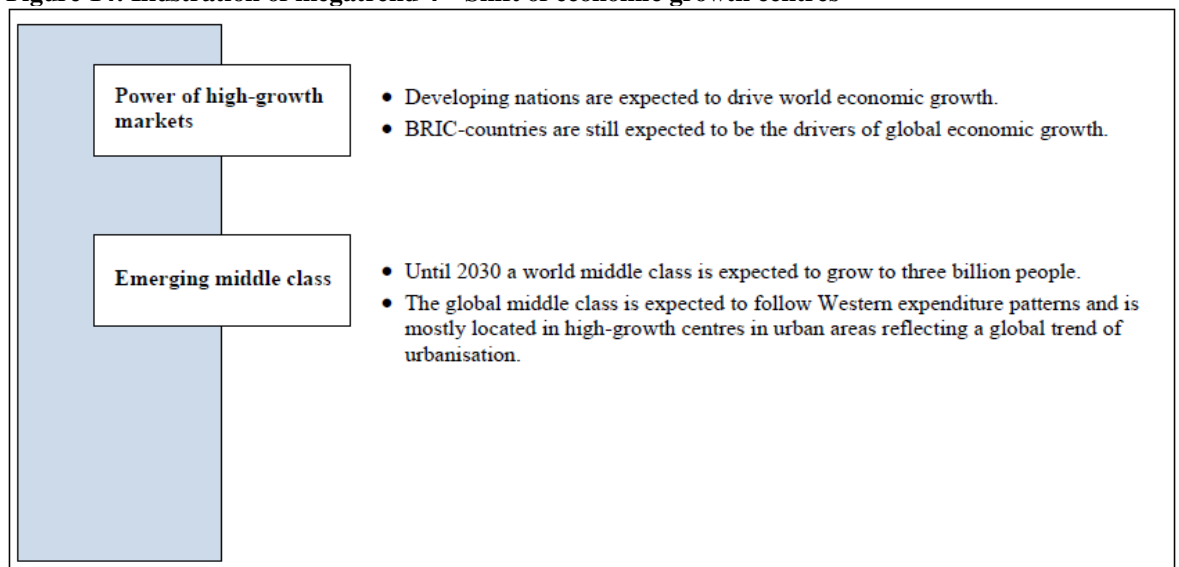
<sup>179</sup> Moeinzadeh/Hajfahaliha (2011), p. 179.

*Proposition 3c. Application of extensive risk management programmes positively influences firms' market growth.*

### 3.2.4 Megatrend 4 - Shift of economic growth centres

#### 3.2.4.1 Illustration of megatrend 4: Economic power shift from developed to high-growth markets and the development of an emerging middle class

**Figure 14: Illustration of megatrend 4 – Shift of economic growth centres**



Source: Based on h&z consulting (2011), p. 21.

In the next decade a shift of economic power from developed markets to markets with high-growth opportunities is expected. From 2005 to 2007, China produced a growth rate of 10 percent annually. However, the share of China's growth generated through exports to the USA decreased within these years from 2.7 percent in 2005, over 2.2 percent in 2006 further down to 1.6 percent in 2007.<sup>180</sup> China generates much of its rapid growth by trading with other high-growth regions such as South America, the Middle East, and Africa, which are expected to become more and more important within the next ten years.<sup>181</sup> The special role of China is further on stressed by the fact that it accounted for 60 percent of the fast growing BRIC-countries' (Brazil, Russia, India, China) output in 2010.<sup>182</sup>

<sup>180</sup> See Ørstrøm Møller (2007), p. 300.

<sup>181</sup> See Ørstrøm Møller (2007), p. 301.

<sup>182</sup> See Sally (2010), p. 169.



Figure 15 shows the development of the GDP of a selected number of countries from 1980 until 2009. Here it becomes obvious, that especially China and India generated growth rates above the average.

**Figure 15: GDP per capita in US \$ from 1980 to 2009**

	1980	2009	Change (%)
USA	12,153	45,674	275.8
Japan	8,387	32,018	281.8
Germany	9,778	36,332	271.6
OECD-countries	8,531	33,023	287.1
Brazil	3,741	10,453	179.4
Russia	-	19,023	-
India	416	3,039	630.5
China	251	6,786	2603.5

Source: OECD (2011b).

Also in 2010, the growth rates of the BRIC-countries have reached the high level of the years before the global financial crisis in 2008. According to the World Bank the growth figures are 7.5 percent in Brazil, 4.0 percent in Russia, 9.7 percent in India and 10.3 percent in China. Compared to the growth rates of the USA (2.9 percent), Germany (3.6 percent) and Japan (5.1 percent) the economic shift from developed countries away to emerging economies becomes clear.<sup>183</sup>

The USA's share of the global domestic product decreased within the last years. In 2007, based on purchasing power parity calculations, the USA's share of the global GDP has been 19 percent compared to 16 percent in China and 5 percent in India, which taken together, have a higher stake in global GDP than the USA.<sup>184</sup>

Also in Europe the slowdown of the US economy would have had negative consequences in past years, but nowadays the phrase which has often been used in Europe "(...) when the US sneezes, Europe gets a cold" seems no longer to be valid since growth figures seem to be more independent from the US economy.<sup>185</sup>

Driven by high growth rates of developing countries an emerging global middle class is expected to reach the mark of 2 billion people by 2030, which offers huge potentials for companies all around the world.<sup>186</sup> To benefit from the Western-oriented expenditure

<sup>183</sup> See Worldbank (2011).

<sup>184</sup> See Ørstrøm Møller (2007), p. 299-300.

<sup>185</sup> Ørstrøm Møller (2007), p. 299.

<sup>186</sup> See Das (2009), p. 89.

patterns of the emerging middle class, MNCs started researching the potential buying behaviour and consumption patterns of this new target group.<sup>187</sup>

Next to the BRIC-countries, which are expected to be among the seven largest economies on the globe by 2030, many members of the Next Eleven group, such as “(...) Egypt, the Philippines, Indonesia, Iran, Mexico and Vietnam will drive the growth of this global middle class.”<sup>188</sup>

### **3.2.4.2 Critical reflection of megatrend 4: The dominance of Western companies in most important industries and the growth of China and India is highly export-dependent and unsustainable**

Due to the strong growth of the emerging markets a shift of global economic power could be expected to happen within the next decade. Also in view of the recovery from the global economic crisis, the BRIC-countries and other emerging economies are doing much better than Europe and the USA. However, China and also other Asian countries still face massive problems in their political and economic structure, which do not allow them to overtake the USA’s position of a global leader.<sup>189</sup> Also in terms of industrial production Asian countries lag behind Europe and the USA. In 2007, the production output of Europe has been more than twice that much as in Asia (see Figure 16).

**Figure 16: Production output of selected regions from 2000 to 2007**

	Production output in trillions (US \$)							
	2000	2001	2002	2003	2004	2005	2006	2007
China	0,48	0,53	0,57	0,66	0,79	0,94	1,15	1,41
Europe	1,90	1,88	2,00	2,37	2,76	2,93	3,18	3,70
India	0,09	0,09	0,10	0,11	0,13	0,15	0,17	0,22
Japan	1,17	0,98	0,92	1,00	1,10	1,07	1,04	1,04
USA	1,85	1,78	1,79	1,85	1,98	2,14	2,24	2,46

Source: Based on Suresh (2009).

Additionally, it should be considered that China’s and India’s growth is to a great extent based on exports, which means that their growth largely depends on the demand from abroad. However, the key to sustainable growth is the development of technologies and

<sup>187</sup> See Wogart (2010), p. 397.

<sup>188</sup> See Das (2009), p. 91.

<sup>189</sup> See Sally (2010), p. 165.

strong domestic demand.<sup>190</sup> Besides, Asia's growth could be even faster, but the regional markets are weakly integrated. Even though the integration of economic transactions between close-by countries seems to improve, it is "(...) mostly limited to manufacturing supply chains in information and communication technology products linked to final markets in the west (...)"<sup>191</sup>, which basically means that the integration is "(...) a product of increasing dependence on the West."<sup>192</sup> Besides the structural problems within Asia the main difference to Europe and the West is "(...) a continental awakening, a striving for progress and advancement that contrasts with a new Eurosclerosis."<sup>193</sup>

Promoting the consumption of the Chinese population would bring the Government in the position to build up a social system in which "(...) the costs of health, education and pensions which rural households have to finance on their own (...)" have to be taken over.<sup>194</sup>

In these points as well as regarding product quality, the Chinese economy is far behind world standards. For instance, US firms supply design and materials for the Chinese electronic hardware products. Since technology imports are often not up-to-date this will be the field in which "(...) the West dominates the East."<sup>195</sup> Therefore, it is mandatory for China to develop own regional R&D locations to become independent from technological imports from the USA. Since a long time ago, already Schumpeter stated that "(...) innovation was the fundamental driving force of the economic system."<sup>196</sup>

Moreover, in three very important areas such as war technology, software, and biotechnology, US companies are still leading.<sup>197</sup>

To conclude the megatrend about the shift of economic growth centres, the main micro movement is the decreasing dependence of the world economy from the USA. Further, the high growth rates in Asia, especially in China and India, are mainly generated through exporting to countries all around the world. Moreover, the domestic demand in China is rather low and therefore hinders sustainable and independent growth and probably prevents China to become the world's leading economy within the next decade.

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<sup>190</sup> See Majumbar (2009).

<sup>191</sup> Sally (2010), p. 171.

<sup>192</sup> Sally (2010), p. 171.

<sup>193</sup> Sally (2010), p. 165.

<sup>194</sup> Dobson (2009).

<sup>195</sup> Majumbar (2009).

<sup>196</sup> Michaelides/Milios (2009), p. 500.

<sup>197</sup> See Majumbar (2009).

### 3.2.4.3 Local sourcing offices

Although, it is not clearly predictable if there will be a shift of economic growth centres from developed countries to high-growth markets, such as the BRIC-countries, the significant role of these high-growth countries should not be underestimated. In times of globalisation, firms are able to “(...) source capital, goods, information, and technology often with a click of a mouse, much of the conventional wisdom about how companies and nations compete needs to be overhauled.”<sup>198</sup> The rapid development of technologies and capabilities of suppliers located in high-growth countries qualifies these emerging markets to promising sourcing locations; not only caused by cost savings.<sup>199</sup>

One possible option to have a share in more competitive cost structures in high-growth markets is off-shoring. Off-shoring can be defined as “(...) being located or operating outside a country’s boundaries.”<sup>200</sup> A step further than off-shoring is the outsourcing of non-core operational tasks which can be defined as “(...) a version of the make-or-buy decision in which an organisation elects to purchase an item that previously was made or a service that was performed in-house; often utilised for services. It involves sourcing and using a supplier that provides the completed item or service rather than buying the components and manufacturing them in-house.”<sup>201</sup>

When pursuing an off-shoring strategy with regard to the procurement organisation of firms, the sourcing strategy plays an important role. Driven by increased global competition which led to shorter life-cycles for many products, companies are forced to source globally in order to stay competitive.<sup>202</sup> In recent years, the topic of global sourcing has been widely discussed in firms of developed nations.<sup>203</sup> Firm leaders expect their purchasing managers to generate larger supply volumes in high-growth markets with lower supply costs. However, if additional transport costs as well as quality and maintenance costs increase caused by global sourcing activities, the overall costs may not be reduced. Further, the importance of location was not noticed for a long time, even though the roots for innovation and company’s success are in many cases geographically pooled. A few examples of this phenomenon are the consumer electronics in Japan, financial activities on

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<sup>198</sup> Porter (1998), p. 77.

<sup>199</sup> See Monczka et al. (2005), p. 48.

<sup>200</sup> Monczka et al. (2005), p. 10.

<sup>201</sup> Monczka et al. (2005), p. 10.

<sup>202</sup> See Kotabe/Murray (2004), p. 7.

<sup>203</sup> See Steinle/Schiele (2008), p. 3; also in the following.

Wall Street, and the entertainment business in Hollywood.<sup>204</sup> These geographical agglomerations are called clusters. Steinle and Schiele define clusters as “(...) socio-technical systems that have embedded relationships and a history of mutual adaptation by their actors.”<sup>205</sup> Whereas Porter sees clusters as “(...) geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions.”<sup>206</sup>

If a firm is handled as a valuable resource within a cluster, firms that are not part of the cluster are confronted with competitive problems, since they cannot use this local supply base.<sup>207</sup> Moreover, it is more difficult to become a preferred customer of a distant supplier<sup>208</sup>, which is in favour with the development of local sourcing offices.

In view of the increasing importance of high-growth markets as sourcing alternative for organisations' procurement the following hypothesis has been developed:

***Hypothesis 4.** The perceived importance of the megatrend about the shift of economic growth centres positively influences the development of local sourcing offices.*

Further, the establishment of local sourcing offices in high-growth markets such as China brings along several advantages<sup>209</sup> like the “(...) reduction of purchasing prices, higher level quality controls, and a reduction of cultural distance (...)”<sup>210</sup>, which leads to competitive advantage based on the physical proximity to their suppliers.<sup>211</sup> This leads to the development of the following propositions:

***Proposition 4a.** Local sourcing offices in high growth markets positively influence firms' market profit.*

***Proposition 4b.** Local sourcing offices in high growth markets positively influence firms' market share.*

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<sup>204</sup> See Porter (1998), p. 78.

<sup>205</sup> Steinle/Schiele (2008), p. 5.

<sup>206</sup> Porter (2000b), p. 16.

<sup>207</sup> See Steinle/Schiele (2008), p. 6.

<sup>208</sup> See Steinle/Schiele (2008), p. 11.

<sup>209</sup> See Kaiser (1997), p. 64.

<sup>210</sup> Nassimbeni/Sartor (2006), p. 505.

<sup>211</sup> See Tunisini et al. (2011), p. 1021.

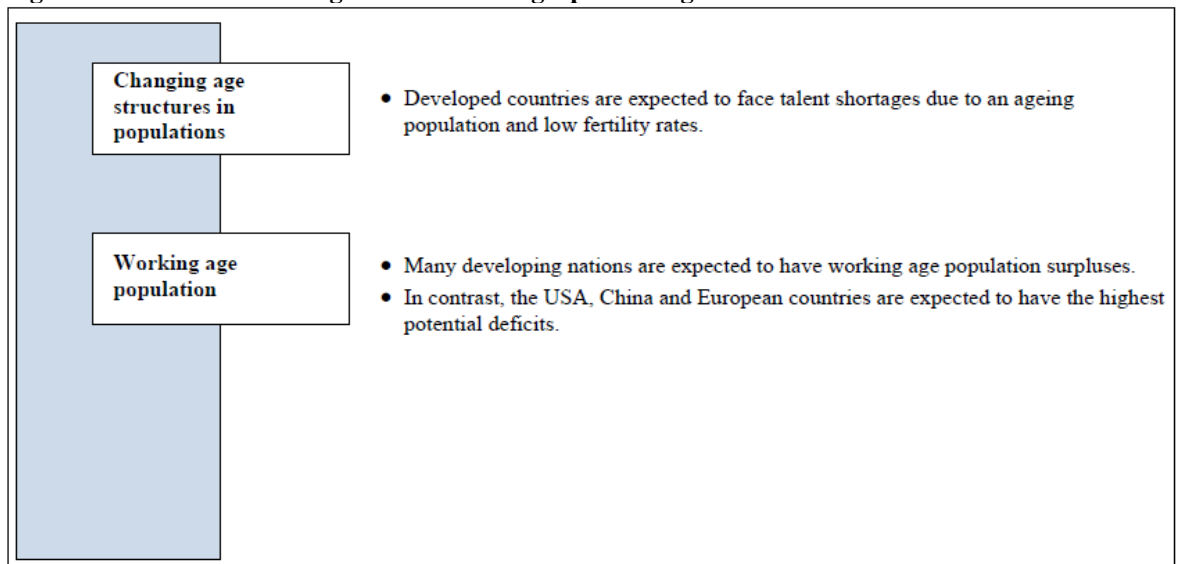
**Proposition 4c.** *Local sourcing offices in high growth markets positively influence firms' market innovativeness.*

**Proposition 4d.** *Local sourcing offices in high growth markets positively influence firms' market growth.*

### 3.2.5 Megatrend 5 - Demographic change

#### 3.2.5.1 Illustration of megatrend 5: Population ageing, the decreasing human resource availability and the war for talents

**Figure 17: Illustration of megatrend 5 – Demographic change**



Source: Based on h&z consulting (2011), p. 27.

The megatrend about the demographic change is coined by the global phenomenon of population ageing. In the years from 2008 to 2040 the share of the world's population of people that are older than 65 years is expected to increase from 7.8 percent to 14.7 percent. However, the point in time and the dynamics of the population ageing will differ from continent to continent.<sup>212</sup> In Figure 18, the development of the population of the world from 2010 to 2050 is outlined.

<sup>212</sup> See Schoeni/Ofstedal (2010), p. 5.

**Figure 18: Distribution of the world population by broad age groups in 2010 and 2050 (billions)**

	0-14		15-24		25-59		60+		80+		Total	
	2010	2050	2010	2050	2010	2050	2010	2050	2010	2050	2010	2050
World	1,862	1,797	1,218	1,209	3,070	4,136	0,759	2,008	0,106	0,395	6,909	9,150
Africa	0,416	0,546	0,209	0,348	0,353	0,892	0,055	0,213	0,004	0,021	1,033	1,998
Asia	1,092	0,937	0,756	0,645	1,906	2,413	0,414	1,236	0,047	0,228	4,167	5,231
Europe	0,113	0,104	0,093	0,070	0,366	0,281	0,161	0,236	0,031	0,066	0,733	0,691
Latin Am. & Caribbean	0,163	0,124	0,105	0,087	0,261	0,331	0,059	0,186	0,009	0,040	0,589	0,729
North Am.	0,070	0,076	0,049	0,052	0,168	0,196	0,065	0,125	0,013	0,036	0,352	0,448
Oceania	0,009	0,010	0,005	0,007	0,016	0,023	0,006	0,012	0,001	0,003	0,036	0,051

Source: Based on United Nations (2009), p. 7.

Japan had the largest share of elderly people with 17.2 percent in the year 2000. Until 2050, it is expected that in Japan this age group will grow to 37.8 percent.<sup>213</sup> Also in China the population ageing is expected to accelerate in the next years. Between 2015 and 2020 the growth rate of the working population is expected to contract and the age group of people older than 60 years is presumed to double until 2030.<sup>214</sup>

In general, the increasing numbers of people older than 60 years offer some promising options for companies to benefit because “(...) the demand for wealth, of which capital is one form, arises from diverse motivations, but the desire to provide for consumption during retirement is among the most important.”<sup>215</sup>

Three aspects can be identified as key drivers of the ageing process of populations: “(...) age dynamics, fertility decline, and longevity increase.”<sup>216</sup> The first driver, age dynamics, means the variations in the past of birth and death rates in a particular population. Secondly, the decreasing fertility rates in most of the countries in the world leads automatically to a strong growth of the older group within a population.<sup>217</sup> The third reason for population ageing is the rising life expectancy. Whereas the life expectancy was globally on average 46 years between 1950 and 1955, it increased to 66 years in the beginning of the 21<sup>st</sup> century and it is expected to increase by another ten years within the next decade.<sup>218</sup>

As a consequence of the population ageing the global labour force participation rate<sup>219</sup> is predicted to decrease from 66.3 percent in 2000 to 62.1 percent in 2040. These figures

<sup>213</sup> See Kapteyn (2010), p. 191.

<sup>214</sup> See Tyers/Golley (2010), p. 593-594.

<sup>215</sup> Lee/Mason (2010), p. 169.

<sup>216</sup> Bloom et al. (2010), p. 237.

<sup>217</sup> See Bloom et al. (2010), p. 237.

<sup>218</sup> See Bloom et al. (2010), p. 238.

<sup>219</sup> Total labour force divided by the population aged 15 and older.

could lead to substantial problems regarding the global economic growth.<sup>220</sup> In contrast, in less developed regions the working population is expected to increase from 59 percent in 2010 to 62 percent in 2050.<sup>221</sup> Based on an estimation of the United Nations, India's potential work force in 2020 will be around 900 million people, wherefrom 250 million will be between 15-24 years old.<sup>222</sup>

### **3.2.5.2 Critical reflection of megatrend 5: Consequences of population ageing in developed countries and global population growth will go beyond the year 2020**

By considering the illustration of the megatrend about the demographic change it becomes clear that the far-reaching consequences of the demographic change are expected to influence the global economy way beyond the year 2020. Developments such as ageing populations in many countries and the population explosion in some developing countries are expected to be relevant for a much longer period than 2020. The growth of the world population is expected to increase until 2050, of which emerging countries are expected to grow from 5.6 billion people in 2009 to 7.9 billion citizens in 2050.<sup>223</sup> Further, ageing of the world population is expected to last far longer than 2050. The median age of the global population is expected to increase from 26.6 years in 2000 over 37.3 years in 2050 to finally 45.6 years in 2100.<sup>224</sup>

In Japan, the ageing population, a national debt, counting for 200 percent of the GDP and a stagnant economy endanger the entire functioning of the national system. However, unemployment, high national debt, overcapacities, fertility decline and population ageing are not considered to be problems only occurring in Japan. This scenario, at the moment discussed in Europe and East Asian countries could become real within the next decades.<sup>225</sup>

Furthermore, as a result of ageing populations combined with low fertility rates in many countries, skilled employees are expected to be rare and fortify the 'war for talents' among

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<sup>220</sup> See Bloom et al. (2010), p. 239.

<sup>221</sup> See United Nations, Department of Economic and Social Affairs, Population Division (2009), p. 4.

<sup>222</sup> See Dobson (2009).

<sup>223</sup> See United Nations, Department of Economic and Social Affairs, Population Division (2009), p. 1.

<sup>224</sup> See Lutz et al. (2008), p. 716.

<sup>225</sup> See Coulmas, F. (2011), p. 42.



companies. Companies are forced to have a well-functioning talent management to identify and recruit the best employees globally.<sup>226</sup>

Additionally, since companies are working more and more in international markets, they have to handle different kinds of employees, cultures, and approaches to work. This internationalisation is challenging for companies, but the “(...) migration and the globalization of customers, suppliers and investors brings diversity into domestic companies.”<sup>227</sup>

In the next years the ongoing globalisation process is expected to continue and will probably lead to a higher degree of mobility among organisations and people. To encounter these developments far-reaching relationship management and advanced leadership skills are required as well as improved human resource processes.<sup>228</sup> However, the increasing mobility of organisations and employees can be challenged by the cluster theory. According to the cluster theory organisations gain competitive advantage when they are part of a cluster in their particular industry.<sup>229</sup> As a consequence organisations would settle in local clusters and not all around the globe.

All in all, the megatrend about the demographic change is influenced by two phenomena: On the one hand the ageing populations in many countries and on the other hand the increase of the world population caused by high fertility rates in developing countries. This development is expected to lead to employee shortages in many countries within the next decades. In these countries the war for talents is expected to become more intense due to decreasing numbers of people in working age.

### **3.2.5.3 Internal Marketing to increase visibility and acceptance of procurement within organisations**

As indicated in the illustration and discussion of the megatrend about the demographic change it is to be expected that procurement organisations will be affected by ageing populations, talent shortages and dispersed workforces all around the globe.<sup>230</sup>

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<sup>226</sup> See McDonnell (2011), p. 169.

<sup>227</sup> Beechler/Woodward (2009), p 276.

<sup>228</sup> See Beechler/Woodward (2009), p 282.

<sup>229</sup> See Steinle/Schiele (2008), p. 6.

<sup>230</sup> See Carter et al. (2007), p. 81.

The establishment of virtual working environments could be the solution for handling a globally dispersed workforce<sup>231</sup> as well as an opportunity to show an interest in the perception of the younger employees which demand more flexibility and free time.<sup>232</sup>

To increase the visibility of procurement within a company, cross-functional teams offer the opportunity to present procurement activities company-wide and increase the integration and acceptance of procurement.<sup>233</sup> Additionally, internal marketing for the procurement department could be an option to increase the acceptance within the company. Internal marketing is defined as “(...) a planned effort to using a marketing-like approach to overcome organizational resistance to change and to align, motivate an inter-functionally co-ordinate and integrate employees towards the effective implementation of corporate and functional strategies in order to deliver customer satisfaction through a process of creating motivated and customer orientated employees.”<sup>234</sup> According to the concept of internal marketing the external economic performance can be improved because the quality of work for the employees and the acceptance for a particular department within the company are expected to increase.<sup>235</sup> Based on the internal marketing concept employees and departments should be treated as internal customers. By fulfilling their needs and wishes it is to be expected that a better working quality, and therefore an improved overall performance, can be reached. This assumption includes that by fulfilling the needs of employees within a company, retention and motivation increase and is expected to be transferred to external customers.<sup>236</sup> To increase the visibility of the purchasing department within a company, especially the marketing department is asked to change its approach. Marketing organisations are expected to treat purchasing as a customer with whom cooperative plans should be developed in order to fulfil the needs of purchasing departments.<sup>237</sup> This leads to the development of the following hypothesis:

***Hypothesis 5.** The perceived importance of the megatrend about the demographic change positively influences internal marketing activities for purchasing.*

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<sup>231</sup> See Carter et al. (2007), p. 83.

<sup>232</sup> See Carter et al. (2007), p. 89.

<sup>233</sup> See Carter et al. (2007), p. 86.

<sup>234</sup> Rafiq/Ahmed (2000), p. 454.

<sup>235</sup> See Varey/Lewis (1999), p. 927.

<sup>236</sup> See Ahmed/Rafiq (2003), p. 1178.

<sup>237</sup> See Sheth et al. (2009), p. 869.

Further, since the strategic relevance of purchasing has been demonstrated in recent research<sup>238</sup>, it can be assumed that internal marketing activities in order to increase the visibility of purchasing have a positive impact on the performance of firms. Therefore, the following propositions have been developed:

***Proposition 5a.** Internal marketing to increase the visibility of purchasing positively influences firms' market profit.*

***Proposition 5b.** Internal marketing to increase the visibility of purchasing positively influences firms' market share.*

***Proposition 5c.** Internal marketing to increase the visibility of purchasing positively influences firms' market innovativeness.*

***Proposition 5d.** Internal marketing to increase the visibility of purchasing positively influences firms' market growth.*

### 3.3 Conclusion: Reinforcement of the megatrends by linking them

At the end of this chapter, in which the five megatrends for procurement have been illustrated and critically reflected, possible links between the different megatrends will be outlined. Furthermore, it will be analysed if the megatrends have the potential to reinforce each other. Based on the outcome of the illustration and reflection of the megatrends for procurement in this chapter a trend matrix (see Figure 19) is developed, in which possible links between the megatrends are illustrated. By considering the trend matrix, it becomes obvious that the megatrends about the increase of environmental and social responsibility, the acceleration of technological progress, changes in the political and macro-economic environment and the shift of economic growth centres can strongly be linked to each other. Based on this observation the following scenario can be developed:

A common thread that links the four megatrends, reinforces their power and creates an overall message of the trends is the growing importance and increasing use of environmental-friendly and sustainable technologies. While currently many raw materials

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<sup>238</sup> See Mol (2003), p. 49.

are scarce, the global demand for raw materials increases, driven by state capitalist players in the markets and growing numbers of financial speculations in raw materials. Being aware of the difficulties to predict the developments regarding CSR within the next ten years, it can be expected that there will be an increasing demand by consumers for a more sustainable behaviour of companies. One potential option to satisfy this demand would be an increased use of renewable energies and other sustainable technologies. Further, the number of innovations in sustainable technologies is increasing and the predictions regarding the development of the environmental technologies segment are highly promising. Due to expected raw material and fossil fuel shortages in the future companies are forced to improve their material efficiency and to use more renewable energies. Further, the power of high-growth markets can only be long-lasting, if sustainable technologies are used to ensure continuous growth. The importance of environmental-friendly and more efficient technologies has been identified for these four megatrends and can be seen as an approach to appropriately handle the consequences of the megatrends. When looking at this particular element, all four megatrends reinforce and strengthen each other.

Moreover, a strong link between the megatrend about the shift of economic growth centres and the demographic change can be identified in the trend matrix. Thus, a second scenario can be developed:

Driven by promising demographic developments the power of high-growth countries increases. For example, many high-growth countries show high surpluses of working populations and support the development of a middle class with Western expenditure patterns.

**Figure 19: Trend matrix - Linking the megatrends**

		Increase of environmental and social responsibility			Acceleration of technological progress			Changes in the political and macro- economic environment			Shift of economic growth centres		Demographic change	
		Increased importance of CSR	Relevance of renewable energies	High-growth markets and sustainability	Investments in education and technology	Technological leapfrogging	Information exchange	Scarcity of raw materials	State capitalism	Financial speculations in raw materials	Power of high-growth markets	Emerging middle class	Changing age structures in populations	Working age population
Increase of environmental and social responsibility	Increased importance of CSR													
	Relevance of renewable energies													
	High-growth markets and sustainability													
Acceleration of technological progress	Investments in education and technology													
	Technological leapfrogging													
	Information exchange													
Changes in the political and macro- economic environment	Scarcity of raw materials													
	State capitalism													
	Financial speculations in raw materials													
Shift of economic growth centres	Power of high-growth markets													
	Emerging middle class													
Demographic change	Changing age structures in populations													
	Working age population													

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Source: Author's own illustration.

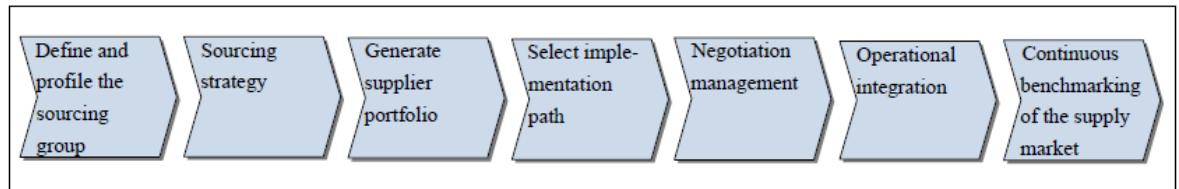
<sup>239</sup> Green-coloured areas indicate links between the trends; red-coloured areas indicate that the trends cannot be linked.

## 4 Procurement and megatrends: Trends influence firms' procurement organisation

### 4.1 Illustration of the sourcing process

After having illustrated and discussed the megatrends for procurement, in this chapter they are being integrated in the sourcing process. During the review of several textbooks different illustrations of the sourcing process were found.<sup>240</sup> The shortest included six steps, whereas the longest process contained eleven steps. As basis for the analysis in this chapter the 7-step strategic sourcing process (see Figure 20) of A.T. Kearney is used.<sup>241</sup>

**Figure 20: The 7-step strategic sourcing process**



Source: Based on Rudzki et al. (2006), p. 122.

Firstly, the sourcing group needs to be defined and profiled. A sourcing group can be seen as “(...) a group of purchased items that are likely to be sourced from the same subset [category] of suppliers.”<sup>242</sup>

To profile a sourcing group the consideration of internal and external supply market data is involved. The internal profiling supports the determination of the own spending details. To understand the supply market an external profiling of the sourcing group is conducted. The development of forecasts about the supply market, based on historical studies about market changes, can provide relevant information and support dealing with prospective situations.<sup>243</sup>

Secondly, a sourcing strategy needs to be chosen. Therefore, the position of the product to be sourced has to be determined in a category positioning matrix. After the position in the category positioning matrix has been found one of the following six sourcing strategies can be chosen: Volume concentration, product specification improvement, joint process

<sup>240</sup> See Irlinger (2011), p. 22; Festel et al. (2001), p. 213; Poethig (2005), p. 26; Hofbauer/Sangl (2011), p. 104; Meier/Stormer (2008), p. 62; Landeka (2002), p. 19; Coyle et al. (2009), p. 565.; Smock et al. (2007), p. 27; Rudzki et al. (2006), p. 122.

<sup>241</sup> See Rudzki et al. (2006), p. 122.

<sup>242</sup> Rudzki et al. (2006), p. 122.

<sup>243</sup> See Rudzki et al. (2006), p. 122-123.

improvement, relationship restructuring, global sourcing/local sourcing and best-price evaluation.<sup>244</sup>

Thirdly, a supplier portfolio composed of interested and qualified suppliers, including all suppliers from the past and current suppliers from the particular sourcing group as well as unconventional suppliers that have the potential to become a qualified supplier has to be created. In the next step the list of potential suppliers has to be shortened based on an individual set of evaluation criteria. The use of a request for information can support the identification of strengths and weaknesses of potential suppliers and offers additional information about the supply market.<sup>245</sup>

Fourth, the most suitable strategy to choose the best supplier of the shortened list has to be determined. Traditionally, a request for proposal is conducted, in which the buyer formulates his requests and prompts the suppliers to specify their offering, including a concrete pricing offer of the suppliers.<sup>246</sup>

Fifth, a negotiation strategy needs to be developed and executed. It is recommended to accomplish the negotiations in a formal manner to prevent a loss of potential value. Therefore, an extensive analysis and discussion of the request of proposal responses from the pre-qualified suppliers is advisable.<sup>247</sup>

Sixth, when the negotiation phase has been finished suppliers need to be integrated. Therefore, an implementation plan should be set up<sup>248</sup> and in case of integrating a new supplier, in the starting phase the quality of logistical and operational processes should be tested in addition to tests regarding the product quality.<sup>249</sup>

Seventh, after an agreement has been arranged successfully, in order to realise changes in the supply market it is recommended to observe the supply market closely. Regarding the new suppliers, the establishment and monitoring of key performance metrics and new product updates can be part of this step.<sup>250</sup>

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<sup>244</sup> See Clegg/Montgomery (2005), p. 37.

<sup>245</sup> See Rudzki et al. (2006), p. 125.

<sup>246</sup> See Clegg/Montgomery (2005), p. 37.

<sup>247</sup> See Rudzki et al. (2006), p. 126.

<sup>248</sup> See Clegg/Montgomery (2005), p. 39.

<sup>249</sup> See Rudzki et al. (2006), p. 127.

<sup>250</sup> See Rudzki et al. (2006), p. 127.

#### 4.2 Integration of the megatrends into the sourcing process

The employment of skilled personnel is essential for the successful implementation of the sourcing process.<sup>251</sup> As a consequence of the demographic change, which brings along a scarcity of skilled employees in many countries, internal marketing activities are inevitable to increase the visibility of procurement within firms in order to clarify its importance within the firms and attract the best employees. Figure 21 shows how the megatrends can be integrated in the sourcing process.

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<sup>251</sup> See Rudzki et al. (2006), p. 122.



**Figure 21: Integration of the megatrend for procurement into the sourcing process**

Step within the sourcing process	Influenced processes by the megatrends	Influential megatrends	Implications for procurement
1. Define and profile the sourcing group	<ul style="list-style-type: none"> <li>• External profiling of the sourcing group involves:                             <ul style="list-style-type: none"> <li>a) Understanding the supply market, both currently and prospectively.</li> <li>b) Determining whether the market is global market, a regional market, a national market or local market.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Changes in the political and macro-economic environment</li> <li>• Shift of economic growth centres</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Risk management</u> By introducing risk management in the process of external profiling, potential risks can be determined and hedged.</li> <li>• <u>Local sourcing</u> In the process of understanding the supply market, existing local sourcing offices can provide relevant information.</li> </ul>
2. Sourcing strategy	<ul style="list-style-type: none"> <li>• Strategy selection: Volume concentration, product specification improvement, joint process improvement, relationship restructuring, global sourcing/local sourcing and best-price evaluation.</li> </ul>	<ul style="list-style-type: none"> <li>• Increase in environmental and social responsibility</li> <li>• Acceleration of technological progress</li> <li>• Shift of economic growth centres</li> </ul>	<ul style="list-style-type: none"> <li>• <u>CSR-aspects in supplier development and supplier evaluation</u> If a strategy of joint process improvement was chosen, CSR-aspects can early be introduced into the supply chain.</li> <li>• <u>Preferred customer</u> When being considered as a preferred customer, processes in the buyer-supplier relationship can be implemented more efficiently.</li> <li>• <u>Local sourcing</u> Local sourcing offices in high-growth markets are in many cases advantageous for firms. For example, research on clusters found that geographical proximity between buyers and suppliers simplifies achieving preferred customer status.</li> </ul>
3. Generate supplier portfolio	<ul style="list-style-type: none"> <li>• Identification of qualified suppliers</li> </ul>	<ul style="list-style-type: none"> <li>• Acceleration of technological progress</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Preferred customer</u> When being considered as a preferred customer by a supplier, then this supplier is automatically better ranked for further orders, due to its outstanding relationship with the buying firm.</li> </ul>
4. Select implementation path	-	-	

5. Negotiations management	<ul style="list-style-type: none"> <li>• Negotiations with suppliers</li> </ul>	<ul style="list-style-type: none"> <li>• Increase in environmental and social responsibility</li> </ul>	<ul style="list-style-type: none"> <li>• <u>CSR-aspects in supplier development and supplier evaluation</u> In the negotiations with current or potential suppliers CSR-aspects can be integrated in new agreements.</li> </ul>
6. Operational integration	<ul style="list-style-type: none"> <li>• Implementation of joint process improvements</li> </ul>	<ul style="list-style-type: none"> <li>• Increase in environmental and social responsibility</li> </ul>	<ul style="list-style-type: none"> <li>• <u>CSR-aspects in supplier development and supplier evaluation</u> In joint process improvements with suppliers, firms can stress the importance of CSR and integrate relevant aspects in the process.</li> </ul>
7. Continuous benchmarking of the supply market	<ul style="list-style-type: none"> <li>• Monitoring the market conditions</li> </ul>	<ul style="list-style-type: none"> <li>• Changes in the political and macro-economic environment</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Risk management</u> While monitoring the market conditions risk management practices can be applied to be prepared for changes in the external environment.</li> </ul>

Source: Author's own illustration.

## 5 Research methodology

### 5.1 Research method description: Expert panels and literature reviews among the most used methods to determine megatrends

In this research two methods were applied in order to discover megatrends for procurement. Based on the findings of Popper, in this study the two mostly used methods in future research were applied; literature review and expert panels.<sup>252</sup>

Firstly, the megatrends have been identified in expert panels by the h&z business consultancy.<sup>253</sup> In this way the knowledge of a group of people which is specialised in the fields of procurement and trend research has been introduced into the analysis. The findings of the expert panels were the starting point of this research project. In a second step, the scientific foundation for the megatrends has been developed by means of an extensive literature review. Thus, each megatrend is illustrated and discussed in detail. After having applied two qualitative methods, the findings have been reviewed by means of a quantitative survey.<sup>254</sup> In the survey, the constructs of CSR-aspects in supplier development programmes and supplier evaluation, preferred customer, risk management programmes, local sourcing offices and internal marketing were single items. The construct of market performance consisted of four items and was formative in nature.

### 5.2 Data collection

#### 5.2.1 Questionnaire development

The survey can be distinguished in three major parts. In the first part, participants were asked to assess the influence of each particular megatrend on their organisation. In the second part, participants were asked to rate to which extent they are prepared for each particular megatrend. For each megatrend one firm action was proposed and the respondents were asked to indicate to what extent their particular firm has already realised this action. Then respondents were requested to indicate their firms position compared to their competitors in terms of their market performance which included market profit,

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<sup>252</sup> See Popper (2008), p. 69.

<sup>253</sup> See h&z consulting (2011), p. 3.

<sup>254</sup> See Popper (2008), p. 64-65.

market share, market innovativeness and market growth. Furthermore, the respondents were asked to state their position in the firm and the industry in which the firm interacts. The items to measure the theoretical constructs have been developed based on an extensive literature review. They were measured on the typical Likert-type rating scale with five categories of response (1 = “strongly disagree”, 5 = “strongly agree”; respectively 1 = “much worse”, 5 = “much better” in case of the performance indicators).<sup>255</sup> Therefore, the level of measurement is ordinal, since “(...) the response categories have a rank order, but the intervals between values cannot be presumed equal.”<sup>256</sup> The questionnaire was distributed in Dutch language. The complete questionnaire can be found in Appendix I.

### 5.2.2 *Sampling procedure*

A quantitative study has been designed by means of a survey which was directed to the participants of the Congress ‘Trends for the future’ in Nyenrode, the Netherlands. All participants had a procurement background. The questionnaire was handed out to all 346 participants of the Congress of which 209 filled it in. This leads to a response rate of 65.5 percent. Three students who participated in the study have been replaced from the sample. The nine consultants that participated in the survey were asked to fill in the questionnaire from the position of one of their main customers and can therefore be included in the final sample, which contained 206 cases for the analysis.

### 5.2.3 *Sample and respondent characteristics*

With regard to the composition of the sample it is to state that almost two-thirds of the respondents work in service industries. Only one-third is employed in manufacturing industries. Furthermore, almost 12 percent of the respondents did not indicate the industry in which their firm interacts. In Figure 22, a detailed overview of the sample composition is outlined.

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<sup>255</sup> See Jamieson (2004), p. 1217.

<sup>256</sup> Jamieson (2004), p. 1217.

**Figure 22: Industry distribution of the sample**

Manufacturing	Number of participants (n)	Share of the sample (%)
Construction	9	4.37
Mining and basic/ raw materials	5	2.43
Chemical, rubber and plastics	2	0.97
Printing	2	0.97
Electrical and electronic engineering	3	1.46
Vehicles	1	0.49
Brick, pottery, glass and cement	0	0.00
Wood and furniture	1	0.49
Mechanical engineering and machine building	5	2.43
Metal manufacture and processing	0	0.00
Food and drink	6	2.91
Paper	0	0.00
Textile and footwear	1	0.49
Other manufacturing	29	14.01
<b>Total manufacturing</b>	<b>64</b>	<b>31.02</b>
<b>Services</b>		
Trade	33	16.02
IT	4	1.94
Media and news services	0	0.00
Transportation	8	3.88
Other services	73	35.43
<b>Total services</b>	<b>118</b>	<b>57.27</b>
<b>Unknown industry</b>		
Unknown industry	24	11.65
<b>Total sample</b>	<b>206</b>	<b>100.00</b>

Source: Author's own illustration.

With regard to the respondent profiles, it is to state that 37.5 percent of the respondents were purchasing managers, 24.0 percent were purchasers, 14.0 percent were senior managers and 24.5 percent served in other functions or did not indicate a function.

## 6 Results

### 6.1 Data analysis

#### 6.1.1 Importance of the megatrends for procurement and firms' reactions

To test the importance of the megatrends for procurement, mean distributions of the survey results regarding the impact of the megatrends on firms are considered. Besides the mean values of the total sample, mean values of manufacturing and service firms as well as mean values of the 25 percent best/worst performing firms are illustrated in Figure 23.

**Figure 23: Descriptive statistics – Importance of the megatrends**

<b>Total sample</b>			
	Mean	St. dev.	Size (n)
Increase in environmental and social responsibility	3.99	0.89	205
Acceleration of technological progress	4.15	0.88	206
Changes in political and macro-economical environment	3.73	1.03	205
Shift of economic growth centres	3.71	1.07	206
Demographic change	3.72	0.95	206
<b>Manufacturing</b>			
	Mean	St. dev.	Size (n)
Increase in environmental and social responsibility	4.09	1.00	64
Acceleration of technological progress	4.06	0.96	64
Changes in political and macro-economical environment	3.57	1.00	63
Shift of economic growth centres	4.06	0.96	63
Demographic change	3.77	0.97	63
<b>Service</b>			
	Mean	St. dev.	Size (n)
Increase in environmental and social responsibility	3.97	0.81	118
Acceleration of technological progress	4.23	0.83	118
Changes in political and macro-economical environment	3.72	1.05	118
Shift of economic growth centres	3.52	1.08	118
Demographic change	3.69	0.93	118
<b>Best performance (Top 25%)</b>			
	Mean	St. dev.	Size (n)
Increase in environmental and social responsibility	4.10	0.86	48
Acceleration of technological progress	4.33	0.88	49
Changes in political and macro-economical environment	3.96	1.00	49
Shift of economic growth centres	3.82	1.17	49
Demographic change	3.73	0.91	49
<b>Bad performance (Worst 25%)</b>			
	Mean	St. dev.	Size (n)
Increase in environmental and social responsibility	3.71	1.04	49
Acceleration of technological progress	3.98	0.88	49
Changes in political and macro-economical environment	3.65	1.19	48
Shift of economic growth centres	3.59	1.12	49
Demographic change	3.65	1.07	49

Source: Author's own illustration.

Concerning the results of the total sample the megatrend about the acceleration of technological progress has the highest mean value with 4.15 and the megatrend about the shift of economic growth centres reaches the lowest mean value with 3.71. By considering the group containing the respondents from manufacturing firms it can be observed that the megatrend about the shift of economic growth centres with 4.06 and the megatrend about demographic change with 3.77 show the highest mean values of all five illustrated groups. Contrary, the group of respondents from service firms reach with 3.52 the lowest mean value of all groups regarding the megatrend about the shift of economic growth centres. Remarkably high mean values shows the group including the 25 percent best performing

**Figure 24: Descriptive statistics – Preparations for the megatrends**

<b>Total sample</b>			
	Mean	St. dev.	Size (n)
CSR-aspects in supplier development and evaluation	3.21	1.14	203
Preferred customer	3.32	1.19	203
Risk management	3.02	1.13	203
Local sourcing offices	2.61	1.26	203
Internal Marketing	3.35	1.15	203
<b>Manufacturing</b>			
	Mean	St. dev.	Size (n)
CSR-aspects in supplier development and evaluation	3.28	1.20	64
Preferred customer	3.38	1.21	64
Risk management	3.03	1.11	64
Local sourcing offices	2.78	1.39	64
Internal Marketing	3.23	1.12	64
<b>Service</b>			
	Mean	St. dev.	Size (n)
CSR-aspects in supplier development and evaluation	3.19	1.12	117
Preferred customer	3.29	1.23	117
Risk management	2.98	1.15	117
Local sourcing offices	2.50	1.19	117
Internal Marketing	3.48	1.16	117
<b>Best performance (Top 25%)</b>			
	Mean	St. dev.	Size (n)
CSR-aspects in supplier development and evaluation	3.61	0.98	49
Preferred customer	3.59	1.12	49
Risk management	3.39	1.11	49
Local sourcing offices	2.82	1.20	49
Internal Marketing	3.71	1.02	49
<b>Bad performance (Worst 25%)</b>			
	Mean	St. dev.	Size (n)
CSR-aspects in supplier development and evaluation	2.96	1.29	49
Preferred customer	2.94	1.11	49
Risk management	2.92	1.10	49
Local sourcing offices	2.31	1.29	49
Internal Marketing	3.06	1.23	49

Source: Author's own illustration.

firms of the sample. The group of the 25 percent best performing firms shows the highest mean values of all groups with regard to the megatrend about the increase in environmental and social responsibility with a mean value of 4.10, the megatrend about the acceleration of technological progress with a mean value of 4.33 and the megatrend about the changes in political and macro-economical environment with a mean value of 3.96. Moreover, the group containing the 25 percent worst performing firms show the lowest mean values for three megatrends, namely the megatrend about the increase in environmental and social responsibility with a mean value of 3.71, the megatrend about the acceleration of technological progress with a mean value of 3.98 and the megatrend about the demographic change with a mean value of 3.65. Overall it is to state that the mean values of all five megatrends are relatively high and thus also the impact on firms.

Further, the respondents were asked to indicate in how far they already implemented actions in order to prepare for the megatrends. With regard to the total sample the action of internal marketing in order to prepare for the megatrend about the demographic change reaches the highest mean value with 3.35 and the action of local sourcing offices in order to prepare for the megatrend about the shift of economic growth centres has the lowest mean value with 2.61. It is remarkable, that the group of the 25 percent best performing firms shows the highest mean values of all groups with regard to the five actions in order to prepare for the megatrends. All values are outlined in Figure 24.

**Figure 25: T-test across manufacturing/service firms and top 25%/worst 25% performing firms (Importance of megatrends)**

<b>Manufacturing/Service.</b>			
	Mean man.	Mean service	Sign.
Increase in environmental and social responsibility	4.09	3.97	0.869*
Acceleration of technological progress	4.06	4.23	-1.221
Changes in political and macro-economical environment	3.57	3.72	-0.923
Shift of economic growth centres	4.06	3.52	3.374***
Demographic change	3.77	3.69	0.482
<b>Top 25%/Worst 25%</b>			
	Mean Top 25%	Mean Worst 25%	Sign.
Increase in environmental and social responsibility	4.10	3.71	2.012
Acceleration of technological progress	4.33	3.98	1.959
Changes in political and macro-economical environment	3.96	3.65	1.403*
Shift of economic growth centres	3.82	3.59	0.973
Demographic change	3.73	3.65	0.407

Notes: T-tests are based on the mean values (manufacturing/service and top 25%/worst 25%) from the data of the Congress Nyenrode survey. T-values are reported. \*\*\*, \*\* and \* indicate significance levels of 1, 5, and 10 percent.

Source: Author's own illustration.



Finally, it was tested if there were significant differences between the results of manufacturing and service companies as well as between the 25 percent best performing firms and the 25 percent worst performing firms with regard to the perceived importance of the megatrends and the preparations for the megatrends. Most of the mean differences between the groups were not statistically significant (see Figures 25 and 26).

**Figure 26: T-test across manufacturing/service firms and top 25%/worst 25% performing firms (Preparations for the megatrends)**

	<b>Manufacturing/Service</b>		
	Mean man.	Mean service	Sign.
CSR-aspects in supplier development and evaluation	3.28	3.19	0.521
Preferred customer	3.38	3.29	0.443
Risk management	3.03	2.98	0.273
Local sourcing offices	2.78	2.50	1.458*
Internal Marketing	3.23	3.48	-1.366
	<b>Top 25%/Worst 25%</b>		
	Mean Top 25%	Mean Worst 25%	Sign.
CSR-aspects in supplier development and evaluation	3.61	2.96	2.827**
Preferred customer	3.59	2.94	2.908
Risk management	3.39	2.92	2.102
Local sourcing offices	2.82	2.31	2.022
Internal Marketing	3.71	3.06	2.858

Notes: T-tests are based on the mean values (manufacturing/service and top 25%/worst 25%) from the data of the Congress Nyenrode survey. T-values are reported. \*\*\*, \*\* and \* indicate significance levels of 1, 5, and 10 percent.

Source: Author's own illustration.

In the first part of the survey respondents were asked to state their perception about the importance of the five megatrends. Followed by an indication as to what extent they have implemented predefined actions in order to prepare for the megatrends in the second part. To check, if the perceived importance of the megatrends impacts firms' actions in order to prepare for the megatrends, linear regression models have been developed. Figure 27 presents the five hypothesised relationships among the variables (H1-H5). Four of the hypotheses were found to be significant, of which two were significant at the level of 1 percent (H1 and H4), one was significant at the level of 5 percent (H2) and one was significant at the level of 10 percent (H3). No support was found for H5. Additionally, all relationships were in the hypothesised direction.

**Figure 27: Regression models – Perceived importance of the megatrends on firms’ actions**

Independent variables	Dependent variables
	<b>CSR-aspects in supplier development and evaluation</b>
<b>Hypothesis 1</b>	Total sample
Increase in environmental and social resp.	0.341 (5.130)***
R	0.341
R <sup>2</sup>	0.116
F-value	26.314
Sample size (n)	202
	<b>Preferred customer</b>
<b>Hypothesis 2</b>	Total sample
Acceleration of technological progress	0.145 (2.075)**
R	0.145
R <sup>2</sup>	0.021
F-value	4.305
Sample size (n)	203
	<b>Risk management</b>
<b>Hypothesis 3</b>	Total sample
Changes in pol. and macro-economical env.	0.134 (1.905)*
R	0.134
R <sup>2</sup>	0.018
F-value	3.630
Sample size (n)	202
	<b>Local sourcing offices</b>
<b>Hypothesis 4</b>	Total sample
Shift of economic growth centres	0.253 (3.713)***
R	0.253
R <sup>2</sup>	0.064
F-value	13.788
Sample size (n)	203
	<b>Internal marketing</b>
<b>Hypothesis 5</b>	Total sample
Demographic change	0.031 (0.445)
R	0.031
R <sup>2</sup>	0.001
F-value	0.198
Sample size (n)	203

Notes: Regression models are estimated with data from the Congress Nyenrode survey.  $\beta$ -values are reported. Absolute values of t-statistics of linear regressions between parentheses. \*\*\*, \*\* and \* indicate significance levels of 1, 5, and 10 percent.

Source: Author’s own illustration.

### *6.1.2 Influence of the implemented actions of firms in order to prepare for the megatrends for procurement on market performance*

In the third part of the survey respondents were asked to indicate their firm’s position compared to competitors in terms of market profit, market share, market innovativeness and market growth. To identify, if the implemented actions of firms have an impact on

their market performance, again linear regression models have been developed. In Figure 28 the complete outcome of the linear regressions can be found. Two of the propositions were significant at the level of 1 percent (P2b and P2c), one was significant at the level of 5 percent (P3b) and four were significant at the level of 10 percent (P1b, P1d, P2d and P5d). Six of the significant propositions (P1b, P1d, P2c, P2d, P3b and P5d) were in the hypothesised direction whereas P2b was not.

**Figure 28: Regression models of four performance variables – Firms’ actions on market performance**

Independent variables	Dependent variables			
	Market profit Model 1	Market share Model 2	Market innov. Model 3	Market growth Model 4
<b>Propositions 1a, 1b, 1d, 1c</b> CSR-aspects in supplier dev. and eval.	0.109 (1.396)	0.146 (1.952)*	0.128 (1.750)*	0.067 (0.890)
<b>Propositions 2a, 2b, 2,c, 2d</b> Preferred customer	0.045 (0.567)	-0.199 (-2601)***	0.293 (3.927)***	0.133 (1.720)*
<b>Propositions 3a, 3b, 3c,</b> Risk management	-0.013 (-0.164)	0.186 (2.410)**	-0.087 (-1.155)	-0.014 (-0.175)
<b>Propositions 4a, 4b, 4c, 4d</b> Local sourcing offices	0.024 (0.312)	0.005 (0.064)	0.111 (1.509)	0.024 (0.309)
<b>Propositions 5a, 5b, 5c, 5d</b> Internal marketing	0.004 (0.055)	0.094 (0.094)	-0.045 (-0.598)	0.130 (1.666)*
R	0.134	0.295	0.349	0.249
R <sup>2</sup>	0.018	0.087	0.122	0.062
F-value	0.688	3.641	5.321	2.512
Sample size (n)	195	197	198	196

Notes: Regression models are estimated with data from the Congress Nyenrode survey.  $\beta$ -values are reported. Absolute values of t-statistics of linear regressions between parentheses. \*\*\*, \*\* and \* indicate significance levels of 1, 5, and 10 percent.

Source: Author’s own illustration.

## 6.2 Discussion of the results

The purpose of this study can be sub-divided into three parts. In the first part, the importance of the procurement megatrends for firms was examined. Secondly, it was analysed to what extent the perceived importance of the procurement megatrends influences the actions that firms took to prepare for the megatrends. Thirdly, it was analysed, if implemented actions to prepare for the megatrends have an influence on the performance of firms.

This study represents an empirical test of the importance of the megatrends for procurement in firms. Indicated by the high mean values (see Figure 23) it can be stated

that procurement organisations consider the five megatrends as important and useful guideposts for the future alignment of their firms. Remarkably, manufacturing firms consider the megatrends about the shift of economic growth centres and the need to prepare for this megatrend by establishing local sourcing offices as much more important as service firms (see Figure 25 and 26).

Further, based on the results of the regression analysis (perceived importance of the megatrends on firms' actions), it can be stated that the perceived importance of megatrends for procurement influences firms' actions. The hypothesised relationship between the perceived importance of the megatrend about the increase in environmental and social responsibility and CSR-aspects in supplier development programmes and supplier evaluation ( $\beta=0.34$ ,  $p<0.01$ ) was highly statistically significant, providing support for H1. Also highly statistically significant was the relationship between the perceived importance of the megatrend about the shift of economic growth centres and local sourcing offices ( $\beta=0.25$ ,  $p<0.01$ ), which supports H4. The relationship between the perceived importance of the megatrend about the acceleration of technological progress and preferred customer status ( $\beta=0.15$ ,  $p<0.05$ ) and the perceived importance of the megatrend about the political and macro-economical changes and risk management programmes ( $\beta=0.13$ ,  $p<0.10$ ) were statistically significant and provide therefore, support for H2 and H3. The relationship between the perceived importance of the megatrend about the demographic change and internal marketing ( $\beta=0.01$ , ns) was non-significant, thus H5 was not supported. This outcome supports the assumption that the megatrends for procurement are considered as important and have the potential to influence the actions of firms and strengthen the results of the first part of the analysis which dealt with the importance of the procurement megatrends. It is one thing for the respondents to state that a particular megatrend influences the way of doing business, but based on the findings of this regression analysis it was examined that firms, at least for the megatrends 1-4, really prepare their procurement organisation for these megatrends.

Moreover, based on the results of the regression analysis (firms' actions on market performance), it was found that particular actions of firms influence the market performance. The expected relationship between preferred customer status and market innovativeness was highly statistically significant ( $\beta=0.29$ ,  $p<0.01$ ) providing support for P2c. Also the relationship between preferred customer status and market share ( $\beta=-0.20$ ,  $p<0.01$ ) was highly statistically significant, but the hypothesised direction of the relationship was vice versa and therefore does not support P2b. To explain the unexpected

result, it has been tested, if the 25 percent best performing firms with regard to turnover and the 25 percent worst performing firms with regard to turnover show different results. In fact, the result of the linear regression of the 25 percent worst performing firms ( $\beta = -0.21$ , ns) was not significant and the result of the linear regression including the 25 percent best performing firms with regard to turnover ( $\beta = 0.25$ , ns) was in the hypothesised direction but also not significant.

Furthermore, the assumed relationships between risk management programmes and market share ( $\beta = 0.19$ ,  $p < 0.05$ ), CSR-aspects in supplier development and supplier evaluation and market share ( $\beta = 0.15$ ,  $p < 0.10$ ), CSR-aspects in supplier development programmes and supplier evaluation and market innovativeness ( $\beta = 0.13$ ,  $p < 0.10$ ), preferred customer status and market growth ( $\beta = 0.13$ ,  $p < 0.10$ ) and internal marketing and market growth ( $\beta = 0.13$ ,  $p < 0.10$ ) were also statistically significant, supporting P3b, P1b, P1d, P2d, and P5d.

## 7 Discussion and conclusion

First of all, in this study the importance of the five procurement megatrends for firms was tested. The empirical analysis shows that firms consider all five determined megatrends to be important (see Figure 23). The megatrend about the acceleration of technological progress was regarded as the most important one, whereas the megatrend about the shift of economic growth centred was viewed as the least important.

Secondly, it was tested if the perceived importance of the procurement megatrends influences the actions of firms in order to prepare for the megatrends. With regard to this issue the results of the statistical analysis showed that four of the five megatrends positively influence the actions of firms. Therefore, the hypotheses 1, 2, 3 and 4 are supported by the outcome of the empirical analysis. However, a significant relationship between the perceived importance of the megatrend about demographic change and internal marketing (H5) was not found.

Thirdly, it was examined to what extent the actions of firms in order to prepare for the procurement megatrends influence their market performance in terms of market profit, market share, market innovativeness and market growth. Therefore, propositions were developed and the statistical analysis provided mixed results. This study provides evidence that the introduction of CSR-aspects in supplier development and supplier evaluation positively influences the firms' market share (P1b) and market innovativeness (P1d). Further, it was found that achieving preferred customer status positively influences firms' market innovativeness (P2c) and market growth (P2d). Additionally, significant outcome was found with regard to the relationship between preferred customer status and market share. However, it is to be discussed why achieving preferred customer status does negatively, and not as expected positively, influences firms' market share. Also, evidence was found that risk management positively influences firms' market share (P3b). Furthermore, it was found that internal marketing positively influences firm's market growth (P5d).

To sum up, this research contributes to the existing literature as follows:

- (1) Whereas most studies about megatrends do not provide an empirical analysis to test the importance and validity of determined megatrends, this research does so.
- (2) Further, this study links procurement megatrends with the field of strategic management.

Additionally, this research brings along managerial implications and provides managers an overview about the megatrends for procurement which are expected to affect firms' procurement within the next decade.

- (1) The participating procurement managers in this study evaluated the megatrend about the acceleration of technological progress as the most important one.
- (2) The analysis of the 25 percent best performing firms showed that these firms see the megatrends as an important tool to prepare their business in the future. In contrast, the 25 percent worst performing firms considered the megatrends as less important factors for the future.
- (3) Further, significant differences between the results of manufacturing and service firms have been found with regard to the megatrend about the shift of economic growth centres and the preparation for this megatrend, the establishment of local sourcing offices.
- (4) Additionally, some of the actions that firms implemented in order to prepare for the megatrends have a positive impact on their market performance.
- (5) Furthermore, the influences of the megatrends for procurement are integrated in the sourcing process. Thereby, it becomes clear what stage of the sourcing process is influenced by which megatrend and potential actions to prepare the business are outlined.

Finally, this relatively unexplored topic seems to be highly relevant in practice indicated by the presented results.

## **8 Limitations and future research**

Since no research is without limitation, also this study has a number of limitations. First of all, the tested propositions with regard to the influence of firms' actions on market performance are inferences from the current situation of firms towards the situation in the future. It can only be predicted that the actions of firms' in order to prepare for the megatrends will also have a positive impact on the future performance of firms, since the performance measurements reflect the current performance of the firms.

Secondly, the sample mainly consisted of employees of firms which are situated in the Netherlands and therefore, findings should only be generalised for firms that are rooted in countries comparable to the Netherlands.

Future research should test the findings of this study with a sample that includes employees from firms in Asia and America in order to check if there are any significant differences. Further the findings of this research should be verified by testing if the firms' actions in order to prepare for the megatrends for procurement effectively had an impact on their market performance. Additionally, the identified megatrends should be monitored and evaluated continuously in order to realise trend variances. Thus, new megatrends could be identified and enhance the findings of this research. It is also possible that the importance of current megatrends is decreasing caused by future developments.



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## Appendix I

The questionnaire that was used for the empirical data collection of the current study is included in this appendix.

### Questionnaire

#### Impact of the megatrends

In welke mate bent u eens met de volgende stellingen over de 5 megatrends?  1  2  3  4  5

(tussen 1 = “nee, volledig mee oneens” en 5 = ja, volledig mee eens”)

*En toenemende mate van deze megatrend zal van grote invloed zijn op de manier van zaken doen van onze organisatie;*

- een toenemende mate van CSR
- een versnelling in de technologische vooruitgang
- politieke en macro-economische instabiliteit
- een verschuiving van de economische groei centra
- demografische veranderingen

#### Vorbereiding op de toekomst

In welke mate treft u voorbereidingen op toekomstige veranderingen?  
(tussen 1 = “nee, volledig mee oneens” en 5 = ja, volledig mee eens”)

*Om voorbereid te zijn op toekomstige veranderingen heeft mijn organisatie...*

...CSR aspecten een belangrijk onderdeel gemaakt van onze       
leveranciersevaluatie en ontwikkelingsprogramma's van leveranciers

...een ‘preferred customer strategie’ om innovatieve leveranciers beter       
aan ons te binden

...een uitgebreid risicomanagement-programma

...lokale 'sourcing offices' in sterk groeiende markten

...'interne marketing' om de zichtbaarheid van Inkoop te verbeteren

### **Prestatie indicatoren**

Kies het antwoord dat het meest voldoet met de situatie in uw organisatie (tussen 1 = "veel slechter" en 5 = "veel beter")  1  2  3  4  5

*Vergleken met u belangrijkste concurrenten, hoe is uw organisatie's prestatie in termen van;*

- Winst
- Marktaandeel
- Innovatie
- Omzetgroei

### **Generale informatie**

Functie

*Wat is uw functie?*

Inkoop manager

Inkoopmedewerker

R&D manager

R&D medewerker

Directie

Anders, namelijk;

Industrie

*Tot welke industrie behoort uw organisatie?*



## **Appendix II**

The following article “Megatrends 2022: Implikationen für den Einkauf” has been accepted for publication in the practitioner magazine “Supply Chain Management – Automotive”.

# **SCM Automotive**

## **-Megatrends 2022: Implikationen für den Einkauf-**

**Holger Schiele / Niels Pulles / Klaus-Johannes Möller (Universität Twente)**

### **Zusammenfassung**

*Welchen Einflussfaktoren sieht sich der Einkauf die nächsten Jahre ausgesetzt und was sind die zentralen Herausforderungen denen er sich bis zum Jahr 2022 stellen muss?*

*Da der Einkauf die zentrale Schnittstelle zwischen Unternehmen und der Angebotsseite des Marktes darstellt, ist die Identifikation von langfristigen externen Veränderungen, sogenannten Megatrends hilfreich. Aufgrund ihres lang andauernden und globalen Einflusses wird angenommen, dass die Auswirkungen von Megatrends das Handeln von Gesellschaften, Unternehmen und Regierungen für lange Zeit beeinflussen werden.*

*In der vorliegenden Studie werden fünf Megatrends vorgestellt sowie Maßnahmen mittels derer sich Unternehmen auf diese Megatrends vorbereiten. Aus den Ergebnissen geht hervor, dass sich führende Unternehmen oftmals besser auf die Auswirkungen von Megatrends einstellen, während weniger erfolgreiche Unternehmen Trends offenbar eher reaktiv abwarten. Relativierend lässt sich feststellen, dass die Megatrends immer wieder neu bewertet und kritisch hinterfragt werden sollten, um Fehleinschätzungen durch Trendabweichungen zu verhindern.*

### **Die Notwendigkeit, sich frühzeitig auf Veränderungen vorzubereiten**

Die Zukunft vorherzusagen ist unmöglich, jedoch lassen sich lang andauernde Trends oder Megatrends identifizieren und ökonomisch nutzen. Unternehmen, die sich frühzeitig auf die in Megatrends implizierten zukünftigen Veränderungen vorbereiten, versetzen sich hierdurch in die Lage, Chancen effektiver nutzen und Risiken früher erkennen zu können.

Die derzeit steigende Anzahl von Studien über Megatrends belegt die zunehmende Bedeutung der Thematik. Jedoch ist der Großteil dieser Studien von nicht-wissenschaftlicher Natur. Die vorliegende Studie ist somit eine der ersten, die die Bedeutung von Megatrends und die Reaktionen von Firmen mittels empirischer Daten unterlegt.

***BOX: Der Megatrend-Ansatz: Lang andauernde, multidisziplinäre Trends***

*Der Begriff Megatrend wurde von John Naisbitt in seinem gleichnamigen Buch „Megatrends“, publiziert im Jahr 1982, maßgeblich geprägt. In seinem Buch identifizierte Naisbitt zehn Megatrends für die kommenden Jahrzehnte [Naisbitt 1982]. In der Trendforschung wird zwischen verschiedenen Trendarten wie Metatrends, Megatrends, soziokulturellen Trends und Konsumtrends unterschieden. Die Einordnung in eine dieser Trendkategorien erfolgt je nach Relevanz, Dauer und Intensität des jeweiligen Trends [Horx/Huber/Steinle/Wenzel 2007].*

*Was genau ist ein Megatrend? Grundsätzlich können Megatrends als weit reichende Veränderungen sozialer und technologischer sowie ökonomischer und politischer Bedingungen gesehen werden [Naisbitt/Aburdene 1990]. Ein jeder Megatrend zeigt die folgenden drei Charakteristika:*

- 1. Die Entwicklung von Megatrends erfolgt stufenweise. Ist diese einmal abgeschlossen, hält ihr Einfluss bis zu 25 Jahre oder länger an [Naisbitt/Aburdene 1990],*
- 2. Megatrends wirken sich auf viele verschiedene Lebensbereiche aus,*
- 3. Megatrends haben einen globalen Charakter; jedoch kann dieser globale Charakter in einer Region stärker ausgeprägt sein als in einer anderen [Horx/Huber/Steinle/Wenzel 2007].*

*Zudem besteht ein Megatrend aus verschiedenen kleineren Trends, so genannten Mikrotrends. (Abb.1)*

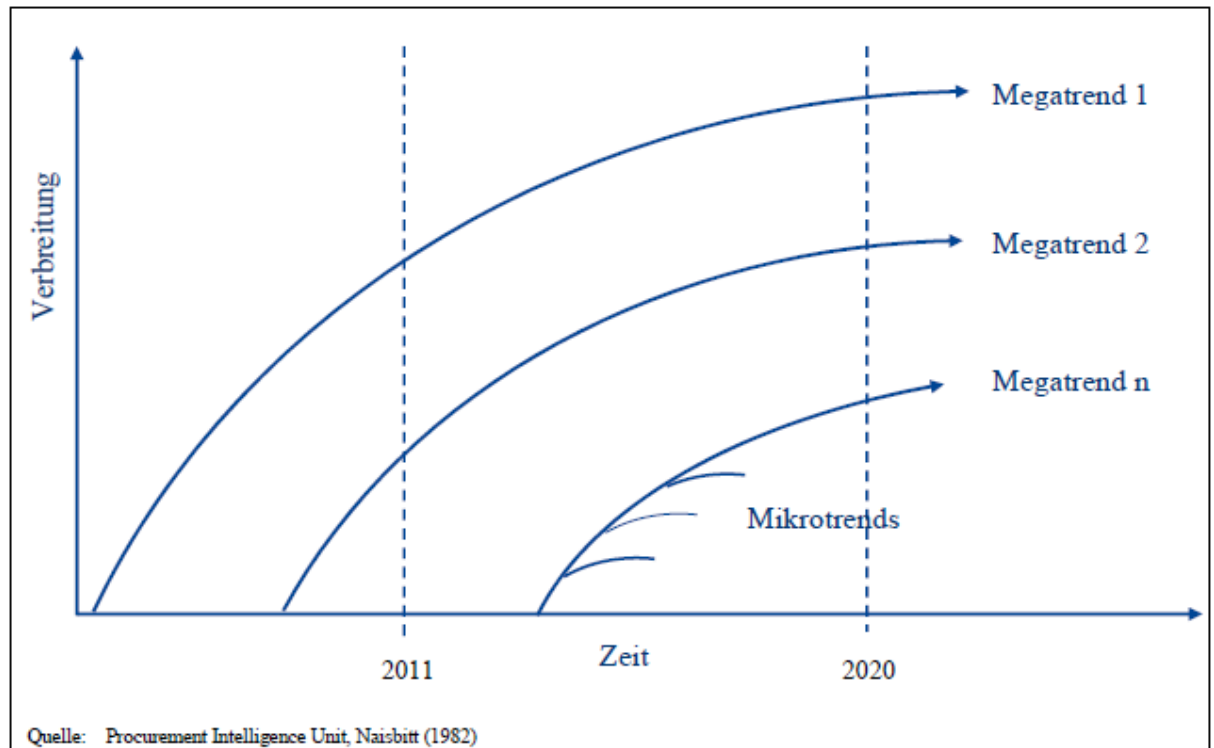


Abb. 1: Die Megatrend-Logik

### Forschungsmethode: Identifikation der Megatrends in drei Schritten

Im Rahmen einer umfangreichen Studie hat die h&z Unternehmensberatung und die Procurement Intelligence Unit (PIU) unter Beteiligung der Universität Twente drei Workshops in Europa (München), Amerika (New York) und Asien (Shanghai) veranstaltet [h&z consulting 2011]. Teilnehmer waren Einkaufsleiter internationaler Konzerne sowie Beschaffungsprofessoren, die in den Workshops Megatrends und deren Bedeutung für den Einkauf herausgearbeitet haben. Ergänzend zu den Expertenworkshops haben wir die gut 200 Teilnehmer eines NEVI-Kongresses zum Thema „Trends im Einkauf“ in Nyenrode (NL) gebeten, die Wichtigkeit der von den Workshopteilnehmern identifizierten Megatrends anzugeben und die Reaktionen ihrer Unternehmen zu beschreiben.

Richtig ist, dass durch eine repräsentative Gruppe als relevant identifizierte Trends nicht im naturwissenschaftlichen Sinne als „bewiesen“ angesehen werden können. Da Trends jedoch maßgeblich durch die handelnden Akteure selber bestimmt werden, entbehrt die Befragungsmethode nicht innewohnender Plausibilität. Im finalen Schritt der Studie wurden die identifizierten Megatrends schließlich durch eine intensive Literaturrecherche kritisch überprüft.

## Fünf Megatrends, von denen maßgebliche Einflüsse auf den Einkauf von morgen erwartet werden

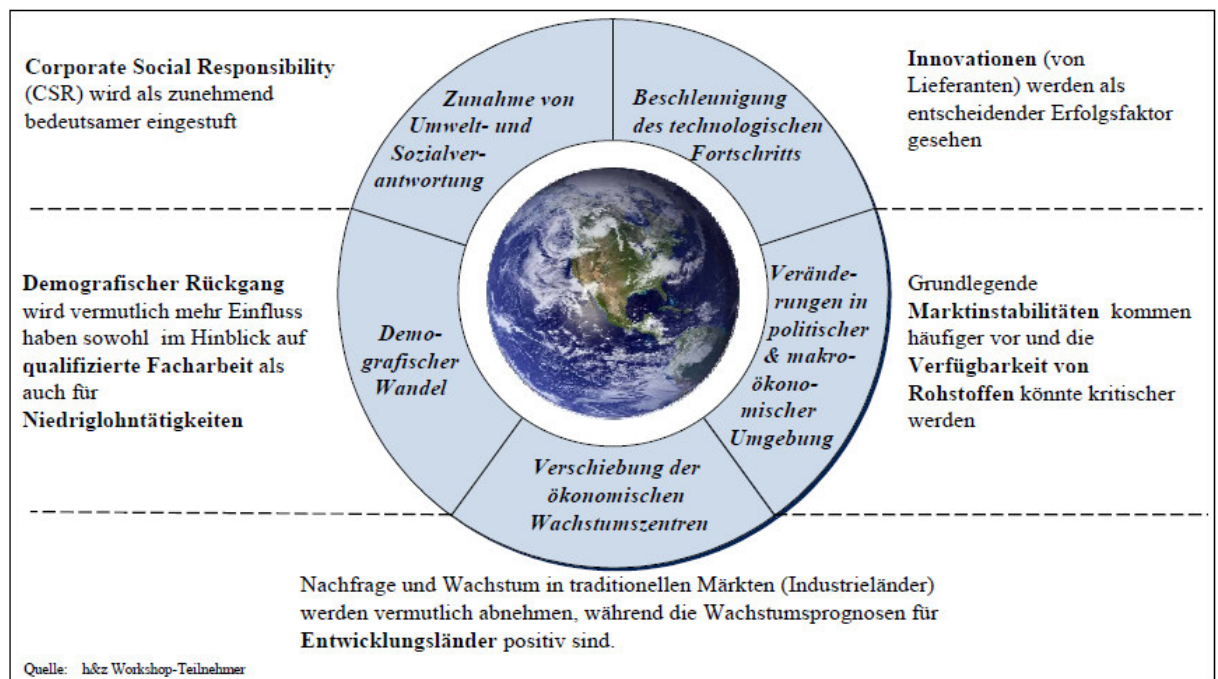


Abb. 2: Globale Megatrends

### Beschleunigung des technologischen Fortschritts

Im Allgemeinen ist ein globaler Zuwachs von Forschern und wissenschaftlichen Publikationen zu beobachten. In diesem Zusammenhang ist festzustellen, dass die Anzahl der wissenschaftlichen Publikationen im Verhältnis zur Anzahl der Forscher wesentlich stärker gestiegen ist. Dies lässt auf einen Anstieg der Pro-Kopf-Produktivität von Forschern schließen [UNESCO 2010]. Generell steigt die Anzahl von Innovationen in Schwellenländern wesentlich schneller als in den Industriestaaten, wobei relativierend anzumerken ist, dass die Menge an Publikationen noch nicht zwingend deren wirtschaftsrelevante Qualität widerspiegeln muss. Recht unzweideutig ist in jedem Fall der Trend zur Verlagerung von Innovationstätigkeit aus den Labors großer Hersteller hin zu Lieferanten.

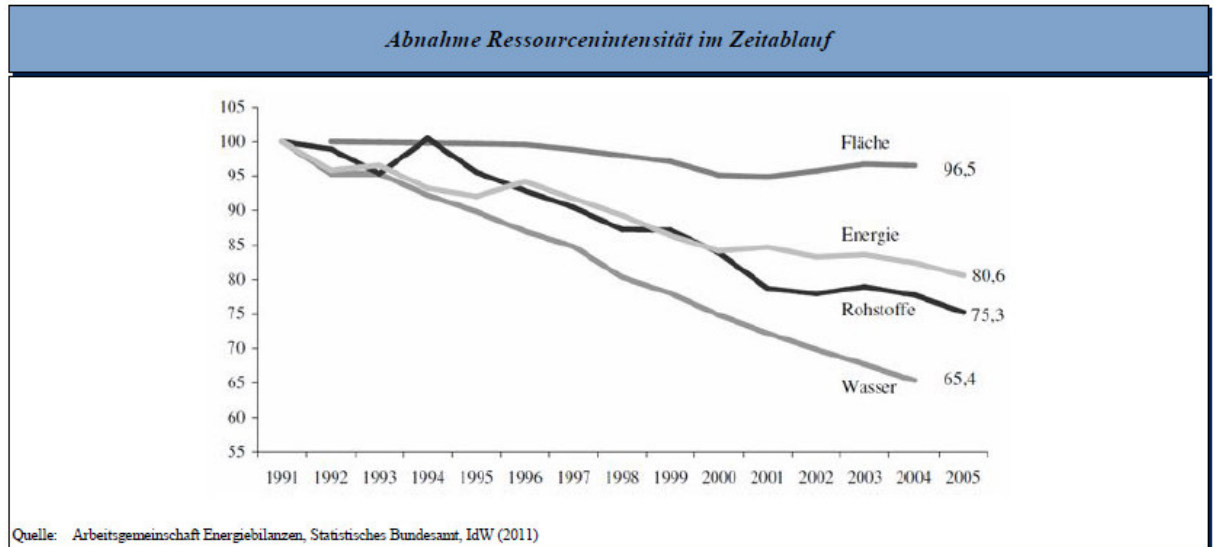
Mögliche Reaktionen von Unternehmen auf den Trend zur Innovationsbeschleunigung und –verlagerung sind frühzeitige Einkaufs- und Lieferanteneinbindung, „Value-sourcing“ und „Reverse Marketing“, um die Attraktivität des kaufenden Unternehmens für innovative Lieferanten auf dem Beschaffungsmarkt zu steigern. Aus dieser Studie geht hervor, dass sich besonders führende Unternehmen darum bemühen, bei ihren innovativen Lieferanten den Status eines „preferred customer“ zu erlangen. Einen solchen Vorzugskundenstatus hat

ein Unternehmen erreicht, wenn es vom Lieferanten bevorzugte Ressourcen-Zuteilung erhält. Lieferanten stellen Vorzugskunden beispielsweise ihr bestes Personal für gemeinsame Produktentwicklungen zur Verfügung und passen ihre Leistungen an die individuellen Kundenwünsche an. Zudem profitieren Vorzugskunden von den Innovationen der Lieferanten [Schiele/Veldman/Hüttinger 2010]. Eine zunehmend praktizierte Möglichkeit für Unternehmen, auf den Megatrend der Beschleunigung des technologischen Fortschritts zu reagieren, ist es die relevanten Innovationslieferanten zu identifizieren und dort „preferred customer“ Status anzustreben, bevor ihre Wettbewerber auf die gleichen innovationstreibenden Lieferanten aufmerksam werden.

### Veränderungen in der politischen und makroökonomischen Umgebung

Zugleich wird von den Befragten in den nächsten Jahren eine zunehmende Verknappung von Rohstoffen erwartet. Zum einen wird der Zugang zu Rohmaterialien als zunehmend kritisch eingestuft und zum anderen erhöhen sich die Preise durch die steigende Rohstoffnachfrage, die durch das starke Wachstum der Schwellenländer verursacht wird. Außerdem ist zu beobachten, dass Regierungen mit Hilfe von Staatsfonds zunehmend in die globalen Märkte eingreifen, um sich strategische Ressourcen zu sichern. Generell wird daher ein weiterer Zuwachs von finanziellen Spekulationen in Rohstoffe erwartet. So stieg das Investitionsvolumen in Rohstoffderivate von 13 Mrd. Euro im Jahr 2003 auf 205 Mrd. Euro im Jahr 2005 [Europäische Kommission 2011]. Die Konsequenz aus dieser Entwicklung ist, dass Rohstoffmärkte nicht mehr ausschließlich von der realen Wirtschaft beeinflusst werden.

Um der makroökonomischen Unsicherheit entgegenzuwirken, haben insbesondere führende Unternehmen umfangreiche Risikomanagementprogramme eingeführt oder bereits bestehende Praktiken dieser Art intensiviert. Vor dem Hintergrund des Megatrends politischer Instabilität wird deutlich, dass Risikomanagement gekommen ist, um zu bleiben. Aufgrund der abnehmenden Ressourcenintensität (Abb. 3) als Folge des technologischen Fortschritts ist jedoch abzuwarten, ob die aktuelle Rohstoff- und Ressourcenknappheit als ein dauerhaftes oder vorübergehendes Phänomen zu betrachten ist. Denn zur Erbringung gleicher Leistungen werden kontinuierlich weniger Rohstoffe benötigt, was den Megatrend infrage stellen könnte.



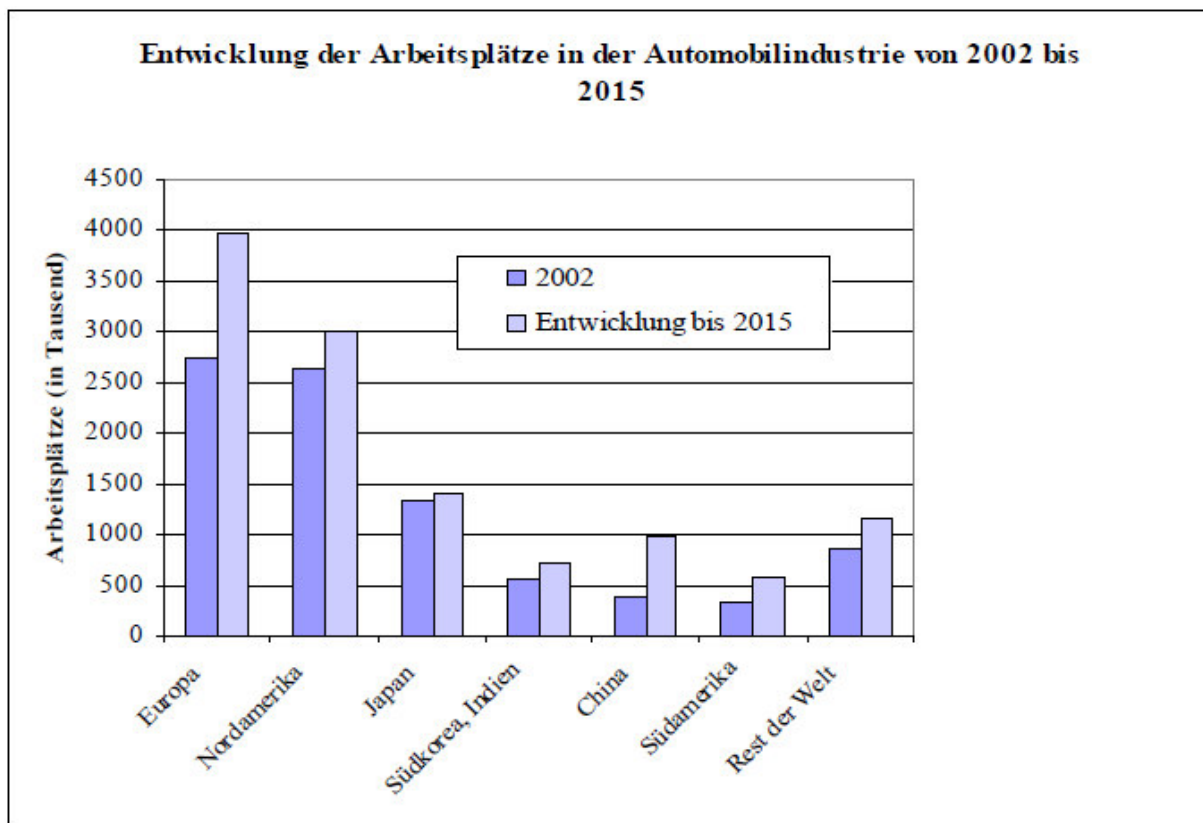
**Abb. 3: Abnahme der Ressourcenintensität von 1991 bis 2005**

### Verschiebung der ökonomischen Wachstumszentren

Die Entwicklungs- und Schwellenländer, allen voran die BRIC-Staaten, werden noch immer als die treibenden Kräfte des globalen Wirtschaftswachstums gesehen. Begünstigt durch das starke Wachstum in diesen Ländern, wird erwartet, dass sich bis 2030 eine globale Mittelklasse entwickelt, die bis zu drei Milliarden Menschen umfasst, deren Konsumverhalten sich sehr stark an dem der westlichen Länder orientiert. Diese globale Mittelklasse soll größtenteils in schnell wachsenden Großstädten entstehen und somit den Mikrotrend der Urbanisierung widerspiegeln.

Eine Möglichkeit für Unternehmen vom Boom und von den niedrigen Kostenstrukturen in Schwellenländern zu profitieren, könnte die Einrichtung global verteilter Organisationsformen im Rahmen von Off-Shoring- und Outsourcingaktivitäten sein. Hierbei ist jedoch abzuwarten, ob sich z.B. chinesische Lieferanten nicht zu Wettbewerbern entwickeln.

Es gilt in diesem Zusammenhang allerdings auch festzustellen, dass Europa in Zukunft, gemessen in absoluten Zahlen, wahrscheinlich der Standort mit den meisten Arbeitsplätzen in der Automobilindustrie sein wird (Abb. 4).



**Abb. 4: Entwicklung der Arbeitsplätze in der Automobilindustrie [Dannenberg/Kleinhaus 2004]**

Kritisch ist ferner zu bemerken, dass beispielsweise das BSP pro Kopf in Deutschland in den letzten 25 Jahren stärker gewachsen ist als beispielsweise in Brasilien [OECD 2011]. Ein automatischer Bedeutungsverlust traditioneller Industrieländer ist somit kritisch und fallbezogen zu prüfen.

### Demografischer Rückgang

In den nächsten zehn Jahren wird in den meisten Industriestaaten mit einem Fachkräftemangel gerechnet, der das Resultat von alternden Bevölkerungen und niedrigen Geburtenraten ist. Im Gegensatz zu China und den meisten Ländern in Europa, die mit einem Bevölkerungsrückgang zu kämpfen haben, wird sich die Anzahl der sich im erwerbstätigen Alter befindenden Bevölkerung in den Entwicklungsländern stark erhöhen und für einen Bevölkerungsüberschuss sorgen.

Um den Konsequenzen des drohenden Fachkräftemangels in Industriestaaten entgegenzuwirken, können Unternehmen durch internes Marketing die Position des Einkaufs innerhalb des Unternehmens verstärken und so die Attraktivität dieses Bereichs steigern. Eine weitere Reaktion auf den bevorstehenden „war for talents“ ist die Einführung von karrierefördernden Angeboten für „high potentials“, wie z.B. die

Unterstützung von Master- und Promotionsprogrammen. Es bleibt jedoch abzuwarten, ob der „war for talents“ nicht nur eine vorübergehende Erscheinung ist, da der demografische Rückgang, wie er sich in vielen Industriestaaten abzeichnet, eine wirtschaftliche Stagnation einleiten kann. Das Schicksal Japans, einer kontinuierlichen Stagnation, könnte somit auch anderswo Realität werden [Coulmas 2011]. Es ist ferner zu beachten, dass die Geburtenraten nahezu global zurückgehen, also auch in den Entwicklungsländern und ohne Trendumkehr auch dort mittelfristig ähnliche demografische Probleme entstehen könnten. [United Nations 2009]. So ist beispielsweise die Geburtenrate in Brasilien bereits unter die bevölkerungserhaltende Reproduktionsrate gefallen und nähert sich sukzessive europäischen Verhältnissen an.

### Zunahme von Umwelt- und Sozialverantwortung

Nie zuvor war das Bewusstsein für Corporate Social Responsibility (CSR) so stark wie heute. Daher wird erwartet, dass CSR auch in Zukunft eines der zentralen Themen für Unternehmen bleiben wird, angetrieben durch Konsumenten mit einem hohen sozialen und ökologischen Anspruch sowie durch die Einführung von Gesetzen zum Umweltschutz und zum sozialeren Handeln. Als Folge dessen könnte sowohl in Industriestaaten als auch in Schwellen- und Entwicklungsländern der Anteil an erneuerbaren Energiequellen auch weit über das Jahr 2020 hinaus steigen. Weltweite Investitionen in erneuerbare Energiequellen sind von 130 Mrd. US-Dollar im Jahr 2008 über 160 Mrd. US-Dollar im Jahr 2009 bis hin zu 210 Mrd. US-Dollar im Jahr 2010 gestiegen [REN21 2011].

Auffallend ist, dass verstärkt führende Unternehmen bereits CSR-Aspekte in ihre Lieferanten-entwicklung und -bewertung aufgenommen haben. Aktuell sind in Niedriglohnländern jedoch deutliche Diskrepanzen zwischen Realität und Anspruch bei der Umsetzung von CSR zu verzeichnen. Die Workshops in der Triade zeigten zudem, dass CSR außerhalb Europas noch nicht vollständig „angekommen“ ist. Auch hieraus ergibt sich ein trendbeeinträchtigendes Potenzial.

### **Verlinkung und gegenseitige Verstärkung der Megatrends**

Die fünf vorgestellten Megatrends sind nicht nur separat, sondern auch in ihrer Gesamtheit zu betrachten. So haben die Megatrends Beschleunigung des technologischen Fortschritts, Veränderungen in der politischen und makroökonomischen Umgebung, Verschiebung der ökonomischen Wachstumszentren und Zunahme von Umwelt- und Sozialverantwortung



eine Gemeinsamkeit, die sich wie ein roter Faden durch diese vier Megatrends hindurch zieht. Diese Gemeinsamkeit ist die wachsende Bedeutung von umweltfreundlichen und nachhaltigen Technologien. Die Verknappung vieler Rohstoffe geht einher mit einer global steigenden Nachfrage nach Rohstoffen, die durch den Eingriff von Staaten und vermehrte Finanzspekulationen angetrieben wird. Zudem kann erwartet werden, dass Konsumentenwünsche in Bezug auf die CSR von Unternehmen zukünftig noch anspruchsvoller sein werden und sich die Forderung nach ethischem und nachhaltigem Verhalten von Unternehmen und deren Lieferanten (weiter als Tier-1) somit intensivieren wird, vorausgesetzt, dass CSR insbesondere in Asien auch durch Konsumenten eingefordert wird. Letzteres ist sehr sorgfältig zu monitoren. Die Beobachtung, dass rund 17 Prozent der globalen CO<sub>2</sub>-Emissionen durch Verkehr verursacht werden, macht die Entwicklung umweltfreundlicher und nachhaltiger Technologien auch für die Automobilindustrie zu einem zentralen Thema des nächsten Jahrzehnts [International Energy Agency 2011], selbst wenn in letzter Zeit die klimabestimmende Zentralität von CO<sub>2</sub> kontrovers in Frage gestellt wird [Vahrenholt / Lüning 2012].

#### **Fazit: Regelmäßige Überprüfung der identifizierten Megatrends zur Fehlervermeidung**

Abschließend lässt sich sagen, dass von den vorgestellten Megatrends maßgeblicher Einfluss auf den Einkauf von Unternehmen (und auf andere Fachbereiche) erwartet wird. Für die meisten identifizierten Megatrends lassen sich jedoch auch kritische Daten bzw. trendkritische Entwicklungen identifizieren. Durch ständige Prüfung der identifizierten Megatrends können etwaige Fehleinschätzungen korrigiert und unvorhersehbare Ereignisse mit in die Bewertung aufgenommen werden.

## **Summary**

*Which will be the influencing factors for procurement within the next years and what are the key challenges until 2022?*

*Since procurement links companies and the supply side of the market, the identification of long-lasting, external changes, so called megatrends, is necessary to stay competitive in the future.*

*In the present study five megatrends which are expected to have a long-lasting influence on procurement will be introduced: increasing corporate social responsibility, acceleration of technological progress, macro-economic instability, shift of growth centres and demographic decline. Furthermore, it will be outlined as to how firms can prepare for the megatrends. The results show that especially leading firms are often better prepared on the effects of the megatrends, while less successful firms adopt a waiting attitude.*

*Concluding it is to state that the megatrends should be assessed and critically scrutinised continuously in order to prevent misjudgements because of trend variances.*

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## **Student declaration**

I hereby declare that:

This thesis is my own work. I have acknowledged material from the work of other people and I have clearly marked and given references to all quotations. Further, the content of this thesis is not confidential.

*Klaus-Johannes Böller*

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Signature