How to achieve Digital Mastery at Maersk Line

- The journey towards sustainable digital innovation

Master’s Thesis

Student: Kirstine Helvig Kromberg

Supervisor: Niels Bjørn-Andersen

Cand.merc.IT (Information management)

Copenhagen Business School 04-01-2016

Number of characters: 181,671
Number of pages: 76
Index

1. Abstract .......................................................................................................................... 1

2. Introduction .................................................................................................................. 3
   2.1 Problem Statement ................................................................................................. 3
   2.2 Demarcation ........................................................................................................... 4

3. Methodology .................................................................................................................. 4
   3.1 Research design ..................................................................................................... 4
      3.1.1 Literature review on Digital Mastery .............................................................. 4
      3.1.2 Literature choices .......................................................................................... 5
   3.2 Empirical evidence: Case Study ............................................................................ 5
      3.2.1 Why a Case Study? ......................................................................................... 5
      3.2.2 Choice of company ........................................................................................ 6
      3.2.3 Research design ............................................................................................. 7
   3.3 Reliability and Validity ............................................................................................ 9
      3.3.1 Sound files and Transcripts ............................................................................. 9
      3.3.2 Interview guide ................................................................................................ 10
      3.3.3 Choosing the respondents ............................................................................. 10
      3.2.4 Generalizing based on a small pool of evidence .............................................. 10

4. Literature review .......................................................................................................... 11
   4.1 Introduction ............................................................................................................. 11
   4.2 Trends in the environment – Why we need Digital Mastery ................................. 12
      4.2.1 Moore’s Law .................................................................................................. 12
      4.2.2 Why we need Digital Mastery ........................................................................ 17
   4.3 What is Digital Mastery? ....................................................................................... 17
      4.3.1 Digital Mastery .............................................................................................. 18
      4.3.2 Having the right Capabilities ......................................................................... 18
      4.3.3 Encouraging cross functional relationships to drive change ......................... 20
      4.3.4 Building sustainable innovation ..................................................................... 22
   4.4 Industry variations for the Shipping industry ......................................................... 22
      4.4.1 The shipping industry in general .................................................................... 22
      4.4.2 Trends in the industry .................................................................................... 23
      4.4.3 IT in the maritime sector ................................................................................ 24
   4.5 The Digital Mastery Framework ............................................................................. 25
      4.5.1 Four levels of Digital Mastery ....................................................................... 26
      4.5.2 Transformation: Scope and size ..................................................................... 28
      4.5.3 The Digital Transformation Compass ......................................................... 33
   4.6 Summary ................................................................................................................... 40

5. Case: Maersk Line ......................................................................................................... 40
   5.1 Introduction to Maersk Line .................................................................................... 40
   5.2 The change history of Maersk Line ....................................................................... 41
      5.2.1 The “beginning” – 1972-1999: ..................................................................... 41
      5.2.2 Growing out of the old culture - 1999-2005: ............................................... 42
5.2.3 Process Excellence and cost cutting 2005-2012: .................................................................45
5.3 The journey to Digital Mastery..................................................................................46
  5.3.1 The Performance Culture 2012: ........................................................................47
  5.3.2 Building a Strategy and Securing the budget .......................................................48
  5.3.3 The Simplification project ..................................................................................50
  5.3.4 Transforming the IT department .......................................................................51
5.4 Summary .................................................................................................................52

6. Analysis.........................................................................................................................53
  6.1 The respondents .....................................................................................................53
  6.2 Four levels of Digital Mastery ..............................................................................54
    6.2.1 Leadership capabilities ................................................................................56
    6.2.2 Digital Capabilities ......................................................................................60
  6.3 Scope and size of the change initiative at Maersk Line ........................................63
    6.3.1: Size................................................................................................................63
    6.3.2: Scope..............................................................................................................63
  6.4 The Digital Transformation Compass ....................................................................64
    6.4.1 Framing the digital Challenge ......................................................................64
    6.4.2 Focusing investment .....................................................................................66
    6.4.3 Mobilizing the organization ..........................................................................68
    6.4.4 Sustaining the digital transition ...................................................................70
    6.4.5 Summary .......................................................................................................71
  6.5 What is next? ...........................................................................................................72

7. Discussion....................................................................................................................73
  7.1 Motivation ...............................................................................................................73
  7.2 Improving the IT infrastructure and Platform .......................................................74
  7.3 Further Changes ....................................................................................................75

8. Conclusion ..................................................................................................................75

Bibliography: ..................................................................................................................77

Appendixes: .....................................................................................................................Fejl! Bogmærke er ikke defineret.
1. Abstract

Digital Mastery is a term created to describe a state of sustainable innovation achieved through appropriate use of information technology (IT) or digital technologies. This study starts with a review of the theory of Digital Mastery and the literature upon which it is based. It continues with the case of Maersk Line, a company currently applying the theory in order to achieve Digital Mastery. The study of Maersk Line shows that Maersk Line has just entered the digital master category, but that hard work will be required to remain masters in the future. The case also shows that finding and maintaining the balance between IT and business is difficult, but since it is vital to long term success, it is worth the effort.

2. Introduction

50 years ago Gordon E. Moore predicted a doubling in the number of components per integrated circuit every year. 40 years ago he adjusted his prediction to every second year, and this prediction has been very close to the truth since. Information and digital technology is developing at a pace that makes it impossible for any one person to understand all the possibilities. This increased speed means that companies need to learn how to take advantage of new technology much faster than earlier. A new interdisciplinary theory about Digital Mastery has been developed by Westerman et al. in 2014 (Westerman, Bonnet & McAfee 2014). The theory guides companies towards a better balance between business and IT, by encouraging the IT department to take a more business oriented approach to IT development, and the business side to get a better understanding of what can be done with IT.

This thesis has two main goals. First it seeks to explain why it is important for companies to achieve Digital Mastery. Second, it looks at how the theory of Digital Mastery can be used to help companies like Maersk Line achieve better mastery over their information and digital technologies.

2.1 Problem Statement

How do companies transform their traditional IT department into a high performance unit, which can help them achieve Digital Mastery?

- What is digital Mastery?
- Why should companies strive for Digital Mastery, and how can they achieve it?
What are the shipping industry specific drivers, if any, for Digital Mastery?
What was done at Maersk?
To what extent did the transformation at Maersk bring them closer to Digital Mastery?
What are the next steps in Maersk’s journey towards Digital Mastery?

The first three will be answered in a literature review, while the fourth will be answered in a case study. The last two will be the topic of the analysis and the following discussion.

2.2 Limitations

Culture is an important part of change management and therefore the case will include some information on corporate culture. The purpose is not to do a full cultural analysis of Maersk Line, only to provide enough understanding of the culture to find any barriers or amplifiers to change.

Halfway through the writing process, access to the company became very limited, resulting in a small respondent pool. Four interviews had already been made, but all though the number was small, it provided substantial insights into relevant processes within the company. Unfortunately, it did mean that some additional questions only surfaced during the four interviews, and I have been left to speculate the answers to those. I shall point this out later in the thesis.

3. Methodology

3.1 Research design

The thesis has two components; a literature review on Digital Mastery based on relevant articles and books in the field, and a case study about Maersk Line, based on a string of interviews, a lecture by the CIO, and literature which is in the public domain.

3.1.1 Literature review on Digital Mastery

A literature review is a systematic search through relevant literature and is an essential start of any academic project (Webster, Watson 2002).

Digital Mastery is a fairly young and multidisciplinary concept which spans the fields of information systems (IS) leadership and management. It has resulted from the combination of theories from each field. In order to explain the underlying theories, articles and books were chosen.
from each of these fields. Some of the theories are well-known cornerstones of their respective fields, while others are recent discoveries. The chosen literature is spread across more than 20 years of research with the earliest article being from 1992, and the most recent from 2014. The purpose of the literature review is to gather the underlying theories and show how they are combined to form the concept of Digital Mastery. This review will create a stepping stone for analyzing the following case study. A secondary purpose is to identify any industry specific variables or trends for the maritime sector that might influence the company’s ability to achieve Digital Mastery.

3.1.2 Literature choices

The review is concept-centric, meaning that the literature was chosen for analysis based on concepts or keywords, rather than author or field.

*Leading Digital – turning technology into business transformation* by George Westerman et al. (2014) was used as a starting point. Citations from this book were used to identify earlier articles and keywords. More articles where identified by searching through the databases of *MIS Quarterly*, *Strategy and Leadership*, *Sloan Management review*, and *Information Systems Research* looking for articles associated with the identified keywords. All of these Journals can be considered leading within their respective fields. Further literature was found in books with similar keywords. Most were identified by looking at the course literature from relevant bachelor and candidate courses at CBS¹, while others were suggested by peers and practitioners in the field.

3.2 Empirical evidence: Case Study

The second part of this thesis is a case study. The primary purpose of this case is to study recent and current events at Maersk Line, in order to map their journey towards Digital Mastery.

3.2.1 Why a Case Study?

“A case study is an empirical inquiry that

- investigates a contemporary phenomenon in depth and within its real-life context, especially when
- the boundaries between phenomenon and context are not clearly evident.” (Yin 2009)

The case study method was chosen because the method is well suited for answering why or how questions, because of its explanatory nature.

¹ Ha.IT and Cand.merc.IT.
“The case study inquiry

- copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result
- relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as a result
- benefits from the prior development of theoretical propositions to guide data collection and analysis.”

(Yin 2009)

The case study method is well suited for examining contemporary events, where the relevant behaviors are not within the researcher’s control. The arrangement with Maersk Line did not provide the author with the ability to influence relevant behavior at the company, which excludes research methods like experiments (Yin 2009), or action research (Avison et al. Jan 1999).

The case study relies on a broad collection of evidence – documents, artifacts, interviews and observations – that allows for a varied approach and make it possible to triangulate the evidence. The limited time available for a master thesis made it necessary to combine interviews performed while preparing for the thesis work with historical second hand documents created by the company and other researchers. The company has been changing for more than 15 years, and is still in the process of changing, making it impossible for the author to collect first hand evidence from the entire period.

A last reason for choosing a case study is that it is well suited as a testing field for newly developed theory resulting from a literature review.

3.2.2 Choice of company

Maersk Line was chosen mainly because the author had prior knowledge of the company as well as several contacts on the inside, making it practical to execute the case study. In the end it turned out that these ties might not have been strong enough which resulted in a narrow pool of respondents.

Another reason for choosing Maersk Line was that the secondary purpose of the thesis is to assess whether the shipping industry has specific variables and trends that might influence the company’s ability and motivation with respect to achieving Digital Mastery. A maritime company was needed and preferably one that was working towards Digital Mastery. Maersk fit the bill.

---

2 The author has previously done projects at Maersk Line as well as other Maersk Group companies (SVITZER).
3.2.3 Research design

The case study is based on a combination of different sources, as described in Table 1.

Table 1 - Empirical evidence

<table>
<thead>
<tr>
<th>Firsthand data</th>
<th>Secondhand data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualitative data</td>
<td>• 4 interviews with employees</td>
</tr>
<tr>
<td></td>
<td>• Book about the culture changes at Maersk Line</td>
</tr>
<tr>
<td></td>
<td>• CIO talks by Robin Johnson October 2013</td>
</tr>
</tbody>
</table>

The following section will explain how and why these sources of evidence were gathered. The reliability and validity of the evidence will be discussed.

**Interview with employees:** When doing interviews, there is a choice of approaches: a *qualitative* approach makes use of a relatively small pool of respondents with in-depth and open questions which are well suited to the case study, while a *quantitative* approach is based on large pools of respondents who answer more standardized questions with predefined answer options. Due to the size of the company and the nature of the case study, the qualitative approach was chosen.

Four interviews were conducted with employees at Maersk Line. The purpose of these interviews was to gain an understanding of what Maersk Line has done in the past, is doing today, and intends to do in the future in order to achieve Digital Mastery - and to evaluate how far they have come in their transformation. The first of the four employees were chosen by asking the person in charge of the project at the Maersk Line who would be the best suited candidate for asking questions about Digital Mastery. The other three employees were chosen and contacted based on input from the first employee. One criterion for choosing informants was that there should be an equal amount of informants on the information technology (IT) and Business side of the company, and that there should be more than one from each side. According to Gerow et al. (2014) it is important to interview parties from both IT and Business in order to get a balanced view of how the company is actually doing. Business and IT employees in the same company do not always agree on what
success criteria for IT projects should be, and studies based on single respondents risk adopting the biased view of the respondent.

The interviews were partly structured interviews (Andersen 2009), which mean that they followed an interview guide but were open to extended questions and comments from the participants. The interview guides (see appendix A1) for the four interviews were almost identical, with a few extra questions for the employees who had worked for the company for a long time (respondents Carsten Frank Olsen and Peter Hyllested). The extra questions were designed to gain a better understanding of past transformation efforts.

The interview guide was created by using the self-assessment tool found in the epilog of George Westerman et al.’s book about Digital Mastery (2014), as well as other self-assessment questions from the same source. The self-assessment tool consists of 20 questions and was originally designed for CEOs who want to assess their company’s level of Digital Mastery. Using these 20 questions as a part of the interview guide made it possible to use the framework from the book, and thus compare the case with some of the most important literature from the literature review. In addition to the 20 questions from the self-assessment tool, 6 questions were chosen from the stage-assessment tools found at the end of chapter 9-12 in the same book. These questions were chosen to help establish a better understanding of what Maersk Line is doing to achieve Digital Mastery, and determine which stage of the transformation process they are currently working on. These 26 questions were all designed to be answered on a scale from 1-7, where 1 is strongly disagree, 4 is neutral and 7 is strongly agree. In order to be able to apply the answers to the framework, the same scale was used in the interview guide as in the book.

Finally, 3 to 6 questions were added, in order to identify the informant and his area of responsibility at Maersk Line, as well as two questions which should cover additional concepts from the literature.

In order to gather more in-depth and qualitative data, informants were encouraged to elaborate whenever they felt the need. The hope was that by moving away from a simple number, the informant would reveal information about the active transformation initiatives; which of them are working, and where more work and focus is needed.
Lecture at CBS by CIO of Maersk Line: This lecture was conducted at CBS in 2013 by Robin Johnson, CIO of Maersk Line, and dealt with how Maersk Line has transformed their IT budget and landscape and gives a good indication of the transformation initiatives implemented by the company in the recent past. The talk was filmed and is available on vimeo.com, courtesy of CBS. In addition to the video, a transcription of the lecture is available (see Appendix B).

Book about cultural change at Maersk Line: Understanding the culture at Maersk Line will be important because it will influence the future transformation at Maersk Line. Due to time and resource restraints on this thesis, it was not possible for the author to conduct an extensive and in depth analysis of the company.

Fortunately, a book was written by Lars Jensen in 2014 about the extensive cultural changes which have occurred at Maersk Line in the past 15 years. “Kulturskælvet i Mærsk Line” (2014) is based on a large body of evidence from current and former employees and provides many insights into the cultural backdrop at Maerks. For the purpose of gaining insight into the culture and the transformation history at Maersk Line, this book will be used as second hand evidence.

3.3 Reliability and Validity

The relevance of the collected evidence and the chosen respondents decides its validity; the reliability depends on how precise the evidence is, and how much it can be affected by chance (Andersen 2009).

3.3.1 Sound files and Transcripts

To improve the replicability of the conclusions drawn from the evidence, all interviews were recorded on a mobile phone, and all these recordings, except one, have been included as a digital appendix (see appendix A4). The recording from the last interview could not be added due to technical issues with the application used for the recording.

According to Andersen (2009), recording and transcribing interviews in their full length is often a waste of time, and only results in a large pile of evidence which is hard to use. Therefore a resume was made of all the interviews, it can be found in appendix A3.

---

3 The video can be found at https://vimeo.com/78141495. The password is : cio
In addition to the recordings, written notes were made during the interviews. The purpose of this was to record the numerical answers in an easily accessible format, but also to keep track of the researchers own thoughts during the interviews. These notes have been scanned and attached in appendix A2.

The hope is that these efforts to make the evidence easy to examine will make it easier for others to verify the conclusions made based on the collected evidence.

3.3.2 Interview guide

Using the same interview guide for the four interviews with employees made it possible to compare the four sets of data, and find a baseline for the company. During the interview it was clear that the questions from the book were not always easy for the respondent to understand. The interviewer had to interpret and explain some of the questions. Even though it was the same person who did all four interviews, differences in interpretation may have occurred, introducing a slight difference in the interview guides, which might impact the reliability of the evidence.

3.3.3 Choosing the respondents

As mentioned above, respondents were chosen with the help from the company. Access to and knowledge about the company was very limited, and as a result the selection ended up being impacted by who happened to have time. This might influence the validity of the evidence. Furthermore, the respondent pool is very small and that employees outside the headquarters and at other levels of the company might have had another interpretation on the situation at Maersk Line. This is unfortunate, but the results should still shed some light on what has happened at Maersk Line and provide a case which can test the theory.

3.2.4 Generalizing based on a small pool of evidence

According to Yin (2009), the main purpose of a case study is to describe the company as well as possible and to reach an understanding of the general trends which are important to the theory, and to identify variations which are specific to the case in question. In this study, only one case was used, which might make it very hard to separate the general and the company-specific variations. This should be taken into consideration when judging the validity of the identified variables in this study.
4. Literature review

The purpose of this chapter is to review relevant literature from multiple fields of study in order to provide a clear understanding of the concept of Digital Mastery. The chapter is divided into five sections: The first is an introduction to the literature and a description of how each piece of literature fits into the bigger picture. The second section looks at trends and changes in the environment to gain insight into why companies are trying to achieve Digital Mastery. The third section contains an introduction to Digital Mastery and its underlying concepts. The fourth section identifies how companies achieve Digital Mastery. The fifth section is industry specific and touches upon the findings from the previous sections, in order to identify industry specific variables or concepts which are important when looking at Digital Mastery from the point of view of a shipping company.

4.1 Introduction

As mentioned above, the review is concept-centric, meaning that the literature was chosen, read and analyzed based on its inherent concepts or keywords (from here on referred to as concepts) rather than who wrote it or which field of study it focused on.

Leading Digital – turning technology into business transformation by George Westerman et al (2014) was used as a starting point. After reading the book, concepts were identified and used to identify other relevant literature. This was done by moving backwards through citations to identify prior articles, as well as searching journals and other databases looking for these concepts. Further literature was found in books with similar concepts, with which the author had prior experience.

After reading each piece of literature, inherent concepts were identified and the table found in appendix D was created. These concepts were: trends in the environment, reasons for Digital Mastery, innovation, flexibility, alignment between IT and business, the relationship between IT and business, barriers to change, leadership and IT as complementary actors for change, change management, and shipping. The concepts were divided into four main groups that answered four different questions:

- What is Digital Mastery?
- Why do companies want to achieve Digital Mastery?
• How do companies achieve Digital Mastery?
• Are there any industry specific variables for the shipping industry when it comes to Digital Mastery?

Each of these questions will be answered in their own subsection below.

4.2 Trends in the environment – Why we need Digital Mastery

A company can be said to have achieved Digital Mastery when it has achieved a sustainable innovative capability to change processes, customer experiences or even the fundamental business model through the use of digital technologies. In order to understand why Digital Mastery is important, it is necessary to examine the trends in business environments. Digital technologies have not always been available, but are a result of a string of developments and trends in the environment. The purpose of this section is to identify relevant trends and explain how they have made Digital Mastery a necessity for companies who want to be competitive.

4.2.1 Moore's Law

The 50-year mark of Moore’s Law has led to the creation of a relatively cheap and increasingly easy-to-use world-wide digital infrastructure of computers, mobile devices, broadband network connections, and advanced application platforms. This digital infrastructure has, in turn, accelerated the emergence of new technologies that enable transformations in how we live and work, how companies organize, and the structure of entire industries. (Fichman, Dos Santos & Zheng 2014)

This is the introduction to Fichman et al.’s article, where they try to establish Digital Innovation as a fundamental concept, which should be part of the Information Systems curriculum for business students. The introduction describes one of the most powerful trends in the world today, known as Moore’s Law after Gordon E. Moore, who wrote a paper in 1965 describing a doubling every year in the number of components per integrated circuit, and foresaw that this rate of growth would continue for at least another decade. In 1975 he revised the prediction to be a doubling every two years, and for more than 40 years this has been very close to the truth. This effect and the associated developments in digital technology have caused disruptions in all industries by removing restraints and creating new possibilities that effect the way people live and do business. Although software development methodologies and processes frequently struggle to keep pace with the rate at which
hardware is developing, Moore’s Law describes an exponential growth which becomes evident in the way developments in technology keep accelerating, especially in the past decade (Westerman, Bonnet & McAfee 2014). We are entering “the second machine age” where digital technology, like computers, are doing for mental power – the ability to understand and shape our environments by using our brains – what the steam engine and its decedents did for muscle power during the first machine age (Brynjolfsson, McAfee 2014). Humanity has always stood apart from every other race on the planet because of its ability to use mental power to transform their surroundings. With the discovery of the steam engine, humanity found a way to break the limitations of our physical power which allowed us to take huge leaps in improving living standards for all. Now with the added boost to our mental capacity which is provided by digital technologies, the only limit to what we might achieve as a race is our ability to innovate and co-operate. Brynjolfsson and McAfee (2014) compare the development of the computer to that of the steam engine, and explain that like the steam engine the computer has taken many years to reach its full potential as a game changer. Computers and software will continue to evolve for many years to come, but the main building blocks are in place, and digital technologies will be as transformational to society and the economy, if not more than, as the steam engine.

**Customer-Centric markets:** The availability of the internet has shifted power towards the consumers, who seek products and services which are tailored to them. Companies who wish to stay in business need to cater to this type of customers and to do this they need to understand their customers better (Yodakawa 2007). This trend is driving companies to rethink their business-to-customer relationship and to transform the communication channels to their customers so that they can support two-way communication instead of one-way communication which was the norm in the past. Two-way communication will allow customers to give feedback, which can help the company understand their customers better.

**Big Data:** So-called *ambient* technologies, which allow companies to collect more data because sensors can be placed on anything, combined with big data analytics tools, which allow managers to analyze this increasing amount of data and find patterns, provide managers with ways to measure the behavior of a company and its clients – and as a result improve decision making and performance (Brynjolfsson, McAfee 2012). More and more companies use social media and ambient technology to collect large amounts of data in order to get a better understanding of what customers want and to glean insight into new markets. They also use this technology to keep better
watch over their value chain as well as internal processes, in order to provide customers with better feedback. Customers will soon come to expect this improved feedback, and companies who cannot provide it will lose business to those who can.

**Digital Goods:** Digital technologies are changing consumption patterns by making intangible goods and services, like music, books, information, games and other types of “software” easily available to everyone. Digitization of these goods changes their economic properties, forcing us to treat them differently than the standard physical goods and services which have been the foundation of our economy in the past. Digitization paves the way for new business models which will force a shift from the customer-centric focus to an everyone-to-everyone (E2E) economy (Berman, Marshall 2014) where everyone can participate as a seller or buyer, and where trade is mostly conducted in virtual marketplaces.

**The digital economy:** There is a broad consensus in the literature that the development in digital technologies has significantly changed the role that IT plays in the economy. As the power and ubiquity of IT grows, the use of IT has become the norm rather than the exception (Carr 2003) and we find ourselves in what Weill and Woerner (2013) describe as the digital economy. It is generally accepted that alignment between IT and business strategies and objectives creates value and improves performance (Wang 2010, Gerow et al. 2014, Preston, Karahanna 2009). What the authors do not agree on is whether IT is still a strategic factor which can be used to gain competitive advantage. The general perception is that the strategic value of IT grows, as IT becomes more powerful and widely available. On the other hand, Carr (2003) points out that competitive advantage is more often gained by having a resource which is scarce – rather than ubiquitous. Developing this argument further will reduce the strategic value of IT as an asset that creates competitive advantage, but not its relevance as a tool to increase performance and value.

*So how important is IT?* For some industries, IT has become a commodity, and the focus should be on bringing down costs, assuring that the IT infrastructure is working smoothly, and that the company stays abreast of developments in new technology, so they do not get left behind. IT may be a commodity right now, but if enough companies fall behind it will cease to be one. For other industries, IT has yet to become a commodity. As Brody and Puresswaren (2015) point out, many of the larger industries like agriculture, transportation, storage and logistics are still considered as not “IT-intensive” industries because of their bad fit with personal computers which require a stationary
office. Recent developments, like the Internet of Things (IoT)\textsuperscript{4}, has made it more attractive for these industries to become fully digital, but it will take a lot of work, and companies who get out in front will have many years of competitive advantage to gain in their respective industries.

How should we handle IT development when IT is a commodity? In the industries where IT is a commodity, IT in itself will have less strategic value. The question is not whether you use IT or not, instead the focus will be on the ability to be innovative in improving products and services, sales and marketing capabilities - or ideally both - through the use of IT. It is the proper use of breakthrough technology which will provide competitive advantage in the future (Denning 2015). As mentioned above, the speed with which discoveries of new technology occurs, is accelerating. To keep pace with this development, companies need to hone their innovative digital capabilities as well as their change leadership capabilities so that they can stay ahead of competitors (Denning 2015, Brody, Pureswaran 2015, Berman, Marshall 2014, Engel et al. 2015). This is why sustainable innovation and agility are buzzwords in the digital economy (Berman, Marshall 2014, Kolding, Robinson & Ahorlu 2009, Yodakawa 2007). This is not to say that innovation is a new concept, on the contrary. Innovation has always been a driver for business value, and it will continue to be so in the future. One of the side effects of IT becoming easy-to-use and ubiquitous is that the barriers that once prevented ordinary people from becoming innovators are diminishing. IT innovation is defined as the ability to combine knowledge about available technology with insight into unsolved organizational or societal problems, in order to create a technology based solution (Fichman, Dos Santos & Zheng 2014). With technology as a commodity, knowledge about available technology will also be easy to access.

Should we continue to invest in new technology? The answer is also yes. IT is still a useful tool and it still needs to be kept up to date. The possibilities of what can be done with IT changes almost every day, and slipping into a mindset where you believe that nothing new can be gained by IT is dangerous. Human use of steam engines has evolved over a period of nearly 400 years - the first patent is from 1606, and nuclear powered steam engines were still being built in 1990\textsuperscript{5}. Although the pace of change has increased, it feels likely that the use of Information Technology is still in its infancy.

\textsuperscript{4} The Internet of Things (IoT) is a network of physical objects or "things" which contain embedded electronics, software, sensors, and network connectivity, which enables these objects to collect and exchange data.

\textsuperscript{5} https://en.wikipedia.org/wiki/Vaygach_(nuclear_icebreaker)
**IT as a replacement for human workers:** As with the steam engine, the computer is bound to replace some human work power. The steam engine replaced many workers because of its large physical power, which made regular workers obsolete. As the steam engine was refined, more and more physical jobs were taken over by engines of various types. The people who were replaced moved into jobs that required mental effort, leaving the physical jobs for the machines. The same development is likely to happen now that machines are capable of increased mental power as well. Machines will force their way into yet another work territory which will make some types of workers obsolete (Brynjolfsson, McAfee 2014). People working in jobs with a high level of routine are slowly being replaced by computers, and as computers become more intelligent more people will be out of a job. Computers are cheaper and they can run without sleep or breaks 24 hours a day, seven days a week, without a union to argue about wages and work conditions. Computers are cheap and expendable so they can also be placed in areas where humans would not want to work, or would demand higher pay for jeopardizing their lives – like mines or oil platforms. Companies are cutting costs by substituting workers with computers, and they will keep doing so in the future. People who want to keep working in the future, will have to go for non-routine jobs. One thing that computers still do not know how to do is innovate.

The change towards jobs that require innovation and creativity provides us with two problems. The first problem is that all people can do manual labour. Some people can do “brain work”. Very few people will be fully employed innovating. The people who fear that they will not be able to carry out innovative jobs will fight the transition towards a more digitized environment, because they fear that it will cost them their jobs. This fear has to be addressed in order to overcome the resistance to change.

The other problem is that motivating people to do routine work is very different from motivation people to do innovative work. According to Pink (2010) most large companies follow what he calls the motivation 2.0 model, which is guided by two very simple principles:

> "Rewarding an activity will get you more of it. Punishing an activity will get you less of it."  
(Pink 2010)

These are the basic principles behind the “stick and carrot” rewards system, where you reward employees for wanted behaviour and punish them for unwanted behaviour. Pink states that this system works very well for routine work, but when applied to innovative work it might have the
opposite effect. Promising a reward for work well done can cause the employee to focus only on the goal and thereby losing the ability to do the “out-of-the-box” thinking that is needed to be innovative. As we move away from routine tasks towards innovation we need to rethink the way reward systems are made in order to support innovation and creative thinking. In order to motivate people to do innovative work, companies need to respond to their employees need for autonomy, mastery and purpose. Doing this will require a change of mind-set in the organization’s management by breaking free of the solid tradition of “stick and carrot”.

4.2.2 Why we need Digital Mastery

“Technology has enabled us to coordinate and amplify the collective intelligence of thousands, millions and perhaps someday billions of minds to achieve goals that would otherwise be impossible.” (Brynjolfsson, Saunders 2010)

Based on the trends discussed in the previous section, we know that IT is a commodity in some industries and is becoming so in others. This means that IT is a part of how you do business these days, and running an efficient IT department with good sound infrastructure is necessary to stay in business. We have also learned that sustainable innovation is a requirement, and that IT as a component of innovation will play a large part in the future.

In order to survive in today’s digital economy, it is important for companies to attain the ability to achieve competitive advantage by utilizing digital technologies to rethink or be innovative about the way they do business. Companies need to focus on building a sound IT infrastructure platform, but also on building change leadership capabilities and digital capabilities which will help them be innovative, and this is what Digital Mastery is all about.

4.3 What is Digital Mastery?

Digital Mastery is a fairly new concept which was introduced as a new management concept by Westerman, Bonnet and McAfee in their book Leading Digital – Turning technology into business transformation, which was released in 2014. When we look closer at the underlying theories of this new concept, we discover that there are many old ideas which have been combined and thus received new life and meaning. Digital Mastery is the extension of more than 30 years of research and development in several fields of study, and Westerman et al. have combined the best and
brightest from these fields and propose a simple framework which can be used by practitioners. This section describes some of the main concepts in Digital Mastery and shows how they resonate with earlier work.

4.3.1 Digital Mastery

“Digital Masters – Companies that use digital technologies to drive significantly higher levels of profit, productivity and performance”

(Westerman, Bonnet & McAfee 2014)

Digital Mastery is a management concept which is concerned with how companies achieve competitive advantage by utilizing digital technologies to rethink the way they communicate with customers, acquire new customers, run their operations, or the way they do business. According to Westerman et al. one of the core ideas of digital mastery is that it takes a balance between digital capabilities and leadership capabilities, as well as collaboration between IT and business people to become true digital masters (2014). To find this balance, the company must develop both digital and leadership capabilities. Development of these capabilities will be discussed in section 4.3.2. The need for a good relationship between IT and business will be discussed in section 4.3.3. The last section of this chapter will discuss agility and innovative capabilities, which are the desired outcomes of the journey towards Digital Mastery, see section 4.3.

4.3.2 Having the right Capabilities

“Companies that struggle with becoming truly digital fail to develop digital capabilities to work differently and the leadership capabilities required to set a vision and execute on it. The Firms that excel at both digital and leadership capabilities are Digital Masters.”

(Westerman, Bonnet & McAfee 2014)

Digital capabilities are defined as the ability to make the right investment in digital technology at the right time and place. It does not describe a company’s cash flow or ability to make large investments until one of them produces the desired result; instead it is about making the investment for the right reasons and achieving the desired result in the first attempt. Digital Capabilities are a combination of knowledge about which digital technologies are available and how they can support the business goals, and financial shrewdness which will allow the company to make the right
investments. The need for financial shrewdness is nothing new, it has always been part of doing business. Combining it with knowledge about the environment and what is possible in order to outsmart the competition is not new either (Salvatore 2007, Hedegaard, Hedegaard 2009). The aspect of Digital Mastery as a theory that is new, or fairly new, is the need for knowledge about digital technologies. Digital technologies have only recently become a strategic factor, which limits the general knowledge about what they can be used for. Further complications are caused by the unparalleled speed of developments in the field, which constantly changes what is possible, making it very hard for companies to stay informed. The challenge of digital capabilities is to keep track of these developments and constantly evaluate which digital technologies might be used to achieve business goals.

Leadership capabilities are defined as the ability to transform the company and gain full usage from new capabilities – or to meet new challenges. It is about top-tier leadership that creates direction, builds momentum and drives the transformation all the way home (Westerman, Bonnet & McAfee 2014). The need for leadership capabilities is not a new idea. Many researchers and practitioners have been writing books and articles about Leadership capabilities and change management in the last 20 years (Anderson, Anderson 2011, Kotter 1996, Schein 1996, Christensen, Kreiner 2008). They do not always agree on what good leadership is, but they do agree that leadership is important for change projects.

Achieving Digital Mastery is not about investing in the newest fashions in the IT industry, instead the focus is on using IT as a tool to improve customer value, and make it easier for employees to do their work by empowering them and improving business processes. Together, leadership and digital capabilities create a strong company that invests in the right technology for the right reasons, and follows up on investments all the way through the transformation process - gaining the desired results by anchoring the technology in culture and business processes (Westerman, Bonnet & McAfee 2014).

Westerman et al’s idea is that companies need digital capabilities to know when and where to invest in new digital technologies, and leadership capabilities to secure potential gains from the investment, by imbedding the technology in work processes and in the company culture (2014). This idea that both leadership and digital capabilities are needed, is supported by Wang (2010) in his article about Chasing the hottest IT. According to Wang, following IT fashion trends can have a
serious impact on performance, reputation and executive compensation. He notes that the performance impact tends to show in the long run, while reputation and executive compensation are affected much faster. Wang’s conclusion is that performance is only significantly impacted when the IT innovation is truly anchored in the company processes and culture, which takes leadership capabilities - and time - to happen. Without leadership capabilities to anchor the new technology in the business processes and culture, digital innovation will have small long term effects. The effect will only be short term and in the form of a social impact on the company’s reputation. Markus and Benjamin (1997) also support the idea by pointing to the fact that IT is not the magical bullet that it has been identified as in the past and that without leadership, it will not work.

4.3.3 Encouraging cross functional relationships to drive change

“It’s about merging the skills and perspectives of business and IT leaders so that they drive transformation together” (Westerman, Bonnet & McAfee 2014)

In addition to having both set of capabilities, Westerman et al. (2014) has the relationship between IT and business leaders as a top priority. Westerman et al. introduce the concept of Shared Understanding which is a well-known concept with roots in IT research literature. Preston and Karahanna wrote an article in 2009 where they defined Shared Understanding to be when the CIO and the Top Management Team (TMT) integrate their respective higher levels of knowledge and perspectives about business and IS knowledge, allowing them to create a shared understanding of how technology can be applied to enhance organizational capabilities. Shared Understanding makes it possible for the CIO to understand the strategic goals of the TMT and use this knowledge to influence the strategic decisions made by TMT about the use of technology for the better in the company. In addition to defining the concept they also prove that shared understanding between the CIO and the TMT has a strong influence on strategic alignment, which supports Westerman et al.’s thesis about how a strong relationship between IT and business is essential to Digital Mastery. Others have supported this idea as well. Yodakawa (2007) suggest that IT-driven business innovation should be driven by the CEO, CIO and the person in charge of the business unit which is being transformed. Researchers are not the only ones who recognize the need for a strong relationship. The importance of CIO/TMT relationships could also be found on the agenda for Digital Business 2014 published by Gartner (Lopez et al. 2014).
A common cause for a poor relationship is often the mindset of the CIO or her lack of business understanding. Across the field of research, authors agree that a good relationship is essential (Bassellier, Benbasat 2004, Feeny, Edwards & Simpson 1992, Weill, Woerner 2013, Westerman, Hunter 2009). Another thing they all agree on is that it is up to the CIO to step up and close the gap between what a CIO used to be and what is needed to become a Digital Master. This is not to say that the TMT should not work on their IT capabilities, but the CIO is usually placed lower in the hierarchy than the TMT, so getting the TMT to expand their knowledge is difficult for the CIO. The TMT on the other hand, will expect the CIO to understand the business objectives, because the CIO’s job is to work towards these objectives. A poor relationship between IT and business can harm their ability to cooperate and might cause setbacks or in the worst case stop the transformation completely.

Another cause for a bad relationship is a bad IT platform or IT infrastructure. An old IT platform with outdated legacy systems puts limitations on the company. Much can be gained from moving towards a centralized and distributed multimedia platform, which can better link business processes with suppliers and buyers (Venkatraman 1997). Without good IT infrastructure, business initiatives such as improved cycle time, implementing redesigned cross-functional processes, utilizing cross selling opportunities and capturing the channel to the customers will be hampered. The IT infrastructure is the base for computer applications and in extension the execution of business processes (Broadbent, Weill 1997). Operating with bad IT infrastructure is like running in water, it takes up much more energy and the performance result is way below what could be achieved when running on pavement.

Together with Hunter, Westerman wrote a book back in 2009, “The real business of IT – How CIO’s create and communicate value”. This book is a guide to CIOs on how they can build a better relationship with their TMT by following the path to IT value. The main topic in the path to IT value is that the CIO and the IT department need to work towards the business goals in order to prove to the business that they are dependable. As trust between the CIO and the TMT grows, the CIO will be given better options to drive IT supported change in the company. The suggested starting point for gaining trust is to bring the IT landscape and infrastructure under control, by providing the right level of services at the right price, and doing it dependably.
4.3.4 Building sustainable innovation

*Digital masters, in short, keep making digital technologies work for them even though the technologies themselves keep changing*  
(Westerman, Bonnet & McAfee 2014)

Becoming a digital master is not just about implementing digital technologies which provide competitive advantage here and now. It is about building the capability to use digital technologies to stay ahead of the competition so that when the market changes the company will change with it, or even become a driver of market changes. Digital masters are masters of digital innovation and always keep an eye out for new ways to innovate. A company starting on its journey towards Digital Mastery needs to understand that it is a never ending journey, where change and innovation must become a part of the way it does business (Westerman, Bonnet & McAfee 2014). Current trends in the environment make the ability to innovate essential to staying alive and ahead in today’s ever-changing environment. The speed with which technology is developed is increasing exponentially and companies need to hone their innovative and change leadership skills in order to keep up with the ever increasing pace of development (Denning 2015, Engel et al. 2015, Fichman, Dos Santos & Zheng 2014, Yodakawa 2007).

4.4 Industry variations for the Shipping industry

The purpose of this section is to identify trends in the shipping industry which might affect companies in the industry in their journey towards Digital Mastery.

4.4.1 The shipping industry in general

In order to identify these trends it is important to understand three things about the shipping industry in general (Stopford 2009). First shipping has played a central and important role in the global economy for more than five thousand years, and has always had a distinctive international flavor. Second, while the basic economics of shipping have not changed, the ships, technology and customers have changed significantly. The shipping trade is highly governed by the laws of supply and demand. The circumstances that influence supply and demand can change remarkably fast, and companies who want to stay alive in the industry need to be able to change just as fast. The industry has grown and developed in parallel with the world economy, exploiting and exploring the fluctuations of the trade. In order to predict future changes in the shipping industry one needs to understand the fluctuations in world trade. At the same time, developments in the shipping industry
have had a significant influence on the global economy and now more than ever help drive the world towards globalization. The third truth about the shipping industry is that it prospers during periods of political stability, which means that trends in the geopolitical environment are important indicators of how the industry might evolve. Changes often occur as short evolutionary steps followed by longer transition periods where the new knowledge or technology is adapted. IT and digital technology are examples of evolutionary technology which caused a short evolutionary period, followed by the current longer period of transition.

Randøy and Jenssen (2007) established in their study that innovation is important in the shipping industry, which correlates with the above description of the industry. Randøy and Jenssen also documented that the use of innovation champions, employee involvement, and building a closer customer relationship had a positive effect in the shipping industry.

### 4.4.2 Trends in the industry

In theory, transportation is a commodity and any maritime value chain can be used as a link between two production units in any supply chain, but in reality this is seldom the case. Transportation is highly differentiated which will always make some services more fitting than others. The increase in globalization presents a number of drivers, which encourage shipping companies to think outside the box and differentiate. Drivers include an increase in the number of competitors, higher focus on cost savings by customers and higher standards for what services are expected as part of the customer’s order-winning criteria. Last but not least, increased regulatory focus on factors such as safety and security has been introduced by customers and several international organizations (Poulis, Poulis & Dooley 2013).

According to Notteboom and Merckx (2006) the logistics environment is dominated by concepts such as global logistics and one-stop shopping. These concepts inspire a trend of integration along the maritime value chain. This trend where shipping is integrated with hinterland and local logistics operations, to cut costs and provide a cheaper and more coherent service to the customer, is evident in the liner shipping industry (Franc, Van der Horst 2010). This strategy creates value for the customers and generates revenue and increase margins for the company.

One of the challenges that integration must overcome is that the information infrastructure of the shipping company must be compatible with the information infrastructure of the landside and
logistics operations, as well as the customer. When these companies are not integrated, each of them will have their own agenda and infrastructure which complicates the production of a coherent door-to-door service further. Creating information infrastructure with the diversity needed for compatibility with all the needed supply chain links is both difficult and expensive, which encourages companies to work towards a common solution with regular business partners. It also creates an opportunity for new companies with one stop solutions that allow customers to create a perfect transport solution without having to contact the individual service providers. While providing business for the carrier companies, these solutions also siphon off some of the profit, and have a measure of control over which carrier gets the most business.

According to Poulis, Poulis and Dooley (2013), other trends in the industry are lean practices and just in time production, which both call for a higher degree of knowledge sharing across company borders, and increase the requirements for effective communication and integration of the links. Flow of real-time information along the supply chain is needed in order to address the complexity of the chain. Franc and Van der Horst (2010) also point to the trend of mega-vessels, which cause operational bottlenecks and synchronization problems within the transportation chain and increase the need for communication and coordination. Loading and unloading very large vessels is a managerial nightmare, when unnecessary movement of a unit of goods causes high additional costs, which must be avoided.

4.4.3 IT in the maritime sector

The use of IT in the maritime industry is not new. Since the 1980s, IT has played a supporting role in logistics operations, and through the 1990s it has achieved a more strategic role (Bourlakis, Bourlakis 2006). According to Bardi (2011), many companies have used it at an increasing rate, due to its ability to reduce inventory and equipment assets and improve management of information, products and cash flow. Another driver for the growth in IT usage is that the price of acquiring and implementing new IT has dropped dramatically during the last decade.

For the purpose of analyzing the use of IT, it makes sense to separate the shipping industry into an on-board and an on-shore section. On-board takes place at sea, where internet is not always

6 3rd party logistics providers like http://www.onestopshipping.com/ are numerous and provide customers with tailor-made solutions.
available or of very poor quality. On-shore facilities are similar to most other office environments, meaning that computers and internet access are commodities. The environment and working conditions, and thus the adaption of IT, is very different in these parts, and generalizing across the entire industry can cause confusion.

Information and communication are crucial to effective operation and value creation in the shipping industry and there are huge potential gains from use of digital technology - but the adoption in the on-board sector has so far been limited. Recent developments in digital technology are creating new possibilities for overcoming this obstacle and the time will probably soon be ripe for wider use of digital technologies on-board the ships.

4.5 The Digital Mastery Framework

*Digital masters excel in two critical dimensions: The what of technology (which we call digital capabilities) and the how of leading change (which we call leadership capabilities).*  
(Westerman, Bonnet & McAfee 2014)

Many books and articles have been written about the *how* of leading change. There are theories aplenty about when, how and why change should occur, and though they agree on some common steps, there are also a lot of variations. All these variations are a result of a simple fact; humans are highly influenced by their context and when involved in a change activity, the context in which the change subjects are immersed must be taken into account. So far it has been impossible for the change management field to agree on a simple solution to fit all scenarios, and new books and articles are still published in the search of the solution. This section is not an attempt to come up with such a solution or even to map all the authors who has contributed to the field; instead this section is built around Westerman et al.’s framework for achieving Digital Mastery. The framework will be described and compared to current trends in the change management literature. The purpose of this introduction is to lay a foundation for the analysis of the Maersk Line case. The intention is to use the Maersk Line case to test the framework, by using it to assess how well Maersk Line is doing, and identifying what should be done next.
4.5.1 Four levels of Digital Mastery

The first step of the framework is to assess the current status of the company. We need to understand where we are before we can decide where we need to go and how. To do this Westerman et al. (2014) introduce a self-assessment tool and four levels of Digital Mastery. The self-assessment tool allows CIOs or other practitioners to assess the current status of the company, by answering 20 questions; ten questions to determine leadership capabilities and another ten for digital capabilities. Each question is given a score of one to seven where one is extremely negative, four is neutral and seven is extremely positive. The scores for each category of ten questions are added and the result is used to place the company in one of the four levels of Digital Mastery introduced below. Westerman et al. defines the line between good and bad digital capabilities to be 42 and the line for leadership capabilities to 43. Westerman et al. provides no explanation for these numbers or the difference between these numbers. Assuming that 10 is the lowest score and 70 is the highest while 40 indicates a neutral score, it makes sense that a score above 40 is positive while a score below that is negative. Why the company needs a very marginally higher leadership score than digital score is uncertain.

Worth noting about the matrix and the four levels is that there is a huge difference between a company with a score of 43 and a company with a score of 70. This means that even if a company has just clawed its way into the Digital Mastery square with a score of 42/43 in each category, it is not doing nearly as well as the company with much higher scores. There will also be a difference between digital masters depending on whether one of their scores is much higher than the other. An example would be a digital master with a high digital score and a low leadership score. The point is that even if a company is placed in a level, there is bound to be differences between companies in the same quadrant, again making it hard to give specific guidelines on what the company should do to get better. In this case it is important to look at which category is doing worst and then look at the ten questions for this category. The questions with low scores will give a good indication on where work should be done in the future.

According to Westerman et al. there are four levels of Digital Mastery which can be put into a two-by-two matrix where the leadership and digital capabilities are used as dimensions (see Figure 1 for illustration). These levels are; Beginners, Fashionistas, Conservatives and Digital Masters.
Beginners are the level where both digital and leadership capabilities are low, and can be seen as the beginning of the journey towards digital mastery. There can be many reasons for why companies are at this level, but often it is because of regulatory challenges or privacy concerns in their industry, which reduce the digital opportunities.

Fashionistas are the level where digital capabilities are high but leadership capabilities are low. These companies ride the technology wave like a surfer, staying on top of the market trends. Unfortunately the lack of leadership capabilities prevents them from harvesting full use of all this technology. Companies in this group have bought and implemented many systems over the years, and their infrastructure is typically chaotic. In order to achieve Digital Mastery, a little spring cleaning should be done to their infrastructure. Building on top of these chaotic infrastructures will only hinder new initiatives.

Conservatives are the level where leadership is high and digital capabilities are low. These companies are masters at making transformations stick and avoiding failure, but lack the guts to experiment with new digital initiatives. As with the beginners, regulations in the industry often play a part in why these companies are over-cautious. On the positive side, companies at this level should have a fairly clean infrastructure depending on their age.

Digital Masters are the final level, where both leadership and digital capabilities are balanced and support each other in achieving competitive advantage. A warning here is that this balance is fragile and these masters must forever stay vigilant to keep the balance and avoid slipping back into Fashionistas or Conservatives.
These four levels of Digital Mastery can be used to assess where the company is in its journey towards Digital Mastery, and identify the next steps.

### 4.5.2 Transformation: Scope and size

This section is about the size and focus of the change needed to achieve Digital Mastery. According to the framework, the size and scope of the change initiative are important factors.

**Size:** It is important to understand the appropriate size of the change needed to achieve Digital Mastery. Being a digital master means that digital is in the bloodstream of the company. It has to be anchored in the culture and business processes of every business unit. To achieve this, the change has to be a complete transformation of every layer of the company. Achieving Digital Mastery will only happen if the entire company is prepared to follow a similar path. Westerman et al. (2014) suggest three categories of change; substitution, extension and transformation. Anderson and Anderson (2011) identify three very similar categories of change initiatives, which support Westerman et al.’s number and definitions. The main difference between these alternative definitions is that Westerman et al. are focused on IT-enabled changes while Anderson and Anderson are looking at change in general.

**Substitution** describes the small change initiatives where an existing skill, method, performance standard, or condition is changed because of its failure to measure up to current or future needs. The IT example here is that one type of technology is exchanged with something else. These changes are “within the box” and are motivated by a need to do better than others or do more of what is already done. Developmental change is about growing, and stretching to improve performance levels, but it does not deliver the widespread transformations needed to achieve Digital Mastery (Westerman, Bonnet & McAfee 2014). This type of change is very useful in the first two steps of the path to IT value - and after the company has achieved Digital Mastery and wants to remain the best of the best. General examples of developmental change are teamwork exercises, process improvement or training (Anderson, Anderson 2011).

**Extension** describes medium sized change initiatives, which significantly improve performance or functionality of a product or service. This type of change improves “what is” without changing it into something else (Westerman, Bonnet & McAfee 2014). The focus is on improving and extending current capabilities as a response to more significant shifts in environmental forces or
marketplace requirements for success. During this type of change, the organization must let go of the old way of operating and move through a transition while the new state is being put into place. This requires a change in selected business processes, but not necessarily the culture (Anderson, Anderson 2011). This type of change is still not big enough for what we need in order to achieve Digital Mastery. General examples of transitional change are reorganizations, simple mergers or consolidations and installation of new technology which do not require any major changes to mindset or behavior.

Transformation describes the big change initiatives which have a fundamental redefining focus of processes or products. This is the most complex type of change an organization can face today. The transformation brings on a radical shift from one state of being to another, so significant that it requires a shift of culture, behavior, and mindset to implement successfully and sustain over time (Westerman, Bonnet & McAfee 2014). To do this the transformation demands a shift in human awareness that will alter the way the people in the organization see the world, how they understand and interact with their customers, how they do their work, and how they perceive themselves. The new state that results from the transformation is largely uncertain at the beginning of the change process. It emerges as a product of the change effort itself (Anderson, Anderson 2011).

Anderson and Anderson (2011) ask two questions that an organization must answer in order to know whether Transformational Change is needed;

1. Does your organization need to begin its change process before its destination is fully known and defined?

2. Is the scope of this change so significant that it requires the organization’s culture and people’s behavior and mindsets to shift fundamentally in order to implement the changes successfully and succeed in the new state?

For companies who want to achieve digital mastery the answer should be “yes” to both of these questions. According to the DTC framework, transformational change is the right category of change for achieving Digital Mastery. Fichman et al. supports this by defining digital innovation as;

A product, process or business model that is perceived as new, requires significant changes on the part of adopters, and is embodied in or enabled by IT.

(Fichman, Dos Santos & Zheng 2014)
This implies that innovation involves “significant changes” and excludes mundane and low complexity changes, such as implementing a simple, well-understood software package for automation of some narrow task which does not require significant organizational changes to gain intended benefits. The main purpose of Digital Mastery is to become masters of digital innovation and “practice makes perfect”, meaning that in order to become digital masters companies need to make many significant changes to either products, processes or business models.

The reason why it is important to identify the type of change is that it influences the need for leadership capabilities. All change is dependent on leadership, but with size and complexity comes greater demands for top level involvement. We already know that leadership capabilities are important to Digital Mastery; now we have seen that it is the size and extent of the change effort that make it so.

Focus areas of interest: In addition to finding the right size and complexity of the change initiative, it is important to decide on the focus for the change. Again Westerman et al. suggest a number of options which are supported by other authors. These are; customer experience, operational processes and products and business model (Fichman, Dos Santos & Zheng 2014, Westerman, Bonnet & McAfee 2014). These options represent areas of interest, where differentiation from competitors can give an advantage.

Changing the Customer Experience is about reforming the way the company perceives its customers and how it interacts with them. This can be done by inserting technology into the customer experience. Technology can be used as a tool to get closer to customers, facilitate communication and improve the analytical abilities of the company (Westerman, Bonnet & McAfee 2014). Developments in new digital technologies have created new possibilities and made the unimaginable possible. Creating a digital customer experience will make it easier to reach and engage the customers, use customer data to target segments or specific customers, and to blend the physical and digital customer channels into one coherent customer experience. This type of change will mainly affect the customer facing business units, while other units will only be affected lightly in areas where they are connected to the customer facing units. The challenge here is to make sure that the change is anchored in the entire company, and not just the company facing business units.

Changing the operational processes is about changing the way the company works internally, by virtualizing the workflows through digital technology. The purpose is to allow companies to
leverage their global knowledge and scale by separating the work processes from the physical location of the work itself, and providing the relevant information to decision makers regardless of source.

This type of change can be done on two levels. On the lower level, the purpose is to digitally optimize the internal core processes. Often it is a race to catch up to what everyone else is doing, making changes in order to reach the same level as competitors on price, quality and product (Westerman, Bonnet & McAfee 2014).

According to Fichman et al. (2014) there are two categories of processes: technical core processes and administrative core processes. The technical core processes include areas such as inventory management, or customer surveys, while the administrative core processes include organizational forms and governance structures. Most process changes start with a focus on transforming a technical core process by applying some form of technology to it. Eventually the change process needs to move on from the technical core to the surrounding administrative processes, making the appropriate changes to support the new technical core process.

When all the processes are optimized and digitized the company has to move to the upper level, where technology will allow the company to rethink the way they do business. This is done by breaking free of outdated assumptions about what you can and cannot do with technology, and thinking outside the box. This level is about doing something new which nobody else does, and differentiating the company from competitors (Westerman, Bonnet & McAfee 2014).

Another important thing to keep in mind when changing operational processes is that, in order to become a digital master, it is important that the focus is on rethinking the way business is done, and not on fascination with new technologies. It may be that others have used mobile technology to do marketing, but there could be other digital options out there which are better suited, that no one has thought about yet.

**Changing the product and or the business model** is the introduction of a new product or service that is either embodied or enabled by digital technology (Westerman, Bonnet & McAfee 2014). In the past introducing a new product was often fairly simple. All the supporting processes, i.e. production, sales, marketing, were created to fit the product - and nothing else. Today, due to
changes in the market, there is very often more than just the product which is for sale, making it necessary to reinvent the business model. A business model defines how value is created and delivered to customers and how this value is converted to profit. Cusumano (2010) introduces two new business models for services or platforms, where physical products and complementary services are combined; this is rapidly becoming the norm. Changing the business model often involves changing or creating new operational processes and customer experience (Fichman, Dos Santos & Zheng 2014). Introducing a new business model can be both simpler and more complex than changing existing processes or the customer experience. Simpler because the project is new and mostly free of attachments to existing processes. Old companies with a lot of legacy systems and processes often prefer to start new business models from subsidiary companies to allow the project team to be innovative and think outside the box. The added complexity stems from the fact that everything is new, and so focus must be given to both processes, product and customer experience at the same time.

Digital masters use digital technology to provide extra services to complement the old as well as new products. They reinvent the entire business model by changing everything, including customer experience, operational processes and economic formulas. Sometimes this just involves selling the same thing as before in a totally transformed way, but other times the markets change too much forcing the company to reinvent themselves by changing what they sell.

Westerman et al. suggest that a choice between an offensive and a defensive strategy is required. The choice is between being on the defensive; slowing the decline of old business models in order to buy time to raise the capital to make the transition when there is no longer a choice, and being on the offence; striving to be the first mover, disrupting industries and competitors by introducing new products and services or by substituting old ones.

In contrast to the three size options, where the transformational option was the only path to achieving Digital Mastery, all of the focus areas of interest may be useful steps on the path to Digital Mastery. Even if changing the business model involves changing processes and the customer experience, it might not be the way to go, at least not at first. Becoming a digital master is about differentiating the company from its competitors by using technology, but there is no easy answer to the question about what should be changed. The answer to the question is influenced by
the company and its environment, and in reality the answer is probably that all of them need to be done in the long run, but that you should start with the most critical.

In order to choose the course of action, the company should investigate how they can deliver new value to customers and create a vision of how the company should look in the future. From there they need to look at available technology and how competitors or players in other industries have solved the problem, and use this to create a roadmap from the present state of the company to the state where the vision has come true.

The framework fails to give a clear guideline on how to begin or what area of interest to start with. The framework is designed to be used by practitioners in every industry where IT might have strategic value, which is to say most industries today. Because each industry is different and market situations are constantly changing, it is next to impossible to come up with guidelines on which digital technology is right for your company. This is the paradox of specialization vs. generalization. Most authors of change management books, also the case with Westerman et al.’s book, write their book in order to make money from selling the book, and potentially from seminars or consultancy jobs where they help practitioners use the book. The paradox is between writing a book which is specific enough to be useful, but general enough to attract a wide pool of potential buyers, who will be left with a few questions they need answered, preferably by a highly paid consultant or the author of the book.

4.5.3 The Digital Transformation Compass

Westerman et al. (2014) include a practical section where they introduce their own change management tool; the Digital Transformation Compass (DTC). The purpose of this section is to present this tool and briefly discuss its strengths and weaknesses compared to other change management tools.

Like most of the change management tools developed today, the DTC is a circular four phase framework for driving Digital change. In the past 20 years the change management field has worked its way from change being a linear process with a well-known start and end point, to a more circular perspective where each change process leaves the company ready to start on the next change. 20 years ago the norm was for companies to execute large change projects that took several years to implement, but where the change, if successful, added value to the company for many years into the
future. Today the speed of development is so fast that a change implemented last year might already be irrelevant next year. Therefore, a company always needs to be ready to change, and last year’s change must be used as a stepping stone or a platform for next year’s change project. Current change management frameworks like DTC have a circular design to support this need for constant change.

Looking at the field of change management today, there is some disagreement on the number of phases, it often varies between three and four phases but Kotter had as many as eight (Anderson, Anderson 2011, Christensen, Kreiner 2008, Fichman, Dos Santos & Zheng 2014, Kotter 1996, Westerman, Bonnet & McAfee 2014). Even if there is a difference in the number of phases, there seems to be a consistency with respect to the components that need to be present in a change process. The use of phases is mostly to couple the components together in manageable sizes, and the disagreement lies in what a manageable size is and how the components best fit together. An example is that all the frameworks agree that to begin a change process; we need a so-called burning platform, a vision to steer towards and buy-in from the top management team. In DTC there is a startup phase, Framing the digital challenge, where the need for change is identified and a vision is created and shared with the top management team. In Anderson and Anderson’s framework it is the same (Anderson, Anderson 2011), while Kotter with his 8-step change process has divided it into three separate steps, where step 1 involves identifying or creating a burning platform, step 2 is getting buy-in from the top management and step 3 is building a vision and a roadmap (Kotter 1996). The structure of the DTC is very similar to most other frameworks.
available. What is unique to this framework is that it is focused on IT projects as the driving force for organizational development and learning. In the DTC, all changes start with an opportunity for new IT or digital technology to add value. This makes the framework well-suited for IT driven change, because it has some specific insights on how IT will influence a change process. It also makes it less useful for companies running change where IT is not in focus.

**Phase 1: Framing the digital Challenge**

Creating and sharing a transformative vision is probably the most important step in the entire change process. As mentioned above, the need for a burning platform and a clear vision is recognized by most frameworks (Fichman, Dos Santos & Zheng 2014, Anderson, Anderson 2011, Christensen, Kreiner 2008, Kotter 1996).

The purpose of a transformative vision is to motivate the entire company to move in the right direction. Often, employees at the lower levels cannot comprehend the full effects of the changes that constantly occur in the environment. Without this understanding, they have a hard time accepting the need for change. The purpose of the vision is to provide them not just with understanding of the perils that threatens the company, but also with a clear picture of what the company must become in order to survive these perils. The vision must be built on the strengths of the company, it must engage employees and evolve over time, forever changing to take developments into account (Westerman, Bonnet & McAfee 2014). Additional insight about the purpose of a transformative vision can be found in other frameworks. It is important that the vision includes an understanding of current and future core competencies (Voss 1996), without this understanding, it will be difficult to create a roadmap. Building a transformative vision, which incorporate changes in the culture and structure of the company, is paramount to clearing the path for groundbreaking results (Anderson, Anderson 2011). It is the idealistic and unrealistic quality of the vision which makes it perfect as a steering tool (Christensen, Kreiner 2008). Aiming for the pot of gold at the end of the rainbow might seem far-fetched but often that is the kind of vision you need to create, in order to motivate people to be creative and think out of the box. Creative thinking and innovation is often what is needed in order to get the company in the right direction. When the vision is created, it must be shared and accepted by the entire company. These additional insights about transformative visions, correlate very well with the DTC, which states that the need for a vision is a general component for change processes.
Phase 2: Focusing investment

The second phase, *Focusing investment*, is concerned with planning the change by creating a roadmap, which is a more detailed plan for how to get from the current status to a reality where the vision has become true. The purpose of the roadmap is not to create a step by step recipe for how the company will achieve the new state. An important aspect of planning transformational change is a recognition that the future is never entirely predictable, which means it is impossible to make a complete actionable plan. The purpose of the roadmap is to create an understanding of how current strategic assets and capabilities must be put into effect and how, and which new ones must be nurtured in order to be prepared for likely scenarios. The most important fact about this roadmap is that, like the vision, it must be changed and kept up to speed with the events and changes which occur from the moment the company embarks on its change mission (Westerman, Bonnet & McAfee 2014). This view of the roadmap is shared by several other authors (Engel et al. 2015, Orlikowski 1996, Markus, Benjamin 1997, Orlikowski, Hofman 1997).

It is also during this phase that funding for the change is secured. The real value of digital transformation comes from the ability to continuously “re-envision” how you can extend your capabilities to increase revenue, cut cost, or gain other benefits. The initial investments become the foundation upon which additional strategic investments are made (Westerman, Bonnet & McAfee 2014). Additional insights about the roadmap are offered by Christensen and Kreiner (2008). The roadmap is a compromise between realism, which will make it credible to investors and stakeholders, and symbolism, which will allow employees to interpret and be creative. It is this creativity which will allow the employees to think outside the box. When the top management creates the roadmap they do not possess enough knowledge to describe exactly how the vision can be met. It is only when the vision, roadmap and the unmet problems are combined with the specialist knowledge of the employees that innovation happens and the real solution to the problem will present itself. The roadmap must be specific enough to identify the first investment, but then allow room for innovation to happen; otherwise the transformative vision can never be met.
Phase 3: Mobilizing the organization

In order to successfully implement change, both line managers and IT specialists must give up their belief in the magical power of IT. The hard reality of IT-enabled transformation is that change is everyone’s job.  

(Markus, Benjamin 1997)

The third phase, Mobilizing the organization, is the implementation phase. This is the phase where the change is pushed out into the rest of the organization. The roadmap is followed as long as it makes sense, and then adjusted to take unforeseen events into account.

There has been some discussion about whether change should be imposed from the top-down or if it should spring up from the ground in a bottom-up approach. According to Yodakawa (2007) it should ideally be a bit of both - a top-down vision and investment strategy combined with a bottom-up effect caused by the innovative capabilities of employees at all levels. The key to change is to realize that change is everyone’s job, and that both leaders and regular employees need to participate in the change effort in order to be successful. The vision and engagement of the C-level executives must help shape the culture, payment-schemes and other forms of recognition which will support and encourage employees to innovate and live the change (Engel et al. 2015). In DTC, leaders must embrace the vision and act as role models for the change, and employees must be engaged in the development of the best solutions. It is important to open channels of communication between top management and employees at all levels. The channels will allow the leaders to gather ideas and opinions from employees as well as securing buy-in from them (Westerman, Bonnet & McAfee 2014). This suggests that Westerman et al. (2014) supports the notion that it must be both a top-down and a bottom-up effort.

Again this phase is present for all authors but the process of implementation is often where the frameworks find their uniqueness. The DTC involves the use of digital champions and a Quick-Win strategy\(^7\), claiming that both are paramount to successful digital transformation. The purpose of digital champions is to form networks which are spread across silos\(^8\) and employment levels which

---

\(^7\) A quick-win strategy is a strategy composed of many smaller successive objectives where each objective can be achieved relatively quickly. The success of each objective is celebrated in order to win over more people for the next sprint.

\(^8\) The metaphor is that each business unit in the company is like a silo and that corn, or in this case work, in one silo cannot be mixed with work from another silo. These barriers can be both formal and informal and restrict cooperation
can help secure the change across the entire organization. These champions must be savvy in both business and technology in order to get their message across, and in order to network with each other. The Quick-Win strategy will allow the company to make every completed step of the roadmap visibly to the company, thus adding fuel to the change. There is nothing more motivating than seeing the success of others and being given the opportunity to join the winning side. Most digital change processes are driven by the IT department and the Quick-Win strategy is an important tool which can be used to sell the change to other departments, which will allow the change to spread outside the IT silo.

**Phase 4: Sustaining the digital transition**

The fourth phase, *Sustaining the transformation*, is the phase where the transformation is anchored in the organization. Reward structures are aligned, evaluation is done, and monitoring is put in place to prevent the company from slipping back into the old practices. This is also where governance structures are put in place for sustainable innovation.

Sustaining the transition is both about consolidating results which have been achieved and keeping the pace up on ongoing transformation initiatives. After the initial sprint, when change has become part of the everyday life of the organization, the TMT often lose interest and start working on other projects, which can cause the change process to grind to a halt. This is the most dangerous time of the change process, and it is often during this phase that change projects fail. Westerman et al. (2014) suggest three activities which can help keep the pace up on the change; *Building foundation capabilities, Aligning reward structures* and *Measuring, monitoring and iterating*.

*Building foundation capabilities* is about building the fundamental capabilities, digital and leadership capabilities as well as a strong IT-Business relationship, which will allow the company to drive the change. This is about understanding what capabilities you have and what you need and then strive to close the gap, by hiring, training, partnering, acquiring or incubating the right type of capabilities. IT is also about building a strong digital platform which provides all the employees with the information needed to make the right decisions and coordinate between different levels and units of the company. There is nothing more disrupting than a malfunctioning IT platform. If the IT
department is unable to provide stable infrastructure, how then can they be trusted to drive change and provide strategic value to the firm (Westerman, Hunter 2009)? With faulty infrastructure as the foundation for the newly implemented digital technologies, chances are that it might crumble like a house of cards, when one of the lower cards is removed. A good platform will also allow the company to reach out to their customers and use them as a source of inspiration. Customers are a good source of information, in identifying new problems, and potential solutions. A good relationship with customers is therefore important when creating new products or redefining the customer experience (Westerman, Bonnet & McAfee 2014). This focus on infrastructure and common platforms across the entire company is one of the unique traits of the DTC. The other frameworks are focused on general change processes and do not include IT specific initiatives like the creation of digital capabilities. The DTC is uniquely qualified to handle companywide IT changes because of this unique insight into what is special about IT changes.

*Aligning reward structures* and *Measuring, monitoring and iterating* is about reinforcing the change initiatives by aligning the reward system and other performance measurement systems with the vision and roadmap. It is about rewarding employees who go the extra mile to secure the change, and who play a role in achieving change results. Using strategic scorecards and key performance indicators (KPI) to measure the change initiatives and their success is important in anchoring the change in the daily work life (Westerman, Bonnet & McAfee 2014). Employees want to do a good job and are to some extent driven by financial and social rewards. Aligning reward systems with the change goals will motivate employees to work toward these. Using KPI and stage-gates provides a kind of structured autonomy that encourages employees to be creative and come up with innovative solutions (Engel et al. 2015).

The DTC holds very little insight on how to build these payment schemes. To gain further insights a practitioner needs to look at the field of behavioral science and economics. Researcher from both fields have discussed the best way to motivate people by the use of payments schemes for a long time, and still there exists a divide between those who believe in monetary rewards and those who believe that money will only get you to a certain point after which it will become a hindrance. Designing rewards systems can be challenging, and according to Jacobsen and Thorsvik (2008) needs to involve more than just monetary rewards. Studies have shown that when rewarding workers who do tasks that involve more than rudimentary cognitive skills, like knowledge workers, monetary rewards can have a negative impact on performance. This means that when motivating
people to be creative and innovative the reward system needs to be about more than just money (Pink 2010). Knowledge workers need to be paid enough so that money is not an issue, and after that rewards must take another form (Mashlow 1943). The three factors that motivate knowledge workers are autonomy, mastery and purpose. These factors must be supported by the governance structures, the culture and the reward system if the company wants to motivate its knowledge workers (Mashlow 1943, Pink 2010, Jacobsen, Thorsvik 2008). In many companies, digital transformation will require a significant shift in the direction of more creativity and innovation for a large group of people. Therefore, it is highly likely that the reward / recognition mechanisms in the company will need a significant overhaul, if the effect is to be sustained.

4.6 Summary

Trends in the economy and the shipping industry have caused a need for companies to become masters at digital innovation. Companies who have achieved this have been identified by Westerman et al. as Digital Masters. In the process of identifying these companies they built a framework which should allow others to follow in the footsteps of these masters. This framework, the Digital Transformation Compass, has been described above and will be used to analyze the progress of Maersk Line.

5. Case: Maersk Line

The purpose of this case is to provide a real-life example of a company trying to achieve Digital Mastery. During the last 15 years Maersk Line has gone through a series of change initiatives, spurred by changes in the environment and the container shipping industry. This chapter will look at how Maersk Line has changed in the last two decades, and how this transformation has prepared Maersk Line for the changes yet to come. The case will then be used to test the DTC framework in the next chapter.

5.1 Introduction to Maersk Line

Maersk Line is a large container shipping company. The Maersk Company was founded in 1928 and has grown from a small Danish company to a large group constellation of several companies where Maersk Line is responsible for container shipping, while other companies provides several supplementary services worldwide. This group is called the Maersk Group, and the headquarters are
is still located in Copenhagen, Denmark. The Group employs approximately 89,000 people, in many diverse business units⁹ which are spread across 130 countries.

5.2 The change history of Maersk Line

Maersk Line has a long history of change, as a result of several simultaneous trends in the environment and a series of overlapping initiatives executed by the company to keep up with these trends. This section will provide an overview of the trends and the resulting changes in Maersk Line, based on Lars Jensen’s book about the cultural changes at Maersk Line (2014) covering the period from 1972-2011.

5.2.1 The “beginning” – 1972-1999:

In 1972 Maersk Line entered the new liner shipping industry (see Appendix C for a complete timeline of important events). At the time, the number of containers being transported was increasing by an average of 9% every year, and even in periods of recession it was a growing industry. The growth was largely supported by the increase in outsourcing to Asia and the restructuring of the cargo from single item goods to container goods. There was a lot of unclaimed territory all over the world and Maersk Line was very good at sending young entrepreneurial people out to start their own offices. The result was a large number of independent offices, who primarily focused on container shipping, adding other services when they saw an opportunity to make extra money. These offices had their own ways and systems for doing business, and email communication and the core values were the only commonality.

The number of containers being moved was still relatively small, and differentiation from competitors was important in securing customers. The startup period at Maersk line was highly influenced by Mr. Mærsk Mc-Kinney Møller who was the soul and embodiment of the five core values which are; Constant Care, Humbleness, Uprightness, Our Employees and Our Name. Maersk Line built its business on these values and they quickly found a niche where great customer service and timeliness were value-adding attributes that customers were willing to pay a premium for.

In 1993 the company launched the Maersk International Shipping Education (MISE), with the purpose of educating young people to be the future leaders of the company, and to prepare them for

⁹ [www.maerskline.com/da-dk/about/facts-figures](http://www.maerskline.com/da-dk/about/facts-figures)
their first assignment as “king” of their own country office. These young men were sent out into the world to establish their own offices and help cement the culture outside the Danish headquarters. These “country kings” were given complete freedom, and as long as there was a positive number on the bottom line, the home office did not ask many questions about why or how business was done. Several initiatives which had little to do with liner shipping, but more to do with complimentary services, were added to the portfolio in these offices and, if they proved a success they, were adopted elsewhere by other kings. Mistakes resulted in a scolding from superiors, but were otherwise accepted as a necessity of learning the ropes of the trade. This approach allowed the young men to be very innovative and to adjust any aspect of their business, including IT, customer experience, products, processes and business models, to cope with their surroundings.

5.2.2 Growing out of the old culture - 1999-2005:

In 1999 the industry began to change; the amount of freight was growing very quickly and new alliances between competing firms were driving profit margins down. The explosive but natural growth of Maersk Line was considered insufficient to achieve the desired market shares, and Sea-Land and Safmarine were acquired to increase market shares of the American and African markets.

The acquisition of these two companies caused several problems which forced Maersk Line to make changes to accommodate their new size, and the cultural differences between the old Maersk Line employees and the newcomers from Safmarine and Sea-Land. The acquisition of Sea-Land also added a Service Center in Manila, which was to play an important role in the changes which occurred during the next 15 years.

Maersk Line approached the two acquisitions differently. While Safmarine was a small company which largely remained untouched as a separate unit, Sea-Land was far too large for this, being almost as big as Maersk-Line.

When Sea-Land was merged with the Maersk-Line offices it caused a culture shock for the Sea-Land employees, and the result was that after a few years very few Sea-Land employees were left. Even though Maersk Line failed to retain most of the Sea-Land employees, the acquisition in itself caused the beginning of cultural and organizational change.
In the years from 2000 to 2005, three initiatives were implemented in response to the new size of the company. The first initiative was an internal job-database which was rolled out in 2000 to handle internal job-rotations. Before this database was implemented, reassignments had been handled by the HR department, who received request from managers when they had need of a new employee, and then they assigned the employee they felt were best suited for the job. This employee was often someone from headquarters, because the HR department knew them best. This tendency to choose from the usual suspects meant that most management posts, both in Denmark and other countries, were given to Danish nationals. The database made it possible for managers to publish vacant positions, and employees from the entire company could apply for the new positions. The sudden rise in employees had made it impossible for the HR department to know all employees well enough to be able to handle the assignment of vacant positions.

The second initiative, which was rolled out in 2003-2005, was the formalization of company values. Mr. Møller had been one of the strongest cultural artifacts in the company, and when he decided to withdraw from the daily running of the company, he felt that the company values had to be formalized in order to survive without him. The formalization work was done by the top 50 executives who had to interpret the five original values, and define how they should be interpreted in the future. In some cases, the resulting interpretations were quite far from the current understanding in the company. Even though steps were made to secure the values in the culture, the result was a considerable weakening of the values, not only as cultural drivers, but also as drivers for competitive differentiation.

The third initiative was the Starlight Strategy which was rolled out in 2002-2004. The purpose of the strategy was to define container shipping as the core business, and redefine the way the company should compete now that it was almost twice as big as the closest competitor. The strategy involved a massive effort to cut costs. One of the ways to reduce cost was by questioning the belief that other Maersk companies were cheaper and better than the competition. Before the Starlight Strategy, companies in the Maersk group had been the first choice of suppliers. After examining the market, it was obvious that costs could be reduced by using other service suppliers in some situations. The strategy also involved a restructuring of decision-making process towards a more centralized area based management, instead of the old nation-oriented structure. The Starlight Strategy clashed with the strong entrepreneurial culture where the local managers had full autonomy to do what they felt was best, as long they made a profit. Reassigning the right to make
decisions to regional offices took away this autonomy and caused anger and resentment in the national offices, who felt that their powerbase was under attack. The resistance of the old culture was so strong that the Starlight Strategy was considered a failure in the end, because it failed to centralize decision rights completely, while the confrontation with the old culture had weakened that culture considerably and helped cement the new interpretation of the company values which were rolled out in parallel.

In 2005 P&O Nedlloyd was acquired, to strengthen Maersk Line’s Route Leadership on the routes between Asia and Europe. Lessons learned from the Sea-Land acquisition were used to improve the process and from a human resource perspective it was a success. Maersk succeeded in retaining more of the P&O Nedlloyd employees, including a lot of the top-level employees, and the changes in the culture, the result of the Starlight strategy and the Sea-Land acquisition ensured that the culture shock was smaller for the P&O Nedlloyd employees. The acquisition was not without problems and from an IT perspective the acquisition is seen as a total failure. Six months before the acquisition of P&O Nedlloyd, Maersk had rolled out a new set of IT systems intended to handle most of the sales process. The purpose of the systems was to make it simpler and faster to process customer requests, all the way from the initial contact, and through to billing and payment. Unfortunately the systems collided with the old culture and ran into trouble. Due to the decentralized nature of the company, the sales process varied enormously from country to country, and this caused problems in the implementation of the new system. People outside headquarters did not recognize the process which had been built into the systems, and six months had not been enough time to train the sales personnel in the new systems and process. A workaround solution was implemented in the form of super users who could solve problems by bypassing the system on a case to case basis, and this had worked for the Maersk employees. When P&O Nedlloyd was added to the systems at the same time, the super users were overloaded and the workaround system broke down. Customers were affected by this break down and Maersk started to loose otherwise loyal customers to the competitors. In an effort to solve the problem quickly, close to 3,500 people were hired mainly in the service centers in India, China and the Philippines, to handle all the extra work caused by the faulty systems, and still it took close to 1.5 years to get the process back under control.
5.2.3 Process Excellence and cost cutting 2005-2012:

The breakdown of the sales process during the P&O Nedlloyd acquisition made it clear that Maersk Line had a general problem with its processes, which stemmed from the old decentralized way of doing business. The Starlight strategy had tried but failed to centralize decisions and process management, and this was very evident in the way the new sales systems were being rejected. There was a lot to gain by standardizing processes across the company, and in attempt to do this the Process Excellence project was initiated in 2005. The focus was to standardize and optimize processes and to improve governance of processes. The service centers played a large part as motivators in this project. The employees in these centers were very cheap, but most effective when given routine tasks. For each standardized process a set of routine tasks could be given to the service centers, freeing up the more expensive employees in the offices to do other non-routine tasks. The effect on the culture was that the local “kings” finally lost control, and most of the power and decision rights were centralized.

The financial crisis in 2008 turned into a global recession, which hit the containerized traffic extremely hard, and cost cutting became critical to survival. As a result the StreamLINE strategy was implemented in 2008. The StreamLINE strategy was a reaction to the changes in the market and the botched P&O Nedlloyd acquisition and the purpose was to cut costs to the bone. The industry was changing, growth had slowed down and container shipping was becoming a commodity, so as a result the only way to fill the ships was to compete on price. If Maersk wanted to stay alive in this industry they needed to cut costs significantly, and the most obvious way to do this was to remove all non-essential personnel. The 3,500 new personnel hired to do routine tasks in the service centers were supposed to replace the people who had initially done these tasks in the national offices. In reality these people were still on payroll and had to some extent been repurposed because the old culture was against letting people go. Part of the StreamLINE strategy was to let these people go, resulting in a major shift in the company culture. The assumption until then had been that the industry was growing, and temporarily redundant employees might be needed again in the near future, so it would be cheaper to keep them than to hire new ones. This assumption went out the door along with the 3,400 employees who were let go during 2008. The StreamLINE further reduced the autonomy of the national offices and implemented top-down management of most projects, changing the focus from small local projects, which would grow depending on their success, to large global initiatives which would be rolled out to all national offices. There were two
reasons for the success of the StreamLINE project. The first reason was that many of the earlier changes mentioned above had already eroded the strength of the old culture, and it now had few supporters left. The second reason was that the CEO Eivind Kolding was successful in convincing everyone that the platform was burning. He made it clear to employees in all layers of the organization that it was a question of changing to meet the market demands or perishing. The “burning platform” ensured that change initiatives like the firing of 3,400 colleagues were accepted as a necessity for the survival of the company and the local managers let go of their autonomy without too much of a fight.

2009 saw the first year of financial loss for Maersk Line. In spite of the cost cutting initiatives, it became clear to Maersk Line that more changes would be required in order to adapt to the commoditization of the container shipping industry. It was decided that the MISE program should be terminated. There was no longer a need for training young people to be leaders, because the company already had too many potential leaders, and the industry was not growing at the same rate anymore, so there was no future needs which had to be met. The MISE program had also served as a cultural amplifier of the old culture, but now that the old culture was being eradicated, it made little sense to produce more champions for that culture.

In 2011 Maersk Line announced “The New Normal” manifest in an attempt to influence customers and steer other factors in the environment towards less competition on price. The hope was that they could increase the value of quality and green shipping, areas where Maersk Line was doing considerably better than their competitors. Unfortunately it did not seem to have much effect on the market, although there was an increase in customer interest in green shipping.

5.3 The journey to Digital Mastery

In 2012 Maersk Line embarked on their journey towards Digital Mastery. The first step in this journey was a set of major changes in the top management team heralded by the appointment of Søren Skou as the new CEO. This section will describe the initiatives which were carried out by Søren Skou and his new CIO Robin Johnson between 2012 and the present. This section is built on the article “How the CIO got freedom to navigate – the case of IT Transformation in Maersk Line” (Jensen, Johnson & Bjorn-Andersen 2015), the CIO talk at CBS by Robin Johnson in 2013 (see Appendix B for the transcript) and four interviews done with employees at Maersk line in 2015 by the author (see appendix A3 for the resumes of the four interviews).
5.3.1 The Performance Culture 2012:

“You have to change the culture. One of the greatest quotes ever is “culture eats strategy for breakfast”, right? And you can see that in a company like this. You’re absolutely right. This company is so embedded in its culture. You know, the entire LMB (leadership management board) being basically new in the last 3 or 4 years is a big driver of that. If you didn’t have a complete turnover, this would be a harder change.”

(Ryan Worobel Interview 2015\textsuperscript{10})

In the years since 2012, large parts of the top management team have been replaced in order to accommodate the changes in the company. Maersk Line understood that leadership was needed to drive the change and to ensure engaged leadership they replaced 50 percent of the senior leadership team. According to Robin the shift was made, not because the old people were necessarily bad leaders, but because they were not fully committed to drive the change (CIO Talk 2013).

One of the leaders who were brought onboard in 2012 was Søren Skou. He became the new CEO of Maersk Line, and where StreamLINE had been the flagship project of the former CEO Eivind Kolding, Project Clarity became Søren Skou’s.

The main purpose of Project Clarity was to simplify the organization. Cost cutting was still on the agenda as well as a simplification of the processes and the underlying IT infrastructure. Project Clarity also introduced three new so-called cultural amplifiers; Simplicity, Focus and Teamwork, which were added to the five company values. It had become clear to the top management that the earlier changes had eroded the culture to a point where it was every man for himself. Employees were driven entirely by their key performance indicators, and loyalty to the company was no longer a key value. No one took the time to help others, because it would not reflect on their performance measurement. The intense focus on process excellence left very little room for entrepreneurs, with many years of hard earned general knowledge about the industry, to be creative. Instead it called for specialists who could optimize one little step of the process they were part of.

The three cultural amplifiers were an attempt to influence the new culture, but lack of commitment to the cultural amplifiers and the company values from top management made the impact very

\textsuperscript{10} Ryan Worobel was one of the four respondents interviewed about Maersk Line and Digital Mastery. The interview will be introduced in the next chapter.
small. In the end the result is a highly performance driven culture, where employees do exactly what they are paid to do, nothing more or less. The cultural amplifiers introduced by Søren Skou did have an impact on training. Carsten Frank Olsen from the Maersk Line comment that; “Before there was training in how to be leaders, now the focus is on teamwork.” (Interview with Carsten Frank Olsen, see Appendix A3 for resume).

Because Project Clarity had simplification of processes and the underlying IT as its main focus, Søren Skou brought in Robin Johnson as the new CIO in the fall of 2012 to make sure the IT side of the project was handled according to his vision.

5.3.2 Building a Strategy and Securing the budget

"You need a burning platform to make people think differently. At Maersk, we had a very, very genuine crisis. When you're losing nine million a day, even for a company that has enormously wealthy backers, that's a bit of a problem. So you have to have a crisis. And you have to establish a clear and compelling need for transformation."

(Robin Johnson, CIO talk at CBS 2013)

When Robin Johnson was brought in by Søren Skou the company was losing money fast and there was a strong need for change. The first thing Robin Johnson did when he took over was to take stock of the situation by holding a string of meetings with heads of the different lines of businesses. He listened to their concerns and the experience was depressing. They had little faith in the ability of the IT department to deliver successful IT projects. The acquisition and IT integration of P&O Nedlloyd in 2005 were used as an example of how incompetent the department was. The failure to deliver successful IT projects had affected business performance in a negative direction on far too many occasions. It was clear to Robin Johnson that a new IT strategy was required, one that would reestablish belief in the abilities of the IT department.

Robin Johnson developed a three-pronged IT strategy. First he had to get the current IT infrastructure and platform under control by enabling absolute stability and seamless operations, while simultaneously keeping the associated costs down. Secondly he had to enhance the capabilities of this IT infrastructure and platform by adding new IT that would meet the increase in customer demand. Thirdly he had to address the low degree of data transparency. To do this he
would focus on four must-win-battles defined by the business: Finish foundation, Care for customers, Optimize network, and Manage profit. Winning these battles would improve the business and would allow the company to differentiate from competitors.

In order to successfully carry out the three-pronged strategy, the organization would have to go through a transformation. The first step was to modernize the IT operations, which involved substantially reducing the IT operation costs, in order to free up resources and budget for new initiatives.

Before Robin Johnson began the process of reducing operational costs, he secured a promise from the top management team that the IT budget would be frozen. Since the recession in 2008 the IT budget had been reduced by 20-30%, which had caused a substantial reduction in the amount of investments made to revamp existing systems and develop new systems. If the budget continued to fall, the resources which were freed up would be transferred to other business units. Freezing the budget would ensure that resources that were freed by cutting cost, would stay in the IT budget and could be used to fund new IT applications to meet future business needs.

He secured this by promising to change the relationship between operation costs and development costs from approximately 80/20 in 2012 towards the ambitious target of a 50/50 split for 2015. This would allow the IT department to deliver much more new value for the same amount of money. This promise gave the CIO high credibility with top management and they promised to retain the total overall IT budget, in the end they actually allocated additional projects and budgets to the IT department.

The IT department on the other hand was adamant that it could not be done. At a CIO Talk at CBS in 2013 he explained that in 2012 “they (the IT employees) all thought they were running really efficiently. We’re at one point seven percent of revenue, 73 percent of the budget being spent running the place. And they did. They negotiated down the contract seven to eight percent a year. We’re doing this pretty well. All the benchmarks applied to us. We looked good”. Through cunning leadership Robin Johnson encouraged them to give it a try and appealed to their need to be on the winning team, and in 2013 the attitude had changed and real results had been gained. “This year, in a year, from starting with a position of there is no money to be saved, they’ve saved 70 million out
of the running budget and they’re all debating - they can’t quite see their way to 50/50 – but they’re debating, should it be 60/40” (Robin Johnson CIO talk at CBS 2013).

5.3.3 The Simplification project

As a part of the process of changing the balance between run and build costs, Robin Johnson created a list of the nearly 500 ongoing initiatives and projects. These were all taking time and money out of the budget, and to get the budget under control he decided to focus on a few of the major ones while putting the rest on hold. These initiatives became part of a transformation project which was planned in collaboration with the business management. The project was called “Simplification” and it would continue the reduction of run costs, using the resources made available as a result to implement new IT systems which would transform the business. Simplification became the sole project from 2014 onwards.

The Simplification project had several steps, but all of them were focused on simplifying the IT portfolio and infrastructure. The obvious place to start was the IT landscape. It had grown unchecked for many years and the complexity was mainly due to the way the company had done business in the past. Robin described the problem at the CIO talk in 2013; “So you take this perfect supply chain model that’s radically different, I hire you, you go to France, and you say “I’m gonna show ‘em. I’m just going to make one tweak”. Well, same in Maersk. A hundred and 45 countries later – we have a hundred and 45 GMs (general managers) who all made just one tweak per quarter. Suddenly your process landscape—We run 3,165 applications in a 27 billion dollar company. We should probably be running 250. But the application landscape is the outcome of your process decisions which is an outcome of your leadership.” The national managers had changed all the processes to fit their “unique” situation and when IT became part of the way you do business, they had developed local IT solutions to fit their unique processes. As mentioned above the company was moving towards standardized processes and to support this, the IT landscape had to be simplified and a set of global core systems should replace all the national systems.

As a part of the cleanup in the IT landscape a single sourcing approach was taken when choosing the new systems which should replace the others. The idea was to use a single vendor for each area of IT operation. The aim was to reduce the number of platforms, and eventually move the entire IT operation to a private cloud. New development initiatives were done in collaboration with the responsible businesses, and the project progress was closely monitored.
After successfully bringing down the run cost for three years in a row Maersk Line is close to reaching a 50/50 balance between running and building costs. The IT landscape is still not completely simplified but with the freed resources work has started on a new IT development plan, which would allow the IT department to cater for the increasing demands from the business.

5.3.4 Transforming the IT department

Robin Johnson knew that one of the most important tasks of any CIO is to maintain a good relationship with top management as well as with heads of the different business units. Based on the meetings with the heads of the other business units, it was clear to him that the relationship between IT and business were damaged by lack of trust in the IT department’s ability to run a clean shop.

In order to build trust he implemented a scorecard for the performance of IT functions for monthly reporting. The Scorecard included five measures, which were focused on: Program and project delivery, major incidents such as user experience, governance and prioritization of projects, total run cost, and people strategy. The measures were adjusted between 2013-2015, to accommodate changes in the company. The purpose of the scorecard was to motivate the IT department to work towards business goals. Using performance measurements to prompt specific behaviors was at this point a large part of the culture and it was a good way to show the business that the IT department operated under the same conditions as the rest of the company.

In addition to the scorecard, collaboration between the IT department and business employees were encouraged. The collaboration should enable smooth operation and help minimize the number of major incidents, and solve the problems that occurred. Collaboration also made it easier for the IT employees to support the business’ four must-win-battle projects.

Robin Johnson succeeded in transforming the IT department. The goal was to create a more collaborative, focused, simple, accountable, transparent and adaptable organization, which would allow the employees to be innovative. The transformation was focused on facilitating internal governance and project management, the relationship with the business organization, and building IT skills and capabilities to boost Business Intelligence and Master Data Management, and IT operations.
As a result of the transformation, the IT organization became a collection of smaller units that handled areas like “all infrastructures” or “vendor management”. The department was also simplified by reducing the number of job titles from 220 to 28.

Massive recruitment from external sources was required to gain the necessary level of skills. Since 2012, the IT department has grown and there is a greater tendency to use internal people instead of using contractors. According to Ryan Worobel from Maersk Line IT they went from: “11 contractors and 3 internal people on the IT side and 3 people on the business side, now 31 internal people. High technical skill, plus an offshore team for development, going on 60 people. Also more people on the business side.” (Interview with Ryan Worobel 2015 see appendix A3 for resume).

To improve the relationship between business and IT, “Champions of IT” were introduced as single points of contact between business and IT and they were responsible for all engagement with business and for delivering programs, budget, scope, and roadmap.

According to Carsten Frank Olsen, the company has changed dramatically and the change has happened during the last 3-4 years. The change was both to the culture and to the company’s approach to technology. The company had become much more flexible and easy to mobilize.

5.4 Summary

In the last 15 years Maersk Line has gone through several sprints of change, which have changed both the culture and the approach to IT. The company started as a relatively small company in a rapidly growing industry where entrepreneurship, autonomy and loyalty were keywords in the culture and where the general knowledge about the industry and the ability to be innovative about how new complementary services or products could supplement container shipping were important to success. During this early period Maersk Line had something very close to Digital Mastery.

The company had an ability to rethink the way they communicated with customers, acquired new customers, ran their operations, and the way they did business. They were able to achieve competitive advantage by adapting to trends in the environment. IT was not the only tool used to do this but it did play an important role facilitating communication between the small national offices.
After this initial period of near Digital Mastery, the company went through several growth spurts, first by natural growth and later through several acquisitions of competing firms. The new status as one of the industry’s largest firms along with the commoditization of container shipping caused a need for change in the company. It started with the introduction of the job database in 2000 and the Starlight strategy in 2002, and the most recent sprints are the Clarity and Simplification projects in 2012-2015. The company today is influenced by a performance driven culture, where margins and value adding activities are in focus. Innovation today is more specialized, and aimed towards process excellence. The focus is on getting better at doing what is already done, not in entering new markets.

The Simplification project is still running, striving to clean up after years of unchecked growth. The IT landscape and infrastructure still needs more work, and there are plenty of possibilities to innovate with new digital technologies. In the past 15 years Maersk Line has taken many steps towards recapturing Digital Mastery.

6. Analysis

This chapter is an analysis of the Maersk Line case using Westerman et al.’s framework which was described in chapter 4. The purpose is to establish how far Maersk Line has come in achieving Digital Mastery, and what should be the next steps. This chapter is built on the four interviews conducted with employees at Maersk Line, based on the self-assessment tool found in Westerman et al.’s book. The interviews can be found in appendix A.

6.1 The respondents

Four interviews were done with four different respondents, two from the IT department and two from the business side. All four were directly involved in the Simplification project. Ryan Worobel and Tim Ferguson were from the IT department while Peter Hyllested and Carsten Frank Olsen were from business.

Ryan is responsible for running all the commercial aspects of IT. This means that he is responsible for supporting sales, customer service, marketing, and all the online e-commerce. Ryan reports directly to the CIO Robin Johnson. Ryan has been with the company for about 2-3 years.
Tim is the head of online operations and responsible for the website and its developments on the IT side. He is a part of Ryan’s team and has been with the company for about 2-3 years.

Carsten has global responsibility for e-commerce at Maersk line. He is responsible for the segmentation of customers, and for understanding the customers better and how to handle the different types of customers. Carsten is the business equivalent of Tim and is his sparring partner on the business side. Carsten has been with the company since 2000.

Peter is a project manager on the business side, and is responsible for transforming the sales process. Peter is part of Carsten’s team, and has been with the company for many years.

6.2 Four levels of Digital Mastery

The first step is to identify which of the 4 four levels of Digital Mastery best describes Maersk Line. 20 of the questions in the interview were focused on the establishing the level of digital capabilities and leadership capabilities at Maersk Line. The respondents scored the 20 questions with a number between one and seven. Ten questions which addressed the company’s leadership capabilities, these can be seen in table 2 along with the answer given by each of the respondents.

Table 2 - Respondent scores on leadership capabilities

<table>
<thead>
<tr>
<th>How well is Maersk building leadership capabilities?</th>
<th>Ryan</th>
<th>Tim</th>
<th>Peter</th>
<th>Carsten</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior executives have a transformative vision of the digital future of Maersk</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>5,75</td>
</tr>
<tr>
<td>Senior executives and middle managers share a common vision of digital transformation</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>5,5</td>
</tr>
<tr>
<td>There are possibilities for everyone in the company to take part in the conversation around digital transformation</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Maersk is promoting the necessary culture changes for digital transformation</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>5,25</td>
</tr>
<tr>
<td>Maersk is investing in the necessary digital skills</td>
<td>6</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>4,75</td>
</tr>
<tr>
<td>Digital initiatives are coordinated across silos such as functions or regions</td>
<td>4</td>
<td>5</td>
<td>211</td>
<td>3</td>
<td>3,5</td>
</tr>
<tr>
<td>Roles and responsibilities for governing digital initiatives are clearly defined</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Digital initiatives are assessed through a common set of key performance indicators</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>4,5</td>
</tr>
</tbody>
</table>

11 This question was not asked to this respondent, but the answer to the next question involved a strong statement about silos still being an issue, because of this the same answer value were applied to the two questions.
The ten other questions addressed how well Maersk Line is building digital capabilities. These questions and answers can be found in Table 3.

Table 3 - Respondent scores on digital capabilities

<table>
<thead>
<tr>
<th>Question/Respondent</th>
<th>Ryan</th>
<th>Tim</th>
<th>Peter</th>
<th>Carsten</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>We are using digital technologies to understand our customers better</td>
<td>3,5</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>4,13</td>
</tr>
<tr>
<td>We use digital channels to market our products and services</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>We sell our products and services through digital channels</td>
<td>5,5</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>5,38</td>
</tr>
<tr>
<td>We use digital channels to provide customer service</td>
<td>3</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>4,5</td>
</tr>
<tr>
<td>Technology is allowing us to link customer-facing and operational processes in new ways</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>4,5</td>
</tr>
<tr>
<td>Our core processes are automated</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>We have an integrated view of key operational and customer information</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>We use analytics to make better operational decisions</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>We use digital technologies to increase the performance or added-value of our existing products and services</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>4,5</td>
</tr>
<tr>
<td>We have launched new business models based on digital technologies.</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>3,5</td>
</tr>
</tbody>
</table>

Each of the tables contains the answers of the respondents as well as an average score of all the respondents. Based on the average scores and the total score on each set of ten questions five points were plotted into a two-by-two matrix, where the leadership capability score was used as the horizontal axis and the digital capability score were used as the vertical axis.

The result can be seen in figure 3. The average result, as can be seen from the matrix, places Maersk Line in the Digital Mastery quadrant, but only just. Westerman et al. (2014) defines digital masters as companies who have a digital score above 42, and Maersk Line has an average score of 42.5. An average score of 43 in leadership capabilities is needed to become a digital master and Maersk Line scored an average score of 47.8, placing it well within the “digital masters” quadrant. Worth noting about the scores is the placement of the respondents in the company. Respondent Ryan and Tim were from the IT department while Peter and Carsten from the business side. Ryan and Carsten were placed higher up in the organizational hierarchy than their colleague from the same unit, Tim.
and Peter. These insights suggest that the respondents’ vertical placement in the hierarchy has little effect on their view on the company’s leadership or digital capabilities. IT has a better average score than business on both capabilities, which might suggest that IT is feeling more confident about the progress than the business department.

A closer look at the data as well as the case description of Maersk Line above, suggests some insights about the Maersk Line’s path to Digital Mastery. Maersk Line has a long history of change projects, both with good and bad outcome. What is worth noting is that every time they failed they tried to learn from their mistakes. The ability to learn from mistakes and to keep trying is evident in the high average score on leadership capabilities. The relatively low digital capability score probably stems from the complex IT infrastructure and landscape which is the result of their early management style. Recent initiatives to simplify and optimize have brought them out of the Conservative category and into the Digital Masters category. Further initiatives are needed if they want to stay there or move deeper into the quadrant.

6.2.1 Leadership capabilities

The respondent most skeptical about the company’s capabilities, both leadership and digital, is Peter who is part of the business unit, and responsible for transforming the sales process. Peter has worked for the company for a long time and has been involved in moving the company towards digitization since the 90’s. His answers suggest that his skepticism stems from a lack of trust in

---

the collaboration with the IT department. He rated questions like; *Maersk Line is investing in the necessary digital skills*, *Digital initiatives are coordinated across silos such as functions or regions* and *The IT unit’s performance meets the needs of the company* negatively, suggesting a lack of faith in the IT department’s efforts. Peter is not the only one to rate these questions low, and there might be some truth to his assessment. Looking closer at the ten questions might yield some insight into how Maersk Line is building their leadership capabilities.

*Digital initiatives are coordinated across silos such as functions or regions:* Both Carsten and Ryan have given a low score to this question. It is not a surprise that silos are still a big issue at Maersk Line. During its long history the company has been divided into many smaller and autonomous units, with free reins to do as they saw fit. It is only in the last 15 years that the company started to work towards a unified and standardized company by breaking down the walls between the silos. More work will have to be put into breaking down the silos, and standardizing the IT platform is an important part of this process. The fact that the average score is 3,5 and not lower, suggests that the problem is not as big as it has been in the past, but without prior measurements it is difficult to know.

*The IT unit’s performance meets the needs of the company:* Ryan supports Peter in the notion that the IT department is not meeting the business objectives, and even though the two other respondents has given a positive answer the average score on this question is four, suggesting that the IT department is doing an average job of meeting the business needs. According to Carsten, the problem seem to be that while there is no shortage of people who wish to work on developing new digital solutions, the work on cleaning up the platform and the old legacy systems has become very slow and unpopular. The lack of attention to cleaning up the platform worries the business unit.

*Maersk is investing in the necessary digital skills:* This question has divided the two groups of respondents. While the IT department is confident that they are building the needed capabilities, the business unit is not so sure. Based on the extended answers from the respondents on this question the conclusion is that the IT department is indeed doing everything they can to recruit external experts, but the business unit is not doing much to extend their digital skills. Carsten from the business side remarks that they need to do more on the business side to investigate the digital capabilities.

---

13 Interview with Carsten. Timestamp 31:20
possibilities and not just rely on the IT department to come up with suggestions. They need to hire younger people, who can tell them why mobile apps might be “so yesterday”\textsuperscript{14}.

\textbf{Roles and responsibilities for governing digital initiatives are clearly defined:} When looking at the scores the respondents do not agree on this question, but when we look at the comments, Ryan is the only one who thinks this is in an immature state. While Peter scores it with a two, he comments that the reason why he gives it a low score is because the roles are so clearly defined that they are actually preventing people from collaborating on achieving the goals\textsuperscript{15}. This suggest that Maersk Line are actually really good at defining roles and responsibilities, but that their measurement and remuneration systems are motivating employees to stay within their area of responsibilities to a degree where it is preventing necessary changes.

\textbf{Digital initiatives are assessed through a common set of key performance indicators:} The answers to this question indicate that the business units are better at assessing digital initiatives through KPI’s than the IT department.

\textbf{IT and Business leaders work together as partners:} While most of the business units are housed at Esplanaden in Copenhagen, the IT department resides a few kilometers away in another building. This distance, though short, drives a wedge between the IT department and the rest of the business. Two or three weekly meetings are held between the different teams where people from both sides are gathered in order to coordinate and digital technology allows them to keep in contact on a day to day basis\textsuperscript{16}. These initiatives help close the gap but it is still there.

\textbf{Senior executives have a transformative vision of the digital future of Maersk:} There is agreement across all respondents that the senior executives have a transformative vision and that it involves the Simplification project. Three of the four respondents comment that it is fairly new for Maersk Line to have a transformative vision, and that it is only recently that the senior executives have begun to understand the extent of the changes which is needed to become truly digital\textsuperscript{17}.

\textsuperscript{14} Interview with Carsten. Timestamp 25:00
\textsuperscript{15} Interview with Peter. Timestamp 13:36
\textsuperscript{16} Interview with Carsten. Timestamp 29:40
\textsuperscript{17} Interview with Ryan, Tim and Peter.
Senior executives and middle managers share a common vision of digital transformation:
Three of the respondents agree that the transformative vision has been shared and adopted by middle managers. Carsten scored this question a four, and commented that the focus of the simplification project is the commercial area, which means that all non-customer facing employees are not involved in the project. They understand that it has to be done but they are not a part of the solution. To get all the managers onboard the simplification project should be enlarged so that it involves these business units and provide them with a way to participate\(^\text{18}\). He also remarks that the way to sell the simplification project to these managers is to demonstrate success through a few quick-win battles. The simplification project is a must-win-battle this year and all managers are aligned with the project\(^\text{19}\).

There are possibilities for everyone in the company to take part in the conversation around digital transformation: The respondents all gave this question a five, indicating that there is a possibility for all employees to influence the change, but that there is room for improvement. Carsten indicates that there are initiatives in place to make it possible for employees to make their opinion heard\(^\text{20}\), but according to Ryan employees have to be proactive about getting a say in the process\(^\text{21}\). These comments support the conclusion that there is still room for improvement.

Maersk is promoting the necessary culture changes for digital transformation: Most of the respondents agree that Maersk Line is going through cultural changes, but when looking at the comments there is a lot of variance in what each respondent associate with culture. Carsten suggests that the focus needs to be more customer oriented\(^\text{22}\), while Tim mentions innovation as something which should be part of the new culture\(^\text{23}\). The company culture is changing but the comments indicate that there is little control with or focus on where the company is going on the cultural front.

Leadership capabilities: Maersk Line is working on improving their leadership capabilities within digital initiatives, and the answers indicate that they are moving forward. The company has a transformative vision which is shared with most of the management staff. There are possibilities for

\(^{18}\text{Interview with Carsten. Timestamp 15:11}\
^{19}\text{Interview with Ryan. Timestamp 5:25}\
^{20}\text{Interview with Carsten. Timestamp 17:10}\
^{21}\text{Interview with Ryan. Timestamp 7:20}\
^{22}\text{Interview with Carsten. Timestamp 20:55}\
^{23}\text{Interview with Tim. Timestamp 8:45}\

employees to engage in the change process and the simplification project is aligned with the performance measurement system at least to some degree. The company is still struggling with breaking down the old silos, and the IT department is still working on getting a standard platform in place. Getting the platform in place would help Maersk Line break down the silo structure. In general there is room for improvement on all the scores, but based on the comments it seems that Maersk Line is aware of their shortcomings and that they are working on improving the scores.

6.2.2 Digital Capabilities

**We are using digital technologies to understand our customers better:** The respondents all agree that they are using digital technologies to collect data on their customers. But when it comes to using this data to understand the customers, Peter and Carsten thinks that there is still some way to go. Peter explains that the problem is that they think they know what the customers want. The result is that data and feedback from customers are not used. The plan is to start using data and collect more feedback, but it is not done yet\(^24\).

**We use digital channels to market our products and services:** Again this is a capability which is under development. Tim explains that they are experimenting with online marketing, which is something completely new for Maersk Line. They are looking at traffic analysis and paid marketing, as well as analyzing what the customers do at their sites, in order to tailor the websites to their needs\(^25\).

**We sell our products and services through digital channels:** Ryan comments that what they are doing digitally is good, but insufficient. 70% of bookings are handled online but no marketing or “up-sales” is done\(^26\). One of the main objectives of the Simplification project is to get the sales process digitized, and this is evident in the average score which is the highest in the digital capabilities sector.

**We use digital channels to provide customer service:** This is also under development as part of the Simplification project. According to Ryan they just activated a customer service case

\(^{24}\) Interview with Peter. Timestamp 18:20
\(^{25}\) Interview with Tim. Timestamp 14:25
\(^{26}\) Interview with Ryan. Timestamp 17:04
management tool, as a part of Salesforces’ service cloud. This is the first step in a process which should take them from 4.5 which is the current average to 5-6 in a not so distant future.

**Technology is allowing us to link customer-facing and operational processes in new ways:** Most of the respondents agree that this is also a part of the Simplification project and that they are getting better at it. Carsten who only scored it with a two commented that they have the capabilities but that they are not good at using it. There is very poor visibility of the connections between the virtual data which is in the system, and the real containers that the data represents. This means that containers which are flagged for a specific kind of handling are not always handled this way.

**Our core processes are automated:** Maersk Line is working on improving this. Automating the sales process is part of the Simplification project, and they have managed to automate 75-80% of their bookings. There are other core processes than sales, with supporting legacy systems, none of these were mentioned as part of the simplification project which suggest that they are not yet being automated. None of the respondents said anything that might indicate whether these processes might become part of the road map in the future.

**We have an integrated view of key operational and customer information:** The average score is neutral and the lack of comments indicates that this is not an area where improvements are being carried out or planned.

**We use analytics to make better operational decisions:** The average score is four and the comments suggest that this is another area under development. Ryan explains that they are spending lots of money on building data warehousing capabilities and analytical capabilities. They are currently good at financial analytics, which means analyzing the past to see what went well and where the company was less successful. The problem comes when trying to predict the future. They have become pretty good at predicting where cargo comes from, but they still have not found a way to foresee financial trends. They also have problems with predicting what kind of services the customers want to buy. To quote Niels Bohr, “Prediction is very difficult, especially if it is about

---

27 Interview with Ryan. Timestamp 18:00
28 The Salesforces service cloud is hosting most of Maersk Line’s sales processes.
29 Interview with Carsten. Timestamp 36:55
30 Interview with Peter and Carsten.
31 Interview with Ryan. Timestamp 19:30
the future” 32. This is certainly true for something as complex as the shipping industry, with its strong dependence on the global economy, it becomes even more so. However, one must try to map out probable scenarios and prepare the company to deal them.

**We use digital technologies to increase the performance or added-value of our existing products and services:** Even if the score is positive, the comments, or lack thereof, indicate that this is not really a focus area for Maersk Line, and that maybe it should be.

**We have launched new business models based on digital technologies:** The message here is very clear. It has not yet happened but it will in the next two years. Carsten explains that it is in the Simplification project but that they are not there yet. They will be launching a full digital journey for their customers, which will allow them to provide end to end customer service. The plan is to become more visionary and in time try to disrupt the industry. They might create an innovation-team who will focus on being innovative and develop new business opportunities, but this is all in the future. The hope is that the score will rise to 6-7 in the not too distant future 33.

**Digital Capabilities:** It is obvious that Maersk Line is in the process of expanding their digital capabilities. They have increased the size of their IT department by hiring experts in digital technologies, and they are now putting these people to work on the simplification project. Significant resources have been transferred to the building of new IT systems. Many of the questions were answered with a current and a projected score, indicating that they expected an improvement in the score when current initiatives had run their course. Maersk Line has just crawled over the line into the digital master’s quarter, but they are not resting on their laurels. They have a good understanding of their problems and they are working on trying to solve them.

---

33 Interview with Carsten. Timestamp 43:52
6.3 Scope and size of the change initiative at Maersk Line

6.3.1: Size

Transformational change was defined as a fundamental redefinition of processes or products that brings on a radical shift from one state of being to another, so significant that it requires a shift of culture, behavior, and mindset to implement successfully and sustain over time. Further characteristics of a transformational change is that the destination is unknown when the change begin.

Based on the Maersk Line case in Chapter 5, the company is in the middle of a long-running transformational change. For the past 10 years they have been eroding the old culture in order to be able to optimize and simplify the organization. They have taken steps to ensure the cultural shift by making changes to both top management and the organizational hierarchy. Performance measurement systems have been sculpted to fit the changes and even today the cultural initiatives are implemented in order to change the culture around the change. The roadmap and the vision has been updated a lot even in the past 3 years to account for changes in and around the company.

6.3.2: Scope

In section 4.5.2 Transformation: Scope and Size it was defined that there were three different focus areas for organizational change, and that any combination of these could lead to Digital Mastery. These are; customer experience, operational processes and products and business model.

Maersk Line has been working on their operational processes for the past 10 years. Ever since their merger with P&O Nedloyd in 2005 they have been working on their sales and decision management processes. Changing the operational processes is about changing the way the company works internally, by virtualizing the workflows through digital technology.

As defined in section 4.5.2 Transformation: Scope and Size this can be done on two levels; the first level is a race to catch up to industry standards and the second level is where the company starts to introduce new and improved operational processes which is ahead of competitors. Maersk Line is changing processes on both levels. The use of IT in the shipping industry is both new and old. Maersk Line has been catching up on the onshore IT, where standards and programs have been readily available, because much can be taken from other industries where sales, HR, finance and
other support functions are similar and have been developing IT for many years. With respect to offshore IT processes, Maersk Line actually seems to be leading the pack. During the interviews several of the respondents mentioned IT systems developed by Maersk Line which were not yet replicated by competitors, and considered industry leading, at least by Maersk Line.

Currently, Maersk Line is working on their sales process, changing both the technical core processes and the surrounding administrative processes. Based on comments from the respondents it seems that they have also taken the first steps towards improving the customer experience of the sales process. Further comments suggest that one or several new business models will be launched in the next 2-3 years.

6.4 The Digital Transformation Compass

This section will try to establish how far Maersk Line has come on the Digital Transformation Compass. The Digital Transformation Compass (DTC) is a circular four phase framework for driving Digital change. For each phase, two or more questions were added to the interviews with the four respondents. These questions were found in the assessment tools at the end of chapter 9-12 (Westerman, Bonnet & McAfee 2014); there was some overlap between these questions and the 20 questions from the self-assessment tool used above. In Table 5-8 the questions will be marked to show which are new, from the self-assessment tool and the phase assessment tool.

6.4.1 Framing the digital Challenge

The startup phase, *Framing the digital challenge*, is where the need for change is identified and a vision is created and shared with the top management team. Maersk Lines efforts to frame the digital challenge will be based on the answers to three questions. Table 4 shows the scores which were assigned by the respondents to each of the three questions. The answers to each question will be analyzed below.
Table 4 Respondent scores on framing the challenge

<table>
<thead>
<tr>
<th>Question</th>
<th>Ryan</th>
<th>Tim</th>
<th>Peter</th>
<th>Carsten</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>We understand which strategic assets will be the most important in digital transformation: (new)</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3,25</td>
</tr>
<tr>
<td>We understand how our own digital capabilities compare with those of our competitors: (new)</td>
<td>6</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>5,25</td>
</tr>
<tr>
<td>We have a clear view of the most important first steps in our transformation: (new)</td>
<td>6</td>
<td>7</td>
<td>3</td>
<td>7</td>
<td>5,75</td>
</tr>
</tbody>
</table>

*We understand which strategic assets will be the most important in digital transformation:* The average score is 3.25 which indicate that Maersk Line has very little insight into which strategic assets will be important in becoming digital masters. Ryan comments that they are still working on a strategy, and that until the strategy is in place they will not know for certain which assets will be important. Ryan indicates that this is not just a problem for Maersk Line but for the entire shipping industry. Digital is new in the shipping industry so the whole industry is learning as they go along. Maersk Line has an idea of their assets but because the industry is moving into unknown territory they do not know which of these assets will become strategic.  

*We understand how our own digital capabilities compare with those of our competitors:* The average score is 5.25 which suggest that Maersk Line has a good idea of how their digital capabilities compare to their competitors. Based on the comments, there seem to be two types of competitors in the market, the first group is made up of established shipping companies which compete directly with Maersk Line for the freight. The second group of competitors is the newly started disruptive companies, who try to place themselves in between the customers and the shipping companies by launching new digital business models. Maersk Line has a good idea of how they compare to the first group because they are very similar to Maersk Line and have been in the market for a long time. On the other hand the second group of competitors seem to take Maersk Line by surprise. These companies are often new players on the market, who enter with a radically different business model and disrupt the market by finding completely new ways to add value.  

*We have a clear view of the most important first steps in our transformation:* The average score is 5.75, which indicates that Maersk Line has a vision and a roadmap, but that it could be

---

34 Interview with Ryan. Timestamp 23:40  
35 Interview with Ryan, Tim and Peter.
better. Two of the respondents gave this a seven and one gave it a six. The last respondent gave it a three and commented that the company is going in zig-zag, and that the roadmap is not very clear, and that it keeps changing. The vision is clear, they want to enable their processes online but the way to get there keeps changing back and forth, because they have not decided how to do this yet\textsuperscript{36}.

**The digital challenge:** Maersk Line has built a strong vision about bringing all their processes online, but the roadmap to get there is changing. Based on the answers it is not clear why the roadmap keeps changing. Digital technologies are fairly new in the shipping industry and the changes in the roadmap might be a result of growing digital capabilities and a better understanding of where digital technologies might take the company. It might also be fluctuations caused by changes in the market, or attempts to counter moves made by competitors. Without further investigation the reasons for the changes can only be guessed at, but it is clear that the company has built a vision and that it is moving towards the goal, even if the course is still being adjusted frequently. The changing roadmap can be confusing for the employees, but could be a good sign for a transformational change if it is because the roadmap is adapting to the current environment.

### 6.4.2 Focusing investment

The second phase, *Focusing investment*, is about planning the change by creating a roadmap. It is also during this step that funding for the change is secured. Maersk Line created a roadmap in the form of the simplification project. Therefore the analysis of the company’s effort will be based on two questions from the self-assessment tool, which also appear in the phase assessment tool, as well as comments made about the simplification project in relation to other questions.

<table>
<thead>
<tr>
<th>Table 5 Respondent scores on focusing investment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Digital initiatives are coordinated across silos such as functions or regions:</strong> \textit{(leadership)}</td>
</tr>
<tr>
<td>Digital initiatives are coordinated across silos such as functions or regions: \textit{(leadership)}</td>
</tr>
<tr>
<td>Roles and responsibilities for governing digital initiatives are clearly defined: \textit{(leadership)}</td>
</tr>
<tr>
<td>Roadmap – Simplification comments</td>
</tr>
</tbody>
</table>

*Digital initiatives are coordinated across silos such as functions or regions:* Silos are still a big issue at Maersk Line. They are left over from a long history of running the company as small

\textsuperscript{36} Interview with Peter. Timestamp 26:30
autonomous kingdoms. The last 15 years have done a lot to remove the silo structure but they are still there. Since this section is also about investments, it is worth mentioning that most of the changes to the IT landscape are driven by the IT budget, which is assigned on a global scale by the top management team, making the direction of transformation top-down. This means that the transformation is driven by investments made by the company as a whole, which should ensure that the transformation is distributed regardless of the budget and goals of the regions or silos. It also means that the entire Simplification project is restricted by the IT department’s ability to change the balance between run and build costs, in order to free up money to do developments. The initiatives are driven by the IT department in collaboration with their business partners.

**Roles and responsibilities for governing digital initiatives are clearly defined:** Roles and responsibilities are very clearly defined in Maersk Line. Sometimes they are so clearly defined that they become a hindrance to collaboration and teamwork. Cultural change initiatives have been initiated in order to bring teamwork back, but lack of commitment from top management prevented real progress.

**Roadmap - Simplification comments:** The questions about Maersk Lines digital capabilities which are analyzed above also gives an indication of the progress of the Simplification project. Many of these questions were answered with a current score and an expected score which should be reached in the next two to three years. There was also agreement between the respondents on which areas were part of the later stages of the roadmap and which were not. This indicates that the roadmap or the Simplification project is pretty well understood, even if it is still changing.

**Focusing investments:** The roadmap for the transformation is clear but flexible, and the investments are coming from a central governing body. Roles and responsibilities are clearly defined and backed by a performance measurement and rewards system which is intended to motivate employees to do their part in the transformation, to a degree where it is almost too well defined. This reward system is well defined and focused on rewarding wanted behavior and punishing unwanted behavior. The investments and initiatives are coordinated and backed centrally which should allow them to transcend silo barriers. The driving force behind the initiatives is the IT department and its partners on the business side of the company.
6.4.3 Mobilizing the organization

The third phase, *Mobilizing the organization*, is the implementation phase, where the change is pushed out into the rest of the organization. Maersk Line’s progress in this phase will be analyzed based on two questions from the self-assessment tool, one question from the phase assessment tool in chapter 11 and two other questions. The two extra questions were added to gain additional information about how the change was done. Table 6 shows the score for each question. The two new questions as well as the question from the phase assessment tool will be looked at in detail while the questions from above will just we recapped shortly.

Table 6 - Respondent scores on mobilizing the organization

<table>
<thead>
<tr>
<th>Question</th>
<th>Ryan</th>
<th>Tim</th>
<th>Peter</th>
<th>Carsten</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our employees understand the need and reasons for change: (leadership)</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>5.75</td>
</tr>
<tr>
<td>Senior executives and middle managers share a common vision of digital</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>5.5</td>
</tr>
<tr>
<td>transformation: (leadership)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are possibilities for everyone in the company to take part in the</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>conversation around digital transformation: (phase)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are the leaders acting as role models: (new)</td>
<td>5</td>
<td>7</td>
<td>3</td>
<td>4</td>
<td>4.75</td>
</tr>
<tr>
<td>What are you doing to build momentum and achieve buy in from employees:</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>5.75</td>
</tr>
</tbody>
</table>

*Our employees understand the need and reasons for change*: The average score is 5.75 indicating that management has done a good job of explaining that the platform is burning, and selling the simplification project as the solution to the problem. All the respondents comment that the employees understand that there is a need for change and in which direction the company is heading, but they also add that it is far from every employee who agrees with the direction. The employees who disagree are mostly uncertain about the need for speed which is inherent in digital technology. In the old days it was good enough if the customer got a reply in less than two hours,
today with digital automated processes the expectation is that the responses will be given within seconds.\(^{37}\)

**Senior executives and middle managers share a common vision of digital transformation:** As mentioned above, the Simplification project is based on the vision and it is so far only concerned with the commercial part of the company. Managers in the affected part of the company have bought into the vision but the other managers have not. There is a plan in place to get the rest of the managers to buy in, by showing success via quick-win battles which are part of the simplification project.

**There are possibilities for everyone in the company to take part in the conversation around digital transformation:** There is a possibility for employees to participate but they have to be proactive about it.

**What are you doing to build momentum and achieve buy in from employees:** The average score is 5.75 and the comments indicate that Maersk Line, through the Simplification project, is doing many things to build momentum for the change. Changes to the organizational structure, areas of responsibility and the top management team have been made in order to create an environment where change is possible.

**Are the leaders acting as role models:** The average score is 4.75 which indicates that some leaders are acting as role models but that there are still managers that do not lead by example. The score and comments suggest that there is better leadership and role modeling on the IT side of the company (which has a relatively high proportion of new employees) than on the business side. Peter and Carsten have given this question a low score indicating a lack of leadership, while Ryan and Tim have given it a positive score.

**Mobilizing the organization:** Maersk Line has created a strong vision which has been accepted by all levels of the organization, at least on the IT side. This vision is enabling Maersk Line to mobilize the organization and create results, which are evident in the way the company has been building digital capabilities and made huge changes to their IT infrastructure in the last three years. Even if some of the employees do not agree with the direction the company is heading, they are still

\(^{37}\) Interview with Ryan. Timestamp 8:38
working for the Simplification project. One thing which is worth noting is that the change seems to be happening mostly on the IT side of the organization, meaning that it is the CIO and the IT department who are driving the change at the moment. If the change is to be successful, this needs to change in the future.

### 6.4.4 Sustaining the digital transition

The fourth phase, *Sustaining the transition*, is the phase where the transformation is anchored in the organization. This is where governance structures are put in place for sustainable innovation. Maersk Line’s progress in the phase will be assessed based on three questions where one of them is from the self-assessment tool and two of them are from the phase-assessment tool in chapter 12. Table 7 shows the scores given by the respondents.

**Table 7 - Respondent scores on sustaining the digital transition**

<table>
<thead>
<tr>
<th></th>
<th>Ryan</th>
<th>Tim</th>
<th>Peter</th>
<th>Carsten</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial incentives and KPI’s are aligned with the IT digital transformation strategy: (phase)</td>
<td>4,5</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>4,63</td>
</tr>
<tr>
<td>Where appropriate we use a common digital platform: (phase)</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>4</td>
<td>3,75</td>
</tr>
<tr>
<td>Digital initiatives are assessed through a common set of key performance indicators: (leadership)</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>5</td>
<td>4,25</td>
</tr>
</tbody>
</table>

**Financial incentives and KPI’s are aligned with the IT digital transformation strategy:**
The average score is 4.63 and most of the respondents agree that some measures have been taken to align the rewards system with the transformation strategy. According to Carsten, a specific incentive scheme has been implemented for the transformation which runs until 2017. This scheme supports the heavy lifting of the transformation and covers all levels of the organization\(^{38}\). Ryan supports this statement, while Tim contradicts it by stating that the solution is immature\(^{39}\). Based on the score it seems that some measures have been taken but they are not fully matured.

**Where appropriate we use a common digital platform:** The average score is 3.75 which indicate that Maersk Line is doing poorly on this front. Part of the simplification project is to simplify the IT infrastructure and platform by removing redundant systems and move as much as

\(^{38}\) Interview with Carsten. Timestamp 28:45  
\(^{39}\) Interview with Tim. Timestamp 13:19
possible on to a private cloud. According to Ryan it is the ambition that all the sub companies of Maersk Line will be brought onto the same platform\textsuperscript{40}. The vision is to get this to a seven, but after three years the score is still below neutral. Based on comments from other questions it is clear that improvement has been made, but it is not enough yet, so this should still be a focal point for future change. This is also an extraordinarily difficult task, so it should not be surprising that it is taking some time.

\textit{Digital initiatives are assessed through a common set of key performance indicators:} The answers to this question indicate that the business units are better at assessing digital initiatives through KPI’s than the IT department.

\textit{Sustaining the transition:} Based on the average scores on the questions, it is apparent that Maersk Line is not in this phase yet. The scores are mostly neutral and often the individual scores are anywhere from two to six, giving the impression that there is very little consensus in what each respondent is experiencing.

\subsection*{6.4.5 Summary}

Maersk Line has done a solid job on creating and sharing a vision across the company. When it comes to the roadmap the volatile cyclical nature of the shipping industry, combined with the fact that digital technology has only recently become part of the industry, is making it difficult for Maersk Line to assess which assets are going to have strategic value, and how to best take the company from the current state to the envisioned future state. The company has done its best to create a roadmap in the form of the Simplification project and is moving forward despite of the uncertainty of the industry. The roadmap remains flexible and is changed to accommodate new knowledge and changes in the environment. The company has made significant progress in the last three years which indicates that they have built a good momentum. The IT department and its business partners are changing the IT infrastructure and landscape in order to build the digital capabilities which will enable Maersk Line to become digital masters. This is done through centrally based initiatives and all developments to the platform are funded through the IT budget.

\textsuperscript{40} Interview with Ryan. Timestamp 22:38
6.5 What is next?

The area where Maersk Line is struggling is in predicting the way the environment and especially the shipping industry will change as it is exposed to digital technology. The shipping industry has always been volatile and highly influenced by economic fluctuations in the world. Predicting how the market will evolve will always be hard and it is unlikely that Maersk Line will ever be able to fully predict changes. Instead Maersk Line will have to improve its agility and change capabilities, in order to adjust to the unforeseen changes which are bound to happen. The last 15 years have shown that Maersk Line has the will to change even if it hurts and involves cutting cost to the bone and making changes to the very fabric which has made Maersk Line special for a century. The result of all the changes is that Maersk Line has built leadership capabilities. This ability to see the need for change and to act is probably one of Maersk Line’s most important strategic assets and the company should keep developing this ability. The speed with which changes are occurring in the world is increasing and the ability to change efficiently and quickly will become ever more important.

Besides the continued improvement of leadership capabilities, Maersk Line needs to keep developing their digital capabilities. The recruitment of digital specialists has increased the knowledge about what is possible. Together with the change to the balance between run and build costs, this will allow Maersk Line to experiment with new digital technologies. Implementing these new digital technologies is important, because it will enable Maersk Line to improve their customer experience and processes, and even develop new business models, which is important if the company wants to stay ahead of the competition.

In order to fully utilize these digital technologies, Maersk Line needs to keep simplifying their platform. Based on comments from the two business respondents, there may be a risk that the IT department is on the verge of getting caught in an IT fashion mindset, meaning that they are getting very excited about new capabilities, causing them to forget about the much needed improvements of the old systems and the need to stabilize the IT platform. The CIO needs to keep an eye on this development and make sure that both run and built receive equal attention and that they collaborate. Building a stable and efficient IT platform is paramount to becoming a digital master, and failing to clean up in the old legacy systems could jeopardize the process.
The relationship between the business side and the IT department is very good considering that they are placed at two different locations. There seems to be an understanding from both sides that they are in the Simplification project together, and even if they do not always agree they need to make it work, and that fulfilling the business goals is important to both parties. It can always be improved but in general they are doing well on this front.

7. Discussion

Before starting on the actual discussion is it worth addressing the potential bias caused by the small respondent pool as well as their concentration within the project group. There are only four respondents, which is a very small group considered that the company has more than 32 thousand employees. The four respondents are all from the head office in Copenhagen and are involved in Simplification project, which means that they are neck deep in the transformation process. This gives them a good idea of what is going on, but it also decreases the chance of getting answers which represents actual resistance to change. It is worth mentioning that Peter was recommended by Ryan because of his very skeptical view on the change. His answers, which were more skeptical than the other three respondents, is hopefully representative of what employees who disagree with the current roadmap might be thinking. The lack of spread and size on the respondent pool gives a very limited view of the change process; this should be taken into account when judging the validity of the conclusions drawn in this thesis. Further studies should include a larger and more diverse group of respondents to verify the conclusion drawn below.

This discussion has three main topics. The first topic is how employees are being motivated and how this could be improved. The second topic focuses on improving the IT infrastructure/platform. The third topic is strategic options for future change initiatives.

7.1 Motivation

Maersk Line is currently using objective quantifiable performance measurements systems, combined with monetary rewards. This type of performance measurements and rewards systems are made based on the theory that; you get what you measure, you get more of what you reward and less of what you punish, and that there is a connection between the amount of money people get and the amount of work they do. The problem is that this connection only actually seems to exist of tasks that involve very little cognitive skill, like simple manual production tasks (Pink 2010).
Maersk Line is not a production company, which means that building a reward system on monetary rewards will only be effective up until a certain point, after which this kind of reward system can become a source of inefficiency and unwanted behavior. The result of the current measurement system is that employees do mostly what they are measured on. This could be good if it were not for the fact that the measurement system seems to be focused on individual KPI’s. This focus has, according to one of the respondents, made the silo problem worse instead of better. The respondent expressed concern that the IT sub departments of run and develop was not working together as they should because their performance measurements are not aligned. This problem at Maersk Line highlights the problem of this type of rewards system. If you get what you measure you need to be able to know exactly what you want and to predict how the measurements will be interpreted by employees. In production it is fairly simple because you know that you want employee A in the production line to put part 1 and 2 together, and then hand it on to employee B, these tasks can be done with very little thinking. In logistics and management, defining tasks to a level where there is no room for interpretation and where quantifiable and objective measurement can be done, is not possible, and if anything it discourages innovation. To solve this problem Maersk Line should consider other reward options to supplement their current system. Doing this would help them overcome the silo problem, increase teamwork and most importantly encourage employees at all levels of the company to innovate - a requirement of true Digital Mastery.

7.2 Improving the IT infrastructure and Platform

Maersk Line began the improvement of their IT infrastructure and platform when they decided to simplify it. They understood that the complexity and age of their legacy systems were a hindrance to process excellence. Based on the analysis, it is clear that they have come a long way in improving the platform, especially when it comes to the sales process, but there may be cause for concern. One of the respondents commented that he was worried that the IT department was losing focus on the legacy systems. After three years of cleaning, all the so called low hanging fruits have been plucked. Smaller local systems have been removed and the users forced onto the larger global systems, the faulty sales systems have been replaced by a cloud solution and the balance between run and build are very close to the goal of 50/50. It is tempting to consider it a win and move on to development. The problem is that despite all the changes, the platform is still full of old legacy systems, and until these have been replaced or improved they will continue to get in the way of process excellence. At the moment the focus of the Simplification project is the sales process, and
thus the sales systems. The question is whether Maersk Line IT is saving the rest for later, which is a good strategy, or if they will consider themselves done when the sales process is streamlined. Which brings us to the final topic:

7.3 Further Changes

At the moment, Maersk Line is focused on improving their sales process. The sales process has been under revision since before the P&O Nedlloyd acquisition in 2005, and they are still working on it. After 10 years of work Maersk Line is still not satisfied with the sales process, and with good reason. Even if 70-80% of the bookings are now made online, the process from end-to-end is still not fully digital. There are still gaps between the booking system and the systems and processes that actually handle the cargo at the docks and onboard the ships. In order to provide full end-to-end service to the customers, these systems need to be linked.

According to the respondents, Maersk Line remains ahead of their obvious competitors, with respect to digital capabilities. This is a good thing, but may be insufficient. Small companies are entering the shipping industry with new disruptive business models which will threaten all of the established players, including Maersk Line. Initially, improvements to the sales process aimed to catch up to industry standards, but today this is turning into a defensive strategy to protect against these newcomers. It will be interesting to see if Maersk Line is able to get their IT infrastructure and platform under control and use it as a platform for launching their own offensive business models in the future.

8. Conclusion

Companies strive to differentiate themselves from their competitors. This can be done in a variety of ways, such as; business models, customer experiences, processes and prices. In the shipping industry prices have already been driven to – and in some cases below - sustainable levels, so further differentiation must come from other sources. This thesis has investigated the potential gains from using IT or digital technologies to innovate business models, customer experiences and processes.
Fueled by Moore’s law, advances in digital technologies have reached a speed where new capabilities may be phased out in a matter of months. If companies want to achieve competitive advantages from implementing new technology, they must build the capabilities to innovate and implement new IT quickly. Digital Mastery can be a path to the solution to this problem, because it is focused on building leadership as well as digital capabilities that will allow the company to achieve sustainable innovation. This in turn will allow companies to differentiate themselves from competitors and thus use digital technologies to drive significantly higher levels of profit, productivity and performance.

In the past Maersk Line were very close to achieving Digital Mastery relative to the requirements of that age, with a high rate of innovation. As the company grew, widely distributed innovation created a very complex infrastructure of processes and supporting IT systems, with the result that this form of innovation became unsustainable. The resulting complexity, combined with trends in the environment, led to a series of changes that removed the original innovative and entrepreneurial culture from the company.

Today Maersk Line strives towards Digital Mastery again. In order to make room and budget for sustainable innovation for global business, they have declared war on complexity, and are currently working very hard to simplify both processes and IT systems. This study shows that they have just entered the Digital Mastery quadrant, but they are now entering a dangerous period, where they will either move forward towards Digital Mastery, or lose momentum. Many of the Quick-Win battles have been won, and going forward from here will be much more difficult.

The IT department needs to keep a focus on simplifying while producing new systems to keep up with technological developments. They also need to avoid getting distracted by IT fashion trends and the myriad of possibilities, and stay focused on achieving the business goals and add value to the company. The business side of the company needs to get more involved, and participate in driving change. So far they have allowed the IT department to come up with ideas, but the IT department will never have the deep understanding of the business which is needed to come up with radically new business models and processes. They also need to help the IT department with the implementation, by changing the culture and governance structure to support innovation.
Bibliography:

Andersen, I. 2009, *Den Skinbarlige Virkelighed - vidensproduktion inden for samfundsvideneskaberne*, 4th edn, Samfundslitteratur, Frederiksberg C.


Appendixes:

Appendix A: Interviews

A-1 Interview guides

A-1-i General template

Explanation for Colors and symbols:

- Blue questions are Leadership questions from the self-assessment tool
- Green questions are Digital questions from the Self-assessment tool
- Purple questions are from the stage assessment tool at the end of chapter 11
- Orange questions are from the stage assessment tool at the end of chapter 9
- Red questions are from the stage assessment tool at the end of chapter 12
- Black extended questions to identify the informant’s position in the company, and extended questions created to make ties to further literature possible.

1. Introduction questions:

- ★ Who are you?
- ★ What is your area of responsibility?
- ★ How are you connected to Maersk’s IT strategy.

1.1 Extra questions for long time employees:

- ★ How long have you been a part of Maersk line?
- ★ If you should describe Maersk’s change history, how would you do it?
- ★ If you could describe Maersk’s culture, how would you do it?
2. **Leadership Capabilities:** 1-7, 4 neutral, 7 agree, 1 disagree.

- Senior executives have a transformative vision of the digital future of Maersk
- Senior executives and middle managers share a common vision of digital transformation
- There are possibilities for everyone in the company to take part in the conversation around digital transformation
- Are the leaders acting as role models
  - Our employees understand the need and reasons for change
- Maersk is promoting the necessary culture changes for digital transformation
- What are you doing to build momentum and achieve buy-in from employees

3. **Governance issues:**

- Maersk is investing in the necessary digital skills
- Digital initiatives are coordinated across silos such as functions or regions
- Roles and responsibilities for governing digital initiatives are clearly defined
- Digital initiatives are assessed through a common set of key performance indicators
- Financial incentives and KPI’s are aligned with the IT digital transformation strategy

4. **IT-business relationship**

- IT and Business leaders work together as partners
- The IT unit’s performance meets the needs of the company
5. Digital capabilities

- We are using digital technologies to understand our customers better
- We use digital channels to market our products and services
- We sell our products and services through digital channels
- We use digital channels to provide customer service
- Technology is allowing us to link customer-facing and operational processes in new ways
- Our core processes are automated
- We have an integrated view of key operational and customer information
- We use analytics to make better operational decisions
- We use digital technologies to increase the performance or added-value of our existing products and services
- We have launched new business models based on digital technologies.

✦ Where appropriate we use a common digital platform

6. Strategic aspects

➢ We understand which strategic assets will be the most important in digital transformation
➢ We understand how our own digital capabilities compare with those of our competitors
➢ We have a clear view of the most important first steps in our transformation

★ What are those?

_A-1-ii Template for each of the four respondents_

Can be found as part of the resumes in appendix A-3
A-2 Scanned notes, made during the four interviews

Ryan Worobel:

1. Introduction questions:

Ryan Worobel
Who are you?
What is your area of responsibility?
How are you connected to Maersk's IT strategy?

2. Leadership Capabilities: 1-7, 4 neutral, 7 agree, 1 disagree.

Human aspects:

- Senior executives have a transformative vision of the digital future of Maersk 5
- Senior executives and middle managers share a common vision of digital transformation 6
- There are possibilities for everyone in the company to take part in the conversation around digital transformation 5
- Are the leaders acting as role models 5
- Employees understand the need and reasons for change 5
- Maersk is promoting the necessary culture changes for digital transformation 6
  - What are you doing to build momentum and achieve buy-in from employees
    - Must win structure change
    - New CFO
    - Jacob focus 5

3. Governance issues:

- Maersk is investing in the necessary digital skills 31
  - Bending
  - CMO
  - DS Head
1. Digital initiatives are coordinated across silos such as functions or regions

2. Roles and responsibilities for governing digital initiatives are clearly defined

3. Digital initiatives are assessed through a common set of key performance indicators

4. Financial incentives and KPI’s are aligned with the IT digital transformation strategy

4. IT-business relationship

5. IT and Business leaders work together as partners

6. The IT unit’s performance meets the needs of the company

5. Digital capabilities

7. We are using digital technologies to understand our customers better

8. We use digital channels to market our products and services

9. We sell out products and services through digital channels

10. We use digital channels to provide customer service

11. Technology is allowing us to link customer-facing and operational processes in new ways

12. Our core processes are automated

13. We have an integrated view of key operational and customer information

14. We use analytics to make better operational decisions
6. Strategic aspects

We understand which strategic assets will be the most important in digital transformation

We understand how our own digital capabilities compare with those of our competitors

We have a clear view of the most important first steps in our transformation

What are those?

- Simplification
- Agile
- Reduce 

- Forward bad
- Backward good

- Disruptors
  - Expedia for shippings
  - 3PLs
Tim Ferguson:

1. Introduction questions:

Tim Ferguson

Who are you? Web sites  Leading digital

What is your area of responsibility?

How are you connected to Maersk's IT strategy.

2. Leadership Capabilities: 1-7, 4 neutral, 7 agree, 1 disagree.

Human aspects:

- Senior executives have a transformative vision of the digital future of Maersk
  - 5

- Senior executives and middle managers share a common vision of digital transformation
  - 6

- There are possibilities for everyone in the company to take part in the conversation around digital transformation
  - 5

- Cost reduction
  - Customer segmentation

Are the leaders acting as role models

- Our employees understand the need and reasons for change
  - 6 (may not agree)

- Maersk is promoting the necessary culture changes for digital transformation
  - 4

- Innovation
  - 6

What are you doing to build momentum and achieve buy in from employees

- Recruiting experts
- bringing expertise in house

- Carsten Freule
- Olsen
- Peter Holestad

3. Governance issues:

- Maersk is investing in the necessary digital skills
  - 6
Digital initiatives are coordinated across silos such as functions or regions
Roles and responsibilities for governing digital initiatives are clearly defined
Digital initiatives are assessed through a common set of key performance indicators
Financial incentives and KPI's are aligned with the IT digital transformation strategy

4. IT-business relationship
IT and Business leaders work together as partners
The IT unit's performance meets the needs of the company

5. Digital capabilities
We are using digital technologies to understand our customers better
We use digital channels to market our products and services
We sell out products and services through digital channels
We use digital channels to provide customer service
Technology is allowing us to link customer-facing and operational processes in new ways
Our core processes are automated
We have an integrated view of key operational and customer information
We use analytics to make better operational decisions
We use digital technologies to increase the performance or added-value of our existing products and services.

We have launched new business models based on digital technologies.
Where appropriate we use a common digital platform.

6. Strategic aspects

We understand which strategic assets will be the most important in digital transformation.

We understand how our own digital capabilities compare with those of our competitors.

We have a clear view of the most important first steps in our transformation.

What are those?

Simplification
additional features online
diverse agnostics
mobile friendly
reliable and quick
great user experience

difference in digital/IT
constant vigilance
culture
Carsten Frank Olsen:

1. **Introduction questions:**

Carsten Frank Olsen

Who are you?

- Commercial BPO (Sales & Customer Service), Senior Director at Maersk Line

What is your area of responsibility?

- E-commerce
- Manu

How are you connected to Maersk's IT strategy.

How long have you been a part of Maersk line?

- 15 years

If you should describe Maersk’s change history, how would you do it?

- My HR chief changed
- My business strategy changed
- My domain changed
- My people changed

If you should describe Maersk’s culture, how would you do it?

- Agile
- Safe
- Flexible
- Lean
- External

Human aspects:

1. Senior executives have a transformative vision of the digital future of Maersk

2. Senior executives and middle managers share a common vision of digital transformation

3. There are possibilities for everyone in the company to take part in the conversation around digital transformation

4. Are the leaders acting as role models

5. Our employees understand the need and reasons for change

6. Maersk is promoting the necessary culture changes for digital transformation

Leadership Capabilities: 1-7, 4 neutral, 7 agree, 1 disagree.
What are you doing to build momentum and achieve buy in from employees

3. Governance issues:

- Maersk is investing in the necessary digital skills
- Digital initiatives are coordinated across silos such as functions or regions
- Roles and responsibilities for governing digital initiatives are clearly defined
- Digital initiatives are assessed through a common set of key performance indicators
- Financial incentives and KPI’s are aligned with the IT digital transformation strategy

4. IT-business relationship

- IT and Business leaders work together as partners
- The IT unit’s performance meets the needs of the company

5. Digital capabilities

- We are using digital technologies to understand our customers better
- We use digital channels to market our products and services
- We sell out products and services through digital channels
- We use digital channels to provide customer service
- Technology is allowing us to link customer-facing and operational processes in new ways
Our core processes are automated

We have an integrated view of key operational and customer information

We use analytics to make better operational decisions

We use digital technologies to increase the performance or added-value of our existing products and services

We have launched new business models based on digital technologies.

Where appropriate we use a common digital platform

Salesforce, etc.

6. Strategic aspects

We understand which strategic assets will be the most important in digital transformation

We understand how our own digital capabilities compare with those of our competitors

We have a clear view of the most important first steps in our transformation

What are those?

Helle Wüberg
Rohys assistant
Peter Hyllested:

1. Introduction

Peter Hyllested

Who are you

What is your area of responsibility?

How are you connected to Maersk's IT strategy.

How would you describe Maersk digital history so far.

2. Leadership Capabilities 1-7... 1 disagree 4 neutral 7 agree

- Senior executives have a transformative vision of the digital future at Maersk 5
- Senior executives and middle managers share a common vision of the digital transformation 5
- There are possibilities for everyone in the company to take part in the conversation around the digital transformation 5
- The leaders are acting as role models 3
- Our employees understand the need and reasons for change 6
- Maersk is promoting the necessary culture changes for digital transformation 5
- What is Maersk doing to build momentum and achieve but in from employees 6

Simplification 4

Customer 4

Fokus pa' ET projekt.
3. Governance:

- Maersk is investing in the necessary digital skills

- Roles and responsibilities for governing digital initiatives are clearly defined

- Digital initiatives are assessed through a common set of key performance indicators

  Financial incentives and KPI's are aligned with the IT digital transformation strategy

4. IT-Business relationship

- IT and Business leaders work together as partners

- The IT unit's performance meets the need of the company/business

5. Digital capabilities

- We are using digital technologies to understand our customers better

- We use digital channels to market our products and services

- We sell our products and services through digital channels

- We use digital channels to provide customer service

- Technology is allowing us to link customer-facing and operational processes in new ways

- Our core processes are automated

- We have an integrated view of key operational and customer information
We use analytics to make better operational decisions.
We use digital technologies to increase the performance or added-value of our existing products and services.
We have launched new business models based on digital technologies.

Where appropriate we use a common digital platform.

6. Strategic

We understand which strategic assets will be most important in digital transformation.
We understand how our own digital capabilities compare with those of our competitors.
We have a clear view of the most important first/next steps in our transformation.

- What are those.

mangler fokus på Omni channels og Customer journeys.

Det før sinover syn.

Fejer for egen dør.
A-3 Resumes of the four interviews

**Ryan Worobel**

**How are you connected to Maersk’s Line and its IT strategy?**

3:23 Respondent: so I run, on the it organization, all the commercial aspects of IT, which really is everything from Dymengine which is kind of marketing automation to invoicing. So it is all the sales, customer service, marketing, and that includes all the online ecommerce, it’s the serum systems, it’s the order management systems, it’s the marketing automation, it is all the online ecommerce. So I have a guy reporting to me who is my head of the commerce group. So very connected as far as the strategy goes. Both the IT strategy, the organizational transformation strategy and the ecommerce strategy.

**Senior executives have a transformative vision of the digital future of Maersk?**

5. They are just now starting to understand what digital transformation means. They have been talking to McKinsey about it, they talked to us about it, they talked to a lot of people about it. But, they’re incrementally moving that way, and for a big company, that’s surprising – small companies are much more agile and innovative. When you talk about a big organization like this, it’s more conservative in thinking. So for them, moving the business, moving your standard order-managements and your bookings online, is a big digital step. But that is just basics, right? So, they understand the need, they understand the drive, but they don’t really understand how far we can go. Does that make sense?

5: 25 **Senior executives and middle managers share a common vision of digital transformation**

6. And I’ll say that because, And I’ll say that because, the company has made this year.. We have a transformation program right now, which is called Simplification. Simplification is, it’s very foundational, but it is transformational and it is starting to take the company into an online structure. But again, the understanding, the conservative understanding of what online is, vs. the value is online, it’s very different. But as now, we organize the company around the “Must-Win-Battles”, so MWB are really what we need to focus on, the main vision focuses. The Simplification program is a Must-Win-Battle this year…. They are all aligned to it. has talked about it, has preached about it. They’ve made it a MWB, so that the whole company is now focused around that area.

7:20 **There are possibilities for everyone in the company to take part in the conversation around digital transformation?**
5. I think you have to be pro-active about it. And, so, let’s go back to your last question about if everyone shares the vision. There is a difference between sharing the vision, and understanding the vision. Understanding the vision, and binding to the vision. There is definitely a difference. I think, you know, you’re in a very old company, there is still a lot of people who believe that Digital – why would my customers want to do this online? There is a fraction of that in the company, so, Yes there’s a division, especially at the senior executive level, and manager level. As you get farther down, out on the frontlines, in places like the Middle East or other areas that are not as digitally focused, there is probably more skepticism. So, just understanding the layers there.

8:15 The leaders acting as role models

I’ll say 5. I think again, you have a majority acting as leaders, but there are still outliers.

8:38 Employees understand the need and the reasons for change?

5. Again, it’s early in the transformation, and there’s a mixed group. I also think, just to add more context, there’s a struggle. We are working off a lot of old legacy systems here as well, which don’t take into account user experience in an online world. So, how do you get sub-second response times in online? Cause, that’s what the users expect. This company thinks that, or has thought that some of the benchmarks have been “we need to get a booking confirmation back to our customers in 2 hours”. And the systems are built around that. That clearly doesn’t work in an online world. So, It’s revamping a lot of that, so you can have those sub-second response times, it’s building in that business process layer into the system network so that you don’t have customers hanging all the time. So, there’s overall understanding of where we are going, and how we get there.

9:55 Is Maersk promoting the necessary culture changes for digital transformation?

6. Again, being part of the Must-Win-Battles means promoting that. You have to change the culture. One of the greatest quotes ever is “culture eats strategy for breakfast”, right? And you can see that in a company like this. You’re absolutely right. This company is so embedded in its culture. You know, the entire LMB being basically new in the last 3 or 4 years is a big driver of that. If you didn’t have a complete turnover, this would be a harder change.

What are Maersk line doing to build momentum and achieve buy in from employees?

I’ll keep it on 5. Again, the Must-Win-Battle Simplification is a big one. They’ve also just changed the organizational structure, So Jacob S. who was running Strategy, Finance and Transformation. They just hired a new CFO, so they are taking Finance out from under Jacob, and leaving Jacob to
focus on Strategy and Transformation. So he’s got a much more narrow focus now. And Strategy and Transformation is focused around digital.

Maersk is investing in the necessary digital skills

6. We have to do more but we are.. 11 contractors and 3 internal people on the It side and 3 people on the business side, now 31 internal people. High technical skill, plus and offshore team for development, going on 60 people. Also more people on the business side.

Digital initiatives are coordinated across silos such as functions or regions

4. We are trying but still early

Roles and responsibilities for governing digital initiatives are clearly defined

3. still immature state.

Digital initiatives are assessed through a common set of key performance indicators

3.

Financial incentives and KPI’s are aligned with the IT digital transformation strategy

5. all leaders in the sales organization has simplification in their kpi’s

IT and Business leaders work together as partners

5. but a lot better than we used to be, 2,5 years ago. We have gone from development to being business oriented. Everyone in IT has a business peer to coordinate with

The IT unit’s performance meets the needs of the company

5 on strategy 3 on current state. We are trying to go where they want us to go. But we are not there on up time and infrastructure.. Strategy wise yes.

We are using digital technologies to understand our customers better

3.5 going up

17:00 We use digital channels to market our products and services

4

17:04 We sell out products and services through digital channels
5.5 What we do with digital is good, but we don’t do enough. 70% of bookings are online. No marketing or up-sales, just bookings

18:00 We use digital channels to provide customer service

3. Just rolling out a customer service case management tool as a part of salesforces’ service cloud. This is step one in a process which should take us to 5-6 in a not so distant future.

18:30 Technology is allowing us to link customer-facing and operational processes in new ways

5. Simplification is driving a lot of this

Our core processes are automated

4. But this is from a shipping perspective, probably higher if the question had included sales.

19:25 We have an integrated view of key operational and customer information

3.

19:30 We use analytics to make better operational decisions

4 trending upwards. Spending lots of money to build up data warehousing capabilities and analytics capabilities. Good at financial analytics, bad at predicting. Looking back is doing okay, looking forward is still hard. We are in the logistics. Good at predicting where cargo comes from, but not good at foreseeing financial trends. Not good at buying analytics on what customers want to buy, that’s on the “to learn” list.

21:40 We use digital technologies to increase the performance or added-value of our existing products and services

4. we do not really do any of this.

We have launched new business models based on digital technologies.

4. Not jet. It is on the road map

22:38 Where appropriate we use a common digital platform

3. all of our sub companies are on their own platforms, we are working on getting everyone onto the same platform. Will improve content management and analytics.
23:40 We understand which strategic assets will be the most important in digital transformation

4. We do not know yet. Working on a strategy, but we don’t know yet. Digital is new in the shipping industry so the whole industry is learning as we go along. We have looked at ourselves but we don’t know what is important yet.

24:15 We understand how our own digital capabilities compare with those of our competitors

6. We understand our competitors, but we do not understand the disruptors who are entering the industry. We do not know how they will influence the industry in the future. Companies with business models like expedia travel are making their way into the industry and we need to figure out how to keep our contact with the customers. We need to defend against these disrupters. 3PLs

25:34 We have a clear view of the most important first steps in our transformation

6.

What are those?

- Simplification process
- Getting the fundamental capabilities in place
- Creating an agile environment
- Building a strategy which reduce the bottom line (automation) and improve topline growth.

IT strategy is fluent, the world is changing and we keep looking out for new possibilities.

Tim Ferguson

Who are you?

Head of online operations. Responsible for the website and developments on the IT side.

Background is leading digital teams. With Maersk Line we have functionality online and customers who use it. We have a lot of transactions, about 20 mio euros which goes through the websites. It is a big traffic site, but largely customers like to ring us, and we try to get more and more of them to use the webpage.

What is your area of responsibility?
This was covered above.

**How are you connected to Maersk’s IT strategy.**

The strategy is focus on a programme called simplification; it’s about removing legacy platforms, making things realtime, removing complexity and cutting costs. The way to do this is set in my domain. There are a number of domains, security, order handling and master data and things like that, all of them rely on me to build the online functionality to bring them the date. The strategy is firmly plugged into my work life.

1-7, 4 neutral, 7 agree, 1 disagree.

**4:00 Senior executives have a transformative vision of the digital future of Maersk**

5. they are starting to wake up to it. Historically Mearsk has been.. it is a shipping company which has done a bit of digital, but now we want to become a digital shipping company in the future. The TMT has started to realize what this means. We move a box from one side of the world to the other, and we do that really well. We have a tried and tested process which has worked for a long time so putting digital into that.. there is some skepticism about whether it is going to work and whether it is what the customers really want. But our competitors will do it if we don’t so we need to do it.

**Senior executives and middle managers share a common vision of digital transformation**

6. there is a vision

**There are possibilities for everyone in the company to take part in the conversation around digital transformation**

5. There are yes. In the end is it about cost reduction. We do a lot of manual processing and offshoring and ultimately the goal is to reduce the number of people, by asking the customers to do it themselves. Some people have something to lose by things going digital. Our customers will have a lot to gain, but they might not like to be pushed online. At the moment some of the customers are getting really great customer service and these might not like to be pushed online.

**Will it still be possible to get personal service?**

It will. We are segmenting our customers. High value customers will still be able to get good personal customer service, but other customers will be encouraged to use the online solution. We try to sell the online solution as a quicker and fast solution for our customers.

**Are the leaders acting as role models**
7. The message is consistent across the leadership board.

8:20 Our employees understand the need and reasons for change

6. Understand yes.. if they like it or agree to it is not the same.

8:45 Maersk is promoting the necessary culture changes for digital transformation

4. they have started to, there is a real drive around innovation. There are a lot of startup companies in the market, which has started to make things which have been very complex in shipping into something very straight forward. So things that shipping companies has always done is being taken over by these disrupters in the market. We are a market leader globally and we want to see if we can be disrupters and if we can lead the industry. so the culture is changing, but there is some resistance to it.

What are you doing to build momentum and achieve buy in from employees

6. I started at the company last June, and I had a team of six people. They had little or no experience in digital technology, so I have been recruiting industry experts. I had a few developers and a tester, everything else was outsourced to vendors who would manage the process. Using vendors is a short term strategy. We were really missing digital capabilities in house, both in IT and on the business side. So I have been bringing in experts, and looking at the disciplines that were absent before I joined. When we are looking at how we deliver digital it is important that we understand the requirements and the needs of our customers, users and the business. It’s a triangle and each one will have competing needs and we need to negotiate and balance the needs.

Maersk is investing in the necessary digital skills

6.

Digital initiatives are coordinated across silos such as functions or regions

5. it is coming together. There are small local initiatives which are working towards this.

Roles and responsibilities for governing digital initiatives are clearly defined

5. we are getting there. The danger of digital is that people get excited and wants to be part of it. And people start their own little projects and start hiring people. So know we have both an online and a mobile department, and it would be logical to merge these to.

Digital initiatives are assessed through a common set of key performance indicators
3.

13:19 Financial incentives and KPI’s are aligned with the IT digital transformation strategy

3. Immature

**IT and Business leaders work together as partners**

7. We have Business partners on the main leaps. We are all completely aligned.

**The IT unit’s performance meets the needs of the company**

5. it is growing.

**We are using digital technologies to understand our customers better**

5.

14:25 **We use digital channels to market our products and services**

4 right now. We are working on online marketing. It is something completely new for us. We are looking at traffic analysis and paid marketing. We have never really looked at what the customers do at our sides, and tried to tailor it to their needs. So there are huge opportunities there for us.

**We sell out products and services through digital channels**

6.

**We use digital channels to provide customer service**

6.

**Technology is allowing us to link customer-facing and operational processes in new ways**

6.

**Our core processes are automated**

3. there is still a lot of backend manual intervention.

**We have an integrated view of key operational and customer information**

5.

**We use analytics to make better operational decisions**

3. We have the analytics but we do not use them as well as we should.
We use digital technologies to increase the performance or added-value of our existing products and services

5.

We have launched new business models based on digital technologies.

5. We are launching them. In a year it would have been 7.

Where appropriate we use a common digital platform

6.

We understand which strategic assets will be the most important in digital transformation

4. We are only just starting to understand that.

We understand how our own digital capabilities compare with those of our competitors

3. We are quite often surprised about what our competitors do.

We have a clear view of the most important first steps in our transformation

7.

What are those?

Simplification is the main driver. Putting additional functionality online. Right now you can make a booking, register as a new customer, and manage your bookings. But there is a lot of things in the cycle which is not available. So it is about putting the functionality online, to make it unnecessary for customers to contact us. We try to make the online solution work for everybody on all devices. Taking peoples devices and connecting into account when they load the webpage. We want to improve the user experience. We want to put the customer at the hearth of every process. We test and get feedback from customers. As developer you get blindsided by looking at a system for to long, and it is very heathy to bring in the customers to test it.

Anything else to ad?

The things we are missing, is the understanding of what the difference is between the realtime digital experience and the old internet experience. the hard part is to know where to launch it. There are many parts that need to be in place before your get the total experience. and in mobile it is even worse because the customer downloads it on to their mobile phone and you can’t control whether it
is on an off, so you have to support it at all times. You have to be proactive about keeping the app running at all times and keep a team ready to fix it. It is hard to turn off when you have turned it on. This is what is unique about digital/mobile technology. The rest of IT is built – test- launch – forget. So we need to focus on building the capabilities to handle digital technology.

**Carsten Frank Olsen**

1. **Introduction questions:**

Carsten Frank Olsen

**Who are you?**

- Commercial BPO (Sales & Customer Service), Senior Director at Maersk Line

**What is your area of responsibility?**

Global responsibility for e-commerce at Maersk line. Simplification is a part of this. Project where we simplify the way we talk to our customers. From manual and tactical to something more modern and in line with what customers expect, which is based more on electronic interaction. E-commerce has been a part of Maersk Line for a while, but it has been dormant until recently. (Simplification was called Apollo in 2011).

Segmentation of customers, to understanding the customers better and how to handle the different types of customers.

**How are you connected to Maersk’s IT strategy?**

The project is divided into domains, and each domain has an IT and a Business person working on it, as a matched pair.

Simplification

<table>
<thead>
<tr>
<th>It</th>
<th>Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-commerce</td>
<td></td>
</tr>
</tbody>
</table>

**How long have you been a part of Maersk line?**

Since 2000. Ryan and Tim receive recommendations. Carsten has faith in these guys.

**If you should describe Maersk’s change history, how would you do it?**
Static. Wanting to make their own systems. Not always good, in most situations the technology is obsolete when it is finished. Now we buy and retrofit. BUY instead of BUILT. More Flexible and agile in development. Fewer developers more managers and call-centers.

If you could describe Maersk’s culture, how would you do it?

The culture is better now. New people from outside. Conventional norms about secrecy and doing it yourself is gone. Less focus on internal and more focus on getting new blood from outside.

Before there was training in how to be leaders, now the focus is on teamwork. New company in the last 3-4 years, both on culture and technology. More flexible and easy to mobilize.

The shipping industry is not known for driving new norms and possibilities.

The leadership at Maersk is very capable, and are strong role models for change.

2. Leadership Capabilities: 1-7, 4 neutral, 7 agree, 1 disagree.

Human aspects:

Senior executives have a transformative vision of the digital future of Maersk

7 – The answer is simplification. Very clear.

15:11 Senior executives and middle managers share a common vision of digital transformation

4 – Middle managers are not totally in on it. The focus is on the commercial area, which means that all non customer facing employees are not in on it. They understand it but they are not a part of the solution. To get all onboard the simplification project should be enlarged so that it involves these business units aswell.

We want to do quick wins to sell to these business units, so that they want to buy in when it is their turn.

17:10 There are possibilities for everyone in the company to take part in the conversation around digital transformation

5 - They have implemented a generic change management framework that is based on kotter. Make changes visible. We do conversations with all levels about how the change will affect them, and take feedback from everyone. Strategies are made by consulting the front line staff.
18:48 Are the leaders acting as role models

4 - Its to early to say. We are still in the mobilizing face. Building the projects before rolling them out. The leaders are very clear when they communicate, but they are not communicating a lot, JET.

Our employees understand the need and reasons for change

6 - They do. The CEO (Søren Schou) has talked about it since he started, and it has been on the agenda on all leadership meetings since he started. Our strategy plan “must win battles” is also visible. Varying degrees of accept but everybody knows that transformation is on the menu and has been for several years.

20:55 Maersk is promoting the necessary culture changes for digital transformation

5,73 - Not jet. We are not jet ready to use customers as inspiration for our transformation. We are still relying on what we think is best for the customer. Too many in the commercial sector is afraid of consulting with the customer. We do a lot to remove transformational actions to allow for time to talk to customers.

What are you doing to build momentum and achieve buy in from employees

6 - They placed the transformation as a part of the strategic portfolio. Lot of visibility on the next step, and telling the right stories. Incentive schemes is used to drive the transformation.

3. Governance issues:

25:00 Maersk is investing in the necessary digital skills

4 - No. Even though we have hired a lot of new people, it was seen mostly as filling a hole, not as driving an agenda. We need to employ our business side, so that they know more about IT possibilities and learn some of the language. They need to hire young people with a hand on the pulse who can tell them why mobile aps might be “so yesterday”.

Digital initiatives are coordinated across silos such as functions or regions

3 - Not jet. But we are working on it. Silo initiatives from before simplification is still running and these are disrupting the work away from silos.

Roles and responsibilities for governing digital initiatives are clearly defined

6 - Yes. A lot of work has been put into defining roles and objectives for simplification.

Digital initiatives are assessed through a common set of key performance indicators
5 - The transformation is measured. The digital initiatives are covered by cost/benefit cases.

28:45 Financial incentives and KPI’s are aligned with the IT digital transformation strategy

6 – we made specific incentive schemes to cover the transformation which runs until 2017. They support the heavy lifting of the transformation and covers all levels of the organization.

4. IT-business relationship

29:40 IT and Business leaders work together as partners

5 - Yes. We can always do more.

It does create a bit of problems that IT and Business is sitting different places. They do a lot of meetings each week to keep in touch but you can never get around it. We know we have a problem and we are working on it.

31:08 The IT unit’s performance meets the needs of the company

3 - Yes and no. we have the old legacy systems which are not a very popular thing to work on, is lacking behind, but all the new technologies are good. Imbalance between work done on the new things and fixing the old infrastructure. They feel they have done what they could, but it isn’t good enough. Not enough focus on fixing the basics.

5. Digital capabilities

33:00 we are using digital technologies to understand our customers better

5 - Yes we do this. We are collecting data on customers, and are using it. Next thing is to understand our online customers.

We use digital channels to market our products and services

5 - Yes.

We sell out products and services through digital channels

5 - Yes

We use digital channels to provide customer service

5 - Yes. We do online case management, where customers can raise tickets and get feedback on the process. We have based 95% of our business on e-channels.
36:55 Technology is allowing us to link customer-facing and operational processes in new ways

2 - Yes- but we are not really good at using it. There are not jet visibility between what is in the system and how containers are actually handled

Our core processes are automated

4 - 75% of our bookings are non-touch. They just go through the system. We are working on the last 25%

We are not working on automating the sailing jet.

We have an integrated view of key operational and customer information

3 - We can do this, but we are not doing this enough.

41:20 We use analytics to make better operational decisions

6 - Yes we do this. We use data to optimize on the different areas of operation. Not my area, but I think they are very good. They could be better at predicting the future, to identify bottlenecks and port congestions.

We use digital technologies to increase the performance or added-value of our existing products and services.

5 - We don’t use data enough to predict and create more value.

43:52 We have launched new business models based on digital technologies.

3 - Not jet. It is in Simplification but we are not there jet. We want to make a full digital journey for our customers. We want to do end to end customer service. We might also become more visionary and try to disrupt the company. We might create a team who will focus on being innovative and develop new business opportunities, but this is all in the future. We hope that it will be a 6-7 in the not too distant future.

Where appropriate we use a common digital platform

4 - Yes I think we do. Salesforce.com is a good example. We do not have a strategy, it just happens where it makes sense.

6. Strategic aspects
46:55 we understand which strategic assets will be the most important in digital transformation

3 - We have a lot of assets, but we do not use it yet. At least not to add value to the customers.

RCM – ground breaking product that keeps a tab on refrigerated containers. We use it internally but don’t sell it to customers.

48:15 we understand how our own digital capabilities compare with those of our competitors

6 - We have a good understanding.

I am working on a Digital intelligence quotient across the company. We want to be leaders on digital in the industry, but we are not really doing that internally yet so we need to understand how we get better. The McKenzie quotient should help us understand how we culturally and leadership wise get closer to being digital.

We have a clear view of the most important first steps in our transformation

7 - Yes we have a clear idea of where we want to do. We have a plan and a vision, and we are following it to the best of our ability.

What are those?

Simplification

You have talked to the four people who are in the process, but not with someone on top of the process.

Helle Wiiberg (assistant for Robin)

Peter Hyllested

1. Introduction questions:

Peter Hyllested

Who are you:

On the business side of transforming the sales process from manual to digital.

What is your area of responsibility:
Project manager. We have a content side of customer relations which is branding and then we have the transactional side which I am responsible for. I make sure that we support all the processes and that we are providing good customer service so that we can get more customers. There is two ways to get customers to use new technology, one is to charge them when they do not use it, the other is to reward them when they do. We aim for the last.

**How are you connected to Maersk’s IT strategy.**

We work very closely with IT. We are the connecting link between IT and the other business units. We own the process and must make it usable for both users and customers.

**How long have you been in the company?**

Many years!!

**How would you describe the digital change in Maersk Line so far?**

3:20 It started in the late 90’s. Me an Carsten has been involved on and off ever since. Around 2000 we started having our first customer friendly webpage, where we gave the customers relevant information. We started with PDF’s with schedules. In 2000 we had the first online booking. Focus on improving the process internally and cut cost. The focus was on improving the process not on customer service. We had challenges caused by our backend systems. We changed to a single backend systems around 2000, and then we could change the webpage to work with the one system.. we haven’t upgraded our webpage since 2006-7. But now we will bring it up to speed.

We do a lot of leaps, where we look at our processes. We had the X-leaps project were we wanted to change the entire customer experience, but we didn’t have buy in from management so it failed. We had good visions but it never stuck. IT tried to dictate how the business should work, because of how the systems would work best. Today we try to work out together how it should work.

1-7, 4 neutral , 7 agree, 1 disagree.

**Senior executives have a transformative vision of the digital future of Maersk**

6 on how to become digital, 3 on omnichannels.

Yes and no. we know there is a need, but we don’t know how far we want to go. There is a vision that we want to use MyMaerskLine, but we don’t know what to do with the other channels. Before we talked a lot about the different channels and saw them as different channels to the customers.
Now we want to focus on omnichannels which means that we want a coherent customer experience across all the channels. We know how we want to get I online, but we don’t have an omnichannel strategy jet.

**Senior executives and middle managers share a common vision of digital transformation.**

We don’t know where we want to be in 3 years.

6 Yes they share the vision of simplification and going online.

**There are possibilities for everyone in the company to take part in the conversation around digital transformation**

5 No. the changes is top-down. So we have to do it. Simplification has many stakeholders, and it is possible for employees to chip in with suggestions.

**Are the leaders acting as role models?**

3. No.

**Our employees understand the need and reasons for change**

6 yes. They understand that it can optimize processes

**Maersk is promoting the necessary culture changes for digital transformation**


5 We talk a lot about diversity but it is mostly one size fits all. We have one system to handle all. The culture in ML is unique and diverse. It does support IT and becoming digital.

**What are you doing to build momentum and achieve buy in from employees**

6. Simplification project. Focus on the project from the TMT.

**Maersk is investing in the necessary digital skills**


13:36 **Roles and responsibilities for governing digital initiatives are clearly defined**

2-3. No we are very silo oriented. The roles are defined but it is too much and it is in the way. We have a built and a run department when it comes to IT, and these are two separate departments which do not work well together. They should be working well together but they fight between themselves.
Digital initiatives are assessed through a common set of key performance indicators

6. Yes they do. It is the only thing we can measure. We can measure the cut in backend resources and this is going well. And then we can measure customer satisfaction.

Financial incentives and KPI’s are aligned with the IT digital transformation strategy

5. We do benefit cases, but we measure if we get the wanted results. No personal rewards.

IT and Business leaders work together as partners

5. Theoretically yes, but they do not have the same agendas. It is better than before but it is still not great. We are placed in different buildings which complicate communication and we speak two different languages (jargon) and mindsets. There is also a lot of new people in IT who does not know what shipping is about. Our infrastructure is very complex and it must be a nightmare to have to get to know.

The IT unit’s performance meets the needs of the company

2 No it does not. But they know and they are working to fix it.

18:25 We are using digital technologies to understand our customers better

3. Not really. Our problem has always been that we think we know what that want. We haven’t tested it jet, but we want to start doing this.

We use digital channels to market our products and services

3. We are building the capabilities for this.

We sell out products and services through digital channels

5 This we do. More than half of our sales comes from our webpage.

We use digital channels to provide customer service

4. we are working on doing this. We are a little weak on providing information.

Technology is allowing us to link customer-facing and operational processes in new ways

20:22. 5. Yes it does.. Everything we do is end to end.

Our core processes are automated

5 Sales is a core process and it is mostly automated. 80% of the bookings are made via the online channels. The ships are still operated manually, but who knows what will happen.
We have an integrated view of key operational and customer information

5 Yes. The customers can see where his freight is.

We use analytics to make better operational decisions

3 No not really. We are starting to get data and we are working on getting better at analyzing and using this data, but we are not there yet. Hopefully it will be a 5 in the future.

We use digital technologies to increase the performance or added-value of our existing products and services

23:18 4. we are offering value adding services to our customers, but it can probably be done better.

We have launched new business models based on digital technologies.

2. Not yet. It is a part of the strategy and it will happen in the future, but not yet. We should be hitting 5 in two years’ time. We are working on it.

Where appropriate we use a common digital platform

4. I think we do. But it could probably be better. We do our own solutions and customize a lot, but we are getting better at doing it across the company.

We understand which strategic assets will be the most important in digital transformation

3. No I don’t think we do. If we had a better vision we would have invested in technologies that might support this vision. This is not done. (he refers to the omni channel vision and not necessarily the simplification). We will use a lot of money on changing things in IT

26:10 We understand how our own digital capabilities compare with those of our competitors

6. We know where we are compared to our competitors, and we are doing pretty well

26:30 We have a clear view of the most important first steps in our transformation

3 We are going in zig-zag. We need to develop a clear vision and follow it. We want to enable our processes online but the way we get there keeps changing back and forth. We haven’t really decided how to do this yet.

Is there anything extra you would like to add?

There is not enough focus on omnichannels and customer journeys. We have begun to look at it and are looking at it in relation to MyMaerskLine. I was at a seminar were we talked about customer
experience, both when they call and when they are online. We are not looking broad enough we only look at how to do a booking or a quote. We were looking at the user journey and were asking us self why the customer needs a rate from us. Is it so that he knows the price of sailing from CPH to Singapore. Yes but it is more than that. It is probably because they have a customer whom they are delivering to, and they need to know what to charge these customers. The customer journey is not just what happens at our place, but also what happens before and after. We need to look out for opportunities that lies outside our own purview, if we want to keep the customers.

**A-4 Sound files with recordings of three of the interviews**

Not available en PDF format.

**A-5 Data handling**

Not available en PDF format. All scores can be found above or in the analysis part of the thesis.

**Appendix B: CIO Talk – Transcript**

CIO Talks, 29.10

00:04

IO: First of all thanks for inviting me. I’m delighted to be here. Leading CIOs sounds awfully impressive. I guess I sort of view my career as I’ve done a lot of IT and you try to make a right call. You get presented with a problem, you try and call it right not wrong and you hope to get it right more than you get it wrong. The inside view, the outside view. I worked for Dell for seven years half the time as the [?] CIO and half the time as the global CIO. Before that, Safeway in the US [so out in?] California. From the golden coast to the stormy coast I guess. And before that, Marks & Spencer which should be a familiar name in this room.

00:52
CIO: I’m English so that helps. It helps with the weather but I’ve been in America best part of 18 years I think. Now, Denmark I’m sure Maersk is a familiar name. What I thought I’d do was start with a little video for anyone who doesn’t know the company. I was told some of the faculty aren’t from Denmark but for anyone who’s Danish, this may be utterly boring. You may know it already but I’ll start there then I’ll just try and humanize what we do in IT. I’m going to talk predominantly about Line. I know a little about drilling, a little about oil. We do provide some of the infrastructure services for some of the rest of the group but I’ll keep the story to Line but I’ll gladly, as we go through what’s transformation about, I’ll gladly take any questions. Raise your hand if I say something that’s either English or American, I get confused between the two. My Danish is atrocious. I’ve got [tack?] nailed [mein tack?] is my next breakthrough so I’m up to two words. You’ve got a tough language. But if I say something that doesn’t make sense, just stop me and ask. Let’s go straight into it. Maybe we’ll start with a little bit of who we are. And what we do.

[video plays]

02:11

CIO: So, a marketing video. It gives you a good summary of what it’s all about. Fundamentally, if you look at, say, across the pacific, if you look in the last ten years the physical cost of moving container is exactly the same in today’s dollars as it was ten years ago. So you talk in many industries about cost efficiency, being lean. Actually, we’ve absorbed inflation completely for ten years. And if you look at a pair of Nike shoes-- Anyone hazard a guess how many cents are the actual transportation costs for a pair of Nike trainers? Anyone got Nike trainers? Come on someone’s got Nike trainers. You Danes are all running the whole time right? A hundred dollars US retail for a sort of high-end pair of Nike trainers, 16 cents. That’s the business we operate in. So if you make it a little more human to the IT factor, the US navy, 288 ships, the largest fleet in the world, the largest navy in the world, Line, Line alone, 650. Two and a half times the US navy just thereabouts. Actually the systems onboard the vessels, six people. Over at [?] in Copenhagen, six people supporting all of that infrastructure. That’s a little bit of how we operate.
CIO: Bananas. No one in this room is average. But the average person eats a banana every third day. Anyone knew that? So a single sailing of the Maersk can deliver the entire annual supply of bananas to Denmark. One sailing. Now, again, what does IT do in that? When you put bananas on the ship, that container gets sealed. The air quality inside, the humidity, the temperature all gets programmed in there that is monitored by the system called RCM all the way here. So every single container - the conditions inside that container – are monitored electronically as that container goes from farm, through port, on vessel, off vessel, to the store. Just a small IT problem. If you talk about the number of containers out there.

CIO: Anyone walked up the Eiffel Tower? I forget the exact number. 2857 steps, something like that. If you do that 6800 times, that’s the same height as all the containers stacked on top of each other. One system, been around for years. There’s a couple of IBM-ers in the room, the IBM-ers will know it well. Runs on a mainframe, we don’t like that bit so much, but that still tracks where every single container is. So just to give you a size of the problem. It’s great to look at this conveyer belt across the pacific. 21 days sailing. Eight ships sailing at any one time, thereabouts. That’s called a string. Three to five strings depending on the port pay you’re talking about. Every single container, where is it, what’s in it, what’s the temperature, if it’s a reefer how is it operating. That’s what we do.

CIO: And the point about margins. When you make a couple of hundred dollars on each one, you have to get it right. So that’s really what IT enables us to do. What drives change? I don’t know looking at the room how many of you are students, how many of you are faculty but I tell you, IT is
the best profession and it’s the worst profession. If you don’t like change, you’re in completely the wrong career. When I started doing some of this, if you were really bored of my speech after ten to fifteen minutes, you just had to sit through it because there was nothing to do. Then about ten years ago, you got things like Blackberries ten, fifteen years ago and you could send your friends a message or answer your corporate email. Today, your generation, you think that’s dull, you’ve got your iPhone or your Android and you’re probably playing a computer game. You look at other industries, they haven’t really changed that much in 15 years. If you look at IT, it’s completely transformed.

06:39

CIO: My family’s from England so we feel like we’re almost home. The plan was to move back to London. We just got it slightly off and ended up in Copenhagen. We’ve got friends in the US. My wife can sit on Facebook, share our family photos from the vacation. She can use Skype to talk to friends around the world. Then you go to the office and you log on to that old mainframe system. You don’t have admin rights. You can’t connect to the printer. This concept of consumerization of technology and the speed of technology change. The marketing guy at Maersk is no different to any other consumer in the street. He doesn’t really understand why his phone takes six weeks to provision and his PC takes six weeks to provision and it looks to him more expensive than going down the high street and buying one. So rate of change is massive.

07:37

CIO: Now this may be a little different here in Denmark. You’re a small - I mean this with all due respect – you’re a small market therefore companies like Maersk have always had a view of going out and selling internationally. If you’re in the UK maybe that phenomena Marks & Spencer. Marks & Spencer put a store in every single town in Britain that grew them to about the 20 billion mark. And when you’ve got a store in every single town in Britain, what do you do? You go take that British clothing to Paris. The French who are fashionable and the Brits who aren’t necessarily fashionable. You take a big bath i.e. you lose a load of money, and then you try again. But the point is, a lot of markets – the US is a great example – you can get really, really big in the US without
being international. You can’t in Denmark but business, in my humble opinion is changing. Technology has done some of this and the way the world is has done some of this, but business is truly international maybe more than ever.

8:37

CIO: You meet small companies now. A friend of mine runs a very small consulting company that he founded. He has, last time I saw him, five clients. Three in the UK, one in Germany, one in Canada. It’s like a twelve man shop. So business is becoming more and more international. And as trade barriers come down, particularly technology changes things, that, I believe will always, or there will be more of that. This is interesting. If you look at IT budgets over the past ten, 15 years, and you look at all of this innovation out there and you look at all the things that you can do with IT, broadly, budgets stayed flat declining for the last six, seven years. If you’re an IT provider, you feel that every time we renew a contract. I was talking to someone in the audience. We just did a deal with IBM. Probably not good to talk about the price differential between old deal and new deal, but [tenths/tens?] of percent less than the old deal. That’s the way of the world now and that equates – if you’re an IT organization – the expectation that you would do more with less or flat, and I would say fortunately for me, we’re probably one of the few IT shops anywhere where the budget’s actually going up. But the budget’s going up marginally.

10:05

CIO: I think the big point here is that a big expectation in business these days is not about spending new money. It’s about running what you’ve got ultra-efficiently. Freeing up money and at best staying flat but driving more value. When I joined IT, it was a little bit of, IT guys were kind of these weird boffins who sat down, typically in the basement of the building. You ran the back-office systems, the financials, the whatever and as long as it worked, don’t come up, don’t be seen in sunlight, just keep it running. Now a sales rep - not quite a sales rep at Maersk but a sales rep at Dell – when he calls on a customer, he’s on a tablet or a phone looking at CRM information from the corporate center, and bluntly, he can’t make a pricing decision without technology in his hand.
11:03

CIO: So the transformation of where technology enables the process, there’s barely a process that goes on these days where technology isn’t essential to doing it. So actually, I may not run the company from a financial aspect but if you lost the HR guy or you lost the finance guy or dare I say you lost the CEO, you could probably get by for a few months. You lose the IT guys, you can’t. That’s how embedded into the process technology is these days.

11:38

CIO: So what do we want? What do companies actually want? And this is no different, I believe, in most companies but it was utterly true here. The big snag in the story is it would be easy to say in our case, it’s a little deceptive to other companies because of the way tax works, we don’t really have a depreciation. I don’t know if you understand capitalization but because capitalization is a way of deferring tax, we don’t have to do that because we pay tonnage tax. You put another ship on the ocean, you pay more tax. It’s a very simple rule. It’s actually probably a very efficient tax regime actually but that’s a different story.

12:24

CIO: So we spend – if you compared to most companies – about a billion dollars a year, 950 million a year. If you just equated it with what people depreciate. We spend about 650 million cash [outlay?]. It would be brilliant if you could spend all of that 650 million on the new tablet, the new app to go on the tablet, the new whatever. The catch in this is your day to day systems – I mentioned [RKM?] runs on the mainframe – how do I perform a sales transaction today? It’s already embedded in the company’s [PNL?] on whatever technology it is. So the challenge for IT organizations is fixed cost - we’ve even invented a language around it – fixed cost, running cost,
keep the lights on spending. These are all codenames for “Leave me alone, I can’t do anything about it” and that’s one of IT’s big problems.

13:22

CIO: That absorbs in the typical company, 60, 70 percent of spending. At Maersk Line, that absorbed 73 percent of the spending a year ago. Therefore, before you even start, and by the way Dell was no different. Dell on a daily basis, we supported 485 thousand supportable devices everyday. Now that’s the switch, the [WAN?] line, whatever form of cable that was, right down to the projector. And that was the IT responsibility. If all 485 thousand of them worked flawlessly every single day, I’d be average. You think about that. You’ve got 485 thousand things today, none of which can go wrong. And if you pull that off 365 times a year, you’re one smarter than me but your grade is average.

14:18

CIO: The business care about what you can do for the [PNL?]. So the point I’m making to you, what new value can you create? What new programs, initiatives are you going to run that generate value they can measure on the [PNL?]. The problem is, the spending profile is completely the reverse to that. The bulk of the spending is here [indicating a part of the slide] and people have the feeling they can’t touch it. So, 70, 80 percent to spend [indicating a part of the slide], 70, 80 percent of your appraisal and how the company’s future [PNL?] looks [indicating a part of the slide]. If no one had growth expectations of companies, IT would be easy. That, unfortunately, is not how markets work. So what do you do about it? This is [out of?] our strategy. I’ve kind of [teed?] this one up with the problem now let me tell you the opportunity. If we can shift our [run/own?] spending, reduce spending as a percent of revenue, the target being 50 percent, 50 percent. Now that would put you at the top five percent of IT shops in the world.
15:25

CIO: Now, that’s a goal. Goals are different to what you achieve. But the first thing about transformation I would tell you is if you ask for ten percent improvement, you are highly likely to get six, seven if you’re lucky, five. If you ask for 50 percent improvement, people are forced to think differently and maybe you get 20, 30. So our goal, we don’t have a clue how to get there, but our goal – we do have some clues – but our goal is 50/50 split. In other words, how do I win, how does the organization win? If I can shift, in our case, 23 percent of the spending from running cost to development cost, I’ve got more chances to find the innovation that makes a difference in the [P[NL?], selfishly I have more chances to get a good appraisal. It’s very simple. So very simple but hard to do.

16:24

CIO: The snag is, I have to reduce the cost here [indicating a part of the slide] whilst increasing the [SLA?]. So the service levels, the perceived reliability of the service, that has to increase as well. That’s hard to do but that’s the goal we set ourselves. On the build side, I talk about this very simply and I’ll use the exact words I used to the team, so if you then look at the build side and you just picture it as a pipe, what I’ve done is make the pipe wider. Our goal is to make it 23 percent of the budget wider. Then it’s about the quality, this thing about collaboration between the business and IT. It’s about the quality of what I put in the pipe. If you put good projects into the pipe, you’ll get good outcomes. If you put bad projects in with bad benefit cases that are never going to work, either technology can’t do them, the business case is rubbish, and business schools aside, business cases are universally rubbish seven out of ten times the world over from my humble experience. And the worst ones are the sales ones. Anything that says increase as a percent of revenue, so “I will increase sales one percent”, instantly be suspicious. It just means someone found a way of applying seeming science to a large number to justify what they want to do.

17:51
CIO: But rubbish in, whether the pipe is fat or skinny, rubbish in generally equals rubbish out. So you need governance and collaboration to make sure you pick the right things to do. So, width of the pipe, what goes in the pipe. Then length of the pipe. How do we use methodology, how do we use process to make program delivery more predictable? And if you joined Maersk when I joined Maersk, the executive board would tell you we haven’t delivered a single project that was meaningful to the [PNL?] in the last three years.

18:32

CIO: Now if you start from zero, yeah 100 percent improvement, 200 percent improvement. It all looks great right? Clearly, they’re making a statement. Clearly it wasn’t really zero. But zero’s more clarifying to the brain than it was sort of OK. But there’s a key difference. If you talk to the IT team by the way, they hate that statement and they absolutely refute it. But the difference is in what are you trying to transform. Are you trying to create an organization that delivers projects? Well that’s one thing. Are you trying to create an organization that delivers bottom line value to the [PNL?] whether that’s revenue increase, whether that’s margin enhancement? That’s a completely different thing. So the measurement-- and as CEO, we have a very, very good CEO I have to say, and one of his favorite, or my favorite lines of his that I will steal and make my own when I’m somewhere else, but I think this is a very important line in what the transformation’s about. He said “We now reward— We no longer reward for activity. We reward for outcome”. And when you think about that, that’s crucially important. We are not trying to free this [indicating a part of the slide] spending up to just run more projects. We’re trying to free the spending up to run more projects that have a genuine impact on the company’s [PNL?]. That’s key difference.

20:04

CIO: And that would by the way—I’m assuming everyone in here is somehow related to the IT profession, That is not a strong suit of IT. Never has been and in my opinion, that’s true whether you’re in Denmark, or if you’re in India, or if you’re in China, whether you’re in the US or the UK. So that’s what we’re about. Free up 23 percent of spending , that’s kind of a 33 percent reduction in
running cost, put that money into development, put the governance structures around development so that we pick the right projects, apply methodology and process so we do it predictably and run more stuff.

20:44

CIO: Now, a balanced view. How then do you take an organization that has operated one way and try and fundamentally change it? This is Maersk but this slide would be absolutely no different at Dell. At Dell, when I joined there as global CIO, we were running at one point nine percent of revenue, heading north. We had regional systems. How many of you have ever bought a Dell computer? I'll excuse the IBM-er in the room. Only three? There’s some shy ones at the back. So only about six of you. So there was the Dell problem right there. You should have bought more PCs.

Audience: Then you wouldn’t have been here.

CIO: Then I wouldn’t have been here. That’s probably true. But if you looked at something like Dell dot com – and this is very, very true in Maersk. And this I suspect is true in a lot of IT organizations – but if you looked at Dell dot com, Dell dot com had grown regionally because whenever you appoint someone as a country president—Here’s what Dell did. Dell had two things going for it. They had a fabulous supply chain model that was radically different and they hired smart people. And when you hire smart people – I know you’re the boss so I can’t deal with you [indicating to audience member] – but when you hire smart people—Are you smarter than him [indicating to audience member]?

Audience: [chuckles] No.
CIO: You’re not? See that’s a one percent answer. But when you hire smart people—Are you smarter than him [indicating to audience member]?

Audience: Of course I am.

CIO: Yeah. That’s a better answer. That’s a more general global answer. Of course I am. And even if you don’t say it, you think you are. So you take this perfect supply chain model that’s radically different, I hire you, you go to France, and you say “I’m gonna show ’em. I’m just going to make one tweak”. Well, same in Maersk. A hundred and 45 countries later – we have a hundred and 45 GMs who all made just one tweak per quarter. Suddenly your process landscape—We run 3,165 applications in a 27 billion dollar company. We should probably be running 250. But the application landscape is the outcome of your process decisions which is an outcome of your leadership.

23:00

CIO: How do you go about changing that when everyone thinks they’re smart and everyone did it for a good reason? Well you don’t understand. France is so different. Well you see these air containers—When you see these containers driven around the street here. Is that air container any different to the [CMA?] or the Hapag Lloyd container? Yeah? No?

Audience: No.
CIO: No. There’s no bloody difference. And nine times out of ten, there’s no difference. Most of this [indicating a part of the slide] is complete rubbish. Legal, regulatory, mandatory, audit. Those are all the excuses. Most of it is complete rubbish. You have to generate a crisis. You absolutely have to generate a crisis.

23:44

CIO: You need a burning platform to make people think differently. At Dell – now I’m going back a few years – at Dell, the crisis was we were a product company. We had expanded into service, we had expanded into storage, we did everything you could buy at a data center. Actually, [consumer?] was only about 12 percent of the business. We had to get into services. Because there’s only one thing that happens in hardware. It’s like your TV at home. Every year there’s more features and it gets cheaper. So the old way of winning was go into another category, go into another category. When you’re in all the categories, you have to change. That was the crisis at Dell. At Maersk, we had a very, very genuine crisis. When you’re losing nine million a day, even for a company that has enormously wealthy backers, that’s a bit of a problem. So you have to have a crisis. And you have to establish a clear and compelling need for transformation.

24:44

CIO: Why does it have to be different? Because we got here by—This is true the world over, whatever company. You got here one smart decision at a time. The guy in France really thought it was different. And if you’re going to turn around the way people have operated, you have to have a really compelling reason.

25:05
CIO: What is it going to look like? What then is the change—This is one of those ones where—It’s interesting watching my team today. The Maersk Line infrastructure team delivered—This time last year, I think I came to this school about December-ish last year. But around this time last year, they all thought they were running really efficiently. We’re at one point seven percent of revenue, 73 percent of the budget being spent running the place. And they did. They negotiated down the contract seven to eight percent a year. We’re doing this pretty well. All the benchmarks applied to us. We looked good. This year, in a year, from starting with a position of there is no money to be saved, they’ve save 70 million out of the running budget and they’re all debating - they can’t quite see their way to 50/50 – but they’re debating, should it be 60/40.

26:09

CIO: Now the thing about—The thing I said earlier about driving change. We’re going to say “If you did this, well maybe it should be 45”. It’s not that we think we can get to 45, it’s you’ve got to keep the momentum on and it goes harder. But you think about that as an organization that’s changed. They’ve just delivered the best savings estimate they’ve ever delivered. That’s the most money they’ve saved out of running cost in a year ever as best I can tell. And now they’re debating the amount they can save next year. 18 months ago we thought we were lean. That’s the change in mindset. But you have to have a clear vision of how that works. You have to drive it. What does translating division—You don’t necessarily have to know how to get there but you have to know the first steps on the journey. One thing I would say I’ve been very fortunate. I’ve worked for some very, very good people, and I’ve learned from some very, very good people.

27:10

CIO: I’ve also met a ton of smart people. Anyone work for a consulting company in this room? I’ve met a ton of really, really smart consultants. Anyone work for Gartner? OK. [I’ll use Forester then?]. I’ve met some really, really smart benchmarking companies who can tell you what you should look like. I mean it’s clear I should be fitter and better looking. That much is clear to me. What’s not clear to me is how that happens. So the real smart people are the people who can
understand what you should look like, how you look today, and most importantly, what are the first four or five steps in the journey. Because if you can gain momentum and you can drive success, there is no point in knowing the start position and the end position. There’s lots of those people but that’s not really helpful. What you’ve got to do is get people moving along a set of steps.

28:12

CIO: So translating what it means. What’s the new methodology? How are you going to work? What are you going to do differently. This one [indicating a part of the slide] really comes a little more back to the business. And this is just one of the things I will tell you the danger of or the allure of IT. Maersk, one of our, like any company—I was talking to Lloyds Bank the other day. Maybe I won’t make this about Maersk. I should make it about Maersk, I won’t make it about Lloyds. But I said to Lloyds Bank, who went from having the highest – I forget the exact measure in banking but they talk about the cost to serve. They went from the worst cost of serve to the best cost of serve over the last four, five years. And I said “Well, in banking you spend—” They spend about seven, eight percent of revenue in banking so if you want to be in IT somewhere where money is no object, join the financial services industry. That’s my tip for you.

29:17

CIO: You can’t possibly—You’ve done the basics right? Your customer database must be clean and under control? They all just laughed at me. Our customer database—We spend a ton of money on the customer database. We have great technology. Gartner approved it. It’s in the [magic?] quadrant up here. If you have no damn business governance of how that data gets put in and who [?] in it, it isn’t worth a damn. If you don’t have an organization structure to manage it, it’s not going to work. So this is about moving people, process and technology at the same time through the same curve. The allure of technology is – and I think this is one of the beauties of software, it’s one of the things I find most interesting about software – there is nothing you can’t do with software. My humble opinion, there is virtually nothing you can’t do.
30:13

CIO: Whether it will be useful, often comes down to, do you have people to operate it? Do you have an organization structure that can manage it and do you have a process to exploit it and deliver it? So it’s not just about technology. I’m going to make it a little sparky for you since I’m in Denmark. I sort of got asked a question that prompted another slide. This will tee it up a little bit. Teams, people, even in IT and I say this to the business a lot. Even IT people want to feel like they’re winners. There’s one basic human need I think. You don’t want to be on a losing team. You’d much rather be on a winning team. It’s just that simple.

31:08

CIO: You are going to motivate a team if they understand the nine million a day to whatever the number is at Dell. You are going to want to be part of the team if you are converting the business from a product company to a services company. Those kinds of stories are inspiring. The story of “Guess what guys, free cash is no longer available. You’re going to have to work harder. There’s an expectation that you’ll deliver. Damn it, you’re not going to get it wrong and we’re going to measure you hard with a set of metrics” that is not everyone’s idea of joy. Right? We are going to turn this around and go from nine million a day loss to however million a day profit which is what we’ve done. That is inspiring. And people will actually work twice as hard in tougher circumstances with more expectation and responsibility if you get the messaging right. That’s been my experience. The other thing we talk a lot about, change management, how you bring people through the change, people want to win. And people want to be part of something that wins.

32:12

CIO: And I think people are also massively resilient to change. In corporations we tend to forget that fuss about change a lot. Nine times out of ten, people can deduce the change and if they feel the
change is genuinely right, they will take part and participate in the change. It needs leadership. We changed 50 percent of the senior leadership team out. We didn’t change them because the old people were really, really atrocious. We changed them because we needed people who were fully committed to drive a difference. And to be honest, I think one of the things that’s changed since I was at work, you sort of used to join a company, stay there ten, 15, 20 years. Now you join a company—I look old. I’ve got seven year itch. It’s supposed to be wives. For me it’s jobs. So I’ve done seven years, seven years, seven years. I don’t know why but actually, I think in some ways it’s healthier. Because people come in, they can see a difference based on experience, they can drive a difference.

33:22

CIO: So you need strong leaders who are going to drive. Global we’ll talk about in a second. Change takes longer to gain traction. It’s interesting. So I was at Safeway where we didn’t do a transformation in the scale of Dell or a—It was more of an IT reorganization. One think I will tell you, companies have cultures. So at Safeway, repeat the message, repeat the message, repeat the message and here’s what would happen in a company like Safeway that was a unionized, sort of industrial, been around a hundred years but looks similar to Maersk. People would say “Here’s the new CIO [or] I was GVP of application development, the last one only lasted 18 months. Let’s give it ‘til Christmas. Let’s give it a year. And if still looks like the story’s the same maybe we’ll get going”. And year two I would say the change got going and by year three it was running. So taking the time to understand the culture matters. At Dell, you arrive and you say “Hey I’ve got five really wild ideas just to spark people thinking differently” and someone’s trying to implement it three weeks later and you say “No. My god it was the stupidest thing I ever said. I didn’t mean go do it, I just wanted to get your reaction to it”. Two vey different cultures. You have to understand the culture of how then you get traction.

34:44
CIO: I’m going to get this wrong. This is a [build?]. They’re always tricky. It’s interesting coming from abroad. One of the questions was “What’s it like being here versus being somewhere else?” I am no expert on culture. I say this with all sort of humility. I’m just trying to do the right thing. My experience has been Maersk Line. Maybe it’s different where you are. This is meant to be a little controversial. Let me give you my observations. Pretty conservative [indicating a part of the slide]. Now that permeates through the vendor community, permeates through the IT teams. We are fundamentally moving our infrastructure to a private cloud. When you talk to the vendors here, people say “Oh. That’s a little risky”. It’s new. You go here [indicating a part of the slide], now I would say the US and the UK are fundamentally different. UK want to know the problem, and I’m half-American half-English. [I’ve got both passports?] so I can be rude about both. I can’t be rude about Danes or the rest of the world. The Brits love a bit of pessimism. They love to know how it’s going to go wrong. They sort of want to do it but they want to hear the war stories. The Americans just think it’s going to work. Blind faith, a bit of pessimism. But, the point is, you go to a fortune 500 company in the US or the UK, you go to some of the banks, they are implementing the cloud.

36:24

CIO: They have implemented the cloud. They’re figuring out how to run their applications on public clouds. You come here and it’s risky. So someone is going to operate—Now luckily, most shipping is in Singapore or Copenhagen so I maybe don’t face what some of you face. But you are going to face a different operating cost in your competitors real soon. By the way, you go to the emerging markets – and I’ve spent a lot of time in the Middle East, a lot of time in India, a lot of time in China – and they say “Don’t tell me that. Tell me what you’re going to do next and I’ll just buy it”. You go to [?] they are complete cloud advocates. So these people building new data centers, the answer is not “I’ll take a mainframe in that corner, a couple of [AAX] machines over there”. We have to deal with a legacy and we are behind.

37:17
And that really gets to this point [indicating a part of the slide]. Naively, I’ve only ever worked in IT. I kind of assumed you could do IT everywhere. I think I was a little naive. It’s a tight resource market in Denmark. It just is. A lot of skills [indicating a part of the slide]. A ton of skills [indicating a part of the slide]. But only in the new technologies. So again, if you’re on the new technologies you can take advantage of—Kerala. It’s a small state. It’s the only, just as an aside, it’s the only democratically elected communist state government in the world if I understand it right. Which is kind of interesting. They have a regular election and they all vote communist every year. They generate something like four million graduates a year. That’s the sort of the numbers you talk about.

38:11

CIO: Off-shoring. We sort of do some. I’ve become a big fan of Denmark. I’ve only been here about 18 months but I’ve got to tell you, I really quite like it and I think so do you. My guys do not like going to the rest of the world. And it’s very interesting to me. In a company that is all about international trade. I’ve got a development center in Charlotte, I got one in London. They’ve all been to London a hundred times. No one really has an appetite. Charlotte’s sunny. So guess what? In the winter months, everyone’s keen to go to Charlotte, IT happens in India these days. I have no volunteers for the trip to India. We actually have to enforce the trip to India. You have to learn the world in this business. You have to. It’s a blend now of all these geographies for different skills.

39:16

CIO: Work life balance. I like this. I think this is good here. It’s healthy. You have a genuine work life balance. In America you have posters. The posters show things like trees and a path through the trees and they’re meant to be super motivational. I hate them. So I would summarize it as more work, less life. The UK is becoming an outpost of America in my humble opinion. The attitude is very, very similar. Emerging markets though, very, very different. You spend time in these countries, I can understand it. If I started where they started, all work, no life. What that means is,
the fundamental way to improve your life is to get a job, a career, and exploit it to the maximum. Because that way you improve not only your life, you improve your whole family’s existence. So very, very different attitudes to work. And you have to, particularly the people who are students, if you think you’re going to join a company, work in a Danish culture in IT, you’re completely missing where it’s at these days. You are going to face into these cultures every day you’re in IT.

40:20

CIO: People are proud to work for Maersk Line. People are really proud to work for Maersk. It’s phenomenal. I haven’t personally figured out quite how you turn that into really pushing the envelope but I am really impressed with how proud people are to do what they do. Posters [indicating a part of the slide]. People are proud to take their pay packet for five years and then move on to the next big thing. That’s okay. You just have to understand it. The employee engagement is different in the emerging markets. The employee engagement is about career pathing. If you’re not offering a career pathing—I mean some of these countries—if you’ve been in IT in ten years in India, all you have ever known is growth. That’s all you’ve ever experienced.

41:18

CIO: And your career path is do you run ten people, fifty people, a hundred people, a thousand people. That’s it. And actually in India you can see that game starting to change. There’s not another hundred thousand people to be outsourced. A lot of companies – Dell included – we really struggled with—Now India’s grown to the point where it gets managed the normal way. We actually remove people. We actually don’t grow to [X?] every year. It provides a very, very different experience out there. That’s the paycheck progression loyalty. You have to understand these things. So what do I think I do? I didn’t write this slide. I don’t particularly like some of the wording but I think the point is right.
CIO: CIOs used to be about running, as I said, keeping the basement running. Making sure that nothing blew up. Coming upstairs whenever it did run up or once a year to get a pat on the back because it all sort of looked like it worked and no one really understood it. Back to my point about the sales rep at Dell making a customer call. Technology is so embedded in what we do now. You’re very often the person who’s describing the business process. I don’t like the word applications anymore. I think the topic is what’s the business process and what’s the automation we can apply to that business process. And that’s the conversation you’re in. In part, you’re the inspiration officer.

CIO: Interaction. One of the biggest risks is – and I think this comes out of consumerization you experience at home – technology can do anything. You sit at home, you can download these apps off the cloud. Luckily at home, most households do not have to be PCI compliant and you don’t get regulated and you don’t have [HIPA?] regulation and you don’t have the Danish tax code. Or you do have the Danish tax code but that’s on a personal basis. It is actually very different, consumer IT to business IT. But your customer sees at home and at work and they don’t understand the difference. And the difference, nine times out of ten is an entity that’s known really over the world for being streamlined, efficient and making clear and transparent rules: it’s government. The Indian IT act. I still can’t deduce what I’m supposed to do but India has passed an IT act if you’ve got an offshore operation. All of the American regulation. They’re masters of regulation. So there is a big difference but there’s not a difference in people’s minds and your job is to spend a lot of time explaining that.

CIO: We have to be better. We have to be better every year. For everything we’re doing, [CMA?] [CGA?] or [Hapag?] or [MSC?], they’re not standing still either. My 16 cents on a pair of sneakers
is not changing. And it’s not likely to become 32 any time soon. It’s likely to become 12 or ten or eight. So what am I doing and what do I keep doing? And it’s relentless. So if you get into this profession and you think “When’s the good year?”, it’s the year you retire. But you thrive on that change or you don’t. So with that, let me pause. That’s my views on change. A little bit of the details of the change. I think now we’re going to Q and A right? I’ll gladly take any questions from the floor or here. However you want to do it.

45:15

Moderator: [How do?] you manage to shift from run to build? What about exploiting new opportunities for innovation? Is that also a part of your taking into consideration?

CIO: Yeah. Well there’s two styles of innovation. There’s—Let me phrase it very simply. It’s all about having the financial ability to exploit innovation. Otherwise, back to—If the world just stayed the way it was, and markets didn’t demand growth out of companies, 73 percent spent doing the same thing and 27 spent driving new things, that would be just fantastic you might argue. The point is technology is opening up new things we can do. Competition gets ever more efficient. I mean, the whole world gets ever more efficient. And you’re on an intersect of you have to change the company. The company has to transform it’s [PNL?] all the time and one of the key levers of doing that, my argument, in any company now is technology and information. And even in shipping. Your container shipping— Most of the large carriers have figured out how to operate to the same standard as Maersk. That was not true 50 years ago.

46:37

CIO: Today if you went to Hapag Lloyd, they deliver on time, the box goes where it’s going, they have [reefer?] containers, they have 45 foots, they have high [cubes?]. The operation is not the
difference. Very often, the information you can provide around that is the difference. So yes, the reason we do this is so that we have the financial wherewithal to exploit the innovation opportunities. And that’s what then drives the [PNL?].

47:00

Moderator: Can you give some insight into the benchmarks you have. You mentioned Dell had [?]

CIO: Well this is self-induced pressure. This is—When I joined it was how much more do we need to spend, get good at development. And when we looked at the running cost, we’re just off the measure. So you can play it the easy way and say “Hey give me 60 million more on the development side and we’ll run some projects” or you can play it the transparent way and you can say “Based upon what I see, I think we need to get development work and acknowledged but we’ve got a problem over here” because I would tell you, in any business not just IT, you can’t really hide from what the industry’s doing. So you may survive by running everything on the mainframe [at mainframe style cost points?] for another year or two but sooner or later — and we have a very sharp CFO and a very sharp CEO, very sharp transformation officer — sooner or later, someone’s going to be at some show or some business school and someone’s going to say “What are you doing about the private cloud or the public cloud or whatever because everyone agrees that’s cheaper?” and I don’t want the answer to be “Nothing”.

48:23

CIO: So we were at one point seven percent. I think we’ll finish this year at something like one point six. We’ve taken 70 million of fixed cost out, we’re putting it all back into development. We talk about major programs. Over 10 million spending in a year. We’ve gone in their eyes - even I don’t really agree with the assessment - from zero major programs under management to 12 this year. And I think key, most of them are delivering. And the benchmarks would be major programs,
value created, cost take out. We have five. Availability as measured by number of incidents reported by the business. The portfolio optimizations, the expected return of the portfolio, are we increasing it, decreasing it. The ratio of run build spending. People strategies, very subjective, which is about does the exec board have confidence in their leadership team, on the IT leadership team and the other one is so damn important I forget it. But there’s a fifth. There’s a fifth.

49:37

Moderator: You mentioned the cloud computing and so on. Is there anything from Dell you have experienced there? Your insights—

CIO: Yeah. I joined Dell—It was kind of— interesting. So I joined Dell 2005 I think with a classical IT view of mid-range computing, I mean—Safeway had a mainframe, a bunch of mid-range computers and what Dell did for me – this is pre-the cloud – it really stretched what X86 could do. Now X86. Why as a CIO do you have an interest in chips that go in PCs? Because one U, a single height server is about a thousand dollars. And what really happened in the tower, what is happening in my view, the only revolution in running data center costs in 20 years--Because mainframe to midrange into it was all rubbish and Dell taught me two things. One. The technology industry thrives on hype. And the Dells, the IBMs, the Oracles, the Suns, if there isn’t a new reason for you to spend lots of money on consulting, sorry, benchmarking, on new services and hardware, their revenues tank. So we have lots of technology innovation that’s all new, right? Or seemingly all new.

51:11

CIO: Actually in my opinion, the biggest thing that’s changed cost in the data centers is virtualization and X86. So buying very cheap servers, stringing them together in such a way that they operate as a cluster. And it’s a four grand machine where you can switch vendor as opposed to
a proprietary, hundred grand machine where when you run out of ports “Oh we’re sorry, you’re at the end of the thousand series. You need to refresh it with a two thousand series”. Take the old one back. Put a new one in. And by the way, you’re not locked in to proprietary technologies.

51:51

CIO: That to me is the single biggest ch—Now someone will argue, “Well what about the advent of blah, blah, Ethernet and da, da, da, da” I believe that’s the biggest single change. And if you’re not—Now it’s got a buzzword around it - the cloud – be it public, private. But for me that’s the thing. What Dell taught me is, we’ve got 97 percent of our compute on to that single platform. So we ran 18,000 servers and every single one was imaged the same way set up the same way. There were only two models. Managing 18,000 of exactly the same thing is easier than managing tons of different things. Now that sounds obvious. It kind of like the automotive industry and how you build them, but that’s the difference. And I think we convinced ourselves complexity is good. I don’t buy that as an industry.

52:50

Moderator: So do you think this will change as Maersk has started to hire —

previously Maersk was, if you started inside the company then you will get promoted, and you come to be a a top manager or executive, but now we have seen the change that Maersk will hire, like you, executive of some outside—

CIO: Yeah.

Moderator: External brought in executives. Do you think that will help the—
CIO: No I think we’re all rubbish [laughs]. Of course I think it will help but I don’t—This one’s a real tricky one. Maersk IT had a big problem. If you looked, and I did, the average tenure of an IT executive, or average IT experience of an executive—So you can be CIO of Maersk Line with 12 point two six years experience. I happen to know that statistic exactly. I ran projects for like 15 years. So it wasn’t bad people. It’s easy to say “Good person, bad person”. Actually I really find that true. It wasn’t bad people, it was we didn’t value what information technology could do for the company. Therefore we had no infrastructure to build people—We didn’t have a career path that lasted for 25 years. So we’ve just about doubled the number of years IT experience in the IT department with the changes we’ve made. Now if I’d been a university professor and given two lectures, I’m going to say I reckon I’d probably be ropey. If I’d done a thousand, and got a lot of feedback, I stand a chance of being good. Why is it any different in my business? And if you went to Maersk and you said, I don’t know—Who’s been a university professor the longest? Getting a bit bored of this [indicating audience member]? 

Audience: No. But I think—

CIO: So play with me. Fancy a change? You should go be a cluster top and run sub-Saharan Africa for shipping.

Audience: I don’t think you want me to try that.

[laughter]
55:05

CIO: I agree. And you know what Maersk reaction would be? “Nice idea but no thanks”. So why when it comes to IT is it OK to take someone with ten years shipping, no IT experience, and drop him in? So it’s about which departments make a fundamental difference—it’s not good people, bad people. It’s which things make a fundamental difference to your [PNL?]. And the decision has been, we want to keep the operational effectiveness of the operation but information technology is one of the things that can make a big difference to our future. So we’re investing in it differently. And that’s why I think—

55:50

Audience: Let me challenge you on this one here. I saw the exhibition with the big [?] that’s humongous and very impressive. Fantastic [?]. One of the figures there that really sort of struck me was that you only use a container three times in a year.

CIO: Four point eight.

Audience: OK. Even four point nine. It seemed to me that this is not a very impressive figure. And it seemed to me that the [?], the big area [?] for a company like yours to say it’s not four point nine, it’s ten.

CIO: Yep.

Audience: So how do we get to ten? What is it that starts here—
CIO: That’s a fantastic example. You’re absolutely right and actually, that could very well be a project that we’re starting to look at now. So let me give you one problem and then try to explain why information technology helps.

56:46

CIO: So there’s about, I forget how many million of them, nine million of them floating around all over the world.

Audience: [inaudible]

56:51

CIO: Here’s how it works. If you went to a container yard in the middle of Africa, about twice a day some guy gets his note pad and he walks around and he writes down the container numbers that he sees. Then, he puts that into Excel and then he sends that Excel off to India where they collect all the Excels. And then they merge them all up into one big file and then they run it in batch mode against a database that tells us where a container is. Now, you can fat finger the writing, you can fat finger the typing – that’s a very American expression – but you can screw it up at many points. Twice a day, we update that database. Who’s got an iPhone? Can you read a QR code on your iPhone [indicating audience member]?

Audience: Of course.

57:42
CIO: So what’s cheaper? Do I give everybody in the world one of those? So here’s a piece of code we’re writing right now because the problem—How many of you have seen a container close up? You know the sides actually sort of go like this? Perforated. So, if you’ve got a flat surface you can [OCR?] the container letters. If you’ve got a surface that bends, most programs won’t read the container number. So. Port at Rotterdam. Here’s how you solve your problem. At 250 grand a few years back – and I’m really proud of this – the sheds are like this size. The truck drives through it. It’s got cameras everywhere so you can get lots of angles on the lettering and they read every container number that comes into the port. And then they [EDI?] it back to the container carrier real time. How’d you do that in Angola? Well I think you do it with one of those. That’s one example. But one example is where is it right now real time? And what’s changed in technology? When we did our [KEM?], you had to have the 250 grand per shed, port of Rotterdam. You had to be a port of Rotterdam or Auckland or Los Angeles to afford the investments to do that. Now, that thing’s 499 dollars. That’s what’s changed.

59:15

Audience: You could probably do it with ten dollars.

CIO: There’s probably some dirt-cheap Nokia that can run that app. And let me give you another one. How many——

Audience: [inaudible]

CIO: But let me give you another one that I think is absolutely brilliant. How many of you have got an iPhone? Any one of you use the find my phone app? And it gets you pretty much to your house right? If you go in and you look for your phone, it will tell you pretty much to your house. So why
is it so bloody hard to know where our containers are? That’s either using GPS or it’s triangulating between cell towers. But our industry has completely missed the point that the world’s covered in cell towers.

Audience: [inaudible]

CIO: Well the [reefers?] now can but at the cost of – this is one of my little jokes – at a cost of 250 dollars per [reefer?] for the unit we put on it, I could have strapped an iPhone to every single one and done it cheaper. Now the trouble is battery life because we’ve got a ten year life on these things but that’s the type of innovations—My point is, miniaturization, the cheapness, you can do fundamentally different things. So, yes. Getting from four point eight to eight or nine – I won’t tell you how many millions are in a turn – but there’s a lot. You’re absolutely right, there’s lots of millions in a turn.

1:00:32

CIO: Let me give you another example. How do we dispose of the ten year old containers wherever they end up? When they’re ten years old we say “Pff” and we try and sell it locally. So if you went to Felixstowe in Britain – UK imports more than it exports – a thousand [containers] it’s like worth a hundred dollars scrap metal. If you could figure out how to land that container in Africa at the end of it’s life you’re in the construction business. It’s worth a thousand dollars. Because it’s a tool store or a house or an extension to a house. So if you really knew where they are, you’re right, hundreds of millions of dollars. So that’s why the [bat?] on information technology, it’s not about moving it anymore. It is about getting more on a ship but that’s the sort of standard play that everyone can recreate. The technology plays maybe can’t be recreated as easily.
1:01:31

Audience: [?] world of technology [did you want to tell that you had a lot of?] mainframe systems [like ?] a lot of us do. How do you convince the business side that that needs to be changed too? [inaudible]

CIO: So that score card. Our story to the business, part of our story to the business—I told that little find my phone story to the business and yet when I say it like that, everyone goes, “Yeah. Maybe we are making it a little more complex than it needs to be in how we do it” but then the downside of that is they instantly go “Well, how do I get that for my container?”. How do you get that on your container? You need to spend a ton more money here [indicating a part of the slide] and you need to start reinventing what you do about information technology. That’s expensive but there’s a way you can manage your cost. You get serious about doing this [indicating a part of the slide]. So in our budget now, I didn’t show it in the slide, but in our budget now - very unusually, and we did this at Dell – the discretionary spend we keep 20 percent of the discretionary spend for business sponsored projects that IT wants done. We call it the IT housekeeping share of the budget. So next year, one of the proposals on the table will be, let’s re-platform all of the [AIX?] applications on to the cloud. I’ve spent six million dollars a year on [AIX?] – sorry IBM – but I run 14 apps. Does that sound good value? And why do I spend six million? Because it’s a proprietary stack with fixed pricing that cost me a bloody fortune. And I’m not picking on IBM. I’m not anti-IBM. But that’s how the old models of data center computing work. You have to change that.

1:03:44

Audience: [inaudible] take charge of 20 percent of your IT budget?

CIO: But why am I doing it? I’m doing it, not because it’s a bad application or we don’t want it. This happens to be a very good application. I’m doing it, because then you’ve got six million more
bets to place up here [indicating a part of the slide] guys. So that 20 percent spending, funds moving stuff so you’ve got more free spending. And that’s a bet they’re willing to take. The big danger of course, you start a bucket like IT housekeeping, guess what? IT is as ill-disciplined - so I described the business as having all these [thousands of processes?] – IT is just as ill-disciplined. IT has 80 million [?] against that 20 million. 90 percent of it, we’re no different, is utterly useless. It’s IT for IT. Let’s upgrade this, let’s do that. We’ve got to do the things that mean the business can operate differently.

1:04:38

Audience: When you took over some years back the business side [?] How did you manage to bring that up to have a more strategic vision?

CIO: I can’t claim any influence on that. It wasn’t me. To be fair, I think they were smart enough and sensible enough to realize that what they wanted was unachievable. In the first year, we narrowed it down to 34, which I thought was too many by the way, and that’s 34 initiatives, I think 20 of which involved IT, 12 of which were big. And I thought, first year, that was probably too much, but nonetheless that was the compromise. We pulled it off. My big worry this year is now everyone’s going [makes hand motion]—I’ve been there 18 months. We’ve had 12 months of relative success so now the floodgate [makes hand motion]—I’m not going to claim I’m any smarter than anyone else. Managing the floodgate? I don’t know. So what we’re trying to do this year, we’ve effectively moved 20 percent. [They’ve?] got a 20 percent increase in their build budget, [we’re saying we’ll?] increase in projects under management to 50 percent. So again, when you set that constraint early, that sounds pretty reasonable right? 20 percent more resources will do 50 percent more work. Everyone says yes. Well, we got that rule established, before they all had their list of what they wanted because the list of what they want would be [makes hand motion]—So ask me in a month. We’ll know where we end up.
1:06:20

Audience: Question on the—you mentioned the [?] the question is how do you want to differentiate Maersk Line the next three to five years and how do you see the future of the offshoring, outsourcing, business process outsourcing [?] et cetera?

CIO: Well, there’s two questions in there that in my opinion are different. How do we differentiate [around?] information? So today, I’m going to give you one example in a so called efficient industry. Today if you ask all of us or the industry, they claim it takes four hours to make a booking. If you ask the customer, they say it’s more like a day. Because you’re phoning India, depending on the time zone. We think it’s four hours work. It’s four hours of interaction with gaps of two hours or eight hours if it’s overnight. So you’ve got these two conflicting views. Here’s the analogy I’d give you. Kind of like the travel industry. Remember when you used to have to call the travel agent to book your ticket? Then comes Orbitz. If you just think of a passenger going on a plane. Multiple stops. There’s lots of different route options between the points. I don’t really see why it’s so different in this business. Now maybe I’ve got a lot to learn. That’s highly likely. Well, actually that’s definitely true. But sometimes, not knowing the industry is actually advantageous. I bet you all the travel agents said it couldn’t be done. But now you just book online, right? Why can’t we book online? Well, it comes back to your “We don’t really know where the container is”. Yeah somewhere like Felixstowe, odds on you’ve got one. Angola? Maybe, maybe not. So what really happens in that four hours is we phone down to Angola—So if you can sort out those fundamental processes, maybe you can do the Orbitz of containers. So how do you differentiate? It is around the information. Your question then the future out—Companies the world over will get more efficient and outsourcing will play in that. Business process, technology. You have to.

1:08:34

Audience: You are focusing a lot on the business aspect and spending for development. How do you ensure that you get the quality built in the systems and is it true that if you just spend more
money, like 20 percent more, you can get 50 percent more output? How do you ensure that quality—

CIO: Yeah.

Audience: Because I think you gain a lot more by building in good quality than just the quantity.

CIO: Yeah. I agree. I think unfortunately in life you never get to do one thing. It’s always balance scorecard. It’s always about the balance. So one of the reasons we measure stability so tight is what we don’t want is people hitting dates and just putting rubbish in. That’s a mess. So I think if you saw the detailed scorecard, this [indicating a part of the slide] is the first point. Now, to your point of can you put 20 percent more resources into development and get 50 percent more productivity through, I don’t know. Let’s be honest. I don’t know. But back to the goal setting, if you’re trying to change, there is utterly no point when we accept—We weren’t inefficient, that may be clear. You could go to many industrial companies and see a very similar profile. But we’re not trying to be average. If you share the goal of trying to get north of average, you’ve got to stretch yourself. So I have no clue whether we can do 50 percent more and 20 percent more money. But if I ask for 20 percent more and 20 percent more money, I know I’ll get all the reasons why that can’t be done.

1:10:20

Audience: But my question is quality. How do you build in quality and make sure—

CIO: You have to measure it. It’s more than just the incidents but you have to measure the process as you go through it. And I think there’s three big aspects we measure. We measure the one you
would probably classically expect. Post-launch, what was the outcome of the system, both in did it meet the functionality and did it fail multiple times. So, what was the impact on the operating system of that launch. We measure—We’re not good at this but we’re starting to measure the quality of the project as asked. What’s the return it’s going to generate? How does that play in the portfolio? Are we doing the right things? And I’ll tell you where we’re the weakest but we’re starting is how do you know you complied to the architecture? How do you know you applied to the standards? There were no standards. It was project manager, do what you did last time. So how do we control the process as the process, classic [gate?] reviews, architecture reviews. So quality, I totally agree with you, is a big thing. There is utterly no point in chasing the do more if you just bring the production systems down. That would be the worst outcome. So it’s huge but I’m not going to tell you we’re more advan—We’re industry average. We’re no better than anyone else. We’re trying to be better though. Yeah?

1:11:47

Audience: What do see as the key capabilities of your organization?

CIO: Right now? Well we’ve demonstrated that we can move the needle on running cost. So we’ve demonstrated we can go from industry average to—Look, I don’t know where we’ve moved on the journey from average to top five percent and top 5 percent isn’t the goal but if you’re 50/50 that’s where [it’d get us?]. Bluntly, I’d be pretty happy with – you just can’t send this video back to my folks – if we got to 55 percent, that’s a lot better than where we are today, 27 percent. If we got to 60 that’s a lot better. So I don’t know where it stops. We’re not going to be silly about it. But we’ve made a meaningful improvement in how we run efficiently. We’ve made a meaningful improvement in quality or availability of production systems. I won’t say quality of development. That’s good. So this scorecard right now, we know we can be better to the tune of 70 million dollars and 20 percent decrease in incidents. Don’t know what we can do next year. We’ve proven that we can manage large programs but we’ve proven we can manage a relatively small number of them. And when I say large I mean things like implementing SAP. Large. So, large programs. That’s what
we’ve proven so far. But I don’t want to portray this as from a disaster. From a typical, average, industrial company. Not a leading edge user of technology. An average user of technology. We’re just trying to push that needle in all dimensions.

1:13:26

Audience: Do you see a problem with having a single vendor who supports and maintains all your systems like IBM does?

CIO: Yeah.

Audience: Are you not afraid that they will take the control next time you negotiate contracts?

CIO: Yeah. But let me tell you the situation we’re in. Back to why do I think [X86?]—I can buy it from IBM. I have no rub with IBM, I have no rub with HP, I’ve got no rub with any of them but one of the reasons you want to be off the proprietary stack is you’re stuck. Here’s what we did in the past. So then we had this [jewel?] vendor policy. Anyone from HP here? Because I’m going to be quite rude about IBM. We thought that would provide competition. What it actually did was we had two incumbents harvesting margin. That’s my opinion. One year IBM would have 60 percent of the business, the other year 40 percent. If you went to development, we had different vendors doing it. And I don’t mean that rudely. I’m not trying to make you feel awkward. I don’t mean that rudely. That’s what your job is as a vendor. I was in one for seven years. Your job is not to give away your [PNL?]. And we signed to deals. So absolutely. The only way you gain control of your running cost is if you have competition in the different elements in the stack.
1:14:52

CIO: Now, you can’t change [WAN?], the network, every six months. There’s a [three year horizon?]. You probably don’t even want to change [X86?] out. But there’s a reason there’s about 18 percent margin on an [X86?] server. I don’t know if you’d like to declare the margin on a mainframe but I bet you it’s north of 80. There’s a reason for that. And you want to guide your organization to the lowest-- Not because you don’t like the vendors, we need good partners, we want good partners, we have some very good partners. But I want to be competitive to the leading end of the industry. So it’s not bad vendor, it’s this is how the IT game gets played. There’s a reason why you’ll get 90 plus percent discount on software licenses. The annuity is the [maintenance strength?]. You’ve got to know this and you’ve got to play that game, or that’s the game that gets played down here and that’s why people call it fixed cost. Well it’s the mainframe. What can I do about it? Well, you can get the business lined up to understand what they’re paying for. You can get them lined up to understand the levers of where they can adjust it. You can get them to understand what else they could do with the money. Let’s get container turns. And I think if you can convince them of that story, and prove that you can execute that story, you can get business support to change the game. And that’s what we’re all about.

1:16:28

Moderator: Alright, [?] ask the last question here?

Audience: Yes, OK.

Moderator: [How is your view?] on Copenhagen Business School, they can—

CIO: Fantastic. What’s my view on?
Moderator: The Copenhagen Business School and how they can support you—

CIO: Let me be totally honest. I don’t know that I’ve got a qualitative view on Copenhagen Business School. I’ve been hugely impressed by the outreach from Copenhagen Business School. I’ve also been hugely impressed by the – I’m going to get the name wrong, forgive me – the IT school up there. The fact that you’ve got an IT school in Copenhagen I think is great. I’ve always done a lot of universities. I did at Dell. And the thing that fascinates me is – and I know we still haven’t figured it out between us but – CIOs last in the US an average of two to three years. I don’t know how long they last in Copenhagen, but this is not a job with a long life expectancy in one position. You could play this for the short term, you can play it for the long term but where I think it’s crucially important we form an interaction is, we have to fuel this team from the bottom. And within Maersk we have to—It’s OK to hire people and get the average up of experience but we’ve got to start pulling people in who know the new—knows contemporary IT, and they’ve gone through the business understanding. So I actually think, for me, why spend time here?

1:18:01

CIO: A lot of it is about how we make Maersk exciting to students and how we form a way [that we entry positions/intrigue position?], we’ve got students coming in as opposed to going to the market. And the reason for that is, I think you’re really measured on whether this sustains is—You can take 70 million out one year, there’s lots of ways of doing it. There’s lots of wrong ways, there’s lots of right ways. The measurement is can we really do what you said over a course of four, five years. Ten years. 15 years. And can you build something that has an infrastructure to keep doing it? Because it’s one thing moving ten percent up the curves—I’m big on sports analogies. I’ll leave you with this. Nottingham Forest can win the league once. Manchester United win the league ten, 15 times. And I think it’s about what do you think you’re building. And what I think we aspire to build is a Manchester United. It’s not about a one time fix. It’s about how do you build something that sustains.
CIO: So for me this is one of the biggest ways we can work together is how do you bring people in with a different experience. How do you give them that 15, 20 year experience in the company? How do you generate the next group of leaders? And it’s shameful, the fact that I’m telling my guys, “This is embarrassing”. It’s embarrassing for us and my organization, the fact that we think the answer’s a 250 thousand dollar shed at Rotterdam, when the answer is actually a 399 iPhone. And I actually think, if you are learning IT today, you think very differently to how corporate IT folks think. And it’s not that we all need one or the other, we need both. And I don’t think we have it today and I think that’s a common problem. So that’s how I think CBS can help. Both through hiring, through inspiration, and through generating the next generation of people who think how it is today. You know, I don’t think I know how Facebook works real well.

Prof Niels: I think that’s [a good question and answer?]. Clearly, one of the points I saw from your slide when you were comparing the three regions was the fact that there was sort of a [lack?] of good resources here. And indeed, good companies are competing for the resources. We’d like to provide better resources, we’d like to provide better students and really have this collaboration continue because we as much as you, rely on thriving industry here, and [?]. So I really hope that you will stay here more than the 3 years on average. So shall we thank Robin for coming here today?

[applause]

Appendix C: Timeline for mayor events at Maersk Line

The timeline is from the book "kulturskælvet i Mærsk Line – fra iværksættere og konger til moderne effektivitet" by Lars Jensen(2014).
1973: Maersk Line enters the liner shipping industry.

1984: Implementation of a new internal mail-system.

1993: Maersk International Shipping Education (MISE) is launched.

1999: Sea-Land and Safmarine is acquired.

1999: Shared Services Centers are established.

2000: Internal Job-database is put into service.

2002: The initial work on the starlight strategy is started.

2003: Mærsk Mc-Kinney Møller initiates the formalization process of the company values.

2003-2004: The starlight strategy is implemented.

2005: The company values are rolled out globally.

2005: P&O Nedlloyd is acquired.

2005: The Process Excellence project is initiated, with a focus on optimizing process governance.

2006: Customer service problems surface as a result of the integration of P&O Nedlloyd.

2007: Work on the StreamLINE-strategy is started.

2007: Eivind Kolding is appointed as the CEO of Maersk Line.

2008: The StreamLINE-strategy is implemented.

2009: The MISE program is terminated.

2009: First year of financial loss for Maersk Line (except during war time)


2012: Søren Skou is appointed CEO of Maersk Line.

2012: Project Clarity is implemented.

2013: The P3 collaboration with MSC and CMA CGM is announced.

2014: The P3 collaboration is cancelled due to monopoly concerns from the Chinese government.
2014: Simplification became the sole change project.

**Appendix D: Literature with keywords and concepts**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Author/sub concepts</td>
<td>Trends in the environment</td>
<td>Reasons for Digital Mastery</td>
<td>Innovation</td>
<td>Flexibility</td>
</tr>
<tr>
<td>Anderson, Dean (2011)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bardi, E. J. (2011)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bassellier, G (2004)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Berman, Saul (2014)</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Bourlakis, M (2006)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Broadbent, Marianne (1997)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brody, Paul (2015)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brynjoldsson, Erik (2010)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brynjoldsson, Erik (2014)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brynjolfsson, Erik (2012)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carr, Nicholas G. (2003)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Christensen, Søren (2008)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denning, Stephen (2015)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Engel, Kai (2015)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeny, D. F. (1992)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Franc, P (2010)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fichman, Robert G. (2014)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gerow, Jennifer E. (2014)</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Jenssen, Jan Inge (2007)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kolding, Marianne (2009)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Lopez, Jorge (2014)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Markus, M. Lynne (1997)</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Orlowoizki, Wanda J. (1996)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orlowoizki, Wanda J. (1997)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Preston, David S. (2009)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venkatraman, N. (1997)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Voss, Hanswermer (1996)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wang, Ping (2010)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weill, Peter (2013)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Westermand, George (2009)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Westermand, George (2014)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yodakawa, Kowi (2007)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>Reference 1</td>
<td>Reference 2</td>
<td>Reference 3</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------</td>
<td>-------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>Stopford, M (2009)</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Bradbury, D (2013)</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Hedegaard, O (2009)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cusumano, M. A (2010)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pink, D. H. (2010)</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beck, K (2004)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>