

UNIVERSIDADE FEDERAL DO RIO DE JANEIRO
INSTITUTO COPPEAD DE ADMINISTRAÇÃO

ANDREA ROCHA BLOCKER

READINESS TO SERVITIZE
Analysis of a pharmaceutical company

Rio de Janeiro
2017

ANDREA ROCHA BLOCKER

READINESS TO SERVITIZE
Analysis of a pharmaceutical company

Master's dissertation presented to Instituto Coppead de Administração, Universidade Federal do Rio de Janeiro, as part of the mandatory requirements in order to obtain the degree of Master in Business Administration (M.Sc.).

SUPERVISOR: Eduardo Raupp de Vargas

Rio de Janeiro

2017

CIP - Catalogação na Publicação

R651r Rocha Blocker, Andrea
Readiness to Servitize - Analysis of a
pharmaceutical company / Andrea Rocha Blocker. --
Rio de Janeiro, 2017.
139 f.

Orientador: Eduardo Raupp de Vargas.
Dissertação (mestrado) - Universidade Federal do
Rio de Janeiro, Instituto COPPEAD de Administração,
Programa de Pós-Graduação em Administração, 2017.

1. Serviço-Administração. 2. Marketing de Serviços.
3. Consumidores. 4. Administração - Teses. I. Raupp
de Vargas, Eduardo, orient. II. Título.


ANDREA ROCHA BLOCKER

READINESS TO SERVICIZE

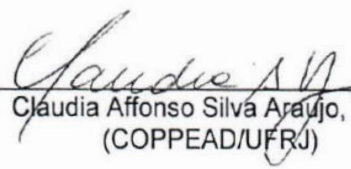
Analysis of a pharmaceutical company

Master's dissertation presented to Instituto Coppead de Administração, Universidade Federal do Rio de Janeiro, as part of the mandatory requirements in order to obtain the degree of Master in Business Administration (M.Sc.).

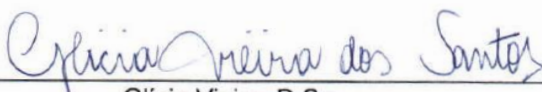
Approved by:



Eduardo Raupp de Vargas, D.Sc
(COPPEAD/UFRJ)



Claudia Affonso Silva Araujo, D.Sc
(COPPEAD/UFRJ)



Glícia Vieira, D.Sc
(UFES)

ACKNOWLEDGEMENT

First, I would like to dedicate this work to my parents, who always encouraged me with my studies; I could not have done it without them. Second, special thanks to my friends, who understood the long hours of study and gave the necessary psychological support I needed for this adventure. Third, I would like to thank my COPPEAD professors for all the teaching and knowledge acquired during these 02 (two) years of intense hard work. Special thanks to Eduardo Raupp, who made me fall in love with the Service Innovation / Servitization discipline. Finally, I would like to thank my boyfriend, André, who stood by my side, no matter what, and never gave up on encouraging me, even in the worst days. Thanks for being “a voice that says I’ll be here; and you’ll be alright.”

ABSTRACT

BLOCKER, Andrea. **Readiness to servitize – analysis of a pharmaceutical company.** 2017. 139p. Thesis (Master in Business Administration) - Instituto COPPEAD de Administração, Universidade Federal do Rio de Janeiro, Rio de Janeiro, 2017.

Manufacturing companies have, in the past years, faced a more globalized environment, an intense increase in the competition and reducing income. Selling only products is not enough anymore, and companies need to do more. Therefore, a creative way out is the inclusion of services into their offerings. This phenomenon is known as 'servitization'. The benefits that arise from this strategy are immense and bring positive results to those that are able to incorporate a service culture into their manufacturing processes. Although it may sound relatively easy to do, companies face many challenges when transitioning from products to services. The service paradox, a perverse and probable outcome of the process, shows that most companies do not achieve the success they initially aimed for. For that reason, it is important to understand what are the key factors that manufacturing companies need to have, in order to engage in a successful servitization process. As a result, 04 (four) critical success factors have been identified in the literature – Relationship Marketing, Human Resources Management, Information Management and Organizational Structure. For this specific study, company 'ABC' – Brazil/Rio de Janeiro, in the pharmaceutical business, will be analyzed. With the help of a scale of servitization and a questionnaire, the company can determine its readiness to servitize, according to the employee's perceptions. Also, it will observe where the critical success factors are positioned, in the scale of servitization, and which are the ones that need most attention from the decision makers (managers and directors).

Keywords: servitization, service paradox, service continuum, critical success factors for customer-oriented business, readiness to servitize, scale of servitization.

RESUMO

BLOCKER, Andrea. **Readiness to servitize – analysis of a pharmaceutical company**. 2017. 139p. Thesis (Master in Business Administration) - Instituto COPPEAD de Administração, Universidade Federal do Rio de Janeiro, Rio de Janeiro, 2017.

Empresas manufatureiras têm, ao longo dos anos, enfrentado um ambiente cada vez mais globalizado, um intenso aumento na concorrência e faturamento reduzido. Vender apenas produtos não é mais suficiente, e empresas precisam fazer mais. Por esta razão, uma saída criativa foi a inclusão de serviços em suas ofertas. Este fenômeno é conhecido como 'servitização'. Os benefícios que surgem a partir desta estratégia são imensos e trazem resultados positivos para aquelas que conseguem incorporar uma cultura de serviços aos processos manufatureiros. Apesar de soar relativamente fácil, empresas enfrentam diversos desafios na transição de produtos para serviços. O paradoxo do serviço, uma forma perversa e provável deste processo, mostra que grande parte das empresas não alcançam o sucesso inicialmente desejado. Por essa razão, é importante entender são os fatores-chave que as empresas necessitam ter, a fim de se engajar em uma servitização de sucesso. Como resultado, 04 (quatro) fatores críticos de sucesso foram identificados através da revisão de literatura – marketing de relacionamento, gestão de recursos humanos, gestão da informação e estrutura organizacional. Para este estudo, a empresa 'ABC' – Brasil/Rio de Janeiro, do ramo farmacêutico, foi analisada. Com a ajuda de uma escala de servitização e um questionário, a empresa 'ABC' poderá determinar sua prontidão para servitizar, de acordo com as percepções dos funcionários. Além do mais, irá observar onde estão posicionados os fatores críticos de sucesso na escala de servitização, e quais são aqueles que demandam maior atenção dos tomadores de decisão (gerentes e diretores).

Palavras-chave: servitização, paradoxo do serviço, *service continuum*, fatores críticos de sucesso para negócios orientados ao consumidor, prontidão para servitização, escala de servitização.

LIST OF ILUSTRATIONS

Figure 01	Articles per Year.....	18
Figure 02	Transition from product manufacturer to service provider.....	28
Figure 03	Service Continuum.....	32
Figure 04	Basic Business Model for Servitized Companies.....	33
Figure 05	Product-service system.....	34
Figure 06	Span of service oriented development methods.....	35
Figure 07	Critical Success Factors.....	53
Figure 08	Pharmaceutical Sales Breakdown of the World Pharmaceutical Markets.....	54
Figure 09	Projected top 10 pharmaceutical companies worldwide by revenue in 2017.....	56
Figure 10	Projected top 10 pharmaceutical companies worldwide by revenue in 2017.....	57
Figure 11	Ranking of Industrial Sector by overall sector R&D intensity.....	58

LIST OF TABLES

Table 01	Literature Review analysis.....	18
Table 02	Readiness to servitize – Questionnaire Final.....	78
Table 03	Example of Questionnaire Response.....	81
Table 04	Area x Position.....	85
Table 05	Service Programs – according to employees.....	86
Table 06	Relationship Marketing – General Analysis.....	88
Table 07	Human Resources Management – General Analysis.....	89
Table 08	Information Management – General Analysis.....	91
Table 09	Organizational Structure – General Analysis.....	92
Table 10	General Analysis.....	94
Table 11	Marketing Analysis.....	96
Table 12	Commercial Excellence Analysis.....	97
Table 13	Others Analysis.....	98
Table 14	SAC Analysis.....	99

LIST OF CHARTS

Chart 01	Definition of Servitization.....	20
Chart 02	Relationship Marketing.....	41
Chart 03	Human Resources Management.....	44
Chart 04	Information Management.....	47
Chart 05	Organizational Structure.....	50
Chart 06	Critical success factors for the servitization process.....	51
Chart 07	Likert Scale.....	67
Chart 08	Readiness to Servitize Scale.....	67
Chart 09	Readiness to Servitize Scale with Critical Success Factors.....	68
Chart 10	Example of Readiness to Servitize Scale.....	69
Chart 11	Service Orientation – Questionnaire 01.....	71
Chart 12	Relationship Marketing – Questionnaire 01.....	72
Chart 13	Human Resources Management – Questionnaire 01.....	73
Chart 14	Information Management – Questionnaire 01.....	74
Chart 15	Organizational Structure – Questionnaire 01.....	75
Chart 16	Service Orientation – Questionnaire 02.....	76
Chart 17	Relationship Marketing – Questionnaire 02.....	76
Chart 18	Human Resources Management – Questionnaire 02.....	76
Chart 19	Information Management – Questionnaire 02.....	76
Chart 20	Organizational Structure – Questionnaire 02.....	76

LIST OF ABBREVIATIONS

CAPES	Comissão de Aperfeiçoamento de Pessoal do Nível Superior
IF	Impact Factor
GDP	Gross Domestic Product
OECD	Organization of Economic Co-operation and Development
ICT	Information and Communication Technology
IBM	International Business Machines
IT	Information Technology
R&D	Research & Development
SUS	Sistema Único de Saúde
RS	Readiness to Servitize

Content

1	INTRODUCTION	12
	1.1 STUDY RELEVANCE	14
	1.2 STUDY DELIMITATIONS	15
	1.3 ORGANIZATION OF THE STUDY	16
2	LITERATURE REVIEW	17
	2.1 THE DEFINITION OF SERVITIZATION	19
	2.2 THE DRIVERS FOR SERVITIZATION	22
	2.3 THE SERVICE PARADOX	27
	2.4 THE SERVICE CONTINUUM	30
	2.5 CRITICAL SUCCESS FACTORS FOR SERVITIZATION	35
	A) RELATIONSHIP MARKETING (CUSTOMERS & PARTNERS)	39
	B) HUMAN RESOURCES MANAGEMENT (HUMAN RESOURCES & LEADERSHIP)	42
	C) INFORMATION MANAGEMENT (COMMUNICATION & TECHNOLOGY)	45
	D) ORGANIZATIONAL STRUCTURE (SEPARATED UNIT & ORGANIZATION DESIGN)	48
3	PHARMACEUTICAL INDUSTRY AND COMPANY 'ABC'	54
	3.1 PHARMACEUTICAL INDUSTRY	54
	3.2 COMPANY 'ABC':	60
4	METHODOLOGY	65
	4.1 RESEARCH DESIGN	65
	4.2 CREATION OF SCALE OF SERVITIZATION	67
	4.3 QUESTIONNAIRE DEVELOPMENT	71
	4.4 QUESTIONNAIRE APPLICATION	81
	4.5 DELIMITATIONS OF THE METHOD	83
5	RESULTS PRESENTATION AND DISCUSSION	85
	5.1 1ST PART: RESPONDENT'S PROFESSIONAL DATA ANALYSIS	86
	5.2 2ND PART: EMPLOYEE'S KNOWLEDGE OF SERVICE PROGRAMS AT COMPANY 'ABC'	88
	5.3 3RD PART: QUESTIONNAIRE ANALYSIS	89
	5.3.1 GENERAL ANALYSIS AT COMPANY 'ABC'	89
	5.3.2 ANALYSIS OF SEPARATED AREAS AT COMPANY 'ABC'	97
	A) MARKETING	97
	B) COMMERCIAL EXCELLENCE	99
	C) OTHERS	100
	D) SAC	101
6	CONCLUSION	102
	6.1 MANAGERIAL IMPLICATIONS	106
	6.2 LIMITATIONS AND FUTURE RESEARCH	107
	REFERENCES	109
	APPENDIX	127
	A – QUESTIONNAIRE 01	127
	B – QUESTIONNAIRE 02	129
	C – PRE TEST	131
	D – PRE TEST CHANGES	132
	E – FINAL QUESTIONNAIRE	133
	F – QUESTIONNAIRE FOR COMPANY 'ABC'	134

1 INTRODUCTION

Servitization is, for the past 10 (ten) years, one of the major themes of study for manufacturers (Elliot, 2014). With the increase in the competition, in the globalization and in the need for constant innovation, companies have found themselves urging for new offerings for their customers (Gebauer et al, 2016). Therefore, including services has shown to be a well-succeeded solution, as a way of satisfying and conquering both current and new customers. The benefits are immense, such as increased competitive advantage, stronger customer relationship, and visible financial growth (Hong et al, 2015). However, some caution needs to be taken, in order to be successful. If not well planned, several difficulties may arise, especially because the corporate culture needs to be flexible enough to embrace all the necessary changes that arise with servitization. The service paradox, for example, is a real phenomenon, which happens when companies fail in the transition process, and end up with unexpected low share of service revenue (Gebauer et al, 2010). To avoid the negative impacts that may occur, and mitigate possible risks, several authors mentioned different factors that manufacturers should focus on, and that are critical for a company's success.

A thorough analysis of these factors has been done, and those that were similar to each other were grouped together. That way, 04 (four) critical success factors were identified in the literature – Relationship Marketing (Customers and Partners), Human Resources Management (Human Resources and Leadership), Information Management (Communication and Technology) and Organizational Structure (Separated Unit and Organizational Design). The purpose of these factors is to know what is critical for manufacturers in the servitization process, and they will serve as a basis for analyzing the readiness to servitize of company 'ABC'. To do so, it is important to get the employee's perceptions. The employees have a direct view of the company, and may bring surprising input to the decision makers (managers and directors). With this, they can better understand how their own employees see services within the company, and make improvements, based on what the employees have stated in the survey.

After the identification of the critical success factors, and to get the employee's input on the readiness to servitize, a questionnaire was created. The questionnaire, which encompasses statements for each of the critical success factors, uses a

scale, which is based on the Likert scale, ranging from 'Strongly Disagree' to 'Strongly Agree', and on the service continuum, ranging from 'Pure Products' to 'Pure Services'.

With the input of employees from company 'ABC' to the questionnaire, the decision makers (managers and directors) can observe where, in the scale, each one of the critical success factors is positioned, and therefore, analyze how ready company 'ABC' is to servitize. On the one hand, the closer to 'Pure Services'/'Strongly Agree', the readier the company is to servitize; on the other hand, the closer to 'Pure Products'/'Strongly Disagree', the less ready the company is to servitize. Furthermore, the company can see which factors need most attention from the decision makers (managers and directors), and these will orient company 'ABC' in improving their current service offerings and/or creating new services to both employees and customers.

For this specific study, company 'ABC' - name will be kept anonymous for privacy reasons - was chosen. Company 'ABC' is a science-led global healthcare company, focused on research, development and manufacturing of innovative pharmaceutical medicines, vaccines and consumer health products. Established in 2000 by a merger of 02 multinationals, company 'ABC' is considered one of the largest pharmaceutical companies in the world, with around 100.000 employees in more than 150 countries. In Brazil, where the company is established for over 100 years, it began, in 2013, to develop service programs to their customers, with the aim to approach and meet patient's needs. The servitization survey has been done with employees from 'ABC' - Brazil/Rio de Janeiro, from different sectors, to understand how ready company 'ABC' is to servitize.

The pharmaceutical industry is extremely relevant and with exponential growth, especially in growing markets, like Brazil, with total revenues reaching over US\$ 01 trillion, in 2014, worldwide, and market opportunities showing new investment possibilities. The challenges faced by pharmaceutical companies are huge, especially with the *Research and Development (R&D)* costs and the long time-to-market of new products. The solution to servitize is, therefore, a creative way out for such companies that need to innovate in such a dynamic business.

With that said, the question that arises with this study is:

Q: How ready to servitize is company 'ABC', according to the employee's perceptions?

Therefore, the main objective of the study is to analyze the readiness to servitize of company 'ABC', considering the employee's input.

To get the results, 02 (two) secondary objectives will:

1. Identify the position, in the scale of servitization, of the critical success factors at company 'ABC', and
2. Identify which are the critical success factors that need most attention from the decision makers (managers and directors) at company 'ABC'.

1.1 Study Relevance

The existing literature on the servitization process is, indeed, extensive. Several authors have already explored the issue and exposed pros and cons regarding the subject. However, there is a gap in the study of servitization, because there is no defined/tangible framework that helps manufacturers in the transformation path from products to services. Most of them highlight the benefits, the challenges and the difficulties encountered by manufacturing companies, but there is no structured model that can be used as a practical guide for companies, considering the articles used for this specific study. For that reason, both the scale of servitization and the questionnaire, with employee's perceptions at company 'ABC', may have a positive effect for decision makers (managers and directors), since they will be able to understand how company 'ABC' is performing today, and what is their readiness to servitize. Also, it is possible to analyze which critical factors should the company 'ABC' focus on, to have a successful transition from products to services. Because company 'ABC' already has services implemented, it is possible to check what factors it needs to invest, so that the current services are improved, or new ones are developed. Important to mention is that the audience of the questionnaire are the company's own employees; that way, the decision makers (managers and directors) may have a clearer view of how their employees see services in the company and what practical actions can be taken to improve their current offerings and/or create new ones.

By analyzing company 'ABC' – Brazil/Rio de Janeiro, the decision makers (managers and directors) can understand how a global manufacturer is dealing with current customer demands locally and what should be their focus in the next coming months/years, related to the servitization process.

1.2 Study Delimitations

Every study has its delimitations, and they are important, to be able to create a feasible and viable analysis of the issue, in a pre-defined period. There are some common delimitations regarding space/location, time and scope.

First, due to limitations in time and access, the study analyzed a single company in a single industry, and in a single region ('ABC' / Pharmaceutical / Brazil/Rio de Janeiro). Also, the company already has services implemented; that way, the servitization process is already in place and may affect one or other result in the analysis.

Second, the study surveyed 50 (fifty) employees at 'ABC' during a short period (December 2016 and January 2017). Important to mention that the study has been done solely with employees; not the directors, C-level, customers and/or partners of company 'ABC'. Due to difficulties in reaching company 'ABC' managers, the communication flow was hampered, and the total number of respondents was below expected. Therefore, the study is exploratory, and aims to provide a basis for future researchers, who may be interested in deeply understanding the pharmaceutical business, in terms of servitization.

Third, the questionnaire was developed with the help of 03 (three) managers at company 'ABC' in Brazil/Rio de Janeiro, who may not have a complete view of the whole servitization process and/or a biased position.

Finally, the study is intended to focus only in the pharmaceutical industry, due to its importance in the market, especially in growing economies like Brazil, and its constant challenge to engage in a servitization process to survive. In order to study new businesses, it is crucial to develop a new questionnaire and understand what is key for that specific industry.

1.3 Organization of the Study

The work is divided in 05 (five) chapters. The 1st (first) one is this introduction to servitization with the question to be answered; the main and secondary objectives, the relevance of the topic, as well as the delimitations and study organization.

Chapter 02 (two) is an extensive literature review, with work from the experts in different fields within servitization. The chapter is divided in sub-topics, which are the definition of servitization; the drivers for servitization; service paradox; the service continuum, and critical success factors for servitization.

Chapter 03 (three) explores the pharmaceutical industry, its characteristics in Brazil and in the world, and the main trends in the market. Furthermore, it highlights company 'ABC' and its service programs in Brazil/Rio de Janeiro.

Chapter 04 (four) refers to the methodology used, with the research design, the creation of the scale of servitization, the questionnaire development and application, and the limitations of the method.

Chapter 05 (five) exposes the results of the questionnaire applied at company 'ABC' – Brazil/Rio de Janeiro and the discussion, both general and separated by business area.

Chapter 06 (six) shows the conclusion of the work, with a wrap-up of all that has been said before, the managerial implications and, finally, possibilities for future research.

2 LITERATURE REVIEW

This chapter is devoted to the literature review regarding the servitization process, with special attention to the innovation through services. The research includes several articles from diverse authors in different regions - mainly in the United States of America and Western Europe - and knowledge fields – operations, services and business.

The existing literature is relatively extensive. Publications data were taken from 04 (four) different databases - EBSCO, ProQuest, Emerald Insight and Science Direct - and the keyword used was “*servitization*”, concerning both manufacturing and services context. The search activity, done from October 2015 to March 2016, provided access to a wide variety of journals and other forms of written materials such as books and magazines from 1988 to 2016. Starting with 1.049 reading papers, some filters had to be employed, to narrow the research material and find those that were relevant to the study.

First, 03 (three) major filters were used: “*revised by specialists*”; “*academic periodic*”, and “*articles*”, in all 04 (four) databases. The total number of articles dropped to 744 papers. Second, not all articles were available for reading; some of them had only the abstract, which prevented from understanding the entire paper. For that matter, those were excluded, resulting in 661 articles. Third, many articles were duplicated, or even tripled; that means, more than 01 (one) copy of the article was included in the total amount. Therefore, by deleting those extra papers, the number fell to 520 – almost half the original volume.

Finally, only publications with classification A1, A2 or B1, according to *Comissão de Aperfeiçoamento de Pessoal do Nível Superior (CAPES)*, were included. Due to the huge amount of scientific paper and journals that exist nowadays, international organizations have created a ranking system, ranging from A1 (the highest) to C (the lowest). To give the classification, some rules should be followed, based on 02 (two) main criteria: H Index and Impact Factor (IF). The H index refers to the quantity of citations that each journal has; and IF refers to the impact that each journal has in the scientific community (Research Gate, 2015).

As said, in this study only articles with classification A1, A2 and B1 were considered. The rules, based on CAPES standard in 2013, are the following:

- Articles considered A1 should have an H Index higher than 20 (twenty); or an IF rate higher than 01 (one);
- Articles considered A2 should have an H Index between 04 (four) and 20 (twenty); or an IF rate between 0,2 (two) and 01 (one); and
- Articles considered B1 should have an H Index between 04 (four) and 0 (zero); or an IF rate between 0 (zero) and 0,2.

By considering only those papers (A1, A2, B1), the number of articles dropped to 464. Later, initial reading of the abstracts, keywords and content allowed this pool to be reduced to 174 academic articles, which were considered relevant for this study, at first. The excluded articles were not related to the scope this study aimed to achieve; they referred mostly to innovation, not exactly with focus on servitization itself. After a more accurate reading of the papers, 41 of them were excluded, because the subject was not exactly the one to be studied. Finally, 133 articles were representative of the current body of knowledge associated with the servitization of manufacturing.

Table 01 shows a summary of the total quantity of papers by Database:

Database	Keyword: "Servitization"	(1) Filters: "Revised by Specialists", "Academic Periodic", "Articles"	(2) Complete Text not Available	(3) Repeated Articles	(4) Publication Classification	(5) Subject not related to study (1st Part)	(6) Subject not related to study (2nd Part)
ProQuest	524	296	249	242	212	115	83
Emerald	142	132	106	15	11	4	4
EBSCO	122	75	65	44	35	16	16
Science Direct	261	241	241	219	206	39	30
TOTAL	1049	744	661	520	464	174	133

Table 01 – Literature review analysis

In a nutshell, with the initial number of 1.049, after all the filters and analysis, the total number of articles used in the work was 133, that means 12.00% (twelve percent) of the initial volume. These served as a basis for the identification of the critical success factors, the construction of the scale of servitization and the creation of the questionnaire.

Figure 01 shows the existing articles (Total = 133) per year, which demonstrates a regular growth in years 2013, 2014 and 2015. Although already existing in 1988, most of the articles were written in the past 04 (four) years. Important to notice that 2016 shows a low number of articles (06) because the

research was done during the first 03 (three) months of that year (January, February and March, 2016).

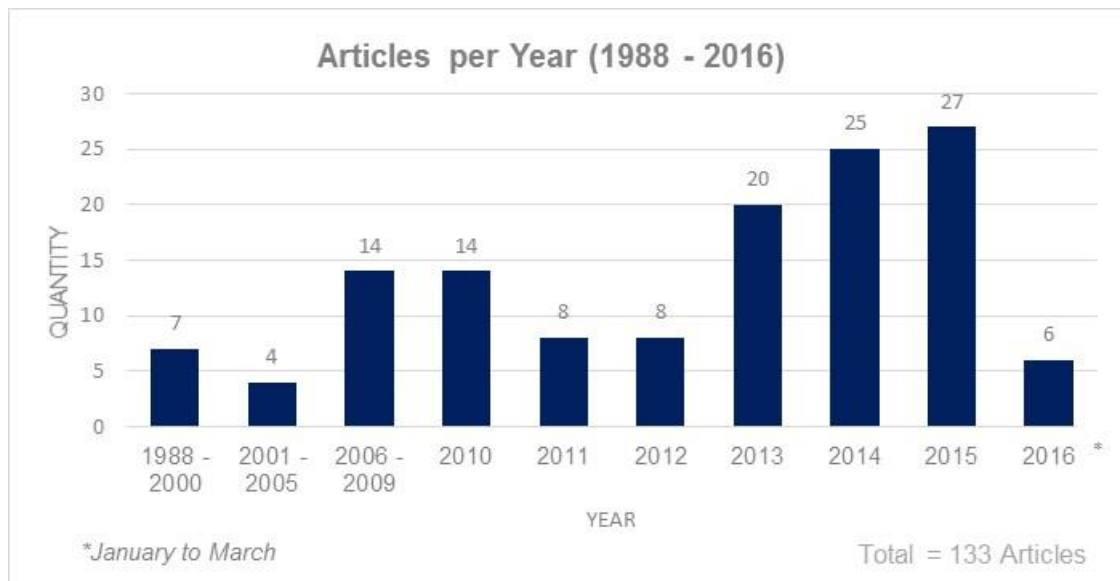


Figure 01 – Articles per Year

With the identification of the articles to be used (133), the literature review is divided into the following items:

- (2.1) The definition of servitization;
- (2.2) The drivers for servitization;
- (2.3) Service Paradox;
- (2.4) The service continuum;
- (2.5) Critical Success Factors for servitization.

2.1 The Definition of Servitization

Servitization is not a new concept. The origins of the term date back to the 1960's, but the pressures in the economy of recent years have given higher attention on the subject (Schemmer, 2009; Elliot, 2014). In the literature, the concept has first appeared in 1988 in a study by Vandermerwe and Rada, where they concluded that servitization would critically affect the way managers think, act and do business in the future. In their words, "it will (...) change some of the relationships and competitive dynamics in which business operates" (VANDERMERWE and RADA, 1988, p. 315). The authors shed light to a trend that started in the late 1980's and gained more strength in the subsequent years. The literature on servitization has spread

considerably, since different scholars have deeply explored the concept, its characteristics and effect on companies, attracting an increasing amount of attention to management, marketing and operations literature (Martin-Peña and Bigdeli, 2016). Today, almost 30 years after its insertion, it represents a total shift in the way most manufacturers operate. As Vandermerwe and Rada (1988) have predicted, servitization has become one of the most important innovations for product-centered businesses.

First, to understand what servitization means, a thorough analysis of the articles has been made and different definitions were chosen, in chronological order, as shown in Chart 01.

Author(s)	Year	Definition of Servitization
Vandermerwe and Rada	1988	"The increased offering of fuller market packages or 'bundles' of customer focused combinations of goods, services, support, self-service and knowledge in order to add value to core product offerings".
Baines et al	2009	"Servitization is the innovation of an organizations capabilities and processes to better create mutual value through a shift from selling product to selling services".
A. R. Tan et al	2010	"Servitization is in effect an approach to designing integrated products and services with a dual focus on both product lifecycle and customer activities considerations".
Steunebrik	2012	"Many organizations that traditionally offer products are currently extending their business to value-adding services. In this context, 'servitization' means that organizations try to find an optimal combination of products and services to generate income"
Barnett et al	2013	"Servitization is the move by firms to gain value from service associated with their products, which requires a strategic rather than incremental change in the provider firm."
Neely	2013	"Servitization is a transformation journey – it involves firms (often manufacturing) developing the capabilities they need to provide services and solutions that supplement their traditional product offerings"
Kaczor and Kryvinska	2013	"Servitization describes the transition from a pure product manufacturer to a finally service offering company striving for increasing revenues with higher margins. This is conducted through offering product service bundles via varying integration possibilities"
Demeter and Szász	2013	"Servitization denotes the process by which the output of manufacturing companies is shifting from delivering pure physical products towards offering a bundle of products and services".
Paiola et al	2013	"Servitization is an innovative combination of products and services leading to high-value unified responses to customer needs".
Elliot	2014	"Servitization means transforming their (manufacturing) business model from being a product-dominant to a customer-centric organization in order to maintain or recover competitive advantage"

Avlonitis et al	2014	“Servitization is about competing through value propositions that integrate services with product offerings”
Vendrell-Herrero et al	2014	“Servitization is the move away from selling traditional product to selling a wide range of product/service bundle combinations, contributing to firm sustainability and profitability and hence the competitiveness of nations”.
Gaspar and Szarz	2014	“Servitization is a process wherein manufacturing companies develop more and better services which are coupled with their products to better satisfy customer needs, achieve competitive advantages and enhance the performance of the company”.
Dubruc et al	2014	“Servitization can be considered as an organizational innovation which requires a shift from a manufacturing culture to a service culture”.
Pezzotta et al	2014	“Servitization is an innovation strategy, shifting the business focus from designing and selling physical products to designing and selling systems consisting of products, services, supporting networks and infrastructures, which are jointly capable of fulfilling specific customer demand”.
Elfving et al	2014	“Servitization means shifting the business from designing and selling physical products only, to selling a system of products and services which are jointly capable of fulfilling specific client demands”.
Gesing et al	2014	“Servitization is an integrated product and service offering that delivers values in industrial applications and leads to new, customer-adjusted solutions”.
Leoni	2015	“Servitization means transforming almost every aspect of the way business is conducted: such as strategies, positions in the value stream, capabilities, organizational structures, as well as culture and mindsets at all organizational workers’ level”.
Lee et al	2015	“Servitized goods in this study are defined as goods integrated with and inseparable from services that have additional and supplementary characteristics such as maintenance, repair, and after-sales service for consumer convenience”.
Stefano et al	2015	“Servitization is a business strategy, and has major potential to generate solutions that meet the needs of not only industry but also clients through the delivery of integrated products and services”.
Pleplys et al	2015	“Servitization is about satisfying customer needs by selling the function of the product rather than the product itself, which in turn can be provided by a combination of products and services”.

Chart 01 – Definition of Servitization

As seen in the existing literature, and as highlighted in Chart 01, the concept has manifold definitions. Even though it exists since 1988, it gets clear from Chart 01 that the concept has been highly explored in very recent years, mainly from 2013 to 2016. By analyzing the phrases exposed, those that have higher impact for the present study are the ones from Neely (2013), Elliot (2014) and Leoni (2015). All of them focus on the transformational path - “transformation journey”, “transforming their

business model”, “transforming almost every aspect” - that companies undergo when adopting a servitization strategy. Briefly, servitization is a means of adding value to the customer by combining both products and services; rather than just selling a physical good, a manufacturer innovates with the addition of service component(s), whether being a simple offering or a more complete service solution. Although apparently easy to define, the concept is rather complex (Lightfoot et al, 2013).

With that said, it is interesting to see why the servitization process has started, and why the movement has conquered so many manufacturers throughout the last years, in a global scale.

2.2 The Drivers for Servitization

In most developed countries, the service sector has dominated the economy and has become key to competitiveness in the late years. Services generate 80.00% (eighty percent) of the *Gross Domestic Product (GDP)* (Godlevskaya et al, 2011), and employ 70.00% (seventy percent) of total working population; with a tendency to grow, according to the *Organization for Economic Co-operation and Development (OECD)* (Kaczor and Kryvinska, 2013). We live in a service world (Vandermerwe and Rada, 1988; Dierdonck, 1992; Kindström and Kowalkowski, 2014; Durst et al, 2015). As expected, the servitization literature shows that this inclination towards services also reflects in the manufacturing sector (Kindström, 2010; Carbonell and Rodriguez-Escudero, 2014; Kowalkowski et al, 2013; Durst et al, 2015; Elving et al, 2015; Beuren et al, 2013; Kohtamäki and Helo, 2015; Colen and Lambrecht, 2013; Chakkol et al, 2014; Alvarez et al, 2015; Barquet et al, 2013). “Service innovation is not the exclusive domain of service companies; (...) the significance is growing among both product and service firms” (BETTENCOURT and BROWN, 2013, p. 277).

There are important reasons that may explain the movement towards services. Scholars highlight aspects, such as the product commoditization (Matthyssen and Vandenbempt, 2008/2010; Thomas et al, 2012; Raddats et al, 2015), the stagnation of product sales, and decline in product margins (Gebauer et al, 2016; Gesing et al, 2014; Elfving et al, 2014; Kindström and Kowalkowski, 2009; Gremyr et al, 2010). In the past years, there has been an intense globalization (Boehm and Thomas, 2013; Gallego et al, 2013), a higher number of demanding customers (Neely, 2013; Paiola et al, 2013; Turunen and Finne, 2014), fierce competitive pressure and an increasing

use of *Information and Communication Technology (ICT)* (Boehm and Thomas, 2013). Kaczor and Kryvinska (2013) go further and mention the global economic change, the trend to outsource and the change in business model, with more leasing and less ownership. These have forced manufacturers to look for new opportunities to be able to achieve differentiation in the market and maintain their competitiveness (Gebauer et al, 2016; Magnusson and Stratton, 2000). With that said, it becomes clear that with the demand for products becoming increasingly stagnated, focusing only on the production of goods is no longer attractive (Martín-Peña and Bigdeli, 2016). “Manufacturers are realizing it is no longer enough to make products (...), they need to do more” (Korte, 2015). Therefore, the servitization process has turned into a natural process for manufacturers. The transition to a service-oriented business brings several positive outcomes to manufacturing firms, and “it is arguably becoming a promising business system that can satisfy both companies and customers with innovative ways of converging products and services” (HONG et al, 2015, p. 975).

The literature explores this aspect in great depth and 04 (four) categories of benefits were identified and grouped:

- Strategy - Competitive Advantage;
- Market - Customer Relationship; and
- Finances - Financial Advantages.

a) Strategy - Competitive Advantage:

The service strategy describes how the company differentiates itself from the competition, and is always backed by a vision (Gebauer et al, 2006). One of the most important roles of business strategy is to create competitive advantage for the firm (Gebauer, 2010; Demeter and Szász, 2013). By transforming the business model from product- to service-oriented, the manufacturer can create a more competitive environment towards the market. Adding bundled solutions to the clients can, therefore, serve as a differentiator (Hong et al, 2015). The competitive advantages are often more sustainable in services, because they are less visible and more labor-dependent; for that matter, harder to imitate (Baines et al, 2009; Gebauer and Friedli, 2005, Lockett et al, 2011). Services are 100.00%-dependent on people for its development and delivery, so the result is, indeed, much more complex than with products. The authors also state that servitization is an innovation process that leads to improved performance, since it provides companies with new business

opportunities (Hong et al, 2015; Raddats et al, 2016) and sets barriers for competitors' market entry (Dachs et al, 2014; Weeks and Benade, 2015). In times of economic crisis, innovation is what drives a company's success.

b) Market - Customer Relationship:

The adoption of a service-oriented mindset leverages customer value, customer collaboration and knowledge sharing between clients and the company (Viljakainen and Toivonen, 2016). The participation of customers in the servitization process is one of its main characteristics (Vendrell-Herrero et al, 2014), and back in 1988, Vandermerwe and Rada already identified the importance of customer relationship. As Neely (2013) said, manufacturers can create a whole new system of value, which help lock-in the relationship with customers and lock-out the competition. Services can minimize the risk of customers being wooed by competitors, since "knowing first that a customer wants something or has bought something is causing unprecedented channel warfare and reaction" (VANDERMERWE and RADA, 1988, p. 319). Also, servitization allows greater dependency and customer loyalty. "It is difficult to create dependency with product-intensive offerings; and the more 'bundles' are offered, the greater the chances of high dependency between customers and the company" (VANDERMERWE and RADA, 1988, p. 319). Services tend to create repeat-sale and, by intensifying contact opportunities with the consumer, it can put the firm in the position to offer new products and services (Baines, 2009; Gebauer et al, 2011; Johnstone et al, 2009; Lockett et al, 2011; Gallego et al, 2013). Companies gain insight into their customers' needs and can develop more tailored solutions (Vandermerwe and Rada, 1988), giving the customer the right product, in the right place, at the right time and at a fair price (Raddats et al, 2016).

Important to mention is that the servitization process improves the relationship with consumers, not only in the short term, but also in the long term (Johnstone et al, 2009). Benedettini et al (2015) believe that the opportunities for value experience that services can create, through customization, bundling and better fit of customer needs, improves the relationship with consumers and their level of satisfaction. "Frequent contacts with customers give the chance to learn more about customer demands" (DACHS et al, 2014, p. 07). Carbonell and Rodriguez-Escudero (2014) state that customer's involvement in the development of new services lead to more innovative ideas and firms develop insights in terms of customer's preferences and

behaviors (Zhen, 2012); especially those that are unrecognized (Gesing et al, 2014; Maiwald et al, 2014). Moreover, customers seek greater value from the experience they get, rather than just the value of the physical product or service itself. The perceived value of the interaction with the firm's employees and the treatment they receive counts more than what they buy (Plepys et al, 2015). "Customers do not look for goods or services per se; they look for solutions that serve their own value-generating processes" (SCHUH et al, 2015, p. 335).

Finally, the benefits of fully satisfied customers (Bettencourt and Brown, 2013; Beuren et al, 2013) are the improvement in the firm's image, the reduction of marketing and transaction cost, an increased satisfaction of personnel, a strong switching barrier (Muffatto and Panizollo, 1995), more repeated purchases, referrals of other customers, and a positive word-of-mouth (Evans and Laskin, 1994).

c) Finances - Financial advantages

As said, product firms were losing market and financial share because of the commoditization of products and the lack of differentiation. With the introduction of services, however, the scenario has changed. Companies can create more personalized offerings to their customers and it leads to better financial outcomes. Many researchers have found a positive relationship between servitization and firm's financial performance (Lee et al, 2015), with commercial benefits and new opportunities for manufacturing firms (Martin-Peña and Bigdeli, 2016). Because customers are willing to pay higher fees (Zhen, 2012; Pourabdollahian and Copani, 2015), the consequences are higher profit margin and stability/security of income (Gebauer et al, 2008; Johnstone et al, 2009; Gebauer, 2009/2010; Kucza and Gebauer, 2011; Gao et al, 2011; Lockett et al, 2011; Baines and Lightfoot, 2014; Martín-Peña and Bigdeli, 2016; Raddats et al, 2016). "(...) Services provide more constant income, higher profit margins, and require less asset allocation than manufacturing" (MARTÍN-PEÑA and BIGDELI, 2016, 18).

The bundle offering of products and services can also increase product sales, and contribute to new solutions to clients and market share growth (Pawar et al, 2009; Demeter and Szász, 2013). Benedettini et al (2015) suggest that "services create a counter-cyclical, recession-resistant, high-margin revenue stream that reduces cash flow volatility, and improves performance" (BENEDETTINI et al, 2015, p. 950). Few authors even estimate that, in some manufacturing sectors – such as aerospace,

locomotives and automotive -, service revenues can be 01 (one) or 02 (two) orders of magnitude greater than the sale of products (Baines et al, 2009). Dachs et al (2014) believe that services can help “to increase capacity utilization, which in turn leads to increasing overall margins; to open up service markets with traditionally superior margins; and to avoid price competition in mature product markets” (DACHS et al, 2014, p. 07). With higher customer proximity, it is possible to expand business opportunities and grow revenue streams (Baines, 2015); therefore, the higher the service orientation, the more profitable the company may be (Gebauer, 2009).

With all benefits mentioned (Strategy, Market, and Finances), it gets easier to understand why companies are engaging in the servitization process. It is curious to note, though, that “traditionally, the tendency has been for managers to view services as a necessary evil in the context of marketing strategies (...). Recently, the value proposition often includes services as fundamental value-added activities and reduces the product to be just a part of the offering” (BAINES et al, 2009, p. 556). There has been a considerable shift in the mindset of managers, and they realized it is necessary to adapt their previous business model to a more up-to-date strategy. The differentiation is not merely adding services to tangibles, but “(...) manufacturers tend to view services as a means to differentiate their manufactured offerings” (BRAX, 2005, p. 144).

The movement has been so drastic that some companies even decided to practically stop selling the product they previously depended on and changed to a complete service-oriented solution. One of the most notorious case studies is *International Business Machines (IBM)*, the traditional hardware manufacturer, established in 1911, which shifted to a bundle of goods and services, with the inclusion of consulting, financing and training services. As a provider of business solutions, today 90.00% (ninety percent) of its revenues come from software, services and financing (Ahamed, et al, 2013). Other examples include companies like Alstrom, General Electric - GE, Rolls Royce, Fujitsu, John Deere, Siemens, Xerox, Apple, Volkswagen, Catterpillar, Johnson & Johnson - J&J, and Ericsson (Paiola et al, 2013; Gebauer et al, 2012; Elving et al, 2015). The numbers and statistics are an optimistic thermometer of this phenomenon. “By 2015, the share of worldwide manufacturers using performance-based service contracts will jump to 65.00%. By

that same future date, over 70.00% of manufacturers will be relying on services as a key product differentiator” (ELLIOT, 2014).

Finally, it is unquestionable that the servitization process brings positive results to manufacturing companies; the benefits are immense. Services contribute to reducing cost, risk and uncertainty, saving time, increasing knowledge and improving image, social status and prestige of the company (Laperchea and Picard, 2013).

However, the transition from product to services is not without obstacles and firms need to be aware of the challenges that might occur.

2.3 The Service Paradox

The servitization process does not happen from day to night. It takes both time and money (Matthyssen and Vandenbempt, 2010; Barnett et al, 2013; Azevedo and Sholiha, 2015). Dubruc et al (2014) affirm that the development of a service culture and the service awareness may take several years. “The transformation from offering and delivering a product to offering and delivering a service is difficult and slow” (BARNETT et al, 2013, p. 148). In addition, it requires substantial investment into the service business (Gebauer et al, 2016), higher labor costs and working capital (Lee et al, 2015). The relationship between servitization and financial performance is not that simple as many companies might predict; it is difficult to get the expected level of return from services (Neely, 2008). “The investment might not always pay off, leading to a situation where costs outperform expected service benefits” (GEBAUER et al, 2016, p. 42). In the literature, this phenomenon is called the ‘Service Paradox’.

The Service Paradox suggests that companies fail in the transitioning from products to services, which leads to unexpected low share of service revenue (Gebauer et al, 2005; Gebauer et al, 2010). “(Companies) are confronted with the situation, in which they invested in extending service business leading to increased service offering and higher costs but these investments do not generate the corresponding higher returns” (GEBAUER et al, 2005, p. 15; AIFANG et al, 2015, p. 183; GEBAUER et al, 2016, p. 36). As Gebauer et al (2006) expose, manufacturers are confronted with the fact that the higher costs of services do not always correspond to higher returns in profit.

Figure 02 shows the service paradox schema, through the difference between manufacturing companies that successfully exploit the financial potential of the

service business versus manufacturing companies struggling to exploit the financial potential of it.

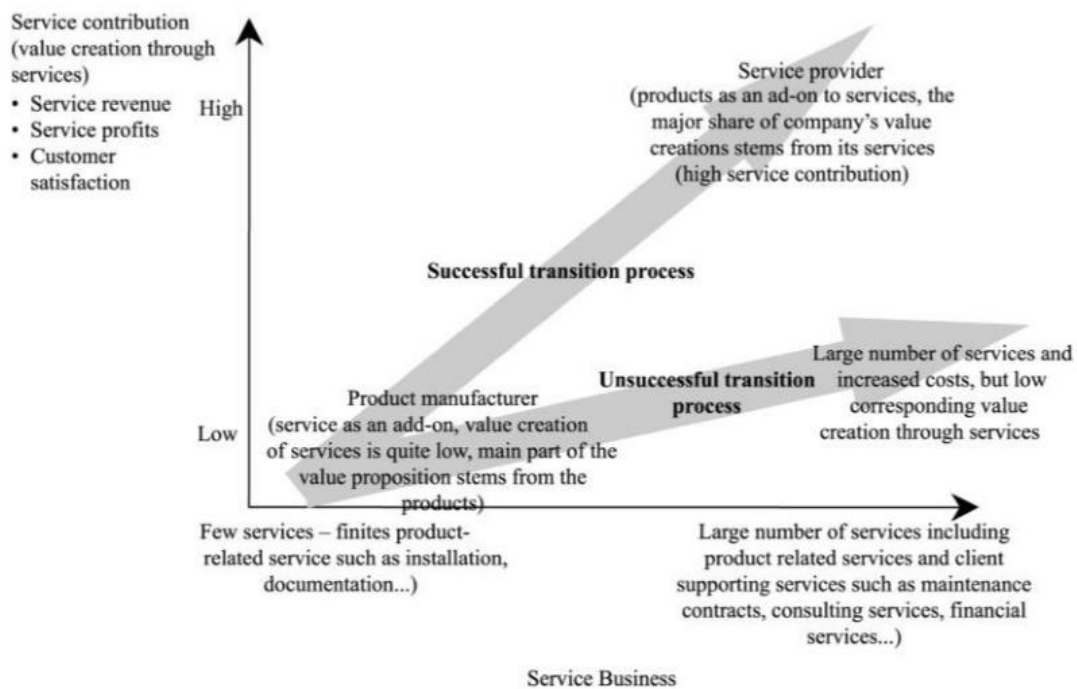


Figure 02 - Transition from product manufacturer to service provider (Gebauer and Friedli, 2005, p. 71)

As Figure 02 exposes, on the one hand, a successful transition process results in a service provider that offers products as an add-on to services and the major share of company's value creation stems from its services. On the other hand, the unsuccessful transition process results in many services and increased costs, but low corresponding value creation through services.

Unfortunately, the phenomenon happens with more frequency than would be expected (Demeter and Szász, 2013), and companies end up investing huge amount of resources into providing services, but do not achieve the expected outcome. "Critical mass of service sales is not reached, services are not related to manufacturer's core business, and available service resources are very few" (FINNE et al, 2013, p. 520). Bain & Company performed a study, which shows that only 21.00% (twenty-one percent) of companies succeed with service strategies (Ulaga and Reinartz, 2011; Parida et al, 2014; Benedettini et al, 2015). Most of them fail during the process, and some even declare bankruptcy.

The reasons for the paradox are various. As Gebauer et al (2016) state, the most important one is that firms underestimate the complexity of the service business.

Neely (2008) believes that there are 03 (three) main reasons why companies fail in the transformation process: the challenges of shifting mindsets (in marketing, sales and customers), timescale, and business models. Lee et al (2015) and Finne et al (2013) note that the delivery of services not always guarantees profitable results because of the management environment. Moreover, establishing supplier-buyer relationship shows different patterns due to higher complexity than the traditional supply chain (Lee et al, 2015). Benedettini et al (2015) explain that the main issue with manufacturers is regarding the risk they are exposed to, as “(...) manufacturing firm enters new fields of services, it likely changes both the levels and types of risks to which it is exposed” (BENEDETTINI et al, 2015, p. 947). The risks herein mentioned are not only internal to the company, but also environmental-related, as the servitization process exposes the firm to a wider sequence of regulatory, legal, economic and/or technological issues. The literature focuses mostly on the internal aspects of manufacturers, but it is equally important to consider the organizational environment in determining the success of servitization strategies (Finne et al, 2013). For pharmaceutical companies, such as company ‘ABC’, the issues related to regulation play a major role and may affect the entire strategy of a manufacturer; therefore, it is highly important to take all the in- and extrinsic aspects of a change in culture into consideration.

Including services in the company’s offering may be complex. Unlike products, services demand much more attention from the front-office employees, and can be very unpredictable. The service paradox is a warning that, if manufacturers do not employ effort in the transition process from products to services, the entire strategy may collapse, and the consequences may be drastic for firms (Neely, 2008).

To avoid the service paradox, and to create a smooth transition from product- to service-oriented organizations, it is fundamental to understand the steps of the servitization process, called the service continuum, and the critical success factors that determine whether the transition will be successful or not. Biege et al (2012) affirm that it is much easier to add services to service companies than to develop services in manufacturing companies; therefore, it is crucial to understand the shift from product to services in the firm.

2.4 The service continuum

The servitization process may be conducted in several ways. Normally, organizations adopt the strategy in a gradual way, from the offer of basic services to more advanced and value-added services, as they gain more experience (Parida et al, 2014). Oliva and Kallenberg (2003) created a framework, called the ‘Service Continuum’, to define the proportion of products and services offered by the manufacturing company. As Martin-Peña and Bigdeli (2016) state, there is a range of options with two extremes that define where the company is positioned, regarding the product-service offering.

“At one extreme lies the traditional manufacturer who only offers goods, while services are complements or add-ons for their products; (...) profit is generated principally through the products that are sold and the contribution of services is reasonably low. At the other extreme are the service providers, where services represent the basis of the value creation process and tangible goods are added to satisfy customer needs; these goods represent just a small part of the total value”.

(MARTÍN-PEÑA and BIGDELI, 2016, p. 22)

Considering both extremes, enterprises position themselves, within the range, in accordance to their organizational reality, needs and limitations/restrictions, at a specific period. It is of extreme importance to highlight that, in most cases, companies face various challenges by adding services to their product offerings, and it becomes a matter of adapting and adjusting the strategy with the internal and external capabilities of the organization. “An organizational capability is a firm’s capacity to deploy resources for a desired result” (ULAGA and REINARTZ, 2011, p. 06). In some situations, the manufacturer may have little choice between service and goods orientation, since it is pushed into a specific direction by the organizational environment, which can be both internal or external (Finne et al, 2013). There may be regulatory, legal, economic and/or technological issues that hinder the servitization path, and decreases the company’s ability to offer more (or less) services. The results, as expected, are extremely variable.

As a matter of better illustrating the service continuum, the authors Oliva and Kallenberg (2003) have developed a framework, as shown in Figure 03.

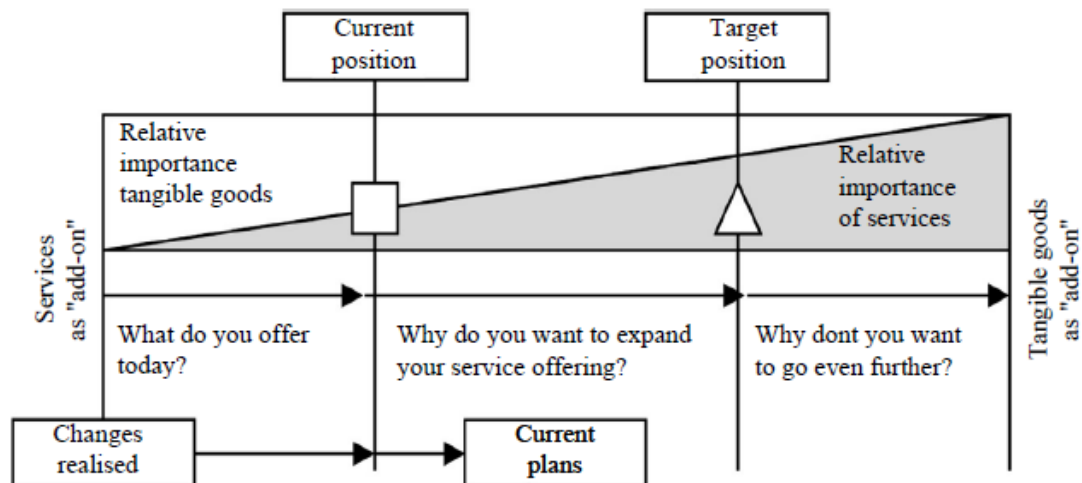


Figure 03 - Service Continuum
(Oliva and Kallenberg, 2003, p. 162)

In the left side of Figure 03, the products (tangible goods) play a major role in the company, and services are 'add-ons'; whereas on the right side, services represent the main offering, and products (tangible goods) are 'add-ons'. Within the range, there are numerous possibilities that companies may pursue, according to their own capacity and needs. With Figure 03, it is possible to visualize where the company is positioned today (Current position - 'What do you offer today?') and what the target position may be (Target position - 'Why don't you want to go even further?'). According to the framework, and by taking a look at the black arrows in the middle, companies should pursue higher positions in the service continuum, which means that they should aim for more service offerings. Of course, this is only illustrative, and companies should focus on their own needs, capabilities and limitations, and not try to reach higher goals if the organization is not ready/capable to do so.

Oliva and Kallenberg (2003) have developed a second framework to better detail the servitization process, as Figure 04 shows. This framework demonstrates the connection between 04 (four) phases that manufacturers go through, according to the authors: 1. Consolidation phase, 2. Entering the service market, 3. Expanding relationship- and process-based services, and 4. End-consumer phase:

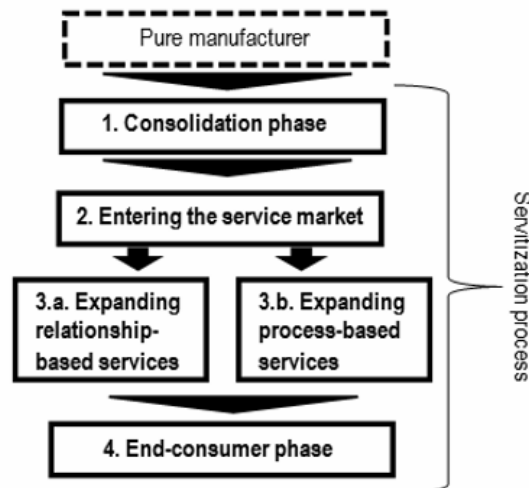


Figure 04 - Basic Business Model for servitized companies
(Oliva and Kallenberg, 2003, p. 165)

Brax (2005) has made a clear explanation of Figure 04, with more details on each of the phases.

“First, companies consolidate their product-related services and often relocate services in a newly created service unit. Second, they enter the installed base service market through defining and analyzing this market, creating an infrastructure for marketing and delivering services and responding to local service demand. Third, companies can expand to relationship-based services or they can focus on process-centered services. Finally, the final stage refers to taking over the end-user’s operations”.

(BRAX, 2005, p. 146)

This framework gives a high-level example of how companies can go through the servitization process, beginning with a pure manufacturer strategy until taking over the customer’s operations. Again, each company has its own reality, needs and limitations, which may alter the way they engage in such a complex process.

It is important to mention that not only Oliva and Kallenberg have dedicated time and effort to study the phases of the servitization process; rather several other scholars have developed different frameworks and nomenclatures to explain the service continuum by which manufacturers go through. Although distinct, the main idea is very similar.

Kotler (apud BRAX, 2005, p. 143) states that there are 05 (five) types of service mix: (1) pure tangible goods, (2) tangible good with accompanying service, (3) hybrid, (4) major service with accompanying minor goods, and (5) pure services. The hybrid offering is defined as a “combination of one or more goods and one or more services, creating more customer benefits than if the good and service were available separately” (ULAGA and REINARTZ, 2011, p. 05). Martin and Horne (apud BRAX,

2005, p. 146) believe there are only 04 (four) possible combinations: (1) goods only, (2) goods and services – good dominant, (3) service and goods – service dominant, and (4) services only. As Tukker (apud SMITH et al, 2014, p. 245) says, there are 03 (three) distinct phases: (1) product-oriented, (2) use-oriented, and (3) result-oriented. At the one end, there is the pure product company; at the other end, the pure service.

Figure 05 is a chart, with more details of a product-service system, according to Tukker’s (apud SMITH et al, 2014, p. 245) theory:

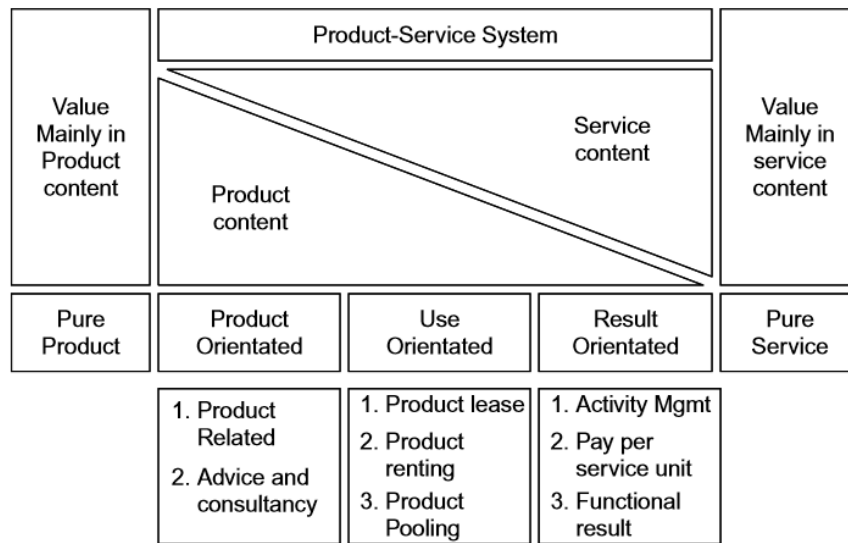


Figure 05 - Product-service system (Tukker, apud Smith et al, 2014, p. 245)

Laperchea and Picard (2013) explain Figure 05:

“The product-oriented services mean services are just added to an existing product system to guarantee the functionality and durability of the product owned by a customer. The use-oriented services mean services intensify the use of the products. The use or the availability of the product is sold but the product is not owned by the customer (product renting, leasing, sharing, pooling). Finally, the result-oriented services mean a result or a capability is sold instead of a product. One actor becomes responsible for all costs of delivering a result and hence has a great incentive to use materials and energy optimally”.

(LAPERCHEA and PICARD, 2013, p. 121)

Based on Tukker’s (apud PARIDA et al, 2014, pg. 44) theory, Parida et al (2014) state that the categorization can be divided into 04 (four) types: (1) add-on customer service/basic services (product-oriented), (2) maintenance and product support services (product-oriented), (3) R&D-oriented services (use-oriented) and (4) functional/operational services (result-oriented). Drodegari et al (2015) adapted Tukker’s (apud DRODEGARI et al, 2015, p. 248) definition and created a new typology with 05 (five) items, ranging from ownership- to service-oriented: (1)

product-focused, (2) product and processes-focused, (3) access-focused, (4) use-focused, and (5) outcome-focused.

It is worth mentioning that the addition of services to the offered product may entail different kinds of service offerings, which include customer service, after-sales services, operational services, customer support services, services for the installed base, advanced services, and R&D-oriented services (Gebauer et al, 2016). “A movement has advanced beyond offering simple add-on services, such as technical user training or product demonstrations, to more complex, high-value-added services, such as product optimization or maintenance” (PARIDA et al, 2014, p. 44). Neely (2008) defines 12 (twelve) types of services that manufacturing firms can offer: design and development; systems and solutions; retail and distribution; maintenance and support; installation and implementation; financial services; property and real estate; consulting; outsourcing and operating; procurement services; leasing; and transportation and trucking.

A R. Tan et al (2010) created a span to distinguish different types of service offerings, ranging from a product-oriented to a customer-oriented approach, as shown in Figure 06:

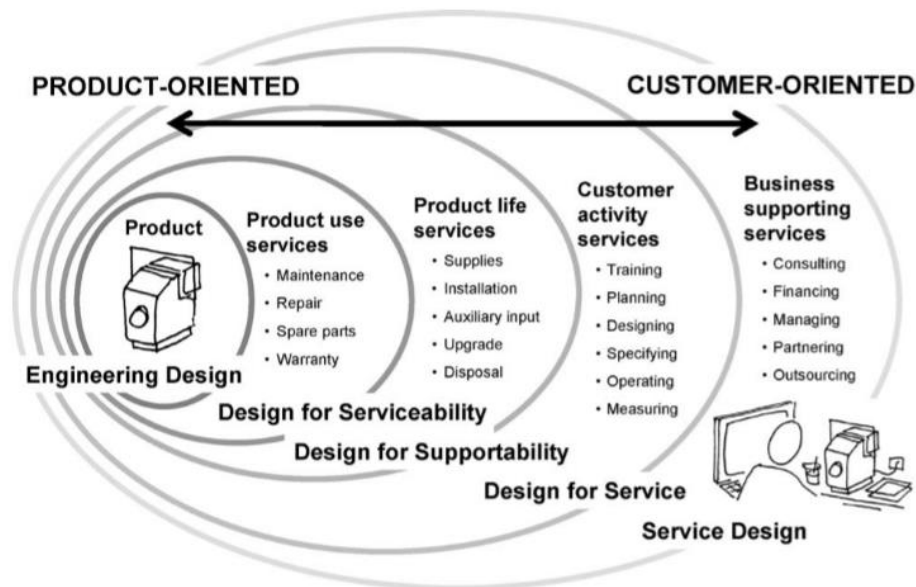


Figure 06 - Span of service oriented development methods (A R Tan et al, 2010, p. 94)

Figure 06 highlights the different design and development approaches existing in the literature, focused on the integration of both products and services. Services, like maintenance and repair, are more product-oriented, whereas consulting and financing are more customer-oriented. In the scale of servitization, the more service-

oriented the company is, the readier it is to servitize; on the other hand, the more product-oriented, the less ready it is to servitize.

It is worth mentioning that the transformation from product-oriented to customer-oriented is fluid. The service continuum, consequently, is also not static. As the name suggests, companies may (and should) change their position in the Figure – whether in the service continuum (Figure 03) or the span of services (Figure 06) – in accordance to their current organizational situation. The service continuum is, therefore, extremely dynamic and should serve as a guide for companies when defining their product-service combination. As already stated, however, environmental aspects may prevent the company from advancing to more customer-oriented stages, and manufacturers may have little choice between service and goods orientation. It is, therefore, important to be aware of the critical success factors, which may help companies in improving their service offerings, while creating a more sustainable and concrete service strategy for them.

2.5 Critical Success Factors for Servitization

Despite all benefits that arise from the change in product-oriented to service-oriented mindset, there are several challenges that companies need to overcome, as already exposed in *2.3 The Service Paradox*. The engrained manufacturing-oriented way of doing business and the difficulties of finding the right combination of products and services (Nuutinen and Lappalainen, 2012) make the change efforts fail in the very beginning (Gudergan et al, 2015). Servitization does not come from day to night and the list of manufacturing companies that engage in successful service strategies is not as long as one might expect (Oliva and Kallenberg, 2003). In fact, few are the ones that succeed.

By analyzing the literature available, it gets clear that products and services are different in many ways. On the one hand, products are tangible, separable, homogeneous and storable. Consequently, product-based manufacturing has proved to be easy to have their products imitated by the competition (Martinez et al, 2010). “Products are simply more obvious than services” (GEBAUER et al, 2005, p. 16). On the other hand, people cannot touch, smell, see or store services. Services have the ‘IHIP characteristics’ – intangibility, heterogeneity, inseparability and perishability (De Toni et al, 1994; Pawar et al, 2009; Spring and Araujo, 2009; Gao et al, 2011; Zhang

and Zhang, 2014). Because the production and consumption happen simultaneously, unlike goods, services have inseparable outcomes, which means that the results are never the same; it has practically no standardization in its performance (Dierdonck, 1992). As Kaczor and Kryvinska (2013) affirm, the lack of standardization happens mainly due to 04 (four) reasons: customer perceptions, costs, geographical characteristics and service providers. By customer perception, Dierdonck (1992) highlights elements that influence the way customer's view services: the general image of the service / sector / organization; the general image of the personnel; and the physical location, environment and working atmosphere.

Narvaiza et al (2016) state that different from products, where the exchange is merely transactional - "I sell you a product, you pay me; end of relationship" - in services, there is a deeper interaction between seller and buyer - "I provide you a service, we start a relationship, we keep in touch" (NARVAIZA et al, 2016, p. 132). As one can realize, services are much more complex and fuzzy than goods (Baines et al, 2009), and for that matter, it has, until today, no clear definition, classification and terminology in the literature (Kaczor and Kryvinska, 2013). As mentioned and due to the major differences in products and services, companies face enormous challenges in the transition to a product-service firm (Baines et al, 2009). Companies cannot simply add services on top of the original goods-dominant offering; a more radical approach is necessary (Brax, 2005; Weeks and Benade, 2015). Baines et al (2009) state that manufacturing companies that decide on a service strategy have to adapt the necessary organizational structure and processes, as well as redesign their business model (Martin-Peña and Bigdeli, 2016). Business models can tell the story of the company (Kindström and Kowalkowski, 2014; Shirahada et al, 2015) and encompass all relevant areas of the organization - key partners, activities and resources; value proposition; customer segments and relationship; channels; cost structure and revenue stream. The process implies not only the development of a service offering, but an entire organizational transformation (Baines, 2015; Ahamed et al, 2013; Martinez et al, 2010). According to the definition by Leoni (2015) in Table 01, "it means transforming almost every aspect of the way business is conducted: such as strategies, positions in the value stream, capabilities, organizational structures, as well as culture and mindsets at all organizational workers' level" (LEONI, 2015, p. 612). The shift to a service-oriented firm is not easy; thus,

organizations are likely to change their strategy, organization, enterprise management, contracting, culture, and operations (Barnett et al, 2013).

First, Kinnunen and Turunen (2012) believe that defining the service strategy is the initial step to servitization. "Service strategy should be considered the foundation for companies seeking to successfully operate in the service business" (KINNUNEN and TURUNNEN, 2012, p. 61). To function properly, there should be an alignment between the organization and the strategy itself; and it should be constantly modified to fit the competitive environment. It is crucial to understand client's needs, market potential and future trends. Therefore, having a market-oriented process allows the firm to create more customized solutions (Gebauer et al, 2005), making companies more competitive, by defining new business solutions.

Second, but not least important, is the adaptation of the organizational culture, to incorporate all changes needed to support the service strategy. "Organizational culture is a system of shared actions, values and beliefs that develops within an organization and guides the behavior of its members" (AHAMED et al, 2013, p. 23). It relates to "(...) social established structures of meaning" (LIENERT, 2015, p. 354); and "it is a distinctive way of thinking and working together that defines the group's norms, values and assumptions" (CARLETON et al, 2015, p. 09). For companies to succeed in the transformation process, they should create a strong service culture (Gebauer et al, 2005; Gebauer et al, 2010; Paiola et al, 2013). According to Kokemmuller (2016), a service culture exists when employees have a customer-centric approach to their regular activities. They put customer needs at first place and focus on providing a good experience, contributing to the development of a long-term relationship. Ahamed et al (2013) details that IBM, in order to succeed, focused first on the development of a service strategy and culture. By developing such a service orientation, they had to position the customer in the spotlight of their business model and not put all their effort in the delivery of a product. The result was that the company could better understand client's needs and provide what best suited them, with quality and profit.

Therefore, a shift in mindset, towards a more customer- and service-oriented approach, is necessary to take on services (Nuutinen and Lappalainen, 2012; Dubruc et al, 2014). Pezzotta et al (2014) state that it is important to shift the culture from a transactional-based approach to a long-term strategy (Rajesh and Tore, 2007). "Service-oriented culture in manufacturing companies contains the values and

behaviors associated with an entrepreneurial orientation, real problem-solving eagerness, innovativeness, and flexibility of service employees” (GEBAUER et al, 2010, p. 239). Additionally, it reflects specific roles for front-office employees, such as serving as a trusted adviser, developing a strong relationship with customers, leading a collaborative support performance, and delivering complex services (Gebauer, 2008).

However, with the implementation of a service-oriented culture and strategy, managers should overcome different obstacles, especially those related to the behavior of employees (Gebauer et al, 2006). Dubruc et al (2014) believe that culture is an abstraction, yet the forces that are generated in both social and organizational environments are powerful, as it can affect the way members think, feel and behave. One of the main difficulties is that part of the culture is hidden; although culture may change all the time, the basic beliefs are not questioned (Nuutinen and Lappalainen, 2012) and the assumptions are unexamined and taken for granted (Lienert, 2015). In addition, culture provides employees with the necessary tools to solve problems and navigate the organizational environment (Lienert, 2015). With the change in culture, though, managers are likely to meet resistance from within the organization, where people do not understand the new strategy, or worse, where people fear an infrastructural change (Baines et al, 2009). People, in general, tend to avoid changing how things work, simply because it is emotionally effort-full. “Transforming the organization’s culture constitutes one of the most fundamental challenges confronting an institution, as people’s natural inclination is to hold on to whatever feels familiar, even if confronted with better alternatives” (AHAMED et al, 2013, p. 23).

For that matter, creating the right strategic and cultural context involves telling a clear and compelling story that persuades people of the value of services. “Winning hearts and minds involves building a service mindset that ensures that people understand that value in the service context is ‘co-created’ in partnership with customers; that the role of leadership should be supportive and enabling; and that services depend on customer intimacy achieved through a combination of data, knowledge and deep relationships” (MARTINEZ et al, 2016, p. 07).

To clarify how to overcome such challenges, this chapter intends to highlight the critical success factors for manufacturing companies, so that they can include services into their offerings, whether in higher or lower degree – according to the

service continuum in Figure 03. As Martinez et al (2016) state, “critical success factors for any business are defined as the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organization” (MARTINEZ et al, 2016, p. 04). First, through an extensive literature review, it was possible to identify the critical success factors that scholars understand are important for the shift to services. Second, those with similar characteristics were grouped to have 04 (four) success factors that are crucial for manufacturing companies. They are:

- Relationship Marketing (Customers & Partners)
- Human Resources Management (Human Resources & Leadership)
- Information Management (Communication & Technology)
- Organizational Structure (Separated Unit & Organizational Design)

a) Relationship Marketing (Customers & Partners)

Services are about relationships and experiences. "In order to make a successful shift to services, there needs to be a fundamental change in the relationship between the service provider, its partners and their customers" (MARTINEZ et al, 2016, p. 06). It is important that everyone is psychological and emotionally ready to accept the changes in responsibility, or else there is the risk of failure. For that matter, the first thing to do is to clearly define the service value proposition and to confirm that it is appealing to the parties involved, whether customers or partners. The relationship-marketing concept has different definitions in the literature, but briefly it can be described as “a continuous process whereby a firm builds long-term alliances with both prospective and current customers so that seller and buyer work together towards a specified goal” (EVANS and LASKIN, 1994, p. 440).

Customers:

Servitization is a customer-centric approach, which means that the client plays a significant role in the service delivery. The initial stage for entering the service business is clearly understanding customer needs (Kindström and Kowalkowski, 2009, Paiola et al, 2013, Marquesa et al, 2013, Demeter and Szász, 2013; Pezzotta et al, 2014), with internal and external inputs, which can be market survey or direct contact with clients (Marquesa et al, 2013). It requires a complete customer

interaction management (Nuutinen and Lappalainen, 2012), since the “servitization promotes intense customer relationships (...), and the manufacturer goes beyond simply offering a product to provide offerings that target efficient and effective operations” (BAINES, 2015, p. 09).

However, having a customer-oriented strategy gets quite challenging for manufacturing companies, since they are used to having the client as a merely consumer of their physical goods. Customer are not a simple receiver of the product anymore; rather he/she co-produces, co-designs and co-creates (Ng et al, 2012), and companies will get in much closer contact with them during the service delivery. “To truly innovate, firms must expand their short-sighted focus beyond existing services and service capabilities to address the fundamental needs of their customers (...)” (BETTENCOURT and BROWN, 2013, p. 14). This allows the firm to create more customized solutions, which will result in higher service revenues (Gebauer et al, 2005). For that matter, front-line employees need to develop a “learning relationship with customers, solve their problems collaboratively, and tailor products and services that will address individual customer needs” (GEBAUER et al, 2010, p. 241). For that matter, it is crucial to focus on customer empowerment, which means “turning the front-line loose”; or letting employees be creative in solving customer problems (Evans and Laskin, 1994), through encouragement and reward of people that exercise imagination. Of course, for it to work, employees will need to have skills, responsibility and authority to make decisions that better serve the customers (Evans and Laskin, 1994). Through the establishment of a close link with customers, and a strong market intelligence (Bader and Enkel, 2014), firms can see value through the eyes of the consumer (Ng et al, 2012).

Ng et al (2012) highlight the fact that, if companies do not understand customer’s needs and consumption process, it will be impossible to create value through services. Customers evaluate services in terms of not only their functional performance but also their emotional impact. Creating deep, meaningful and long-term relationships with customers (Gebauer et al, 2005; Kowalkowski et al, 2013), based on trust and mutual understanding is essential if the firm is willing to help them achieve their goals (Martinez et al, 2016).

Partners:

In services, not only customers play a vital role in services, but also key partners. Martinez et al (2016) believe that only when the firm is confident that the delivery partners are willing to embrace the changes the servitization process demands, can they create the strategic and cultural conditions, in which services can be designed. According to Evans and Laskin (1994), both parties need to be collaborative and have clear mutual focus about the specific needs to be met. Additionally, the relationship must be based on honesty and openness, with regular communication. “The buyer-supplier relationships have to facilitate greater levels of information and knowledge exchange, tighter social bonds, increased interdependency, increased levels of coordination and the acquisition of partnering competences and increased level of cooperation” (BASTL et al, 2012, p. 651).

Parida et al (2014) researched 122 manufacturing companies in Finland and Sweden to study the servitization process they underwent and found that the network management is of extreme relevance, which involves the management of new and existing partners. By understanding partner’s goals, competencies and growth strategies, the relationship allows manufacturing companies to share the risks and responsibilities. Due to the increased focus on value co-creation, managing dealers, distributors, services partners and branches become more important in the servitization process, as it is not possible to capture service market without the support of the delivery organization.

Chart 02 summarizes the key words the authors have explored in the literature, regarding the Relationship Marketing:

Author	Year	RELATIONSHIP MARKETING	
		Customers	Partners
Gebauer et al	2005	Market-oriented process	-
Gebauer et al	2006	Comprehensive market understanding	-
Rajesh and Tore	2007	Knowledge of customer’s needs	-
Kindström and Kowalkowski	2009	Interactions	-
O’Halloran	2010	Customer engagement / Customer Needs	-
Kinnunen and Turunnen	2012	Customer-centric organizational configuration	-
Nuutinen and Lappalainen	2012	Customer Relationship	-
Paiola et al	2013	Customer-oriented attitude	-

Marquesa et al	2013	Customer Needs	-
Kowalkowski et al	2013	Proactive market orientation	Network
Parida et al	2014	-	Network Management
Bader and Enkel	2014	Market Intelligence	-
Pezzotta et al	2014	Knowledge that meets client's desires	-
Baines	2015	Customer Relationship	-
Schnürmacher et al	2015	-	Supplier Relationship

Chart 02 – Relationship Marketing

b) Human Resources Management (Human Resources & Leadership)

To innovate in services and ensure they are delivered successfully, companies should devote the necessary human resources to establishing, interconnecting and sustaining the service business. Firms need to understand what resources and capabilities they already have, both within the organization and across the network, even before they can create new services (Martinez et al, 2016). Gudergan et al (2015) highlight the fact that, to be ready to change, it is important to have a holistic view, with both individual and organizational level. A service strategy requires many changes in the company's structure and demands effort and time for its proper implementation; therefore, all members need to be committed to the transformation process. "The concept of commitment to change can be defined as a force that binds an individual to a course of action deemed necessary for the successful implementation of a change initiative" (ABRELL-VOGEL and ROWOLD, 2014, p. 902). Nuutinen and Lappalainen (2012) say that the first step in changing the corporate culture to a more service-oriented approach is to engage both managers and employees in a service awareness. Managers should learn a total new way of doing business, and employees need to understand the differences from selling a product to providing a service. The entire organization needs to be aligned with the new service strategy, and understand what and how it relates to their own work and skills (Nuutinen and Lappalainen, 2012).

Human Resources:

According to Schuler (1991), "human resources management means getting everybody from the top of the human organization to the bottom doing things that make the business successful" (SCHULER, 1991, p. 18). Gebauer and Friedli (2005)

analyzed manufacturers that both succeeded and failed in the transition from products to services, and concluded that it is crucial to have an investment in human resources. Gebauer (2008), Gebauer et al (2010), Baines et al (2013) and Marquesa et al (2013) also believe that companies should focus on human resources management. The shift to services requires a change in the relationship with employees, especially the front-office personnel, who are the ones directly linked to providing the service to customers. Employees need to see and believe in the value of services, since a successful transition process requires a strong commitment of service workers. "Our employees were the ones who actively innovated and sold services" (GEBAUER and FRIEDLI, 2005, p. 74). When employees see the organization as having strong service orientation, customers tend to report more positive service experience (Schneider and Bowen, 1992). For that to work, it is important to create a culture that recognizes the importance the company places on people, with trust and cooperation (Schuler, 1991).

Additionally, to provide service offerings, Kowalkowski et al (2013) state that the internal resources need to have certain skills. Some specific characteristics of the front-office personnel lead to a successful customer service, such as flexibility, relationship building, service-centricity, authenticity, technically adept, and resilience (Baines et al, 2013). Employees need "to display more initiative, to cope more effectively with stress, to be more interpersonally flexible and sensitive, and to be more co-operative" (BARNETT et al, 2013, p. 147). Not by coincidence, successful service firms place huge effort in the selection/recruitment, development/training, coaching, empowering/ownership (O'Halloran, 2010), motivation and compensation of its employees (Gebauer, 2008; Paiola et al, 2013). To perpetuate a service culture, it is necessary to include service standards in job descriptions and employee evaluations. If the organization emphasizes customer service in assessments, raises and promotion decisions, it strengthens its commitment (Kokemuller, 2016). That way, it is possible to allocate the right people in the right position, which contributes positively to a smoother transition process.

Leadership:

Not only employees, but also decision makers (managers and directors) need to understand the advantages of adopting a service business (Gebauer et al, 2010). Both play an important role as leaders, because they are responsible for committing

the entire team to work towards the same goal. Mainly it includes establishing direction, aligning people, motivating and inspiring individuals, as well as causing dramatic and useful change (Schuler, 1991). When managers perceive high value in services, they are more motivated to develop the service business, and become “an important facet of offering service-related value proposition that supports customer’s value creation” (GEBAUER et al, 2010, p. 240). As in the case of IBM, leadership and teamwork are considered of high importance to explain the success they obtained in the servitization transformation (Ahamed et al, 2013). Leaders take the responsibility for the actions and decisions made, as well as influence others and help in achieving a common strategical goal (Gudergan et al, 2015). There needs to be a strong support from managers throughout the entire process (Dubruc et al, 2014), and the leadership should clearly understand what the customer benefits from services are; only then, can they properly communicate the message and disseminate the new strategy to the employees.

Chart 03 summarizes the key words the authors have explored in the literature, regarding the Human Resources Management:

Author	Year	HUMAN RESOURCES MANAGEMENT	
		Human Resources	Leadership
Gebauer and Friedlli	2005	Human Resources Investment	Commitment of managers and workers
Gebauer	2008	Relationship with employees	-
O’Halloran	2010	Employee motivation and ownership of service engagement	-
Gebauer et al	2010	Human Resources Management	-
Baines et al	2011 / 2013	Behavior and skill-sets of front-line employees	-
Nuutinen and Lappalainen	2012	-	Engagement of managers
Ahamed et al	2013	-	Leadership and Teamwork
Marquesa et al	2013	Human Resources	-
Paiola et al	2013	Recruitment, development and compensation of personnel	-
Kowalkowski et al	2013	Service skilled personnel	-
Dubruc et al	2014	-	Strong support from managers
Gudergan et al	2015	Human Resources Management	Top management commitment

Chart 03 – Human Resources Management

c) Information Management (Communication & Technology)

Information management is one of the most important success factors that can drive a company's success, when shifting to a service-oriented mindset (Nuutinen and Lappalainen, 2012; Lehtonen and Kostama, 2014; Bader and Enkel, 2014; Gudergan et al, 2015). "Being able to clearly formulate and communicate the service offering of a company makes servitization more likely to succeed and can give a significant competitive advantage to the firm (LEHTONEN and KOSTAMA, 2014, p. 09). Communication is a social process where people, immersed in a specific culture, create and exchange meaning; it is a joint construction of meaning. Communication is, by no means, limited to verbal productions or written expressions; it also includes gestures, actions and behaviors (Simões and Esposito, 2014). Importantly to note is that the communication skills should be both internal and external to the organization (Paiola et al, 2013), as customers, employees and different partners should be involved and aligned with the company's service strategy. For the information management to properly work, technology plays a vital role in helping managers analyze and control the communication shared with all the parties involved.

External communication:

The participation and co-creation of customers is one of the most important differences in the service offering, compared to product-oriented organizations. Therefore, understanding what are the consumers' needs and concerns, and stimulating a constant information exchange between customer and the service provider is essential for the firm to succeed (Schuh et al, 2015). "Customer interactions have to be used more frequently and more intensively to improve services and provide real solutions to customer problems" (DEMETER and SZÁSZ, 2013, p. 313). Since it poses a major challenge for manufacturing companies (Brax, 2005), some highlights need to be taken into consideration.

First, to develop a service culture, the initial step is to show genuine interest in finding out what customers want from the company, its products and services. Ongoing research can help the organization gain insight as to how it currently performs and what improvements should it make to strengthen loyal and long-term relationships (Kokemuller, 2016). An effective "feedback system should gather, analyze, and distribute information about customer needs, expectations, and

perceptions” (EVANS and LASKIN, 1994, p. 443). Second, services demand intimate knowledge (Gobble, 2015) of the customer’s operational requirements, operating environment and geographical location (Rajesh and Tore, 2007), and the more knowledge there is, the more successful the company will be. “Customers need to be able to communicate meaningfully with the company, not just to provide feedback or ask for help with a product” (GOBBLE, 2015, p. 58). Third, when the firm develops continuous communication with their customers, it can get more updated input and clarity about their expectations, which can improve internal processes, as well as the delivery of services (Martinez et al, 2016). Both company and customer can benefit from a well-managed communication strategy.

Internal communication:

The employees of a service company represent its biggest asset. For obvious reasons, it is of extreme importance to inform the internal people about the strategy and the values of the company. As Ahamed et al (2013) show, the communication inside IBM played an important role in the shifting process that they underwent. The managers had to communicate and spread the company’s values, all over the enterprise, and the CEO constantly met with individuals, to get their feedback and new ideas for the change process. If employees do not know what is going on in the organization, they will surely not make the proper sacrifices that are undoubtedly necessary to make a change (Ahamed et al, 2013). In addition, the company’s mission, website, employee policy manual and customer service policy all provide opportunities to infuse customer-oriented policies for external and/or internal communication (Kokemmuller, 2016). Barnett et al (2013) believe that companies need to include cooperative and communicative values, “which encourages reward and communication” (BARNETT et al, 2013, p. 147).

Technology:

To help in the communication with employees and customers, the technology is an excellent ally. “The use of technology is key in meeting the requirements of changing markets and new competitive situations. Technology contributes to organizational dynamic capabilities by facilitating product adaptation, as well as new product or service offerings (...)” (TIMMOR and ZIF, 2010, p. 146). Technological innovation is, therefore, becoming key for customer-oriented and service-intensive

businesses (Hong et al, 2015; Marquesa et al, 2013; Aifang et al, 2015; Lim et al, 2015), mostly because the transition is a data intensive process (Opresnik and Taisch, 2015). Both knowledge and technology are a pre-requisite for change (Leoni, 2015) and can result in competitive advantage for manufacturers, since ICT enables not only deeper relationships with customers, but also extensive service offerings (Kowalkowski et al, 2013). “To take advantage of the servitization, a business needs to have appropriate readiness and absorption capacity through technological innovation” (HONG et al, 2015, p. 976).

By coupling ICT with advanced services, it is possible to deliver an effective product-centric service (Hong et al, 2015), identify new opportunities (Lim et al, 2015), enable a tighter relationship between partners – not only customers (Opresnik and Taisch, 2015), and lower barriers to leveraging informal and unstructured knowledge through virtual- and self-learning (Leoni, 2015). In addition, it can reduce costs and increase revenues, by offering higher value through new services (Kowalkowski et al, 2013). A. R. Tan et al (2010), Lim et al (2015) and Gobble (2015) state that a crucial factor for servitization is to gather; store and analyze data from both customers and products, which is enabled by the *Information Technology (IT)*, through the provision of information on how to improve customer’s values. Acquiring strategic customer data is a necessary, though not sufficient, condition: manufacturers still need to translate these data into a source of new revenues and/or an opportunity to provide new offerings (Ulaga and Reinhardt, 2011). “Firms have to think about technology to collect data, combine it with other available data, analyze and feed it to the customer for real-time decision support” (AIFANG et al, 2015, p. 185). In addition, IT has a crucial impact on value creation, as technology can improve the use of labor, equipment and material, resulting in financial gain.

Chart 04 summarizes the key words the authors have explored in the literature, regarding the Information Management:

Author	Year	INFORMATION MANAGEMENT	
		Communication	Technology
Rajesh and Tore	2007	Knowledge Exchange	-
Nuutinen and Lappalainen	2012	Communication	-
Ahamed et al	2013	Value Sharing and communication	-
Barnett et al	2013	Cooperative / Communicative Values	-

Marquesa et al	2013	-	Technological aspects
Paiola et al	2013	Communication Skills	-
Kowalkowski et al	2013	-	ICT
Lehtonen and Kostama	2014	Communication	-
Bader and Enkel	2014	Communication Strategy	-
Hong et al	2015	-	Technological Innovation
Aifang et al	2015	-	Technological Capability
Gudergan et al	2015	Communication	-
Lim et al	2015	-	Informatics
Leoni	2015	Knowledge Management	Technology
Schuh et al	2015	Information Exchange	-
Gobble	2015	-	Technology (Big Data)
Opresnik and Taisch	2015	-	ICT

Chart 04 – Information Technology

d) Organizational Structure (Separated Unit & Organization Design)

In order to be ready to change, it is important to have a holistic view, with both individual and organizational level (Gudergan et al, 2015), and invest in the organizational design (Aifang et al, 2015). A flexible, agile and creative organization design can break the information barrier among the organization, (...), thus improve customer service, decrease service cost, meet the requirements of shortening the distance between time and space with customers” (AIFANG et al, 2015, p. 185). As expected, the organizational structure of a service-oriented business is different from the one found in a product-oriented.

Separated Unit:

A recommended step for companies to become service providers is to consolidate all existing service offering under a single unit in the organization (Oliva and Kallenberg, 2003; Gebauer et al, 2006; Barnett et al, 2013), which means integrating all service decisions and finances into a unique structure. “Separating services from the product business means that firms create a distinct strategic business unit for services that fully control the targeting of customers and the development, pricing, selling, and delivery of service offerings” (GEBAUER et al, 2010, p. 241). That way companies can enhance the performance and have more control and organization of their solutions. “The consolidation of the service offering is normally accompanied by a strong initiative to improve efficiency, quality and delivery time of the services

provided, and the creation of additional services to supplement the service offering” (OLIVA and KALLENBERG, 2003, p. 166).

Gebauer (2008), Gebauer and Friedlli (2005) and Kowalkowski et al (2013) also say it is recommended to establish a separated service organization in the enterprise, to implement a customer-process oriented approach for value creation with a significant degree of empowerment, and to use multidimensional metrics to measure customer/employee satisfaction and the success of the service offers (Gebauer, 2008). That way firms can concentrate all efforts in services, with skilled employees and dedicated attention and can focus all its efforts in building service capacity – right people, with the right knowledge/skill, to the right position (Gebauer and Friedlli, 2005). Firms that only partially commit to services face serious problems, such as customer confusion, employee frustration, strategic misalignment, financial losses and eventually, the disintegration of the service offering. Creating the right structures and governance for services is, therefore, a recommended step (Martinez et al, 2016).

Organizational Design:

Although separated, it is important to integrate the entire company in the new strategy of services, so that there is a common alignment between all managers in the organization. Parida et al (2014) and Schnürmacher et al (2015) believe in the integrated development, because selling products and services require that companies integrate both components in the R&D stage (Parida et al, 2014). Paiola et al (2013), finally state that flexibility is the major characteristic for companies that will change their values and strategy. It is important to create a systematic and transparent operation, with frequent feedbacks, communication channels and monitoring tools. Finally, companies need to ensure that product and service business units are mutually supportive rather than competitive (MARTINEZ et al, 2016, p. 09).

Chart 05 summarizes the key words the authors have explored in the literature, regarding the Organizational Structure:

Author	Year	ORGANIZATIONAL STRUCTURE	
		Separated Unit	Organizational Design
Oliva and Kallenberg	2003	Consolidation of all areas	-
Gebauer and Friedlli	2005	Separated service	Structural Changes

		organization	
Gebauer et al	2006	Involvement of all areas	Systematic / transparent operation
Gebauer	2008	-	Organizational Structure
Gebauer et al	2010	-	Organizational Structure
Paiola et al	2013	-	Flexible Structure
Kowalkowski et al	2013	Separated Unit for services	-
Parida et al	2014	Integrated Development	-
Aifang et al	2015	-	Organizational Design
Gudergan et al	2015	Holistic View	-
Leoni	2015	Separated Unit for services	-
Schnürmacher et al	2015	Integrated Solution	Internal processes and capabilities

Chart 05 – Organizational Structure

Chart 06 is a complete summary of key words the authors have exposed in the literature (in chronological order), regarding the 04 (four) critical success factors – Charts 02, 03, 04 and 05:

AUTHOR	YEAR	CRITICAL SUCCESS FACTORS FOR THE SERVICITIZATION PROCESS							
		RELATIONSHIP MARKETING		HUMAN RESOURCES MANAGEMENT		INFORMATION MANAGEMENT		ORGANIZATIONAL STRUCTURE	
		CUSTOMERS	PARTNERS	HUMAN RESOURCES	LEADERSHIP	COMMUNICATION	TECHNOLOGY	SEPARATED UNIT	ORGANIZATIONAL DESIGN
Oliva and Kallenberg	2003	-	-	-	-	-	-	Consolidation of all Areas	-
Gebauer et al	2005	Market-oriented process	-	-	-	-	-	-	-
Gebauer and Friedli	2005	-	-	Human Resources Investment	Commitment of managers and workers	-	-	Separated Service Organization	Structural changes
Gebauer et al	2006	Comprehensive market understanding	-	-	-	-	-	Involvement of all areas of Company	Systematic/transparent operation
Rajesh and Tore	2007	Knowledge of customer's needs	-	-	-	Knowledge Exchange	-	-	-
Gebauer	2008	-	-	Human Resources Management	-	-	-	-	Organizational Structure
Kindström and Kowalkowski	2009	Interactions	-	-	-	-	-	-	-
O'Halloran	2010	Customer engagement/Customer needs	-	Employee Management	-	-	-	-	-
Gebauer et al	2010	-	-	Human Resources Management	-	-	-	-	Organizational Structure
Baines et al	2011 / 2013	-	-	Human Resources	-	-	-	-	-
Kinnunen and Turunnen	2012	Customer-centric organizational configuration	-	-	-	-	-	-	-
Nuutinen and Lappalainen	2012	Customer Relationship	-	-	Engagement of managers	Communication	-	-	-
Ahamed et al	2013	-	-	-	Leadership and Teamwork	Value Sharing and Communication	-	-	-
Barnett et al	2013	-	-	-	-	Cooperative/Communicative Values	-	-	-
Marquesa et al	2013	Customer Needs	-	Human Resources	-	-	Technological Aspects	-	-
Paola et al	2013	Customer-oriented attitude	-	Human Resources Management	-	Communication Skills	-	-	Flexible Structure
Kowalkowski et al	2013	Proactive market orientation	Network	Service Skilled Personnel	-	-	-	Separated Unit for Services	-
Kowalkowski et al	2013	-	-	-	-	-	ICT	-	-
Dubruc et al	2014	-	-	-	Strong Support from Management	-	-	-	-
Parida et al	2014	-	Network Management	-	-	-	-	Integrated Development	-
Lehtonen and Kostama	2014	-	-	-	-	Communication	-	-	-
Kindstrom and Kowalkowski	2014	-	-	-	-	-	-	-	-
Bader and Enkel	2014	Market Intelligence	-	-	-	Communication Strategy	-	-	-
Pezzotta et al	2014	Knowledge that meets client's desires	-	-	-	-	-	-	-
Hong et al	2015	-	-	-	-	-	Technological Innovation	-	-
Aifang et al	2015	-	-	-	-	-	Technological Capability	-	Organization Design
Baines	2015	Customer Relationship	-	-	-	-	-	-	-
Gudergan	2015	-	-	Human Resources Management	Top Management Commitment	Communication	-	Holistic View	-
Lim et al	2015	-	-	-	-	-	Informatics	-	-
Leoni	2015	-	-	-	-	Knowledge Management	Technology	Separated Unit for Services	-
Schuh et al	2015	-	-	-	-	Information Exchange	-	-	-
Gobble	2015	-	-	-	-	-	Technology (Big Data)	-	-
Opresnik and Taisch	2015	-	-	-	-	-	ICT	-	-
Schnürmacher et al	2015	-	Supplier relationship	-	-	-	-	Integrated Solution	Internal Processes and Capabilities

Chart 06 - Critical Success Factors for the Servitization process

With the identification of the 04 (four) critical success factors, a framework has been developed, to better organize the factors into a unique scheme.

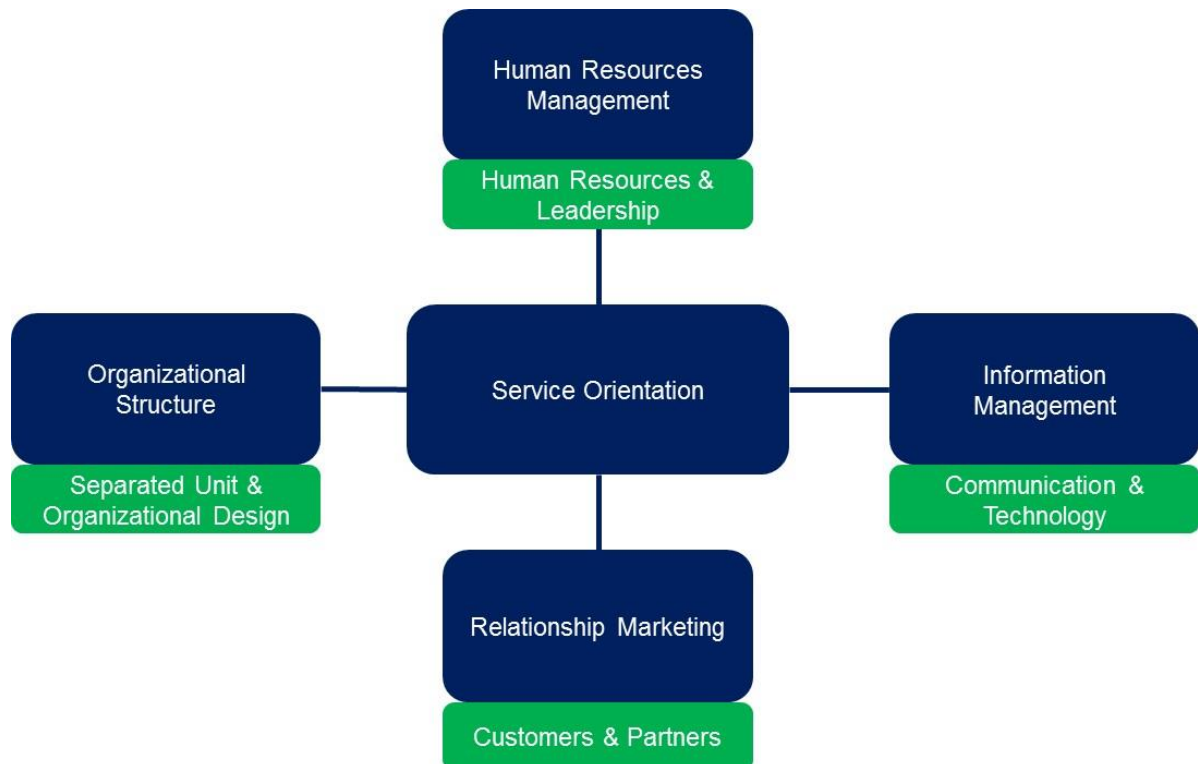


Figure 07 - Critical Success Factors

Figure 07 tries to elucidate the 04 (four) factors in a more structured way. The framework highlights the critical factors that are essential for the transition from products to services. As exposed, companies need to engage in a series of actions, in different domains, so that the transformation process is successful. Of course, companies should put more effort in a specific factor than in others, in accordance to their own needs and limitations. But it is of extreme importance that they are aware of the factors, so that they avoid facing negative results, as the service paradox phenomenon. The critical success factors are intended to serve all manufacturers as a basis for the servitization process. There may exist differences in industry, but it is expected that the 04 (four) factors embrace all company's basic needs. For the pharmaceutical industry, the 04 (four) factors play an important role and affect how services will be implemented in the company.

As Figure 07 shows, the Service Orientation is in the middle because, at first, a service strategy is necessary to build the basis for the transformation. Without the strategy, none of the other factors will function properly. Although not being one of

the critical success factors, companies need to bear in mind that the strategy needs to be service-oriented; that's why the 'service orientation' is highlighted. To define a successful service strategy, it is important to integrate all involved parties - employees, customer and partners - and consider customer requirements, market potential and future service trends. The change in culture should also occur in the management level to enable the change on the employee level, whereby the mindset of an integrated offering of products and services is essential. For that to function, it is important to have a strong communication management, so that all necessary parties are aligned with the new strategy proposed by the firm. The technology, therefore, is a way of enabling the analysis and control of all information exchanged in the network. Additionally, scholars recommend that companies have a separated service organization, which is responsible for all services, but maintain product and service design processes integrated. Finally, providing a service-oriented business model requires a Relationship Marketing to ensure a long-term collaboration between provider and customer.

3 PHARMACEUTICAL INDUSTRY AND COMPANY 'ABC'

3.1 Pharmaceutical Industry

The pharmaceutical industry is responsible for the discovery, development, production and marketing of drugs for use as medications. Pharmaceutical companies may deal in generic or brand medications and medical devices; and are subject to a variety of laws and regulations that govern the patenting, testing, safety, efficacy and marketing of drugs (Pharmaceutical industry, 2017). Its importance in the global economy is immense and evident. The total revenue worldwide has reached nearly US\$ 01 trillion in 2014, with the United States playing a leading role in the industry, responsible for more than 40.00% of the generation of the total revenue (Global Pharmaceutical Industry, 2014). Below is the breakdown of the pharmaceutical markets, worldwide, from 2015.

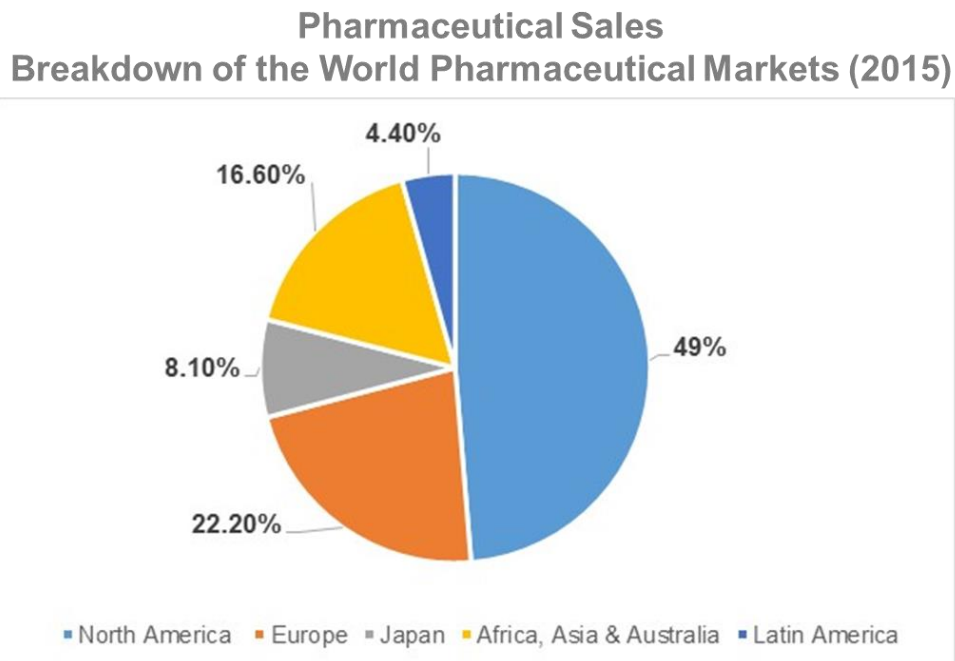


Figure 08: Pharmaceutical Sales Breakdown of the World Pharmaceutical Markets
(Source: The Pharmaceutical Industry in Figures, 2016)

As Figure 08 shows, the United States represents almost 50.00% of participation in the market, followed by Europe (22.20%) and Africa, Asia & Australia (16.60%). Latin America has the lowest participation in the market, with 04.40%. Although still not very significant, the region is growing in importance and sales.

As the World Health Organization (WHO) states, the ten (10) largest medical drug companies control over 1/3 of this market, several with sales of more than US\$10 billion a year and profit margins of about 30.00%. 06 (six) are based in the United States and 04 (four) in Europe. “It is predicted that North and South America, Europe and Japan will continue to account for a full 85.00% of the global pharmaceuticals market well into the 21st century” (World Health Organization – WHO, 2017). According to Statista (2017), the top 10 (projected) pharmaceutical companies are:

Projected top 10 pharmaceutical companies worldwide by revenue in 2017 (in US\$ Bi)

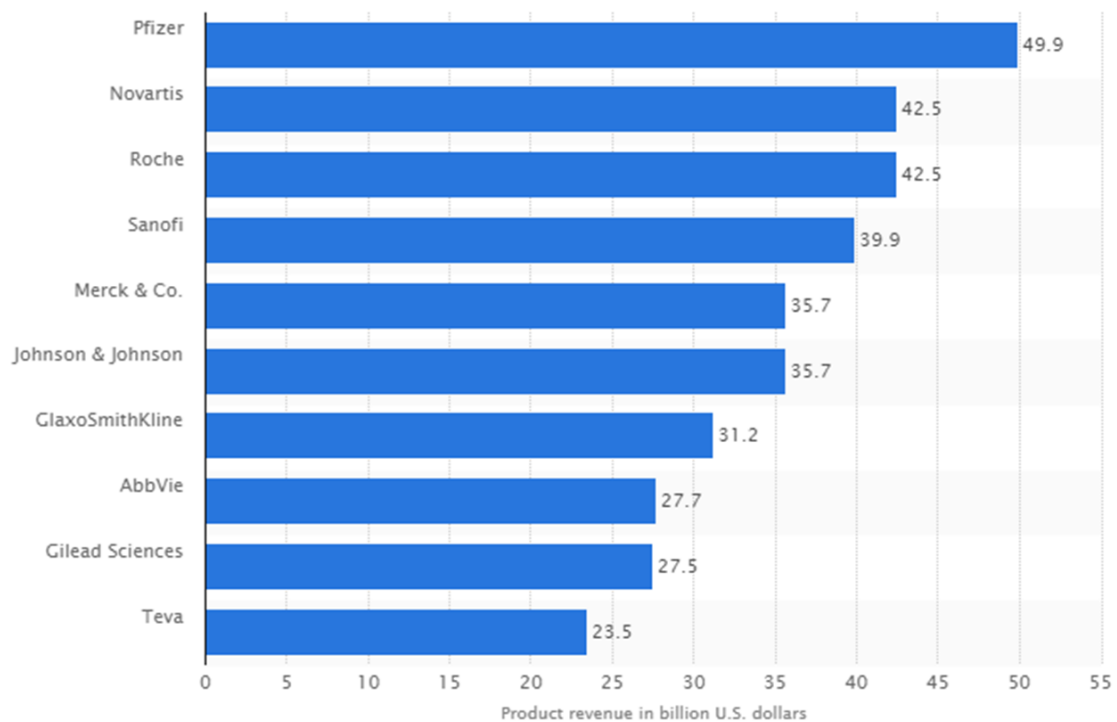


Figure 09: Projected top 10 pharmaceutical companies worldwide by revenue in 2017
(Source: Statista, 2017)

As highlighted in Figure 09, Pfizer is the most important company in the pharmaceutical business, with US\$ 49.90 billion projected revenues for 2017, followed by Novartis and Roche, both with US\$ 42.50 billion projected revenues (each). Sanofi, Merck, Johnson & Johnson and GlaxoSmithKline (GSK) appear below, with US\$ 39.90 billion, US\$ 35.70 billion, US\$ 35.70 billion and US\$ 31.20,

respectively. Most of the companies listed are from the United States and Europe, and have facilities and offices throughout the globe. As expected, the pharmaceutical market has grown substantially in the past years, as Figure 10 highlights (Statista (2), 2017):

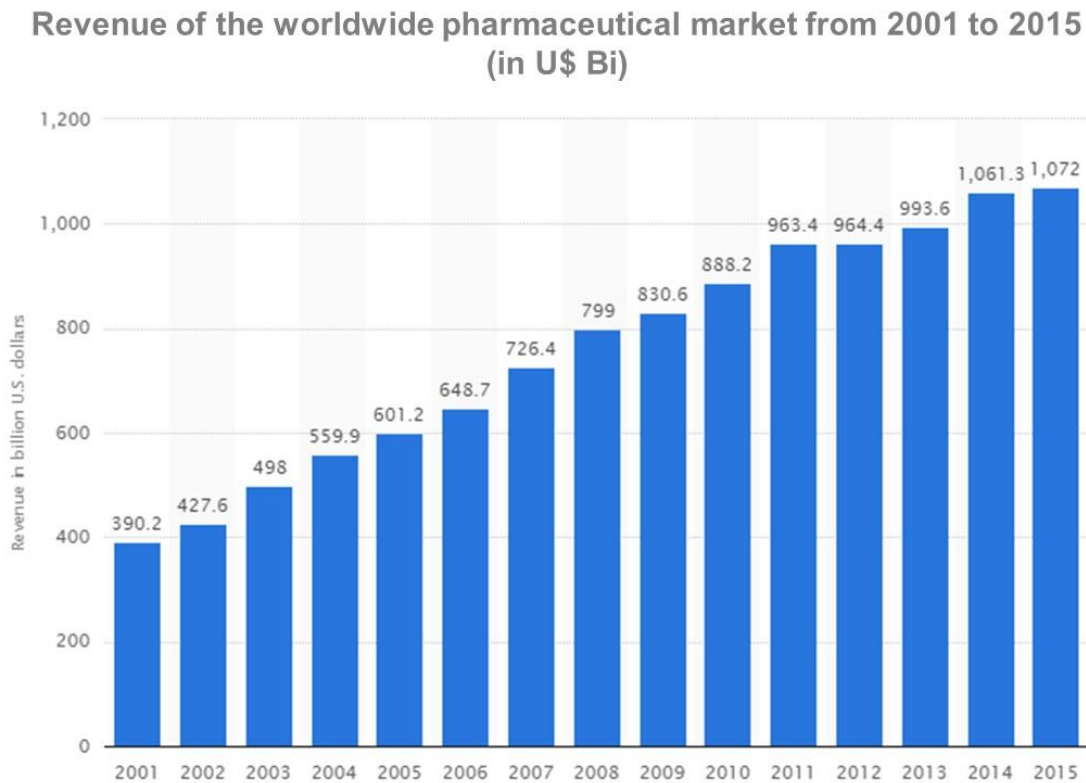


Figure 10: Revenue of the worldwide pharmaceutical market from 2001 to 2015
(Source: Statista (2), 2017)

As shown in Figure 10, the total revenue, worldwide, has reached nearly US\$ 01 trillion in 2014 and 2015, with expectation to continue growing in the coming years. According to 'Pharmaceutical Commerce (2016)', the global pharma market will reach US\$ 1.12 trillion in 2022. "Among global companies, Roche could overtake Novartis by the slimmest of margins by 2022, with sales of US\$ 52.60 billion versus US\$ 52.50 billion. Pfizer will drop to Number 03, with sales of US\$ 49.10 billion" (PHARMACEUTICAL COMMERCE, 2016). The importance of the industry is immense for customers all over the world, and the numbers show how dependent customers, companies and governments are of medicines and vaccines. Also, the competition is fierce, the investment, huge and innovation, a necessity. Servitization is, therefore, key for the industry, and companies realize it is no longer possible to

survive with no innovative offerings to their clients, especially those related to services.

Innovation:

All new medicines introduced into the market are the result of lengthy, costly and risky R&D conducted by pharmaceutical companies. Drug discovery and development is very expensive; of all compounds investigated for use in humans only a small fraction are eventually approved in most nations by the government. The approval comes only after heavy investment in pre-clinical development, as well as a commitment to ongoing monitoring for safety. Drugs which fail in this process often incur large costs, while generating no revenue in return. According to Pharmaceutical industry (2017), if the cost of the failed drugs is taken into consideration, the total cost of developing a successful new drug, is estimated in US\$ 1.3 billion, excluding expenses with marketing.

A study at Bain & Co. (2003) reported that the cost for the discovery, development and launch of a new drug increased, in 05 (five) years, to nearly US\$ 1.70 billion. According to Forbes (apud PHARMACEUTICAL INDUSTRY, 2017), by 2010 development costs were between US\$ 4.00 billion to US\$ 11.00 billion per drug. Because of the very long time needed for discovery, development, and approval of pharmaceuticals, the costs can accumulate astronomically. A direct consequence within the pharmaceutical industry value chain is that major pharmaceutical multinationals tend to increasingly outsource risks related to fundamental research, which somewhat reshapes the industry ecosystem with biotechnology companies playing an increasingly important role, and overall strategies being redefined accordingly.

Figure 11 shows the comparison in % of the different industries, in terms of R&D spend.

Ranking of Industrial Sector by overall sector R&D intensity (2014)

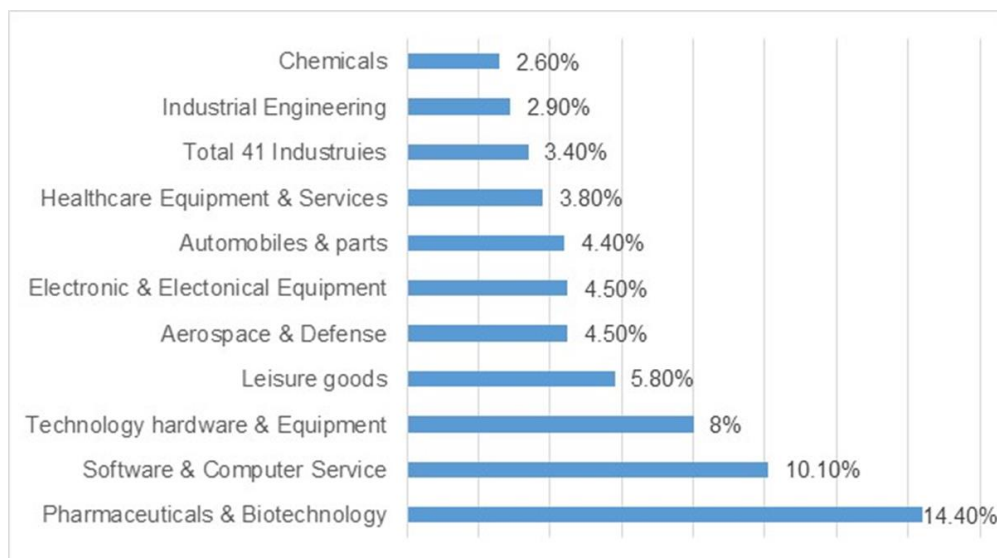


Figure 11: Ranking of Industrial Sector by overall sector R&D intensity
(Source: The Pharmaceutical Industry in Figures, 2016)

According to 'The Pharmaceutical Industry in Figures' (2016), Pharmaceuticals & Biotechnology represent the highest % of R&D intensity, with 14.40%, followed by 'Software & Computer Science', with 10.10%, and Technology hardware & Equipment, with 8.00%. Other industries that appear are Aerospace & Defense, Electronic & Electonical Equipment, Industrial Engineering and Chemicals, with 4.50%, 4.50%, 2.90% and 2.60%, respectively.

Market Trends:

The Pharmaceutical industry's long successful strategy of turning few molecules into blockbusters worked well for many years, but the environment is changing. The R&D productivity has decreased, due to (07) major trends, according to PWC (2017):

- The growth of chronic disease, which places pressure on already limited healthcare budgets;
- Healthcare policy-makers are forcing what doctors can prescribe;
- A growing number of healthcare payers are measuring the pharmaco-economic performance of different medicines. A widespread use of electronic medical records will give them the data they need to insist on outcomes-based pricing;

- Boundaries between different forms of healthcare are blurring, as clinical advances render previously fatal diseases chronic and the self-medication sector expands;
- Demand for medicines is growing more rapidly in the emerging economies than in the industrialized economies;
- Governments are beginning to focus on prevention rather than treatment, although they have not yet invested very much in such measures; and
- Regulators are becoming more cautious about approving truly innovative medicines.

The 'Pharmaceutical Industry in Figures' (2016) shows that there is a rapid growth in the market and research environment in emerging economies, such as Brazil, China and India, which leads to a migration of economic and research activities from Europe to these fast-growing markets. In 2015, the Brazilian and Chinese markets grew by 14.00% and 07.00%, respectively. Comparatively, Europe grew 5.90%, and the United States, 8.50%, in the same period (IMS Health, apud THE PHARMACEUTICAL INDUSTRY IN FIGURES, 2016, p. 04).

As one can see, the challenges are increasing, and pharmaceutical companies need to invest in creative solution for their customers, in order to maintain/increase their participation in the market. Leading companies are already investing in servitization components, with the implementation of service offerings and more direct contact with current and potential customers.

Pharma Industry in Brazil:

According to 'The Pharmaceutical Industry in Brazil' (2013), despite its complexity, the healthcare industry in Brazil is undergoing profound transformations and experiencing new business dynamics, making it an attractive market in the world. In 2010, healthcare expenditures in the country summed US\$ 193.09 billion; where 47.00% of the revenue came from the public, and 53.00% from the private sector. Within the public sector, '*Sistema Único de Saúde*' (SUS) plays a vital role, since a significant portion of the population has no financial resources to spend with the private health plans. According to Agência Nacional de Saúde Suplementar (ANS), less than 25.00% of the population had health plans in 2012. The SUS offers to the population a universal and free public health system, with no extra charges to the

public, being a viable way out for those in urgent need. As Investopedia states, “Brazil takes pride in running one of the most comprehensive national public healthcare systems in the world” (INVESTOPEDIA – The High Growth Potential of Brazil’s Pharma Market, 2016).

From 2007 and 2011, medical drug sales increased considerably, going from R\$ 23.6 billion to R\$ 43 billion (almost 100.00% growth), which can be explained by the rise in household income (Interfarma, apud THE PHARMACEUTICAL INDUSTRY IN BRAZIL, 2013, p. 03). According to Investopedia (2016), “Brazil's pharmaceutical's market has exhibited double-digit growth in the last decade and has the potential to maintain realistic and sustainable growth through 2020” (INVESTOPEDIA - The High Growth Potential of Brazil’s Pharma Market, 2016). In terms of sales revenue, Brazil is the 6th largest market in the world, with the segment of generic drug being the main driver behind this growth. Investopedia (2016) identifies 05 (five) aspects that will drive the future potential of pharma market in Brazil: demographic changes (retired aging population), government’s priority focus (advancement in the healthcare sector), balanced approach for local and foreign players (foreign investment and incentives for domestic pharma manufacturers), untapped market potential (access of mid-size cities), and steady expenditure (higher proportionate spending).

3.2 Company ‘ABC’:

For this specific study, the analysis is done at company ‘ABC’, a British science-led global healthcare company, focused on research, development and manufacturing of innovative pharmaceutical medicines, vaccines and consumer health products. Established in December 2000 by a merger of 02 (two) multinationals, ‘ABC’ is considered one of the largest pharmaceutical companies in the world, with around 100.000 employees in more than 150 countries. The company has its facilities divided into 04 (four) divisions: R&D sites in Europe, North America and China; centers for biopharmaceutical products in Europe and North America; manufacturing sites for prescription products; and manufacturing sites for consumer products in different locations, such as Brazil. The R&D sector, as expected, is a source of innovation for company ‘ABC’, and requires huge investment, both in time and finances. All requirements for testing, approval, manufacturing, labelling, and

marketing are rigorous, and it is crucial to keep innovating, whether in processes or in new methodologies/standards. Besides, company 'ABC' makes use of 'open innovation', as a way of promoting change through the sharing of expertise, resources, intellectual property and know-how with external researchers and the scientific community. "Conceptually, it is a more distributed, more participatory, more decentralized approach to innovation, based on the observed fact that useful knowledge today is widely distributed, and no company, no matter how capable or how big, could innovate effectively on its own" (Chesbrough, 2011). It can reduce cost, accelerate time-to-market, increase differentiation among competitors in the market and create new revenue streams for the company. The open innovation practice is just one of the innovation mechanisms that company 'ABC' uses to create differentiated products to the consumer; and shows the constant need to innovate in such a dynamic business. Sevritization is, therefore, a key phenomenon for pharmaceutical companies. Offering services to the clients (patients) has become a pre-requisite for the company's success.

Company 'ABC' in Brazil:

In Brazil, company 'ABC' is established for over 100 years, and the products are divided into medicine/vaccines and consumer healthcare goods. Due to the enormous challenges it faces, company 'ABC' started, in 2013, to develop service programs to consumers, with the aim to approach their needs, such as 'Program 01', 'Program 02', and 'Program 03'. The analysis will take into consideration the subsidiary in Brazil/Rio de Janeiro, where those programs are active and properly working. There are other service programs offered by 'ABC' – Brazil/Rio de Janeiro, however those 03 (three) are the most mature. Each program has a specific characteristic and purpose, which will be highlighted, as follows:

'Program 01' is the biggest and more mature program that 'ABC' offers to its patients. It began in Brazil in 2013, as a program for helping those who suffered from chronic diseases. Chronic diseases are those that persists for a long time and that tend to become more common with age. Statistically, 80.00% of Americans over 65 years old have at least 01 (one) chronic health condition (Medicine Net, 2016). "Chronic disease and conditions – such as heart disease, stroke, cancer, type 02 diabetes, obesity, and arthritis – are among the most common, costly, and preventable of all health problems" (Centers for disease control and prevention).

With an analysis of what already existed in the market, from the competition, 'ABC' – Brazil/Rio de Janeiro decided to focus on respiratory diseases, at first. Today, however, the program encompasses other diseases, such as asthma, bipolar syndrome, epilepsy, smoking and depression. The main objective is that patients adhere to the treatment they are supposed to follow to improve their health condition. There are different services that are offered, which include a web platform where patients register to get information about their disease, what is the best treatment offered to their situation, how can they prevent, or even reduce the possible side effects. There are also tips on quality of life; with healthy eating, physical exercises, leisure and routine. Furthermore, they can search for the location of pharmacies nearby, and the possibility of gaining discounts in their next purchase. Finally, there is also a mobile app, which can warn the patient when to take the correct medication, and can help them have easy and complete access to more information.

To be a registered member, the patient should inform their personal data in the website, as well as provide the medical prescription. Not only patient, but also physicians can have a registration in the program. The advantage is that the platform becomes a huge database, where both physicians and patients can search for valuable information regarding the disease they suffer/study, and which medication fits best for each case. The physicians play an important role in the disclosure of the program and its expected benefits, being a communication link between company 'ABC' and the patient. In a nutshell, 'Program 01' becomes a network for patients, physicians and 'ABC' to exchange information and provide a better lifestyle for those who need it. Moreover, it is a way of making the patient stick to the treatment for a longer time – normally, those who suffer from chronic disease take the medication for an average of 04 (four) months; with the program the patient sees the importance of taking the medication for as long as it is necessary, whether it is for 12 (twelve), 24 (twenty-four), or 36 (thirty-six) months, continuously. (Miceli, 2015).

'Program 02' is a web platform with the focus on vaccines. The vaccine division of 'ABC' is one of the leading organizations, with headquarter in Belgium for 100 years. With 40 vaccines marketed throughout the world, it offers over 02 (two) million

vaccines per day in 170 countries. In Brazil, company 'ABC' vaccines division is positioned in Rio de Janeiro, helping citizens prevent common diseases.

In the website, there is a list of several diseases that already have a vaccine established– such as chickenpox, cholera, yellow fever, HPV, hepatitis A / B, pneumonia and tuberculosis – with information on what they are, how they occur, their symptoms, and prevention. It is very explanatory and democratic, since everybody can access the website and get data on what is important for them. The website also includes several videos with real people and real stories, which is customer-friendly and relatively easy to understand. Finally, there is a world map with information on what vaccines are necessary for each location, so that people can be prevented before travelling. The platform is more informative than interactive, but it is possible to make suggestions/complaints and improvements.

'Program 03' is also a web platform, that works as a blog for patients. Its focus, as the name already suggests, is asthma, a respiratory disease. It is basically an interactive communication channel between 'ABC', patients and their family. Company 'ABC' is committed to developing therapeutics solution for the asthma control, and through the blog, it can understand the real needs of patients and better comprehension of how both patients and family feel when the asthma condition is active. The main idea of the blog is to create a space where everybody can contribute, rather than only reading and absorbing new data. 'ABC' is interested in the patients and what they have to say. There is a special area for allergic rhinitis, flu and, of course, asthma; with different articles and tips on each topic. Finally, there is a search tool for patients to search for physicians, as well as pharmacies nearby ('Program 03', 2016).

As one can notice, there is a global trend to use digital media for the integration with the final consumer. It allows a better understanding and interaction between patients, physicians and the company. Important to mention that, through informal conversations with company 'ABC''s managers, the service programs are taken seriously, with constant updates in the information database and the data shared with the users. They intend to increase the number of service programs offered to their customers, and seek to understand what customers need and search. All information gathered from the Internet websites, Portal and blogs are carefully

analyzed by a specialized team, and new input is generated from the original information.

It is of extreme importance to highlight the fact that 'ABC' – Brazil/Rio de Janeiro is a manufacturing company that has already engaged in some service offerings, such as those already explained: 'Program 01', 'Program 02' and 'Program 03'. Therefore, 'ABC' – Brazil/Rio de Janeiro is already in the process of servitization. For that matter, the aim of the study is to understand how ready the company is to servitize. Also, it is possible to analyze if the employees are aware of the existing programs at 'ABC' – Brazil/Rio de Janeiro, what is the position, in the scale of servitization, of each one of the critical success factors, and which are the ones that need most attention from the decision makers (managers and directors) to engage in more service offerings to both their employees and customers.

4 METHODOLOGY

This chapter presents the methodology used for analyzing the readiness to servitize of company 'ABC', considering the employee's perceptions. For that matter, a quantitative research method was chosen, with the help of a scale of servitization and a close-ended questionnaire. As stated, company 'ABC' – Brazil/Rio de Janeiro is a pharmaceutical organization that already offers service programs to its customers. With the employee's responses to the questionnaire, it will be possible to know what is the position, in the scale of servitization, of the critical success factors, and which are the ones that need most attention from the decision makers (managers and directors). That way they will be able to improve their current service offerings and/or create new services to both employees and customers.

It is important to highlight that the study is exploratory. It intends to explore the research question, better understand the problem, and not offer a final solution, as a conclusive study (Research Methodology, 2016). It has been stated that the exploratory study uses a smaller sample size, and is not as rigorous as conclusive studies. However, they are more flexible and adaptable to change, and is effective in laying the ground to future research. This analysis at company 'ABC' is intended to give a basis for other companies that aim to study the subject in deeper details. The chapter is divided into 05 (five) main topics: (01) research design, (02) creation of scale of servitization, (03) questionnaire development, (04) questionnaire application and (06) research method limitations.

4.1 Research Design

There are 03 (three) types of research methods available, which are quantitative, qualitative and mixed. For this study, a quantitative method has been chosen. The quantitative research method is about asking people for their opinions in a structured way so that it is possible to produce facts and statistics that will later guide them. It is used to quantify attitudes, opinions, behaviors, and other defined variables – and generalize results from a larger sample population (Snap Survey, 2011), "Quantitative data collection methods are much more structured than qualitative data collection methods, and include various forms of surveys, such as online

surveys, paper surveys, mobile surveys, kiosk surveys, face-to-face interviews, telephone interviews, longitudinal studies, website interceptors, online polls, and systematic observations” (Snap Survey, 2011). As Creswell (2014) suggests, it includes cross-sectional or longitudinal studies using questionnaires or structured interviews for data collection, with the intent of generalizing from a sample to a population. Furthermore, answers on a structured questionnaire are usually closed, as they require respondents to choose from a specific selection of answers and do not allow for the respondent to qualify or elaborate their answer (Creswell, 2014).

According to Libweb (2016), there are several benefits for conducting a quantitative study: it is more reliable and objective; it can use statistics to generalize a finding; it often reduces and restructures a complex problem to a limited number of variables; it looks at relationships between variables and can establish cause and effect in highly controlled circumstances;; it assumes sample is representative of the population; and the subjectivity of researcher in methodology is recognized less.

The quantitative method was chosen for some reasons. First, it is important to have a structural and statistical method to analyze the results, with the analysis of the relationship between variables. The qualitative research would be extremely deep and not possible to generate enough numerical data to create a statistical result. Second, it is important to survey a large number of employees, so that the results are as reliable as possible. With a qualitative research, only a few employees would be interviewed, and would not be representative of the whole.

For this specific quantitative research, an online survey was used, with a close-ended questionnaire, in a cross-sectional study (done at one point in time), rather than longitudinal (during a long period). For the survey, several steps were taken. First, the scale of servitization was defined, based on both the service continuum and the Likert scale. Second, a questionnaire was created, based on the 04 (four) critical success factors – Relationship Marketing, Human Resources Management, Information Management and Organizational Structure. Due to its quantitative nature, the questionnaire has only close-ended statements. Finally, the questionnaire was adapted to reflect company ‘ABC’'s reality.

4.2 Creation of Scale of Servitization

The purpose of a scale is to create a basis for the design of a questionnaire, which will provide a quantitative measurement of an abstract theoretical variable (DeCoster, 2000). "(...) there are many different types of measures, but the vast majority of scales used by behavioral scientists in survey questionnaires are Likert scales that utilize an interval level of measurement (HINKIN et al, 1997, p. 04). The Likert scale is commonly involved in research that employs questionnaires, and it is the most commonly used approach to scaling responses in survey research. (Creswell, 2014).

According to DeCoster (2000) and Malhotra (2004), good scales possess both validity and reliability. "A scale has validity if it properly represents the theoretical construct it is meant to measure. A scale has reliability if repeated measurements under the same circumstances tend to produce the same results" (DeCOSTER, 2000, p. 01). Validity is often known as 'accuracy', while reliability is its 'precision'. The author also gives some insights on how to formulate statements that are easily understandable. First, they should be simple and straightforward. The less instruction is given, the better. Second, make the questions as clear as possible, with attention to the language used for the specific audience. "An item should be designed such that every respondent interprets it in the same way" (DeCOSTER, 2000, p. 02). Third, it is important to use a common structure.

For this study, the Likert scale was chosen, because it is the most used and easily understood research method, worldwide (Malhotra, 2004). When responding to a Likert scale, participants specify their level of (dis) agreement on a symmetric agree-disagree scale for a series of statements. Thus, the range captures the intensity of their feelings for a given item (Malhotra, 2004). Well-designed Likert items exhibit both symmetry and balance. According to Malhotra (2004), symmetry means equal number of positive and negative positions, with a neutral position in the middle; and balance means the distance between each position is the same. Often 05 (five) ordered response options are used, although many psychometricians advocate using 07 (seven) or 09 (nine) options. Measuringu (2010) affirms that when designing a new scale and the decision comes on the number of response options, having 07 (seven) will likely give a benefit over 05 (five). "Having seven points tends

to be a good balance between having enough points of discrimination without having to maintain too many response options” (MEASURINGU, 2010).

For that matter, this research has a typical 07-option Likert scale, which has the following response options: (01) ‘Strongly Disagree’, (02) ‘Disagree’, (03) ‘Disagree Somewhat’, (04) ‘Neither Agree nor Disagree’, (05) ‘Agree Somewhat’, (06) ‘Agree’, (07) ‘Strongly Agree’, as shown in Chart 07:

READINESS TO SERVITIZE SCALE							
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree

Chart 07 – Likert Scale

After the choice of the Likert scale and its response options (Chart 07), it is important to co-relate it to the existing servitization literature. For the creation of a scale of servitization, different frameworks were analyzed and, finally, the service continuum (Chapter 2.4.1) was chosen. As stated, the service continuum framework shows the range from ‘Pure Products’ to ‘Pure Services’, which can easily be linked to each one of the response options from the Likert scale (from ‘Strongly Disagree’ to ‘Strongly Agree’, as in Chart 07). That means, each response option from the Likert scale is co-related to an option from the service continuum. The nomenclature chosen for the servitization scale is based on Kotler (apud, BRAX, 2005, p. 143), with the following response options for service mix: (01) ‘Pure Products’, (02) ‘Products and Services’, (03) ‘Product-service System’, (04) ‘Services and Products’, and (05) ‘Pure Services’.

Because there are 07 Likert response options, and only 05 Service Continuum options, some response options from the Likert scale were coupled together. ‘Disagree’ and ‘Disagree Somewhat’ are considered a single item (‘Products and Services’), and ‘Agree Somewhat’ and ‘Agree’ are also considered a single item (‘Services and Products’), as shown in Chart 08.

READINESS TO SERVITIZE SCALE							
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree
Position in the Service Continuum	Pure Products	Products and Services		Product-service System	Services and Products		Pure Services

Chart 08 – Readiness to Servitize Scale

As exposed, Chart 08 is a merger of the 07-option Likert scale and the 05-option Service Continuum. On the one hand, when respondents answer (01) ‘Strongly Disagree’, it means that it is related to ‘Pure Products’. On the other hand, when respondents answer (07) ‘Strongly Agree’, it means that the it is related to ‘Pure Services’. The closer to (07) ‘Pure Services’/‘Strongly Agree’, the readier the company is to servitize; and the closer to (01) ‘Pure Products’/‘Strongly Disagree’, the less ready the company is to servitize.

After the creation of the scale of servitization and its response options (based both on the Likert scale and on the service continuum – Chart 08), it was important to aggregate the 04 (four) critical success factors - Relationship Marketing, Human Resources Management, Information Management and Organizational Structure - into the scale, as Chart 09 exposes:

READINESS TO SERVITIZE SCALE							
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree
Position in the Service Continuum	Pure Products	Products and Services		Product-service System	Services and Products		Pure Services
CRITICAL SUCCESS FACTORS							
Relationship Marketing							
Human Resources Management							
Information Management							
Organizational Structure							

Chart 09 – Readiness to Servitize Scale with Critical Success Factors

As shown in Chart 09, with the employee’s responses, each one of the critical success factors will be located at a specific position in the scale of servitization. In other words, it is possible to observe the position, in the scale of servitization (ranging from (01) ‘Pure Products’/‘Strongly Disagree’ to (07) ‘Pure Services’/‘Strongly Agree’), of each one of the critical success factors - Relationship Marketing, Human Resources Management, Information Management and Organization Structure. With the development of the questionnaire (05 statements for each one of the critical success factors), and with the input of the employees, the scale will be populated and an average grade will be obtained (from 01 – minimum to 07 - maximum) for each one of the critical success factors. That grade will show

the exact position of the critical success factors in the scale of servitization, and it is possible to analyze how ready the company is to servitize. The closer to (07) 'Pure Services'/'Strongly Agree', the readier to servitize the company is; and the closer to (01) 'Pure Products'/'Strongly Disagree', the less ready to servitize the company is.

For the decision makers (managers and directors), it is important to know the position of each one of the critical success factors, in the scale of servitization, and highlight which are the ones that need most attention. To engage in a service-oriented strategy, it is crucial that all of the critical success factors are close to (07) 'Pure Services'/'Strongly Agree'. If a specific factor lies closer to (01) 'Pure Products'/'Strongly Disagree', the manufacturer will know and will be able to put enough effort into that factor. For example, in case the 'Relationship Marketing' factor is positioned at (06) 'Services and Products'/'Agree', and the 'Organizational Structure' factor is positioned at (03) 'Products and Services'/'Disagree Somewhat', one can conclude that the 'Relationship Marketing' factor is readier to servitize, comparing to 'Organizational Structure'. Managers can then put more effort in the 'Organizational Structure' factor, if the aim is to engage in a service-oriented strategy (see example in Chart 10).

READINESS TO SERVITIZE SCALE								
#	1	2	3	4	5	6	7	
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree	
Position in the Service Continuum	Pure Products	Products and Services		Product-service System	Services and Products		Pure Services	
CRITICAL SUCCESS FACTORS								
Relationship Marketing						x		
Human Resources Management				x				
Information Management				x				
Organizational Structure			x	→				

Chart 10 – Example of Readiness to Servitize Scale

Of course, it is crucial to take into consideration the company's needs and limitations, and respect if any barriers and/or environmental issues (internal and external) hinder the effort for a more service-oriented strategy. There may exist companies that cannot engage in a (07) 'Pure Services' strategy because of issues that are not in their control, such as regulatory, legal, economic and/or technological.

The analysis herein made, towards (07) 'Pure Services', is ideal, but it is also important to analyze those limiting factors when studying company 'X' or 'Y'.

4.3 Questionnaire Development

Questionnaires are a method used to collect standardized data from a large number of people, as the same information is collected in the same way (Libweb, 2016). They consist of the same set of questions that are asked in the same order and in the same way, so that the same information can be gathered. Also, they are used to collect data in a statistical form, and are usually helpful in generalizations. There are different other benefits for using a questionnaire, which are: practicality, a large amount of information can be collected from a large number of people in a short period of time and in a relatively cost effective way, the results can be easily and quickly quantified, and it can be analyzed more scientifically and objectively than other kinds of research forms. (Libweb, 2016).

For this questionnaire development, several articles, from the literature, have been chosen as a basis. They are all close-ended, and use the response options of the Likert scale ((01) 'Strongly Disagree', (02) 'Disagree', (03) 'Disagree Somewhat', (04) 'Neither agree nor disagree', (05) 'Agree Somewhat', (06) 'Agree', (07) 'Strongly Agree').

It is important to highlight that, for the 1st (first) version of the questionnaire, the original study had 05 (five) critical success factors, rather than 04 (four). "Service Orientation" was the first critical factor to be identified. For that matter, it will be included in this part of the creation of the questionnaire, because, during a while, it was part of the whole.

Service Orientation (Culture and Strategy):

The Service Orientation is measured by the following items: a) the alignment between organization and service strategy, with a clear understanding of the customer needs; b) the commitment of all employees to the service values; c) the ability to focus on the long-term goals; and d) the flexibility in culture to change from transactional-based to relational-based.

In order to analyze both culture and strategy, the following statements have been identified, based on the articles by Gebauer et al (2005) and Aifang et al (2015), in chronological order.

Service Orientation		
Author	Year	Sentence
Gebauer et al	2005	Our company develops a service strategy with a comprehensive understanding of the market in respect to customer needs, market potential and future service trends
Gebauer et al	2005	Our company builds up a network of sales, technical staff and external experts, which systematically collect and record current and future customer needs
Gebauer et al	2005	Our company defines how the company differentiates itself from competitors by means of service offers
Gebauer et al	2005	Our company involves all areas of the company affected by service strategy in the development process
Gebauer et al	2005	Our company boosts the value added thinking from the managerial to the employee level
Gebauer et al	2005	Our company establishes an appropriate service awareness to overcome the typical cultural habits of product manufacturer
Gebauer et al	2005	Our company maintains a symbiotic relationship between manufacturing values and service oriented values
Gebauer et al	2005	Our company changes managerial thinking from services as an add-on to services as value-added activities
Aifang et al	2015	Our company recognizes services as a lasting differentiation strategy
Aifang et al	2015	Our company focuses on the long-term commitment for the service strategy

Chart 11 – Service Orientation – Questionnaire 01

Relationship Marketing (Customers and Partners):

The Relationship Marketing is measured by the following items: a) the need for an intense interaction with customer; b) the satisfaction and loyalty of customers; c) the integration of partners and suppliers, ensuring the same level of information; and d) the engagement and alignment of partners, customers and the organization.

In order to analyze both customers and partners, the following statements have been identified, based on the articles by Gebauer et al (2005), Aifang et al (2015), Alvarez et al (2015), and Martinez et al (2016), in chronological order.

Relationship Marketing		
Author	Year	Sentence
Gebauer et al	2005	Our company involves the customer in the development of products/services (co-creation)
Gebauer et al	2005	Our company obtains information about customer needs through market research and workshops with lead-customers
Aifang et al	2015	Our company has repeatedly told our staff that the success of the business depends on its ability to meet market demand
Alvarez et al	2015	Our company measures the satisfaction and loyalty of customers, using research questionnaires
Aifang et al	2015	Our company can and will act quickly to respond to competitors
Alvarez et al	2015	Our company is concerned about the integration of partners and suppliers, ensuring that all parts have the same level of information
Martinez et al	2016	Our company clearly has defined the service value proposition and confirmed that it is appealing to all parties involved in its delivery
Martinez et al	2016	Our company ensures that people across the ecosystem understand and believe in the services vision and rationale so they are 'living' the service culture

Chart 12 – Relationship Marketing – Questionnaire 01

Human Resources Management (Human Resources and Leadership):

The Human Resources Management is measured by the following items: a) the commitment from both employees and managers to the service strategy; b) the recognition of services as a potential way of higher profitability; c) the recruitment, training and empowerment of front-office employees; and d) the reward to service-oriented employee behavior.

In order to analyze both human resources and leadership, the following statements have been identified, based on the articles by Evans and Laskin (1994), Gebauer et al (2005), and Aifang et al (2015), in chronological order.

Human Resources Management		
Author	Year	Sentence
Evans and Laskin	1994	Our company empowers service employees to go out of their way to meet customer needs
Gebauer et al	2005	Our company is committed to training sales people and service technicians so that they offer services actively
Gebauer et al	2005	Our company has a special program of recruitment for front-office employees.
Baines et al	2013	Our company's management is highly committed to the service strategy.
Baines et al	2013	Our company's management values characteristics such as flexibility, relationship building, service-centricity, authenticity, technically adept, and resilience
Aifang et al	2015	Our company's management considers the combination of products and services as a potential way to improve profitability
Aifang et al	2015	Our company's management coaches service employees to behave in a service-oriented way
Aifang et al	2015	Our company empowers service employees to respond to a broad range of customer problems
Aifang et al	2015	Our company sets rewards for service-oriented employee behavior
Aifang et al	2015	Our company's management is willing to incorporate service values to their daily tasks.

Chart 13 – Human Resources Management – Questionnaire 01

Information Management (Communication and Technology):

The Information Management is measured by the following items: a) the development of communication channels with employees, customers and partners; b) the importance of feedback and information exchange; c) the identification of technology as an enabler in the analysis of data; and d) the correct use of technology for the service development.

In order to analyze both communication and technology, the following statements have been identified, based on the articles by Gebauer et al (2005), Aifang et al (2015), Alvarez et al (2015), Leoni (2015) and Martinez et al (2016), in chronological order.

Information Management		
Author	Year	Sentence
Gebauer et al	2005	Our company is establishing, with the aid of various communication tools, a continuous communication between customer and service workers
Alvarez et al	2015	Our company offers training to customers, so that they understand how the services are delivered in a proper manner
Alvarez et al	2015	Our company offers performance reports to employees, so that they know what the company is doing and how it is performing, towards the internal goals and the competition
Leoni	2015	Our company encourages employees to learn and share knowledge through the Internet
Leoni	2015	Our company evaluates employees by the amount of service courses they take – whether online or offline
Aifang et al	2015	Our company can take advantage of new technologies to improve the service system continuously
Aifang et al	2015	Our company can identify the role of new service technologies in work practices
Aifang et al	2015	Our company can understand and master the new service technical knowledge
Aifang et al	2015	Our company can apply the new technology to the service process
Martinez et al	2016	Our company communicated a clear and compelling service vision, underpinned by a coherent rationale for why services matter
Martinez et al	2016	Our company develops channels to open, share and harmonize information and feedback for relevant people, both inside and outside the service firm
Martinez et al	2016	Our company tracks actions generated by customer's feedback and inform customers and staff about the changes made in order to involve them in the co-creation process
Martinez et al	2016	Our company creates a service repository that can easily be accessed

Chart 14 – Information Management – Questionnaire 01

Organizational Structure (Separated Unit and Organizational Design):

The Organizational Structure is measured by the following items: a) the cooperation between all areas in the organization; b) the knowledge sharing throughout different departments; c) the development of a new area for services within the organization; and d) the dedicated structure for services.

In order to analyze both separated unit and organizational design, the following statements have been identified, based on the articles by Gebauer et al (2005), Aifang et al (2015), Alvarez et al (2015), and Martinez et al (2016), in chronological order.

Organizational Structure		
Author	Year	Sentence
Gebauer et al	2005	Our company's entire structure is aware of the service strategy, and is willing to commit to the new culture
Gebauer et al	2005	Our company invests in an information system to monitor the business operations to achieve account transparency for the new service business
Gebauer et al	2005	Our company has developed a decentralized service organization, with profit-and-loss responsibility
Gebauer et al	2005	Our company creates a dedicated sales force and service technicians for the service organization
Aifang et al	2015	Our company is committed to the cooperation between various departments, in order to provide mutual assistance
Aifang et al	2015	Our company's employees can freely share knowledge across departments in the company
Alvarez et al	2015	Our company is committed to integrating products, services and sales area, as a way to guarantee the delivery of what is being sold to the customer
Alvarez et al	2015	Our company has developed a new area focused solely on services
Martinez et al	2016	Our company aligns incentives and metrics across business units, so the products and service businesses recognizes that services are different and need different contracting and governance structure
Martinez et al	2016	Our company establishes strategic objectives for services – with service targets and metrics, and aligns them with the individual and team incentives
Martinez et al	2016	Our company creates a governance structure with service leaders who have the necessary hierarchical position, power and authority to expand the firm's revenues through services

Chart 15 – Organizational Structure – Questionnaire 01

As a first version, the initial questionnaire had a total of 52 statements; all of them related to the articles mentioned in Charts 11, 12, 13, 14 and 15. As a result, it was too long – *See Appendix / Questionnaire 01*.

To make the questionnaire shorter, the idea was then to establish a maximum number of statements per critical success factor. After talking to experts in the field, the ideal number was 05 (five), which summed 25 statements, as seen in Chart 16, 17, 18, 19 and 20. The initial statements, therefore, had to be rewritten, to maintain the same idea of the sentences, since some of them had to be excluded from the previous questionnaire. After those changes, the questionnaire had half the initial number of statements (25, rather than 52) – *See Appendix / Questionnaire 02*.

The statements are included in Chart 16, 17, 18, 19 and 20:

SERVICE ORIENTATION

1. All areas of the company, including mine, are involved in the service strategy.
2. All levels within the company, from trainee to directors, are committed to the service values.
3. There is a technical staff, which collect and record service trends.
4. All employees are encouraged to identify services as a value-added and long-term activity.
5. The company's culture is flexible, as it can adapt to changes of the internal and external environment.

Chart 16 – Service Orientation – Questionnaire 02

RELATIONSHIP MARKETING

6. The customer is involved in the development of new product/services.
7. The customer's needs are obtained through market research and workshop with lead-customers.
8. Our company measures the satisfaction and loyalty of customers, using research questionnaires.
9. There is a general concern with the integration of partners and suppliers, ensuring that all parts have the same level of information.
10. Employees, partners and suppliers adopt a market-oriented focus.

Chart 17 – Relationship Marketing – Questionnaire 02

HUMAN RESOURCES MANAGEMENT

11. The managers/directors incorporate service values into their daily tasks.
12. The managers/directors coach employees to behave in a service-oriented way.
13. There is a special program of recruitment for front-office employees and service technicians.
14. There is a special program of training for front-office employees and service technicians.
15. There is a special program of reward and empowerment for service-oriented employee behavior.

Chart 18 – Human Resources Management – Questionnaire 02

INFORMATION MANAGEMENT

16. The managers/directors communicate a clear and compelling service vision, based on the importance of services.
17. The managers/directors develop channels to open and share information for people, both inside and outside the firm.
18. The managers/directors encourage employees to learn and share knowledge through the Internet.
19. The managers/directors invest in new technology to improve services continuously.
20. The front-office employees and service technicians understand and apply service knowledge, through technology.

Chart 19 – Information Management – Questionnaire 02

ORGANIZATIONAL STRUCTURE

21. There is an integration of products and services, as a way to guarantee the delivery of both offerings.
22. There is a cooperation between various departments, in order to provide mutual assistance.
23. Employees can freely share knowledge across departments.
24. There is a new area focused solely on services, with service targets and metrics.
25. There is a dedicated sales force and service technicians for the service organization.

Chart 20 – Organizational Structure – Questionnaire 02

After the development of Questionnaire 02, a pre-test was conducted with 06 (six) researchers from different universities in Brazil, whose study encompasses the fields of services and innovation. According to DeCoster (2000), pre-tests happen when you collect data that you expect will be used to establish both the validity and the reliability of the scale. It is recommended to always perform a test of the final version to justify its use. The main goal of this pre-test is for the researchers to correctly associate each one of the 25 statements with the corresponding critical success factor, through a survey developed in Google Form - *See Appendix / Pre Test*. The statements were put in a random order, so that it would not be biased.

After the pre-test results, some important changes had to be done, in order to better adequate the questionnaire. The first measurement was to exclude 'Service Orientation' as a critical success factor, as it was causing a lot of confusion with the researchers. The statements were too broad and could be related to different success factors. Therefore, the entire work had to be adapted and show only 04 (four) critical factors, instead of the previous 05 (five). Moreover, all the statements that had a percentage (%) rate lower than 80.00 had to be either modified or excluded. That means, statements with less than 80.00% of the response rate were not strong enough to be included in the questionnaire – *See Appendix – Pre Test Changes*. After the modifications, 05 (five) statements were excluded, and the questionnaire had a total of 20 statements, as shown in Table 02.

Table 02 shows the integration between the final 20-statement questionnaire and the scale of servitization:

READINESS TO SERVICIZE SCALE							
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree
Position in the Service Continuum	Pure Products	Products and Services	Product-service System	Services and Products	Pure Services		

CRITICAL SUCCESS FACTORS							
Relationship Marketing							
The consumers are involved in the development of new products and services							
The consumer's needs are identified through market research and workshops							
There is a team specialized in analyzing service trends in the market and anticipating consumer needs							
Our company periodically measures the satisfaction and loyalty of customers, using research questionnaires							
Employees, partners and suppliers adopt a market-oriented focus							
Human Resources Management							
The managers / directors incorporate service values in their daily tasks							
The managers / directors coach employees behave in a service-oriented way							
There is a special recruiting program for front-office employees							
There is a special training program for front-office employees							
There is a special program of reward and empowerment for service-oriented employee behavior.							
Information Management							
The managers / directors develop a communication channel for information exchange, with both employees and consumers							
The managers / directors periodically communicate about the importance of services for the company							
The managers / directors invest in new technologies, in order to improve services continually							
The front-office employees understand and apply service knowledge through technology							
There is a concern with the integration of partners and providers, assuring that all of them have the same amount of information							
Organizational Structure							
The corporate culture is flexible and adapt to both internal and external environment							
All areas of the company are, somehow, involved in the service strategy							
There is an integration of products and services, as a way to guarantee a better delivery of both offerings							
There is a cooperation between different departments in the company, in order to promote mutual assistance between them							
There is a single area focused on the service delivery, with its own metrics and objectives							

Table 02 – Readiness to servitize Questionnaire - Final

For company 'ABC' – Brazil/Rio de Janeiro, the questionnaire in Table 02 was sent to 03 (three) managers, who were responsible for reviewing the statements and making sure they make sense, in accordance to their reality – See Appendix – Questionnaire to 'ABC'. From the original 20 statements of the questionnaire, 05 (five) had to be excluded, because they had no relevance to their business. Others had to be adapted, and some phrases had to be changed, as a matter of better representing the current environment at 'ABC' – Brazil/Rio de Janeiro, as shown below:

1. The end customer (patients)'s needs are identified through market research and workshop.

2. There is a team specialized in analyzing service trends in the market and anticipating end customer (patients)'s needs, as new functionalities that can be incorporated in 'ABC' programs ('Program 01', 'Program 02', 'Program 03', etc) and/or the creation of new programs for 'ABC'.
3. Employees, partners and suppliers adopt an end customer (patient)'s focus.
4. The managers / directors are engaged and incorporate service values in their daily tasks (flexibility, adaptability, focus on the relationship, etc).
5. The managers / directors coach employees to behave in a way to support end customer (patient)'s needs, when it comes to 'ABC' programs ('Program 01', 'Program 02', 'Program 03', etc).
6. There is a special training program for employees that act directly with 'ABC' programs ('Program 01', 'Program 02', 'Program 03', etc).
7. The managers / directors develop a communication channel for information exchange, with both employees and end customer (patient), about 'ABC' programs ('Program 01', 'Program 02', 'Program 03', etc).
8. The managers / directors communicate about the importance of 'ABC' programs ('Program 01', 'Program 02', 'Program 03', etc).
9. The managers / directors invest in new technologies, in order to improve 'ABC' programs ('Program 01', 'Program 02', 'Program 03', etc).
10. The employees that act directly with 'ABC' programs ('Program 01', 'Program 02', 'Program 03', etc) understand and apply service knowledge through technology.
11. The corporate culture is flexible and adapt to both internal and external environments.
12. All areas of the company are, somehow, involved in the strategy of 'ABC' programs ('Program 01', 'Program 02', 'Program 03', etc).
13. There is an integration of products and 'ABC' programs ('Program 01', 'Program 02', 'Program 03', etc), as a way to guarantee a better delivery of both offerings.
14. There is a cooperation between different departments in the company, when it comes to 'ABC' programs ('Program 01', 'Program 02', 'Program 03', etc), in order to promote mutual assistance between them.
15. There is an area focused solely on 'ABC' programs ('Program 01', 'Program 02', 'Program 03', etc).

Because some statements were excluded, some of the critical success factors have less statements than others. Here is the relation between statement and critical success factor in the questionnaire for 'ABC' – Brazil/Rio de Janeiro:

- Relationship Marketing: statements -> 01, 02, and 03;
- Human Resources Management: statements -> 04, 05, and 06;
- Information Management: statements -> 07, 08, 09, and 10;
- Organizational Structure: statements -> 11, 12, 13, 14, and 15.

The final questionnaire is intended to help managers at company 'ABC', in developing new services to their customers. The study is exploratory and will serve as a basis for future researchers, who are interested in the company and/or in the industry. If other companies are to be studied, a new questionnaire should be developed, together with the managers from company X or Y.

4.4 Questionnaire Application

For this specific study, the questionnaire was applied at company 'ABC'. The analysis took into consideration the subsidiary in Brazil/Rio de Janeiro, where the service programs are active and properly working. There are other service programs offered by 'ABC' – Brazil/Rio de Janeiro, however Program 01, 02 and 03 are the most mature and known ones. For that reason, company 'ABC' is already in the process of servitization.

The questionnaire has a cross-sectional approach, since data was collected at one point in time – December, 2016 and January, 2017 - rather than over a long period of time (longitudinal). After the adjustments in the questionnaire, it has been, initially, sent to 71 employees from different areas, such as Marketing, Human Resources, Finances and Client Support. The Internet link to the questionnaire was sent to the respondents through their corporate e-mail as a Google Form document. There are different benefits in using an online research tool, such as being faster, cheaper, more accurate, quickly to analyze, easy to use for participants and researchers, easy to style, more honest and selective, as well as more flexible (Creswell, 2014).

With the questionnaire, it is possible to answer the question:

Q: How ready to servitize is company 'ABC', according to the employee's perceptions?

Therefore, the main objective of the study is to analyze the readiness to servitize of company 'ABC', considering the employee's input.

To get the results, 02 (two) secondary objectives will:

1. Identify the position, in the scale of servitization, of the critical success factors at company 'ABC', and
2. Identify which are the critical success factors that need most attention from the decision makers (managers and directors) at company 'ABC'.

To answer the main and secondary objectives, an average grade will be generated for each one of the critical success factors. Each statement will have a position in the scale of servitization (from 01 to 07 - Likert scale), with a corresponding percentage (%), which is the response rate. A 'Sum product' formula in Excel will be used to calculate the average percentage of each critical success factor. That will give input to analyze the readiness to servitize of the critical success factors and of the company, in general.

For example, let's suppose the 'Relationship Marketing' factor has the following responses:

READINESS TO SERVITIZE SCALE							5.76
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree
Position in the Service Continuum	Pure Products	Products and Services		PSS	Services and Products		Pure Services
Relationship Marketing							
The managers / directors develop a communication channel for information exchange, with both employees and end customer (patient), about service programs ('Program 01', 'Program 02', 'Program 03', etc).					70.00%	20.00%	10.00%
The managers / directors periodically communicate about the importance of service programs ('Program 01', 'Program 02', 'Program 03', etc).					10.00%	90.00%	
The employees that act directly with service programs ('Program 01', 'Program 02', 'Program 03', etc) understand and apply service knowledge through technology.					25.00%	50.00%	25.00%

Table 03 – Example of Questionnaire Response

As Table 03 shows, for Statement 01 (one), 70% of the respondents believe it lies in the (05) 'Agree Somewhat' position, 20% believe it lies in the (06) 'Agree'

position and 10% believe it lies in the (07) 'Strongly Agree' position. For Statement 02 (two), 10% of the respondents believe it lies in the (05) 'Agree Somewhat' position and 90% believe it lies in the (06) 'Agree' position; and so on. When summing all the % with the corresponding number, the average grade for 'Relationship Marketing' is 5.76, in the 'Services and Products' position.

By doing the same calculations with all the 04 (four) critical success factors, it is possible to, in the end, generate a weighted average grade for the company, which will show how ready it is to servitize. Also, it will be possible to check which are the critical success factors that need most attention from the decision makers (managers and directors), so that the company is closer to a 'Pure Services' strategy – ready to servitize.

4.5 Delimitations of the Method

First, the quantitative research method is very limited in the sense of getting respondent's feelings and emotions. Unlike the qualitative research method, the interaction between researcher and respondent is close to zero.

Second, because the number of respondents was too small (50), the survey is exploratory. It intends to explore the research question, better understand the problem, and not offer a final solution, as the conclusive study (Research Methodology, 2016). This analysis at company 'ABC' is intended to give a basis for other researchers, who aim to study the company/industry in deeper details.

Third, the interaction with company 'ABC' was rather problematic, with difficulties in contacting the managers responsible for the case, in getting more responses to the questionnaire. In a nutshell, the communication with company's 'ABC' was a limiting factor in the conclusion of the work. Also, the Google Form, although simpler to implement, is a limiting factor, in the sense that not all of the respondents feel comfortable and/or willing to answer a virtual questionnaire from someone they do not know. If the questionnaire was done locally, the answers would be more frequent.

Finally, the analysis herein made is only for company 'ABC' – Brazil/Rio de Janeiro and their service programs in Brazil/Rio de Janeiro. If the survey was taken

elsewhere or with any other business/company, the outcomes would be not the ones found in this study.

5 RESULTS PRESENTATION AND DISCUSSION

The analysis was performed at company 'ABC' – Brazil/Rio de Janeiro, with employees from different areas and positions within the subsidiary. The questionnaire was sent to 71 employees, and 50 responses were received, reflecting a rate of 70.40%. The questionnaire was first launched to the employees on December 15th, 2016, and they had one (01) month to answer it (until January 15th, 2017). Although relatively high (70.40%), the response rate has been affected by vacation time (Christmas and New Year), and maybe a closer number to 71 (100%) could have been reached. If done in another period in time, the response rate would, probably, be even higher, with a more approximate number. Due to difficulties in contacting the company, the number of respondents was relatively low, comparing to other researches in the market; therefore, the survey is only exploratory. It is intended to create a 1st (first) analysis of the company, in terms of servitization, and will serve as a basis for future research.

As already exposed in *Appendix F – Questionnaire for 'ABC'*, the questionnaire to company 'ABC' – Brazil/Rio de Janeiro was created with the aid of 03 (three) managers, so that it could reflect its reality. With the input from the employee's it will be possible to answer the following question:

Q: How ready to servitize is company 'ABC', according to the employee's perceptions?

Therefore, the main objective of the study is to analyze the readiness to servitize of manufacturing companies, considering the employee's input.

To get the results, 02 (two) secondary objectives will:

1. Identify the position, in the scale of servitization, of the critical success factors at company 'ABC', and
2. Indicate which are the critical success factors that need most attention from the decision makers (managers and directors) at company 'ABC'.

The survey was divided into 03 (three) main parts. The 1st (first) part is about the respondent's professional data, including area of work, current position, and total years at company 'ABC'; the 2nd (second) part is a question regarding the employee's knowledge of the current service programs at company 'ABC' –

Brazil/Rio de Janeiro; the 3rd (third) part is related to the questionnaire itself (with 15 statements).

5.1 1st Part: Respondent's Professional Data Analysis

The 1st (first) part of the questionnaire refers to respondent's professional data, regarding area of work, current position, and total years at company 'ABC' – Brazil/Rio de Janeiro.

The following statistics show the respondent's profile, from highest to lowest:

Area of Work at company 'ABC' – Brazil/Rio de Janeiro:

- 30.00% work at 'Marketing';
- 30.00% work at 'Others';
- 24.00% work at 'Commercial Excellence';
- 12.00% work at 'Consumer Support (SAC)';
- 04.00% work at 'Human Resources';
- 00.00% work at 'Finances'.

Most respondents belong to 03 (three) areas: 'Marketing' (15), 'Others' (15), and 'Commercial Excellence' (12). Together, they represent 84.00% of all answers. 'Consumer Support (SAC)', 'Human Resources' and 'Finances' had little respondents, with a total number of 06 (six), 02 (two) and 00 (zero), respectively. Because 'Finances', unfortunately, had no respondents to the questionnaire, it was excluded from the analysis. Therefore, the general analysis is based on 05 (five) areas: 'Marketing', 'Others', 'Commercial Excellence', 'Consumer Support (SAC)', and 'Human Resources'.

Current Position at company 'ABC' – Brazil/Rio de Janeiro:

- 52.00% are 'Analyst';
- 30.00% are 'Manager';
- 16.00% are 'Coordinator / Specialist';
- 02.00% are 'Intern';
- 0.00% are 'Director'.

Most respondents work at company 'ABC' – Brazil/Rio de Janeiro as 'Analysts' (26). 'Managers' and 'Coordinators' also play an important role in the study, with 15

(fifteen) and 08 (eight) respondents, respectively. Only 01 (one) Intern answered the questionnaire, and no Directors participated in the survey. As a result, the general analysis considered 04 (four) different positions: 'Intern', 'Analyst', 'Coordinator/Specialist', and 'Manager'.

Years at company 'ABC' – Brazil/Rio de Janeiro:

- 44.00% have been working for '01 – 05 years';
- 38.00% have been working for '05 – 10 years';
- 08.00% have been working for '10 – 15 years';
- 06.00% have been working for '+15 years'.
- 4.00% have been working for '00 – 01 year';

Most respondents have been working at company 'ABC' – Brazil/Rio de Janeiro for '01 to 05 years', and for '05 – 10 years', with a total of 82.00%. 02 (two) employees were recently hired, with '00 to 01 years'; 04 (four) have been working for '10 to 15 years', and 03 (three) have been working for more than 15 (fifteen) years.

By looking at each area individually, the total number of employees per position is the following:

Area x Position	Total
Excellence	12
Analyst	6
Coordinator	4
Manager	2
Human Resources	2
Analyst	1
Manager	1
Marketing	15
Analyst	9
Coordinator	1
Manager	5
Others	15
Analyst	5
Coordinator	3
Manager	7
SAC	6
Analyst	5
Intern	1
Grand Total	50

Table 04 – Area x Position

5.2 2nd Part: Employee's Knowledge of Service Programs at company 'ABC'

The 2nd (second) part of the questionnaire is a single question referring to the employee's knowledge about the current service programs at company 'ABC' – Brazil/Rio de Janeiro. It is intended to measure how many employees know about the service programs the organization already has today; and if the answer is 'Yes, I know about the programs', which programs do they know about. From the total responses, 09 (nine) people did not answer anything, neither 'Yes', nor 'No'. So, these were excluded from this analysis.

For that matter, considering 41 responses ($50 - 09 = 41$), here is the result:

Service Programs	
Program 01	96.00%
Program 02	27.00%
Program 03	49.00%
Program 04	10.00%
Program 05	15.00%
Program 06	10.00%
Program 07	3.00%
Program 08	5.00%
Grand Total	

Table 05: Service Programs, according to employees

As already expected, 'Program 01' has the highest rate, with 96.00%; only 02 (two) people did not mention it. The most probable reason is that the program is the most developed and mature one in the organization. According to informal conversations with the managers at company 'ABC', it is willing to increase the participation of customers and employees in this program, and is doing efforts to better communicate it to them. 'Program 03' and 'Program 02' also have high response rates, with 49.00% and 27.00%, respectively. Together with 'Program 01', the programs play an important role in the servitization process of company 'ABC' – Brazil/Rio de Janeiro. Other programs arose in the questionnaire, such as Program 04 to Program 08, and although not yet totally well-known, in general, it is possible to see that company 'ABC' – Brazil/Rio de Janeiro is engaged in increasing its programs to help customers in dealing with their diseases.

5.3 3rd Part: Questionnaire Analysis

The 3rd (third) part of the questionnaire is related to the servitization questions itself (Appendix F – Questionnaire to company ‘ABC’).

For the study to be more complete, 02 (two) different analyses were made. First, a general analysis was generated, with the inclusion of all 50 (fifty) answers, from all different areas. Second, an analysis per business area was done, so that it was possible to observe whether there are similarities within each area of work: ‘Marketing’, ‘Commercial Excellence’, ‘Others’ and ‘SAC’. Because ‘Human Resources’ and ‘Finances’ had very low response rates, these were excluded from the individual analysis.

5.3.1 General Analysis at company ‘ABC’

The general analysis considers all 50 (fifty) responses from company ‘ABC’ – Brazil/Rio de Janeiro’s employees. The Google Form automatically creates a summary of all responses and give the corresponding percentages (%) for each of the statements. Therefore, it is possible to verify the general readiness to servitize of company ‘ABC’, according to employee’s perceptions. Also, it is possible to observe the position, in the scale of servitization, of each one of the critical success factors, and as a result, determine which are the ones that need most attention from the decision makers (managers and directors).

To have a more structured analysis, the critical success factors were separated, and analyzed individually. With the employee’s input, it was possible to populate the scale and an average grade, obtained (from 01 – minimum to 07 - maximum). That grade will show the exact position of the critical success factors, in the scale of servitization, and it is possible to analyze how ready the company is to servitize. The closer to (07) ‘Pure Services’/‘Strongly Agree’, the readier to servitize the company is; and the closer to (01) ‘Pure Products’/‘Strongly Disagree’, the less ready to servitize the company is. Important to mention that by having a critical success factor in ‘Pure Services’/‘Strongly Agree’, it does not mean that the company is already in the ‘Pure Services’ level of servitization; rather it means that that specific critical success factor is readier to servitize. That way it is possible to see what is the

general grade for each critical success factor, and for the company in general, and also, which factors need most attention, in terms of servitization.

Important to mention that the responses are based on the employee’s perceptions, which may be influenced by their area within the company, or by the position they belong to.

For the general analysis, the ranges of the scale have been painted with degrees of grey, with the following rule:

- > = 50% of responses: black
- > = 35 % of responses and < 50% of responses: dark grey
- > = 25% of responses and < 35% of responses: mid grey
- > = 15% of responses and < 25% of responses: light grey

Also, a solid line has been included inside the quadrant that has most responses.

For the ‘Relationship Marketing’, the following grade is observed:

READINESS TO SERVICIZE SCALE					5.51		
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree
Position in the Service Continuum	Pure Products	Products and Services		PSS	Services and Products		Pure Services
Relationship Marketing							
The end customer (patients)´s needs are identified through market research and workshops.				—			
There is a team specialized in analyzing service trends in the market and anticipating end customer (patients)´s needs, as new functionalities that can be incorporated in service programs ('Program 01', 'Program 02', 'Program 03', etc) and/or the creation of new programs.							—
Employees, partners and suppliers adopt a end customer (patient)´s focus.							—

Table 06: Relationship Marketing – General Analysis

By taking the response’s percentages (%) into consideration, the average grade for ‘Relationship Marketing’ is 5.51, according to Table 06. That means that the critical success factors lie between (05) ‘Agree Somewhat’ and (06) ‘Agree’, showing a relatively high readiness to servitize.

According to the employee’s perceptions, there is a team responsible for analyzing service trends in the market. This is an important step in the servitization process, because the study of what already exists in the market, and what future solutions it might bring, is a fundamental tool for the development of innovative solutions to customers. Also, employees state that both partners and suppliers adopt a customer-oriented attitude, showing that the service mindset is already embedded

in their day-to-day operation. The alignment between the different stakeholders is a pre-requisite in a transformational process from products to services, as shown in the literature review.

As exposed in Table 06, the 1st (first) statement lies in the ‘Neither agree nor disagree’ position. That means that the identification of customer’s needs is not intense in the organization. It has been said in the literature review that the initial stage for entering the service business is clearly understanding customer needs, through market survey or direct contact. If not properly done, this can bring negative results for company ‘ABC’ – Brazil/Rio de Janeiro, because the servitization process is customer-centric. If the customer does not co-produces/co-participates, the service offering might not represent exactly what they demand, and the company might invest in something that has little/no appeal to the consumer. It is important to further investigate how the participation of the customer is conducted at company ‘ABC’, if their needs are listened and how often company ‘ABC’ performs interactions with the customers (monthly, yearly, etc).

The customer-centric approach represents one of the major challenges for manufacturers, since they are accustomed to having the customer as a mere buyer of their products. Therefore, this might be an attention factor for the decision makers (managers/directors) at company ‘ABC’ – Brazil/Rio de Janeiro; if they intend to improve their service offerings, or even create new ones, they should intensify their relationship with the customers.

For the Human Resources Management, the following grade is observed:

READINESS TO SERITIZE SCALE						5.40	
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree
Position in the Service Continuum	Pure Products	Products and Services		PSS	Services and Products		Pure Services
Human Resources Management							
The managers / directors are engaged and incorporate service values in their daily tasks (flexibility, adaptability, focus on the relationship, etc).							—
The managers / directors coach employees to behave in a way to support end customer (patient)’s needs, when it comes to service programs ('Program 01', 'Program 02', 'Program 03', etc).							—
There is a special training program for employees that act directly with service programs ('Program 01', 'Program 02', 'Program 03', etc).		—		—			

Table 07: Human Resources Management – General Analysis

By taking the response’s percentages (%) into consideration, the average grade for ‘Human Resources Management’ is 5.40, according to Table 07. That also means that the critical success factors lie between ‘Agree Somewhat’ and ‘Agree’, showing a relatively high readiness to servitize.

According to the employees, the managers/directors incorporate the service values, as well as coach employees to behave in a service-oriented way. Both practices are extremely positive in the servitization process, since managers/directors play a vital role in changing employee’s view about services, and increasing the awareness on the changes to be done inside the organization, as highlighted in the literature review. In the questionnaire, employees also state that those employees that deal directly with the service programs, do not receive special training. It is said that successful service firms place huge effort in the selection/recruitment, development/training, coaching, empowering/ownership, motivation and compensation of its employees. It is important to understand which kind of training the employees receive at company ‘ABC’, how frequent are they exposed to different types of training, if the training lessons are on- or offline, virtual or on-site, and how much is company ‘ABC’ investing in training in an annual basis. Employees that deal directly with the customers should be trained differently, because they deal with customer’s emotions, frustrations, expectations and concerns. The psychological side may be an important factor in the service delivery, and front-office employees play one of the most important roles in the process.

For the Information Management, the following grade is observed:

READINESS TO SERVITIZE SCALE				4.58			
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree
Position in the Service Continuum	Pure Products	Products and Services		PSS	Services and Products		Pure Services
Information Management							
The managers / directors develop a communication channel for information exchange, with both employees and end customer (patient), about service programs ('Program 01', 'Program 02', 'Program 03', etc).						—	
The managers / directors periodically communicate about the importance of service programs ('Program 01', 'Program 02', 'Program 03', etc).				—			
The managers / directors invest in new technologies, in order to improve service programs ('Program 01', 'Program 02', 'Program 03', etc).					—		
The employees that act directly with service programs ('Program 01', 'Program 02', 'Program 03', etc) understand and apply service knowledge through technology.						—	

Table 08: Information Management – General Analysis

By taking the response's percentages (%) into consideration, the average grade for 'Information Management' is 4.58, according to Table 08. That means that the critical success factors lie in 'Neither agree nor disagree', showing a medium level of readiness to servitize.

This factor is the one that needs most attention from company 'ABC' – Brazil/Rio de Janeiro. Although most respondents say managers/directors develop communication channels with both employees and customers, a considerable number of respondents believe it is not yet totally ready. Managers/directors are responsible for increasing the communication and highlighting the importance of the programs that already exist at company 'ABC' – Brazil/Rio de Janeiro, and of the ones that are expected to begin in the future. As part 02 (two) of the questionnaire shows, most employees are only familiar with 03 (three) service programs ('*Program 01*', '*Program 02*', '*Program 03*'). There are others that the vast majority never heard of, which may represent a problem in the future. As more and more programs are implemented, it is crucial that everybody is aware of them, so that they can contribute with their experience and input. Important to mention that the communication is both internal and external; that means that managers/directors need to focus on the entire information flow, whether inside or outside the company.

Technology does not seem to be a huge problem for company 'ABC' – Brazil/Rio de Janeiro, since they adopt, use, and know the different types of technology available, and apply service knowledge through it. As already exposed, technology is a fundamental tool in helping the information management in organizations, and plays, nowadays, a vital role in organizations, both inside and outside. The Internet has created a whole new environment and communication channel for everybody and companies should make constant use of it, for their own benefit. The managers/directors should continue investing in technology, and making constant use of it, in order to increase the communication with employees and customers.

For the Organizational Structure, the following grade is observed:

READINESS TO SERVICIZE SCALE								4.89
#	1	2	3	4	5	6	7	
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree	
Position in the Service Continuum	Pure Products	Products and Services		PSS	Services and Products		Pure Services	
Organizational Structure								
The corporate culture is flexible and adapt to both internal and external environment.			—					
All areas of the company are, somehow, involved in the strategy of service programs ('Program 01', 'Program 02', 'Program 03', etc).						—		
There is an integration of products and service programs ('Program 01', 'Program 02', 'Program 03', etc), as a way to guarantee a better delivery of both offerings.					—			
There is a cooperation between different departments in the company, when it comes to service programs ('Program 01', 'Program 02', 'Program 03', etc), in order to promote mutual assistance between them.					—			
There is an area focused solely on service programs ('Program 01', 'Program 02', 'Program 03', etc).						—	—	

Table 09: Organizational Structure – General Analysis

By taking the response's percentages (%) into consideration, the average grade for 'Organizational Structure' is 4.89, according to Table 09. That means that the critical success factors lie in 'Neither agree nor disagree', showing a medium level of readiness to servitize.

By looking at the Table, what first calls the attention is the flexibility in culture being so low in the scale ((03) 'Disagree somewhat'/ (04) 'Neither agree nor disagree'). The corporate culture is part of the initial steps for engaging in a servitization process. If not flexible, the change in mindset will not be as profound as expected. Therefore, for the servitization to take place, it is necessary that both culture and corporate strategy have a focus on services, and are flexible enough to adapt to environmental changes, and constant updates in processes and internal methodologies. It is important to understand how company 'ABC' – Brazil/Rio de Janeiro is putting effort in the culture, and creating a communication tool that help employees understand the changes that are required in a servitization process. If not well-planned, the organization might suffer with the possible negative effects that may come with the transformation, such as the service paradox. It is, for that reason, extremely important that the company focuses on this aspect, before even developing new services and/or improving the ones they already have.

Another item that is highlighted in the 'Organizational Structure' is the existence of an area focused solely on services. Curiously, although most respondents believe there is an area only for services, some of the respondents answered 'Strongly

Disagree’, which shows that the company does not have a unit focused on services. When analyzing the individual areas alone, it is strange to notice that ‘SAC’ and ‘Commercial Excellence’ employees believe company ‘ABC’ – Brazil/Rio de Janeiro has no separated unit for services; whereas ‘Marketing’ and ‘Others’ believe company ‘ABC’ – Brazil/Rio de Janeiro has a separated unit for services. That is quite challenging to understand, because different areas have opposite opinions regarding the same subject. The managers/directors should improve the communication regarding the existence, or not, of an area for services. If it indeed exists, it should be clear to everybody inside the company, because having opposite points of view has a negative impact for the organization.

On the contrary, all areas of the company seem to be working towards the same goal, with intense cooperation between them, and an integration between products and services. This is positive, since the company works as a single structure, although separated by different tasks. One question that remains is: if the areas are so interconnected, how can they not know if there is a service area inside the organization?

The general analysis shows that, in average, company ‘ABC’ – Brazil/Rio de Janeiro has a grade of 5.095 - ‘Agree Somewhat’ quadrant:

READINESS TO SERVICIZE SCALE							5.095
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree
Position in the Service Continuum	Pure Products	Products and Services		PSS	Services and Products		Pure Services
Relationship Marketing					5.51		
Human Resources Management					5.40		
Information Management				4.58			
Organizational Structure				4.89			

Table 10: General Analysis

According to Table 10, the critical success factors are not completely ready to servitize, because none of them are close to 07 at company ‘ABC’. However, there are some critical success factors that need more attention from the decision makers (managers and directors).

The highlight is 'Information Management' (Grade: 4.58), where managers/directors should put strong effort into increasing the information flow between areas, employees and customers. The technology is an ally in this process, and if well used, may bring positive results to the organization. Increasing the communication with employees is crucial for the success of the service offerings at company 'ABC' – Brazil/Rio de Janeiro, and that should be a focus in the coming months. Also, increasing the awareness of the service culture, and turning it into a flexible organism for all the employees, it will be possible to not only improve current service programs, but to also create new programs for both employees and customers. Finally, it is of extreme importance to clearly communicate about the existence or not of a separated unit for services, and engage all different areas in the service development.

In general, by improving the communication skills, through the use of virtual and face-to-face methods (meetings, e-mails, phone calls, banners, posters, etc), managers/directors will be able to incorporate customer needs into their service offerings, improve the information flow between areas, better train their front-office customers, and enhance the knowledge of the current and next service programs, inside and outside the company.

The best result goes to 'Relationship Marketing (Grade: 5.51), since there is a general concern with service trends that may become new offerings in the future. Through informal conversation with the managers at company 'ABC', it is a general will to improve the current service programs, especially 'Program 01', and to create new ones to the customers. The program began in 2013, and since then a lot of new features have been implemented, and they intend to continue with the effort of improving the offering. Although the research shows that company 'ABC' does not consult the customers very often, the managers confirm, through the informal conversations, that it is willing to improve the current programs, as well as incorporate new services. There is already a developed offering of service programs already in place (08 were mentioned in the survey), with different scope and purposes. It is important for managers/directors to continue with the effort of sharing service values throughout the company, and educating their employees in the service culture. Employees play a vital role in the servitization process, and may influence, positive or negatively, in the increase of service offerings within the company.

5.3.2 Analysis of separated areas at company 'ABC'

After the general analysis of the questionnaire, and the comments regarding each one of the critical success factors, and which factors should company 'ABC' – Brazil/Rio de Janeiro focus on, the analysis of the individual areas might bring some new information. Interesting to notice that the responses within each area are similar, which could mean that the employees from each area are exposed to the same level of information; for example, employees from 'Marketing' have exposure to the same kind of information.

For the individual analysis, the % (percentage) of each critical success factor has been included, so that it is easier to visualize. As mentioned, 'Human Resources' and 'Finances' had an insignificant number of respondents; therefore, these will be excluded from the individual analysis. That way, the analysis will be done for: 'Marketing', 'Commercial Excellence', 'Others', and 'SAC', according to Tables 29, 30, 31 and 32.

a) Marketing

For the 'Marketing' analysis, 15 (fifteen) respondents participated.

READINESS TO SERVICIZE SCALE							
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree
Position in the Service Continuum	Pure Products	Products and Services		PSS	Services and Products		Pure Services
Relationship Marketing							
The end customer (patients)'s needs are identified through market research and workshops.				47.00%	27.00%		
There is a team specialized in analyzing service trends in the market and anticipating end customer (patients)'s needs, as new functionalities that can be incorporated in GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc) and/or the creation of new programs for GSK.							40.00%
Employees, partners and suppliers adopt a end customer (patient)'s focus.						40.00%	
Human Resources Management							
The managers / directors are engaged and incorporate service values in their daily tasks (flexibility, adaptability, focus on the relationship, etc).						33.00%	33.00%
The managers / directors coach employees to behave in a way to support end customer (patient)'s needs, when it comes to GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).							53.00%
There is a special training program for employees that act directly with GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).		47.00%					
Information Management							
The managers / directors develop a communication channel for information exchange, with both employees and end customer (patient), about GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).						47.00%	
The managers / directors periodically communicate about the importance of GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).				40.00%			
The managers / directors invest in new technologies, in order to improve GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).					60.00%		
The employees that act directly with GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc) understand and apply service knowledge through technology.						60.00%	
Organizational Structure							
The corporate culture is flexible and adapt to both internal and external environment.		40.00%					
All areas of the company are, somehow, involved in the strategy of GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).						60.00%	
There is an integration of products and GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc), as a way to guarantee a better delivery of both offerings.					40.00%	20.00%	
There is a cooperation between different departments in the company, when it comes to GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc), in order to promote mutual assistance between them.					53.00%		
There is an area focused solely on GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).					20.00%	27.00%	

Table 11: Marketing Analysis

The 'Marketing' analysis shows a result extremely close to the General analysis. All factors have more or less the same percentages (%), with minimal differences. It is important to mention that 'Marketing' employees believe there is a separated unit inside company 'ABC' – Brazil/Rio de Janeiro with a service focus.

b) Commercial Excellence

For the 'Commercial Excellence' analysis, 12 respondents participated.

READINESS TO SERVICIZE SCALE							
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree
Position in the Service Continuum	Pure Products	Products and Services		PSS	Services and Products		Pure Services
Relationship Marketing							
The end customer (patients)'s needs are identified through market research and workshops.							50.00%
There is a team specialized in analyzing service trends in the market and anticipating end customer (patients)'s needs, as new functionalities that can be incorporated in GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc) and/or the creation of new programs for GSK.							42.00%
Employees, partners and suppliers adopt a end customer (patient)'s focus.							42.00%
Human Resources Management							
The managers / directors are engaged and incorporate service values in their daily tasks (flexibility, adaptability, focus on the relationship, etc).							42.00%
The managers / directors coach employees to behave in a way to support end customer (patient)'s needs, when it comes to GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).							50.00%
There is a special training program for employees that act directly with GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).		33.00%		33.00%			
Information Management							
The managers / directors develop a communication channel for information exchange, with both employees and end customer (patient), about GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).	33.00%						
The managers / directors periodically communicate about the importance of GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).	17.00%	33.00%					
The managers / directors invest in new technologies, in order to improve GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).		33.00%	17.00%				
The employees that act directly with GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc) understand and apply service knowledge through technology.				42.00%	17.00%		
Organizational Structure							
The corporate culture is flexible and adapt to both internal and external environment.			42.00%	17.00%			
All areas of the company are, somehow, involved in the strategy of GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).				50.00%			
There is an integration of products and GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc), as a way to guarantee a better delivery of both offerings.			50.00%				
There is a cooperation between different departments in the company, when it comes to GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc), in order to promote mutual assistance between them.					42.00%	17.00%	17.00%
There is an area focused solely on GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).	50.00%						

Table 12: Commercial Excellence Analysis

'Commercial Excellence' employees tend to choose the extremes. That gets clear in the 'Relationship Marketing' and Information Management' factors. This area believes that end customer's needs are identified through market research, which is not exactly what the general analysis showed. On the contrary, 50% of the respondents believe there is no specific area for services inside company 'ABC'.

c) Others

For the 'Others' analysis, 15 respondents participated.

READINESS TO SERVICIZE SCALE							
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree
Position in the Service Continuum	Pure Products	Products and Services	PSS	Services and Products	Pure Services		
Relationship Marketing							
The end customer (patients)'s needs are identified through market research and workshops.				42.00%		33.00%	
There is a team specialized in analyzing service trends in the market and anticipating end customer (patients)'s needs, as new functionalities that can be incorporated in GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc) and/or the creation of new programs for GSK.							47.00%
Employees, partners and suppliers adopt a end customer (patient)'s focus.							31.00%
Human Resources Management							
The managers / directors are engaged and incorporate service values in their daily tasks (flexibility, adaptability, focus on the relationship, etc).					20.00%	33.00%	20.00%
The managers / directors coach employees to behave in a way to support end customer (patient)'s needs, when it comes to GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).					20.00%	27.00%	40.00%
There is a special training program for employees that act directly with GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).			33.00%	40.00%			
Information Management							
The managers / directors develop a communication channel for information exchange, with both employees and end customer (patient), about GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).			27.00%	20.00%			
The managers / directors periodically communicate about the importance of GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).			20.00%	33.00%			
The managers / directors invest in new technologies, in order to improve GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).					40.00%	27.00%	
The employees that act directly with GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc) understand and apply service knowledge through technology.				40.00%	20.00%	33.00%	
Organizational Structure							
The corporate culture is flexible and adapt to both internal and external environment.			33.00%		33.00%		
All areas of the company are, somehow, involved in the strategy of GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).					20.00%	33.00%	20.00%
There is an integration of products and GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc), as a way to guarantee a better delivery of both offerings.					27.00%	27.00%	20.00%
There is a cooperation between different departments in the company, when it comes to GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc), in order to promote mutual assistance between them.					47.00%		
There is an area focused solely on GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).					20.00%	27.00%	33.00%

Table 13: Others Analysis

The 'Others' analysis, as in 'Marketing' show a result extremely close to the General analysis. All factors have more or less the same percentages (%), with minimal differences. It is also important to mention that 'Others' employees believe there is a separated unit inside company 'ABC' – Brazil/Rio de Janeiro with a service focus.

d) SAC

For the 'SAC' analysis, 06 respondents participated.

READINESS TO SERVICIZE SCALE							
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree
Position in the Service Continuum	Pure Products	Products and Services		PSS	Services and Products		Pure Services
Relationship Marketing							
The end customer (patients)'s needs are identified through market research and workshops.				83.00%			
There is a team specialized in analyzing service trends in the market and anticipating end customer (patients)'s needs, as new functionalities that can be incorporated in GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc) and/or the creation of new programs for GSK.				17.00%	67.00%		
Employees, partners and suppliers adopt a end customer (patient)'s focus.			17.00%	17.00%	50.00%		
Human Resources Management							
The managers / directors are engaged and incorporate service values in their daily tasks (flexibility, adaptability, focus on the relationship, etc).			33.00%	67.00%			
The managers / directors coach employees to behave in a way to support end customer (patient)'s needs, when it comes to GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).			17.00%	17.00%	67.00%		
There is a special training program for employees that act directly with GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).			50.00%				
Information Management							
The managers / directors develop a communication channel for information exchange, with both employees and end customer (patient), about GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).				17.00%	17.00%	50.00%	
The managers / directors periodically communicate about the importance of GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).				33.00%	33.00%		
The managers / directors invest in new technologies, in order to improve GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).			67.00%				
The employees that act directly with GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc) understand and apply service knowledge through technology.				17.00%	17.00%	50.00%	
Organizational Structure							
The corporate culture is flexible and adapt to both internal and external environment.				83.00%			
All areas of the company are, somehow, involved in the strategy of GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).					83.00%		
There is an integration of products and GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc), as a way to guarantee a better delivery of both offerings.					17.00%	67.00%	
There is a cooperation between different departments in the company, when it comes to GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc), in order to promote mutual assistance between them.					83.00%		
There is an area focused solely on GSK programs (Viver Mais GSK, Casa de Vacinas GSK, Chega de Asma, etc).	33.00%		33.00%				

Table 14: SAC Analysis

'SAC' employees tend to show medium readiness to servitize responses, ranging from 'Neither agree nor disagree' and 'Agree Somewhat'. There are no extreme responses (07 and 01), except for the separated unit for services. These also believe there is no area focused only on services.

6 CONCLUSION

This chapter is devoted to the revisions of the main items highlighted throughout this work. First, the main and secondary objectives will be exposed again, followed by the main conclusions. Later, there is the managerial implications, as well as limitations and future research possibilities.

Servitization is, for the past 10 (ten) years, one of the major themes of study for manufacturers. With the increase in the competition, in the globalization and in the need for constant innovation, companies have found themselves urging for new offerings for their customers. Therefore, including services has shown to be a well-succeeded solution, with benefits such as increased competitive advantage, stronger customer relationship, a more positive environmental performance and financial growth. However, some caution needs to be taken in order to be successful. If not well planned, several difficulties may arise, especially because the corporate culture needs to be flexible enough to embrace all the necessary changes that arise with servitization. The service paradox, for example, is a real phenomenon, which happens when companies fail in the transition process, and end up with unexpected low share of service revenue. In order to avoid the negative impacts that may occur, and mitigate possible risks, companies should have specific competences, which include critical success factors that may orient them and structure their strategy towards a more service-oriented approach.

The first thing to define was the critical success factors that manufacturers need to have, in order to engage in a successful servitization process. Those were identified through an extensive literature review, and were named: Relationship Marketing, Human Resources Management, Information Management and Organizational Structure. Second, a scale of servitization was created, both based on the Likert scale and the Service Continuum (ranging from (01) 'Strongly Disagree'/'Pure Products' to (07) 'Strongly Agree'/'Pure Services'). Third, the questionnaire, based on the 04 (four) critical success factors was developed for company 'ABC'. On the one hand, a 'Strongly Disagree' statement refers to 'Pure Products'; on the other hand, a 'Strongly Agree' statement refers to 'Pure Services'. Through the answers to the questionnaire, it is possible to observe where each factor is positioned, within the scale of servitization, and which are the factors that

need most attention from the decision makers (managers and directors), in order to successfully engage in a servitization process.

With that said, the purpose of this work is to answer the question:

Q: How ready to servitize is company 'ABC', according to the employee's perceptions?

Therefore, the main objective of the study is to analyze the readiness to servitize of company 'ABC', considering the employee's input.

To get the results, 02 (two) secondary objectives will analyze:

1. Identify the position, in the scale of servitization, of the critical success factors at company 'ABC'; and
2. Identify which are the critical success factors that need most attention from the decision makers (managers and directors) at company 'ABC'.

The pharmaceutical industry is extremely relevant and with exponential growth, especially in growing markets, like Brazil, with total revenues reaching over US\$ 01 trillion, in 2014, worldwide, and market opportunities showing new investment possibilities. The challenges faced by pharmaceutical companies are huge, especially with the R&D costs and the long time-to-market of new products. The solution to servitize is, therefore, a creative way out for such companies that need to innovate in such a dynamic and competitive business. Established in 2000 by a merger of 02 multinationals, company 'ABC' is considered one of the largest pharmaceutical companies in the world, with around 100.000 employees in more than 150 countries. In Brazil, where the company is established for over 100 years, it began, in 2013, to develop service programs to their customers, with the aim to approach and meet patient's needs.

The survey has been done with employees from company 'ABC' in Rio de Janeiro – Brazil. An online questionnaire has been sent to 71 employees' corporate e-mail, in a Google Form, and 50 responses were received, reflecting a rate of 70.40%. It was first launched to the employees on December, 2016, and they had one (01) month to answer it.

The questionnaire to company 'ABC' – Brazil/Rio de Janeiro is divided into 03 (three) parts, which are professional data, employee's knowledge on current service

programs and the 15-statement questionnaire itself. The employees belong to 06 (six) different areas – ‘Marketing’, ‘Others’, ‘Commercial Excellence’, ‘SAC’, ‘Human Resources’ and ‘Finances’. Most of the audience are analysts, with some managers and coordinators. Only 01 Intern has responded, and no directors have participated in the survey. More than 90.00% of the employees knew about the service program ‘*Program 01*’, which was already expected. ‘*Program 02*’ and ‘*Program 03*’ have high response rate percentages (%), as well, but other programs that arose, had very little employee knowledge.

For the questionnaire study, 02 (two) different analyses have been made. The 1st one is regarding the general analysis, with all 50 responses; and the 2nd is regarding the separated analysis for each different business area. Because ‘Human Resources’ and ‘Finances’ had little/none response rates, these were excluded from the individual analyses.

The results for the general analysis show the following answers to the secondary objectives:

1. What is the position, in the scale of servitization, of each one of the critical success factors?
 - ‘Relationship Marketing’ has a total grade of 5.51, which lies between (05) ‘Somewhat Agree’ and (06) ‘Agree’.
The factor is in the ‘Services and Products’ position.
 - ‘Human Resources Management’ has a total grade of 5.40, which lies in (05) ‘Somewhat Agree’.
The factor is in the ‘Services and Products’ position.
 - ‘Information Management’ has a total grade of 4.58, which lies in the (04) ‘Neither agree nor disagree’.
The factor is in the ‘PSS’ position.
 - ‘Organizational Structure’ has a total grade of 4.89, which lies in the (04) ‘Neither agree nor disagree’.
The factor has a ‘PSS’ position.
 - The general grade for company ‘ABC’ is 5.095, reflecting a (05) ‘Agree somewhat’ position in the scale of servitization.
The company is in the ‘Services and Products’ position.

2. Which are the critical success factors that need most attention from the decision makers (managers and directors)?

The critical success factors that need most attention from the decision makers (managers and directors) are 'Information Management' and 'Organizational Structure', with special focus on the 1st (first) one. 'Information Management' has the lowest grade (4.58), almost 01 (one) point lower than the 1st (first) place ('Relationship Marketing – 5.51). 'Organizational Structure' is slightly better (4.89), almost reaching the 'Services and Products' position. Therefore, the focus for this study is 'Information Management', being the critical success factors that needs most attention from the decision makers (managers and directors).

With the input from the secondary objectives results, it is possible to conclude, regarding the main objective, which is the analysis of the readiness to servitize of company 'ABC':

Q: How ready to servitize is company 'ABC', according to the employee's perceptions?

Considering the employee's input to the questionnaire, the general grade for company 'ABC' is 5.095, meaning that the company has a medium/high level of readiness to servitize. The closer to (07) 'Pure Services', the readier the company is to servitize; the closer to (01) 'Pure Products', the less ready it is to servitize. It is in the 'Services and Products' position, which is a rather positive result; in fact, a readiness to servitize ranging from (05) 'Agree Somewhat' to (06) 'Agree' was already expected. So, the result confirms the assumption that the company would be positioned in 'Services and Products'. Because company 'ABC' already has service programs to their customers, it is no surprise that the critical success factors are relatively ready to servitize. Surprise would be if they were all low in the scale of servitization (closer to 01, instead of 07); then the company would probably be facing some problems. Therefore, the grade of 5.095 is no shock.

As a conclusion, for the case of company 'ABC', the decision makers (managers and directors) should improve their communication skills. The 'Information Management' factor is the one that demands most focus, because, not only it has

the lowest grade, but it also influences the other factors. By improving the communication skills, the decision makers (managers and directors) will be able to incorporate customer needs into their service offerings, improve the information flow between areas, better train their front-office customers, and enhance the knowledge of the current and next service programs, inside and outside the company. That way, the organization will be able to improve its service strategy, and make better use of the available tools and procedures.

Comparing the result obtained with the literature review, one reason that may explain why the 'Information Management' is lower in the scale of servitization is the environmental issues that influences companies, especially pharmaceutical, in terms of regulatory, legal and/or technology issues. There may exist hindrances, that do not appear in the survey, but that the decision makers (managers and directors) are aware of, which play an important role in the entire communication process. That could explain why the information flow is not that fluid. And if that is the case, maybe company 'ABC' will never be able to achieve a (07) 'Pure Services'/'Strongly Agree' position in the scale of servitization for the 'Information Management' factor. As exposed before, companies need to understand their own needs and limitations, and not force a position that is not sustainable in the scale of servitization. The 'ideal world' may not work for every manufacturer, and it is of extreme importance to recognize the company's own limits. If communication is a major concern for the decision makers, but there is no concrete possible action to be taken, it is the decision makers' (managers and directors) role to understand, accept and try to improve services through other alternatives.

6.1 Managerial Implications

The managerial implications refer to the fact that, although relatively common in the literature, there is no tangible way of analyzing a company's readiness to servitize, based on defined critical success factors – Relationship Marketing, Human Resources Management, Information Management and Organizational Structure.

The Relationship Marketing can help the decision makers (managers and directors) better study the market, getting input from customers and partners. Because customers play a vital role in the servitization process, the decision makers (managers and directors) should focus on what they need and believe it's best for

them. Including them into the decisions for services might bring positive results when the company intends to create and/or expand their service offering.

The Human Resources Management is of extreme importance, because the employees and leaders are the ones to capture the customer's needs and turn it into a service that will please them. Front-office employees need to have special training and compensation, as dealing with the public is completely different from dealing with the selling of a product. The decision makers (managers and directors) should understand what is the best way of leveraging their human capital, so that both their employees and customers are satisfied with what the company has to offer.

The Information Management is what drives the success of a transition from products to services. If not well planned and managed, the final objectives will not be achieved, and the company might even lose money and time. Communication involves several tools and can be both internal and external. Not only the communication with the employees needs to be stimulated, but specially the communication with the customers. Technology, therefore, may be a powerful aid in this entire process, and if well applied, may change a company's way of working. The decision makers (managers and directors) need to understand what are the available tools in the market, and adopt the ones that better suit their reality.

Finally, the Organizational Structure may help in the design and information flow within the company. The more flexible the structure, the more changes the company has of succeeding. Depending on the company's reality, the internal organization may define whether it will have a more/less successful transition to services.

With the understanding of each one of the critical success factors, the study aims to help the decision makers (managers and directors) of company 'ABC' in the identification of what is the readiness to servitize of their company, according to the employee's perceptions. Also, they will observe the position of the critical success factors, in the scale of servitization, and be able to analyze which are the ones that need most attention. If they intend to engage/expand their service-oriented strategy, they should expect the factors to be close to (07) 'Pure Services'/'Strongly Agree'.

6.2 Limitations and future research

First, the study presented a quantitative research method, which limits the amount of information to be obtained by the respondents. It would be interesting to

analyze, for example, why the 'Information Management' is the least ready critical success factor at company 'ABC'. Maybe a solution, as a next step in the analysis, would be the implementation of a qualitative approach, through face-to-face interviews and open questions to key managers, customers and/or partners at the company. The assumed conclusions herein made could be confirmed (are there really environmental issues?), and the decision makers (managers and directors) would have more knowledge for their improvement strategy (if not the communication processes, what else could they invest in?).

Second, it is interesting to investigate if company 'ABC' is getting the financial return they expected, at first. Is company 'ABC' successful in the servitization process? Is the income at company 'ABC' suffering any changes with the implementation of service programs, whether positive or negative?

Third, the analysis was made with responses from 50 (fifty) employees at company 'ABC' in Brazil/Rio de Janeiro. It would be important to survey more people, to check if the results would be the same. It is expected that the results will not differ, but maybe if a different area is surveyed, Finances for example (since no one responded), new results show up. Also, only the subsidiary in Rio de Janeiro was analyzed; maybe a different location shows a different result. Employees in other places may see the service offerings in a different way.

Fourth, future studies should attempt to include the analysis of other companies in the same industry of company 'ABC' – pharmaceutical. Companies that are similar, in scope and service programs, show a similar servitization result?

Finally, it is interesting to observe how manufacturing companies in different countries, sizes and industries are dealing with services.

REFERENCES

ABRELL-VOGEL, C.; ROWOLD, J. Leader's commitment to change and their effectiveness in change - a multilevel investigation. *Journal of Organizational Change*, v. 27, n. 06, 2014. Available in: <<http://www.emeraldinsight.com/doi/abs/10.1108/JOCM-07-2012-0111>>. Access in: 07/25/2016.

AHAMED, Z.; INOHARA, T.; KAMOSHIDA, A. The Servitization of Manufacturing: an Empirical Case Study of IBM Corporation. **International Journal of Business Administration**, v. 04, n. 02, p. 18 – 26, 2013. Available in: <<http://search.proquest.com/docview/1317726234/19E212ED2C454DE5PQ/22?accountid=26631>>. Access in: 05/01/2016.

AIFANG, G.; YUKE, L.; ZE Z.; GUANGPU, C. Influence of organizational elements on manufacturing firms' service-enhancement: An empirical study based on Chinese ICT industry. **Technology in Society**, v. 43, p. 183 – 190, 2015. Available in: <<http://www.sciencedirect.com/science/article/pii/S0160791X15000597>>. Access in: 04/27/2016.

ALLAIS, R.; GOBERT, J. A multidisciplinary method for sustainability assessment of PSS: Challenges and developments. **CIRP Journal of Manufacturing Science and Technology**, p. 01 – 09, 2016. Available in: <<http://www.sciencedirect.com/science/article/pii/S1755581716300104?np=y>>. Access in: 04/27/2016.

ALVAREZ, R. L. P, MARTINS, M. R., SILVA, M. T. Applying the maturity model concept to the servitization process of consumer durables companies in Brazil. **Journal of Manufacturing Technology Management**, v. 26, p. 1086 – 1106, 2015. Available in: <<http://www-emeraldinsight-com.ez29.periodicos.capes.gov.br/doi/pdfplus/10.1108/JMTM-04-2014-0050>>. Access in: 04/20/2016.

ANGELIS, J.; LIMA, E.; SIRALIOVA, J. Servitised Experiences: Business and Management Implications. **Current Issues of Business and Law**, v. 05, p. 06 – 21, 2010. Available in: <<http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=29&sid=d379956b-df41-4538-a614-0229818db78d%40sessionmgr110&hid=118>>. Access in: 05/01/2016.

A R Tan; D. Matzen; T C McLoone; S. Evans. Strategies for designing and developing services for manufacturing firms. **CIRP Journal of Manufacturing Science and Technology**, v. 03, n. 02, p. 90 – 97, 2010. Available in: <<http://www.sciencedirect.com/science/article/pii/S1755581710000039>>. Access in: 04/26/2016.

AVLONITIS, V.; FRANSEN, T.; HSUAN, J.; KARLSSON, C. Driving Competitiveness through Servitization – A Guide for Practitioners. The CBS Competitiveness Platform, p. 1 – 24, 2014. Available in:

<<http://www.industriensfond.dk/sites/default/files/20140509.pdf>>. Access in: 05/01/2016

AZEVEDO, A.; SHOLIHA, M. Innovative Costing System Framework in Industrial Product-service System Environment. **Procedia Manufacturing**, v. 04, p. 224 – 230, 2015. Available in: <<http://www.sciencedirect.com/science/article/pii/S2351978915011518>>. Access in: 04/27/2016.

BADER, K.; ENKEL, E. Towards Service-based Business Models in Product-centric Firms: a Capability Approach. **The International Society for Professional Innovation Management**, p. 01 – 19, 2014. Available in: <<http://search.proquest.com/docview/1690362398/fulltextPDF/19E212ED2C454DE5PQ/202?accountid=26631>>. Access in: 04/26/2016.

BAINES, T. Exploring Service Innovation and the Servitization of the Manufacturing Firm. **Research Technology Management**, p. 09 – 11, 2015. Available in: <<http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?sid=042df993-49d3-43c4-bd59-252dc3a27b0a%40sessionmgr107&vid=53&hid=124>>. Access in: 04/26/2016.

BAINES, T.; LIGHTFOOT, H. Servitization of the manufacturing firm: Exploring the operations practices and technologies that deliver advanced services. *Int. Journal of Operations & Production Management*, v. 34, n. 01, p. 02 – 35, 2014. Available in: <<http://search.proquest.com/docview/1467773481/A6D0E8407E44A5EPQ/2?accountid=26631>>. Access in: 04/20/2016.

BAINES, T. S.; LIGHTFOOT, H. W.; BENEDETTINI, O.; KAY, J. M. The Servitization of Manufacturing: A review of Literature and Reflection on Future Challenges. **Journal of Manufacturing Technology Management**, v. 20, n. 05, p. 547 – 567, 2009. Available in: <<http://search.proquest.com/docview/208185192/fulltextPDF/19E212ED2C454DE5PQ/1?accountid=26631>>. Access in: 06/30/2015.

BAINES, T.; LIGHTFOOT, H.; PEPPARD, J.; JOHNSON, M. et al. Towards an Operations Strategy for Product-centric Servitization. **International Journal of Operations Management**, v. 29, n. 05, p. 494 – 519, 2009. Available in: <<http://search.proquest.com/docview/232352876/fulltextPDF/19E212ED2C454DE5PQ/19?accountid=26631>>. Access in: 04/04/2016.

BAINES, T.; LIGHTFOOT, H.; SMART, P. Servitization within manufacturing. Exploring the provision of advanced services and their impact on vertical integration. **Journal of Manufacturing Technology Management**, v. 22, n. 7, p. 947 – 954, 2011. Available in: <<http://search.proquest.com/docview/893418303/fulltextPDF/19E212ED2C454DE5PQ/17?accountid=26631>>. Access in: 04/20/2016.

BAINES, T.; LIGHTFOOT, H.; SMART, P.; FLETCHER, S. Servitization of Manufacture: Exploring the deployment and skills of people critical to the delivery of advanced services. **Journal of Manufacturing Technology Management**, v. 24, n. 04, p. 637 – 646, 2013. Available in:

<<http://search.proquest.com/docview/1354828778/fulltextPDF/19E212ED2C454DE5PQ/24?accountid=26631>>. Access in: 04/04/2016.

BARNETT, N.; PARRY, G.; NEWNES, L. B.; GOH, Y. M. Servitization: is a Paradigm Shift in the Business Model and Service Enterprise Required? **Strategic Change**, v. 22, n. 03, p. 145 – 156, 2013. Available in: <<http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?sid=042df993-49d3-43c4-bd59-252dc3a27b0a%40sessionmgr107&vid=40&hid=124>>. Access in: 04/25/2016.

BARQUET, A. P.; OLIVEIRA, M. G.; AMIGO, C. R.; CUNHA, V. P.; ROZENFELD, H. Employing the business model concept to support the adoption of product–service systems (PSS). **Industrial Marketing Management**, v. 42, n. 05, p. 693 – 704, 2013. Available in: <<http://www.sciencedirect.com/science/article/pii/S0019850113000710>>. Access in: 04/26/2016.

BASTL, M.; JOHNSON, M.; LIGHTFOOT, H.; EVANS, S. Buyer-supplier relationships in a servitized environment. **Int. Journal of Operations & Production Management**, v. 32, n. 06, p. 650 – 675, 2012. Available in: <[http://www-emeraldinsight-com.ez29.periodicos.capes.gov.br/doi/pdfplus/10.1108/01443571211230916](http://www.emeraldinsight-com.ez29.periodicos.capes.gov.br/doi/pdfplus/10.1108/01443571211230916)>. Access in: 04/20/2016.

BELVEDERE, V.; GRANDO, A.; BIELLI, P. A quantitative investigation of the role of information and communication technologies in the implementation of a product-service system. **International Journal of Production Research**, v. 51, n. 02, p. 410 – 426, 2011. Available in: <<http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?sid=042df993-49d3-43c4-bd59-252dc3a27b0a%40sessionmgr107&vid=148&hid=124>>. Access in: 04/26/2016

BENEDETTINI, O.; NEELY, A.; SWINK, M. Why do Servitized Firms Fail? A Risk-based Explanation. **International Journal of Operations and Production Management**, v. 35, n. 06, p. 946 – 979, 2015. Available in: <<http://www-emeraldinsight-com.ez29.periodicos.capes.gov.br/doi/pdfplus/10.1108/IJOPM-02-2014-0052>>. Access in: 05/04/2016.

BETTENCOURT, L.; BROWN, S. From Goods to Great: Service Innovation in a Product-dominant Firm. **Business Horizons**, v. 56, p. 277 – 283, 2013. Available in: <<http://www.sciencedirect.com/science/article/pii/S0007681313000098>>. Access in: 06/30/2015

BEUREN, F. H.; FERREIRA, M. G. G.; MIGUEL, P. A. C. Product-service systems: a literature review on integrated products and services. **Journal of Cleaner Production**, v. 47, p. 222 – 231, 2013. Available in: <<http://www.sciencedirect.com/science/article/pii/S0959652612006841>>. Access in: 04/26/2016.

BIEGE, S.; JAEGER, A.; BUSCHAK, D. New Service Development in Manufacturing Companies-Insights from the German Manufacturing Sector. **Journal of Applied Management and Entrepreneurship**, v. 17, n. 03, p. 4 – 19, 2012. Available in:

<<http://search.proquest.com/docview/1041243633/6A909B43998A46D5PQ/5?accountid=26631>>. Access in: 04/25/2016.

BOEHM, M.; THOMAS, O. Looking beyond the rim of one's teacup: a multidisciplinary literature review of Product-Service Systems in Information Systems, Business Management, and Engineering & Design. **Journal of Cleaner Production**, v. 51, p. 245 – 260, 2013. Available in: <<http://www.sciencedirect.com/science/article/pii/S0959652613000243>>. Access in: 04/26/2016.

BRAX, S. A Manufacturer Becoming Service Provider – Challenges and a Paradox. **Managing Service Quality**, v. 15, n. 02, p. 142 – 155, 2005. Available in: <<http://www-emeraldinsight-com.ez29.periodicos.capes.gov.br/doi/pdfplus/10.1108/09604520510585334>>. Access in: 05/04/2016.

CARBONELL, P.; RODRIGUEZ-ESCUADERO, A. I. Antecedents and consequences of using information from customers involved in new service development. **The journal of Business & Industrial Marketing**, v. 29, n. 02, p. 112 – 122, 2014. Available in: <<http://search.proquest.com/docview/1507813760/6AC71B77CCDF48DAPQ/6?accountid=26631>>. Access in: 04/20/2016.

CARLETON, T.; COCKAYNE, W.; SAWATAN, Y. Changing the Culture of R&D. **Research Technology Management**, v. 58, n. 03, p. 9 – 10, 2015. Available in: <<http://search.proquest.com/docview/1683082896/E71B5722DB047C9PQ/6?accountid=26631>>. Access in: 04/25/2016.

CHAKKOL, M.; JOHNSON, M.; RAJA, J.; RAFFONI, A. From goods to solutions: how does the content of an offering affect network configuration? **International Journal of Physical Distribution & Logistics Management**, v. 44, n. 01, p. 132 – 154, 2014. Available in: <<http://search.proquest.com/docview/1504107988/28A2A47680D84A59PQ/1?accountid=26631>>. Access in: 04/20/2016.

COLEN, P. J.; LAMBRECHT, M. R. Product service systems: exploring operational practices. **Services Industry Journal**, v.33, n. 05, p. 501 – 515, 2013. Available in: <<http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?sid=042df993-49d3-43c4-bd59-252dc3a27b0a%40sessionmgr107&vid=116&hid=124>>. Access in: 04/26/2016.

DACHS, B. BIEGE, S., BOROWIECKI, M., LAY, G., JÄGER, A., SCHARTINGER, D. Servitisation of European Manufacturing: Evidence from Large Scale Database. **The Service Industries Journal**, v. 34, No. 01, 05 – 23, 2014. Available in: <<http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=12&sid=d379956b-df41-4538-a614-0229818db78d%40sessionmgr110&hid=118>>. Access in: 04/04/2016.

DE TONI, A.; NASSIMBENI, G.; TONCHIA, S. Service dimensions in the buyer-supplier relationship: A case study. **International Journal of Physical Distribution & Logistics Management**, v. 24, n. 08, p. 4, 1994. Available in: <<http://www->

emeraldinsight-com.ez29.periodicos.capes.gov.br/doi/pdfplus/10.1108/09600039410071235>. Access in: 04/20/2016.

DEMETER, K.; SZÁSZ, L. Towards Solution based Thinking: Characteristics of Servitization at Hungarian Manufacturing Firms. **Journal of East European Studies (JEEMS)**, p. 309 - 335, 2013. Available in: <<http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=17&sid=d379956b-df41-4538-a614-0229818db78d%40sessionmgr110&hid=118>>. Access in: 04/04/2016.

DIERDONCK, R. Success Strategies in a Service Economy. **European Management Journal**, v. 10, n. 03, p. 365 – 372, 1992. Available in: <<http://www.sciencedirect.com/science/article/pii/026323739290033Z>>. Access in: 04/25/2016.

DRODEGARI, F.; ALGHISI, A.; ARDOLINO, M.; SACCANI, N. From Ownership to Service-oriented Business Models: A Survey in Capital Goods Companies and a PSS Typology. **Procedia CIRP**, v. 30, p. 245 – 250, 2015. Available in: <<http://www.sciencedirect.com/science/article/pii/S2212827115001870>>. Access in: 04/26/2016.

DUBRUC, N.; PEILLON, S.; FARAH, A. The Impact of Servitization on Corporate Culture. **Procedia CIRP**, v. 16, p. 289 – 294, 2014. Available in: <<http://www.sciencedirect.com/science/article/pii/S2212827114001322>>. Access in: 05/01/2016.

DURST, S.; MENTION, A. L.; POUTANEN, P. Service innovation and its impact: What do we know about? **Investigaciones Europeas de Dirección y Economía de la Empresa**, v. 21, n. 02, p. 65 – 72, 2015. Available in: <<http://www.sciencedirect.com/science/article/pii/S1135252314000410>>. Access in: 04/27/2016.

EISENHARDT, K. Theories from Case Study Research. *The Academy Management Review*, v. 14, n. 04, p. 532 – 550, 1989. Available in: <<https://www.jstor.org/stable/pdf/258557.pdf>> . Access in: 01/09/2016.

ELVING, S. W.; LINDAHL, M. SUNDIN, E. Ericsson – The History from Product to Solution Provider and Challenges and Opportunities in an Evolving Environment. **Procedia CIRP**, v. 30, p. 239 – 244, 2015. Available in: <<http://www.sciencedirect.com/science/article/pii/S2212827115001894>>. Access in: 04/26/2016.

ELFVING, S. W.; WASHINGTON, N.; LIENERTB, A.; MÄNZ, K.; WILKENS, U. At a Crossroads: Case Study Analysis of the Organizational Challenges within the Transformation Path to an IPS2. **Procedia CIRP**, v. 16, p. 326 – 331, 2014. Available in: <<http://www.sciencedirect.com/science/article/pii/S2212827114001383>>. Access in: 04/26/2016.

EVANS, J. R.; LASKIN, R. L. The Relationship Marketing Process: a conceptualization and application. *Industrial Marketing Management*, n. 23, p. 439 – 452, 1994. Available in: https://www.researchgate.net/profile/Joel_Evans4/publication/223047614_The_relationship_marketing_process_A_conceptualization_and_application/links/553bf67c0cf29b5ee4b87f17.pdf. Access in: 07/25/2016.

FINNE, M.; BRAX, S.; HOLMSTRÖM, J. Reversed servitization paths: a case analysis of two manufacturers. *Service Business*, p. 513 – 537, 2013. Available in: <http://link.springer.com/article/10.1007/s11628-013-0182-1>. Access in: 07/21/2016.

GALLEGO, J.; RUBALCABA, L.; HIPPI, C. Services and Organizational Innovation: the right mix for value creation. **Management Decision**, v. 51, n. 06, p. 1117 – 1134, 2013. Available in: <http://search.proquest.com/docview/1398033404/E1D6FB6717F94311PQ/2?accountid=26631>. Access in: 04/25/2016.

GAO, J.; YAO, Y.; ZHU, V.; SUN, L.; LIN, L. Service-oriented manufacturing: a new product pattern and manufacturing paradigm. *Journal of Intelligent Marketing*, v. 22, n. 03, p. 435 – 446, 2011. Available in: <http://search.proquest.com/docview/1112161034/B9B9EFB708E4FC5PQ/31?accountid=26631>. Access in: 04/25/2016.

GEBAUER, H. Antecedents for the Transition from Products to Services. **Journal of Applied Management and Entrepreneurship**, v. 13, n. 03, p. 04 – 19, 2008. Available in: <http://search.proquest.com/docview/203924844/A7B13BB96BCD4479PQ/15?accountid=26631>. Access in: 05/04/2016

GEBAUER, H. An attention-based view on service orientation in the business strategy of manufacturing companies. **Journal of Managerial Psychology**, v. 24, n. 01, p. 79 – 98, 2009. Available in: <http://www.emeraldinsight.com.ez29.periodicos.capes.gov.br/doi/pdfplus/10.1108/02683940910922555>. Access in: 04/26/2016.

GEBAUER, H. Service Business in Manufacturing Companies: Identifying Misconceptions and Directing Further Research. **Journal of Applied Management and Entrepreneurship**, v. 15, n. 03, p. 50 – 61, 2010. Available in: <http://search.proquest.com/docview/734621193/6A909B43998A46D5PQ/6?accountid=26631>. Access in: 04/25/2016.

GEBAUER, H.; EDVARDSSON, B.; BJURKO, M. The impact of service orientation in corporate culture on business performance in manufacturing companies. *Journal of Service Management*, v. 21, n. 02, p. 237 – 259, 2010. Available in: <http://search.proquest.com/docview/233639987/7968D61EB9D94E85PQ/26?accountid=26631>. Access in: 04/20/2016.

GEBAUER, H.; FRIEDLI, T. Behavioral Implications of the Transition Process from Products to Services. **Journal of Business & Industrial Marketing**, v. 20, n. 02, p. 70 – 78, 2005. Available in: <http://www.emeraldinsight>

com.ez29.periodicos.capes.gov.br/doi/pdfplus/10.1108/08858620510583669>.
Access in: 04/26/2016.

GEBAUER, H.; FLEISCH, E.; FRIEDLI, T. Overcoming the Service Paradox in Manufacturing Companies. **European Management Journal**, v. 23, n. 01, p. 14 – 26, 2005. Available in: <http://www.sciencedirect.com/science/article/pii/S0263237304001392>>. Access in: 04/27/2016.

GEBAUER, H.; FRIEDLI, T.; FLEISCH, E. Success Factors for Achieving High Service Revenues in Manufacturing Companies. **Benchmarking: An International Journal**, v. 13, n. 03, p. 374 – 386, 2006. Available in: <http://www-emeraldinsight-com.ez29.periodicos.capes.gov.br/doi/pdfplus/10.1108/14635770610668848>>. Access in: 05/04/2016.

GEBAUER, H.; FISCER, T.; FLEISCH, E. Exploring the interrelationship among patterns of service strategy changes and organizational design elements. **Journal of Service Management**, v. 21, n. 01, p. 103 – 129, 2010. Available in: <http://search.proquest.com/docview/346134326/7968D61EB9D94E85PQ/17?accountid=26631>>. Access in: 04/20/2016.

GEBAUER, H.; GUSTAFSSON, A.; WITELL, L. Competitive advantage through service differentiation by manufacturing companies. **Journal of Business Research**, v. 64, n. 12, p. 1270 – 1280, 2011. Available in: <http://www.sciencedirect.com/science/article/pii/S0148296311000233>>. Access in: 04/27/2016.

GEBAUER, H.; KREMPL, R.; FLEISCH, E. Service Development in Traditional Product Manufacturing Companies. **European Journal of Innovation Management**, v. 11, n. 2, p. 219 – 240, 2008. Available in: <http://www-emeraldinsight-com.ez29.periodicos.capes.gov.br/doi/pdfplus/10.1108/14601060810869875>>. Access in: 04/26/2016.

GEBAUER, H.; JONCOURT, S.; SAUL, C. Services in Product-oriented Companies: Past, Present and Future. **Universia Business Review**, p. 32 – 53, 2016. Available in: <http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=27&sid=d379956b-df41-4538-a614-0229818db78d%40sessionmgr110&hid=118>>. Access in: 04/04/2016.

GEBAUER, H.; PAIOLA, M.; EDVARDSSON, B. Service business development in small and medium capital goods manufacturing companies. **Managing Service Quality**, v. 20, n. 02, p. 123 – 139, 2010. Available in: <http://search.proquest.com/docview/198143739/8664CC3D9212449APQ/4?accountid=26631>>. Access in: 04/25/2016.

GEBAUER, H.; REN, G. J.; REYNOSO, J. Service-driven Manufacturing: Provision, Evolution and Financial impact of Services in Industrial Firms. **Journal of Service Management**, v. 23, n. 01, p. 120 – 136, 2012. Available in: <http://search.proquest.com/docview/926016880/fulltextPDF/19E212ED2C454DE5PQ/206?accountid=26631>>. Access in: 04/04/2016.

GESING, J.; MAWALD, K.; WIESEKE, J.; STURM, R. Are IPS2 always a Solution? Obstacles towards Buying Industrial Product Service Systems. **Procedia CIRP**, v. 16, p. 265 – 270, 2014. Available in: <<http://www.sciencedirect.com/science/article/pii/S2212827114001280>>. Access in: 04/26/2016.

GOBBLE, M. M. From Customer Intelligence to Customer Intimacy. **Research Technology Management**, v. 58, n. 06, p. 56 – 60, 2015. Available in: <<http://search.proquest.com/docview/1736458103/E71B5722DB047C9PQ/5?accountid=26631>>. Access in: 04/25/2016.

GREMYR, I.; LÖFBERG, N.; WITTELL, L. Service innovations in manufacturing firms. **Managing Service Quality**, v. 20, n. 02, p. 161 – 175, 2010. Available in: <<http://search.proquest.com/docview/198027578/8664CC3D9212449APQ/6?accountid=26631>>. Access in: 04/25/2016.

GUDERGAN, G.; BUSCHMEYER, A.; KRECHTING, D.; GFEIGE, B. Evaluating the Readiness to Transform Towards a Product-service System Provider by a Capability Maturity Modelling Approach. **Procedia CIRP**, v. 30, p. 384 – 389, 2015. Available in: <<http://www.sciencedirect.com/science/article/pii/S2212827115004473>>. Access in: 04/26/2016.

HINKIN, T., TRACEY, J. B., ENZ, C. A. Scale Construction: Developing reliable and valid measurement instruments. Cornell University School of Hotel Administration, v. p. – 23, 1997. Available in: <<http://scholarship.sha.cornell.edu/cgi/viewcontent.cgi?article=1618&context=articles>>. Access in: 12/13/2016.

HONG, P.; KIM, Y.; CIN, B. Product-Service System and Firm Performance: The Mediating Role of Product and Process Technological Innovation. **Emerging Markets Finance & Trade**, v. 51, n. 05, p. 975 – 984, 2015. Available in: <<http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?sid=042df993-49d3-43c4-bd59-252dc3a27b0a%40sessionmgr107&vid=193&hid=124>>. Access in: 04/26/2016.

JOHNSTONE, S.; DAINTY, A.; WILKINSON, A. Integrating products and services through life: an aerospace experience. **Int. Journal of Operations & Production Management**, v. 29, n. 05, p. 520 – 538, 2009. Available in: <<http://search.proquest.com/docview/232354479/A6D0E8407E44A5EPQ/13?accountid=26631>>. Access in: 04/20/2016.

KACZOR, S.; KRYVINSKA, N. It is all about Services – Fundamentals, Drivers and Business Models. **Journal of Service Science Research**, p. 125 – 154, 2013. Available in: <<http://search.proquest.com/docview/1628722574/19E212ED2C454DE5PQ/68?accountid=26631>>. Access in: 04/04/2016.

KINDSTRÖM, D. Towards a Service-based Business Model – Key Aspects for Future Competitive Advantage. **European Management Journal**, v. 28, n. 06, p. 479 – 490, 2010. Available in:

<<http://www.sciencedirect.com/science/article/pii/S0263237310000538>>. Access in: 04/26/2016.

KINDSTRÖM, D.; KOWALKOWSKI, C. Development of industrial service offerings. **Journal of Service Management**, v. 20, n. 02, p. 156 – 172, 2009. Available in: <<http://www.emeraldinsight.com.ez29.periodicos.capes.gov.br/doi/pdfplus/10.1108/09564230910952753>>. Access in: 04/20/2016.

KINDSTRÖM, D.; KOWALKOWSKI, C. Service Innovation in Product-centric Firms: a Multidimensional Business Model Perspective. **The Journal of Business and Industrial Marketing**, v. 29, n.02, p. 96 – 111, 2014. Available in: <<http://search.proquest.com/docview/1507813637/fulltextPDF/19E212ED2C454DE5PQ/223?accountid=26631>>. Access in: 04/04/2016.

KINNUNEN, R.; TURUNEN, T. Identifying Servitization Capabilities of Manufacturers: A Conceptual Model. **Journal of Applied Management and Entrepreneurship**, v. 17, n. 3, p. 55 – 78, 2012. Available in: <<http://search.proquest.com/docview/1041243636/6A909B43998A46D5PQ/1?accountid=26631>>. Access in: 04/04/2016

KOHTAMÄKI, M.; HELO, P. Industrial services - the solution provider's stairway to heaven or highway to hell? **Benchmarking**, v. 22, n. 02, p. 170 – 185, 2015. Available in: <<http://search.proquest.com/docview/1656264544/CBC47B86C94D4B64PQ/1?accountid=26631>>. Access in: 04/25/2016.

KOKEMMULLER, N. What does the term service culture mean & how do companies develop a service culture? 2016. Available in: <<http://smallbusiness.chron.com/term-service-culture-mean-companies-develop-service-culture-74446.html>>. Access in: 19/07/2016.

KORTE, D. Is Servitization the key to manufacturers' long-term survival? **Field Service Digital**, 2015. Available in: <<http://fsd.servicemax.com/2015/03/10/is-servitization-the-key-to-manufacturers-long-term-survival/>>. Access in: 05/01/2016

KOWALKOWSKI, C.; KINDSTRÖM, D.; GEBAUER, H. ICT as a catalyst for service business orientation. **The journal of Business & Industrial Marketing**, v. 28, n. 06, p. 506 – 513, 2013. Available in: <<http://search.proquest.com/docview/1425370381/6AC71B77CCDF48DAPQ/2?accountid=26631>>. Access in: 04/20/2016.

KOWALKOWSKI, C.; WITELL, L.; GUSTAFSSON, A. Any way goes: Identifying value constellations for service infusion in SMEs. **Industrial Marketing Management**, v. 42, n. 01, p. 18 – 30, 2013. Available in: <<http://www.sciencedirect.com/science/article/pii/S0019850112001873>>. Access in: 04/26/2016.

KUCZA, G.; GEBAUER, H. Global approaches to the service business in manufacturing companies. **The journal of Business & Industrial Marketing**, v. 26, n. 07, p. 472 – 483, 2011. Available in:

<<http://search.proquest.com/docview/888253794/6AC71B77CCDF48DAPQ/11?accountid=26631>>. Access in: 04/20/2016.

LAPERCHEA, B.; PICARD, F. Environmental constraints, Product-Service Systems development and impacts on innovation management: learning from manufacturing firms in the French context. **Journal of Cleaner Production**, v. 53, p. 118 – 128, 2013. Available in: <<http://www.sciencedirect.com/science/article/pii/S0959652613001856>>. Access in: 04/26/2016.

LEE, S.; YOO, S.; KIM, D. When is Servitization a Profitable Competitive Strategy? **International Journal Production Economics**, v. 173, p. 43 – 53, 2015. Available in: <<http://www.sciencedirect.com/science/article/pii/S0925527315005216>>. Access in: 05/01/2016.

LEHTONEN, H.; KOSTAMA, H. A Novel Categorization of Industrial Services - Analysis of Service Offerings of Manufacturing Companies. **Journal of Applied Management and Entrepreneurship**, v. 19, n. 03, p. 08 - 34, 2014. Available in: <<http://search.proquest.com/docview/1564428204/6A909B43998A46D5PQ/2?accountid=26631>>. Access in: 04/25/2016.

LEONI, L. Adding service means adding knowledge: an inductive single-case study. **Business Process Management Journal**, v. 21, n. 03, p. 610 – 627, 2015. Available in: <<http://www-emeraldinsight-com.ez29.periodicos.capes.gov.br/doi/pdfplus/10.1108/BPMJ-07-2014-0063>>. Access in: 04/25/2016.

LIENERT, A. Change of Culture or Culture of Change? Introducing a path-agency-culture (PAC) Framework to Servitization Research. **Procedia CIRP**, v. 30, p. 353 – 358, 2015. Available in: <<http://www.sciencedirect.com/science/article/pii/S2212827115001705>>. Access in: 04/26/2016.

LIGHTFOOT, H.; BAINES, T.; SMART, P. The Servitization of Manufacturing. A Systematic Literature Review of Interdependent Trends. **International Journal of Operations and Production Management**, v. 33, n. 11/12, p. 1408 – 1434, 2013. Available in: <<http://search.proquest.com/docview/1462451872/fulltextPDF/19E212ED2C454DE5PQ/8?accountid=26631>>. Access in: 04/04/2016.

LIM, C.H.; KIM, M.J.; HEO, J.Y.; KIM, K.J. A Conceptual Framework for Designing Informatics-based Services in Manufacturing Industries. **Procedia CIRP**, v. 30, p. 72 – 77, 2015. Available in: <<http://www.sciencedirect.com/science/article/pii/S2212827115001742>>. Access in: 04/26/2016.

LOCKETT, H.; JOHNSON, M.; EVANS, S.; BASTL, M. Product service system and supply network relationship: an exploratory case study. **Journal of Manufacturing Technology Management**, v. 22, n. 03, p. 293 – 313, 2011. Available in: <<http://search.proquest.com/docview/855079469/FD82BA3F13F34235PQ/10?accountid=26631>>. Access in: 04/20/2016.

MAGNUSSON, J.; STRATTON, S. How do companies servitize? International Business Master Thesis, 2000. Available in: <https://gupea.ub.gu.se/bitstream/2077/2448/1/Magnusson_2000_37.pdf>. Access in: 07/01/2016

MAIWALD, K.; WIESEKE, J.; EVERHARTZ, J. The Dark Side of Providing Industrial Product-service Systems – Perceived Risk as a key Challenge from a Customer-centric Point of View. **Procedia CIRP**, v. 16, p. 241 – 246, 2014. Available in: <<http://www.sciencedirect.com/science/article/pii/S2212827114001255>>. Access in: 04/26/2016.

MARQUESA, P.; CUNHA, P.; VALENTE, F.; LEITÃO, A. A Methodology for Product-service Systems Development. **Procedia CIRP**, v. 07, p. 371 – 376, 2013. Available in: <<http://www.sciencedirect.com/science/article/pii/S2212827113002709>>. Access in: 04/26/2016.

MARTÍN-PEÑA, M.; BIGDELI, A.Z. Servitization: Academic Research and Business Practice. **Universia Business Review**, p. 18 – 31, 2016. Available in: <<http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=9&sid=d379956b-df41-4538-a614-0229818db78d%40sessionmgr110&hid=118>>. Access in: 04/04/2016.

MARTINEZ, V.; BASTL, M.; KINGSTON, J.; EVANS, S. Challenges in Transforming Manufacturing Organizations into Product-service Providers. **Journal of Manufacturing Technology Management**, v. 21, n. 04, p. 449 – 469, 2010. Available in: <<http://search.proquest.com/docview/208177762/fulltextPDF/19E212ED2C454DE5PQ/51?accountid=26631>>. Access in: 04/04/2016.

MARTINEZ, V. NEELY, A.; URMETZER, F. Seven Critical Success Factors in the Shift to Services. University of Cambridge, p. 1 – 16, 2016. Available in: <http://cambridgeservicealliance.eng.cam.ac.uk/resources/Downloads/Monthly%20Papers/SevenCriticalSuccessFactorsintheShifttoServices_ExecBriefing.pdf>. Access in: 18/06/2016.

MATTHYSSEN, P.; VANDENBEMPT, K. Moving from basic offerings to value-added solutions: Strategies, barriers and alignment. **Industrial Marketing Management**, v. 37, n. 03, p. 316 – 328, 2008. Available in: <<http://www.sciencedirect.com/science/article/pii/S0019850107001575>>. Access in: 04/26/2016.

MATTHYSSENS, P.; VANDENBEMPT, K. Service addition as business market strategy: identification of transition trajectories. **Journal of Service Management**, v. 21, n. 05, p. 693 – 714, 2010. Available in: <<http://search.proquest.com/docview/761439007/7968D61EB9D94E85PQ/7?accountid=26631>>. Access in: 04/20/2016.

MUFFATTO, M.; PANIZOLLO, R. A process-based view for customer satisfaction. **The International Journal of Quality & Reliability Management**, v. 12, n. 09, p. 154, 1995. Available in: <<http://www-emeraldinsight.com.ez29.periodicos.capes.gov.br/doi/pdfplus/10.1108/02656719510101259>>. Access in: 04/25/2016.

NARVAIZA, L.; OLANO, D. R.; CAMPOS, T.; ARRONIZ, I. When services are offered by small and medium retailers: what is the customer's perception? **Universia Business Review**, p. 132 – 145, 2016. Available in: <<http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?sid=042df993-49d3-43c4-bd59-252dc3a27b0a%40sessionmgr107&vid=18&hid=124>>. Access in: 04/26/2016.

NEELY, A. Exploring the Financial Consequences of the Servitization of Manufacturing. **Operations Management Research**, p. 103 – 118, 2008. Available in: <<http://search.proquest.com/docview/883432863/19E212ED2C454DE5PQ/18?accountid=26631>>. Access in: 04/04/2016.

NG, I.; PARRY, G.; SMITH, L.; MAULL, R.; BRISCOE, G. Transitioning from Goods-dominant to a Service-dominant Logic. **Journal of Service Management**, v. 23, n. 03, p. 416 – 439, 2012. Available in: <<http://search.proquest.com/docview/1023911440/7968D61EB9D94E85PQ/2?accountid=26631>>. Access in: 04/04/2016.

NUUTINEN, M.; LAPPALAINEN, I. Towards service-oriented organizational culture in manufacturing companies. **International Journal of Quality and Service Sciences**, v. 04, n. 02, p. 137 – 155, 2012. Available in: <<http://search.proquest.com/docview/1019286609/A7B13BB96BCD4479PQ/32?accountid=26631>>. Access in: 05/04/2016.

O'HALLORAN, P. Strategies for Selling Services. **The Open Source Business Resource**, p. 25 – 28, 2010. Available in: <<http://search.proquest.com/docview/1695042564/abstract/F2D011306CBC43B7PQ/30?accountid=26631>>. Access in: 04/26/2016.

OLIVA, R.; KALLENBERG, R. Managing the transition from products to services. **International Journal of Service Industry Management**. v. 14, n. 02, p. 160 – 172, 2003. Available in: <<http://search.proquest.com/docview/233665868/A7B13BB96BCD4479PQ/2?accountid=26631>>. Access in: 05/04/2016.

OPRESNIK, D.; TAISCH, M. The value of Big Data in Servitization. **International Journal of Production Economics**, v. 165, p. 174 - 184, 2015. Available in: <<http://www.sciencedirect.com/science/article/pii/S0925527314004307>>. Access in: 04/25/2016.

PAIOLA, M.; SACCANI, N.; PERONA, M.; GEBAUER, H. Moving from Products to Solutions: Strategic Approaches for Developing Capabilities. **European Management Journal**, v. 31, n. 04, p. 390 – 409, 2013. Available in: <<http://www.sciencedirect.com/science/article/pii/S0263237312000977>>. Access in: 04/26/2016.

PARIDA, V.; SJÖDIN, D. R.; WINCENT, J.; KOHTAMÄKI, M. A Survey Study of the Transitioning towards High-value Industrial Product-services. **Procedia CIRP**, v. 16, p. 176 – 180, 2014. Available in: <<http://www.sciencedirect.com/science/article/pii/S2212827114001097>>. Access in: 04/26/2016.

PARIDA, V.; SJÖDIN, D.; WINCENT, J.; KOHTAMÄKI, M. Mastering the Transition to Product-service Provision. **Research Technology Management**, p. 44 – 52, 2014. Available in:

<<http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=33&sid=d379956b-df41-4538-a614-0229818db78d%40sessionmgr110&hid=118>> Access in: 04/04/2016.

PAWAR, K. S.; BELTAGUI, A.; RIEDEL, J. The PSO triangle: designing product, service and organization to create value. **Int. Journal of Operations & Production Management**, v. 29, n. 05, p. 468 – 493, 2009. Available in:

<<http://search.proquest.com/docview/232327624/A6D0E8407E44A5EPQ/20?accountid=26631>>. Access in: 04/20/2016.

PEZZOTTA, G.; PINTO, R.; PIROLA, F.; OUERTANI, M. Z. Balancing Product-service Provider's Performance and Customer's Value: The Service Engineering Methodology (SEEM). **Procedia CIRP**, v. 16, p. 50 – 55, 2014. Available in:

<<http://www.sciencedirect.com/science/article/pii/S2212827114000936>>. Access in: 04/26/2016.

PLEPYS, A.; HEISKANEN, E.; MONT, O. European policy approaches to promote servicizing. **Journal of Cleaner Production**, v. 97, p. 117 – 123, 2015. Available in:

<<http://www.sciencedirect.com/science/article/pii/S0959652614003771>>. Access in: 04/26/2016.

POURABDOLLAHIAN, G.; COPANI, G. Development of a PSS-oriented Business Model for Customized Production in Healthcare. **Procedia CIRP**, v. 30, p. 492 – 497, 2015. Available in:

<<http://www.sciencedirect.com/science/article/pii/S2212827115004710>>. Access in: 04/26/2016.

RAJESH, K.; TORE, M. Development of performance-based service strategies for the oil and gas industry: a case study. **The journal of Business & Industrial Marketing**, v. 22, n. 04, p. 272 -280, 2007. Available in:

<<http://search.proquest.com/docview/221999878/6AC71B77CCDF48DAPQ/13?accountid=26631>>. Access in: 04/20/2016.

RADDATS, C.; BAINES, T.; BURTON, J.; STORY, V.; ZOLKIEWSKI, J. Motivations for servitization: the impact of product complexity. **Int. Journal of Operations & Production Management**, v. 26, n. 05, p. 572 – 591, 2016. Available in: <[http://www-emeraldinsight-com.ez29.periodicos.capes.gov.br/doi/pdfplus/10.1108/IJOPM-09-2014-0447](http://www.emeraldinsight-com.ez29.periodicos.capes.gov.br/doi/pdfplus/10.1108/IJOPM-09-2014-0447)>.

Access in: 04/20/2016.

RADDATS, C.; BURTON, J.; ASHMAN, R. Resource configurations for service success in manufacturing companies. **Journal of Service Management**, v. 26, n. 01, p. 97 – 116, 2015. Available in:

<<http://search.proquest.com/docview/1661566060/fulltextPDF/AA1D48E1BF17448APQ/1?accountid=26631>>. Access in: 04/20/2016.

SCHNÜRMACHER, C.; HAYKAB, H.; STARK, R. Providing Product-Service-Systems - The Long Way from a Product OEM towards an Original Solution Provider (OSP). **Procedia CIRP**, v. 30, p. 233 – 238, 2015. Available in:

<<http://www.sciencedirect.com/science/article/pii/S2212827115003583>>. Access in: 04/26/2016.

SCHUH, G.; GUDERGAN, G.; FEIGE, B. A.; BUSCHMEYER, A.; KRECHTING, D. Business Transformation in the Manufacturing Industry - How Information Acquisition, Analysis, usage and Distribution Affects the Success of Lifecycle-Product-Service-Systems. **Procedia CIRP**, v. 30, p. 335 – 340, 2015. Available in: <<http://www.sciencedirect.com/science/article/pii/S2212827115004461>>. Access in: 04/26/2016.

SCHULER, R. S. Strategic Human Resources Management: linking people with the strategic needs of the business. p. 18 – 32, 1991. Available in: <<http://www.sciencedirect.com/science/article/pii/009026169290083Y>>. Access in: 07/28/2016.

SCHNEIDER, B.; BOWEN, D. E. The Service Organization: Human Resources Management is crucial. p. 39 – 52, 1992. Available in: <http://www.library.armstrong.edu/eres/docs/eres/MHSA7650-1_CROSBY/765001croCrucial.PDF>. Access in: 07/28/2016.

SHIRAHADA, K.; BELAL, H. M.; TAKAHASHI, N. Development of technology and service thinking for technical personnel: Action research at a Japanese monitor maker. **Technology in Society**, v. 43, p. 191 – 198, 2015. Available in: <<http://www.sciencedirect.com/science/article/pii/S0160791X15000469>>. Access in: 04/27/2016.

SIMÕES, P. M.; ESPOSITO, M. Improving change management: how communication nature influences resistance to change. *Journal of Management Development*, v. 33, n. 04, 2014. Available in: <<https://halshs.archives-ouvertes.fr/hal-00802173/document>>. Access in: 07/28/2016.

SMITH, L.; MAULL, R.; NG, I. C. L. Servitization and Operations Management: a Service dominant-logic Approach. **Int. Journal of Operations & Production Management**, v. 34, n. 02, p. 242 – 269, 2014. Available in: <<http://search.proquest.com/docview/1476439514/fulltextPDF/19E212ED2C454DE5PQ/25?accountid=26631>>. Access in: 04/04/2016.

SPRING, M.; ARAUJO, L. Service, services and products: rethinking operations strategy. **Int. Journal of Operations & Production Management**, v. 29, n. 05, p. 444 – 467, 2009. Available in: <<http://search.proquest.com/docview/232354420/A6D0E8407E44A5EPQ/10?accountid=26631>>. Access in: 04/20/2016.

STEFANO, N. M.; CASAROTTO, F.; BARICHELLO, R.; SOHN, A. P. Hybrid Fuzzy Methodology for the Evaluation of Criteria and Sub-criteria of Product-service System (PSS). **Procedia CIRP**, v. 30, p. 439 – 444, 2015. Available in: <<http://www.sciencedirect.com/science/article/pii/S2212827115005442>>. Access in: 04/26/2016.

THOMAS, A.; BYARD, P.; EVANS, R. Identifying the UK's manufacturing challenges as a benchmark for future growth. **Journal of Manufacturing Technology**

Management, v. 23, n. 02, p. 142 – 156, 2012. Available in: <http://search.proquest.com/docview/918505534/88EE017290A24F25PQ/15?accountid=26631>>. Access in: 04/20/2016.

TIMMOR, Y.; ZIF, J. Change Readiness: an alternative conceptualization and an exploratory investigation. **EuroMed Journal of Business**, v. 05, n. 02, p. 138 – 165, 2010. Available in: <http://search.proquest.com/docview/1011597921/F51868F6F0474B87PQ/11?accountid=26631>>. Access in: 05/04/2016.

TURUNEN, T.; FINNE, M. The Organizational Environment's Impact on the Servitization of Manufacturers. **European Management Journal**, v. 32, n. 04, p. 603 – 615, 2014. Available in: <http://www.sciencedirect.com/science/article/pii/S0263237313001539>>. Access in: 04/25/2016.

ULAGA, W.; REINARTZ, W. Hybrid Offerings: How manufacturing firms combine goods and services successfully. *Journal of Marketing*, v. 75, p. 05 – 23, 2011. Available in: <http://vsb.vidya.edu.in/wp-content/uploads/2015/05/Hybrid-offerings.pdf>>. Access in: 20/07/2016.

VANDERMERWE, S.; RADA, J. Servitization of Business: Adding Value by Adding Services. **European Management Journal**. v. 06, n. 04, p. 314 – 324, 1988. Available in: <http://www.sciencedirect.com/science/article/pii/0263237388900333>>. Access in: 05/01/2016

VENDRELL-HERRERO, F.; PARRY, G.; BUSTINZA, O.; O'REGAN, N. Servitization as a Driver for Organizational Change. **Wiley Online Library**, p. – 279 – 285, 2014. Available in: <http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=15&sid=d379956b-df41-4538-a614-0229818db78d%40sessionmgr110&hid=118>>. Access in: 04/04/2016.

WEEKS, R.; BENADE, S. The development of a generic servitization systems framework. *Technology in Society*, v. 43, p. 97 – 104, 2015. Available in: <http://www.sciencedirect.com/science/article/pii/S0160791X15000743>>. Access in: 04/27/2016.

ZHANG, Y.; ZHANG, L. Organizing complex engineering operations through the lifecycle: a service-centered view and case studies. **Journal of Service Management**, v. 25, n. 05, p. 590 – 602, 2014. Available in: <http://search.proquest.com/docview/1660769284/7968D61EB9D94E85PQ/11?accountid=26631>>. Access in: 04/20/2016.

ZHEN, L. An analytical study on service-oriented manufacturing strategies. **International Journal of Production Economics**, v. 139, n. 01, p. 220 – 228, 2012. Available in: <http://www.sciencedirect.com/science/article/pii/S0925527312001685>>. Access in: 04/25/2016.

Others:

BAINES, T.; LIGHTFOOT, H. Made to Serve: How manufacturers can compete through servitization and product-service systems. **Wiley Online Library**, 2015. Available in: <<http://onlinelibrary.wiley.com/doi/10.1002/9781119207955.part4/pdf>>. Access in: 12/05/2016.

CRESWELL, J. W. Research Design – Qualitative, Quantitative and Mixed Methods Approaches. 4th Edition, 2014. Access in: 11/15/2016.

CHESBROUGH, H. Everything you need to know about open innovation. Forbes, 2011. Access in: 3/15/2017. Available in: <<https://www.forbes.com/sites/henrychesbrough/2011/03/21/everything-you-need-to-know-about-open-innovation/#48bc791175f4>>.

DeCOSTER, J. Scale Construction Notes. 2000. Available in: <<http://www.stat-help.com/scale.pdf>>. Access in: 12/13/2016.

ELLIOT, C. Why Manufacturers are shifting their focus from products to customers. Forbes, 2014. Available in: <<http://www.forbes.com/sites/ptc/2014/02/20/why-manufacturers-are-shifting-their-focus-from-products-to-customers/>>. Access in: 05/01/2016

KORTE, D. Is Servitization the key to manufacturers' long-term survival? **Field Service Digital**, 2015. Available in: <<http://fsd.servicemax.com/2015/03/10/is-servitization-the-key-to-manufacturers-long-term-survival/>>. Access in: 05/01/2016

MALHOTRA, N. K. Pesquisa de Marketing – Uma Orientação Aplicada. Georgia Institute of Technology, Bookman, 4th Edition, 2004. Access in: 11/15/2016.

MICELI, V. Servitização e Inovação em serviços na Indústria farmacêutica: Uma análise e proposta de integração. 2015. Access in: 12/13/2016.

NEELY, A. What is servitization? 2013. Available in: <<http://andyneely.blogspot.com.br/2013/11/what-is-servitization.html>>. Access in: 05/01/2016

Company 'ABC' Brasil. Available in: <<http://br.gsk.com/>>. Access in: 12/11/2016.

Research Gate – Journal Classification. 2015. Available in: <https://www.researchgate.net/publication/279531549_Comparacao_entre_o_Qualis_Capes_e_os_indices_H_e_G_o_caso_do_portal_de_periodicos_UFSC>. Access in: 11/15/2016.

Quantitative Research Methods. Available in: <<http://www.orau.gov/cdcynergy/soc2web/Content/activeinformation/tools/toolscontent/quantiativemethods.htm>>. Access: 11/15/2016.

Snap Survey. What is the Difference between Qualitative Research and Quantitative Research? 2011. Available in: <<http://www.snapsurveys.com/blog/what-is-the-difference-between-qualitative-research-and-quantitative-research/>>. Access in: 11/15/2016.

Libweb. 2016, Available in: http://libweb.surrey.ac.uk/library/skills/Introduction%20to%20Research%20and%20Managing%20Information%20Leicester/page_01.htm Access in: 11/15/2016.

Donut Survey. Available in: <http://www.marketingdonut.co.uk/marketing/market-research/questionnaires-surveys-and-focus-groups/what-is-quantitative-research>. Access in: 12/15/2016.

My Market Research Methods. Available in: <http://www.mymarketresearchmethods.com/types-of-data-nominal-ordinal-interval-ratio/>. Access in: 12/11/2016.

Statista, The Statistics Portal. Available in: <https://www.statista.com/topics/1764/global-pharmaceutical-industry/> >. Access in: 12/11/2016.

Wikipedia GlaxoSmithKline. Available in: <https://en.wikipedia.org/wiki/GlaxoSmithKline>. Access in: 12/11/2016.

PWC. Available in: <http://www.pwc.com/gx/en/industries/pharmaceuticals-life-sciences/pharma-2020/industry-strategies-trends-analysis.html>. Access in: 02/16/2017.

Pharmaceutical Industry. Available in: https://en.wikipedia.org/wiki/Pharmaceutical_industry. Access in: 02/16/2017.

The Pharmaceutical Industry in Brazil, 2013. Available in: <https://www.pwc.com.br/pt/publicacoes/setores-atividade/assets/saude/pharma-13-ingles.pdf>. Access in: 02/16/2017.

Global Pharmaceutical Industry – Statistics and Facts (2014). Available in: <http://www.statista.com/topics/1764/global-pharmaceutical-industry/>. Access in: 05/01/2016

The Pharmaceutical industry in figures. European Federation of Pharmaceutical Industries and Associations, 2016. Available in: <http://www.efpia.eu/uploads/Modules/Documents/the-pharmaceutical-industry-in-figures-2016.pdf>. Access in: 02/16/2017.

World Health Organization (WHO), 2017. Available in: <http://www.who.int/en/>. Access in: 02/16/2017.

Statista, 2017. Available in: <https://www.statista.com/statistics/407969/projected-sales-of-top-pharmaceutical-companies-worldwide/>. Access in: 02/16/2017.

Statista (2), 2017. Available in: <https://www.statista.com/statistics/263102/pharmaceutical-market-worldwide-revenue-since-2001/>. Access in: 02/16/2017.

Research Methodology, 2016. Available in: <<http://research-methodology.net/research-methodology/research-design/exploratory-research/>>. Access in: 02/16/2017

Pharmaceutical Commerce, 2016. Available in: <<http://pharmaceuticalcommerce.com/business-and-finance/global-pharma-market-will-reach-1-12-trillion-2022/>>. Access in: 02/21/2017.

Investopedia – The high Growth Potential of Brazil’s Pharma Market, 2016. Available in: <<http://www.investopedia.com/articles/investing/011916/high-growth-potential-brazils-pharma-market.asp>>. Access in: 02/21/2017.

MeasuringU. 2016. Available in: <<http://www.measuringu.com/blog/scale-points.php>>. Access in: 12/16/2016.

Centers for Disease Control and Prevention. Available in: <<https://www.cdc.gov/chronicdisease/overview/>>. Access in: 12/13/2016.

MedicineNet – Definition of Chronic Disease, 2016. Available in: <<http://www.medicinenet.com/script/main/art.asp?articlekey=33490>>. Access in: 12/13/2016.

Program 03, 2016. Available in: <<https://www.chegadeasma.com.br/tag/rinite/>> Access in: 12/13/2016.

Program 01, 2016. Available in: <<https://www.vivermaisgsk.com.br/>>. Access in: 12/13/2016.

APPENDIX

A – QUESTIONNAIRE 01

READINESS TO SERVTIZE							
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree
Service Continuum	Pure Products	Products and Services	Product-service System	Services and Products	Pure Services		
SERVICE ORIENTATION							
Our company develops a service strategy with a comprehensive understanding of the market in respect to customer needs, market potential and future service trends							
Our company builds up a network of sales, technical staff and external experts, which systematically collect and record current and future customer needs							
Our company recognizes services as a lasting differentiation strategy							
Our company defines how the company differentiates itself from competitors by means of service offers							
Our company involves all areas of the company affected by service strategy in the development process							
Our company boosts the value added thinking from the managerial to the employee level							
Our company establishes an appropriate service awareness to overcome the typical cultural habits of product manufacturer							
Our company focuses on the long-term commitment for the service strategy							
Our company maintains a symbiotic relationship between manufacturing values and service oriented values							
Our company changes managerial thinking from services as an add-on to services as value-added activities							
RELATIONSHIP MARKETING							
Our company has repeatedly told our staff that the success of the business depends on its ability to meet market demand							
Our company involves the customer in the development of products/services (co-creation).							
Our company obtains information about customer needs through market research and workshops with lead-customers							
Our company measures the satisfaction and loyalty of customers, using research questionnaires							
Our company can and will act quickly to respond to competitors							
Our company is concerned about the integration of partners and suppliers, ensuring that all parts have the same level of information							
Our company clearly has defined the service value proposition and confirmed that it is appealing to all parties involved in its delivery							
Our company ensures that people across the ecosystem understand and believe in the services vision and rationale so they are 'living' the service culture							
HUMAN RESOURCES MANAGEMENT							
Our company's management is highly committed to the service strategy.							
Our company's management is willing to incorporate service values to their daily tasks.							
Our company's management considers the combination of products and services as a potential way to improve profitability							
Our company's management coaches service employees to behave in a service-oriented way							
Our company's management values characteristics such as flexibility, relationship building, service-centricity, authenticity, technically adept, and resilience							
Our company has a special program of recruitment for front-office employees							
Our company is committed to training sales people and service technicians so that they offer services actively							
Our company empowers service employees to respond to a broad range of customer problems							
Our company empowers service employees to go out of their way to meet customer needs							
Our company sets rewards for service-oriented employee behavior							

INFORMATION MANAGEMENT							
Our company is establishing, with the aid of various communication tools, a continuous communication between customer and service workers							
Our company communicated a clear and compelling service vision, underpinned by a coherent rationale for why services matter							
Our company develops channels to open, share and harmonize information and feedback for relevant people, both inside and outside the service firm							
Our company tracks actions generated by customer's feedback and inform customers and staff about the changes made in order to involve them in the co-creation process							
Our company offers training to customers, so that they understand how the services are delivered in a proper manner							
Our company creates a service repository that can easily be accessed							
Our company offers performance reports to employees, so that they know what the company is doing and how it is performing, towards the internal goals and the competition							
Our company encourages employees to learn and share knowledge through the Internet							
Our company evaluates employees by the amount of service courses they take – whether online or offline							
Our company can take advantage of new technologies to improve the service system continuously							
Our company can identify the role of new service technologies in work practices							
Our company can understand and master the new service technical knowledge							
Our company can apply the new technology to the service process							

ORGANIZATIONAL STRUCTURE							
Our company's entire structure is aware of the service strategy, and is willing to commit to the new culture							
Our company is committed to the cooperation between various departments, in order to provide mutual assistance							
Our company's employees can freely share knowledge across departments in the company							
Our company is committed to integrating products, services and sales area, as a way to guarantee the delivery of what is being sold to the customer							
Our company invests in an information system to monitor the business operations to achieve account transparency for the new service business							
Our company aligns incentives and metrics across business units, so the products and service businesses recognizes that services are different and need different contracting and governance structure							
Our company establishes strategic objectives for services – with service targets and metrics, and aligns them with the individual and team incentives							
Our company has developed a new area focused solely on services							
Our company has developed a decentralized service organization, with profit-and-loss responsibility							
Our company creates a dedicated sales force and service technicians for the service organization							
Our company creates a governance structure with service leaders who have the necessary hierarchical position, power and authority to expand the firm's revenues through services							

B – QUESTIONNAIRE 02

READINESS TO SERVICIZE							
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree
Service Continuum	Pure Products	Products and Services		Product-service System	Services and Products		Pure Services

SERVICE ORIENTATION							
All areas of the company, including mine, are involved in the service strategy.							
All levels within the company, from trainee to directors, are committed to the service values.							
There is a technical staff, which collect and record service trends.							
All employees are encouraged to identify services as a value-added and long-term activity.							
The company's culture is flexible, as it can adapt to changes of the internal and external environment.							

RELATIONSHIP MARKETING							
The customer is involved in the development of new product/services							
The customer's needs are obtained through market research and workshop with lead-customers							
Our company measures the satisfaction and loyalty of customers, using research questionnaires.							
There is a general concern with the integration of partners and suppliers, ensuring that all parts have the same level of focus							

HUMAN RESOURCES MANAGEMENT							
The managers/directors incorporate service values into their daily tasks.							
The managers/directors coach employees to behave in a service-oriented way.							
There is a special program of recruitment for front-office employees and service technicians.							
There is a special program of training for front-office employees and service technicians.							
There is a special program of reward and empowerment for service-oriented employee behavior.							

INFORMATION MANAGEMENT							
The managers/directors communicate a clear and compelling service vision, based on the importance of services.							
The managers/directors develop channels to open and share information for people, both inside and outside the firm.							
The managers/directors encourage employees to learn and share knowledge through the Internet.							
The managers/directors invest in new technology to improve services continuously.							
The front-office employees and service technicians understand and apply service knowledge, through technology.							

ORGANIZATIONAL STRUCTURE							
There is an integration of products and services, as a way to guarantee the delivery of both offerings.							
There is a cooperation between various departments, in order to provide mutual assistance.							
Employees can freely share knowledge across departments.							
There is a new area focused solely on services, with service targets and metrics.							
There is a dedicated sales force and service technicians for the service organization.							

C - PRE TEST

Pre Test	Service Orientation	Relationship Marketing	Human Resources Management	Information Management	Organizational Structure
All areas of the company, including mine, are involved in the service strategy.					
The customer is involved in the development of new product/services.					
The managers/directors incorporate service values into their daily tasks.					
The managers/directors communicate a clear and compelling service vision, based on the importance of services.					
There is an integration of products and services, as a way to guarantee the delivery of both offerings.					
All levels within the company, from trainee to directors, are committed to the service values.					
The customer's needs are obtained through market research and workshop with lead-customers.					
The managers/directors coach employees to behave in a service-oriented way.					
The managers/directors develop channels to open and share information for people, both inside and outside the firm.					
There is a cooperation between various departments, in order to provide mutual assistance.					
There is a technical staff, which collect and record service trends.					
Our company measures the satisfaction and loyalty of customers, using research questionnaires.					
There is a special program of recruitment for front-office employees and service technicians.					
The managers/directors encourage employees to learn and share knowledge through the Internet.					
Employees can freely share knowledge across departments.					
All employees are encouraged to identify services as a value-added and long-term activity.					
There is a general concern with the integration of partners and suppliers, ensuring that all parts have the same level of information.					
There is a special program of training for front-office employees and service technicians.					
The managers/directors invest in new technology to improve services continuously.					
There is a new area focused solely on services, with service targets and metrics.					
The company's culture is flexible, as it can adapt to changes of the internal and external environment.					
Employees, partners and suppliers adopt a market-oriented focus.					
There is a special program of reward and empowerment for service-oriented employee behavior.					
The front-office employees and service technicians understand and apply service knowledge, through technology.					
There is a dedicated sales force and service technicians for the service organization.					

D –PRE TEST CHANGES

Sentence	Critical Success Factor	Changes
All areas of the company, including mine, are involved in the service strategy.	Service Orientation	Moved to Organizational Structure
All levels within the company, from trainee to directors, are committed to the service values.	Service Orientation	Excluded
There is a technical staff, which collect and record service trends.	Service Orientation	Moved to Relationship Marketing
All employees are encouraged to identify services as a value-added and long-term activity.	Service Orientation	Excluded
The company's culture is flexible, as it can adapt to changes of the internal and external environment.	Service Orientation	Moved to Organizational Structure
The customer is involved in the development of new product/services.	Relationship Marketing	No changes
The customer's needs are obtained through market research and workshop with lead-customers.	Relationship Marketing	No changes
Our company measures the satisfaction and loyalty of customers, using research questionnaires.	Relationship Marketing	No changes
There is a general concern with the integration of partners and suppliers, ensuring that all parts have the same level of information.	Relationship Marketing	Moved to Information Management
Employees, partners and suppliers adopt a market-oriented focus.	Relationship Marketing	No changes
The managers/directors incorporate service values into their daily tasks.	Human Resources Management	No changes
The managers/directors coach employees to behave in a service-oriented way.	Human Resources Management	No changes
There is a special program of recruitment for front-office employees and service technicians.	Human Resources Management	No changes
There is a special program of training for front-office employees and service technicians.	Human Resources Management	No changes
There is a special program of reward and empowerment for service-oriented employee behavior.	Human Resources Management	No changes
The managers/directors communicate a clear and compelling service vision, based on the importance of services.	Information Management	Changes in writing
The managers/directors develop channels to open and share information for people, both inside and outside the firm.	Information Management	Changes in writing
The managers/directors encourage employees to learn and share knowledge through the Internet.	Information Management	Excluded
The managers/directors invest in new technology to improve services continuously.	Information Management	No changes
The front-office employees and service technicians understand and apply service knowledge, through technology.	Information Management	No changes
There is an integration of products and services, as a way to guarantee the delivery of both offerings.	Organizational Structure	No changes
There is a cooperation between various departments, in order to provide mutual assistance.	Organizational Structure	No changes
Employees can freely share knowledge across departments.	Organizational Structure	Excluded
There is a new area focused solely on services, with service targets and metrics.	Organizational Structure	Changes in writing
There is a dedicated sales force and service technicians for the service organization.	Organizational Structure	Excluded

E – FINAL QUESTIONNAIRE

READINESS TO SERVICIZE SCALE							
#	1	2	3	4	5	6	7
Likert Scale	Strongly Disagree	Disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree	Strongly Agree
Position in the Service Continuum	Pure Products	Products and Services	Product-service System	Services and Products	Pure Services		

CRITICAL SUCCESS FACTORS

Relationship Marketing							
The consumers are involved in the development of new products and services							
The consumer's needs are identified through market research and workshops							
There is a team specialized in analyzing service trends in the market and anticipating consumer needs							
Our company measures the satisfaction and loyalty of customers, using research questionnaires							
Employees, partners and suppliers adopt a market-oriented focus							

Human Resources Management							
The managers / directors incorporate service values in their daily tasks							
The managers / directors coach employees behave in a service-oriented way							
There is a special recruiting program for front-office employees							
There is a special training program for front-office employees							
There is a special program of reward and empowerment for service-oriented employee behavior.							

Information Management							
The managers / directors develop a communication channel for information exchange, with both employees and consumers							
The managers / directors communicate about the importance of services for the company							
The managers / directors invest in new technologies, in order to improve services continually							
The front-office employees understand and apply service knowledge through technology							
There is a concern with the integration of partners and providers, assuring that all of them have the same amount of information							

Organizational Structure							
The corporate culture is flexible and adapt to both internal and external environment							
All areas of the company are, somehow, involved in the service strategy							
There is an integration of products and services, as a way to guarantee a better delivery of both offerings							
There is a cooperation between different departments in the company, in order to promote mutual assistance between them							
There is a single area focused on the service delivery, with its own metrics and objectives							

F – QUESTIONNAIRE FOR COMPANY ‘ABC’

Parte 1 – Identificação do Respondente

- 1) Área de Atuação
 - Marketing ()
 - Recursos Humanos ()
 - Excelência Comercial ()
 - SAC – Sistema de Atendimento ao Consumidor ()
 - Finanças ()
 - Outros ()

- 2) Cargo
 - Estagiário ()
 - Analista ()
 - Coordenador/Especialista ()
 - Gerente ()
 - Diretor ()

- 3) Tempo de trabalho na Empresa
 - 0 – 1 ano ()
 - 1 – 5 anos ()
 - 5 – 10 anos ()
 - 10 – 15 anos ()
 - + 15 anos ()

Parte 2 – Questionário de Servitização

Os itens desse questionário estão relacionados à sua percepção como funcionário da empresa ‘ABC’; não existem respostas certas ou erradas. Por favor, responda de 01 a 07, sendo 01 referente a DISCORDO TOTALMENTE e 07, CONCORDO TOTALMENTE.

Você conhece os Programas da empresa ‘ABC’ voltados para prestação de Serviços? Mencione todos os que conhece.....

- 1) As necessidades dos consumidores finais (pacientes) são identificadas através de pesquisa de mercado e workshops.
 - () Discordo Totalmente
 - () Discordo
 - () Discordo Parcialmente
 - () Nem Discordo nem Concordo
 - () Concordo Parcialmente
 - () Concordo

- Concordo Totalmente
- 2) As empresas parceiras e fornecedores da empresa 'ABC' adotam um foco orientado aos consumidores finais (pacientes).
- Discordo Totalmente
 - Discordo
 - Discordo Parcialmente
 - Nem Discordo nem Concordo
 - Concordo Parcialmente
 - Concordo
 - Concordo Totalmente
- 3) Existe uma equipe especializada em analisar tendências de serviços no mercado e antecipar necessidades dos consumidores finais (pacientes), como por exemplo, novas funcionalidades que poderiam ser incorporadas nos programas da empresa 'ABC' ('Program 01', 'Program 02', 'Program 03', etc) e/ou a criação de novos programas para a empresa 'ABC'.
- Discordo Totalmente
 - Discordo
 - Discordo Parcialmente
 - Nem Discordo nem Concordo
 - Concordo Parcialmente
 - Concordo
 - Concordo Totalmente
- 4) Os gerentes/diretores são engajados e incorporam os valores de serviços no dia-a-dia (flexibilidade, adaptabilidade, foco no relacionamento, etc).
- Discordo Totalmente
 - Discordo
 - Discordo Parcialmente
 - Nem Discordo nem Concordo
 - Concordo Parcialmente
 - Concordo
 - Concordo Totalmente
- 5) Os gerente/diretores auxiliam os funcionários a se comportarem de forma a atenderem as necessidades dos consumidores finais (pacientes) no que tange aos programas da empresa 'ABC' ('Program 01', 'Program 02', 'Program 03', etc).
- Discordo Totalmente
 - Discordo
 - Discordo Parcialmente
 - Nem Discordo nem Concordo
 - Concordo Parcialmente
 - Concordo

- Concordo Totalmente
- 6) Existe um programa de treinamento para funcionários que atuam diretamente com os programas da empresa 'ABC' ('Program 01', 'Program 02', 'Program 03', etc).
- Discordo Totalmente
 - Discordo
 - Discordo Parcialmente
 - Nem Discordo nem Concordo
 - Concordo Parcialmente
 - Concordo
 - Concordo Totalmente
- 7) Os gerentes/diretores desenvolvem um canal de comunicação para uso e troca de informação tanto para funcionários quanto para consumidores finais (pacientes) dos programas da empresa 'ABC' ('Program 01', 'Program 02', 'Program 03', etc).
- Discordo Totalmente
 - Discordo
 - Discordo Parcialmente
 - Nem Discordo nem Concordo
 - Concordo Parcialmente
 - Concordo
 - Concordo Totalmente
- 8) Os gerentes/diretores comunicam sobre a importância dos programas da empresa 'ABC' ('Program 01', 'Program 02', 'Program 03', etc).
- Discordo Totalmente
 - Discordo
 - Discordo Parcialmente
 - Nem Discordo nem Concordo
 - Concordo Parcialmente
 - Concordo
 - Concordo Totalmente
- 9) Os gerentes/diretores investem em novas tecnologias para melhoria contínua dos programas da empresa 'ABC' ('Program 01', 'Program 02', 'Program 03', etc).
- Discordo Totalmente
 - Discordo
 - Discordo Parcialmente
 - Nem Discordo nem Concordo
 - Concordo Parcialmente
 - Concordo
 - Concordo Totalmente

- 10) Os funcionários dos programas da empresa 'ABC' ('Program 01', 'Program 02', 'Program 03', etc) entendem e aplicam o conhecimento através de tecnologia.
- () Discordo Totalmente
 - () Discordo
 - () Discordo Parcialmente
 - () Nem Discordo nem Concordo
 - () Concordo Parcialmente
 - () Concordo
 - () Concordo Totalmente
- 11) A cultura da empresa é flexível, já que se adapta a mudanças no ambiente externo e interno.
- () Discordo Totalmente
 - () Discordo
 - () Discordo Parcialmente
 - () Nem Discordo nem Concordo
 - () Concordo Parcialmente
 - () Concordo
 - () Concordo Totalmente
- 12) Todas as áreas da companhia, inclusive a minha, estão, de alguma forma, envolvidas na estratégia dos programas da empresa 'ABC' ('Program 01', 'Program 02', 'Program 03', etc).
- () Discordo Totalmente
 - () Discordo
 - () Discordo Parcialmente
 - () Nem Discordo nem Concordo
 - () Concordo Parcialmente
 - () Concordo
 - () Concordo Totalmente
- 13) Existe uma integração de produtos e dos programas da empresa 'ABC' ('Program 01', 'Program 02', 'Program 03', etc), como uma forma de garantir uma melhor entrega de ambos.
- () Discordo Totalmente
 - () Discordo
 - () Discordo Parcialmente
 - () Nem Discordo nem Concordo
 - () Concordo Parcialmente
 - () Concordo
 - () Concordo Totalmente

- 14) Existe uma cooperação entre os diferentes departamentos na companhia, no que tange aos programas da empresa 'ABC' ('Program 01', 'Program 02', 'Program 03', etc), a fim de promover assistência mútua entre as áreas.
- Discordo Totalmente
 - Discordo
 - Discordo Parcialmente
 - Nem Discordo nem Concordo
 - Concordo Parcialmente
 - Concordo
 - Concordo Totalmente
- 15) Existe uma área focada única e exclusivamente aos programas da empresa 'ABC' ('Program 01', 'Program 02', 'Program 03', etc).
- Discordo Totalmente
 - Discordo
 - Discordo Parcialmente
 - Nem Discordo nem Concordo
 - Concordo Parcialmente
 - Concordo
 - Concordo Totalmente