The Effect of Organizational Culture on the Implementation of Servitization in Manufacturing Companies

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ABSTRACT,

Servitization is a topic that has received much attention and is widely discussed in today's market field. Manufacturing companies increasingly shift from being pure product suppliers to more service-oriented systems and including more and more value-adding service activities in their product offerings. This study is set to conduct a qualitative research and investigate the impact of different organizational cultures on implementing servitization within the manufacturing companies. The theoretical framework displayed that clan oriented culture and adhocracy oriented culture appear to be the most suitable organizational cultures for developing service oriented strategy in a company. Ultimately, the results of interviews with different manufacturing firms provide support for this hypothesis.

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Keywords

Servitization, Organizational culture, Competing values framework, Manufacturing, Service culture

1. INTRODUCTION

A new trend has received much attention in today's industry, where manufacturing companies transition from being pure product suppliers to include additional services as a value-adding component of their key offerings and products. This trend can be recognized as a process where manufacturing companies seek to and create more and more services in their offerings. This trend is widely called "servitization" (Desmet et al., 2003).

With the trend of servitization, services have generally been defined as essential add-on activities to the core corporate product offerings. Servitization is one of the most significant strategic choices for manufacturing companies, many companies have received enormous pressure and they realized it is very difficult to stand out and achieve desired profit as a manufacturing company only through focusing on selling goods and technology innovation (Ahamed et al., 2013). More and more manufacturing companies today are seeking to innovate, managing to combine or bundle both products and services and increasingly providing more extensive services or market packages to satisfy the needs of customers in order to remain their competitiveness in the current marketplace (Oliva & Kallenberg, 2003).

According to the perspective from Neely (2009), servitization can be described as 'the innovation of an organization's capabilities and processes in order to better create mutual value the capabilities and processes through a transition from selling goods to selling Product-Service systems'. Furthermore, servitization plays an important role in influencing the ways in which managers and employees think, behave and make business decisions within the companies in the future (Vandermerwe & Rada, 1988). Within the servitization process, manufacturing companies face a lot of challenges in developing a service culture, since they firstly need to overcome their existing embedded products-focused culture (Vladimirova, 2011). In order to implement a servitization strategy successfully, manufacturing companies have to make a change in mindsets of their personnel (Dubruc et al., 2014), shifting from a pure manufacturing based to a service-oriented mindset. In addition, looking from a project's findings and results in respect to the servitization introduced by Service Science Factory in the Maastricht University, they came up with a model with two important internal-oriented successful characteristics of servitization, which are: Organizational Culture and Service Innovation Processes.

This research paper is going to focus on investigating the internal transformation of organizational culture from a product and technology based to a service-oriented culture, and gaining more insights into the relationship between organizational culture and the level of servitization within manufacturing companies.

1.1 Research objective

Servitization is a clear trend which can be seen in the current manufacturing field, whereby offering services becomes an increasingly important role in the business model of manufacturing companies. The manufacturing companies now are trying to bundle both products and services to add value to their offerings and focus more and more on selling and promoting their services in order to meet and satisfy the need of customers. Implementing a service-oriented strategy successfully always largely depends on how the people think, act and making decision within a company. The objective of this research is to investigate the impact of organizational culture on servitization in manufacturing companies and therefore it is also important to understand and analyze the relationship between different organizational cultures and the level of servitization.

1.2 Research question

The aim of this paper is to discuss the impact of organizational culture on implementing and accomplishing servitization in manufacturing companies. The research question is designed to probe deeply into the research goal. The research question is formulated as follows: 'What is the influence of organizational culture on the implementation of servitization in manufacturing companies?'

There are some relevant sub-questions displayed below. These sub-questions will be used to get a better understanding on how to eventually formulate a clear and full answer to the research question.

-What is organizational culture and how is it measured?

-What do we mean by servitization and how is it measured?

-What is the relationship between the organizational culture and servitization within the manufacturing companies?

1.3 Academic relevance

Currently, the topic of servitization is a highlighted subject and has received a lot of attention from the marketing domain. The strategic benefits of servitization have been posed, many manufacturing companies evolved their business from pure manufacturing to more service-oriented systems, changing their culture from technology-based and product-focused to a service culture as well as paying attention to promoting their services effectively to respond to the diverse needs of customers. This research paper aims to focus on providing more insights and deeper knowledge into the link between organizational culture and the extent of servitization, and to also look into the effect of different organizational cultures on moving towards to servitization within manufacturing companies. In addition, no research has been done concerning this topic area before.

1.4 Practical relevance

This paper aims to discuss and analyze the effect of organizational culture on the implementation of servitization and provide an answer about the relationship between organizational culture and the degree of servitization within the manufacturing companies, which would be new knowledge in this research domain. In order to develop a service strategy, the manufacturing companies need to change their conventional production and manufacturing culture to service-oriented culture and make transformations from focusing on products and technology to service offerings and becoming customer focused.

The results and findings of this research will be used to enrich the knowledge regarding the impact of organizational culture on servitization, giving more insights into what kind of organizational culture has a positive influence on servitization and would be the most appropriate culture when companies want to develop a service strategy. Furthermore, this research is designed to be conducted in manufacturing companies and thus the results and findings are useful and appeal to high-tech manufacturing enterprises and some relevant industries.

1.5 Outline

In order to fully answer the research question, several aspects need to be included and covered throughout the chapters of this research paper. The structure of this paper is as follows. Firstly, the theoretical framework is discussed, which plans to filter and outline theoretically relevant research applicable to analyze the effects of organizational culture on implementing servitization in manufacturing companies. After the theoretical framework, the methodology regarding data collection and data analysis will be described and the results of the data analysis will be presented afterwards. The conclusion of this research paper will provide a short overall summary of the findings. The paper finishes with the discussion section, in which possibilities for future research and limitations of the research are proposed and suggested.

Table 1: Outline of the research paper

Chapter 1	Chapter 2	Chapter 3	Chapter 4	Chapter 5	Chapter 6
Introduction -Description -Relevance -Research question	Theoretical framework -Organizational culture -Servitization -Organizational culture and servitization	Methodology -Research design -Data collection	Results -Data analysis	Conclusion -Findings summary	Discussion -Limitations -Recommendations

2. THEORETICAL FRAMEWORK

2.1 Organizational Culture

2.1.1 Definition of Organizational Culture

Schein (2010) defines organizational culture as a set of basic assumptions, which are invented, developed and fostered by a given group as it learns to deal with its problems of both external adaptation (relationship with customers and suppliers) and internal integration (relationship with employees). According to Cameron and Quinn (2011), organization culture can be more broadly described as "values that are taken for granted, referring to underlying assumptions, involving expectations, collective memories and definitions used in the current organization". Organization culture represents a pattern of commonly shared values, beliefs and the ways of thinking that convey sense of organizational identity to employees or members. This sense of identity is able to provide unwritten regulations and usually unspoken guidelines for how to get along with each other and how work is done and enhances the stability within an organization.

2.1.2 Measuring of Organizational Culture - Competing values framework

The Organizational Culture Assessment Instrument (OCAI) introduced by Cameron and Quinn (2011) is based on the Competing Values Framework. This theoretical model consists of two different opposite dimensions with respect to the structure (Flexibility, Stability) and focus (Internal orientation, External orientation). Based on this framework, every organization is different and has their own unique culture referring to one of these four different organizational cultures. The Competing Values Framework categorizes four types of organizational culture, namely Clan, Adhocracy, Hierarchy and Market (Figure 1) and provides a focused and validated approach to analyze the central values of an organization effectively (Cameron & Quinn, 2011).
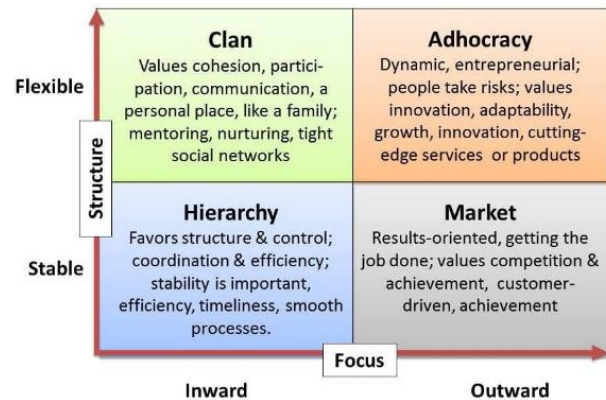

Figure 1: Competing values framework- Cameron & Quinn (2011)

Looking from the viewpoint introduced by Cameron and Quinn (2011), an organization's culture is reflected by what is valued, the dominant leadership style, the language and symbols, the procedures and routines, and the definitions of success that make an organization unique. The Organizational Culture Assessment Instrument (OCAI) consists of six important culture aspects. Every key aspect has four alternatives, which corresponds to the four different organizational cultures from the Competing Values Framework model (Clan, Adhocracy, Hierarchy and Market respectively). The table below shows the evaluation criteria of the organizational culture.

Table 2: Measurement criteria of the organizational culture (Cameron & Quinn, 2011)

Dominant Organizational Characteristics	- Personal place like a clan - Entrepreneurial and risk taking - Orientation on competition and achievement. - Control and structure
Leadership style	- Mentoring, facilitating, nurturing - Innovative, risk taking, entrepreneurial - Aggressive, No-nonsense, result-oriented - Coordinating, organizing, efficiency oriented
Management of employees	- Teamwork, consensus, and participation - Individual risk taking, innovation, freedom, and uniqueness - Competitiveness and achievement - Security, conformity, predictability
Organizational glue	- Loyalty and mutual trust - Commitment to innovation and development - Emphasis on achievement and goal accomplishment - Formal rules and policies
Strategic emphasis	- Human development, high trust, openness - Acquisition of resources and creating new challenges - Competitive actions and winning - Permanence and stability
Criteria for success	- Development of human resources, teamwork, and concern for people - Having the most unique and newest products and services - Winning in the marketplace and outpacing the competition - Dependable, efficient, and low cost

2.2 Servitization

2.2.1 Definition of Servitization

Vandermerwe and Rada (1988) were first to describe servitization as a process, where companies managed to combine and bundle both products and services to add and create more value to their business offerings. According to the viewpoint from Neely (2007), manufacturing firms are increasingly adopting servitization, and it is also mentioned that servitization can be defined as a business model innovation whereby existing product offerings are extended through the provision of related services. Looking from the new perspective on the concept of servitization introduced by Neely (2009),

servitization involves the innovation of an organization's capabilities and processes so that it can better create mutual value through a shift from selling products to selling Product-Service Systems.

2.2.2 Measuring of Servitization

2.2.2.1 Measures of Current Service Offering

According to Kohtamäki et al. (2018), the current service offering of the organization explains the strength of the existing service portfolio of the manufacturing firm and it is a critical metric for assessing the level of servitization within companies. The current offerings of a manufacturing company can be measured by using three key indicators, namely the number of services offered, the depth of services delivered and the nature of service offerings, namely whether they are basic, intermediary or advanced respectively. The scope of the service strategy of a company is clearly reflected in the number of services offered to their customers. Since the more services that a manufacturing company provides, the greater is the ability of the firm to increase the product offering. The number of services itself is a significant aspect of implementing a service-oriented strategy in the company (Homburg & Hoyer, 2002).

In addition to the given number of services provided, manufacturing companies have the choice of delivering services actively to customers or only when their customers request them specifically (Homburg et al., 2003), and thus it is also essential to take into account the depth or intensity of how the manufacturing company offers those services to their customers when precisely measuring the current extent of service strategy within the company. Furthermore, the service offerings, such as technical support and maintenance services or whether the company provides services which are usually internal to the customer, are important in terms of assessing the degree of servitization (Baines & Lightfoot, 2013). The following Table 3 displays some of the categorized base, intermediate and advanced services identified in manufacturing companies.

Table 3: Base, intermediate and advanced services in manufacturing companies (Baines & Lightfoot, 2013)

Base services (narrow activities centered around organizations production competences)	Intermediate services (stretched services based on existing production competences /customer maintenance services)	Advanced services (stretched activities that are usually internal to the customer)
Installation service	Product research for customers	Service for operating customer's process
Spare part provision	Customer training	Distribution, wholesaling, retailing, branding for customer
Technical support	Sourcing services	Consulting services
Analyses on product's manufacturability	Recycling service	Financing services for customers
Procurement services	Product design and development service	Start-up assistance for customers
Warranty	Repair and maintenance	Customer support agreements
Product demonstrations	Product upgrade service	Outcome-based performance services

2.2.2.2 Measures of Strategic Intent for Future Service Offering

In addition to evaluating the number of current service offerings, it is equally important to understand the future strategic intent of service offerings development when assessing and comparing the level of servitization in the company (Kohtamäki et al., 2018). If the manufacturing company does not have a plan for providing further services in the future, it will not be able to devote and invest its current service offerings. As the trend of servitization continues, developing a conscious and explicit service-oriented strategy has been viewed from today's marketing field as a main determinant for the success of a company, with services becoming one of the critical differentiating factors related to the fully integrated products and service delivery of manufacturing companies (Baines & Lightfoot, 2009). The strategic intent of future service offerings needs to be defined in accordance to both service breadth and service depth (Lay et al., 2010), meaning that the expectation of manufacturing companies regarding the broadening of their current service programs can be clearly reflected by the company's intention to increase the number of service offerings in their future development plan.

Furthermore, the strategic intent to improve the current service quality and the manufacturing company's vision to expend the depth of future service offerings explains that they aim to be more active in terms of providing various service activities to customers in the future. These anticipations need to be specifically described in the servitization strategy of the company. Even though some traditional manufacturing companies provide a few services because of customer driven and market pressure, service-oriented manufacturing firms currently use service offerings in order to differentiate themselves from the competition and create better interaction as well as achieving value co-creation with their customers.

2.2.2.3 Measures of Service Revenue

Service revenue is another crucial dimension when measuring and comparing the servitization (Kohtamäki et al., 2018). Within the servitization process, manufacturing companies have the opportunity to create more revenues through achieving product-service combinations as well as strategically integrating services with products and technologies. Therefore, the degree or extent of servitization can be understood and measured from the percentage of revenue that originates from the service offerings in the companies. According to Lay et al. (2010), the revenue is generated by the company directly and indirectly through the service offerings to their customers, since the manufacturing companies may not be able to separate service revenue from the product sales. Therefore, it is important and appropriate to take both the directly and the indirectly invoiced service shares into account when measuring the service revenue within manufacturing firms.

2.3 Organizational Culture and Servitization

2.3.1 The link between organizational culture and servitization

According to Dubruc et al. (2014), creating a servitization-friendly organization is essentially in line with the premise that having a flexible culture is essential. Based on this link, Clan and Adhocracy-oriented culture are supposed to be the most appropriate organizational cultures for implementing servitization within manufacturing companies.

2.3.1.1 Adhocracy oriented culture

The adhocracy culture is highly flexible and reacts strongly and fast to a changing and dynamic environment. In an organization with an adhocracy culture, almost everyone gets involved in the

production, service delivery, customer interaction, and research and development process. Emphasis is placed on individuality, taking risks and predicting the future (Cameron & Quinn, 2011). This implies that the focus of employees within the organization is satisfying the wishes and needs of their customers. The characteristics of this culture are based on external orientation, development and innovation and oriented on adding value to the products of the customers. These characteristics play an essential role in achieving servitization and the adhocracy culture probably is the most appropriate organizational culture for a manufacturing company with a high extent of servitization.

2.3.1.2 *Clan oriented culture*
Cameron and Quinn (2011) mentioned "a pattern of basic assumptions in a clan culture are that the environment can best be managed by teamwork and personnel development, and customers can best be viewed as partners". Like Adhocracy culture, employees within a clan culture are flexible and pay attention to personal development. The key characteristics of this culture are staff loyalty and team cooperation. These characteristics are important for carrying out service-oriented strategy successfully within a company.

2.3.1.3 *Market-oriented culture*
According to Cameron and Quinn (2011), organizations with a market culture focus on the external changing environment instead of taking care of the internal affairs within the organization such as formulating a service strategy. It attaches importance to making transactions with several stakeholders from the external environment such as suppliers, customers, contractors, unions, regulators and alike. The market-oriented culture works mainly towards economic market mechanisms, namely that of monetary exchange. These lead to the market culture primarily being focused on conducting transactions to create sustainable competitive advantage. The main goals of these organizations are all about profitability, quarterly results, strong market positioning and superiority. The characteristics of market culture are relatively stable, customer-driven and transaction-focused.

2.3.1.4 *Hierarchy oriented culture*
Until 1960s, the Hierarchy culture was deemed as the ideal organizational culture since it resulted in stable, efficient and greatly consistent products and service offerings (Cameron & Quinn, 2011). The organization environment with a hierarchy culture was comparatively stable, and employees and jobs were more easily coordinated and controlled. The primary characteristics of this culture are a structured working space, standardized regulations and procedures, which affect people's ways of thinking, to make them behave more internal-oriented

and rigid. These elements do not correspond with the flexible service-friendly culture and they are more suitable for a manufacturing firm mainly focused on achieving and benefiting from the operational excellence.

2.3.2 *Service Culture*
Looking from the perspective stated by Grönroos (1990), the concept of corporate culture is clearly described as a pattern of more or less common norms and values or basic assumptions and thus it is exceedingly important for a manufacturing enterprise to create a strong and well-formulated service culture. According to Gebauer (2007), a service culture is essential and service orientation of corporate or organizational culture can be viewed as one of the successful determinants when shifting from a pure product focused company to a service oriented organization. Brax (2005) mentioned that service culture is largely different compared to the traditional production culture. Therefore, achieving a service strategy and attaining a desirable extent of servitization requires a transition in mindset of managers and employees in a manufacturing company. They both need to change their awareness from viewing the service offerings as add-on components to value-adding activities (Gebauer et al., 2006). The required change can be precisely characterized as a transformation in the typical product-based manufacturer's thinking towards a service-oriented culture (Wallin, 2012).

3. METHODOLOGY
An effective research is conducted by analyzing the subject closely while applying use of several research techniques (Morgan & Smircich, 1980). This research is designed by following a qualitative approach, which contains and includes searching for related articles and setting out to systematically collect, analyze and describe data. Setting up as a qualitative research, the theoretical framework will be focused on reviewing the recent scientific literatures regarding the description and measurement of servitization and organizational culture, as well as the link between organizational culture and servitization. In addition, Scopus, Web of Science, Google Scholar, and some other similar websites or databases will be used for searching relevant articles in this research. The key search terms used include: servitization, organizational or corporate culture, manufacturing, development, marketing and combinations of those. In order to get more insight into the research topic, the reference lists of the papers read for this research also compared and referred to other possible and applicable relevant literatures. When searching for the scientific articles, focus was placed on the relevance and quality of the papers in particular together with looking into the related journals they were published in recently.

Data collection can be done by using one or multiple ways such as by reviewing published literatures, delivering questionnaires, making observations or doing interviews (Patton, 1990). Conducting semi-structured interviews is the primary data collection method in this research in order to have the possibility to ask more in-depth questions based on the answers of interviewees. A semi-structured interview is centered around a list of predetermined topic and questions (Whiting, 2007). The interview guide with the questions and topics will inform the interviewees and companies beforehand. Each interview will

start off with a clear introduction about this research and the purpose of the interviews. The questions of the interviews will be asked in the same order to the representatives of the different manufacturing companies. These interviewees are all business managers and responsible for the customer services of their company. During this research, all of the interviews will be conducted with manufacturing companies in China and the Netherlands and it is planned to interview around 5 companies, preferring those manufacturing companies with different types of organizational culture and from various industries. The face-to-face technique will be used when conducting the interviews with manufacturing companies in the Netherlands, as they are relatively easy to reach. For doing the research together with manufacturing firms which are located in China, the qualitative data will be collected by making these interviews over the phone or through video. The anticipated duration of every semi-structured interview will be approximately 30 to 45 minutes.

These semi-structured interviews will consist of three parts including closed-ended and open-ended questions in order to gather more information, instead of only setting one fixed answer as would be the case when asking multiple-choice questions in a questionnaire. The interviews will start with a few general questions to get a better understanding of the manufacturing companies, followed by some questions relevant for evaluating the corporate culture based on six main aspects which are designed according to Organizational Culture Assessment Instrument (OCAI) that correspond with the Competing Values Framework (Quinn and Cameron, 2011). The creation of the third part of the interview is based on literature in terms of measuring servitization. The semi-structured interviews will be fully conducted in English. The interview questions that will be asked to each of the manufacturing companies can be found in Appendix 1.

The data analysis method used to interpret and analyze the collected qualitative data is content analysis. The manufacturing companies assess their organizational culture through choosing one of the classifications of the Competing Values Framework (Quinn and Cameron, 2011). The extent of servitization will be measured based on three equally important dimensions, namely the percentage of revenue that is generated from the service activities, the current service offerings as well as the strategic intent for future service offerings within the company. The semi-structured interviews will be recorded together with taking detailed notes to ensure all the questions have been answered by the interviewees so that no important information can get lost. In order to manage, transcribe and analyze all the information obtained from the interviews properly, it is essential to perform open coding (Khandkar, 2009) which is a process used to develop categories of information and a method for analyzing the qualitative data derived from the interviews. Open coding aims to create a descriptive and multi-dimensional elementary framework for conducting the following analysis (Strauss and Corbin, 1990). In addition, the consequences of each interview will be summarized and displayed in one table respectively.

4. RESULTS

The interviews were conducted with five manufacturing companies in China and the Netherlands during the research. Specifically, three of the manufacturing companies are in the Netherlands and the other two companies are located in China. These manufacturing companies assessed their organizational culture on six key aspects based on the Organizational Culture Assessment Instrument (OCAI) to find out which organizational culture category they belong in the Competing Values Framework (Quinn and Cameron, 2011). The level of

servitization will be measured according to three main dimensions, namely the percentage of revenue that derives from the service activities, the current service offerings as well as the strategic intent for future service offerings in the manufacturing company. The results from the five interviews can be found in Table 4.

Table 4: Overview interview results

Interview 1	Company A			
	Culture Category	**Percentage of revenue gained through Services (%)**	**The current service offering**	**The strategic intent for future service offering**
	Hierarchy oriented culture	Around 40%	Offer 5 main service activities to customers currently	Continuous improvement is always encouraged and would like to provide more new services to customers in the future
			Base and intermediate services	Intent to offer services to customers more actively in the future
			Actively provide those services to customers and customer feedbacks also used for continuous improvement	

Interview 2	Company B			
	Culture Category	**Percentage of revenue gained through Services (%)**	**The current service offering**	**The strategic intent for future service offering**
	Adhocracy oriented culture	Between 50% and 55%	Offer 9 main service activities to customers currently	Aim to increase the number of current services and provide various services to customers in the future
			Base and intermediate services	Willing to provide service activities to customers more actively in the future in order to enhance the market position and generate more profits
			Actively offer those services to customers and installation service is a part of sales	

Interview 3	Company C			
	Culture Category	**Percentage of revenue gained through Services (%)**	**The current service offering**	**The strategic intent for future service offering**
	Clan oriented culture	Around 60%~70%	Provide more than 10 service activities to customers currently	Willing to offer more new different services to customers in the future
			Intermediate and advanced services	Aim to offer service activities to customers more actively in order to explore new markets and promote their own brand in the future
			Actively provide those services to customers especially the consulting services and invite customers to visit the factory and show them the entire production process	

Interview 4	Company D		

Culture Category	Percentage of revenue gained through Services (%)	The current service offering	The strategic intent for future service offering
Clan oriented culture	Approximately between 60% to 65%	Provide 8 key service activities to customers currently	Have the ambition for offering more different service activities to customers in the future in order to realize greater business opportunities
		Base service and mainly on intermediate services together with a few advanced services. Actively provide those services to customers with data and voice solutions and ensure business-class service to wholesale customers	Aim to offer services to customers more actively in the future, continuing to grow their wholesale business as well as enhancing current services to provide top quality for customers.

Interview 5	Company E		

Culture Category	Percentage of revenue gained through Services (%)	The current service offering	The strategic intent for future service offering
Adhocracy oriented culture	Around 60%	Offer 6 main service activities to customers currently	Willing to offer more various new service activities to customers in the future to keep satisfying customer's demand and try to make their products are more welcome by customers
		Base service and mainly on intermediate service and advanced services. Actively provide those services to customers especially the consulting services, there are professional staffs to help with enquiries and offer recommendations for wholesale customers	Plan to offer services to customers more actively in the future and pay attention to customer feedbacks in order to constantly improve and enhance the service quality

After conducting individual interviews with the representatives from these five manufacturing companies, every interviewee stated that their company already had a well-established corporate culture which is suitable for the current extent of servitization as well as corresponding with the company development. However, the degree of servitization is not yet on the level that they expect to reach in the future and the companies aim to keep improving servitization constantly.

In addition, another important aspect is that each interviewed manufacturing company has exclusive products, a unique business model and strategy. The interviewees mentioned that it is difficult to differentiate and separate the revenue between product sales and services in manufacturing companies. This is due to the fact that research and development service of companies sometimes will be directly added into the product price when the company launches new products and thus may not be charged separately to their clients, meaning services and products sometimes are integrated, but the research and development of products and service deliveries are usually in the charge of different departments in the manufacturing companies. In such situations, it is hard for these companies in terms of combining the revenue percentages from different departments and precisely measure the revenue percentage purely generated through the service offerings.

Furthermore, the business manager from company E indicated that it is hard to use only a single organizational culture to define their company since they notice there are a few aspects from different types of cultures combined in their company and they found out that the measuring scores in terms of each organizational culture category are rather close to each other after the interview. This is probably because of the fact that the large corporations with various branches such as company E, which is a relatively large manufacturing company compared to the other four interviewed companies and thus they could likely face some problems regarding multiple organizational cultures existing in the company.

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4.1 Clan oriented culture

The characteristics of a clan oriented culture is focused on staff loyalty and teamwork. A company with this culture feels like an extended family and customers can best be viewed as partners. There are two interviewed manufacturing companies in this research which evaluated themselves as having a clan oriented culture based on the six critical aspects from Organizational Culture Assessment Instrument (OCAI), namely dominant organizational characteristics, leadership style, management of employees, organizational glue, strategic emphasis and criteria for success.

Company C gave a representative example of clan oriented culture with a rather high percentage of revenue gained through services at between 60% and 70% approximately. This company is a food manufacturing company and mainly produces dairy products. They pay close attention to products quality assurance and try to improve their products quality to a new level continually. The interviewee from company C stated that all the new products need to go through more than seven strict inspections before launch and promotion to the market. In addition, Company C currently provides more than ten service activities to their customers and they always invite local clients as well as offering the opportunities for some main overseas customers to visit the factory in order to show them the entire production process. In the future, company C is still willing to offer further different services and plan to provide these services more actively to customers to explore new markets and to better promote their own brand to the world.

Another example of a clan oriented culture is Company D. It is an emerging manufacturing firm in the TV and broadband industry, which mainly produces routers, cables and set top boxes. Company D knows that they are a start-up in this industry and therefore it is crucial for them to stand out and distinguish themselves from the other competitors in the current market. The business manager from Company D during the interview indicated that the majority of the companies in this industry now are pure manufacturing companies, primarily attaching importance to production, technology innovation, operational excellence and cost efficiency. Company D aimed to maintain long-term relationships with their customers and to increase the number of returned customers through ensuring product quality together with providing top quality service activities, hoping customers will get back when they need new products. This company believes that fast, reliable broadband networks with business-class services are able to make all the difference to a company's success. Company D offers data and voice solutions to customers, ensuring business-class service to guarantee their clients experience is seamless and the connection is reliable. In addition, they planned to continue to grow wholesale business, leveraging the global coverage of their network and investing in expansion and innovation. For the future service strategy, company D has ambitions for extending their services and providing further different service activities to customers in order to realize greater business opportunities.

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4.2 Adhocracy oriented culture

An adhocracy oriented culture is a highly flexible and dynamic culture, reacting strongly and fast to the changing environment. There is few formal procedure and rules. Within an adhocracy oriented culture organization, bureaucracy does not exist and almost everyone gets involved in the production, service offering and research and development process.

During the interviews, company B assessed themselves to have an adhocracy culture and achieved relatively high service revenues percentage between 50% and 55% as well as offering nine key services to customers, which are a lot for a company manufacturing machines for the production of integrated circuits in the semiconductor industry. This company provides majority of base and intermediate services and actively offer them to customers. The representative from company B mentioned that the installation service is a part of sales and the main constant purpose of the company is managing to assure excellent product quality while satisfying the customer demands to greatest extent. Company B is planning to increase the number of current services, providing various new service programs to customers and trying to build a more outstanding after-sales service department. In terms of the future servitization strategy, the company would love to provide service activities to customers to enhance the market position and generate extra profits.

Company E is a domestic apparel manufacturing company, which is another typical example of having an adhocracy oriented culture and manifesting the importance of a flexible culture. The business manager from company E indicated that due to the trend towards product customization, they received massive pressure and had to shift from mass production to more flexible and high volume production. The percentage of revenue derived from services has reached around 60% and the company indeed currently provides many service activities including base, intermediate and advanced services, which is higher compared to the other competing companies in textile and clothing industries. Additionally, Company E offers first-class services to their main customers, especially their excellent consulting services, which include professional personnel to help with enquiries and that provides recommendations during the purchasing process. The arising questions from every client regarding clothing fabrics and apparel designs can be solved directly during the day in general. In terms of the strategic intent for future service offering, the company is willing to deliver further services together with offering these service activities more actively in order to keep satisfying customer requirements and try to make their products more welcomed by clients and the customer feedbacks will be used for improving and enhancing the service quality.

Furthermore, Company E aims to develop overseas markets and sell their products to anywhere in the world. In such situations, they expect that they will likely face some difficulties regarding the time difference among various countries. For example, problems and orders which arise during the night could be problems and orders during the morning in different time zones and need to be solved and processed in the first time. The company now is planning to provide 24/7 online consultation service to customers and establish a specialized and user-friendly service team. The professional service personnel will be available to work, providing further assistance and solving the problems of customers at various times.

4.3 Market oriented culture

None of the manufacturing companies in this research assessed themselves as having a market oriented culture. This is probably due to the research design, as those manufacturing companies were selected in accordance to their link with servitization, which means they have already successfully transformed their business from pure manufacturing based to more product-service-oriented systems. This demonstrated that the market oriented culture does not correspond with servitization and this was also expected by the aforementioned theory since this culture mainly focuses on conducting transactions with external stakeholders and getting the job done, which is exactly the opposite in terms of developing service-oriented strategy.

4.4 Hierarchy oriented culture

A hierarchy oriented culture is characterized by a rather controlled and structured working place together with formal and standardized procedures, which affect what employees think and how they behave. According to the hypotheses based on the aforementioned theory, a negative relationship between hierarchy oriented culture and servitization within manufacturing company was expected.

A typical example of a hierarchy oriented culture is Company A. This is a manufacturing company which focuses on producing aircrafts and the relevant associated components. During the interview, the business manager from Company A stated that due to the particularity of aircraft industry, the formal procedures are necessary for quality control on products and safety, efficiency and reliability are highly emphasized in an aircraft manufacturing company. For example, as long as quality issues occur, employees need to handle and solve them at immediately. In such situations, a hierarchy oriented culture would be the most suitable culture for their company. Additionally, company A also pays close attention to the customer feedbacks for continuous improvement and every customer has supplier quality engineers who are responsible for product quality inspection and supervision in the factory. While company A operates with a hierarchy oriented culture, it actually has a high level in terms of servitization compared to the most of aircraft manufacturing companies and achieved relatively high service revenues at around 40%. Furthermore, the company aims to shift from internal focus to more external focus and intent to provide more services and being more actively offer the new service activities to customers. With the outstanding expertise and product quality, company A believes that they are able to deliver more excellent services to customers in the future since they are now trying to build a better service department as well as creating a more and more externally based organizational culture.

5. CONCLUSION

This study collected qualitative data through making the individual interviews with different manufacturing companies in order to find out a full answer to the research question. Every interviewed company has a unique and well-established corporate culture and set the bar high for everything they do, as well as continuously improving themselves in accordance with their products, services and processes in search of excellence. This paragraph will provide an overall summary of the findings of the research.

According to the literature review, organization culture can be defined as a pattern of commonly underlying shared value, beliefs and the ways of thinking that successfully convey sense

of organizational identity to employees or members. This sense of identity is able to provide unwritten regulations and usually unspoken guidelines for how to get along with each other, how the work is done and enhances the stability within an organization.

The authors Quinn and Cameron (2011) came up with a theoretical model of four competing values, which corresponds with four types of organizational culture, namely clan culture, adhocracy culture, market culture and hierarchy culture According to this framework, every organization is different and has their own distinct cultures refering to one of these different organizational cultures. The concept of servitization is described as a business model innovation whereby existing product offerings are extended through the provision of related services (Neely, 2007).

The service culture is indeed greatly different compared to a traditional manufacturing culture. Therefore, the mindsets of managers and employees need to be changed when transitioning from pure production and technology focused to fully combining services and products in the company, meaning people's awareness needs to be shifted from considering the service offerings as add-on components to value-adding activities.

Looking at the four different organizational cultures which are described according to Competing Values Framework, the most important factor for developing a servitization-friendly organization is essentially in line with the premise that having a flexible culture is crucial. Based on the theoretical framework, a relationship between organizational culture and the level of servitization can be expected. To summarize, the hypotheses are that there is a positive relationship between both clan and adhocracy oriented cultures and servitization. On the contrary, market culture and hierarchy culture have a negative effect on achieving service orientation in the manufacturing company.

Looking at the results of the five interviews, clan oriented culture and adhocracy oriented culture both have a significant positive relationship with the extent of servitization within manufacturing companies, which supports the aforementioned theoretical hypothesis that both clan and adhocracy-oriented culture are the most appropriate organizational cultures for a company when implementing servitization. On the other hand, applying a hierarchy oriented culture could be necessary for the manufacturing companies in some specific industries and these companies can still achieve relatively high degrees of servitization under the influence of this culture. The market oriented culture lays emphasis on conducting transactions and being result-oriented, which does not correspond with service orientation and is the opposite in terms of developing a service strategy within a company.

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6. DISCUSSION

6.1 Limitations
One of the limitations of the research is that individual interviews were only conducted with five manufacturing companies. The results from one of the interviews during this research seems to go against the findings in aforementioned theory or literature about the relationship between culture and servitization, namely that it might be necessary for some manufacturing companies to involve hierarchy oriented culture due to the particularity of their industry such as aircraft manufacturing. This interviewed aircraft company appears to have the possibility to achieve a relatively high extent of servitization with the impact of this culture, but its servitization

level is still a bit lower than the other four interviewed manufacturing companies with clan oriented culture or adhocracy oriented culture. Based on these findings, it is important for a manufacturing firm to get insight into the nature of their business, as well as taking into account industry classification and advantages when developing a corporate culture that matches the servitization ambitions of the company. Due to the time limitation and company willingness, making interviews with other similarly relevant companies in the aircraft industry was not possible. In order to get more accurate and valid conclusions regarding the relationship between servitization implementation and organizational culture categories within manufacturing companies, more interviews with the business managers from various manufacturing companies need to be conducted in order to collect more data and to conduct a statistical analysis.

This qualitative research is also limited by the research design, as these interviewed manufacturing companies have been selected based on their link to servitization, meaning that they are already relatively servitized and successfully transitioned their business from pure manufacturing based to more product-service-oriented systems. Therefore, there is a lack of failure stories to which could be referred to for portraying a failure to embrace servitization.

In addition, another limitation during this research is that these interviewed manufacturing companies are exclusively domestic corporations in China and the Netherlands and thus the results have limited applicability to multinational enterprises. On the other hand, implementing servitization in a transnational company will be more complex and different global aspects need to be taken into account in order to create a suitable corporate service culture.

Furthermore, the Organizational Culture Assessment Instrument (OCAI) is used to evaluate the organizational culture of these interviewed manufacturing companies. This measurement instrument is practical, timely, efficient, valid, widely used and manageable which corresponds with the Competing Values Framework model (Quinn and Cameron, 2011). However, this assessment approach is not necessarily the single best and most precise method for measuring the organizational culture of a company. One of the main drawbacks of this instrument is that organizational cultures are merely defined to a variation regarding only four predetermined classifications cultures. It summarizes the different types of organizational culture, but it still does not fully comprehend and include all the necessary detailed cultural circumstances of diverse companies. As a result, some significant aspects in terms of the uniqueness of organizational culture might be left out.

6.2 Future research recommendations
According to the limitations mentioned above, the future research should be done through interviewing more representatives from various manufacturing companies as well as conducting the interviews with some transnational large companies in order to improve regarding the limitation generalizability. In terms of measuring organizational culture more precisely within a company, it is important to use different organizational culture assessment instruments to comprehensively define company cultures regarding various dimensions. Furthermore, future research could improve on the qualitative methodology by making a statistical analysis or market survey through questionnaires to avoid certain biases that might originate from individual face-to-face interviews. In order to do a quantitative analysis properly, a well-designed questionnaire is needed during the research. It is necessary to

give an explicit introduction about the research and the purpose of the questionnaires together with the different types of organizational cultures and servitization measurement approaches to the respondents from interviewed manufacturing companies.

7. ACKNOWLEDGEMENTS

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Appendix 1：Interview questions

The interview or questionnaire questions can be found below.

General questions:

1. How many years you have been employed and worked in this manufacturing company (Name of the company)?

2. For how long does your company exist?

3. What type of products does your company make and sell?

4. Did you conduct market research before offering new services to the customers?

Please give assessments for the following 6 aspects (Questions 2 –Question 7). You have 10 point among four alternatives. Which statement that you think is the most appropriate and

suitable description for your company? (Give a higher number of the points to the alternative that is the most similar to your company and less or zero points to the option that is inappropriate or the least similar to your company.)

2. Dominant Characteristics (What do you think of the atmosphere within your company?)

The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.

The organization is a very dynamic entrepreneurial place. People are willing to stick out their necks and take risks.

The organization is very results-oriented. A major concern is with getting the job done. People are very competitive and achievement-oriented.

The organization is a very controlled and structured place. Formal procedures generally govern what people do.

3. Organizational Leadership (What are the characteristics of the leadership style you are following in the company?)

The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.

The leadership in the organization is generally considered to exemplify entrepreneurship, innovation, or risk taking.

The leadership in the organization is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.

The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.

4. Management of Employees (What is the management style in your company?)

The management style in the organization is characterized by teamwork, consensus, and participation.

The management style in the organization is characterized by individual risk taking, innovation, freedom, and uniqueness.

The management style in the organization is characterized by hard-driving competitiveness, high demands, and achievement.

The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.

5. Organization Glue (How does your company hold together?)

The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.

The glue that holds the organization together is commitment to innovation and development. There is an emphasis on being on the cutting edge.

The glue that holds the organization together is an emphasis on achievement and goal accomplishment.

The glue that holds the organization together is formal rules and policies. Maintaining a smooth-running organization is important.

6. Strategic Emphases (What does your company focus on?)

The organization emphasizes human development. High trust, openness, and participation persist.

The organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.

The organization emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.

The organization emphasizes permanence and stability. Efficiency, control and smooth operations are important.

7. Criteria of Success (How does your company define success?)

The organization defines success on the basis of development of human resources, teamwork, employee commitment, and concern for people.

The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.

The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.

The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling and low-cost production are critical.

Further questions about measuring the extent of servitization within manufacturing companies:

8. What is the approximate percentage of the revenue that generates through the service offerings to your customers accounts for the total revenue of your company?

9. How many services that your company is offering to customers right now?

10. What type of the services/ What are the services that you are providing to your customers?

11. Do you offer those services actively to customers? Or providing those service activities more likely only when your customers explicitly ask for them?

12. What do you think of the current culture of your company? Does the organizational/corporate culture actually suit the level of servitization you are reaching for?

13. Does your company still want to improve the level of servitization and provide more services to the customers in the future? (Intent to increase the number of current service offering activities) Or have you already reached the level of servitization that you would like to be?

14. How is the future servitization strategy of your company? (Strategic intent of future service offering) Does your company aim to and would like to offer the service activities to customers more actively in the future?