Proposal of a Performance Measurement System
for e-commerce SMEs in Denmark

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“Perception is strong and sight weak. In strategy it is important to see distant things as if they were close and to take a distanced view of close things”

Miyamoto Musashi (1584–1645)

Japanese warrior, strategist
ACKNOWLEDGEMENTS

This thesis not only represents the end of a very important period of my student life but also the result of hard work, curiosity, challenges, difficulties, excitement, some frustrations and an invaluable learning process.

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Randers, February 16, 2012
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1 INTRODUCTION

1.1 PROBLEM BACKGROUND

In the recent years there has been a crescent influx of e-commerce companies in almost all industries, and as a natural consequence a huge competition followed by increasingly bargaining power of online buyers. The online trading environment has become stable now and it is possible to say that consumers are much more comfortable and confident with this method of purchasing. What is more, customers have got a wider choice, increased knowledge about products and prices with the possibility to switch from one homepage to a competitor’s in a matter of seconds if they are not satisfied. This scenario has made online organizations strive on finding ways to achieve success, sustainable growth and to respond to an extremely demanding market.

Online businesses have a major chance of gathering a huge amount of data about customer behavior in a much shorter period of time which can be seen as a competitive advantage if compared to traditional off line shops that does not possess the same facility. However, it is important knowing how to employ effectively so much information. Furthermore, for any kind of business whether online or offline, it is well known that customer loyalty is a crucial aspect. Understanding factors that can enhance customer satisfaction and monitoring their performance are extremely relevant for management, especially within e-commerce. For instance, logistic fulfillment has already been considered a vital part of the online customer experience, being pointed as an important differentiator for many e-commerce organizations worldwide.

Besides the pure-players\(^1\), nowadays it is almost impossible not finding a retail which does not offer online shopping services, also known as Clicks-and-mortar\(^2\). Several factors have made individual retailers adopting the Internet as a sales channel such as product range (Choi et al., 2006), operational factors (Ellis-Chadwick et al., 2002; King and Liu, 2004) and strategic approach (Tse and Soufani, 2007).

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1 Pure-players are companies which trade solely online, there are no physical stores.
2 Clicks-and-mortar refers to a business that combines online and off-line presence, they have physical stores.
Within a modern Economy’s context, Denmark is considered one of the most digitized countries in the world with a population that actively shops online. Revenue for e-commerce is about 40 billion DKK annually\(^3\), including both trades of physical and non-physical goods. In regards to SMEs enterprises, when compared to other EU countries, the Danish share of micro enterprises is lower than that of the EU average. In terms of SME employment, Danish SMEs account for a somewhat smaller share of total employment than the EU average. On the other hand, the value added of the Danish SMEs is substantially higher than the EU average.\(^4\)

Although there is a vast literature offering many interesting insights about online customer behavior or factors affecting the use of the Internet as a sales channel, there is still a lack of understanding concerning strategic planning and performance measurement with regard to e-commerce (Dohert et al., 2003; Gunawan et al., 2008). Particularly in Denmark, albeit rapid expansion in consumer demand for internet shopping, it was not easy to find academic literature concerning performance measurement of Danish e-commerce companies. A theoretical ‘gap’ in regards to e-commerce performance measurement in Denmark especially with regards to small and medium sized e-commerce enterprises was detected and this thesis will therefore be able to contribute with new knowledge in this area.

Performance Measurement plays a critical role in understanding how a business is operating, identifying where improvements should be made and finally informing the strategic planning process (Kaplan and Norton, 1996; Bourne et al., 2000; Bititci et al., 2002; Gunawan et al., 2008). Especially in the case of smaller e-commerce retailers, it is very important to be conscious about how the business is performing. They are more vulnerable because, amongst other things, the lack of a structured performance measurement can also lead these companies to fail. Moreover, competitive advantage and profit considerations when adopting e-commerce are crucial for small and medium-sized enterprises (SMEs) since they have limited financial slack to experiment with new approaches and limited cushion for failure (Karagozoglu and Lindell, 2004).

Reviewing the Business Management literature, Venkatraman and Ramunujan (1986, p.7) suggested that business performance should include emphasis on indicators of operational performance (i.e. non-financial) in addition to indicators of financial performance. Kaplan and

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\(^3\) [http://www.fdih.dk/in-english/](http://www.fdih.dk/in-english/)

Norton (1992) devised a Balanced Scorecard, including financial measures as indicators of actions already taken and complemented by operational measures on customer satisfaction, internal processes, innovation and improvement activities – all affecting future financial performance. Additionally, the Balanced Scorecard can be used to translate vision and strategy into objectives, and then, through measurement assess whether the strategy and its implementation are successful or not (Chaffey, 2006, p.172).

When assessing the performance of e-commerce businesses, some studies have suggested an integrated range of measures. An “e-performance scorecard” with 21 indicators was developed by Agrawal et. al (2001) measuring a website’s success in attracting, converting and retaining visitors based on two key dimensions: the efficiency of costs and the effectiveness of a site’s operations. Wang and Forgione (2007), have described a balanced scorecard-based framework for Strategic e-Business management. Nevertheless, according to Gunawan et al., (2008), performance measures within e-commerce initially focused on monitoring features of web-technology and visitor traffic but over time it has been realized the need for a wider range of measures, to enable a greater understanding of business performance.

Understanding the various aspects of performance measurement within the e-commerce context is extremely relevant and fascinating especially because Internet-based businesses are relatively new if compared to other industries. Although such measurement frameworks are important since they contribute for a better comprehension of the topic, they are not so clear about which performance indicators are most significant to measure taking into consideration the dynamic nature of organizations, related trading environments and strategic relevance (Neely, 2005; Gunawan et al., 2008). E-commerce companies are very heterogeneous, varying in terms of size, level of maturity, products and objectives. It should be stressed that traditional performance measurement systems which were originally created for larger and offline companies may not be suitable for the needs of SMEs online companies. Consequently, an investigation in both literature and real life cases should be conducted before proposing a satisfactory performance measurement system to SMEs e-commerce enterprises in Denmark.
1.2 Problem Statement and Research Questions

Against this background, it is possible to observe that the Internet has evolved during the last decade into a more established trading environment, and a broad number of performance measures have been proposed accordingly. Notwithstanding, yet very little is known towards a more managerial point of view in regards to Small and Medium sized e-commerce enterprises in Denmark. How evolved is the managerial knowledge about e-commerce performance measurement among these practitioners? What kind of measurement systems are these e-commerce companies currently using? Which elements do they focus on for measuring e-commerce performance? An elucidation of this subject is certainly relevant, providing insights to propose a new measurement system framework that can improve their performance measurement.

Hence, this thesis aims to investigate how small and medium sized (SMEs) e-commerce companies in Denmark are monitoring their performance and how a new model for performance measurement within e-commerce could be developed. That being said, the problem statement can be defined as:

| How can a model for improved performance measurement in Danish Small and Medium sized e-Commerce enterprises be developed? |

To support the aforementioned Problem Statement, there are some research questions that should be addressed:

**R.Q.1 - What kind of measurement systems are the Small and Medium sized Danish e-commerce companies currently using?**

This question is relevant in order to understand (i) how performance measurement is perceived by practitioners, (ii) how these e-Commerce companies in particular are monitoring their performance, and (iii) which dimensions within the business receive more focus whilst monitoring performance. Furthermore it is necessary to examine the environment in which the business operates to comprehend the rationale behind and identify possible weaknesses in the current measurement systems not mentioned hitherto.
R.Q. 2 - What do theory and research say about Performance Measurement and Management?

This question is extremely relevant since it intends to build a strong theoretical basis that will be applied later on to improve the performance measurement systems in the aforesaid e-commerce companies. Therefore, a literature review concerning Performance Measurement and Management will be carried out, discussing the most relevant frameworks and performance management philosophies.

R.Q. 3 - Which performance measurement systems have already been applied in the e-commerce?

This question investigates which performance measurement systems as well as performance management philosophies have already been applied into e-Commerce. A case review is done, discussing the rationale behind of these systems as well as their feasibility into the SEMs context.

R.Q. 4 - How can a new model which is more relevant and applicable for SMEs be developed?

The goal of this research question is to propose a model or framework that will be suitable for Small and Medium sized Danish e-commerce companies aligning their operations with strategies at the same time enabling them to measure its overall performance beyond financial numbers. Furthermore, this model will help them to monitor their strategies not only in a short term but also in a medium to long term perspective.

1.3 Thesis Overview

Figure 1.3 provides an overview of the thesis structure. It commences with the introductory chapter, where the problem background is discussed; problem statement and research questions are defined. Chapter two elaborates on the methodological approach where research design is chosen and applied methods are discussed. Hereafter, the thesis follows two paths: (i) empirical observations within e-commerce and (ii) Performance Measurement and Management theory review, which together should provide enough information to answer the problem statement.
In the first path, chapter three strives to understand the e-Commerce and Internet environment whereas chapter four investigates the current situation of e-commerce SMEs in Denmark concerning performance measurement and management. In the second path, chapter five performs a large theory review in regards to performance measurement and management, while chapter six narrows performance measurement further down into the e-Commerce perspective. The main objective of the thesis is achieved on chapter seven, where a new performance measurement model for Danish e-commerce SMEs is developed based on the acquired background and discussed. Conclusions and final considerations are elaborated on chapter eight, which is also completed by ideas for further studies that would be interesting to investigate but are considered out of the scope of the present thesis.
2 METHODOLOGICAL APPROACH

2.1 PHILOSOPHY OF SCIENCE AND RESEARCH PARADIGM

The first important step to determine the research design of any study refers to the Paradigm Positioning. A paradigm defines the researcher’s way of seeing the world and basic sets of beliefs, including guiding principles with regards to ethics, ontology, epistemology and methodology (Denzin and Lincoln, 2000).

According to Mason (2006), Ontology or Ontological perspective refers to the nature of the phenomena, entities or social reality under investigation. Multiple realities or versions, people, understandings, perceptions, views and texts are some examples of different ontological properties. The Epistemology or Epistemological position on the other hand, represents the knowledge or evidence of the entities or social reality under study.

This research subscribes to the Constructivist-Interpretivist Paradigm (see table 2.1). Under this paradigm, the researcher follows an ontological view with multiple, equally valid and socially constructed realities. Knowledge and a deeper understanding of the chosen topic are gained through people’s interactions and shared meanings in a certain social unit. This view of reality is associated with the epistemological position, which under this paradigm the researcher has an interactive - participant role. It is possible to interact and therefore uncover deeper meanings and insights of the studied topic. The methods advised for this type of research are only qualitative: naturalistic, highly interactive, uncovering incorporated meaning through words and text. It follows a hermeneutical - interpretive, explanatory- approach (Ponterotto and Grieger, 2007).
Table 2.1:
Intersection of Research Paradigms and Philosophy of Science Parameters

<table>
<thead>
<tr>
<th></th>
<th>Positivism</th>
<th>Postpositivism</th>
<th>Constructivist-Interpretivist</th>
<th>Critical-Ideological</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ontology</strong></td>
<td>One true reality; apprehensible</td>
<td>One true reality; approximational</td>
<td>Multiple, equally valid, and socially constructed realities.</td>
<td>Apprehendable reality shaped by political, social and economic factors.</td>
</tr>
<tr>
<td><strong>Epistemology</strong></td>
<td>Dualistic and objective; detached researcher role.</td>
<td>Objective (dualism is abandoned or deemed realistic)</td>
<td>Interactive researcher-participant role; potency of interaction uncovers deeper meaning and insight.</td>
<td>Interactive and proactive researcher role seeking transformation and emancipation.</td>
</tr>
<tr>
<td><strong>Axiology</strong></td>
<td>Researcher values have no place in research; must be carefully controlled.</td>
<td>Researcher values must be kept in check so as not to bias study.</td>
<td>Researcher value biases are inevitable and should be discussed at length and bracketed (“epoch”).</td>
<td>Research values are central to the inquiry as participant empowerment is a research goal.</td>
</tr>
<tr>
<td><strong>Rhetorical structure</strong></td>
<td>Third person, objective, and “scientific”; detached and unemotional prose.</td>
<td>Third person, generally objective, and “scientific”; detached and unemotional prose.</td>
<td>First person; relying extensively on participant voices; emotive prose.</td>
<td>First person; relying extensively on participant voices; emotive prose.</td>
</tr>
<tr>
<td><strong>Method</strong></td>
<td>Experimental conditions; careful manipulation of variables and control of confounds; only quantitative methods.</td>
<td>Experimental and quasi-experimental; field research, chiefly quantitative methods; some qualitative methods.</td>
<td>Naturalistic, highly interactive; uncovering embedded meaning through words and text (hermeneutical); only qualitative methods.</td>
<td>Naturalistic, highly interactive; creating transformation (dialectic) through transactional discourse (dialogical); chiefly qualitative methods.</td>
</tr>
</tbody>
</table>

Source: Ponterotto and Grieger (2007)

2.2 METHOD

When collecting information and data for a research, it can be done either qualitatively, quantitatively or both. In order to answer the main research problem as well as the research questions a need for closer approach to the studied topic, gaining substantial knowledge about how online business functions into the different stages of its value-chain was necessary. As aforesaid, in this thesis it was decided to follow a Qualitative research approach because of its considerable potential for obtaining a deeper understanding of how things work in particular contexts. A qualitative inquiry means going to the field or the real world of organizations and getting close enough to people and circumstances and capture what is happening (Patton, 2002). According to Strauss and Corbin (1998:10-11), qualitative research is “any type of research that produces
findings not arrived at by statistical procedures or other means of quantification”. It is the kind of research that embraces an interpretive, naturalistic way of approaching the world studying things in their natural settings, interpreting phenomena in terms of the meanings people bring to them (Denzin and Lincoln, 2000). The ontological position in this work suggests that managers’ knowledge, views, understandings, interpretations, experiences, interactions and perceptions are meaningful properties of the social reality which the research questions are designed to explore (Mason, 2006, p.63).

2.2.1 Data Collection

In order to answer the first research question, an exploratory research methodology is applied and it is based on (i) small samples of practitioners in e-commerce which will provide insights and develop an understanding of how the specific problem or situation can be solved; (ii) relevant texts - published sources including virtual sources. This research design is more appropriate when there is only little or prior knowledge about the variables involved in the phenomenon or in their relationships (BPM Lecture notes #8, 2009). Nevertheless qualitative research demands that sampling and selection are well done. These are very important strategic elements which will have direct implications on generalization – whether and how it is possible (Mason, 2006, p.121).

Interviews are collected in a semi-structured way. It is recognized to be semi-structured and not unstructured because decisions and judgments were previously made about the topic already giving some form of structure and purpose to the data generation process (Mason, 2006, p.69). By trying to explore more in depth specific areas, the respondents are questioned about issues in which they possess superior knowledge about. This approach is equally desirable for allowing further clarification or doubts that may come up during the interview. It also allows the respondent to speak and to express his/her ideas and opinions in a freer manner. Before starting the interview, a brief overview of the thesis was given, clarifying the research objectives. The asked questions were left open-ended placing no constraints on the respondents; the interviews were adapted to each individual interviewee. Questions from the interviews were in regards to performance measurement, but they were not based on one specific theory, nor directly reflected concepts. Instead, they were explorative whilst trying to understand the relevant daily practices and activities of the interviewees.
Nevertheless, some drawbacks do exist in this approach such as the often small number of samples for practical reasons - such as time and money of generating and analyzing qualitative data (Mason, 2002: p.134); or the low level of response. It may occur, for example, if potential respondents are not willing to participate in the interview, due to concern of disclosing strategic issues. That being said, the following organizations were contacted: www.osuma.dk (online supermarket); www.bearleaguestore.dk (toys and accessories); www.petdreams.dk (accessories for pets); www.miinto.dk (clothing); www.billigvoks.dk (hair products); www.nicehair.dk (hair products); www.just-eat-dk (fast food). Additionally, two companies specialized in online marketing: www.carat.dk and www.webtomega.dk were also contacted. However, only four companies gave a positive reply to participate in the research, responding to the qualitative interviews. Albeit the low response level, the amount of knowledge collected from the four interviews was of high value for the present work.

In regards to the primary sources, data were collect through face-to-face interviews, with the following e-commerce practitioners: (1) Allan Jørgensen, CEO of www.webtomega.dk who has been working with online business since 2003; (2) Jacob Ludvigsen, COO of www.bearleaguestore.com; (3) Mads Øvlesen, Digital Manager at Carat Denmark; (4) Paula Pedersen, Co-owner at www.petdreams.dk.

Questionnaires were sent beforehand to the interviewees, so that they could read and prepare themselves prior to the interview. Four different questionnaires were applied, one for each respondent. The intent was to collect as much information as possible as well as to adjust the questionnaire into the expertise of each respondent. Interviews were tape-recorded, transcribed and afterwards individually analyzed, writing down key observations and findings. It was attempted to collect examples from the interviewees’ daily practices as well as their point of view and impressions.

As secondary sources information was gathered from www.fdih.dk, which is the Danish Distance Selling and e-Business Association website seeking to provide up-to-date insights and a better understanding of electronic commerce in Denmark. Additionally, specific books and relevant literature covering academic articles extracted from the Århus University library data bases such as Elin were likewise used as secondary data source.
In order to solve the second research question, an exhaustive literature review concerning Performance Measurement and Management theory was carried out. It starts out with clarification of definitions, followed by a historic review of Performance Measurement Systems. Giving sequence, a review concerning differences in Performance Measurement between Large and SMEs is conducted. Additionally, an investigation of how SME’s apply performance measures is added to the chapter. Finally the most relevant frameworks and performance philosophies proposed in the literature are reviewed and discussed.

In regards to the third research question, initially frameworks and performance measurement models developed for e-commerce companies are investigated. Later, the investigation is narrowed down by conducting a case review to assess which performance measurement systems have been applied into real life cases, discussing the organization’s achievements.

Concerning the final research question, this is answered with a combination of inputs from qualitative interviews, theoretical and case review findings where a new model for small and medium sized Danish e-commerce companies is proposed and finally discussed.

2.2.2 Validity and Reliability

While conducting a research, an important issue is the foundation on which results are based upon. Patton (2001) stated that validity and reliability are two important factors that the qualitative researcher should be concerned about while designing a study, analyzing the results and evaluating the quality of the study.

Reliability refers to consistency of the data, whether the same results are produced if the study is repeated. However, in a qualitative study it is difficult to replicate the data since they are obtained through open-ended questions. If questions are asked once again, the situation could be perceived differently compared to the first time. Thus, credibility is an important concept used in Qualitative research. Using as many credible sources as possible will have a positive impact on the assignment.

Validity refers to the accuracy of the research. In this dissertation it refers to misunderstandings and misinterpretations during the interviews that could affect the accuracy, and thus validity. Therefore, precautions were taken, such as sending emails explaining the purpose of the interviews and issues that would be relevant to discuss, so in that manner the respondents would have some time to prepare themselves prior to the meetings.
2.2.3 Delimitation

Due to the vast nature of the topic, it is understandable the necessity of delimitate the present work. The present study will focus on:

- The “pure play” internet firms, which are known as companies trading solely through the internet with no physical stores.
- Small and Medium sized e-commerce companies – larger e-commerce players are not included in the survey.
- All the organizations that participated in the research are in Denmark.

\(^5\) Examples of transaction alternatives between business, consumers and governmental organizations extracted from Chaffey (2006), p. 13
3 E-COMMERCE AND THE INTERNET ENVIRONMENT

In this section, relevant aspects and characteristics concerning the Internet Environment will be discussed. The objective here is to give a brief overview of the business: concepts, how it functions and its surrounding environment. A foundation is provided to the reader, helping on understanding the development of next chapters.

3.1 E-COMMERCE AND E-BUSINESS

Since its origins, e-Commerce has become object of study and interest in different disciplines, however due to its highly dynamic nature and still growing field turns out to be a little difficult to give a universally accepted definition. Moreover, it is important to distinguish between E-commerce and E-business, since they are not the same thing yet still interrelated. Chaffey (2006) stated that ‘e-commerce refers to both financial and informational electronically mediated transactions between an organization and any third party it deals with.’ He argued that non-financial transactions such as inbound customer e-mail enquiries and outbound e-mail broadcasts to prospects and customers are also aspects of e-commerce that need management. On the other hand, E-business can be understood as ‘the transformation of key business processes through the use of internet technologies’. This term explained in just one sentence, was coined by one of the first suppliers in the market, IBM.

Kalakota and Whiston (1997, p.3) have argued that is not possible to label e-commerce from a unique perspective, on the contrary, this term should be seen in a broader way embracing different perspectives:

“From a communications perspective, electronic commerce is the delivery of information, products, services or payments via telephone lines, computer networks, or another means. From a business process perspective, electronic commerce is the application of technology toward the automation of business transactions and workflows. From a service perspective, electronic commerce is a tool that addresses the desire of firms, consumers, and management to cut service costs while improving quality of goods and increasing speed of service delivery. From an online perspective, electronic commerce provides the capabilities of buying and selling products and information on the Internet and other online services. All of the above definitions are valid. It is just a matter of which lens is used to view the electronic landscape.”

6 www.ibm.com/e-business
Schniederjans and Cao (2002) defined e-commerce as an exchange of transactions. “E-commerce is the exchange transactions which take place over the Internet primarily using digital technology. These exchange transactions include buying, selling, or trading of goods, services, and information. This encompasses all activities supporting market transaction including marketing, customer support, delivery and payment.”

Although e-commerce can be observed and understood from different perspectives, in this thesis e-Commerce is defined as an Internet-based buying and selling of goods. This is a relatively generic interpretation which could be problematic if the purpose here was to highlight e-Commerce in detail. However, the focus of this dissertation is not to describe in minor details the entire e-Commerce phenomenon, but to explore Performance Measurement in Danish SMEs e-commerce companies.

3.2 UNDERSTANDING THE BUSINESS

In order to exist and perform on line, a web shop - in this context selling physical goods - needs to have two systems: the Front and the Back-end which is also known as Back-office (see figure 3.2.1). Front is the platform, the website, the visual part where the user browses and interacts with the shop. After the customer registering himself on the website and making the order, the Back-end or Back-office takes action. This means that Back-office follows up the order from the moment that the client clicks on the button “buy” until the moment the product arrives to the client.

Process-wise, it is necessary to stress the whole management flow that happens behind an order. The first important aspect is inventory management. In order to sell a product, the web shop needs to have this product in stock and the necessary conditions to deliver the correct product to the customer. In the worse case-scenario, the web shop should have a replacement or an agreement with the supplier to ensure that the product is delivered. One of the secrets to successful online store is having a quality logistics system, which distribute the products efficiently and thus provide credibility to the brand and increases the e-consumer confidence.

The next important aspect is the payment. Selling online is different from selling off line - the customer has a relationship of trust where he pays first and receives after, not immediately. Brand credibility and trust signs such as credit card logos, Trustpilot7 and customer reviews which are visible on the Front part will contribute positively to this relationship. From the seller perspective,

7 Trustpilot: www.trustpilot.dk; works with security center and customer center reviews about websites in Denmark.
the web shop also needs to obtain the authorization code from the customer’s credit card and prepare the invoice before moving on to the third step which is picking and packing the good.

![Diagram of Visual Part (Website) and Back-office within Web shop]

*Figure 3.2.1 - Visual Sample to illustrate a Web shop*

*Source: Own elaboration*

It is also important to be careful with logistic losses due to delays or deliver of inadequate products. Not having the product put for sale in stock, sending the wrong product or sending expired items will have negative consequences such as the cancellation of orders and loss of customers damaging immensely the web shop image. Besides getting an angry customer that will probably not repeat a purchase with the web shop again, this generates unnecessary extra costs with reverse logistics. Reverse logistics happens if the consumer wants to return the product and the website should be prepared to work with it, for example, re-entry of goods into stock and the reimbursement of amount.

When there is low number of orders per day, it is possible to perform these tasks manually. However, as the number of orders increases it is not feasible anymore since it becomes too much time consuming with bigger chances of re-work and mistakes due to human error. This is when an integrated Back-office system, a piece of software that optimizes and integrates the operational processes involved in the e-Commerce, is advisable to come into the picture.

In regards to start ups and SMEs companies, they usually do not require very sophisticated software in the beginning. These firms in particular, make use of less expensive solutions and rely on different pieces of software not integrated among themselves, i.e.: one for registering the products that will be sold, other to track which products were sold in the website and calculate the profits,
other for CRM, and so on. Nevertheless, this is not sustainable from a long term perspective. The situation will become really complex and problematic because as the company grows, it will be harder and harder to keep track of the daily activities and such a chaotic scenario can lead to failure.

What has been observed nowadays is that many web shops are opting for outsourcing their stock. Many retailers prefer not to create physical inventory of its online products and are creating automated direct channels with its distributors and manufacturers to request their demands for purchases. Often this logistics model proves worthwhile and it is interesting to some niche markets, especially for the online model. By doing so, it is possible to obtain some benefits such as larger catalogs of products, immediate availability, exploring new markets, reducing investments and most importantly, costs.

3.3 The Internet Environment

Any organization has to operate within an environment that influences the way their businesses functions. Especially in regards to the Internet where new facets are constantly introduced to the environment, monitoring, understanding and taking appropriate actions concerning these changes will empower organizations to succeed in a highly competitive marketplace.

In this arena it is important to make distinction between the micro-environment and the macro-environment. The micro-environment or ‘operating environment’ is the closest marketplace of an organization. When developing internet marketing strategies for instance, the influences coming from the micro-environment are considered to be the most significant ones. Key factors here would be the needs of customers and how services are provided to them. On the other hand, the macro-environment sometimes also known as the ‘remote environment’, has broader influences provided by local and international economic conditions, legislation, social and technological factors. Both of them complement the environment in which an organization or in this case, an e-commerce company will be in. Key issues concerning Micro and Macro-Environment are presented and discussed in Appendix A.

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3.4 FROM VALUE CHAIN TO VALUE NETWORK

According to Porter (1980), Value Chain considers key activities that an organization performs or manages aiming to create value for customers. The Value Chain can be understood as an important framework to add value and competitiveness within any area of business. Every company should be aware of what it is really good at, which stage of the value chain is the most important, better or different from its competitors.

The initial business model of the Value Chain was based on the Industrial age, where the company develops, produces and sells its products (see figure 3.5.1). However, nowadays for many businesses in the world this model has become obsolete. Especially with the advent of Internet, traditional models of the value chain needed to be re-evaluated and restructured in order to fit within the new reality of global electronic communications.

Back in 1998, two new models of Value Creation were identified by Stabell and Fjelstad (1998): Value Shops and Value Networks. The first being a model for solving customer or client problems in a service environment and the second being a model for mediating exchanges between customers. The Value Networks were defined as a business model for a single company that mediates interactions and exchanges across a network of its customers. The aim is to add more value to customer, exchange opportunities and share interests, besides reinforcing the brand identity and building loyalty.

Firms are outsourcing more and more activities therefore management of the links between the company and its partners becomes extremely important. Especially for the SMEs e-commerce companies, this is very relevant since they rely a lot on external networks such as suppliers or affiliate networks to carry on their businesses. And by doing so, they are able to concentrate on their core-chain activities. In the electronic commerce context, it is also possible to find companies
disaggregating their value chain which is also referred as value-chain disaggregation (Kalakota and Robinson, 2000).

Value-chain disaggregation can occur when the primary activities of the value chain are deconstructed and then outsourced as appropriate. Each of the elements can receive a different or new approach, such as working differently with suppliers or logistic partners.

One of the most important characteristics in the value networks is perhaps its dynamic nature. The network can be readily modified according to marketing conditions or response to customer demands. Moreover new partners can be quickly added to the network and others can be removed if they are not performing in a satisfactory way.

Figure 3.5.2: Members of the value network of an organization

Source: adapted from Deise et al. (2000).

Figure 3.5.2, shows the Value network of an organization with some of its main partners. The number of core value chain activities that can be outsourced to third parties will vary accordingly to
the different companies’ profile and needs. Value chain integrators mentioned in the model can be also partners who supply services that mediate the internal and external value chain. These are the companies or information system partners providing electronic infrastructure. Another good example that illustrates the importance of value networks to e-commerce are the affiliate networks and ad networks. These partners have a great importance in Internet marketing, building traffic between an e-commerce company and third-party sites through links, banner advertisements and incentives. Sell-side involves all electronic business transactions between an organization and its customers whereas buy-side involves transactions between organization and its suppliers.

3.6 Internet Service Value Chain

It was found out that Service provisioning is one of the critical factors to understand the online customer perspective (Plant 2000; Willcocks and Plant, 2002). The need of being responsive to consumers along the entire internet value chain was fast recognized by Industry leaders (Plant, 2000; Willcocks and Plant, 2002). This also means that for many SME’s that would be one important differential to compete, besides price. Figure 3.6.1, illustrates the Internet Service Value Chain. It embraces four stages, as follows:

- **Customer Acquisition:** It is the initial stage where Online marketing strategies and techniques are used to gain new customers. There is a cost associated with the acquisition of new customers and the ability to define these costs is highly significant to online organizations.

- **Customer Support during purchase:** It is important to identify major reasons why customers abandon online shopping carts before completing the purchase. Could that be among other things, high shipping prices, site unstable or checkout process is confusing. Understanding these issues and identifying their relevance and impact to the organization is crucial enabling to perform adjustments to the strategy.

- **Customer fulfillment:** The fulfillment of the process has been pointed as a key customer service factor, meaning that the customer will get the purchased good as promised in terms of place and deadline. Economically viable fulfillment models are widespread among leader companies where third part logistics support is included in their fulfillment strategies.
• **Customer Continuance:** The post purchase customer support initially has been neglected by many online organizations. Mistakenly they would believe that just one sale would be enough to convince the customer to come back for life. Thus, identifying the reasons that will enhance customer retention should be a major issue for all online organizations and even more for SME’s due to the massive competition.

These four elements or areas can be understood as the foundation or pillars of Customer Service. They are uniquely important and all together can enable the online organization to identify weaknesses, turning the boat around building up a strong customer service dimension.

### 3.7 Closing Remarks

Since its appearance, Internet has certainly revolutionized the world as we know it. After almost two decades, it has become object of interest and study of many researchers among the most different fields.

New ways of growing business emerged along with its development, evolving from simple structures to highly complex networks. Especially in regard to networks, this aspect makes the internet and managing e-commerce so particular. Understanding how the whole mechanism
functions in both internal and external environment as well as these two environments interact with each other is vital for online organizations survive in such a competitive path.

It should be stressed that the level of heterogeneity within e-commerce is extremely high, which makes internet organizations vary a lot in terms of size, product or profile. Such heterogeneity creates several categories or sub-groups in the Internet industry. This chapter aimed to offer a brief overview of relevant notions in e-commerce so that readers in general can understand the rationale behind the present work.
4 E-COMMERCE SMEs IN DENMARK

4.1 CHARACTERISTICS OF SMEs

Before moving on with the discussion it is important to find a definition for Small and Medium sized enterprises as well as understanding their peculiarities. The definition about SMEs provided by the European Union is therefore used for this work.

“The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons with an annual turnover not exceeding 50 million euro, and/or an annual balance sheet total not exceeding 43 million euro.” (EC, 2005)⁹.

Even though numbers can be used to classify a company as a SME, it should be complemented by a set of other characteristics that will improve the definition of the term. Despite the heterogeneity among these existing enterprises, researchers in this field recognized that they share a number of general characteristics (Hudson et al., 2001) which were grouped in two main categories (Cocca and Alberti, 2010) external and internal environment. The external environment was divided into two subcategories: market and customers both referring to the context in which the organization operates as well as factors outside the control of organizational members. The internal environment on the other hand, compasses factors inside the company or under management’s control such as human and financial resources and the way they are managed. It should be noticed that in regards to external environment, SMEs possesses some common characteristics, such as operating in highly competitive, turbulent and uncertain markets (Garengo et al., 2005); and not having the control or influence over the market therefore using a reactive approach and being adaptive to market changes (Hudson, 2001).

A typical characteristic from the internal environment and perhaps one of the main problems faced by SMEs, are the scarcity of resources in terms of personnel, including managerial time, financial stability and security (Singh et al. 2008). What is more, owner-managers are often lacking

managerial expertise or organizational capabilities which implies on poor strategic business planning and human resource management (Pansiri and Temtime, 2008).

“... you see the small, medium companies to be very dynamic and again not using that much time on performance measurement or in general measurements. It is very much how people feel things are going and what they think that is right”. (Jakob Ludvigsen, Bear League)

If company’s size can be pointed as a weakness in terms of available resources and managerial expertise, on the other hand it can also be seen as an advantage. One of the advantages that small and medium sized e-commerce companies have is that their size and location turn out to be irrelevant to compete effectively (Karagözoglu and Lindell, 2003). What is more, a flat organizational structure with absence of bureaucracy can contribute for a flexible, adaptable and fast way on responding to the changes in the environment (Garengo et al., 2005). A structure with few management layers improves face-to-face relations, simplifies communication processes and managers have higher visibility on the processes as well as the possibility of influencing employees directly (Singh et al., 2008).

“...another thing with e-commerce in being in a small business is that you make all the decisions. You don’t need to go through the corporate leader to get approval... It is very dynamic.” (Paula Pedersen, Petdreams.dk)

“...SMEs companies are much more dynamic and organic and you are much quicker to adapt and you have a better touch and feeling of what is going on the floor, sort of speak.” (Mads Øvlesen, Carat)

An important observation that should be made is that the managerial competencies of the owner (which in many times is the manager as well) will seriously affect the organizational success or failure in SMEs. These decisions are mainly based on a highly personalized management style, tending to follow a “react and adapt” philosophy and fire-fighting strategies, focusing on short term horizons and not working on strategic planning (Hudson et al. 2001).
4.2 MEASUREMENT SYSTEMS CURRENTLY USED AT SMEs DANISH E-COMMERCE COMPANIES

In this sub-section, the interviews performed among the practitioners in SMEs e-commerce companies in Denmark were analyzed. Key findings are commented in order to illustrate and answer the research questions.

4.2.1 HOW PERFORMANCE MEASUREMENT IS PERCEIVED BY SMEs E-COMMERCE PRACTITIONERS IN DENMARK?

Performance measurement has become very important to any business and it should not be different within e-Commerce. When talking to the respondents about their perceptions regarding performance measurement they demonstrated a good theoretical understanding of the meaning and the reasons for measuring performance. This level of awareness is important for smaller and medium-sized companies, since they are most likely the ones to fail or to least have a structured performance measurement system in place (Gunawan et al., 2008). The following quotations illustrate this point:

“In every aspects of every company, even though if it is e-commerce or just commerce, if it is B-2-B or B-2-C, of course it is important to monitor your effectiveness and overall success because if you don’t monitor you can’t see if you are doing good or doing bad obviously, but you also can’t see if you are improving” (Allan)

“Performance measurement is of course the way you perform, so you know how your performance is and where you have to be better. It is a good way to control the overall company performance. But from more simply is just to know if you are going in the right direction or not” (Jacob)

“Performance measurement depends a lot on your business of course, but, well, getting as much data and insight into what you are doing and what you are trying to achieve in everything from planning to execution, finding out how and why you want to do, and how to do it and then constantly monitor each step all the way through and afterwards analyzing how and if you achieved what you wanted. Why did it work and why it did not.” (Mads Øvlesen)

“I would say that performance measurement is how close to the goal that I have made do I achieve...” (Paula Pedersen)
When bringing performance measurement into the e-commerce reality, it is interesting to see that perceptions may vary among practitioners, reflecting the parts that they are responsible for. For example, if a manager is responsible for Online Marketing only, he or she may perceive performance measurement in e-commerce more from the Front part, from the web shop perspective. Interestingly, it seemed that the term ‘e-commerce’ is perceived or associated more in regards to online marketing and customer related optimization possibilities rather than the whole process that an online company goes through when trading online. What is more, it seemed that operations and overall strategy are not really connected to each other. Observe the following quotations:

“You can go into a lot of details about suppliers and etc. but that would be more some key point indicators that I would use as a strategic point of view, more if you look into to the whole process or the whole performance of the company. If we talk only about e-commerce I would more look into the customer related optimization possibilities”. (Alan)

“If we bring it to the e-commerce perspective it depends on what you are trying to achieve: if you are just trying to brand yourself or if you are actually trying to push goods or services to the consumer. Well, to make a part of it today is to check traffic, see how many users you have on your own website. Either your own website or in websites that you are somehow connected to, either through advertising or partnerships, whatever network agreements you set up; seeing, well, how many users, how much time to do the visit (how long do they stay on my website), are we able to move visitors to one site to another, could we advertise or perhaps show the users something they would click on and move to complete a purchase? And then all the way through this step you perhaps moved a user and you will see in two months the behavior.” (Mads)

Web shop owners, on the other hand, may perceive a performance measurement system more as a piece of software rather then a model for aligned strategic measurement. From this system, data from the different areas would be collected, calculations performed and delivered in numbers to the manager in a format that will enable him or her to take decisions.

“Performance Measurement system is the system that would connect, that would record all these areas into the system and then analyze it. So, we would put all the calculations together based on this. And then it would be in a format that can actually make an analysis and make decisions based on the numbers that I received.” (Paula)

Another observation is that managers in SMEs e-commerce companies seem to perceive performance measurement in their business from a more operational point of view with a lot of
focus on web analytics to analyze marketing performance of the website. Web analytics, is a frequently used tool to obtain knowledge, among other things about user behavior and conversion rates\(^\text{10}\). It helps to build knowledge about customer preferences and behavior according to the sites and contents consumed by customers while online. Increased knowledge in regards customer behavior is a powerful weapon to online business. According to Mads Øvlesen, customer behavior plays an extremely important role in this type of business. "Behavior is the big thing today. It is extremely important and without it you would be working in the blank without some sort of idea, of what the user is really doing."

It was also noticed there was a lack of knowledge on how to structure an adequate performance measurement system which aligns operation with overall strategy. Furthermore managers may face some difficulties such as not having all the necessary measures to understand how their businesses are performing and why is performing the way it is. SMEs e-commerce companies may be still behind when it comes to defining key performance indicators to measure performance besides the ones already employed in online marketing measurement. Some reasons were detected from the qualitative interviews, such as lack of time to focus on measurements, limited financial resources and the company size.

"We do define key performance indicators...but in a very amateur way, I would say...that is very amateur because it is not something that we write down and then we see at the end of the month how did we do it...It is just because we forget to look at them" (Pet dreams.dk, Paula)

"...everybody would like to use more measurements of how the performance is but they don’t have the time and the finances to use on it because it is also very expensive to measure all the time...I think for the size of the company as we are, we would use too much time and too much money on measuring a lot of stuff because it is when you are getting bigger and bigger that you need to know more and see how the overall performance is. But as longs as we are not bigger than we are, it doesn’t make much sense of using that much time on it. So, it is again the good feeling and simplicity." (Bear League, Jacob)

In regards to the company size some practitioners believe that there exists a big difference in how SMEs perceive performance measurement when compared to larger companies. As previously mentioned, SMEs are considered to be more dynamic than bigger companies. Furthermore not

\(^{10}\) Conversion Rate: It is the proportion of visitors coming to the specific web site and buying the offered products or services
much time is spent on performance measurement, simply because it is believed that there is no time to be spent on extra measurements and strategies. They have a more simplistic way of observing their business performance. Observe the following quotations.

“I think there is a very big difference. Especially when you are going to a very large company, they are very strict about the performance and also because the strategy they have is very big, it is difficult for them to change the way they are doing things and the performance. It is that they are not very dynamic, I think, it is not very often you see a very large company that it is dynamic. Where you see the small, medium companies to be very dynamic and also not again, not using that much time on performance measurement or in general measurements. It is very much how people feel things are going and what they think that is right.” (Jacob)

Basing the feasibility of performance measurement on company size could be a misleading conception especially in the case of e-commerce organizations. Many SMEs e-commerce managers may believe in the fact that there is no need for lots of measurements in their companies. ‘Lots of measurements’ is understood here as measurements that go beyond the financial and marketing campaign’s measurements.

Nevertheless, especially in the case of online companies, size is not always proportional to the number of customers. It is not impossible for a SMEs company in the internet to have a large amount of customers, and this misconception can undermine valuable chances for the development of a company. Important measures such as customer satisfaction or delivery cycle time may be not explored at its best; perhaps not because they do not want to, but because they do not know how to improve it. Likewise, the belief that measuring performance would require a large amount of key performance indicators could be also wrong. Quantity does not necessarily mean quality. A selected and precise amount of key performance indicators should be more than enough. According to Paula Pedersen, ‘in e-commerce it is possible to have real time numbers. That’s one huge benefit.’ There is a huge amount of data available in e-commerce on a daily basis and the chance of getting lost in the middle of the way is much higher, thus the importance of being selective while choosing key performance indicators.
4.2.2 How do SMEs e-commerce companies monitor their performance?

When investigating how Small and Medium-sized companies in Denmark are monitoring their performance, the initial impression was that there is not a big difference between SMEs and large companies in terms of monitoring, except for the availability of resources to invest in high quality software systems or to devote more time on performance measurements.

“...some of the big companies are way ahead of the small companies mainly due to resources. And it is a costly effort if you want to improve or monitor your performance in every aspect, but I don’t think that in general or in a strategic point of view the big and the small companies are that much different.” (Allan)

As mentioned before while reviewing characteristics of SMEs companies, lack of resources were pointed as one of their main disadvantages. A smaller company has a more limited time and budget; less skilled employees and small capabilities to optimize processes if compared to larger ones. However, regardless size e-commerce companies are able to obtain benefits when using more accessible software tools, such as Google Analytics. It has been pointed as an important tool for monitoring their online marketing campaigns as well as follow up customer behavior and website performance. What is more, these web analytic tools seem to put up SMEs and larger companies almost on the same level with regards to monitoring performance in the Front part.

“If you look into the Danish companies, there is actually a high level of performance monitoring in both places (large and smaller companies), and that’s due to some of the easy and more cheap ways of doing it – Google Analytics being one of them, it is more or less something that every website and web shop in Denmark particularly are using.” (Allan)

“Google Analytics is a wonderful tool for that, actually a very advanced tool with some good basic insights, but you need a great understanding to know what it is.” (Mads)

Notwithstanding, SMEs also rely on other pieces of software available in the market to monitor performance within specific areas such as inventory control and CRM. S.O Power Sweet, Rank Tracker, Meal Champ, Suggar-CRM are just some examples extracted from the interviews. These business intelligence tools should be compatible with the e-commerce platform ‘Magento’ to make sure that the monitoring process works out without conflict. ‘Magento’ has been pointed as the
fastest growing e-commerce platform and many software companies are developing more compatible modules to connect with it.

Pieces of software are connected to the back office giving information about daily sales, conversion rates in form of dashboards that can be “tailored” to the company, monitoring performance in SMEs:

“Dashboard is mainly what I am using so it is an executive summary built in with... actually we have created our own software for time to time, so besides we have Google Analytics, we have our own hub called administration module or back office where we have dashboards telling us about daily sales, which products have been sold, conversion rates, etc, etc. So, I mainly use two systems that is the in built administration module for any web shop because that would be in any case the place where I have more statistic data and use an external system as Google Analytics to make well more the user’s structure sort of: where did they come from, how do they react on site, what do they search for, what is the conversion rates, so...that’s the main tool ...” (Alan)

Nevertheless, an interesting aspect was noticed during the interviews. It was found out that Google Web Analytics is an example of web analytics software offered by Google that supplies information regarding a group of customers. It can inform how many visitors a web shop gets organically. It means that if a web shop had 500 visitors in a day, the software shows which key words were accessed, how much time people have spent on the site through these key words, if there were any purchases, what country they are in, which was the landing page\textsuperscript{11}, bounce rates\textsuperscript{12} or if the user is accessing through Windows or Linux operational systems. These are some examples concerning the kind of information given by Google Analytics, which obviously is very valuable to monitor performance of the online marketing strategies and to follow up customer behavior. It does give an overview of a customer base but it does not give detailed information about one particular customer. For this purpose e-commerce companies also need to have in hand an integrated CRM (Customer

\textsuperscript{11} Landing pages: In online marketing a landing page is a single web page that appears in response to clicking on an advertisement.

\textsuperscript{12} Bounce rates: It is the percentage of visitors who enter the website and then “bounce”, meaning that they leave the website rather than continuing browsing other pages within this website or web shop. In other words, if the web site is receiving a lot of visitors but they are dropping off this is a problem and it will affect among other things, the financial health of the business.
Relationship Management) system that would collect more specific information about customers that have purchased in the web shop. Yet, it seems that it is a challenge for SMEs to find one specific piece of CRM software that is targeted to the company and at the same time, suitable to their limited budgets.

“There are many CRM software tools out there in the field. But there are CRM tools that are not so targeted to one company. There are companies that own a lot of money to create their own CRM system based on their needs, but since we are small company we need to find one that somehow, maybe would fulfill our needs in 80%.” (Paula Pedersen, Petdreams.dk)

A very important aspect also observed while listening to some of the respondents, is the fact that performance in the SMEs e-commerce companies in Denmark seems to not be monitored on an integrated way but in a more isolated way amongst the other different dimensions of the business. This behavior can generate serious problems such as disorganization or unnecessary increase of costs generated by rework.

“Performance is monitored isolated. I would say it is very isolated.” (Paula Pedersen, petdreams.dk)

“Software tools used to monitor performance would be at an entrance level, and usually it would be separated and not integrated, I guess. You would have to collect data and you would have to set it up in an easy and understandable way” (Mads Øvlesen, Carat)

Perhaps due to the nature of the business itself, the logic of monitoring e-commerce performance is different from the so called traditional ways of monitoring performance at the non e-commerce companies. Besides monitoring the online marketing activities and the website, which again is a tool for selling and communicating with the customers, there are others parts involved in e-Commerce, which are vital for its functioning. As already mentioned, these parts together are known as ‘back-office’ and it is composed by departments such as logistics and inventory control, accounting and CRM. A good back-office system aims to integrate all the departments involved in the core business with the website, so that data in real time is available for control13. It means that all the steps involved from the moment the customer buys on the website till the moment he receives the product are being monitored. Ideally in e-commerce it is necessary the integration between processes involved in each of these back-office areas and the website, so that it becomes possible to manage the whole flow: inventory control, payment approval, “picking and packing”,

posting, reverse logistics or returns and so on. The point is that finding a system that integrates all the areas is apparently not so easy and SMEs e-commerce companies are in many cases learning by doing.

“...but since we haven’t be able to find a software that was adequate to what we needed many times we would get the software implemented to Magento, which is the software, I mean the e-commerce platform we use for our site. So, we would implement this model and the program would make changes within this model because it is just not good enough.” (Paula Pedersen)

Furthermore, larger companies are able to afford a tailor made system that could integrate all the core business areas which is not always the case for SMEs. Being many times considered as time consuming and costly, this is an investment that depends on the company profile and its own growth objectives.

“It is possible to create a tailor made program but it costs money and time. So it really depends on how you are doing. We are still a small company, so we are focused on how much things are going to cost ...but I am sure that a larger company could have a very good tailor made program for them.” (Paula Pedersen)

A good piece of software undoubtedly can organize and optimize processes as well as gathering a good volume of data, but data without knowledge is nothing. If you don’t know how to employ data to move the business forward, all the effort can be useless. So far it is possible to notice that SMEs are at a stage where they are facing some problems in a very operational level, not finding time left to think about managing or measuring performance of their electronic businesses in a higher strategic level. In a country with the size of Denmark is relevant to remember two things: i) SMEs e-commerce companies probably have a fewer number of employees compared to other bigger European countries like Germany, Spain or Italy for example and ii) the labor costs are high and it is not feasible to hire so many employees to handle all the processes in-house. Furthermore, many times the owner of the web shop find himself in a situation where he has to manager areas that he is really not specialized at. Because of poor management skills and lack of knowledge in specific areas it is difficult to identify which areas could be improved and most importantly, how they could be improved. Many SMEs e-commerce companies are outsourcing many of its ‘departments’ so that they can devote more attention to the core business.

As already discussed, Logistics is a key process in e-commerce, therefore lack of knowledge and poor management skills in this area can seriously harm the business. Nowadays, many e-commerce
companies, regardless of size, are outsourcing the logistics more and more to specialized companies. According to Paula Pedersen from petdreams.dk, in the case of Denmark it is becoming a very common practice to outsource logistics, hiring specialized companies called “leje hotel” (in Danish) to take care of it. So e-commerce companies are paying for the packer and for that space to use their warehouses, letting they do their expertise in setting up everything that is necessary, also including the monitoring aspect. SMEs e-commerce companies are also outsourcing activities like accounting. In Denmark the information is analyzed by accountants specialized in e-commerce and the owner of the web shop obtains a report with the numbers, conclusions and suggestions for improvements.

4.2.3 WHICH DIMENSIONS WITHIN THE BUSINESS ARE RECEIVING MORE FOCUS WHILST MONITORING PERFORMANCE?

According to Gunawan et al., (2008), performance measures within e-commerce initially focused on monitoring features of web-technology and visitor traffic but over time it has been realized the need for a wider range of measures, to enable a greater understanding of business performance.

However it was found out during this exploratory study that it is not exactly the case. The focus seems to still be mainly on website performance, web analytics, online marketing strategies and on following visitor traffic from URLs. No doubt these are important parts to be monitored, since they basically trigger the whole e-commerce process. Web Analytics helps e-commerce companies immensely to track as much information as possible about the online user with the advantage of getting real time data to analyze marketing campaigns and customer behavior. According to Mads Øvlenesen (Carat), understanding customer behavior is considered an important weapon for e-commerce increase retention rates since customers have a million of choices and the web shop is probably competing for a window of attention or for seconds of attention.

In 2011, the Danish Distance Selling and E-business Association14 has entered into an agreement with Sitemorse Denmark establishing a semi-annual quality analysis of the industry websites also called FDIH Website Index15. The aim is to carry out approximately 600 objective tests on each of all FDIH members’ website. This will include for example, tests on all links and e-mails, response and load speed, browser compatibility, accessibility and functionality. Each FDIH member has

14 Danish association for companies that use the Internet and other digital channels commercially (FDIH)
individual access to view the detailed results for their own site, and thereby compare their own performance against FDIH overall results. Based on the results, the members can optimize and improve their sites. With that, it is possible to notice that Front is receiving more attention while monitoring performance. Links, landing pages and web shop itself have to perform perfectly. If a website is not working properly, the chances of losing potential customers are much higher.

“... a user that is browsing through search results or a web site will only pay attention to a result, a banner or something for a second or two and you have to connect to that point. But also you want to move the user to your site, you would need to track every step they will go: is there somewhere where we might risk loosing a customer; is the customer scared to get the purchase information or anything like that...as long as you are able to monitor and track the movement and behavior you will be able to get some insights into what is happening and back then hopefully measure your performance along with.” (Mads)

Besides web site performance, customer service is another dimension receiving focus. It is just not about customer buying a product for the first time, but also offering an outstanding customer service so that the customer loyalty increases. What is more, customer service or customer supports are fundamentals of the back-office created to support the online customer experience. The following quotations illustrate this point:

“...our drivers here, I would say, it is customer service. We try to answer emails, we stop anything to answer the customer as fast as possible to provide; that could be a question to a product, could be a complaint...” (Paula)

“It is of course important that it works, for all we probably don’t have much time for back-office as we should have so again, it is very floating but of course everything needs to have a good back office to, or a solid ground to stand on, because if the back office is not working, it will affect the end also.” (Jacob)

Although it is very clear the importance given to customer satisfaction for e-commerce, some of the organizations taking part in this research are not often measuring it. The argument used is that there is almost zero number of complaints, so there is no need for much measurement. The tendency is to be action oriented and solve the real problem first and if time permits importance is given to measuring customer service satisfaction.
On the other hand during the interviews, differences between SMEs and large e-commerce companies become more visible. It was observed that SMEs e-commerce companies seem to base their overall performance on financial results only. There is very little focus on measuring overall strategic performance or time to understand and to analyze how different parts of the business will impact on financial performance, relying many times on the good feeling of how things are going around.

“…because it is so small it is more the good feeling of how it is going and not a big performance measurement we are doing, so it is really the numbers at the bottom that show how it is going. Of course you have the strategy but it is very little, everything is driven by the economics performance.” (Jacob, Bear League)

What is more, it is very likely that SMEs e-commerce companies will develop short to medium term strategies rather than long term strategies that are commonly developed by big e-commerce companies.

“If you have a big e-commerce the ideal is more a long term strategy where we are using more a short term strategy. So if you don’t perform then we will definitely look at it differently or changing a strategy, so we will be very much able to change the strategy all the time to ensure the performance.” (Jacob, Bear League)

Being in such a dynamic industry, where everything changes all the time, there is not much opportunity for these SMEs companies to get involved in long term strategies and have the time to collect and measure their results. Before it happens the external environment may rapidly change and the company needs to react immediately proposing new strategies or adjusting the current ones as a way to response and to adapt to the demands of the market. If the performance was not as expected, these SMEs enterprises will be willing to change their strategies as many times as necessary.

4.3 CLOSING REMARKS

This chapter intended to answer the first research question of the thesis. “What kind of measurement systems are the Small and Medium sized Danish e-commerce companies currently using?” A large and detailed qualitative analysis was carried out and the keys finds are:
SMEs e-commerce companies are using different pieces of software to measure the different e-commerce business’ dimensions: web site, online marketing campaigns, CRM, inventory and stock being some of them. They also make use of executive dash boards.

These measurement systems are not integrated among themselves, but each of them are connected directly to the website platform. While being relatively small, an online company can handle these tasks individually. Once the volume of sales increase, it will become much harder to follow up. Therefore, an integrated piece of software system is highly advisable and the costs with investment usually pay off. Some of these companies in Denmark are already investing or planning to invest on it. This shows the high level of dependency on Business Intelligence systems tailor made for e-commerce.

In theory, SMEs e-commerce practitioners are aware of the importance of measure performance and how performance measurement systems can contribute for it. However, in practical terms, they perceive performance from a much more operational level without aligning it with overall strategy. The strategies receiving more focus are mainly the ones related to the front part of the web shop. It was detected a lack of integration with front and back-office.

Success is still measured based on financial numbers. These practitioners also do not seem to seek other key performance indicators (i.e.: customer satisfaction and deliver cycle time) besides the ones used in the front part. Likewise, it is important to focus on performance at the back-office. Although back-office does not trigger the process, its support is vital for e-commerce.
This section conducts a study in the literature and research concerning Performance Measurement and Management theories. The most relevant performance measurement systems as well as performance methodologies are reviewed, used as an inspiration to build a new performance measurement model which can be suitable for the reality of SMEs e-commerce in Denmark.

Initially definitions are clarified and a brief historical review is conducted explaining and illustrating the evolution of Performance Measurement Systems. Next, a brief discussion about Performance Measurement applied in large and SMEs is carried out. Giving sequence, the most relevant Performance Measurement models are reviewed and discussed accordingly.

5.1 PERFORMANCE MEASUREMENT DEFINITIONS

What is performance measurement? A clarification on this topic is the initial step and Neely et al. (1995) have proposed definitions about performance measurement, performance measure and performance measurement system, as follows:

“Performance Measurement can be defined as the process of quantifying the efficiency and effectiveness of action.”

“A performance measure can be defined as a metric used to quantify the efficiency and/or effectiveness of action.”

“Performance Measures are designed to help people track whether they are moving in the direction they want to.”

“A performance measurement system can be defined as the set of metrics used to quantify both the efficiency and effectiveness of actions.”

However, these definitions are very simplistic and performance measurement in practice has become a lot more complex as it has evolved during the last 2 decades. Bourne et al. (2003) have
pointed other aspects within Performance measurement that are equally relevant while seeking for a broader definition of the topic. According to the authors, performance measurement refers to a multidimensional set of financial and non-financial measures, internal and external measures of performance and measures quantifying what have been achieved as well as measures that help to predict the future. It should not be done in isolation and should be developed from strategy. The concept of performance measurement used in this work will refer to the use of a multi-dimensional set of performance measures for the planning and management of a business (Bourne et al., 2003).

Performance measurement is also being used to assess how actions are impacting on stakeholders of the organization and on the environment in which it operates. In fact, managing an organization nowadays has become so complex that managers are required to view performance in several areas almost in a synchronized way. A problem that many enterprises will certainly come across sooner or later is with regards to measurement. According to Marr (2006, p.9), this happens when the organization does not link their indicators to the strategy of the organization. It also occurs when they try to quantify the unquantifiable or try to measure what is easy without focusing on relevant and meaningful indicators. These mistakes will reduce the chances of enhancing strategic-decision making and foremost, learning.

5.2 The Evolution of Performance Measurement

The roots of Performance measurement can be found in early accounting systems at pre-industrial organizations and the Medici accounts was cited as an example (Johnson, 1981; Bourne et al., 2003). Between the 1850s and 1920s the use of more sophisticated budgeting and management accounting techniques took place as a response to the gradual industrial organizations development. From 1925 until 1980s there was a long gap with no significant changes registered in the management accounting field (Johnson and Kaplan, 1987; Bourne et al. 2003). Finally, by middle 80s, the traditional accounting measures started to be questioned and criticized. As competition has intensified, non-financial performance measures have gained progressively importance as new sources of relevant information (Hemmer, 1996) or competitive advantage.

Taticchi et al. (2009) have investigated the literature available in the field of Performance Measurement and Management. Some of the models originally proposed to larger companies were
later on adapted to SMEs. It is possible to see the historic of Performance Measurement Systems already proposed in both Large and SMEs enterprises in the Appendix B. For obvious reasons it is not possible to review all of them, but some of the most relevant and well-known models will be discussed further on.

5.3 PERFORMANCE MEASUREMENT SYSTEMS: LARGE COMPANIES VERSUS SME’s

The main goal of performance measurement systems, models or frameworks is to support management by helping them to measure business performance and evaluating whether the organization is going in the right direction or not. In regards to large companies, there is a clear maturity of Performance Measurement literature in comparison with Small and Medium enterprises. Taticchi et al. (2009) notes this observation and emphasizes the time delay in this research field: first performance measurement models for large companies come from the 1980s whereas first related researches for SMEs appeared in middle 1990s. During this period, SMEs have lied on financial performance measures which were also used in large companies. Still according to Taticchi et al., it was only at the beginning of 2000s that research on performance measurement in regards to SMEs took two directions: the first and main one being the application and/or adaptation of the models initially purposed for large companies such as the Balanced Scorecard or Business Excellence Models; and the second one being the development of more specific models for SMEs focusing for instance on owners objectives or quality issues (Taticchi et al., 2009).

Lack of awareness about the strategic importance and value of performance measurement (Gunawan et al., 2008, p. 376) and the cost of process involved on building a measurement system with the right key performance indicators (Neely et al., 2005) could be some of the difficulties that a SMEs may undergo. Furthermore, incomprehension of benefits and costs fear could be examples of factors impacting negatively on the motivation to implement a PMS from the management side. From the operational side, rejection for a system which could be seen as intrusive from employee’s side could be equally demotivational. (Taticchi et al., 2009, p.5).

There is an enormous difference between big and small company problems which can explain the reasons why performance measurement models developed for big companies may not be suitable or feasible to SEMs. However, Balanced Scorecard, Performance Prism and some quality models
could be adapted to smaller companies (Taticchi et al., 2009) or used as source of inspiration to create a new model.

5.4 HOW SMEs TYPICALLY USE PERFORMANCE MEASURES

SMEs predominantly focus their performance measures on cash flow (Jarvis et al., 2000). Nevertheless, although business level performance measure in SMEs is typically minimal and financially focused, Hynes (1998) stresses that SMEs cannot manage performance effectively on this basis. CIMA (1993) stated that the increasing realization of the importance of non financial measurement among SMEs, although it admits that there is still a disparity between practice and theory, which emphasizes non financial measures. This disparity can be explained by the unclear understanding of the importance of performance indicators in general, particularly operational indicators (Walley et al. 1994, Webb et al. 1999).

Furthermore, studies regarding the use of performance measures states that operational measures are ‘ad hoc’ and informal (Addy et al., 1994; Hudson et al. 1999), showing no real understanding of key performance drivers (Greatbanks and Boaden, 1998). This picture may explain why SME performance measurement systems are ineffective in supporting the achievement of strategic goals (CIMA, 1993; Barnes et al. 1998; Hudson et al. 1999; Veitch and Smith, 2000) and why many firms do not change their performance measures when they change their strategies (Walley et al. 1994) .What is more, unstructured performance measures could not just make the achievement of strategic objectives difficult, but could potentially prevent any strategic development occurring within the company (Hudson et al., 2001).

Finally, according to Hudson et al., (2001) research has demonstrated that the use of performance measures in SMEs (small to medium sized enterprises) is limited. Financial measures, which are required for examination by external stakeholders, are generally well developed. On the other hand, operational measures are typically ad hoc and lack formal structure.
5.5 PERFORMANCE MANAGEMENT AND MEASUREMENT SYSTEMS

In this section, three relevant Performance Measurement models: Performance Pyramid, Balanced Scorecard and Performance Prism are reviewed and discussed. Additionally, quality frameworks and philosophies that could be used to improve performance management among small and medium e-commerce companies will be conducted. More relevant information concerning the models, frameworks and philosophies are respectively in Appendix C, and D.

5.5.1 THE PERFORMANCE PYRAMID AND SMART SYSTEM

The Strategic Measurement Analysis and Reporting Technique – SMART was proposed by Cross and Lynch (1988) as a control system and it was the result of a development effort in a manufacturing company. The structural framework of this model was represented by a pyramid and divided into four levels: top level, second level, third level and departmental level. (See figure 5.5.1 Appendix C). One of the innovative ideas of this model at that time was the linkage between organization’s strategy with its operations by translating objectives from top down (based on customer priorities) and measures from the bottom up. It also touched relevant operational criteria such as quality, delivery, process time and cost. Furthermore, the authors argued that performance measures should be specifically tuned to their strategies to avoid irrelevant or misleading information which will undermine the achievement of the strategic objectives.

The main strength of the performance pyramid is its attempt of integrating corporate objectives with operational performance indicators. However this approach does not provide any mechanism to identify key performance indicators nor integrates explicitly the concept of continuous improvement (Ghalayini et al., 1997; Tangen, 2004). More than 20 years later, it is still possible to recognize these concepts in others frameworks or tools for Quality management and improvement such as Six Sigma and Lean, which is applied in both manufacturing and some servicing industries.

5.5.2 BALANCED SCORECARD

Developed by Kaplan and Norton (1992), the Balanced Scorecard is probably the most well known performance measurement system, proposing that a company should use a balanced set of measures that allows top managers to take a quick but comprehensive view of the business. This framework
came as a response to the growing dissatisfaction towards the traditional approaches of measuring performance mainly based on financial measures. The structure of the BSC is a way of thinking about the organization not in silos of departments but holistically. It consists of four interrelated perspectives (see figure 5.5.2, Appendix C), providing answers to the following questions:

(1) How do we look to our shareholders? (Financial perspective)
(2) How do customers see us? (Customer perspective)
(3) What must we excel at? (Internal business perspective)
(4) How can we continue to improve and create value? (Innovation and Learning perspective)

Nevertheless, the BSC framework with the usual 4 perspectives should be considered as a template rather than an inalterable practice (Kaplan and Norton, 2006). Since its initial development in 1992, changes have occurred in the definition of the BSC framework as a natural development process and three generations or types of BSC were identified. According to Speckbacker et al., (2003) the Type I BSC is a specific multidimensional framework for strategic performance measurement that combines financial and non-financial strategic measures. The type II BSC is an extension of Type I BSC adding a description of strategy by using cause-and-effect relationships. And the last generation is the Type III BSC. This one is an extension of Type II BSC also implementing strategy by defining objectives, action plans and results at the same time connecting employee incentives with the BSC.

Notwithstanding some weaknesses were detected in this approach. According to Ghalayini et al. (1997), the balanced scorecard is constructed as a monitoring and controlling tool rather than an improvement tool. Neely et al. (2000) states that even though the balanced scorecard is a valuable framework while suggesting important areas where performance measurement can be useful, it provides little guidance on how appropriate measures can be identified and used to manage the business. They also argue that the balanced scorecard does not take into consideration the competitor perspective. Norreklit et al, (2008) points out that the cause-and-effect assumption underlying the BSC could be misleading for management. Another weakness is about difficulties concerning time dimension, because a cause-and-effect relationship requires a time leg between cause and effect, which is not an explicit part of the scorecard. The effect of leading measures will occur at different points of time, because the effects of the different perspectives involve different time scales.
5.5.3 **The Performance Prism**

The Performance Prism is considered a second generation performance measurement and management framework developed in 2001 by Andy Neely and Chris Adams (Neely et al., 2002). It came as a response to the world’s new priorities in the so called “New Economy”, focusing in other non-financial measures that also impacts on the performance and success of an organization such as suppliers, alliance partners, intermediaries, regulators, local community and pressure groups. (Neely et al., 2001). It is a tridimensional model which addresses the issue of complex organization’s relationships with its multiple stakeholders. Performance Prism has five dimensions or perspectives: Stakeholder Satisfaction, Stakeholder Contribution, Strategies, Processes and Capabilities (see figure 5.5.3, Appendix C).

According to Tangen (2004), the strength of this framework lies on the fact that it first questions the current company’s strategy before the measure selection process, ensuring that performance measures have a strong base. Nevertheless, Tangen (2004) has identified as a weakness the fact that it offers little about how the performance measures are going to be realized. Another weakness is that little or no consideration is given to already existing Performance Measurement Systems that companies may have in place (Medori and Steeple, 2000). And as a matter of fact, it should be stressed that “businesses rarely wants to design PMS from scratch. Managers are usually interested in eliminate any weaknesses in their existing system” (Neely et al., 1994).

**5.6 Quality Management**

The importance of quality for company’s performance and success on the market it operates has been widely recognized in the business literature and practice (Crosby, 1986; Deming, 1986; Juran, 1992). A brief review concerning the most important contributions of the main gurus of Total Quality Management is at Appendix D.

Several approaches to management of quality were suggested in order to help companies enhance performance, efficiency and competitiveness through improvement of quality. The philosophy of Total Quality Management (TQM) is one of the most recommended approaches. It is a holistic
approach that seeks to integrate all organizational functions to focus on meeting customer needs and organizational objective (Kumar et al., 2009).

Many definitions can be found in the literature for TQM, nevertheless there is a general consensus in regards to the essential principles, practices and values of TQM (Hellsten and Klefsjö, 2000; Eriksson and Hanson, 2003; Yang, 2003). Pfau (1989) described TQM as a holistic approach to improving quality, productivity and competitiveness in the international market place. Yang (2005) stated that TQM is an integrated management philosophy and a set of practices that highlights, among other things, continuous improvement, meeting customers’ requirements, reducing rework, closer relationships with suppliers, process redesign and competitive benchmarking.

5.7 Six Sigma

The term ‘Six Sigma’ has been around since 1986 when Motorola decided to improve its quality by x100 as a strong response to the Japanese competition (See table 5.7.1, Appendix D). During the 70’s the U.S. consumer electronic market came under threat by the Japanese who began to erode Motorola’s market share. Earlier it was a quality initiative compared to the rigorous methodology that exists nowadays. Six Sigma is now a recognized approach for improving Quality, Cost and Delivery (QCD) that yields superior customer satisfaction and supporting the retention of existing business (Bicheno et al., 2005). What is more, it has been a reputable and powerful business strategy that yields a dramatic reduction in defects, errors or mistakes in service processes (Antony et al., 2005).

5.7.1 Six Sigma in Service Organizations

Although the Six Sigma approach to quality and process improvement has been used mainly by manufacturing organizations, currently its popularity is increasing among service organizations. Six Sigma alignment to business objectives is becoming very popular where the Balanced Scorecard tool appears to be enjoying a resurgence in ensuring that the performance of the Six Sigma activity is delivering against the targets established for the Balanced Scorecard (Bicheno et al., 2005, p.23). According to Taghaboni-Dutta and Moreland (2004) Six Sigma is particularly attractive to many services processes today because of its customer-driven methodology.
Service processes create scrap and rework in the form of costs of poor quality just like manufacturing processes (Bisgaard and Freiesleben, 2004). The objective of a six sigma strategy in service processes is to understand how defects are occurring and then create process improvements to reduce the occurrence of such defects. These improvements will enhance the overall customer experience and thereby increase customer satisfaction. Actually most of the developed countries no longer have a manufacturing-based economy. The real economy in these countries is fostered by fields such as financial services, health care, e-commerce and logistics, but less manufacturing, which has tended to move to low-cost locations.

According to Antony et al., (2006) experts agreed that the most common reason service-oriented organizations stay away from six sigma is that they see it as a manufacturing solution. One of the major obstacles service-oriented organizations must overcome is the idea that, because their company is human-driven, there are no defects to measure. Many people engaged in service organizations have the common belief that six sigma requires complicated statistical tools and techniques. Organizations, even the Small and Medium-sized ones, need to change this mindset. The truth is that six sigma is not about a collection of statistical tools and techniques. Still quoting Antony et al., (2006), the authors state that in fact, service organizations simply do not need many of the tools and techniques of the six sigma toolbox. The majority of the process- and quality-related problems in service organizations can be readily approached using the simple problem-solving tools of six sigma, such as process mapping, cause and effect analysis, Pareto analysis, control charts and so on. Another misconception among many organizations in the service sector is that Six Sigma demands massive training costs and extra effort. Although Six Sigma does require some investments, it is proven that the benefits achieved with its implementation surpass the investment costs. Some of the expected benefits that a service-oriented business can obtain after adopting a six sigma business strategy are as follows (Antony, 2005a, b):

- Organizational culture transformation from ‘fire-fighting’ mode to ‘fire-prevention’ mode;
- Reduced number of non-value added steps in critical business processes through systematic elimination, leading to faster delivery of service;
- Reduced cost of poor quality (costs associated with late delivery, customer complaints, misdirected problem solving, etc.);
- Improved consistency level of service through systematic reduction of variability in processes;
- Increased employee morale;
- Effective management decisions due to reliance on data and facts rather than assumptions and gut-feelings.

For many service organizations, the purpose of introducing a Six Sigma program is to establish and map key processes that are critical to customer satisfaction. It will help to understand how defects or failures occur in the processes, suggesting process improvements that will reduce the occurrence of such defects and cutting costs. As a positive consequence the overall customer experience is improved leading to higher levels of customer satisfaction. Enhancing customer experience and thus customer satisfaction is one of the keys for succeeding in e-commerce.

5.8 THE EFQM EXCELLENCE MODEL

The European Foundation for Quality Management (EFQM) Model is a framework introduced in 1992 by fourteen leading European business with the purpose of helping organizations to achieve it by measuring where they are on the path to Excellence, helping them to understand the gaps and stimulating solutions (Self assessment guide EFQM, 1999).

The rationale behind this model (See figure 5.8 – Appendix D) is that regardless of size, sector, structure or maturity, to be successful, organizations need to establish an appropriate management system. The EQFM is a self-assessment framework with focus on improvement planning comprising 9 criteria in which five are Enablers and four are Results. In the Enabler criteria are included Leadership, People Management, Policy and Strategy, Resources and Processes. The Results criteria include People Satisfaction, Customer Satisfaction, Impact on Society and Business Results.

There are few drawbacks in the EFQM Excellence Model such as that it does not address plans or strategies for organizations aiming to implement the model in order to achieve continuous improvement through the self-assessment. Although the model requires organizations to incentive compensation, it seems to provide limited detail for linking successfully with the strategic measures. (Wonggrassamee et al.,2003).
5.9 DISCUSSION AND CLOSING REMARKS

The overall objective of this chapter was to exhaustively investigate Performance Measurement Systems and Management theories available in the literature, which could be enlightening to build a relevant model for SMEs e-commerce companies. Through this assessment, important models such as Balanced Scorecard, Performance Pyramid, Performance Prism and the EFQM Excellence Model were discussed as well as two quality management philosophies: Total Quality Management and Six Sigma.

Although there is no 100% perfect model – and no 100% perfect company either, the contributions of these models to management of large organizations are extremely valuable. Certainly there is no magic formula and the success of such models will rely also on the management and employees’ commitment to yield the expected benefits. In regards to SMEs companies, especially when these are e-commerce organizations, some of these models may not arouse the interest of owners and managers due to its complexity and long-term expected results.

Nevertheless, the logic behind these frameworks and philosophies should not be underestimated. They are certainly relevant for e-commerce SMEs management contribute to enhance management from a more holistic way and monitoring performance of the different business dimensions.
6 PERFORMANCE MEASUREMENT AND MANAGEMENT IN THE E-COMMERCE

The aim of this chapter is to investigate performance measurement and management into the e-commerce context. Frameworks and models encountered in the literature were examined. Additionally two cases regarding performance measurement frameworks applied in organizations dealing with e-commerce were equally assessed and finally findings are discussed.

6.1 E-PERFORMANCE SCORECARD BY AGRAWAL ET. AL

The e-performance scorecard proposed by Agrawal et. al (2001) comprises 21 indicators, which measure performance statistically (at one point in time) and dynamically (over a period of time). The indicators grouped under three categories: attraction, conversion and retention – are afterwards organized into the overall e-performance scorecard, a weighted average of the 21 indicators (See figure 6.1, Appendix E).

Nevertheless, this scorecard expresses only two key dimensions of e-business: the efficiency costs (financial benefits) and the effectiveness of a site’s operations. Cost efficiency examples could be costs of acquiring visitors to a site or costs of maintaining active customers. In regards to effectiveness of a site’s operations, conversion rates and customer gross margins are some examples.

The drawback in this e-performance scorecard is that it is very limited, not taking into consideration other equal important dimensions besides website operations and cost efficiency, such as customer relationship, processes or logistics. Also it is important to align these measures or indicators with the overall strategy, to ensure that measures are relevant.

6.2 E-BUSINESS BALANCED SCORECARD BY PLANT ET AL.

Another case concerning the use of Balanced Scorecard into e-commerce was researched by Plant et al. (2003). After surveying a number of 78 leading and lagging e-business companies, they
identified four critical factors to the development and execution of e-business strategies. A modified approach was then suggested to the traditional balanced scorecard turning into a more suitable framework for management of e-business units. In this approach the customer perspective from the original balanced scorecard is enhanced with four additional perspectives: **brand, service provisioning, market positioning and technology** – tuning it to the specific needs of the e-business channel. Therefore, understanding the customer perspective implies on understanding these factors as well. The sum of these parts leads to the overall customer perspective. Please refer to figure 6.2, Appendix E for a more detailed explanation of this model.

Plant et al. (2003), highlights the importance of aligning the customer perspective with the internal process and learning and growth perspectives in order to create a complete e-Business BSC environment. This study has made apparent that organizations adopting and utilizing forms of scorecarding were able to translate their business strategy throughout the organizations well as manage it more effectively.


The Electronic Business Balanced Scorecard was proposed by Wang and Forgionne (2007) and it is an adapted framework from the original balanced scorecard by Kaplan and Norton (1992) into an e-business management framework shown in the figure 6.3, Appendix E. The EBBSC consists of four perspectives including the Business Core, Analytic e-CRM, Process Structure and e-Knowledge Network. Such a framework intends to help managers developing and assessing e-business strategies and many benefits were pointed: i) identifying major decision factors; ii) specifying direct and indirect relationships among factors; iii) helps to understand and to explore e-business initiatives in a more effective way; iv) helps to generate strategies that would improve overall business performance. The rationale behind the model is explained in the Appendix E.

It is possible to affirm that theory-wise, this framework has a great relevance since this balanced scorecard adaptation offers a new perspective to formulate and evaluate e-business strategies. The EBBSC also indicates that e-business strategy making will involve multiple decision criteria. In practice, the EBBSC helps identifying business opportunities and threats in both internal and external environment, analyzing current business capabilities and resources to address the
opportunities and threats, thus generating effective e-business strategies that would enhance the company’s overall business performance and profitability. Nevertheless, more empirical research is needed to specify the measures, decision factors and functional relationships in each e-business perspective. Furthermore, managers desiring to apply this methodology on SMEs e-commerce may need to work on an ‘adaptation’ of the proposed EBBSC. It possesses a higher level of complexity – since it has been developed for larger companies – therefore may not be suitable for SMEs e-businesses. More empirical research would be required to test this model in this context.

6.4 PERFORMANCE MEASUREMENT SYSTEMS ALREADY APPLIED IN THE E-COMMERCE

6.4.1 E-COMMERCE SCORECARD BY HASAN AND HENDRIKA:

Hasan and Hendrika (2000) perhaps were one of the first researchers investigating the applicability of the Balanced Scorecard as a strategic management tool for the electronic commerce while proposing an adapted e-commerce scorecard. It was based on an interpretation of a case study about the implementation of the BSC in an Australian state government utility together with a theoretical contribution from Martinsons’ Information Systems scorecard (Martinsons et al., 1999) and the literature on management of e-commerce. A comparison of Balanced Scorecard perspectives from each source, as well as an elaboration of the scorecard is found at Appendix E.

After setting up the scorecards, some improvements were identified in the company: (i) marked effect on quality of work and morale off staff; (ii) website was placed on the top quality category for usability; (iii) the openness and accountability of the organization was evidenced by the inclusion on their public Website of many organizational documents, improving the business image with shareholders.

Hasan and Hendrika (2000) work was remarkable when recognizing that e-commerce introduced fundamental changes to traditional business models. Adapting the traditional balanced scorecard framework to an e-commerce scorecard was a response to the new challenges that managers are facing in organizations doing business online. Nevertheless, it is not easy to formulate suitable measures for each of the perspectives at the e-commerce balanced scorecard. The authors highlight
the need of more research into indentifying goals, measures and targets in each of the proposed scorecards, which should be meaningful and workable.

6.4.2 BSC FOR AN E-COMMERCE SME BY RICKARDS & HARZ

Another relevant case study was conducted by Rickards (2007), with the purpose to develop a strategic and operational balanced scorecard that could attend the needs of a real, medium-sized firm engaged in e-commerce. Although many journals have published numerous reports about the success of BSCs in large corporations, the author arguments that small-and medium-sized enterprises (SMEs) have been ignored as well as e-commerce firms in particular.

The case study takes place in Eurostove’s\footnote{It is a fictitious name. The real name of the company was not disclosed in the case, as promised to management that wanted to remain confidential.}, a German subsidiary of a small Asian company which designs and installs woodstoves. The organization expanded and established a website on which it began to offer the woodstoves for delivery and installation throughout Europe. The paper described the development and implementation of a BSC for this particular business unit in Germany, accessing some of the problems SMEs tend to have with both controlling and BSCs. The author argues that even though Kaplan and Norton talk mostly about four perspectives, every firm has unique characteristics and special potentials. Therefore it seemed perfectly reasonable for Eurostove’s executives to identify and build its strategy around six perspectives: \textit{customer}, \textit{internal business process}, \textit{employee}, \textit{finance and controlling}; \textit{partner organizations} and \textit{external communication}. Observing from the big picture, the internal business process perspective was then broken down into \textit{innovation}, \textit{quality}, \textit{customer service} and \textit{customer communication}. The aim was not to concentrate on too much detailed process analysis but examining the firms’ business process overall – from the identification of customers needs to their actual satisfaction.

In regards to quality, Eurostove’s executives set an operational goal of reducing their firm’s product defect rate to close to zero. That required identification of all relevant processes, defining standards and instituting measurement methods. The authors also recommended the EFQM-model for Excellence or Six Sigma method as being appropriate for using in this connection. The partner organizations perspective was created because relationships such as suppliers and logo partners were seen as crucial to the firm’s future strategic direction. The company also intended to improve
its communication with customers, supply chain and logo partners as well as with its future capital providers as a question of strengthening personal contacts.

Even though this case has its value when contributing for the literature concerning performance measurement applied into SMEs e-commerce enterprises, it is clear that the company’s profile differs from the company’s that are being considered for this current study. However, this example shows the possibility of “customizing” balanced scorecard’ perspectives according to the strategies. It is a way of adapting or assessing the required capabilities in order to achieve the company’s strategic objectives, which is expected to positively affect the measurement and overall management.

6.5 Closing remarks

Although performance measurement, management models and frameworks have already been applied in many other industries, it was possible observing from the insights obtained in this chapter that the application of such tools into the e-commerce context is still very new and immature. Especially in regards to SMEs e-commerce enterprises there was almost no evidence of such cases. This is perhaps understandable, due to the fact that Internet itself can be considered a recent phenomenon when compared to several other types of industries.

It is possible to assume until here that from a technological perspective, e-commerce companies - regardless of size or segments - are in an advanced stage. However from a managerial perspective there is still a large discrepancy and this knowledge gap needs to be filled out. Most of the frameworks found in the literature and analyzed in this chapter even though of great value, are only adaptations of the traditional Balanced Scorecard into the specific e-commerce organization’s contexts. More theoretical and empirical research is needed, not only about SMEs but more specifically about SMEs ecommerce enterprises in Denmark.
7 PROPOSING A NEW PERFORMANCE MEASUREMENT MODEL FOR DANISH E-COMMERCE SMEs

7.1 HOW CAN A NEW MODEL BE DEVELOPED?

It is important to perceive an organization as a system. Each occurring event as well as its causes should not be observed in an isolated way, but as parts which interact among each other. What happens in any part of the system will affect all the others with higher or less intensity. Therefore, synergism is an aspect that should be present in a performance measurement system.

Furthermore, a measurement system must incorporate Critical Success Factors (CSFs) which are those few specific things that must go well to ensure the success for a manager or an organization. They represent those managerial areas that must be given special and continuous attention to deliver high performance (Boynton and Zmud, 1984). In addition, besides understanding the context which the model will be applied, a spectrum of measures is required. The measures should not only provide data on financial success, but also on quality, responsiveness and flexibility, just to mention a few. However, this need must be balanced with the concern of avoiding information overload and keeping the system as simple as possible (Kanji and E Sá, 2006).

Keeping the system as simple and effective as possible are important criteria when proposing a new performance measurement model for SMEs e-commerce companies. This model should contain key dimensions based on Critical Success Factors within e-commerce it should be adaptable to SMEs reality and foremost, managers should be able to understand and follow its logic.

7.2 RECOMMEND TO KNOW WHEN DESIGNING PERFORMANCE MEASURES

There is no standard formula for performance measures and Neely et al. (1997), indeed quoted that the key issue in designing measures of performance is that they have to be matched to the organizational context. Several authors have discussed the design of performance measures. Lea and Parker (1989), suggested that measures of performance should be transparent and visible to all, simple to understand, have visual impact and focus on improvement rather than variance. Lynch
and Cross (1991) emphasizes the connection between strategies, action and measures. Globerson (1985) on the other hand has a more complex and detailed approach to define performance measures. He recommends that measures should be derived from strategy; provide timely and accurate feedback; relate to specific; stretching but achievable targets; be based on quantities that can be influenced, or controlled, by the user alone or by the user in co-operation with others; be clearly defined; be part of a closed management loop; have an explicit purpose; be based on an explicitly defined formula and source of data; employ ratios rather than absolute numbers and finally use data which are automatically collected as part of a process whenever possible. Fortouin (1988), thinks similarly as Globerson, but also suggests that measures should provide fast feedback and information, be precise – be exact about what is being measured and be objective – not based on opinion.

Based on previous findings, managers and owners of e-commerce SMEs are likely to not have interest on elaborate or use performance measures with a lot of complexity. Particular in the case of these companies, “keep it simple” will probably be the best approach. ‘The performance measure record sheet’, a framework proposed by Neely et al. (1997) could be used to help these managers in the guidance of defining realistic performance measures. Elements such as: purpose of the measure, which business objectives it is related to, how often these measures should be recorded and reported according to its purpose, the source of consistent data and perhaps the most important: what the added value is. The rationale behind in here is that unless the management loop is closed, there is no point in having such a measure (Neely et al., 1997, p.1140).

This is extremely relevant for e-commerce organizations in general, where the amount of available data is so large. Concerning SMEs e-commerce in particular, this should be even more stressed. Planning to measure the right indicators in both Front and Back-end parts will save time and re-work generated by measurement without purpose, not measuring a large amount of indicators that have no clear objective.

7.3 **E-COMMERCE PERFORMANCE MEASUREMENT MODEL**

Considering the foundation obtained from several sources investigated in this thesis - inputs from qualitative interviews as well as the large amount of models and frameworks from the literature - it is possible now to build up a model that is suitable for a SMEs e-commerce companies in Denmark to manage and measure its performance.
The model was developed based on the models and philosophies previously reviewed in this work:

**Performance Pyramid**  
*Cross & Lynch, 1988*

There is a linkage between organizations’ strategies with operations by translating objectives based on customer priorities.

“Quality”, “Delivery”, “Process time” and “Cost” are pillars for operational objectives.

**Balanced Scorecard**  
*Kaplan & Norton, 1992*

E-commerce company is observed on a holistic way. It should be a multidimensional framework not focusing only on financial measures. Furthermore, there should be objectives, measures and targets to follow up the strategies.

**Total Quality Management**

All organizational functions are integrated focusing on meeting customer needs and organizational objectives. Focus on Continuous improvement.

**Performance Prism**  
*(Neely et al., 2001)*

Customers are perceived as the main stakeholders and trigger the whole process. Therefore, Strategies are based on customer priorities;

Addresses the issue of complex organizations relationships with its multiple stakeholders; i.e.: suppliers, affiliate partners, and intermediaries.

**EQFM Excellence Model**

Employees, partners, resources and processes are considered enablers or the capabilities needed to drive the company forward.

*Figure 7.3.1: e-Commerce Performance Model – rationale behind*

*Source: Own creation*
The model represents the dynamism of e-commerce that is characterized for a non-static nature, thus the reason for the circle format. Like a wheel moving forward, it suggests continuous improvement and adaptation to the market and its costumers. The arrows connecting the dimensions back and forth indicate the interaction which is needed in order to make the model works instead a pure cause-and effect logic. The external arrow coming from the financial results and pointing to Strategies, symbolizes that if the financial results are not as expected, strategies must be reviewed and consequently operations. These strategies will be divided into strategies developed to the Front part and to the Back-end part. The Enablers mentioned at the bottom represents all the drivers that will contribute to the company’s existence and development.

Figure 7.1: Proposed Performance Measurement System for SMEs e-commerce companies

Source: Own creation
The dimensions composing the proposed model are explained as follows:

**Customers:** The needs and expectations of the customers are primary drivers for the strategies. Understanding the online consumer behavior and their needs is an important weapon among e-commerce companies, especially for SMEs.

**Strategy:** Consists on defining the intended customers and how the web shop will compete for them. The web shop’s strategy is mainly divided into strategies for the front part and strategies for the back-end. After setting up these strategies, key actions to accomplish the objectives are taken. Measures should be defined and monitored, so that it is possible to know whether strategies are being accomplished.

**Back-end/Back-office:** These two components are included on the model to remind that strategies need to be adequate to these “two different realities” within the online business. Although distinct, they are integrated among themselves. Therefore, there will be strategies developed for the Front part which will trigger the process of attracting and retaining a customer. Likewise, there will be strategies developed for the Back-end which will support the purchase from the moment a customer clicks the bottom “buy” until he receives the product as well as any other eventual enquires. It is of no use to develop brilliant strategies for the front part without also developing strategies for the back-end to support them.

**Operations:** It is understood as all the direct or indirect business activities that helps executing strategies and deliver products and services for customers and stakeholders. It is important that operations are aligned with the strategies so that it will enhance the strategies execution.

**Financial Results:** Products and services provided to customers will generate financial returns for shareholders and stakeholders. The arrow coming from financial results and pointing to strategy means that depending on the financial results i.e. whether the goals were achieved or not, the strategies should be reviewed.

**Enablers:** All the capabilities of an online company and its infrastructure will enable its operations to efficiently satisfy stakeholders and shareholders requirements. Enablers allow the web shop to move on and evolve, therefore the arrow points forward. Within e-commerce there is a vast range of enablers and it can vary accordingly with being Small or Medium: Technology and IT, Innovation, Staff Capability, Benchmarking, Voice of the Customer (Customer needs and expectations), Process
Quality (i.e.: web site usability, security, speed) and External Partnerships (i.e.: affiliate networks, suppliers, warehouses).

For a better understanding of the proposed model, an example was created (see Appendix F). In the example strategies were broken down into Front and Back-end and objectives were set up following the same logic.

<table>
<thead>
<tr>
<th>Front Objectives</th>
<th>Measures</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Customer Attraction &amp; Acquisition. How?</td>
<td>Ranking of key words in relation to competitors; Position of website in Search engines; Amount of orders generated from each campaign; Kroner/month for Organic searchers coming to website; Conversion rate; Revenue per customer; Bounce rate on top landing pages.</td>
<td>3 Mths &amp; 6 Mths</td>
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<td>Dkk/month</td>
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<tr>
<td>2. Customer Retention with focus on quality and continuous improvement. How?</td>
<td>Support response time; Average of # Complaints/errors; Bounce rate; # News Letters Sign up; Average # of News letters/orders; Revenue per repeat customer; Repeat customer churn rate.</td>
<td>Minutes</td>
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<tr>
<td>3. Back-end Objectives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Customer Retention How?</td>
<td>Average # of customer complaints/errors Support response time</td>
<td>#</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minutes</td>
</tr>
<tr>
<td>5. Suppliers:</td>
<td>% of profit per product</td>
<td>%</td>
</tr>
<tr>
<td>6. Inventory and Stock:</td>
<td># of returns Average fulfilment time Inventory turnover</td>
<td>#</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Day (s)</td>
</tr>
</tbody>
</table>

Table 7.1: Example of Front and Back-end Strategies

Source: Own elaboration
Objectives will obviously depend on each e-commerce company and what they intend to achieve. In this case Customer Attraction and Acquisition, Customer Retention with focus on quality and continuous improvement were objectives regarding the Front part.

It should be noticed that Customer Retention was also cited as objectives at the Back-end, together with objectives regarding Suppliers and Inventory & Stock. This is because the focus on customer retention should be present in the whole value chain. Afterwards, measures should be defined as discussed in the previous sessions, and targets established in two time paths: three months and six months. On the bottom, enablers will turn operations feasible. Operations will focus on continuous improvement embracing both internal and external activities: Customer Service, Website Usability and Web analytics, Inventory & Stock, Affiliates, Suppliers and Learning.

In regards to quality in the Front part, an example of focus on quality would be eliminating all that is not needed on the webpage, especially on the landing pages. Improvement could be made on search boxes, name of the company as visible as possible, use of trust signs such as credit cards signs and Trustpilot reviews. These are actions which will give the user a positive impression about the web shop, not only helping him to complete the whole transaction process, but also building a trust for future purchases.

An example of continuous improvement in the Back-end is the use of bar code by adopting a scanning system which is connected to every single product and in turn is connected to the web shop. Therefore, all the prices would be connected. The use of bar codes would reduce the manual work, consequently reducing the number of errors and costs generated with re-work.

Although some managers and owners can be reluctant to measures and targets, these are still necessary to follow the company’s development over a period of time in both Front and Back-end. Especially in companies which do not perform any kind of non-financial measurement, even a small improvement on performance measurement focusing on the most relevant areas would certainly lead to positive gains.

This model also helps in regards to self assessment of the web shop, rising attention to weaknesses not observed until then. Furthermore, owners and managers will have an integrated perception of the business and will understand the relevance of following performance on both –Front and Back-end.
7.3.1 PERCEIVING THE WEB SHOP AS A SYSTEM

As an attempt to demonstrate the synergy of the proposed model, an example of how the different operations will impact on the achievement of strategies is discussed in this section (see figure 7.3.1).

It was assumed that increased revenue - or positive financial results - was the main final objective of this web shop. This objective can be achieved by attracting customers to the web shop (customer attraction), making them conclude a purchase (customer acquisition) and do what is possible to make them return for new purchases (customer retention).

*Figure 7.3.1 – Web shop as a system.*

*Source: Own elaboration*
That being said, several different operations will impact on these three variables. Initially usability tests to improve customer experience will ensure website quality and also affect positively on customer retention. Web site quality will also impact on the front part, affecting customer attraction and acquisition. Other processes will equally interfere on the performance of the Front part, such as use of Search Engine Optimization to acquire web site traffic, more cooperation with Affiliates to acquire customers and more New Letters sign ups.

At the Back-end, many processes also interact among themselves to support the Front-part of the web shop. The front-part should also be connected to inventory control, providing up to date information about daily purchases. Ideally inventory control should be aligned with a Supplier Relationship Management system as well as with an e-CRM system. This integration will impact positively on other important processes such as customer support during as well as post purchase and fulfillment of orders. Especially in regards to fulfillment of orders, which is an important part of the back-end process a lot of attention is required in order to avoid delays on deliveries or sending a wrong product to a customer.

All these interconnections will implicate not only increased customer retention, but also the financial revenue. Finally a good relationship management with suppliers can lead to better deals which can in turn increase profits per products sold, impacting positive financial results.

7.4 CLOSING REMARKS

This chapter intended to propose a managerial framework that can help to close the gaps in performance measurement and improve strategic management at SMEs e-commerce companies in Denmark. As previously detected, these particular companies are basing their health on financial results as well as on measurements in the front part (i.e.: website and online behavior) but giving lower attention to the back-end, which also requires equal importance.

So far, the Balanced Scorecard has been the only strategic framework applied to measure e-commerce performance. It has been adapted into the context of few medium or large online organizations whereas nothing was found in the literature concerning its application on SMEs e-commerce companies. Although the model is inspired on successful models it attempts to focus on the needs and deficiencies of the SMEs enterprises. It helps the managers to visualize how the
dimensions within e-commerce interact among themselves taking into consideration customers, operations, strategies, and enablers or capabilities. Furthermore, it attempted to illustrate in a simpler way to practitioners how e-commerce operations can be aligned to strategy, helping SMEs owners and managers to overcome eventual shortcomings.
8 CONCLUSIONS AND FINAL CONSIDERATIONS

This chapter of the thesis elaborates on the conclusions that have been drawn so far, considering the key research questions explored while reviewing theory, research, cases and the findings from the qualitative interviews. Additionally, limitations will be discussed as well as scope for improvements and recommendations for future research.

8.1 DISCUSSION

The main goal of this thesis was to suggest a model for improved performance measurement in Small and Medium sized e-commerce companies in Denmark. Because of the high level of heterogeneity among online businesses, the research was limited on investigating the SMEs online business selling physical goods to consumers only through the internet. To this end, a field study in the form of qualitative interviews was initially conducted with few e-commerce practitioners investigating how performance measurement is understood, their perceptions about the topic, and their current ways of measuring the performance of their web-shops.

Answering to the first research question “What kind of measurement systems are the Small and Medium sized Danish e-commerce companies currently using?”, through the findings it is possible to say that these investigated companies are not using any kind of performance measurement systems used in larger companies, such as Balanced Scorecard or Performance Prism, nor any Business Excellence Models such as EFQM. The high level of dynamism existent in the internet business world combined to the dynamic mindset of the practitioners in this field generates a rejection and a positioning somewhat skeptical towards performance measurement systems applied in larger companies. They perceive larger companies as not being dynamic in most of the cases, wasting too much time with measurements and strategies and therefore these systems are of no use for these e-commerce enterprises. In fact, this mismatch between performance measurement systems for large and SMEs has become object of study of many researchers worldwide and it has already been detected that these models are not suitable for SMEs. But then what? It turns out that these particular SMEs e-commerce companies do follow the performance of their online businesses, but still in a very operational level. Executive dashboards are being used and furthermore they rely on pieces of software attached to their web platforms - enabling to access a lot of data on a
continuous basis with regards to online user behavior, performance of online marketing campaigns, customer relationship management, website performance (i.e.: usability, user friendliness, download speed and security), logistics and inventory. The market is developing pieces of software that can be purchased or downloaded for free, depending on the financial possibilities of each company, which will eventually impact on quality of data and performance measurement. It is perfectly possible to obtain a large amount of data, but data without purpose means nothing.

SMEs and larger companies may be on the same level or some SMEs are even better on measuring performance of online marketing campaigns and website performance (related to the Front part) but when it comes to measuring performance of the back-end, although they may obtain data, they are less specialized on applying this knowledge. Moreover, it has been detected a certain lack of integration between the front part and the back-end in these companies. Another important finding is that key performance indicators are mainly related to financial numbers. Also designing of performance measures – if done – is carried on in a very amateur way and it is not followed on a consistent basis.

Attempting to answer the second research question “What do theory and research say about Performance Measurement and Management?”, a large amount of time was employed on investigating the origins and evolution of performance measurement and management, understanding the differences between performance measurement in larger and SMEs companies as well as reviewing some of the most used frameworks (Balanced Scorecard, Performance Pyramid and Performance Prism) and quality improvement philosophies (Total Quality Management and Six Sigma) that could inspire a model for the SMEs e-commerce Danish companies. Additionally three performance measurement systems, which are adaptations from Balanced Scorecard to e-commerce organizations were also found in the literature and investigated with the same purpose. It is possible to conclude that even though, some of the exact models or frameworks are not suitable for SMEs companies; the rationale behind these models and philosophies can be adapted and applied to these companies' realities. This point has triggered the curiosity to find out whether e-commerce companies have started applying any performance measurement systems and what were their findings and benefits out of it.
Therefore the third research question “Which performance measurement systems have already been applied in the e-commerce?” investigated the existence of such companies on documented cases in the literature. Interestingly only two cases were found, and none of them were approaching the type of SMEs e-commerce companies discussed in this thesis. The first case, an e-commerce scorecard proposed by Hasan and Hendrika (2000) was the adaptation of the traditional balanced scorecard framework to an e-commerce scorecard. The organization in question was a public (and large) organization creating a website to share information and interact with the stakeholders. An e-commerce balanced scorecard was implemented to facilitate the project management. Although the staff and management were very committed to the project it was not easy to formulate suitable measures for each of the perspectives at the e-commerce balanced scorecard. The authors highlighted the need of more research into indentifying goals, measures and targets in each of the proposed scorecards, which should be meaningful and workable. The second case investigated was a BSC for an e-commerce SME proposed by Rickards & Harz. The authors developed a strategic and operational balanced scorecard that could attend the needs of medium-sized e-commerce engaged in e-commerce. Although the original BSC has 4 perspectives, this BSC had to be adapted to the organization’s needs and gained 2 others: partners’ organizations and external communication. Furthermore the internal processes perspective was broken down into innovation, quality, customer service and customer communication. Especially in regards to quality, the authors recommended the EFQM-model for Excellence or Six Sigma method in connection as being appropriate for this use. In this second case, the BSC was only implemented but no benefits after its implementation were discussed in the paper.

By observing these two situations, it was possible to notice that relatively large organizations with hierarchical levels and considerable amount of qualified employees are still the ones making use of these traditional performance measurement frameworks. What is more, these are firms that started off-line and later on implemented an website to sell products or to interact with their stakeholders - a response to the changes that internet has performed on the way of doing business. These companies already have previous experience with the so called ‘back-office’ but were learning how to deal with the challenges encountered at the ‘front part’. Ironically, what happens with the SMEs e-commerce companies trading solely online since their creation is exactly the opposite. They possess a large know-how in the front part but there is a certain lack of knowledge in regards of
measuring performance of the back-office activities. And what is more, a certain weakness on how to align operations with strategies was also perceived during the research process.

That all being said, it has led to the elaboration of the fourth and final research question “How can a new model which is more relevant and applicable for SMEs be developed?” - By answering to the three previous research questions, it was possible to obtain a reasonable amount of theoretical knowledge and some empirical foundation to develop the relevant performance measurement system aimed in this thesis.

The suggested model attempted to illustrate that interaction of Front part and Back-end is vital for the success of any online business. Customers and market will trigger the strategies, that will vary accordingly to Front or Back-office and which in turn will be supported by the operations. These operations will be performed by the enablers whose will help the online organization to deliver the promised goods and services thus generating the financial results and closing the management loop. Enablers (being web shop online and offline infrastructure, technology and IT, staff capabilities, benchmarking, voice of the customer, focus on quality to reduce number of errors, external partnerships and so on), will obviously vary accordingly with the SMEs objectives, time, and resources. Financial resources a part, this model aims to approach the important dimensions that were not receiving previous adequate attention, helping managers and owners to contemplate the full perspective as well as the separated parts.

Furthermore, key issues that should be taken into consideration while designing performance measures as well as critical questions that owners or managers may consider to be used together with this performance measurement system were also discussed in the chapter. It should be stressed that this model – as any performance measurement model – has to be used in adequacy to the organizational context and it is not a guaranteed formula for success. The mindset and commitment of owners, managers and staff will also contribute to the success of implementing such a model and to obtaining the expected benefits.
8.2 LIMITATIONS

This thesis has a number of noteworthy limitations that should be discussed. First, although the focus has been on the Danish context only, there has been certain difficulty in finding Danish scientific papers about this topic. The qualitative interviews were the main material obtained as Danish sources. Conversely, it was not possible to find published scientific articles concerning case reviews of SMEs e-commerce companies in Denmark, which would enrich the research findings even more. The case reviews used here are from other geographical contexts (Germany and Australia).

Secondly, was the limited number of informants willing to participate on the survey. Even though nine companies were contacted to participate in the research, only four of them made their valuable contribution. In regards to the other five companies, it was noticed that there was a hesitancy or unwillingness to disclose strategic issues or eventual weaknesses even being given the possibility of remain anonymous in the paper. Other constraints were lack of time, knowledge to discuss the topic or language barrier – since the interviews would have to be conducted in English.

Third, the qualitative interviews were not conducted by a professional interviewer therefore some “noise” may occur in the qualitative data. In order to reduce the “noise” the interviews have been fully transcribed from recorder to paper and again another analysis was carried out, highlighting the key findings. Furthermore, different questionnaires were applied to the limited number of respondents. The intent was to collect a broader amount of information at the same time targeting to the capabilities of each respondent.

Lastly, there was neither enough time nor scope to test the interaction of the assumptions in the proposed model nor time to discuss with the researched companies or respondents, listening to their feedback in regards to the model and its feasibility. Therefore, the companies would need some time to implement the model, observe if the gaps were closed and expected objectives achieved.
8.3 Scope for Future Improvement

Internet and E-commerce are still recent phenomena and therefore a large pool for research. Obviously, this thesis does not exhaust the answers to the proposed questions; on the contrary it has triggered a way for more research in the field - especially in Denmark where the acceptance of e-commerce is so positive. That being said, the following suggestions for future research are identified:

- More investigation concerning the interactions in the proposed model and performing the necessary adjustments before implementing it;
- More investigation concerning other possible variables which should be examined and assessed by managers who are immerse in the nature, context and functioning of the particular firm.
- Implementation of the proposed model in a Small and/or Medium sized company, observing the generated benefits in different periods of time: 3 months, 6 months and 1 year.
- Whether the same model could be applied in SMEs e-commerce companies trading non-physical goods.
- Using the model in different geographical contexts and observing its acceptance and yielded benefits. (i.e.: in emerging countries like Brazil where e-commerce is developing at a high speed and the number of SMEs enterprises is equally increasing).
GLOSSARY OF E-COMMERCE TERMS:

Affiliates: In this thesis it is also named as Affiliate networks. It is a reciprocal arrangement between a company and third-party sites where traffic is directed to the company through banner advertisements, links and incentives. In return for liking to the destination site the third party site will receive a commission or a proportion of any resulting sale.

Attrition rate: Percentage of visitors on a web site who are lost at each stage in making a purchase.

Bounce rates: It is the percentage of visitors who enter the website and then “bounce”, meaning that they leave the website rather than continuing browsing other pages within this website or webshop. In other words, if the web site is receiving a lot of visitors but they are dropping off this is a problem and it will affect among other things, the financial health of the business.

Churn rate: The percentage of subscribers to a service that discontinue their subscription to that service in a given time period.

Clicks-and-mortar: Refers to a business that combines online and off-line presence, they have physical stores.

Clickstream: It is a record of the path a user takes through a web site. Clickstreams enable web site designers to assess how their site is being used.

Conversion Rate: It is the proportion of visitors coming to the specific web site and buying the offered products or services.

CPA: Cost per acquisition, is the cost of acquiring a new customer.

Landing pages: In online marketing a landing page is a single web page that appears in response to clicking on an advertisement.

Leads: Details about a potential customer (prospect).

Pure-players: Companies which trade solely online, there are no physical stores.

Explanation of mentioned e-Commerce terms were mainly extracted from Chaffey (2006).
**Referrer:** The site that a visitor previously visited before following a link.

**SEO:** Search Engine Optimisation is a structured approach to increase the position of a company or its products in search engine natural or organic results listings for selected key words or phrases.

**Trustpilot:** Company working with security center and customer center reviews about websites in Denmark. [www.trustpilot.dk](http://www.trustpilot.dk)

**Usability:** An approach to web site design intended to enable the completion of user tasks. The better the usability, the lower the probability that a user will leave the web site.

**Web Analytics:** Techniques used to assess and improve the contribution of e-marketing to a business. It includes reviewing traffic volume, referrals, clickstreams, online reach data, customer satisfaction surveys, leads and sales.
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Class Notes


PhD Thesis


Others