The culture of ITIL: values and implementation challenges

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Abstract

The article reports on ITIL implementation in Maersk Oil. We analyze the values embedded in ITIL, compare them to Maersk Oil's organizational culture, identify implementation challenges, and discuss how to manage these. The contribution of the article is: (1) identifies the values underlying ITIL, (2) discusses how to overcome cultural incongruence through business process implementation, and (3) highlights implications for managers trying to improve processes through the use of quality management standards and process models.

Keywords: ITIL, organizational culture, process improvement, standards

1. Introduction

In recent years, scholars have emphasized that the business environment of many companies is characterized by hypercompetition, making it increasingly difficult if not impossible for them to achieve let alone sustain competitive advantages (D'Aveni, 1998). Companies face the dual challenges of, on the one hand, improving efficiency and quality of development, manufacturing, and service delivery, and, on the other hand, innovating product and service offerings. Many companies rely on various quality management standards and process models in their efforts to increase business process efficiency and improve product and service quality. Among these are ISO 9001 (requirements for quality management systems), ISO/IEC 15504 (software development process and related business management functions), ISO/IEC 20000 (IT service management reflecting best practice guidance contained within the ITIL (Information Technology Infrastructure Library) framework), and the CMMI – Capability Maturity Model Integration (process improvement for systems development).

Quality management standards and process models are cultural artifacts embodying certain organizational values and management ideals. They espouse ideal practices and desirable value orientations as the end goal of process improvement (Müller, Kræmmergaard, & Mathiassen, 2009; Müller & Nielsen, 2013; Ngwenyama & Nielsen, 2003). Previous research has shown that cultural incongruence, i.e. conflict between organizational cultures and the value orientations underlying standards and process models, "signals ambiguity, lack of unity, and discrepancies between organizational behaviors and espoused values" (Müller & Nielsen, 2013, p. 159). Consequently, cultural incongruence should be managed (Cameron & Quinn, 2006). Management of cultural incongruence during process improvement is, however, under-researched within the Information Systems (IS) field.

In this article, we address this knowledge gap by investigating ITIL implementation in Maersk Oil, a company within the A.P.Moller - Maersk Group. Maersk Oil's IT strategy identifies "IT Service Management & Standardisation" as one of five strategic initiatives, and here we report on an in-depth case study of this initiative. The case study, which employs a pluralist methodology (multi-method approach to research), is guided by the following research question: "How do the values underlying ITIL influence implementation, and how can organizations manage the cultural challenges?"

The article is organized as follows. Section 2 summarizes state-of-the art knowledge on ITIL and culture in process improvement. Section 3 provides background information about the case company. Section 4 describes the research methodology, including the theoretical framework driving the analyses as well as our approach to data collection and analyses. Section 5 presents the results of our analyses, i.e. culture profiles of ITIL and the implementing organization. Section 6 contains a discussion of ITIL values, cultural challenges, and management of process improvement, leading to implications for both practitioners and researchers. Section 7 concludes the article.

2. Background

A substantial body of literature deals with critical success factors and barriers in process improvement (Dybå, 2005; Niazi, Wilson, & Zowghi, 2006; Rainer & Hall, 2002, 2003; Stelzer & Mellis, 1998). Previous studies describe process improvement as an emergent and risk-prone activity, which is both enabled and constrained by context (Allison & Merali, 2007; Iversen, Mathiassen, & Nielsen, 2004). Process improvement involves competing interests and values, and organizational politics may influence outcomes (Kautz, Hansen, & Thaysen, 2001; Nielsen & Nørbjerg, 2001; Stelzer & Mellis, 1998). Extant research also highlights the importance of organizational culture in process improvement (Dangle, Larsen, Shaw, & Zelkowitz, 2005; Schneider, 2002; Siakas & Georgiadou, 2002). Process improvement is, on the one hand, influenced by organizational culture and, on the other hand, influencing the culture of the organization.

In terms of being influenced by culture, Stelzer and Mellis emphasize the need for "anchoring changes in the organization's culture" (Stelzer & Mellis, 1998, p. 230). Fitzgerald and O'Kane furthermore stress that a "strong and pervasive culture" for process improvement is critical to implementation success (Fitzgerald & O'kane, 1999, p. 39). Additionally, Dybå goes as far as saying that new processes that are not aligned with the organizational culture, "will be rejected by the 'organizational' body" (Dybå, 2005, p. 418).

With regard to influencing culture, Dion shows process improvement to be a catalyst for organizational culture change (Dion, 1993). Quality management standards and process models are imbued with certain values. Aaen, for example, points out that process models like the CMMI aim to "build an infrastructure and culture that support effective methods, practices, and procedures and integrate into the ongoing way of doing business" (Aaen, 2003, p. 86). Incongruence between the values underlying such models and

organizational cultures threaten successful process implementation (Müller et al., 2009; Ngwenyama & Nielsen, 2003). Boehm, for example, argues that the adoption of process models promotes certain organizational cultures, suggesting potential conflicts between such models and the culture of the organization (Boehm, 2000). Similarly, Dubé and Robey show that implementation success depends on the fit between group-based values and the values underlying new processes (Dubé & Robey, 1999). Consequently, congruence between the values underlying new processes and the organizational culture facilitates implementation (Dubé, 1998).

CMMI is not the only process model drawing the attention of researchers and practitioners. Across the globe, organizations are also implementing the ITIL (IT Infrastructure Library) best practice framework for the purpose of improving their IT service management processes. In agreement with the broader process improvement literature, studies point to several critical success factors with regard to implementation, including senior management support, intraorganizational communication and collaboration, use of consultants, training, and appropriate IS selection (Pollard & Cater-Steel, 2009; Tan, Cater-Steel, & Toleman, 2009). In addition, Pollard and Cater-Steel stress the need for creating an ITIL-friendly culture (Pollard & Cater-Steel, 2009). Tan et al. add that there is a "need for an appropriate change management strategy to transform the organisational culture to a service-oriented focus" (Tan et al., 2009, p. 1). Furthermore, Iden argues that an ITIL implementation will only be effective when the cultural aspects are handled (Iden, 2009). In a similar vein, Eikebrokk and Iden (2016) draw attention to the importance of the IT service climate in implementing ITIL best practices by "showing that implementing ITIL as a system of best practices is related to IT service climate both directly and indirectly through process management" (Eikebrokk & Iden, 2016, p. 32). Hong et al. (2013) study the antecedents and influence processes of service climate, and identify among other things relationships between service climate, service performance, customer satisfaction, and financial performance (Hong, Liao, Hu, & Jiang, 2013). Last, but not least, Nicho and Mourad point out that national cultures affect the implementation of IT governance practices, and that "training is a major and common factor that instills a broader ITG culture as well as a more specific ITIL culture" (Nicho & Mourad, 2012, p. 38). However, previous studies have not investigated the characteristics of this ITIL culture and how to achieve it in the face of cultural incongruence between the values underlying ITIL and existing organizational cultures.

In summary, managers of process improvement need to consider the fit between values embedded in new processes and the context in which they are to be implemented (Dubé & Robey, 1999; Dubé, 1998; Frederiksen & Rose, 2003; Yamamura, 1999), understand the values underpinning quality management standards and process models (Boehm, 2000; Ngwenyama & Nielsen, 2003), and adapt such models to organizational cultures (Phongpaibul & Boehm, 2005). Despite existing contributions to state-of-the-art knowledge of organizational culture in process improvement, existing research has not sufficiently dealt with the consequences and managerial implications of cultural incongruence, i.e. the differences between organizational cultures and the value orientations

underlying quality management standards and process models. One noticeable exception is the study by Müller and Nielsen, which shows that successful process implementation is possible despite cultural incongruence (Müller & Nielsen, 2013). Although the authors suggest cultural profiling as a means to discover potential implementation problems and plan appropriate management actions, more knowledge is needed regarding ITIL implementation challenges. This article seeks to address this knowledge gap.

3. Case Description

Maersk Oil is part of the A.P.Moller - Maersk Group. The company is in the business of finding and developing oil and gas, and produces equivalent to 550.000 barrels of oil per day. Maersk Oil was founded in 1962 and employs 4.300 people. The company operates on- and offshore production facilities in Denmark, the UK, Qatar, Kazakhstan, the Gulf of Mexico, Brazil, and Algeria. In addition, the company has ongoing exploration activities in Angola, Norway, Greenland, and Iraq.

In 2010, Maersk Oil restructured its IT organization and established the Information Solutions department at that time. The department is tasked with executing the global IT strategy through development, ownership, and maintenance of IT processes, policies, standards, and tools. The goal of Information Solutions is to become a vital part of business and be more consistent and efficient in delivering its services. Five strategic initiatives set the direction of the department, and one of these initiatives is "IT Service Management & Standardization" which calls for transparency in IT service delivery and global processes for IT service management. This initiative has resulted in a project that looks toward the Information Technology Infrastructure Library (ITIL) as a basis for standardizing processes. The project is currently in an implementation phase. Among senior management there is a growing awareness of the impact of culture and the need to adopt a "service mindset" for the project to become a success. Establishing service catalogues is not enough. This realization stems from ongoing implementation and benefits realization management experiences.

Information Solutions operates both globally and locally through a federal governance model with local IT organizations catering to individual needs within each business unit (production facility) and a global IT organization that ensures integration and standardization of common systems. The global organization is depicted in Figure 1.

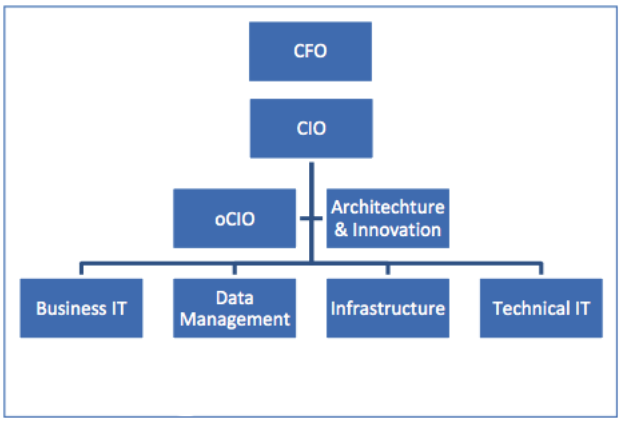

Figure 1: Information Solutions Organization

Information Solutions is headed by the CIO who is globally responsible for IT. The CIO reports to the CFO who is a member of the Maersk Oil Executive Team. Office of the CIO (oCIO) is responsible for financial and contractual obligations. Architecture & Innovation drives standards and guidelines for the IT landscape. Business IT has project and service ownership of business applications (e.g. SAP). Data Management handles operational data (drilling, wells, production etc.). Infrastructure makes overall decisions with regard to IT infrastructure. Technical IT has project and service ownership of technical applications (e.g. for exploration activities). An IT director manages each of the different groups within the department. Each group consists of 4-21 employees.

4. Methodology

To address the research question we have analyzed the values underpinning the ITIL framework, established a culture profile of Maersk Oil, and interviewed key stakeholders involved in the rolling out of new service management processes at the company with the purpose of understanding and discussing cultural challenges of the ITIL implementation. First, we describe the analytical framework driving our analyses. Second, we describe our approach to data collection and analysis.

Competing Values Framework

For the purpose of studying organizational culture, we have chosen the competing values framework (Cameron & Quinn, 2006; Quinn & McGrath, 1985; Quinn & Rohrbaugh, 1981, 1983). Cameron and Quinn define organizational culture as "taken-for-granted values, underlying assumptions, expectations, collective memories, and definitions present in an organization" (Cameron & Quinn, 2006, p. 16). According to Schein, this culture is "learned by a group as it solved its problems of external adaptation and internal integration" (Schein, 2004, p. 17). In this article, we subscribe to the view that organizational culture can be understood by analyzing organizational artifacts: visible organizational structures and processes; values and underlying assumptions; and symbols (Ngwenyama & Nielsen, 2003; Rafaeli & Worline, 2000; Schein, 1991).

Various models and techniques have been developed to measure organizational cultures (Yu & Wu, 2009), including the Theoretical Model of Culture Traits

(Denison & Mishra, 1995), the Organizational Culture Profile (O'Reilly, Chatman, & Caldwell, 1991), and The Organisational Cultural Model (referred to as "a six-dimensional model of organizational cultures" in (Hofstede, Neuijen, Ohayv, & Sanders, 1990)). The competing values framework has, however, been used extensively and dominates quantitative assessments of organizational culture (Kwan & Walker, 2004; Yu & Wu, 2009).

The competing values framework is useful as an analytical model by offering clear conceptualizations of four culture types, and it also includes an instrument to establish organizational culture profiles (Cameron & Quinn, 2006). The framework describes two dimensions on which organizations differ: (1) flexibility and discretion versus stability and control; and (2) external focus versus internal focus (see Figure 2).

On the one hand, organizations may be built and function around the idea of stability, order, and control of human behavior while other organizations may be characterized by flexibility, dynamism, and trust in human judgment. On the other hand, some organizations focus on internal integration and unity while other organizations are oriented toward external market differentiation, competition, and rivalry. These two dimensions delineate four organizational culture archetypes, which are based on competing basic assumptions, orientations, and core values. These are theoretical constructs, and real-world organizations contain elements of all archetypes as every organizational culture is unique in nature with specific characteristics (Cameron & Quinn, 2006).

Cameron and Quinn have developed the Organizational Culture Assessment Instrument (OCAI) that allows for organizational culture profiles to be established through the use of a survey. The OCAI assesses the relative importance of elements of each culture type in an organization. For example, an organization might be dominated by the Hierarchy culture type (40 percent), supported by elements of Market (30 percent), but only marginally influenced by the Clan and Adhocracy (15 percent each). The percentage points should be interpreted as expressions of tendencies within the organization rather than facts (Cameron & Quinn, 2006). The OCAI and a brief description of its application can be found in Appendix A. The instrument has been used and validated through several studies (Cameron & Quinn, 2006; Howard, 1998). Yu and Wu (2009) review empirical studies using the competing values framework and OCAI and conclude that compared to other organizational culture models, they have several advantages, for example that they have been "empirically validated in cross-cultural research" (Yu & Wu, 2009, p. 40).

As a supplement to the OCAI, Müller and Nielsen have developed the Organizational Culture Text Analysis Tool (OCTAT). This text analysis technique provides a method of analyzing the values underlying any written text and the creation of a culture profile also based on the competing values framework (Müller & Nielsen, 2013). It measures organizational culture along the dimensions described by the framework, which overlap "eight overarching, descriptive dimensions of culture" identified by Detert & Schroeder (Detert & Schroeder, 2000, p. 851). Any text is a cultural artifact embodying certain values

and assumptions, and the OCTAT assesses the relative importance of these in the text. The OCTAT and a brief description of its application can be found in Appendix B. The technique has been validated against previous research (Ngwenyama & Nielsen, 2003) and used for empirical analyses (Müller, Ulrich, & Nielsen, 2014; Müller & Ulrich, 2015).

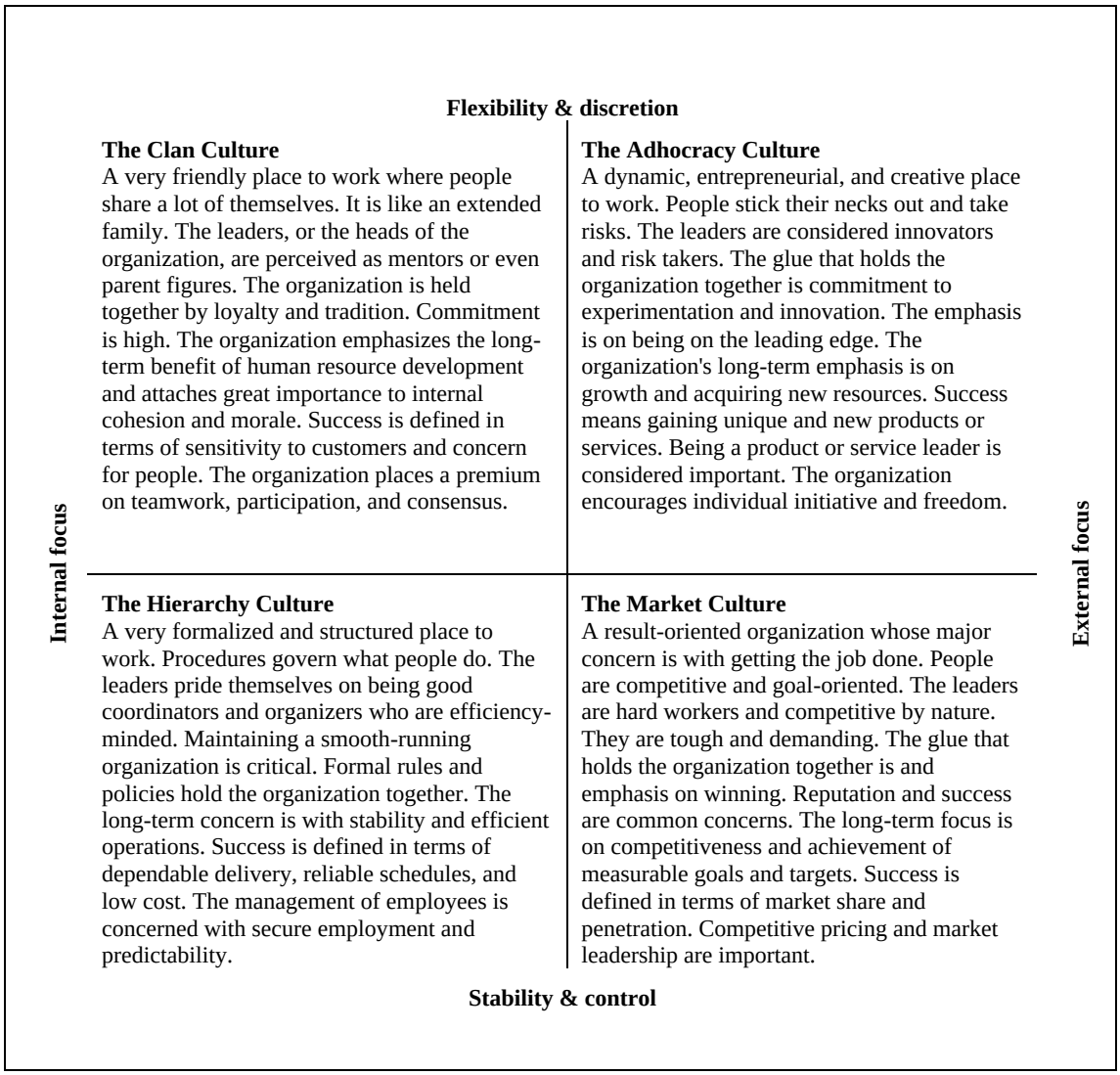

Figure 2. The competing Values Framework (Cameron & Quinn, 2006, p. 66).

Data Collection and Analysis

As part of this study, we (1) established an organizational culture profile of Maersk Oil using the OCAI, (2) analyzed the cultural values and assumptions underlying the ITIL framework using the OCTAT, (3) conducted semi-structured interviews with the IT directors involved in service management implementation, and (4) held a meeting with the entire IT management team in which the results of our investigation were presented and discussed.

The OCAI survey was sent to all 74 employees in the corporate Information Solutions department within Maersk Oil using SurveyMonkey. Invites were distributed by e-mail containing instructions along with an explanation of the purpose of the survey. The instructions and the layout of the survey were

evaluated in a pilot test with five employees, subsequently leading to minor changes. 45 respondents completed the survey, resulting in a 61% response rate. Based on the survey responses, a culture profile of the organization was established as described by (Cameron & Quinn, 2006).

For the purpose of analyzing the cultural values and assumptions underlying the ITIL framework, the OCTAT was used. Each of the five books that collectively describe the ITIL v3 framework (Office of Government Commerce, 2007) was analyzed separately and summarized in an overall culture profile in accordance with (Müller & Nielsen, 2013). As a text analysis technique, OCTAT searches systematically and exhaustively for words and phrases associated with each of the four organizational culture types associated with the competing values framework. It is accessible as an easy-to-use web service (http://www.processinnovation.dk/octat.html), which provides an efficient and effective method of establishing an organizational culture profile of any text. In (Müller & Nielsen, 2013), the authors document how the words and phrases were identified through comprehensive analyses of the detailed description of each culture type in (Cameron & Quinn, 2006). During these analyses measures were taken to ensure both intracoder and intercoder reliability of the process of identifying, discussing, and redefining culture codes. OCTAT automates the frequency and weighed distribution analyses required to produce an aggregate culture profile of a text. This technique takes into account an uneven number of words and phrases for each culture type (22 for Adhocracy, 18 for Clan, 20 for Hierarchy, and 17 for Market). The resulting culture profile shows percentages for each culture type and can be illustrated graphically for a visual overview. For the purpose of our study, we used the OCTAT web service. The ITIL books were analyzed by copying their content from digital copies and importing them into the web service. Redundant data in the form of shared figures, tables, preface, and definitions of words were removed prior to the analysis to avoid bias.

We conducted five semi-structured interviews with all the directors of the different groups within the corporate Information Solutions organization (see case description) with the exception of Technical IT, as the management position was vacant at the time of the investigation. The interviews were based on an interview guide, covering various questions related to the cultural challenges of implementing ITIL. First, we asked the interviewees to describe the culture in Information Solutions. Second, the respondents were asked to comment on the culture profile of the organization in light of their own understanding of the culture. Third, we presented the result of our analysis of ITIL, asking them to reflect on the level of congruence between the organizational culture and the cultural values and assumptions underlying the framework. Fourth, we asked the respondents to give their perspectives on the advantages of using ITIL as a means to standardize service management, implementation problems, and critical success factors. All the interviews were audio recorded and transcribed for the purpose of data analysis. As part of the analysis, similarities and differences across the interviews were listed, allowing us to identify patterns. This list was prepared by one of the authors as a basis for discussion. Disagreements and differences in perspectives were noted and reconciled by revisiting the empirical data through iterative cycles of analyses and discussion.

The results of our analysis were presented and discussed at a half-day IT management meeting in the corporate Information Solutions department. In addition to all directors of the different groups with Information Solutions, including the newly appointed director of Technical IT, the CIO and the head of the Office of the CIO attended the meeting. At the meeting, the management implications of our investigation were debated, informing the discussion of the results in this article. The meeting was audio recorded and a summary of key points were written.

The empirical data were analyzed through a three-step process. First, we carried out "first-level coding" of the empirical data, summarizing the segments of the data and categorizing them according to content (Miles, Huberman, & Saldana, 2014). This provided an overview of the content and topics of conversation. Second, we conducted "pattern coding", grouping summaries into a smaller number of themes (Miles et al., 2014). As recommended by Miles et al. (2014), this was an iterative process throughout the data collection and analysis phases. The competing values framework provided guidance during "pattern coding" in the sense that we organized our data around the values associated with the four culture archetypes of the framework, i.e. we categorized the data according to Clan, Adhocracy, Hierarchy, and Market cultures (see Figure 2). The reliability of the coding process (both "first-level coding" and "pattern coding") was ensured by our performing these first two steps independently of one another and subsequently comparing results. This process of check-coding revealed an estimated intercoder reliability above the average 70% mentioned by (Miles et al., 2014). Third, the empirical data, which at this stage had been coded and categorized, were interpreted with reference to the culture profiles produced by the OCAI and OCTAT.

5. Results

Using the OCTAT, a culture profile of ITIL was generated (see Figure 3). The resulting profile shows the primary and secondary culture types to be Market (37%) and Hierarchy (33%) respectively. As a group, they dominate the profile with their emphasis on stability and control. Conversely, the Clan (10%) and Adhocracy (20%) culture types – emphasizing flexibility and discretion – are less dominant as a group. In particular, the Adhocracy culture type is of marginal influence with its emphasis on creativity, innovation, experimentation, and flexibility. The primacy of the Market culture type suggests that ITIL is result-oriented, looking toward the external environment, and that it focuses on strategic planning, competitiveness, and productivity.

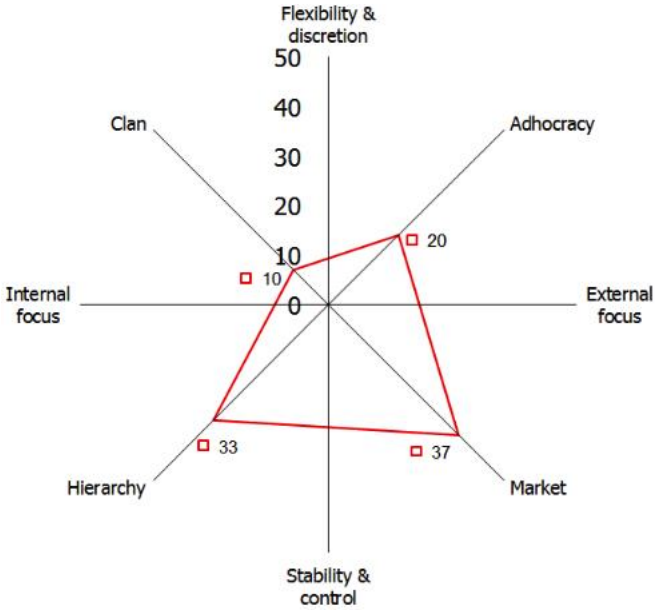

Figure 3: Culture Profile of ITIL

Based on the OCAI, a culture profile of Information Solutions was established (see Figure 4). The resulting profile shows the organization to be dominated by the Hierarchy (31%) culture type, supported by elements of the Market (27%) and Clan (25%) culture types, but only marginally influenced by the Adhocracy (17%) culture type. The dominance of Hierarchy indicates that stability, efficiency, and structure take center stage. It also suggests that Information Solutions is a formalized workplace where procedures govern work practices of employees.

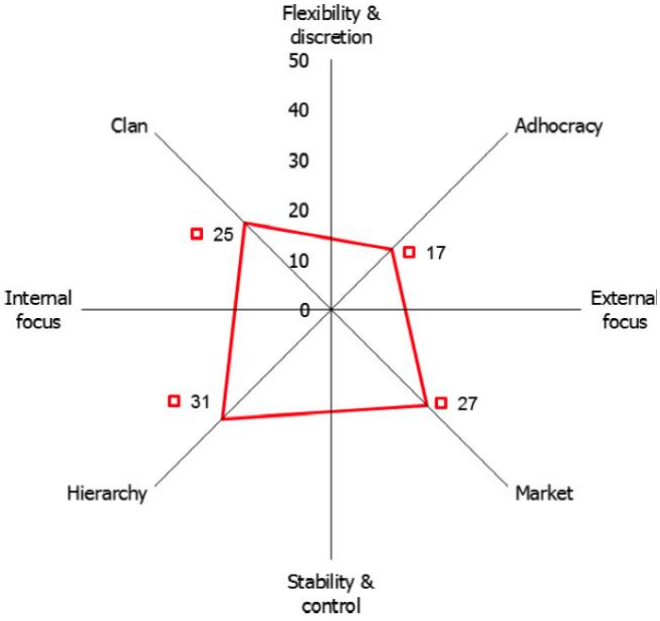

Figure 4: Culture Profile of Information Solutions

Comparing the culture profiles of ITIL and Information Solutions reveals some conspicuous similarities and differences. Figure 5 juxtaposes the two profiles.

Whereas the differences between the profiles are small with regard to Hierarchy and Adhocracy, the Market and Clan culture types differ greatly across the two profiles. On the one hand, the Clan culture type is more prominent in the Information Solutions profile than in that of ITIL. The Clan culture type (25 percent) underscores the importance of internal orientation, integration, and unity in Information Solutions. On the other hand, the Market culture type defines the culture profile of ITIL to a greater extent than Information Solutions. The Market culture type (37%) points to the implicit focus on external market differentiation, competition, and rivalry in ITIL.

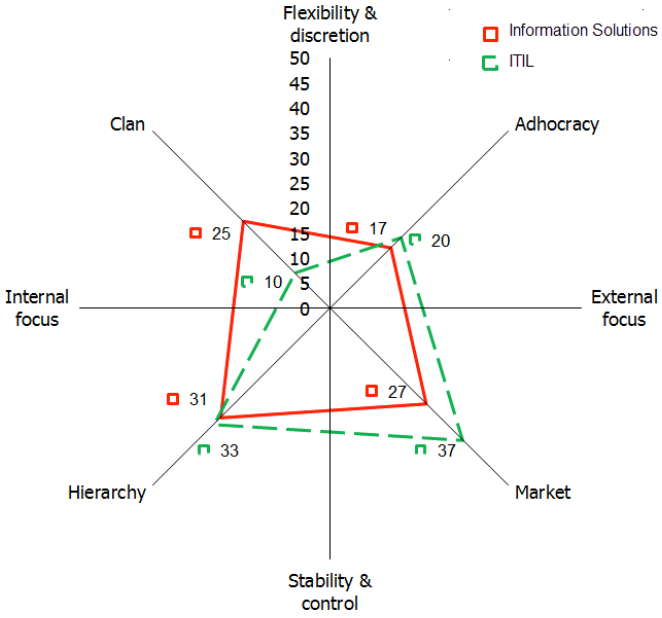

Figure 5: Culture Profiles Comparison

The two profiles are clearly distinct, even incongruent. According to Cameron and Quinn, two culture profiles are congruent if the primary culture types are the same and if the differences across types between the profiles are less than 10 percentage points (Cameron & Quinn, 2006). In this case, the differences are ≥ 10 percentage points with regard to both the Market and the Clan culture types. This cultural incongruence, i.e. the differences between the organizational culture and the value orientations underlying ITIL, suggests mismatches between the espoused values of ITIL and the organizational culture (Müller & Nielsen, 2013). In the short term, such incongruence may be functional by highlighting conflicting values and motivating change (Cameron & Quinn, 2006). In the longer term, it may pose ITIL implementation challenges and inhibit organizational performance. The consequences of this cultural incongruence will be discussed next.

6. Discussion

During the interviews with the IT directors involved in the service management implementation, the cultural incongruence between Maersk Oil and ITIL was addressed. The IT directors argued that the incongruence should be interpreted

in light of Maersk Oil being in a cultural transition like the rest of the A.P.Moller - Maersk Group toward becoming more commercial and result-oriented with clear strategic positioning and a focus on cost structure. This transition was described in terms of moving from "a reactive doer culture to a more professional proactive, performance oriented, commercial, and global organization" (IT management team meeting). In the context of service management, the IT directors interpreted it as being able to anticipate and respond to IT service needs in a timely, cost-effective, and uniform way. In supporting this transition, they argued for a cultural fit between the Maersk Group values and ITIL. Against this backdrop, the fact that Maersk Oil is heavier on the Clan culture type than ITIL, which has stronger emphasis on Market values, was not perceived as an obstacle. This does not mean, however, that the cultural transition does not pose any challenges to Maersk Oil. The IT directors pointed unanimously to the existence of many subcultures within corporate and across the local Information Solutions organizations. As one IT director said: "The oil industry has previously been very decentralized, because it has been tied to where the oil fields were. There simply was a great distance between the steppes of Kazakhstan to the Persian Gulf, to the North Sea, to Greenland where the fields are. And I believe it leaves a culture element in the organization" (Interviewee 1). Subcultural differences across the global and local organizations challenge standardization aspects of the implementation, because local needs for flexibility have to give way to global needs for efficiency. At the corporate (global) level, ITIL is received differently across the groups within the department (cf. Figure 1) due to historically grounded differences in perspectives on the need for standardization. This perceived need (or the lack thereof) depends on the departments' focus on, e.g., standardized, commodity IT in servicing global needs or highly specialized, customized applications for local needs. At the local business unit (production facility) level, culture clashes are manifest in the transition from local "chiefdoms" to a global performance-based organization. In the words of one IT director: "I have been sitting in Doha for six and a half years as IT manager without communicating with anyone in Copenhagen. That is the way the business worked. If you are the Son of God, help yourself!" (Interviewee 1). In other words, the local Information Solutions organizations have previously enjoyed a high degree of local autonomy which is being challenged by efforts at the corporate level to centralize and streamline IT service management processes.

Several ITIL implementation challenges with regard to the resulting culture change were mentioned during the interviews. First, implementing ITIL entails a culture change from not sharing objectives across departments within the global Information Solutions organization to depending on each other. Second, implementation across organizational levels (global versus local) depends on local resources that the corporate organization does not control. One IT director described the problem: "We are up against an organizational structure that does not fit us 100 percent. We have a decentralized organizational structure with local chieftains out there who do as they please with their employees, hiring and firing people as they see fit. But you cannot build global services with dependencies to local resources you cannot control. We, therefore, have a catch-22 organizational problem" (Interviewee 1). This means that there is a mismatch

between the decentralized IT governance structure placing the decision-making authority at the local level and the new service management processes requiring a centralized structure for effective implementation. Third, there is no perceived value in cross-organizational process integration, which the following quotation shows: "At the local business site, the managing director will ask: 'what do I get out of it?' And when the local IT manager says 'you get fantastic IT processes out of it', he will say 'forget it - I want an application and lower costs' " (Interviewee 5). Put differently, process standardization is of little perceived value compared to operational autonomy. Fourth, service management is being implemented on a corporate mandate without selling the vision behind the strategic initiative on "IT Service Management & Standardization" and the resulting ITIL project. The absence of such a vision leads to lack of direction: "If you want to rally people around the project, you have to be able to explain why we are doing it and what the goal and level of ambition are. In the absence of this, everything is okay. It is a little bit like Alice in Wonderland: 'if we don't know where to go, all roads are equally good' " (Interviewee 5). Thus, the value of standardizing processes has not been communicated by senior management which leads to lack of buy-in among employees. Instead of communicating the vision, there is a tendency to focus on details rather than the goals of the project. This attention to details leads to problems: "We can talk about ITIL on a principle level as opposed to nitty gritty, which I still feel is very IT centric. So, it depends whether what we have to agree on: is it a principle, and that is where I feel quite happy, and lower than that and I would really struggle" (Interviewee 3). Rather than securing support for ITIL at the principle level - focusing on *why* ITIL is needed, discussions revolve around the question of *how* to implement it. In addition, the pursuit of an incremental rather than big bang implementation strategy carries with it the risk of people "cherry picking" elements of the ITIL framework at the expense of the big picture, i.e. what the overall goal is. Fifth, IT is seen as a utility rather than a core capability, which makes the need for service management a hard sell. Consequently, IT has not historically been viewed as key to business success: "Previously, there has been a missing conceptual link between the way we manage the IT business and the oil business" (Interviewee 4). IT has, for example, not been part of the project maturation process from business prospect to commercialization, which is attributed to the low cost of IT as a share of total expenditures. Changing the perception of IT requires a new mindset. "We are now moving to a management of IT technology capability mindset instead of being in a technology operations mindset" (Interviewee 1). In other words, managers and employees alike have to change their perspective on IT from that of a utility to an enabler of the value proposition of the oil business.

Despite these challenges, the alignment between the IT strategy and the ITIL project was mentioned as one of the positive forces facilitating implementation. However, though ITIL is part of the strategic transformation of the IT function, i.e. Information Solutions, the need for greater agreement in terms of goals (cheaper vs. better processes) and level of ambition (better support of the business or best among competitors) was underscored. On the journey from Clan to greater Market orientation, the IT directors stressed the need for leveraging the strong element of Hierarchy culture present in both Information Solutions and ITIL. For example: "We are trying to move from being clan based to

becoming more market oriented, but the journey takes us through elements of hierarchy, structure, and governance" (Interviewee 2). Transitioning from local chiefdoms to professional service organizations requires measures of formalization and bureaucratization. The IT directors argued that the Hierarchy culture element is an expression of globalization and formalization of performance, and that documentation, processes, and roles are necessary in an international, distributed organization with a global supply chain. Business processes are seen as means to institutionalize Market values, e.g. customer and performance orientation. Although, the IT directors recognized the possibility of implementing ITIL through means associated with the Hierarchy culture, e.g. structure, control, and governance, they emphasized the risk of "getting stuck in the hysteria of bureaucracy" (Interviewee 2) and the consequent need to remain agile. This quotation is symptomatic for the fear of bureaucratization at the expense of flexibility. The need to stay nimble and focus on goals is also emphasized by the CIO: "The strength of Maersk Oil has been a low hierarchical organization which is very efficient and result-oriented with less bureaucracy and overhead. In our implementation [of ITIL] we should try to maintain those elements" (IT management team meeting). Phrased differently, the flexibility and discretion associated with the Clan culture are considered values of importance now and in the future. The IT directors therefore emphasized the need to set general boundaries for employee behavior instead of establishing detailed work instructions, because such boundaries would lead to employee empowerment in accordance with the Clan values. One IT director remarked: "Common sense and empowerment of the individual employee need to be balanced against the necessity of bureaucracy and documentation" (Interviewee 2).

This case study is in line with previous studies, which highlight the importance of organizational culture in process improvement (Dangle et al., 2005; Schneider, 2002; Siakas & Georgiadou, 2002) by showing that implementation is, on the one hand, influenced by organizational culture and, on the other hand, influences the culture of the organization (Aaen, 2003; Boehm, 2000; Dion, 1993; Dubé & Robey, 1999; Dubé, 1998; Dybå, 2005; Fitzgerald & O'kane, 1999; Müller et al., 2009; Ngwenyama & Nielsen, 2003; Stelzer & Mellis, 1998). Organizational culture, managerial action, and ITIL implementation are inextricably linked. This is in accordance with Hong et al. (2013) who find that the service climate mediates the effect of leadership on employee attitudes and practices (Hong et al., 2013). It furthermore confirms the link between ITIL implementation and service climate through process management (Eikebrokk & Iden, 2016). Our case study adds to our understanding of the relationship between culture, ITIL, and management through an in-depth analysis of how competing values challenge implementation efforts. In terms of managerial implications, this study suggests, firstly, that managers should focus on the question of "why" before getting into the details of "what" and "how" to implement ITIL. This is in agreement with extant research that emphasizes the need for communicating goals and purpose, and securing senior management support (Pollard & Cater-Steel, 2009; Tan et al., 2009). Although this implication may seem generic in nature and arguably valid across organizational change initiatives, our case study shows it to be particularly important in relation to culture changes associated with ITIL implementation. Our study shows the risk of losing sight of and failing to

communicate the overall goal of an ITIL implementation, which results in lack of motivation and resistance to changes that challenge existing cultural values. At Maersk Oil, the lack of a shared vision resulted not only in diverging perspectives and priorities across Information Solutions at the level of the local and global IT organizations, it also led to implementation challenges due to the incongruence between the organizational culture and the value orientations underlying ITIL. Overcoming these challenges necessitated a change in perspective from seeing IT as a utility to being a business enabler. Secondly, the case also highlights the need to connect process improvement initiatives to the business strategy and the organizational culture. Different management tactics are needed depending on the challenges confronting the company with regard to aligning the organizational culture with the values embedded in the quality management standard and process model (ITIL or other) being used for process improvement. In the case of Maersk Oil, this means involving and empowering employees in the ITIL implementations and setting boundaries instead of establishing work instructions. This recommendation is consistent with the guidelines for culture based process improvement management set forth by Müller et al. (2014). Thirdly, it is also important to recognize the risk of losing sight of the overall goal when pursuing an incremental, or phased, rather than big bang implementation strategy. This is an elaboration of Tan et al.'s call for an appropriate change management strategy in instilling service management values in the organization (Tan et al., 2009). Lastly, the analysis demonstrates that formalized business processes may be used as a means to institutionalize the Market values associated with ITIL, e.g. customer and performance orientation. The risk, however, is increasing the bureaucratic burden upon the organization and employees.

Regarding future research, we invite researchers to investigate the guidelines for culture based process improvement management suggested by Müller et al. (2014), which we have elaborated on in this study with respect to an organizational culture dominated by Hierarchy and ITIL with its Market oriented values. Although this study confirms the need to address the cultural aspects of an ITIL implementation (Iden, 2009), process improvement based on ITIL and other quality management standards and process models need to be studied in other companies as a basis for carving out implementation strategies for use in, for example, more Adhocracy or Clan based cultures. We also invite researchers to investigate the interplay between organizational and national culture in the implementation of ITIL related practices. Though we recognize the importance of national culture (Nicho & Mourad, 2012), our case study is limited in its focus on organizational culture.

7. Conclusion

The article reports on a case study of ITIL (Information Technology Infrastructure Library) implementation in Maersk Oil. We have analyzed the values embedded in the ITIL framework, compared these values to the organizational culture of Maersk Oil, identified implementation challenges, and discussed how to manage these challenges. We have contributed to state-of-the-art knowledge of culture in process improvement in three ways: First, we have

identified the values underlying ITIL. Second, we have discussed how to overcome cultural incongruence through the implementation of business processes. Third, we have highlighted implications for managers trying to improve business efficiency and effectiveness through the use of quality management standards and process models. This has led to the suggestion that managers focus first and foremost on communicating the vision and goals of process improvement, subsequently link and adapt implementation plans to the business strategy and cultural values of the company, and lastly consider the possibilities and risks of instilling Market values through formalized business processes.

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Appendix A

The Organizational Culture Assessment Instrument uses a survey to establish organizational culture profiles. The survey contains six questions each having four alternative answers (see Table A.1).

1.	Dominant Characteristics	Now
A	The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.	
B	The organization is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.	
C	The organization is very results-oriented. A major concern is with getting the job done. People are very competitive and achievement-oriented.	
D	The organization is avery controlled and structured place. Formal procedures generally govern what people do.	
	Total	100

2.	Organizational Leadership	Now
A	The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.	
B	The leadership in the organization is generally considered to exemplify entrepreneurship, innovation, or risk taking.	
C	The leadership in the organization is generally considered to exemplify a no-nonsense, agrresive, results-oriented focus.	
D	The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.	
	Total	100

3.	Management of Employees	Now
A	The management style in the organization is characterized by teamwork, consensus, and participation	
B	The management style in the organization is characterized by individual risk taking, innovation, freedom, and uniqueness.	
C	The management style in the organization is characterized by hard-driven competitiveness, high demands, and achievement.	
D	The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.	
	Total	100

4.	Organization Glue	Now
A	The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.	
B	The glue that holds the organization together is commitment to innovation and development. There is an emphasis on being on the cutting edge.	
C	The glue that holds the organization together is the emphasis on achievement and goal accomplishment.	
D	The glue that holds the organization together is formal rules and policies. Maintaining a smooth-running organization is important.	
	Total	100

5.	Strategic Emphasis	Now
A	The organization emphasizes human development. High trust, openness, and participation persist.	
B	The organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.	
C	The organization emphasizes competitive actions and achievements. Hitting stretch targets and winning in the marketplace are dominant.	
D	The organization emphasizes permanence and stability. Efficiency, control, and smooth operations are important.	
	Total	100

6.	Criteria of Success	Now
A	The organization defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.	
B	The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.	
C	The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.	
D	The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling, and	
	low-cost production are critical. Total	100

Table A.1. The OCAI Survey (Cameron & Quinn, 2006)

For each question, the respondent divides 100 points among the alternative answers. Percentages are calculated based on summary scores, indicating the relative importance of each culture type. The percentage points are illustrated in a culture profile chart (see Figure A.1).

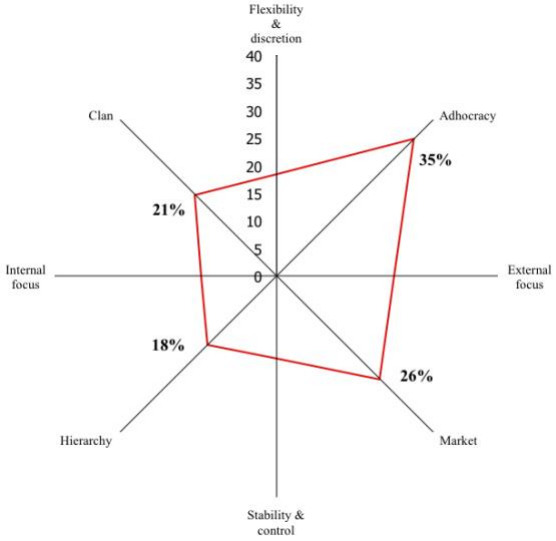

Figure A.1. Example Culture Profile Chart

Calculation is done according to the following guidelines: All A responses are added together and divided by six (corresponding to the number of questions) to calculate the average score. Similarly, average scores for B, C, and D are calculated. Each average score corresponds to a culture archetype (A = Clan; B = Adhocracy; C = Market; D = Hierarchy).

Appendix B

The Organizational Culture Text Analysis Technique (OCTAT) searches a text systematically and exhaustively for words and phrases associated with each of the four cultural archetypes of the competing values framework. These words and phrases are derived from the detailed descriptions of the four culture types (Cameron & Quinn, 2006). After this search, a weighed distribution analysis is performed taking into account an uneven number of words and phrases for each culture type to determine the prevalence of the values associated with the four culture types in the text. Lastly, an aggregate culture profile of the text is established based on the weighed distribution analysis, showing percentages for each culture type. The technique is available as a web service: http://processinnovation.dk/octat.html.

	Culture type				**Total**
	Adhocracy	**Clan**	**Hierarchy**	**Market**	
# of hits	1979	962 (1176)	905 (996)	1153 (1492)	4999 (5643)
in %	35,07	20,84	17,65	26,44	100 (100)
# of codes	22	18	20	17	77

Table A.2. Example culture profile calculation

Table A.2 shows the number of codes (words and phrases) and 'hits' (also shown in percentages of all 'hits' across culture types) associated with each culture type

in an example culture profile calculation. For example, keywords and phrases (20 codes in total) associated with the Hierarchy culture type are used 905 times in the text. The number of 'hits' has been normalized (based on the Adhocracy score). For example, the normalized number of Hierarchy 'hits' is calculated as follows: 22/20 x 905 = 996. The normalized scores are listed in parentheses. The normalized scores are then used for calculating the weighed distribution in percentages. In this example, the calculation is performed as follows: 100/5.643 x 996 = 17,65 percent (≈ 18 percent). For the purpose of simplification and plotting the culture profile (based on the percentage scores), decimal points are removed. The calculations yield the culture profile chart shown in Appendix A, Figure A.1.

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