



Improving solution selling process with service design methods

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**Improving solution selling process with
service design methods**

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Service design is well-recognised for the facilitation of healthy communication and collaboration between service provider and customer but there is not much literature available that focuses to analyse the application of service design methods and tools for improvement of the communication and collaboration within service provider organization. Therefore, a new perspective of service design methods and tools is explored in this thesis. The objective of the thesis is to develop an improved solution selling process with service design methods and tools, by improving the communication and collaboration of internal stakeholders in a solution selling organization as well as to evaluate the suitability of service design methods and tools for this purpose.

In this research study, action research is used as research method. The literature review has been done to find appropriate service design methods and tools. Based on literature review, service blue-print and participatory workshop has been selected for empirical study. Both qualitative and quantitative data collection techniques have been utilized in empirical study, such as 20 interviews, a participatory workshop, notes, observations and survey.

During empirical study, a service blueprint for existing internal solution proposal process of the case organization was prepared, to visualize whole service process as sequenced process. The participatory workshop was found very beneficial for collaboration support. It revealed that both service blueprint and participatory workshop have positive effects on the communication and collaboration of internal stakeholders in solution selling organization. A big picture of entire process can be visualized by service blueprint which enhance common understanding of process and ease internal communication in organization. Furthermore, the participatory workshop facilitates to create an environment to support healthy communication and collaboration for experience sharing and analysing improvement ideas regarding the organizational processes. The empirical study results were utilized to prepare a new version of the internal process visualization of case organization, in the form of service blueprint. This new service blueprint presents the improved internal solution proposal process of the case organization, for more efficient solution selling process.

The core value of this thesis is to state practicality of service design methods in improving collaboration and reduce communication gaps between internal stakeholders in solution selling organization, to improve solution selling process. The results of research study suggest that service blueprint and participatory workshop are very useful to facilitate deep understanding of entire process across the organization as well as for improvement in organizational internal processes for solution selling. It is concluded from results of research study that service design is very beneficial to facilitate for the improvement in the solution selling process of organization.

Keywords: service design, solution business, communication, collaboration, service blueprint, participatory workshop

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1 Introduction

1.1 Background

The research in field of service design (SD) has been started since early 1990s but it has gained wide spread attention during last two decades. The research community has published various literature about organizational development benefits, by adoption of service design. Service design proposes various methods and tools, in order to facilitate cross-functional communication and collaboration between organizations and their customers (Stickdorn and Schneider 2011; Shostack 1982; Bosworth 1995; Junginger 2015; Curedale 2013). However, there are not many studies that focus to improve communication and collaboration within organization by implementation of service design methods and tools. This aspect of service design is very important, especially within solution selling organizations. Hence, this new perspective of service design methods and tools application has been explored in this thesis.

In modern era, business-to-business firms are shifting their paradigm from goods-dominant logic towards service dominant logic. These firms are adopting business models that are built on value co-creation concept, such as solution business. These business models are based on idea of moving from product selling towards the solutions selling or system selling. One fundamental aspect of solution business is that, selling solution is not the main issue but most important is its efficient delivery (Storbacka and Pennanen 2014; Bosworth 1995).

The development in internal procedures of organization can be considered a measure of service design concept (Stickdorn and Schneider 2011). It will be interesting to observe, how service design methods and tools can be used within solution selling organization for improvement. The prime objective of this thesis is to implement and evaluate service design methods and tools, from perspective of development in collaboration and communication between various departments of the organizations, for efficient solution selling business. Moreover, the idea of research is not only to analyse internal collaboration process but also enhance collaboration between internal departments of case company, for improved solution selling process.

One objective of this research was also, to enhance knowledge of service design methods and their applicability. This thesis presents service design discipline, its applicability and boundaries. Furthermore, it was interesting to learn the benefits of service design methods and tools so as to improve the solution selling process by efficient cross-functional communication and collaboration in internal departments of case company.

1.2 Research problem and questions

The concept of solution selling has its existence since 1980s with the emergence of BOT (Build-operate-transfer) infrastructure projects but it has gained much attention in last couple of decades as the world's leading organizations have shifted their strategic paradigm towards providing solution, instead of merely selling individual products or services. The solution selling concept has been developing intensively in the high value, engineering and technological goods sector, where designing, integration and delivery of complex products and systems are done on project basis, either in small batches or as one-offs for business users, service providers and government sector (Brady, Davies and Gann 2005).

The solution selling is not a simple process as it is longitudinal process of collaboration by involving various functions of selling and buying organization. It involves multiple stake holders and their conflicting requirements in customer organization. The characteristics of solutions business model are customer embeddedness, offering integratedness and operational adaptiveness. One fundamental aspect of this business model is that, selling solution is not the biggest challenge but most important is its efficient delivery (Storbacka and Pennanen 2014).

Due to increased demand of solution selling providers, many firms are moving towards solution selling via sales, but don't pay attention to transform other functions. They might create new values for customers but simultaneously tends to face difficulties in standardizing the processes due to divergence and uncontrolled complexity of processes, in both sales as well as in delivery of solutions. These difficulties can be based on many factors such as market expansion, human resources growth, competitor offering solutions and operational procedures, but one important factor is, maintaining cross-functional communication and beneficial collaboration between internal stake holders of solution selling organization.

The large organization, involved in solution business, usually face challenges to maintain efficient cross-functional communication and collaboration between multiple units, department and information as they are spread all around the organization. Despite overlapping process for solution creation, these units don't work together on daily basis and cross-functional communication between employees got affected. The poor communication and inefficient collaboration can make drastic effects on solution business organization. Therefore, the research study of this thesis is based on, how the communication and collaboration of internal stakeholder in solution selling organization can be improved for efficient solution selling process.

The literature review has been done to understand solution business, explore service design methods for visualization and improvement of internal processes of solution business organization. After that, suitable service design methods are selected and applied in the empirical study for improved solution selling process. The aim of thesis is to find solution of following research questions.

Research Question 1: what service design methods and tools are suitable for the visualisation and improvement of internal process of a solution selling organization?

Research Question 2: How service design methods and tools support and improve cross-functional communication and collaboration of internal stakeholders in solution selling organization, for efficient solution selling process?

1.3 Research scope

For the case study of this thesis, one solution selling unit of a leading power and automation company has been considered. This department is involved in marine and shipbuilding sector and provides electrical power plants and automation solution to their customers. The business focus of this unit is, to establish as a solution selling organization, instead of merely product selling organization. It involves various product factories within the same organization, to prepare a complete solution for customers. The unit is referred as Marine and Ports unit (MP). The study is not focused on the whole unit as it has various functions such as marketing, project management, service department, automation department, propulsion department, electrical system (ES) department etc. For the research work, (ES) sales support department is chosen as it is single point of contact for various product factories and acting as solution integrator within MP unit. Therefore, primary focus of empirical study is based on idea to improve the cross-functional communication and collaboration related to solution integration process, developed by ES sale support department.

1.4 Disposition

This Master's thesis consists of six chapters. The first chapter provides a brief introduction of thesis and presents research questions of this study. Chapter 2 includes the literature review about solutions selling and service design. It also emphasis to the application of service design methods and tools for visualization of organizational process in solution selling organization. Chapter 3 represents the research methodology and data collection process. Chapter 4 contains the results based on the empirical study. The analysis of the results has been presented in Chapter 5. Finally, the thesis is concluded in Chapter 6.

Keeping in view the perspective of research question, the structure of thesis is presented in the Table 1. The first column comprises of chapters which are related to research question 1 whereas second column includes research question 2 related chapters.

RQ1: what service design methods and tools are suitable for the visualisation and improvement of internal process of a solution selling organization?	RQ2: How service design methods and tools support and improve cross-functional communication and collaboration of internal stakeholders in solution selling organization, for efficient solution selling process?
	2.3 Introduction to service design
	2.4 Service design benefits
2.5 Service design process	
2.6 Service design methods and tools	
2.7 Literature review summary	
	4.1 Improving solutions selling process
4.2 Suitability evaluation of service design tools	
5.1 Service design methods and tools for organizational process	
	5.2 Improvement in solutions selling process
6 Conclusions	

Table 1: Structure of thesis in relevance to research questions

2 Literature review

2.1 Literature review process

The service design is a hot prospect of today's business world but it is relatively a new discipline. A lot of research work is being published on service design but there are not many scientific articles based solely on service design. Due to this, the search and management of the literature review is a bit tricky and explained below, how it is done.

Searching of material

Effective searching on internet is based on the optimal use of keywords. In order to find scientific articles and literature related to service design and its methods, following keyword has been utilized as mentioned in the Table 2.

Order of search query	Keywords for searching
1	"Service design"
2	"Service design methods"
3	"Service design" + "Organization"
4	"Service design" + "Methods"
5	"Service design" + "Collaboration"

Table 2: Keywords for searching literature of service design and methods

The literature review is not only based on scientific articles searching but also books on service design has been consulted from library of multidisciplinary departments (Engineering, Business, Arts and Design etc.) so as to achieve in-depth knowledge of subject. Moreover, searching is continued by utilizing snowball method, that is exploring the reference list of existing articles/studies and then continuing searching for original material related to topic of this study.

These keywords provide good knowledge bank for service design and its methods but different sets of keywords had to be used for searching literature about solution selling and service design methods for visualisation and improvement. Table 3 represents used keywords for searching literature and articles of service design methods for visualization and process improvements. The used keywords for searching literature and articles related to solution selling are presented in Table 4.

Order of search query	Keywords for visualization methods	Keywords for process improvement
1	“Service design” + “Visualization”	“Workshop”
2	“Visualization”	“Participatory workshop”
3	“Blueprint”	“Collaboration service design methods”
4	“Service blueprint”	“Communication”
5	“Blueprint methods”	“Co-creation”

Table 3: Keywords for searching literature about service design methods for visualization and improvement

Order of search query	Keywords for searching
1	“Solution selling”
2	“Solution selling” + “business”
3	“Service design” + “Solution selling”

Table 4: Keywords for searching literature about solutions selling

It is important to consider that using suitable keywords, a lot of articles, literature and studies can be found on internet but content of those might include little information for the searched subject. Hence through scanning is required to extract needed information.

Selection of material

The selection of material for this thesis is based on approach of thoroughly reading the material and then finding relation with research of thesis. Initially the abstract is scanned carefully and if found related, then entire document is read thoroughly to identify facts and theories, related to the research questions. One important aspect in literature selection is publishing year of resource. A wide range of literature, considering broad range of publishing years has been selected so as to take into account the continuous development of service design.

Analysis of material

Once the literature resources are collected, then analysis is done by going through selected material carefully so as to identify related points, ideas, theories and topics. It is carefully considered, what similarities are present in the selected resources and how these studies support the common idea of service design and methods. One important fact of analysis is to identify relevance with the research questions of this thesis.

2.2 Solution business

2.2.1 Introduction to Solution selling

The term “solution” is very famous and often used as a fancy synonym for a high technology product in marketing material of companies nowadays. However, this concept has gathered much attention from research community, management and sales consultancy firms and more profound practical approaches are presented around this concept (Eades 2003; Foote, Galbraith, Hope and Miller 2001; Galbraith 2002). The research in this area shed light on facts that organizations adopting solution-oriented strategy are able to leverage their existing technological and product capabilities as well as move their businesses from product to value added services. This also enables them to stabilize their revenue while expanding existing markets (Miller, Hope, Eisenstat, Foote and Galbraith, 2002).

The definition to a typical question “what is definition of solution” would be answered as “an answer to a problem”. (Eades 2003). This answer needs to be elaborated more for meaningful context. Many researchers have defined term “solution” according to their perspective. Some definitions from research community is presented as follow.

Eades (2003) extends the definition of “solution” from “answer to a problem” as:

“[Solution] is mutually shared [between supplier and customer] answer to a recognized [customer business] problem, and the answer provides measurable improvement”.

Galbraith (2002) points out the systematic nature of solutions and define as follow.

“The companies following a solution strategy bundle their products together and add software and services. These packages create more value than the customer can create for themselves by buying only the stand-alone products”.

Miller et al. (2002) highlights in their definition that solutions need to be tailored according to requirements of the customer.

“Although there are many kinds of solutions, they are all, in essence, integrated combination of products and/or services that are unusually tailored to create outcomes desired by specific clients or type of clients”.

Nowadays, a large number of companies are promoting solutions selling to their customers, instead of standalone products or services. (Galbraith 2002; Miller et al. 2002). There are many other companies which advertise themselves for solution sales, although “solution” may only be a buzz-word in their marketing process (Eades 2003; Eades and Kear 2006).

Many advantages of adopting solution practices has been identified from researchers which are not only related to customers but also for the solution providers.

Storbacka and Pennanen (2014) presented idea that solution business is not a product category, instead it is a distinct business model. They define “solutions” as:

“Solutions are longitudinal, relational processes that comprise the joint identification and definition of value creation opportunities, the integration and customization of goods, service, and knowledge elements, the deployment of these elements into the customer’s process, and the compensation of the solution provider on the basis of the customer’s use-value”.

They also point out a fundamental aspect of solution business that “Selling solution is not the problem - Efficient delivery is”. The success in solution business lies in accepting it as a distinct business model instead of simply considering it another product category or an extension of existing product business. (Storbacka and Pennanen 2014).

2.2.2 Characteristics of Solution business

Storbacka and Pennanen (2014) has point out the characteristics of solution business based on four factors. The characteristics of the solution business models are customer Embeddedness, offering integratedness, operational adaptiveness and organizational networkedness.

Customer embeddedness identifies that solution is based in idea of client-supporting instead of product-supporting. These solutions are not developed only for or to customers but instead these are developed and delivered in long-term process with customer. Next offering integratedness is based on commercial integration by combining multiple products/services into a single transaction. Operational adaptiveness advocated to meet key customer’s expectations by making solutions adaptive to the customer’s situations and processes. While organizational networkedness identifies the importance of network dimensions as business eco systems become more complex. One crucial element in solution business is supplier and partner’s efficient management (Storbacka and Pennanen 2014).

2.2.3 Solution business framework

Storbacka and Pennanen (2014) has beautifully presented the solution business framework and its development from commercialization as well as industrialization point of view. They explained that commercialization is started by achieving understanding of customer's situations and process by continuous interactions. Customer-value research should be conducted for solution life-cycle in following steps:

- By defining process of customer.
- Customer's business objectives.
- Relevant situations identification.
- Analysis of customer's challenges
- Challenges solution.

	Develop solution	Create demand	Sell solution	Deliver solution
Commercialization	Value research	Value propositions	Value quantification	Value verification
Industrialization	Solution Hierarchy	Solution configurations	Solutions tools	Solution deployment
Solution platform				
	Strategy planning	Management system	Infrastructure support	Human resources management

Table 5: Solution business framework (Storbacka and Pennanen 2014)

The firm has to identify basic sales items (BSIs) and built solutions from these BSIs. There is a clear distinction between solution development and product development. The BSIs are foundation of efficient customization. Next step to this solution development is generating sales opportunities. This is achieved by value proposition to the customer and generating sales leads. It is different than traditional product-oriented sales. Value proposition is based on communicating the financial impact of that offering on to the business of the customer. Value

proposition could be firm-level, segment-level or customer-specific. The main characteristics of value proposition are description of offering, impact on customer's business and differentiate the offering firm from its competitors. The key objective of value proposition to customer is to identify sales opportunities based on customer's business and then qualify for those sales leads. While in solution defining process, the firms should secure value capture not only for themselves but also value creation for their customers (Storbacka and Pennanen 2014).

Further moving from solution creation to solution selling by turning an opportunity into order for the firm. One key tool for commercialization and value-selling context is win-plan. Its main purpose is to make sure the maximizing the profitability of winning orders, while considering particular risks and cost levels. It has various interrelated elements as customer understanding, value proposition, competitive analysis, decision making of customer and the action plan. The next important aspect is value quantification which is basically translating a solution into finance. Its main purpose is to show to the customers, how efficiently provider firm knows about their business as well as able to provide solution which is beneficial for customer's organization. The value-based pricing is a major factor for performance improvement. It is built on foundation of value quantification. For value capture maximization, the pricing strategy should be based on two activities; creating pricing differentiation and managing pricing. The creation of solution configuration tool is also very important as these are used to mass-customize solutions for individual customers. The solution configuration through appropriate tools have many benefits such as speed up of sales process, shorter sales cycle, reduced requirement of technical expertise, more precise and correct quotations (Storbacka and Pennanen 2014).

After solution selling, next aspect is delivered solution which is based on securing customer value creation and firm value creation. A key feature of solution business is, not only promise value creation but also to make sure that value is delivered. The value verification should be done in collaboration of customer, on regular basis. Another important point is standardization of the sale process so as to acquire efficient delivery. In order to make successful solution business, balance between value creation and value capture should be maintain where value creation is prerequisite for value capture. The credibility of the solution business is based on delivery of solution which meets the agreed objectives with the customer (Storbacka and Pennanen 2014).

The partner network management has a vital rule in solution business as when transforming form product to solution business, the firm might not rely only its products and services but also need to involve a wide network of partners. These third-party elements have to be efficiently managed as BSIs.

Solution platform is foundation for sustainable success and it requires commitment from top management with vision and dedication. The success of solution business is done by dedication into solution business platform which is categorised in four set of capabilities as strategy planning, management system, infrastructure support, human resources management (Storbacka and Pennanen 2014).

2.2.4 Advantages of solution selling strategy

There are multiple advantages of adapting solution selling strategies. Storbacka and Pennanen (2014) has presented three main reasons to support decision of organization for moving towards solution business. There main reasons are:

1. Advancement in value chain and integrated, complete offerings enables top-line growth.
2. Access to bigger share of total profit pool, enabling the bottom-line growth for firm.
3. Use-value based define markets are typically more stable than product/equipment based defined markets, hence solution providing firm has more stable cash flow.

Many other researchers support the idea and a summary of key drivers and benefits of implementation of solution strategy is presented in Table 6.

Market drivers for implementing a solution strategy (Galbraith 2002; Shepherd & Ahmed, 2000)	Benefits of solutions strategy for suppliers (Miller et al. 2002)	Benefits of solutions strategy for customers (Miller et al. 2002)
Commoditization of products	Expanded margins and volumes	Superior or simplified operations
Need for a limited form of outsourcing	Stabilized revenues	Cost savings
Internationalization of competition and globalization of manufacturing	Differentiation from competition	Performance guarantees
Compression of product lifecycles	Cross-selling opportunities	Convenience and customized service
Need for greater integration of technologies		State-of-the-art offerings
Increasingly sophisticated customers		

Table 6: Drives and benefits of solution strategy for business

2.3 Introduction to Service design

based on complex networks of interaction with involvement of various people, systems, products and combination of organizations (Polaine, Løvlie and Reason 2013). It is evident that continuous innovation in technology helps to explore new methods to create service for enhanced values to users. The relationship of service provider and end user had been transformed to large extent because of technological development but where technology offers new possibilities, it is accompanied by many challenges as well (Moritz 2005).

The service system quality and its acceptance in end users is based on fact that how efficiently the complete service system is performing all together. It is not sufficient that individual parts of services are designed properly but it is also important to consider that whole service process has to be designed holistically (Polaine et al. 2013).

This increasing complexity in services requires a dedicated design approach which consider whole process of service development and related aspects. This design approach is known as service design (SD). It was introduced very first time in 1991 at Cologne International school of Design (KISD) as disciplinary field of design. After that very first SD consultancy office was opened in London as "Live Work" in 2001 (Kuosa and westerlund 2012).

Service design had been defined in many ways from research community. The interpretation of serviced design can be done in many ways due to diverse background of researches involved in the SD. Hence it is not possible to identify complete right or wrong definition of service design. For the said reason some most relevant definition of SD from researchers has been presented as follow.

"Service Design helps to innovate (create new) or improve (existing) services to make them more useful, usable, desirable for the clients and efficient as well as **effective for organizations**. Its new holistic, multi-disciplinary, integrative field."

(Moritz 2005, 6)

"Service design is a design specialism that helps develop and deliver great services. Service design projects improve factors like ease of use, satisfaction, loyalty and efficiency right across areas such as environments, **communication** and products - and **not forgetting the people who deliver the service.**"

(Engine service design 2010, cited in Stickdorn and Schneider 2011, 24)

"Developing the **environments**, tools, and processes that **help employees deliver** superior service in a way that is proprietary to the brand."

(Continuum 2010, cited in Stickdorn and Schneider 2011, 24)

These three definitions of SD have been presented due to most relevant aspects of this study. These not only describe SD as a path to usable efficient services but also enlighten the importance of employee environment in service providing organization. The environment of service provider organization is strongly based on the communication and collaboration of internal stake holders, which is the main point in this research study.

SD plays a major role to understand holistically complete service system and different involved actors in process. The SD approach combines various methods and tools from other related fields (marketing, research, management etc.), to create beneficial, valuable and desired service from end user's perspective as well as unique and effective services from provider's point of view (Mager and Sung 2011).

It does not matter what type of services are under consideration, people are always part of it. It is also important to note that employees are correspondingly the users and providers of services (Po-laine et al. 2013). The SD approach positioned people in centre of design process. The main objective of SD is to create good understanding of the objective, motivation and underlying needs of end users (Moritz 2005).

Tuulaniemi (2011) mentioned in his research that a common language for collaboration of various fields can be created by SD, by the application of specific methods and processes. Usually SD is considered to create or improve services but Tuulaniemi (2011) has opinion of SD that supports idea of applying SD methods and process for improvement of the communication and collaboration within organization.

The research community in the SD put much attention for creation and improvement of services involving customers and business models influenced by SD. However, utilization of SD for improvement of organization's environment and hence the services of organization is also gaining attention from researchers.

2.4 Service design benefits

The SD application can be seen in the business environment. Tuulaniemi (2011) points out importance of designing services while keeping balance between customer values and service provider. In modern business worlds, organizations are quite open to elaborate about their services being user centric. This is one of the main reasons for development in SD field and increasing number of emerging SD consultancies as well as SD related job market. The advantages of SD are not limited to services of providing organization. Tuulaniemi (2011) presented many advantages of SD application in strategic decision making of organization, operations focused towards customer orientation, development of internal processes, enhancing customer-brand relationship, and creating new as well as improving existing services (Tuulaniemi 2011, 95-100).

Service design should be embedded into design practices, methods and approaches of service providing organization, instead of considering SD a separate activity. Junginger (2015) has present-ed many benefits of SD application in organizations, for instance organizational process develop-ment, collaboration and engagement which leads towards the business success as well as new opportunities has been created. To achieve success, dedication of service de- signer & decision makers in service provider organization is of most importance, for under- standing and accepting change in current design approaches of the organization (Junginger 2015).

The key benefits of SD for the organizations are mentioned by various researchers. A summary of SD benefits is presented in the Table 7. These benefits are categorised in three columns and each category is based on the origin of the benefits. It is important to note that these benefits categories are interlinked to each other.

Benefits associated with SD core principles	Benefits associated with immediate actions	Benefits associated with sequence of actions
Creating deep understanding of customer, service provider and whole service environment (Stickdorn & Schneider 2011; Tuulaniemi 2011)	Brand message in the right touchpoints with the end users (Tuulaniemi 2011)	Deep attachment creation with brand, service and service provider (Stickdorn & Schneider 2011; Tuulaniemi 2011)
Creating communication and collaboration environment (Stickdorn & Schneider 2011; Junginger 2015)	New services development according to requirements & values (Tuulaniemi 2011)	Aligning strategic decision making of organization (Tuulaniemi 2011; Junginger 2015)
Service visualization as a sequenced process (Stickdorn & Schneider 2011; Shostack 1982; Bitner, Ostrom & Morgan 2008)	Organizational process improvement (Tuulaniemi 2011; Junginger 2015)	Improving existing services of organization (Stickdorn & Schneider 2011; Tuulaniemi 2011; Shostack 1982)

Table 7: Key benefits of Service Design.

2.5 Service design process

The frameworks of SD processes have been presented in many ways by researchers in literature and practices. These frameworks are based on three or more steps, depending on ideology of re-researcher but in principle, these all are based on basic idea of including phases consisting of different activities and can be divided in stages of analysing, defining, developing and implementing (Kuosa and Westerlund 2012; Meroni and Sangiorgi 2011; Moritz 2005; Stickdorn and Schneider 2011). Every phase serves its dedicated purpose and provides input for the next stage. These stages are summarised as follow:

- **Analysing Stage:** this stage is related to identify the problem, explore customer's current experience, discover the requirement of customer, recognise the opportunity of the services as well as consider the limitations. This stage provides the basic input for the design team and project development greatly depends on it (Stickdorn and Schneider 2011).
- **Defining stage:** this stage is utilised to analyse the gathered insight from the analysing stage and then transformed those into ideas and service concepts (Meroni and Sangiorgi 2011; Stickdorn and Schneider 2011).
- **Developing stage:** this stage evaluates the feasibility of ideas and service concepts, keeping in view whether discrete parts of service are designed and linked properly for efficient working of the whole service system. Also, it is explored that individual touchpoints are interconnected for the creation of complete service experience for the end users (Meroni and Sangiorgi 2011; Miettinen and Koivisto 2009; Stickdorn and Schneider 2011).
- **Implementation stage:** In this stage, the experimentation of the new service models and ideas are performed during workshops or real scenarios, to minimise the failure risk and generate improvement ideas (Meroni and Sangiorgi 2011).

Although, SD is based on these stages but it is not necessary to pass through these phases from start to end order. SD is iterative and non-linear in nature. Moving between different stages is not only possible but it is also recommended (Stickdorn and Schneider 2011).

The nature of service design process is best described by Meroni and Sangiorgi (2011) in the following Figure 1.

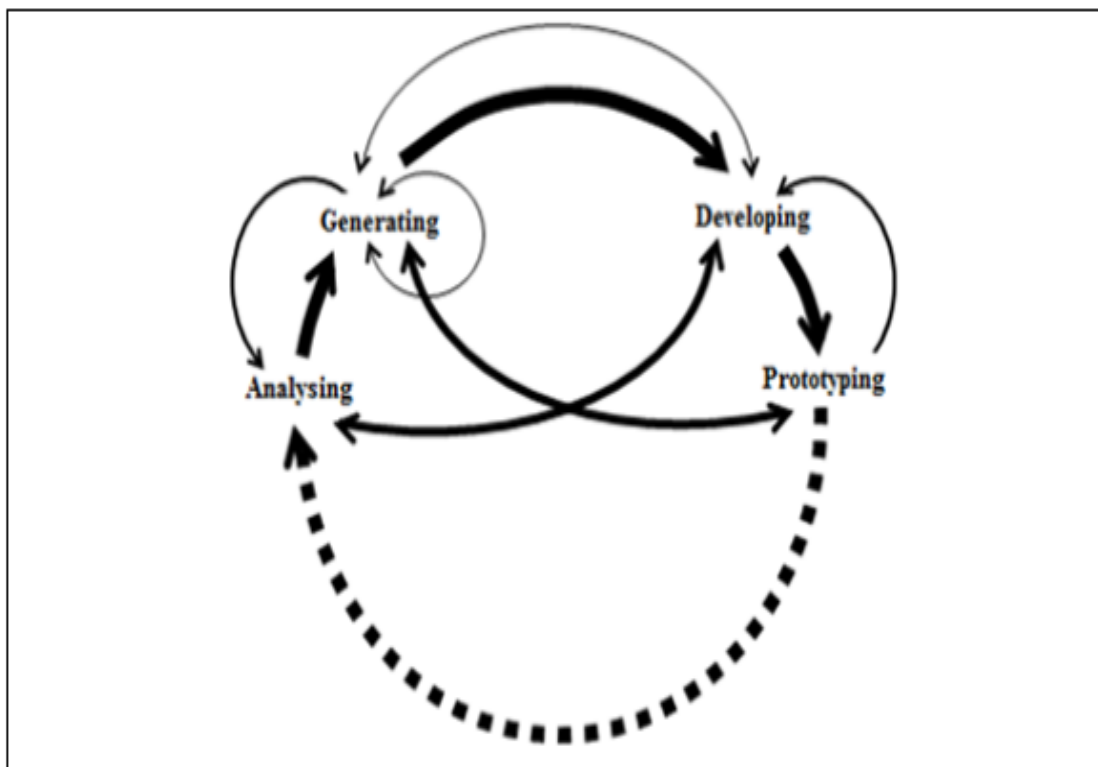


Figure 1: Service Design process (Meroni and Sangiorgi 2011)

The diagram shows possibility of movement between different stages as per the requirement of case. It is possible to identify new insights or findings at any stage that require to return at previous stage or even to very beginning stage. Hence complete design process can have multiple full cycles or there is possibility of multiple cycle's iteration within single stage. In this way, the new service solution can be evaluated with end-users and other stakeholders, to achieve desired goal of excellent service design (Holmlid and Evenson 2008).

The core idea of these stages is based on understanding customer, end-user, service provider and market, idea generation, explaining processes and using appropriate tools to create valuable service experience for the people (Meroni and Sangiorgi 2011; Moritz 2005).

Stickdorn and Schneider (2011) recommended to not rely on pre-defined process model but adapt the process model according to requirement of case. Therefore, it can be concluded that there is no general fit-to-all SD process model for all case scenarios but it can be adaptive according to requirements and situation of case scenario.

2.6 Service design methods and tools

There are vast range of SD methods and tools available for service designers and selectivity of those depends on respective case. The SD methods and tools are characterised in structure sets by professionals and organizations, in order to make selection of these methods logical

and systematic. There are different ways proposed by different researchers and organizations, to characterize SD methods. A summary of SD methods is presented in the Table 8.

Creator of SD method category set	"This is service design thinking" (Stickdom & Schneider 2011)	Methods Cards (IDEO. Method cards)	"Service designer: 250 essential methods" (Curedale 2013)	"A Taxonomy of innovation" (Luma Institute; Vision statement: A taxonomy of innovation 2014)	Categorization: Service design tools (Tassi 2009)
SD method category tree	<ul style="list-style-type: none"> - Explore - Create & Reflect - Implement 	<ul style="list-style-type: none"> - Learn - Look - Ask - Try 	<ul style="list-style-type: none"> - Define the intent - Frameworks - Know people and context - Explore ideas 	<ul style="list-style-type: none"> - Looking <ul style="list-style-type: none"> - Ethnographic research - Participatory research - Evaluative research - Understanding <ul style="list-style-type: none"> - People & Systems - Patterns & Priorities - Problem framing - Making <ul style="list-style-type: none"> - Concept ideation - Modeling & Prototyping - Design rationale 	<ul style="list-style-type: none"> - Design activities - Co-designing - Envisioning - Testing & Prototyping - Implementing - Representations <ul style="list-style-type: none"> - Texts - Graphs - Narratives - Games - Models - Recipients <ul style="list-style-type: none"> - Stakeholders - Professionals - Service staff - Users - Contents <ul style="list-style-type: none"> - Context - System - Offering - Interaction

Table 8: Service Design methods categorizations

All of these SD method categorizations by various researcher contain common path in all of them. The SD methods can be selected according to process stage, provided service design process is presented in four basic stages. In addition to main categories, more detailed set of sub-categories are also available to choose from. These sub-categories assist service designers greatly to focus on certain element of service design. It is evident, for example, sub-categories of Tassi (2009), which strengthen idea of questioning the method selection criteria and its applicability for users.

Taking everything into account, it is evident that it does not matter how SD method is chosen, provided the chosen method meet desired goals. There is no hard and fast rule for SD method application and experimenting is acceptable for desired results. Due to distinct nature of cases, different mixtures of SD methods are utilised in different cases. For the said fact, the SD method categorization presented in Table 8 should be used for guidance, instead of considering a strict manual to follow.

As mentioned, SD methods in Table 8, Tassi (2009) categorization of SD methods has been selected to support this research study, due to fact that the communication and collaboration are focus point in this study. The chosen SD method categorization set take into account categorization based on process stage as well as other aspects in SD.

There are a large number of tools and techniques used in service design, but most commonly used tools are shortly described in later part of this chapter.

2.6.1 Customer journey map

A customer journey map is a visual representation of customer's experience about a service. It can be in the form of flowchart, map or other graphical illustration. The main objective of customer journey map is to identify key elements of service and elaborates the customer's experience by recognition of main touch-points. These touch-points are recognised by customer insights. The actual structure of service process is not presented in it, instead it presents how customer perceive the service. It is very useful in analysing stage of design process to illustrate an existing customer experience but can also be used to identify issues throughout whole process (Meroni and Sangiorgi 2011). An example of customer journey with touch points related to a tourist destination is presented in Figure 2.

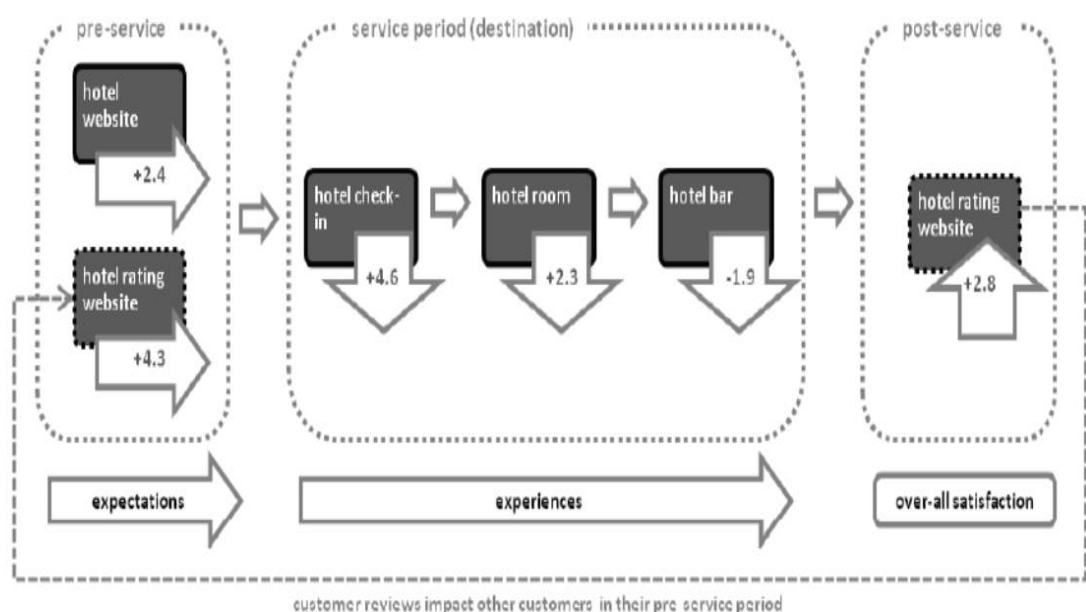


Figure 2: Customer journey map example (Stickdorn and Zehrer 2009, 8)

2.6.2 Story board

Story board tool is derived from the cinematographic traditions. It describes interaction of a service over time. The story board of a service presents touch-points of service and their relationship to each other. It is made of images or drawings which illustrate the important aspects of service interactions in a service system. In comparison to customer journey map, the story board is more generic about service process. Its implication can be done at concept development phase to whole design process. It is very useful to envision future interactions and simulate discussion (Meroni and Sangiorgi 2011; Segelström 2013). An example of story board for a hospital process map is presented in Figure 3.

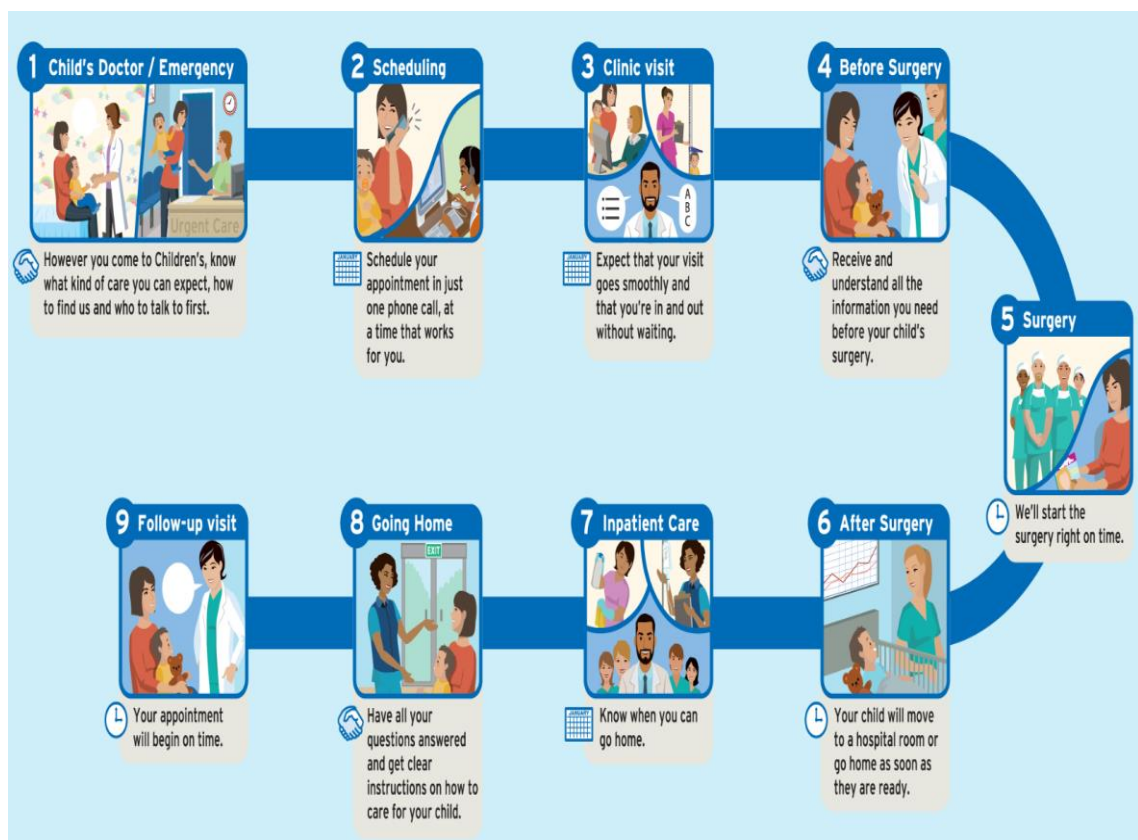


Figure 3: Story board tool example (Tassi 2009. Service design tools [Story board])

2.6.3 System map

The system map is visual description of working model of a system from service provider's perspective. It represents different actors involved in system, link between them, flow of material, energy, information and money within the system. It is used to understand structure of the service system. It is usually applied at initial stages of SD process, to identify the feasibility of the idea. It also enables stakeholders of system to recognise their relationship to each other and how they affect the whole service system (Meroni and Sangiorgi 2011; Segelström 2013). An example of system map for an E-meal process is presented in Figure 4.

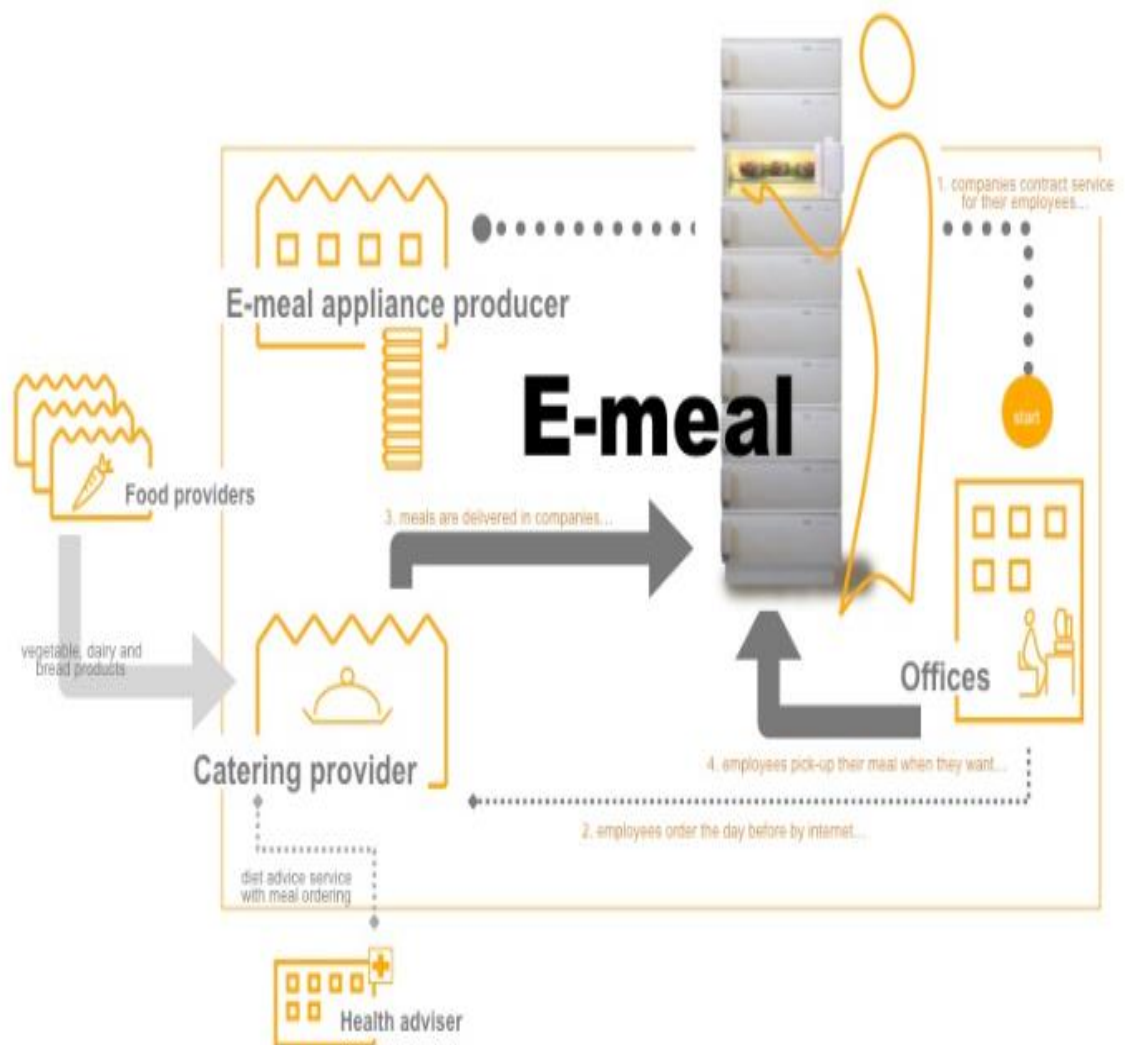


Figure 4: System map tool example (Tassi 2009. Service design tools [System map])

2.6.4 Service blueprint

Service blueprint is a visualization method that represents function and activities of service creation and management. It provides reliable information of all stakeholders and their role in the service (Lim and Kim 2014; Shostack 1984). It is very useful tool to identify various process of service and establish cross-functional communication between different service aspects (Bitner et al. 2007). The first version of blueprint was presented by Shostack (1982) which was comprises of two stag-es; front stage and backstage. Later on, the blueprints were developed into a five-row system.

Bitner et al. (2007) has beautify explained “Service Blueprinting” concept, its importance in connection to service innovation, and customer experience design. Service blueprint is a flexible approach to help with challenges of service process design and analysis. It is used to depict a service at multiple levels of analysis as well as visual overview of entire service

process. The concept of service blueprint is a visual notation for representation of business process via symbols, which are based on actors and activities. It can be combined with other methods, such as critical incident technique, for insight of service process designs. Service blueprints are graphical in nature, therefore it is easy to involve all stakeholders effectively. There are five components of service blue-printing.

- Actions of the customer
- Onstage/visible contact employee actions
- Backstage/invisible contact employee actions
- Support process
- Physical evidence.

First component, customer actions, contains all customer steps so as to experience the service. These customer actions are mentioned chronologically from top of the blueprint. The actions of the customer are central to the blueprint. Second component is the actions which occur as part of face to face interaction with customer by frontline contact employees. These employees are separated to customer by line of interaction. A moment of truth has occurred, every time the line of interaction is crossed from either side. Third component is separated from the onstage actions by line of visibility. Customer can only see what is appeared above the line of visibility, but everything below this line is invisible to customer. All non-visible interaction with customer (Telephone calls, online contact etc.) are presented by this component. The fourth component is support process, which is separated from contact employees by the internal line of interaction. These are not part of contact employees but sums-up all those activities which are required from units and individuals within the company so as to deliver the services to customer. At very top of blueprint, the fifth component "Physical evidence" is described. These are prepared and mentioned for each customer action and every moment of truth (Bitner et al. 2007).

While building a blueprint, it is important to consider, for which customer segment it is going to be prepared. After that customer actions have to be considered as it is the foundation for all other blueprint elements. The fundamental elements of blueprint can be adjusted according to requirement of the case.

Physical Evidence	
Customer Actions	Line of Interaction
Onstage/ Visible Contact Employee Actions	Line of Visibility
Backstage/ Invisible Contact Employee Actions	Line of Internal Interaction
Support Processes	

Figure 5: Service blue print example Bitner et al. (2007)

2.6.5 Participatory workshop

Participatory workshop is an organised event in a collaborative and creative environment. The basic idea of participatory workshop lies to extract knowledge and respective opinions of participants about selected topic/issue/problem of workshop. These workshops are famous tool and has been refereed by many names in literature such as design workshop, interactive workshop, participatory workshop etc. Miettinen et al. (2009) suggest design works as an innovation method that is used for collecting information through participation. The user participations and facilitates co-creation is main idea of this creative method (Miettinen et al. 2009, 65-66). It is also very popular tool in service design which is used to recognise the view-point, opinion and knowledge of participants about design process outcomes and get their insights about the whole process (Stickdorn and Schneider 2011, 270).

A major advantage of the participatory workshop is sharing experience of participants towards the selected topic. In this way, participants express their experience and comments about process. The organization of a successful participatory workshop requires various aspects to be considered as follow.

Preparation; the participant of workshop should be chosen from various background so as to achieve cross-disciplinary participation. Mobile phones and other devices that may diverge concentration of participants, should be avoided in workshops. The workshop environment should be comfortable for interaction and discussions so that participants can share their opinion and knowledge easily and freely. The location of workshop should be safe and encourage participants for collaboration. It is also vital to consider scheduling of workshop so that participants should not be over-burden. There should be breaks for lunch/coffee so that participants will feel fresh throughout the workshop session. The administrative arrangement time should be considered in schedule of the workshop. It is good to have timetable for various tasks during the workshop but time limits should not be strict so as to allow the participant's deeper discussion on topics that require more attention (Farrell, Ryan and Langrick 2001; Pavelin, Pundir and Cham 2014; Koloski 2012).

Activities; a workshop should comprise of different activities which include individual and group tasks for participants. It is important to explain goal and suitability of every activity to participants, to increase participant's engagement in the workshop. Also results of each activity should be informed and discusses with participants (Pavelin et al. 2014). At first participants should be engaged by an exercise relate to actual problem or introduce participants' experiences about topic and then later search for solutions.

The idea of participatory workshop is to gather feedback on selected topic and activities supporting this idea should be included in agenda of workshop. These activities should engage participants in enjoy-full manner. Co-creation is also very important aspect of workshop, where idea-generation is done in groups or teams. This might result into many useful findings/solutions. Prioritization of solutions and selecting most suitable is difficult job to perform therefore, it is quite common to left solutions non-prioritised on purpose. It might be possible that final decision/solution is not agreed at the end of workshop but next actions should be agreed. Hence, careful choice of activities is very essential for successful participatory workshop (Farrell et al. 2001; Koloski 2012).

Tips for facilitator; the facilitator has very important role in the workshop. He should be focused on goal of the workshop and execute planned agenda for successful event. The facilitator has to be familiarised with the workshop expertise area so that he can explain and prioritise topics during the workshop. The workshop related material should be readily available. The facilitator should take care that during the event, goal of various exercises/activities is fulfilled and insights are documented. There can be more than one facilitator for the workshop if required (Farrell et al. 2001; Pavelin et al. 2014; Koloski 2012).

2.7 Literature review summary

The literature review shed light on solution business and service design discipline.

Solution business is very famous in modern business world due to its numerous advantages. The organizations are more and more adapting solution selling strategies to stabilize their revenue while expanding existing markets. Solution-oriented strategies are not only beneficial for customers or end-users but also it has very promising effect on business of solution provider organization. Solutions business should not be confused with product category as it is a distinct business model. An important aspect to be carefully consider in solution selling organization is that efficient delivery of solution to customer is as important as creating solution. The characteristics of solution business models are customer Embeddedness, offering integratedness, operational adaptiveness and organizational networkedness (Storbacka and Penanen 2014).

Service design discipline is based on methods for improvement of existing services and creation of new services that would be valuable for end-users. In literature, various definitions of service design are available that focus on importance of the communication and collaboration of internal stakeholders of an organization ((Stickdorn and Schneider 2011, 32-33). Service design is very beneficial for organizations as it provides great advantages to organization at all stages of service design process and make positive impacts on business. There are numerous advantages, obtained by application of service design thinking principles, on immediate and long-term actions (Tuulaniemi 2011, 101-107).

The objective of this research study is to concentrate on application of service design thinking for improved solution selling process, by improving the communication and collaboration of internal stakeholders of organization. Due to said reason, SD methods and tools are evaluated to select the most suitable for organizational process visualization and improvement. Various categorization of SD methods and tools were reviewed in order to identify the most appropriate tools for case study.

Service design is relatively new discipline and the literature is accumulated from various science disciplines such as engineering, design and business. This thesis is marginally based on analysis of scientific literature about service design but in addition to that, a large portion of literature review is taken from service design books, especially related to communication and collaboration aspects.

3 Research methodology

3.1 Case description

For the case study of this thesis, Marine and Ports (MP) unit of a solution selling organization has been selected which is located in Helsinki, Finland. The MP unit provide integrated solutions /services of power plants and electrical systems for marine or shipbuilding industry. The marine industry plays a vital role in economic growth and considered a renowned transportation mode. The recent trends indicate great development in shipbuilding sector due to new market players joining the cruise business as shown in Figure 6.

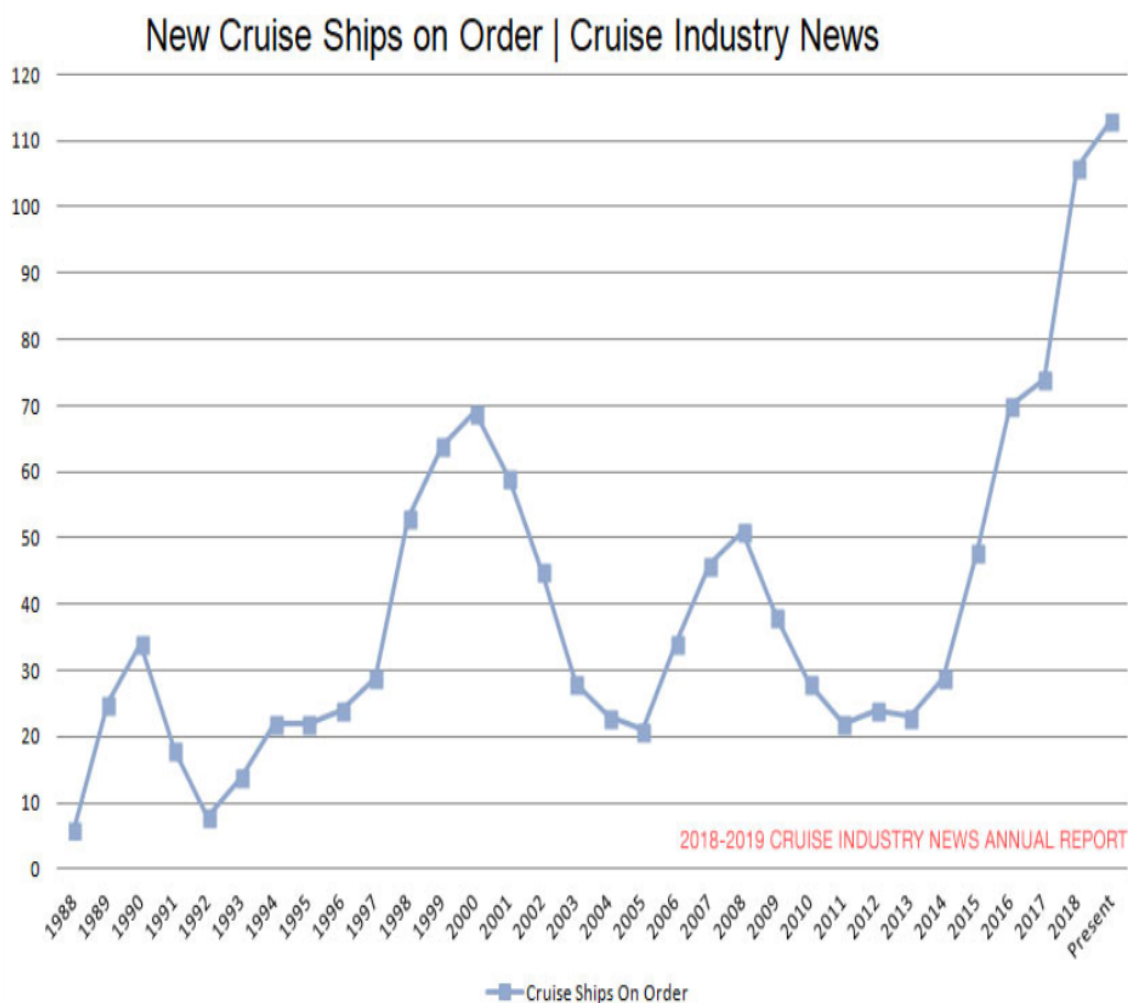


Figure 6: Statistics of global cruise order (Cruise industry news)

The MP unit has shifted their paradigm towards solution business for marine sector and focused on selling solution instead of products to their customer. This approach has not only served them to become one of top solution provider in shipbuilding industry but also maximise their business over the years. The MP unit act as a solution integrator and it involves various feeding factories for different products, to provide a solution package for their customers.

For this thesis research, the electrical system (ES) sales support department in the MP unit has been focused. The ES sales support department deals with various internal stakeholders and external stakeholders. A general overview of whole process and focus of research is presented in Figure 7.

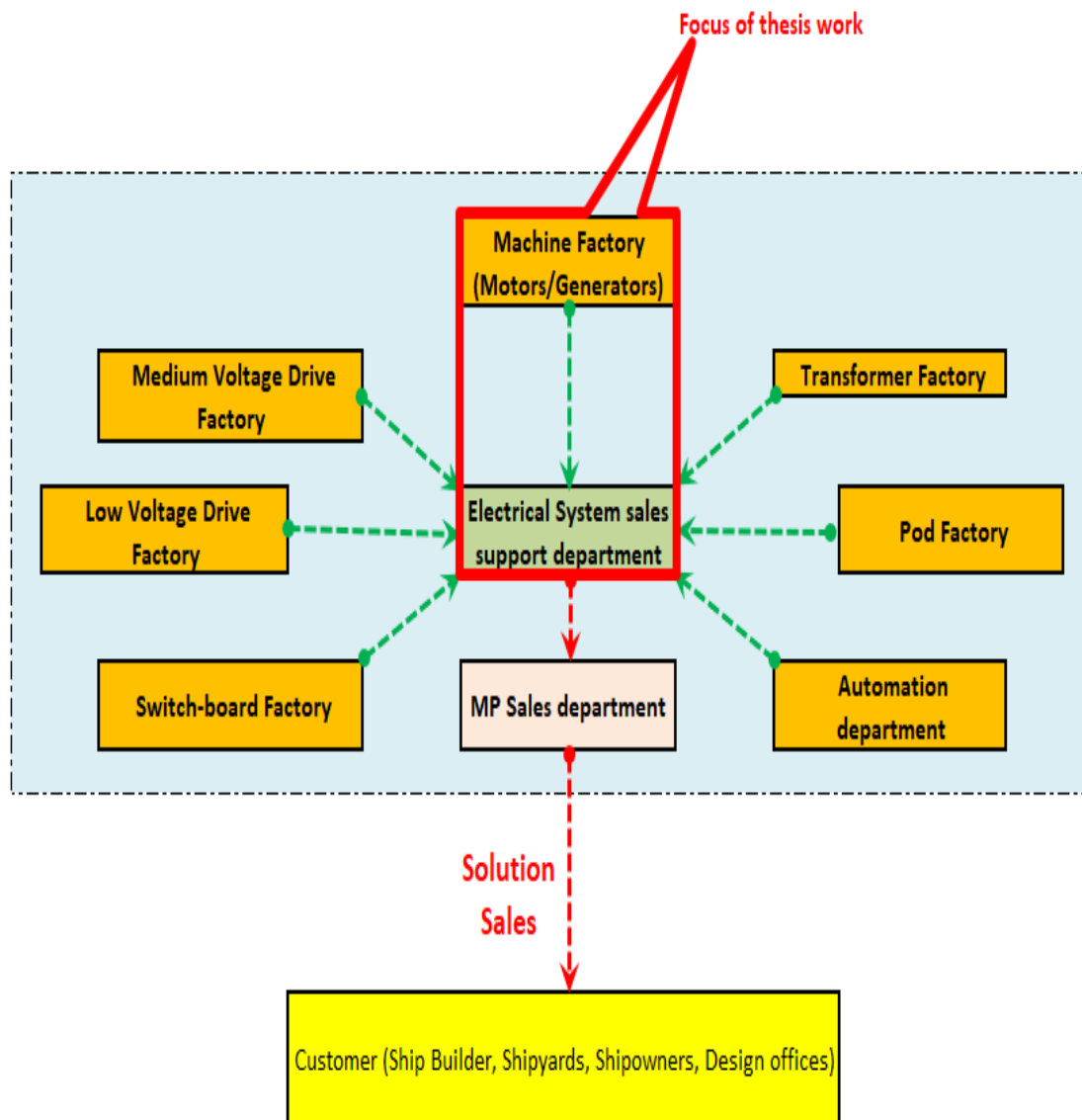


Figure 7: Stake holder mapping in case organization

The customers of MP solution sales get complete solution as per their specification and requirements but behind the scene, various internal stakeholders participate to prepare the desired solution. The case organization has many factories which are dedicated to produce specific components. The ES sales support department acts as an integrator for all these component feeding factories (FF) and prepares dedicated solutions for the MP unit's customers.

The overall process starts when customer sends their request for proposal (RFP) to the MP sales department. The sales department pass on technical details to ES sale support department where ES department personals carefully examine RFP. The ES sales support department then contacted to related FF so as to get customised component for desired solutions. One major stakeholder in FF of MP unit is “Machine factory”, providing electric motors and generators for solution sales of MP unit. Being a major supplier in solution sales, the Machine factory has significant impact on solution integration and overall customer experience. Despite huge importance of the communication and collaboration between ES and Machine factory there is no common practices to endorse the effective communication between both units.

Therefore, the empirical study is primarily focused to improve the cross-functional communication and collaboration between Machine factory and MP unit’s ES sales support department, related to solution sales of marine power plants.

3.2 Research progression

In this thesis work, actions research method is used due to its vast benefits both from theoretical and practical point of view. The action research is proven effectively applicable for complex problematic issues. These complex problems could be difficult to define properly and associated to social aspects. As there tend to be many solutions for communication and collaboration and it is not easy to point out one right solution due to highly social matters, hence these can be considered as complex issues. The actions research is proven to be an effective research method for social issues in organizations. It can be considered as collaboration and learning development (Avison, Lau, Myers, and Nielsen. 1999; Baskerville and Wood-Harper 1996; Susman and Evered 1978). Therefore, actions research methodology has been chosen to identify whether service design methods are beneficial for improvement in the communication and collaboration within the case organization of this thesis work.

Action research emphasise on considering the comment of participants during research and then based on that, adjust the theory accordingly. This approach is very much similar to service design concepts which emphasize active involvement of end users for co-creation of services. In this way, the research outcome is not only based on theoretical points but also supported by case organization’s employees. In later part of the chapter, it is presented that research process steps are thoroughly supported by employee’s feedback of case organization.

In this case study, research not only focuses opinion of experts about their activities but also to have deep insight about their actual activities. Hence, observations have been done on current process of the communication and collaboration between stakeholders, how these are developed and improved between employees from different department in solutions selling process of organization.

An extensive action research implementation is usually based on a five-stage cyclic process which consist of diagnosing, action planning, action taking, evaluation and specifying learning stage as shown in Figure 8.

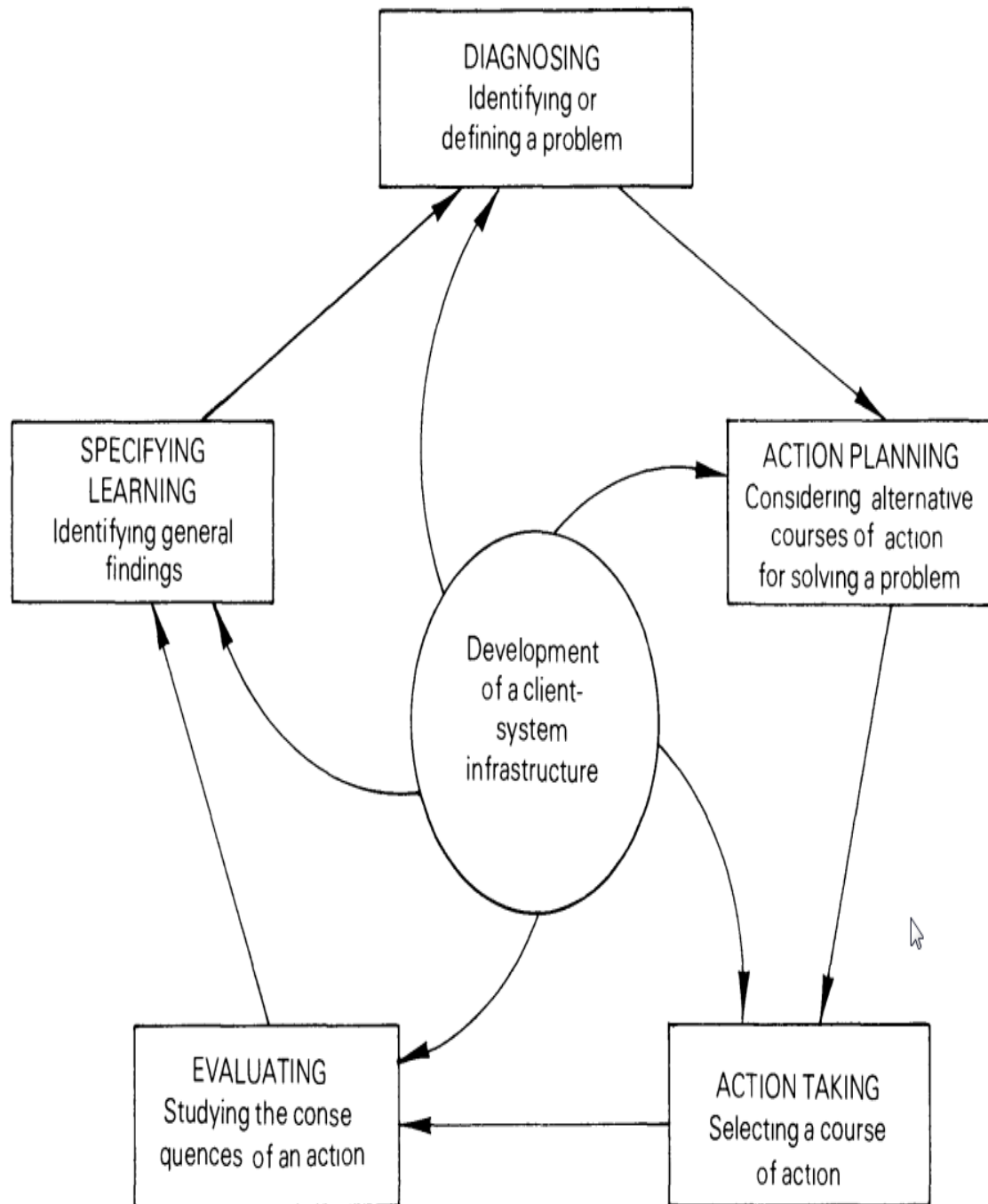


Figure 8: Cyclic process of action research (Susman and Evered 1978)

But the number of phases in action research are adjustable according to requirement of research case (Susman and Evered 1978). In this thesis, the structure of the actions research is followed as presented by Avison et al. (1999) which is a three-stage process, based on

problem diagnostic, action intervention and reflective intervention. It is appropriate for this case study due to the fact that two stages can be performed simultaneously with other activities. The planning stage is merged with literature view and done before as well as during the problem diagnosis stage. The evaluation is done during each research process stage. The empirical study structure is presented in Figure 9.

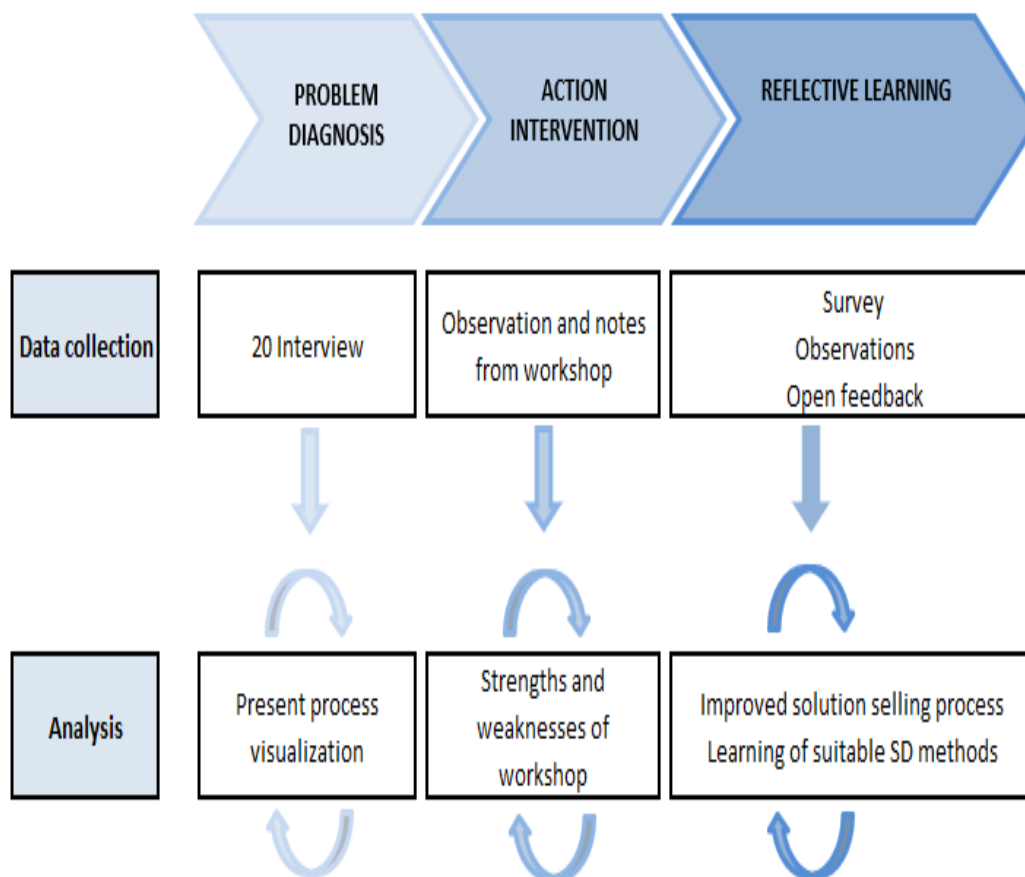


Figure 9: Detailed view of research process

The data collections and analysis are done individually for each research process stage. At first, data is collected and then analysis is done in iterative manner for every stage. In this research study, various data collection methods are utilised such as qualitative (interviews, observations, work-shops, notes, open feedback, comments) and qualitative (survey). Analysis at each stage provides data for next stage. The complete process is done with one iteration and presented as flowchart in Figure 10. More details related to action research of this study has been presented in the following chapters of this thesis.

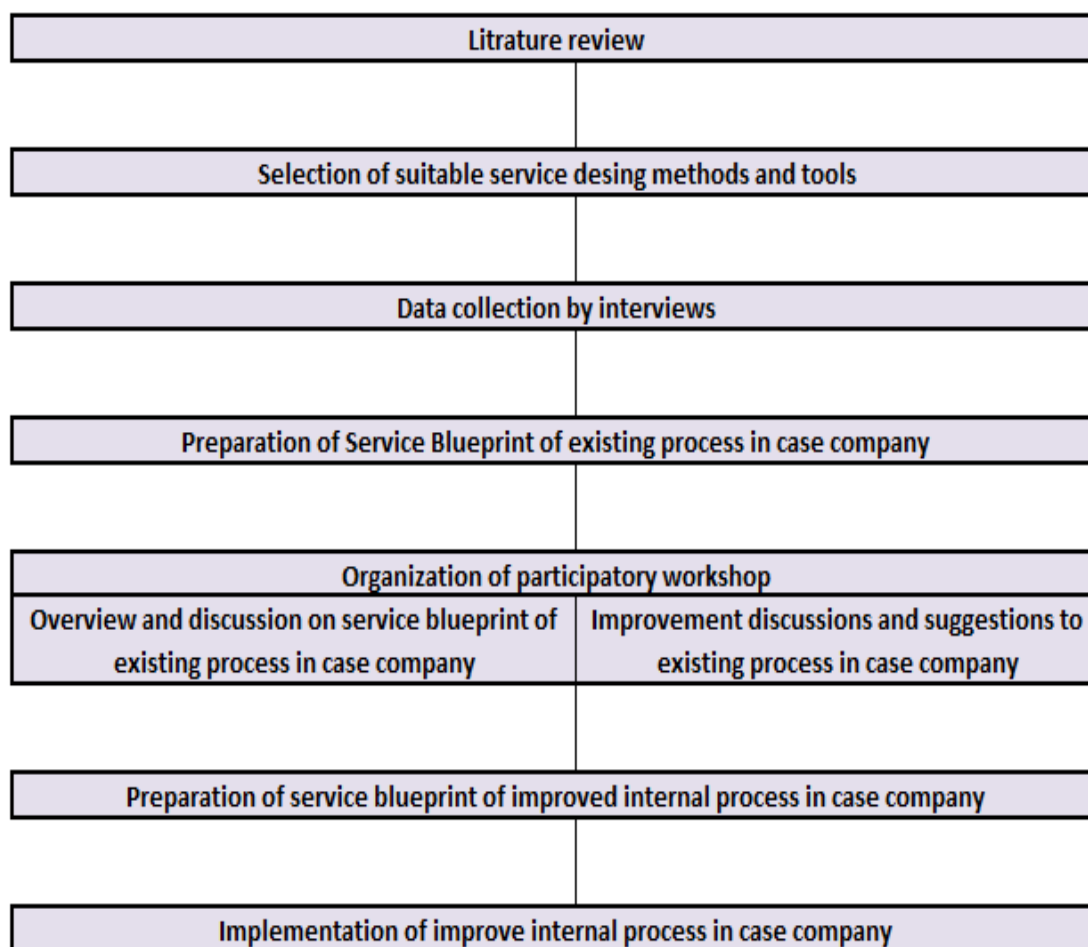


Figure 10: Flowchart of research process

3.2.1 Problem diagnostic phase

Problem diagnosis is first stage of this research process and 20 interviews had been done from relevant personals. The aim of these interviews was to visualize the current setup and working process of case company. The interviews were done from relative employees in the MP unit, ES sale support department as well as from machine factory which are involved in the process of solution preparation and delivery.

The interview order is followed as presented in Figure 11. At first, the information about the product, supply chain and quotation process for the solutions preparation in MP unit, is gathered from the relative departments so as to create technical understanding of products and processes. For this purpose, interview process had been started from various departments of MP unit to get the know-how of process and products (Project management, R&D, Engineering, Design). Once the information collection is done, ES sales and sales support team, involved in the solution integration and preparation, was interviewed to understand their part

in the solution making process. Later on, sales and sales support personals from Machine factory has been interviewed to under-stand their side of picture in solution preparation process.

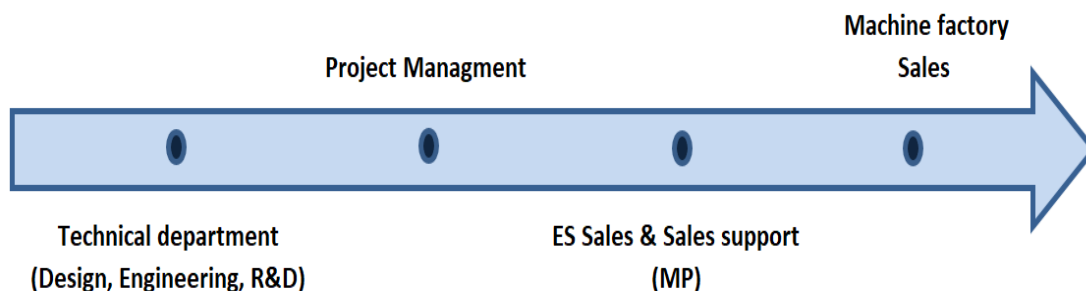


Figure 11: Interviewing process order

The main focus of interviews was to understand expertise, part of each department in solution integration process and improvement ideas. The observations and notes had been taken by the researcher during interviews. These interviews were semi-structured and blueprint is prepared based on the notes of interviews.

Department	No. of persons	Designation	Experience in organization (years)
Project management	2	Project manager	10-15
Design	2	Design engineer	3-5
R&D	2	R&D engineer	4
Engineering department	2	Lead engineer	8
ES sales support	2	Sale support engineer	2-4
ES sales support	3	Technical bid manager	6-15
ES sales support	1	Sales support development Manager	10
Sales department	2	Sales Manager	17
Machine factory sales	2	Sales manager	5-9
Machine factory sales	2	Sales support manager	6-12

Table 9: Interviewed employee's details

A list of guiding question for interviews has been prepared but it was not followed strictly and these are slightly adjusted according to requirement. These questions are then fine-tuned after couple of interviews and presented in the Appendix 1.

In order to get deep insights from interviews, these questions are not shared with interviewees beforehand, however a general overview had been mentioned in meeting invitation about process and agenda of interview. As researcher is interviewing its own colleagues, hence “getting know” part of interview was not required and average time span of interview was half an hour. Based on the outcome of interviews, a process prototype, explaining present working condition of the case company, was prepared which later on utilised in the participatory workshop.

3.2.2 Action intervention phase

In this phase, considering the outcomes and findings from problem diagnosis phase, a participatory workshop was organised. In this workshop, current process’s blueprint was presented to participants of workshop and discussions had been done for improvement. The researcher acted as a facilitator in participatory workshop and took notes of observations and discussions of participants. In this way, second round of qualitative data had been accumulated from workshop.

3.2.3 Reflective learning phase

The workshop is utilised, not only to gather qualitative data but also a survey was distributed and filled by participants, to gather quantitative data. Along with survey, the facilitator writes down open feedbacks, personal comments and passer-by comments during workshop. These quantitative and qualitative data form previous stages of research process were analysed and concluded accordingly.

4 Empirical results

4.1 Improving solution selling process

4.1.1 Problem diagnostic

The visualization of current internal process is created in the form of service blueprint with assistance of findings in the interview sessions from various stakeholders. The service blueprint is shown in Figure 12.

The complete solution proposal process was divided into four phases: Pre-Phase: Inquiry/Sales phase, During Phase: Budgetary proposal phase, During phase: Solution proposal preparation phase and Post phase: solution proposal submission phase. These phases are divided based on the corresponding activities happened during complete process. There are various departments involved in the whole process and colour codes has been used for individual departments for better visualization.

The first phase of the process shown in the service blueprint is Inquiry/Sales phase. This phase visualizes the part of process which involves the activities related to customer who is intended to buy the solution. The second phase of process is budgetary proposal phase where a rough order of magnitude is prepared for the solution proposal. It is an estimated price indication with limited information available for the scope of supply. The budgetary proposal phase is followed by next phase known as solution proposal preparation phase. In this phase, the scope of supply is refined as per requirement of project by the customer and solution providing organization prepare solution proposal according to customer specifications. The last phase in service blueprint is solution proposal submission phase. This phase represents activities related to submission of solution proposal to the customer which was prepared in the previous phase. In later part of this chapter, each of these four phases of service blueprint are explained in more details.

The complete service blueprint, as presented in Figure 12, is further divided into four figures, corresponding to each process phase respectively.

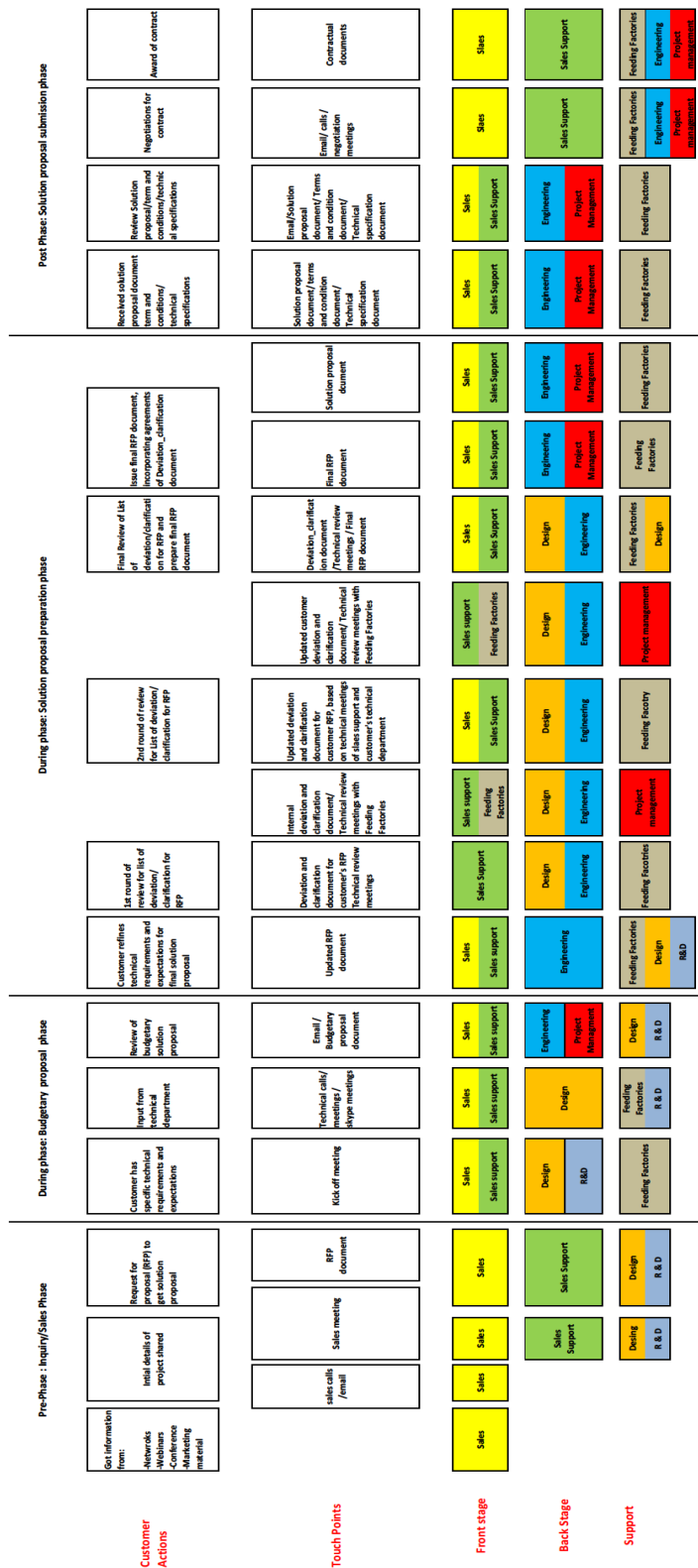
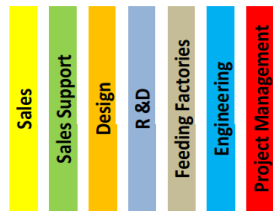


Figure 12: Service blueprint of case organization's current internal process

Pre-Phase: Inquiry/Sales Phase

This is the first phase of internal process of solution selling to potential customer in the organization. This phase is presented in Figure 13 for a closer look.

This phase is dominated by sales department as they are in lead role for customer interactions. These interactions involve various mode of virtual meetings (emails, skype, call etc.) and physical meetings. The sales department is assisted by the sales support department and internal consulting is done between these departments according to requirement. In standard sales cases, design and R&D department has insignificant presence in this phase but for technologically challenging sales cases, design and R&D department also provide support to the sales department.

Internal consultation between departments usually happened unplanned face-to-face talks and if required more detailed discussion, organised meetings are done accordingly. These communication styles seem very affective to provide support for the sales department during sales phase.

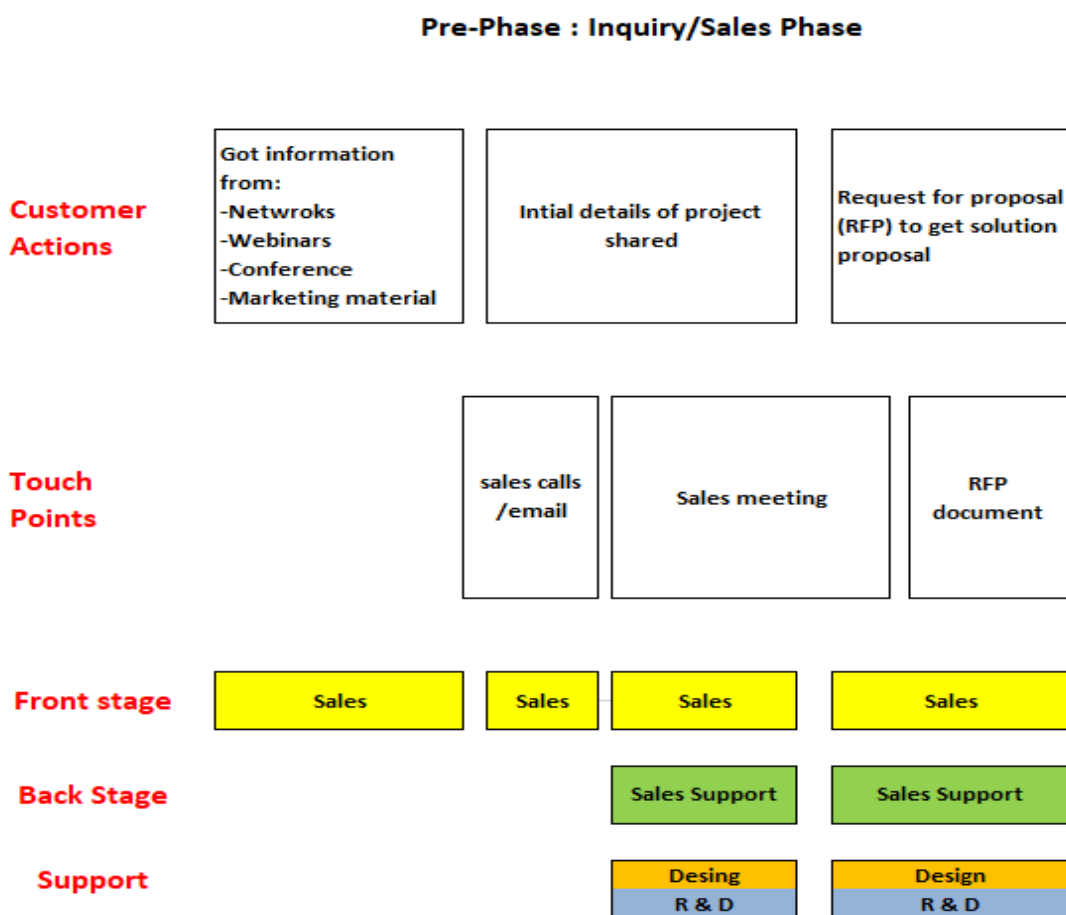


Figure 13: Pre-Phase: Inquiry/Sales phase of the organization's internal process

The customer's solution buying process can be based on competitive bidding approach or direct negotiation approach. There are various touchpoints involved in this phase, based on the customer's approach for buying solution.

In competitive bidding, the solution providing organization's sales department is get involved from the customer organization related to their project. The sales department co-ordinates with customer organization to obtain the initial requirements of the project. The sales department, with assistance of sales support department, identifies most relevant requirements of the project with respect to competencies of the solution providing organization, from these initial requirements. In case of technologically challenging cases, sales support department involves the Design and R&D departments to evaluate Go/No-Go situation for project bidding process.

These requirements must not be 100 percent accurate but can be within appropriate range for budgetary price indication. Later on, sales department communicate these required information to the customer so that they can issue the first draft of request of proposal (RFP) for solution proposal.

The direct negotiation approach is utilised for standardized sales cases. In this scenario, the customer is aware of the general required information for solution proposal preparation and usually sales department is enough to coordinate with customer for preparation and issuing of initial RFP document to solution selling organization.

The case organization has practice of having weekly inter-department meetings between sales and sales support department to overview potential sales leads and on-going sales cases. Also, these department personals are situated on same floor of a building and have frequent interactions with each other, which is seen a positive attribute for organization. This way, communication and collaboration between these departments on various issues happened on daily basis, in addition to organised weekly meetings.

There is another aspect to be considered about case organization that although sales and sales support department are placed in the same building but other major departments such as R&D, Design, Engineering and Project management etc are placed in another building of office which is almost 3 km away. This placement of departments in different buildings affect the communication and collaboration between sales/sales support department and other departments. The sales case specific meetings with these departments are held once a month or in urgent cases, through organised meetings, but these are not frequent meetups due to different office locations.

During interview sessions, the weekly meetings between sales and sales support department and monthly meetings for cross-unit information sharing are identified as communication

channels, to receive updates about potential sales lead and on-going sales cases from the sales department and prepared accordingly.

During-Phase: Budgetary proposal phase

On the receiving of initial RFP from customer, the second phase of internal process of solution selling in the organization starts which is mentioned as “Budgetary proposal phase” and has been shown in Figure 14.

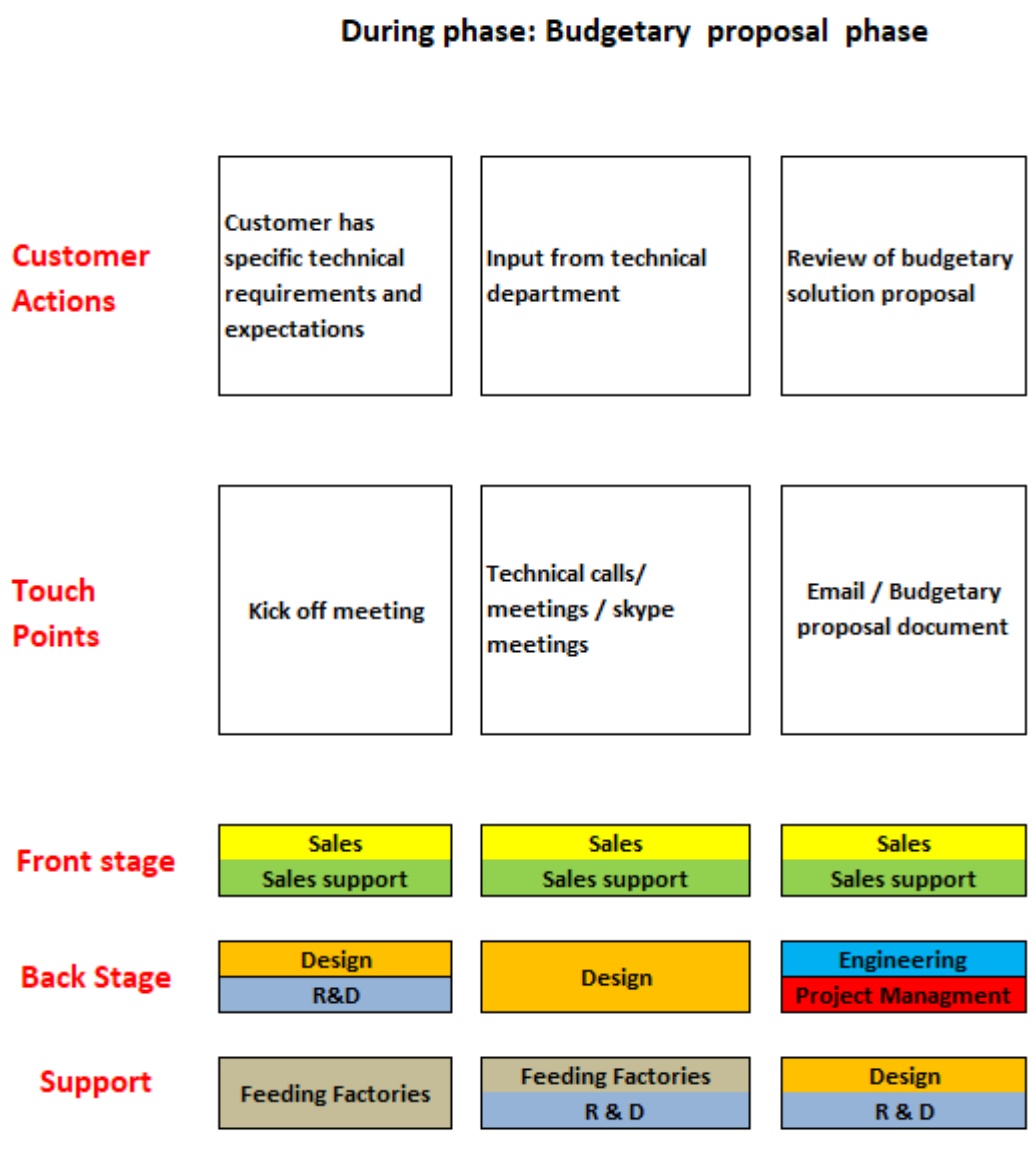


Figure 14: During-Phase: Budgetary proposal phase of the organization’s internal process

In this phase, solution selling organization review the RFP document of customer and sales support department involves in front stage, along with sales department. The process starts with kick-off meeting, to clarify general requirements into relatively more specific

requirements. This clarification work involves the R&D and design departments for general specification of solution proposal, but feeding factories also support product specific discussions. This phase involves various technical meetings between customer's technical department and selling organization, physical as well as virtual, according to requirements. These meetings are coordinated by sales and sales support department, but they also have the support from other departments. In this phase, the purpose is not to identify accurately all the technical and commercial requirements but to clarify the most important details for preparation of the budgetary proposal. This budgetary solution proposal is not binding and subject to change once all the technical and commercial clauses have been agreed and signed in later stages. The main purpose of this budgetary offer is to provide end-customer about rough order of magnitude (ROM) for investment, dimensions (foot-print) and weight of equipment, basic technical data sheets of equipment and standard terms and conditions for the solution. This will help the customer to evaluate the feasibility of the overall project and its characteristics.

This phase starts with technical kick-off meeting, involves technical meetings and ends with the budgetary solution proposal, submitted by solution selling organization towards the customer organization. The sales and sales support department are involved in face-to-face communication and it is perceived most efficient way of communication. Beside this, the communication and collaboration with other departments as well as with feeding factories are not that frequent and mostly based on email and short phone calls. In order to get support from them, organised meetings are required which effect on the robustness of the process.

The prototype of internal process of case organization reveals that lack of frequent and effective collaboration within internal departments and feeding factories effect the whole process. The sales support department, who is responsible for preparation of budgetary proposal, have to estimate various parameters of solution proposal at this stage due to lack of communication and collaboration, especially with feeding factories. During the interview sessions, it was also pointed out that the estimate practice is somehow fine with experienced employees, but it is difficult for less experienced employees to prepare the good budgetary proposal without coordinating with other departments and feeding factories.

During-Phase: Solution proposal preparation phase

The next phase of process is "Solution proposal preparation phase" as show in Figure 15. In the previous phase, the customer got the budgetary proposal from the solution selling organization and evaluate the feasibility of whole project. Based on the management decision, if project seems feasible to the customer, they move on to the next step and prepare detailed project specific RFP document. This detailed RFP document contains all the desired technical specifications and functionalities of equipment, technical standards to be followed,

commercial terms and conditions and all other project specific requirements. This updated RFP is provided to solution selling organization.

In this phase, sales and sales support department are at front stage but they require extensive input from all other departments and feeding factories to prepare solution proposal. At first stage, engineering and design departments are involved to evaluate the technical requirement and feasibility of the project. In case of technological challenges, R&D department is also involved to find best possible solution. Once the appropriate solution is identified, the sale support department co-ordinates with the feeding factories for the respective products.

Usually customer RFP document is quite extensive and big. The communication and collaboration protocol between feeding factories and Marine and Ports unit is decided so that sales support department will extract only relevant information of respective product from RFP document and send to feeding factories. This will allow feeding factories to focus on the product specific parts of RFP. Other than product specification, the commercial term and condition are reviewed by sales department and technical/system level specifications are reviewed by sales support department. Other departments such as engineering and project management department support in this process to sales support department.

It is identified in internal process prototype that email is used as communication channel for exchange of these information between sales support department and feeding factories as well as with other departments i.e. Engineering, project management etc. The sales support department extract relevant specification from RFP and send to relevant department or feeding factories for consideration.

The feeding factories review internally the specifications and prepare comment/deviation list according to the equipment. Sale support department prepares comment deviation list for technical/system level specification, with the input from other departments. While the sales department reviews commercial part of RFP document.

During phase: Solution proposal preparation phase

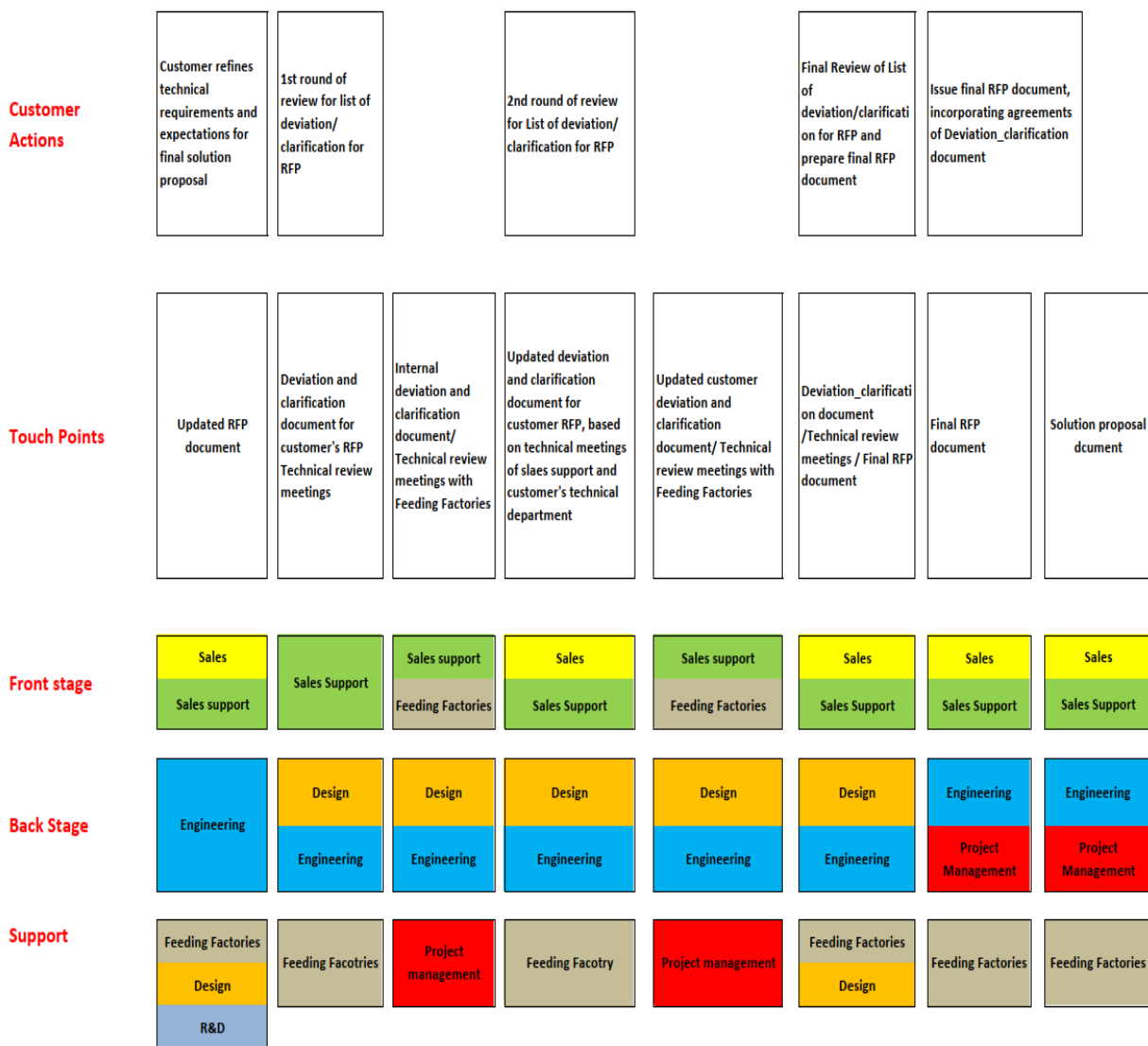


Figure 15: During-Phase: Solution proposal preparation phase of the organization's internal process

Once all stakeholders reviewed the RFP document and prepared their comments/deviation list, they sent these to ES sales support department. The sales support department review all comments/deviation and if required more explanation/details, they organise technical review meetings with feeding factories or relevant department.

After compilation of deviation/clarification list document by sales support department, the sales department submit it to customer. Based on this document and RFP, technical review meetings are done between customer's technical department and sale support department. These review meetings are based on many rounds until final agreement reached on

specifications. During these re-view rounds, sales and sales support department act on the front stage while feeding factories act in support.

Based on these clarification rounds, customer and solution selling organization come to the common understanding and agreement for project specifications. Then customer issues final RFP document for solution selling organization. Based on this final RFP document, solution selling organization has to prepare binding solution proposal. At this stage ES sales support department lead the process to create full cost model (FCM) and gather quotations from all feeding factories, take input from other relative departments for cost allocation for engineering, commissioning, project management and services of case project. Based on these, ES sales support department prepare the solution proposal for the customer.

It is identified in interview sessions that due to limited communication and collaboration of feeding factories in review meetings, these reviews involve several rounds, sending back and forth the comment/deviation list document. The reason behind this back and forth movement of comment/deviation list is, the ES sales support presents the deviation and proposed remedy to customer but if the customer does not accept proposed remedy and suggest some other possibility related to product specification, the sales support department is not able to verify its applicability on the product and hence they have to consult back to the feeding factories. During interview sessions, it is also found that Machine factory has a significant impact on solution proposal, being a major feeding factory. It is also mentioned that collaboration and communication between machine factory and sales support department is heavily done via emails and phone calls. The organised meetings are not very frequent between machine factory and ES sales support.

Another aspect is identified in interview sessions that communication of ES sales support department towards the machine factory is not well organised. The sales support department has dedicated personals for different segments. These segment responsible persons individually deal with machine factory sales department. There is no transparent information available that how many cases are in pipeline with machine factory and how they are prioritized.

Every segment responsible marks its relevant case as most important and expect from the machine factory sales to prioritize it.

Post-Phase: Solution proposal submission phase

Figure 16 presents the post phase of internal process, known as “Solution proposal submission phase”. In this phase, solution selling organization submit the solution proposal to customer. The customer evaluates the technical specification, commercial terms and conditions and other aspects of solution proposal. If there is requirement for some changes, it will be implemented by solution selling organization. After satisfactory review, a price negotiation round

come up where discounts, owner benefit package and other project specific bundle offers are being discussed and finalised. Once solution selling organization and customer agree of all terms and condition for the case project, the contract is signed between both companies.

As shown in Figure 16, this phase has larger portion of communication and collaboration of sale and sales support department with the end customer. The internal communication and collaboration with feeding factories and other departments is done according to requirement, if needed. This communication is done in forms of organised meetings to evaluate the solution and adjust according to customer’s expectations.

During interview sessions, it is pointed out that communication and collaboration is very good in this phase as all stakeholders desire to get the contract and more focused on the project.

Post Phase: Solution proposal submission phase

Customer Actions	Received solution proposal document term and conditions/ technical specifications	Review Solution proposal/term and conditions/technical specifications	Negotiations for contract	Award of contract	
	Touch Points	Solution proposal document/ terms and condition document/ Technical specification document	Email/Solution proposal document/ Terms and condition document/ Technical specification document	Email/ calls / negotiation meetings	Contractual documents
	Front stage	Sales Sales Support	Sales Sales Support	Slaes	Slaes
	Back Stage	Engineering Project Management	Engineering Project Management	Sales Support	Sales Support
Support	Feeding Factories	Feeding Factories	Feeding Factories Engineering Project management	Feeding Factories Engineering Project management	

Figure 16: Post-Phase: Solution proposal submission phase of organization’s internal process

Communication and collaboration focus

In the interview sessions, the discussion was not only focused on current internal process, but it is also discussed that how communication and collaboration could be improved between internal stake-holders for efficient solutions selling process. From interview discussions, it was identified that major focus should be on following phases of internal process and relative stakeholders as mentioned in Table 10.

During phase:
Solution proposal preparation phase
Communication and collaboration between ES sales support and Feeding factories
Communication and collaboration between ES sales support and Machine factory

Table 10: Topics of communication and collaboration improvement during interview sessions

The budgetary proposal phase and solution proposal phase as shown in Figure 12 are of most importance in whole process. Whether the customer is utilizing competitive bidding approach or direct negotiation approach, the ES sales support and feeding factories have a vital role in solution proposal. The effectiveness of communication and collaboration between ES sales support and feeding factories is very important for the whole solution proposal process. Due to large number of feeding factories for solution proposal, it was discussed in interviews that what are major products utilised in standard projects of solution selling organization. It is identified that almost in every solution proposal, the products from the machine factory are major part of solution. This fact emphasizes the importance of focusing communication and collaboration between ES sales support and machine factory.

It is also noted during interview sessions that there is not much organized protocol for communication and collaboration between ES sales support and machine factory. Limited communication and collaboration of machine factory in review meetings acts as a major reason to stretch this review for several rounds, sending back and forth the comment/deviation list document. In addition to that ES sales support department has multiple communication channels towards machine factory as every segment responsible from ES sales support is in direct contact with machine factory sales department. The ES sales support department does not maintain any record for all RFP request send to machine factory and there is no priority list coordination with machine factory so that machine factory can prioritise the RFP requests from ES sales department. Within ES sales support department, there is no information sharing protocol or method to understand the workflow towards the machine factory and how to prioritise it.

Based on these findings and observation during interview sessions, it is aimed by researcher to focus on improvement of communication and collaboration between ES sales support

department and machine factory, being major feeding factory during budgetary proposal phase and solution proposal preparation phase.

4.1.2 Action intervention

At actions intervention stage of this empirical study, a participatory workshop was organized. The notes and findings from interview sessions, such as service blueprint of internal process, communication and collaboration improvement suggestion and other general thoughts were utilised in this participatory workshop.

The workshop was planned in the afternoon and length of workshop comprises of 3 hours. The schedule of workshop is adjusted in afternoon, in order to not interrupt or disturb the daily working routines of participants. Total fourteen representatives were invited to the participatory work-shop. These representatives were selected based on idea that two participants from each internal stakeholder group were invited. In the end, there were twelve participants who attended the participatory workshop. The agenda of workshop is presented in Table 11.

Workshop Agenda		
Session 1		
13:00 - 13-15	Introduction	15 min
13:15 - 13-45	Affinity diagram	30 min
13:45 - 14-15	Introduction to internal process (Current service blueprint)	30 min
14:15 - 14-30	Coffee break	15 min
Session 2		
14:30 - 14-45	Improvement of service blueprint	15 min
14:45 - 14-55	Placing post-its	10 min
14:55 - 15-10	New pain-points	15 min
15:10 - 15-30	Ideas for improvement	20 min
15:30 - 15-45	Filling the survey	15 min
15:45 - 16-00	Open discussion and feedback	15 min

Table 11: The planned agenda of participatory workshop

As mentioned in Table 11, the agenda of workshop was comprising of two sessions and one fifteen-minute coffee break in between. This schedule was followed accordingly during the workshop implementation with participants. However, coffee break was reduced to five minutes, since the participants wished so. Therefore, these extra ten minutes were utilised in workshop section “Improvement of service blueprint” and this section’s duration was twenty-five minutes, instead of planned fifteen minutes.

The program of workshop was divided in four parts; the affinity diagram exercise, the internal process evaluation, discussion for improvement ideas and finally feedback survey is done by participants. The workshop started with the introduction to the participants about the scope of workshop. After the introduction, thirty minutes affinity exercise was done with participants as it was very useful method to enable participant to get familiarised with topic and prepared for upcoming tasks.

After affinity diagram exercise, the prototype of internal process (service blueprint) was presented to participants. The idea of this step was to gather shortcomings, improvement ideas and receive feedback related to introduced blueprint of current internal process. At this point, a five-minute coffee break was taken to refresh participants, which concludes the first session of participatory workshop.

After the coffee break, second session of the workshop started, and the discussions were held between participants based on identified issues and points from previous steps. The focus of discussion was mainly on improvement for communication and collaboration of internal stakeholders, especially between ES sales support and machine factory. The thorough analysis of improvement ideas with reference to possibilities, constraints, applicability and practicality had been done in group discussions. The dialogues between participants did not conclude to find the exact solutions of particular pain-points for further implementation but it pointed out the direction towards further action plans.

The researcher of this thesis study acted as facilitator in participatory workshop. Once the improvement ideas discussion step was concluded, the participants were asked to fill the survey forms. This activity was planned for fifteen minutes so that participants had enough time to fill out the survey forms properly. The survey form “Critical feedback” is presented in the Appendix 2 and it is comprising of questions which support the second research question of this research study. The reflective learning part of this thesis is also based on the answers of the workshop participants in survey forms. These survey forms were distributed to participants during introduction part of workshop and facilitator encouraged participants to note down their thought and opinions during the workshop as well as in the dedicated time slot for survey at the end of workshop.

At the end of workshop, the facilitator collected survey forms from the participants and a fifteen-minute session of open discussion/feedback was held. After that the facilitator thanked to all participants for their generosity of time and contribution during the participatory workshop and closed the session.

Organised participatory workshop strengths and weaknesses

The facilitator collected notes and observations during the workshop. The data based on these collected notes and observations is used for further analysis. The organized participatory workshop has many benefits but there are some shortcomings as well. The strengths and weaknesses of organized participatory workshop is presented in Table 12.

Strengths	Weaknesses
Preparation	Duration of workshop
Diverse background and number of participants	Detailed prototype
Engagement of participants	Small break
Location and environment	Focus group
Communication and collaboration	

Table 12: Strengths and weaknesses of organized participatory workshop

These strengths and weaknesses are elaborated further. The preparation is very important aspect of any successful participatory workshop and researcher prepared dedicatedly for workshop, hence it was one major strength of organized workshop. The number of participants from various department, location and environment of workshop, activities to be done during workshop, tools and other supplies (papers, post-it-notes, pens etc) arrangement and most importantly workshop agenda were planned. Also, paper version of internal process prototype was printed before workshop, to be available for participants. This beforehand preparation proved very helpful for successful execution of workshop.

One positive aspect of workshop was number of participants and their diverse background. There were 12 participants in the workshop which is neither too large nor too small group for workshop. Selecting two participants per department was also beneficial as it introduced diversity of experience and opinions for the discussion and analysis during workshop.

The workshop was done in spacious meeting room. The location and environment were chosen carefully, to maintain relaxing atmosphere for participants and avoid tensed feeling of a serious meeting. It is considered cautiously that participants feel comfortable and involve in workshop freely, without hesitation. This also helps to maintain high engagement of the participants during entire workshop duration.

The communication and collaboration between participants were very good. Although, some participants got involved in their daily task for some moments during the workshop, but group involvement and flow of discussion was not affected. All participants shared their inputs and view-points in healthy environment which assisted effective discussion about root cause of certain issues and improvement possibilities. Hence communication and collaboration were the major strength of organized participatory workshop.

In addition to strengths, some shortcomings of organised workshop were identified also. The workshop duration was planned for three hours during second half of participant's routine working day, hence consuming a significant portion of daily routine worktime in workshop. In addition to that, by the end of workshop, the participants become quite tired. One major cause of tiredness was, the coffee break in workshop was very small. However, the tiredness did not have any significant impact on motivation, involvement, communication and collaboration of the participants during workshop.

Also, service blueprint scope and focus group mismatched a bit. The internal process visualization was felt too detailed and some participants encountered difficulties to fully understand the complete internal process. Especially when discussion focused on certain step of process, some participants was not able to contribute in discussion due to lack of involvement in that particular process step. But generally, all participants were very motivated and active when discussion relates their team, roles and responsibilities.

4.1.3 Improved internal process

In this research study, the data for reflective learning is accumulated with the help of four methods. These methods are facilitator's observation during workshop, survey and open feedback from participants in workshop, and passer-by comments right after participatory workshop. In addition to that, the notes and data collected in action intervention phase, also support the learning and improvement idea for process visualization as well as for service design methods and tools. The interview process and participatory workshop revealed numerous ideas and suggestions that could be applied to internal process of case organization, for improved and better communication and collaboration of internal stakeholder which enhance the productivity of overall process.

Based on the gathered suggestions and ideas from interviewing process and participatory work-shop, a new version of internal process visualization has been prepared and presented in the form of service blueprint. This new service blueprint presents the internal process of case organization, including the actions, revealed during two previous stages of research, for the improvement in communication and collaboration within the organization. The proposed changes in first version of service blueprint for case organization's current internal process has been highlighted and presented in Figure 17.

The proposed changes are highlighted with red rectangles and red cross in all phases of service blueprint. The changes in each phase is discussed separately in later part of this chapter.

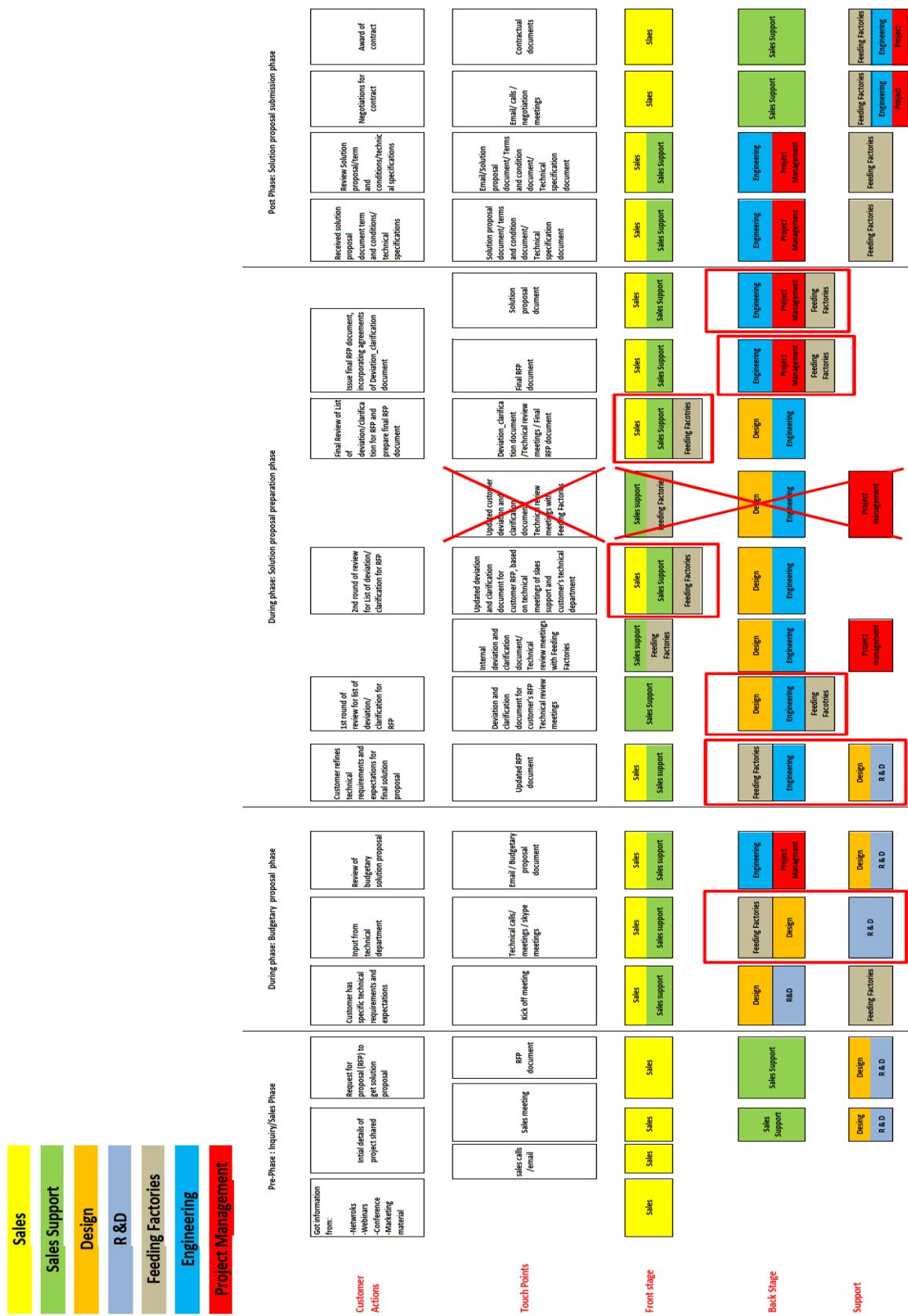


Figure 17: Service blueprint of the case organization’s internal process with highlighted proposed improvements

Proposed Pre-Phase: Inquiry/Sales Phase

The proposed first phase of internal process of solution selling to potential customer in the organization is presented in Figure 18.

In this phase, the sales department has a lead role and Internal consultation between departments usually happened unplanned face-to-face talks. The more detailed discussions are organised in form of planned meetings. These communication styles seem very affective to provide support for the sales department during sales phase. Although, there are no proposed changes in visualization of this phase and it remains unchanged as mentioned in Figure 18, but one improvement suggestion was related to placement of different departments. It was revealed that placement of departments in same buildings could have positive affect on the communication and collaboration between departments, due to ease of frequent interactions and meetups.

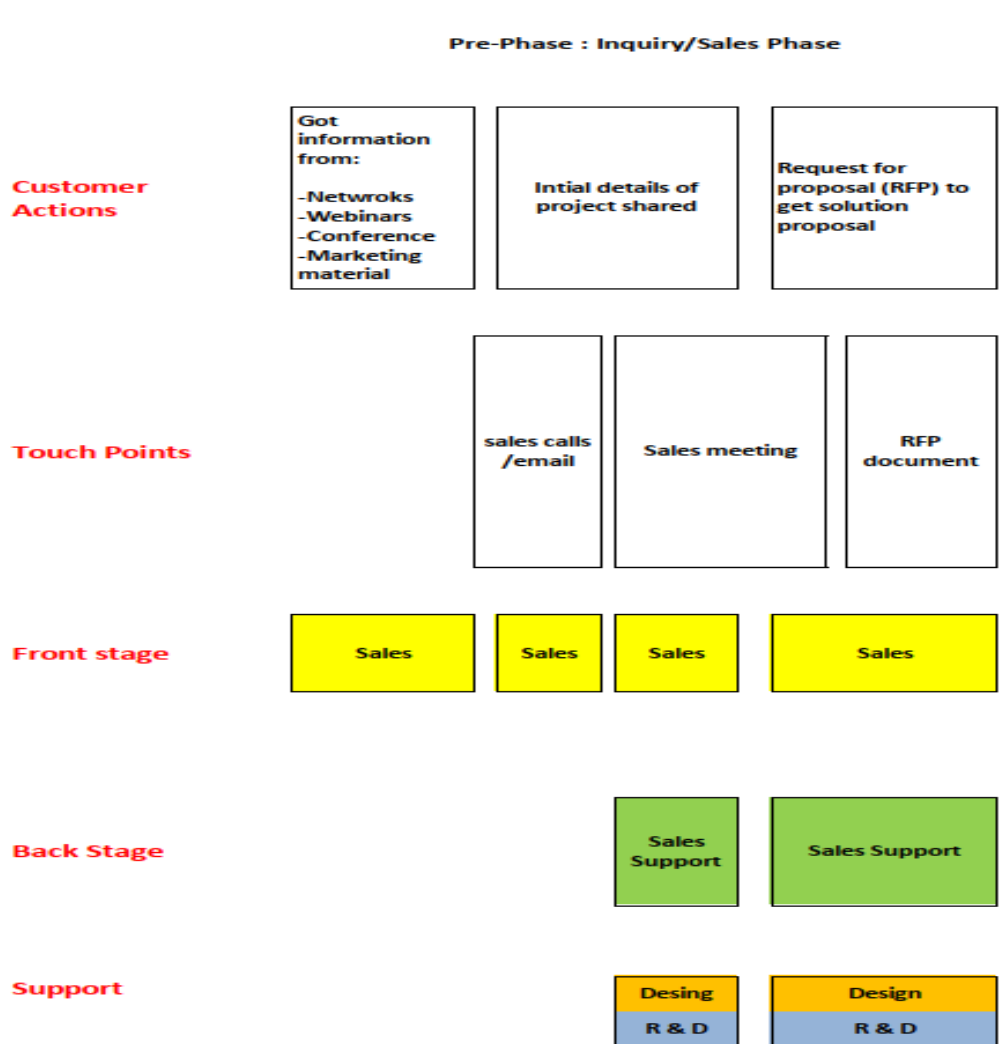


Figure 18: Proposed Pre-Phase: Inquiry/Sales phase of the organization's internal process

Proposed during-Phase: Budgetary proposal phase

The proposed second phase of internal process has been shown in Figure 19.

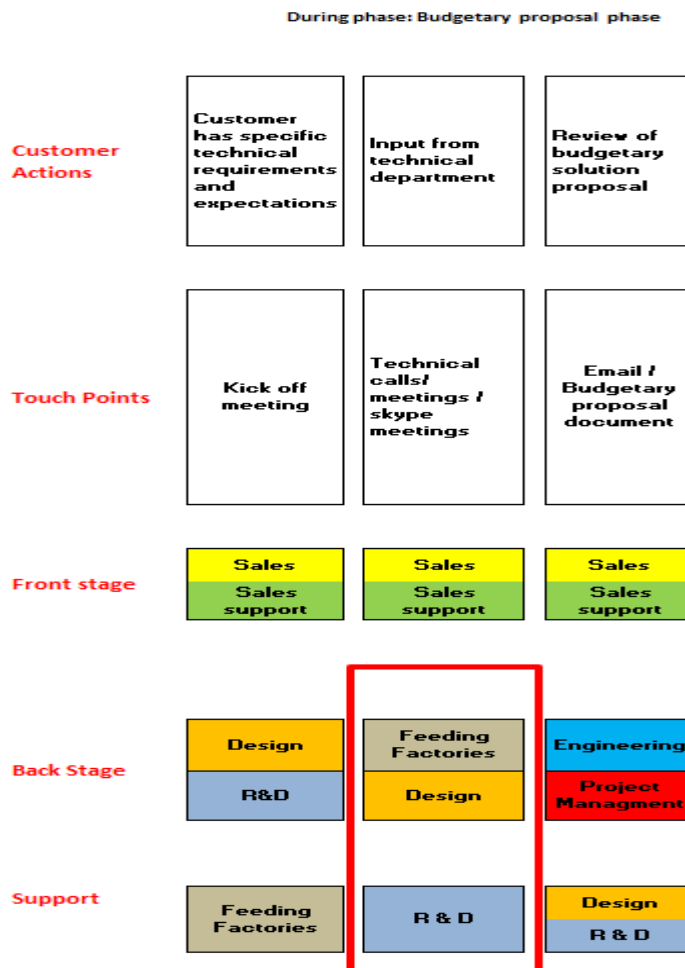


Figure 19: Proposed During-Phase: Budgetary proposal phase of the organization's internal process

In second phase of current organizational process, the sales department and support department are involved in front stage with customer, whereas R&D and design departments act on the back-stage. The feeding factories act in support role.

The proposal to enhance the internal communication and collaboration is based on the idea of changing the role of feeding factories in this stage of internal process within the case organization. The major feeding factories (Machine factory) in solution proposal should be involved in the back-stage role, as highlighted by red rectangular in Figure 19.

In this way, the ES sales support department will have realistic estimation for product parameters as it will be coming from the feeding factories and estimation practices will be more

streamlined for less-experienced employees of ES sales support department. The improved internal communication and collaboration will result into more precise budgetary proposal preparation.

Proposed during-Phase: Solution proposal preparation phase

The most important phase of process is “Solution proposal preparation phase” and proposed improvements in it are mentioned as red rectangular and red cross as show in Figure 20.

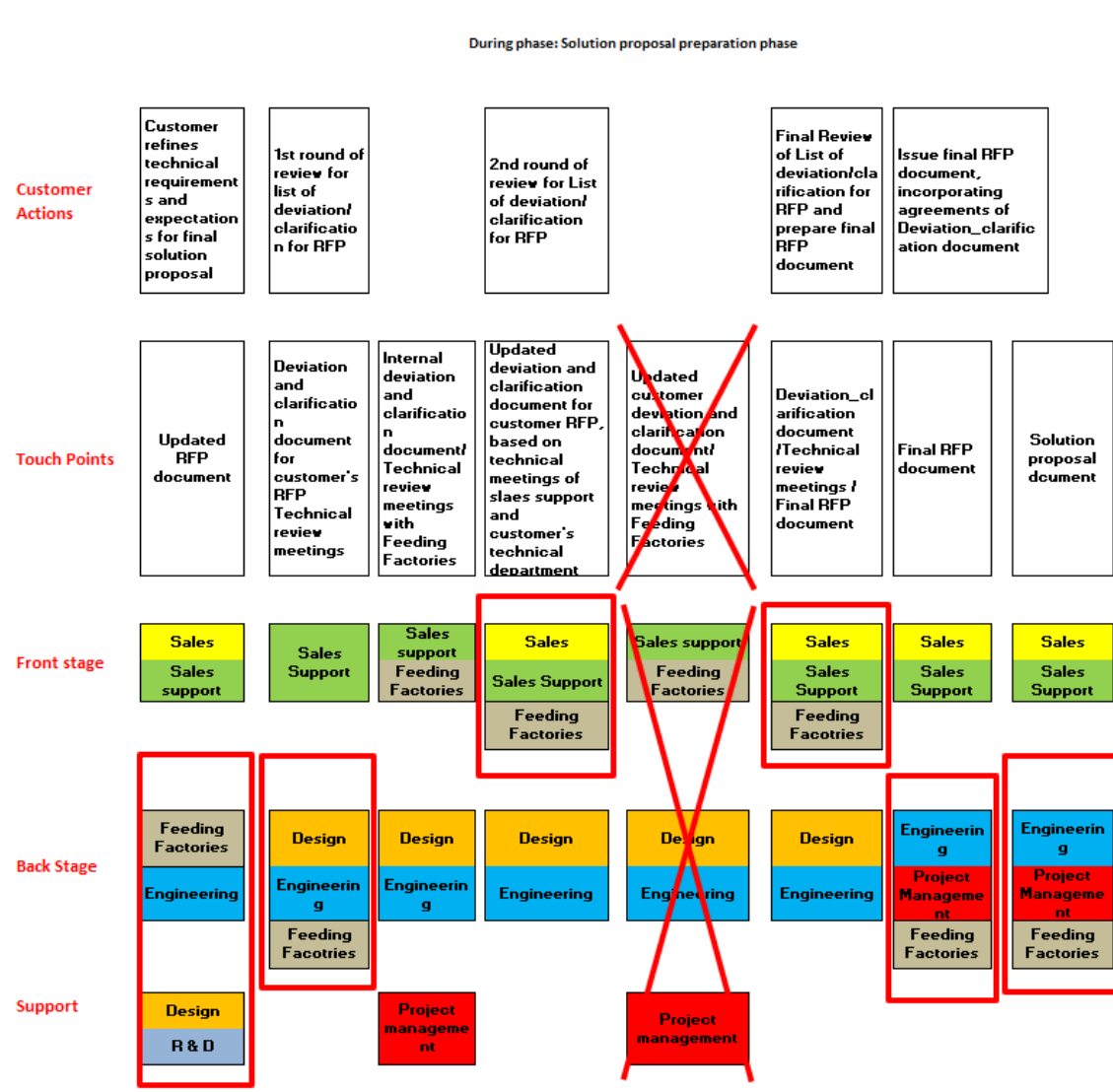


Figure 20: Proposed During-Phase: Solution proposal preparation phase of the organization’s internal process

In the budgetary proposal phase, the prepared budgetary proposal will be based on much more realistic estimation as specification input will be coming straight from feeding factories.

In this phase, it is also proposed to change the roles of internal stakeholder. Due to time limitation, it was not possible to consider all the feeding factories, in this research study. It was revealed from the empirical study that Machine factory has a significant impact on solution proposal, being a major feeding factory, hence the focus was narrowed towards the communication and collaboration of ES sales support department and Machine factory, due to their high importance in solution preparation process.

In the current process of case organization, once the RFQ document is received from the customer, it will be reviewed by ES sales support department and relevant information are extracted for feeding factories i.e. Machine factory. This communication is usually done by email and role of feeding factories i.e. Machine factory is categorised as support in service blueprint of current process in case organization.

To enhance the communication and collaboration between ES sales support department and feeding factories i.e. Machine factory, it is proposed in 1st step of this phase that Machine factory's role should be back-stage. The communication between ES sales support and the Machine factory should not be limited to e-mails or short calls only. There should be combined meetings together, to review and comment the customer specification. This will result in more comprehensive comments list for customer as well as alternative solutions to deviation from RFP document.

In the current process of case organization, during 2nd step of this phase, the deviation/clarification document is sent to the customer's technical department and technical review meetings are done between customer's technical department and sales support department. These review meetings are based on many rounds until final agreement reached on specifications. For new/improved internal process, it is proposed that Machine factory should be at front stage, along with ES sales support, in review meeting with customer. This setup not only makes these review meetings more effective as the alternative solutions and other possibilities will be discussed promptly, but also reduces numerous back and forth movements of comment/deviation lists, which in turn reduces the number of review meetings. This can be seen in Figure 20 with red X. Both ES sales support department and Machine factory should participate at front stage, for technical meetings with customer until all clarification/deviation is agreed and customer issues the final RFQ document. After issuing the final RFQ document, the role of Machine factory will be back-stage, along with other departments, to assist the ES sales support department in the final solution proposal preparation. At this point, ES sales support department leads the process to prepare full cost model (FCM) and take quotations from all feeding factories, get input from other relative departments for cost allocation of engineering, commissioning, project management and services of case project. Based on these, ES sales support department prepares the solution proposal for the customer.

It was also revealed from empirical study that communication of ES sales support department to-wards the machine factory is not well organised. There is no transparent information available about cases are in pipeline with machine factory and their priority. It is also proposed to create a protocol for prioritizing the cases, sent to Machine factory from ES sales support department. The ES sales support department as well as Machine factory should have transparent information about the projects under consideration, to optimise workload and efficient responses. This will enhance the communication and collaboration between ES sales support department and Machine factory, which in turns positively affect the robustness of internal process of case organization.

Post-Phase: Solution proposal submission phase

Figure 21 presents the proposed post phase of internal process, known as “Solution proposal sub-mission phase”.

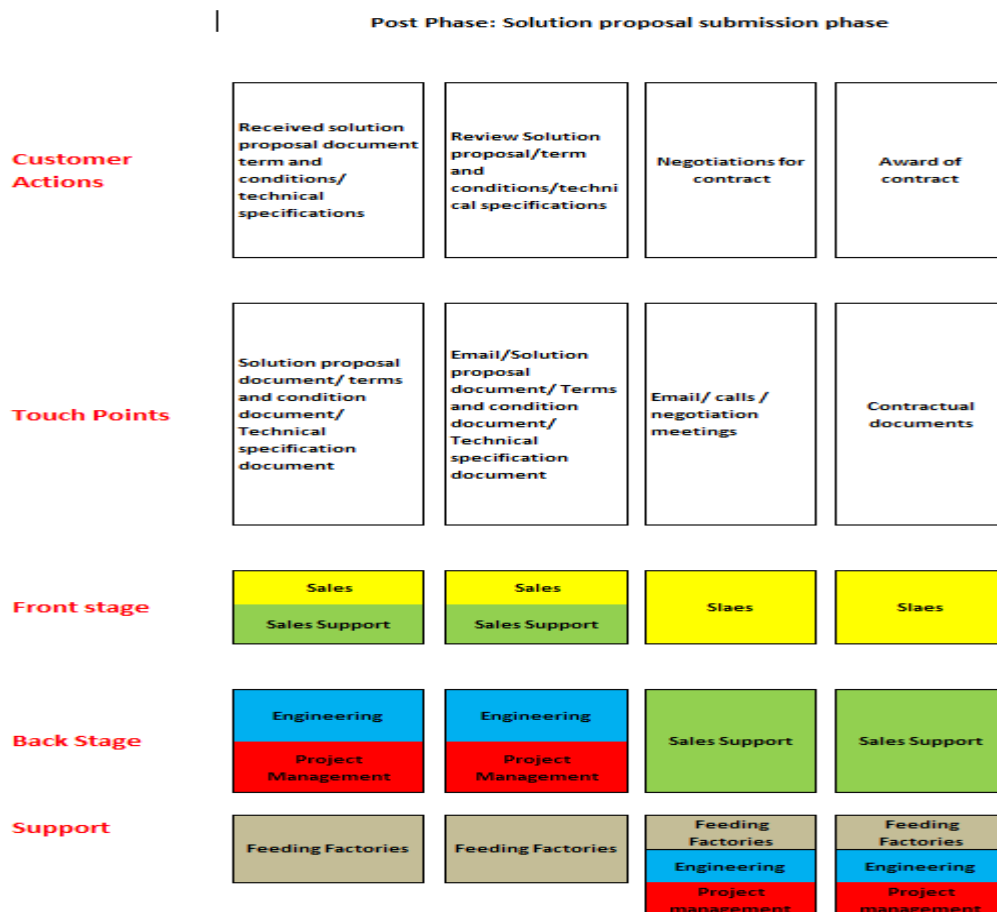


Figure 21: Proposed Post-Phase: Solution proposal submission phase of the organization’s internal process

In this phase, solution selling organization submit the solution proposal to customer. The customer reviews the solution proposal and negotiation round is held between customer and

solution providing organization. This phase has larger portion of communication and collaboration of sale and sales support department with the end customer. The internal communication and collaboration with feeding factories and other departments is done as per requirement. The empirical study's result suggest that communication and collaboration is very good in this phase as all stakeholders desire to finalize project.

Summary

The new proposed actions and activities in process has been listed in Table 13.

Actions	Details
Role change of feeding factories (Machine factory) in budgetary proposal.	The major feeding factories (i.e. Machine factory) in solution proposal should be involved in the back-stage role.
Role change of feeding factories (Machine factory) in the solution proposal's initial step.	The major feeding factories (i.e. Machine factory) should be involved in back-stage role. The communication between ES sales support and Machine factory should not be limited to e-mails or short calls only. There should be combined meetings together, to review and comment customer specification.
Participation of feeding factories (Machine factory) in solution proposal's review meetings with the customer.	The major feeding factories (i.e. Machine factory) should be at front stage, along ES sales support, in review meeting with customer.
Reduce number of review meetings.	The participation of major feeding factories (i.e. Machine factory) in review meeting with customer will reduce numerous backs and forth movement of comment/deviation list.
Organized communication between feeding factories (Machine factory) and ES sales support department.	The ES sales support department and feeding factories (i.e. Machine factory) should have transparent information flow about the projects under consideration. A protocol for prioritizing the cases and optimizing the workload should be in place.

Table 13: The new proposed actions and activities in the internal process

The service blueprint of new internal process has been presented in Figure 22.

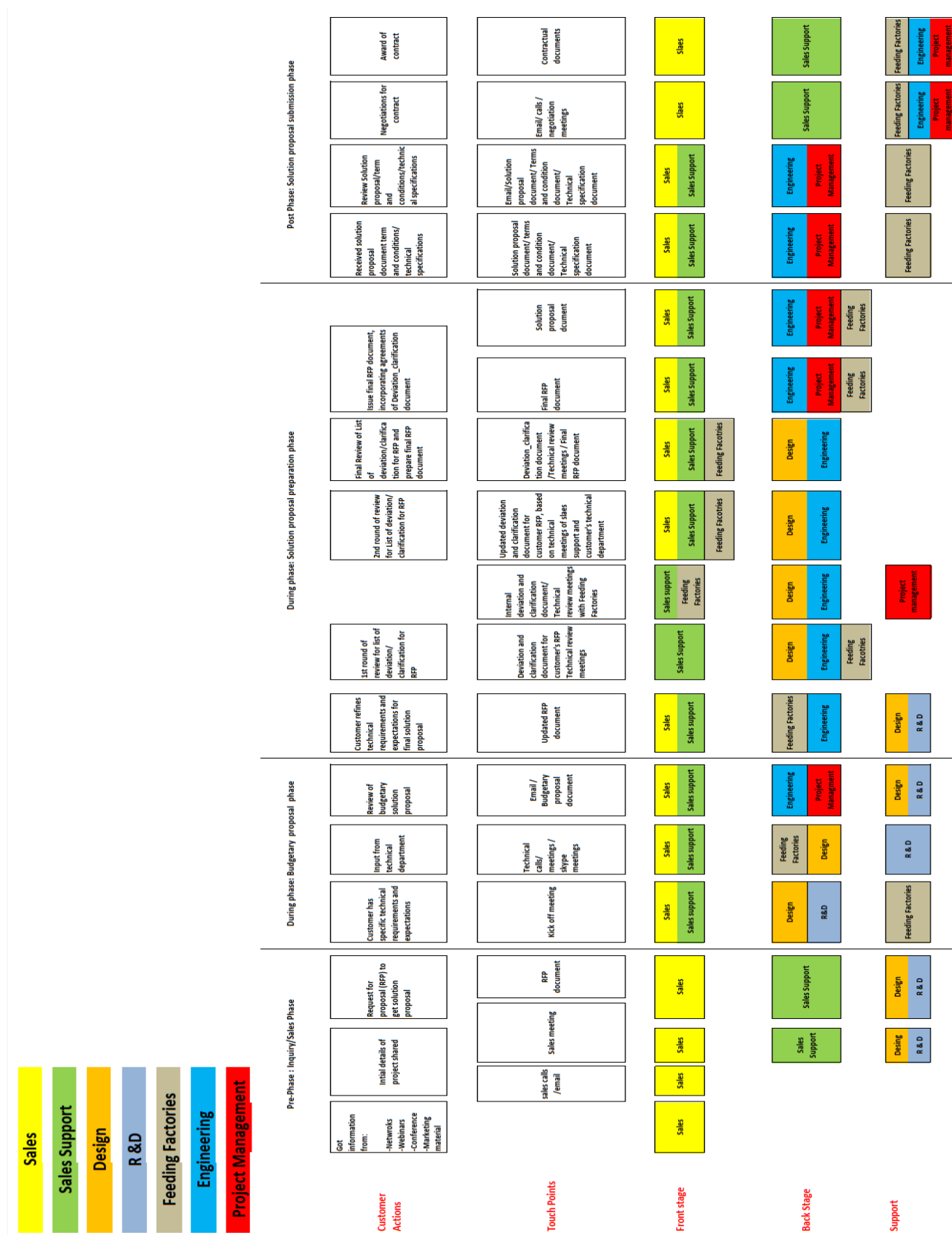


Figure 22: Service blueprint of new internal process

4.2 Suitability evaluation of service design tools

A large number of SD methods and tools are available for service designers and their selectivity depends on the nature of particular case. Service designers are free to choose and combine different SD tools according to desired characteristics, requirement of process stage, situation and design interventions. The main objective of designers is to identify suitable combination of SD tools for the gradual improvement through service design process.

The selection of SD tools for this research study is based on fact that how efficiently those tools can be applied for visualization and improvement of the organizational process of case organization. Tassi (2009) categorization of SD method has been selected for this research as communication and collaboration are primary focus point in this study. The sub-categories from Tassi (2009) categorization are used as a criteria to choose following SD tools.

- Service blueprint
- Participatory workshop

4.2.1 Service blueprint for process visualization

The service blueprint is selected for the visualization of organization process. The selection of SD tool for visualization while keeping focus on communication and collaboration of internal process of organization is done by researcher, based on Tassi (2009) categorization.

In Table 14, SD methods and tools are organised by researcher in suitability order for process visualization. The main idea of organizing these methods in suitability order is, to identify most appropriate SD tool that would meet all the requirement of research questions. These SD tools are analysed turn by turn to identify suitability of each tool for research study. From a large range of SD tools and methods, only most suitable tools are listed in Table 14.

Suitability order	Representations: Graphs	Contents: Interaction	Contents: System	Design Activities: Implementing	Recipients: Stakeholders
1.	Blueprint	Blueprint	Touchpoints matrix	Blueprint	Blueprint
2.	Touchpoints matrix	Touchpoints matrix	Actors map	Service prototupe	Touchpoints matrix
3.	Customer journey map	Storyboard	system map		Customer journey map

Table 14: SD methods and tools suitability order for visualization.

The most natural way for process visualization is representation type of graph. Interaction content represents communication and collaboration phases between system stakeholders. For visualization of technical features of process, system content is of great importance. Implementing stage enables to choose appropriate method for idea communication and provide support for further actions. The recipient's category of stakeholder is beneficial for internal utilization of organization. A recipient stakeholder group is analysed for research study.

It is shown in Table 14, that service blueprint is considered first choice in all categories except system content. The next choice to blueprint is touchpoint matrix that fits in all categories except implementing activity. The comparison of these two choices need to be done for visualization as well as improving the communication and collaboration of internal stakeholders of organization. Tassi (2009) has defined service blueprint as a description of interactions that provide service whereas touchpoint matrix is focused on personas and based on combination of system maps and customer journey maps. The main difference between these two methods is focus area. The service blueprint is more focused on layers of service provider which are related to collaboration whereas touchpoints matrix keeps focus on action of customer and touchpoints during the user experience. In this research study, the focus is more on the visualization of internal stakeholders than customer experience. Therefore, service blueprint has a strong edge to be selected as visualization tool for this study.

In addition to that, the evaluation of SD methods and tools by Segelström and Holmlid (2011) was also looked over to have broader perspective of method selection. According to their research, service blueprint was considered a strong tool due to heterogeneity and goods as distribution mechanism which are main aspects of the communication in stakeholder's group. On the other hand, customer journey is considered suitable for not only these qualities but also all other qualities in their re-search such as intangibility, heterogeneity, value in use, goods as distribution mechanism, customer orientation, relationship and inseparability (Segelström and Holmlid 2011).

Keeping in view that main focus of this research is on the communication and collaboration of internal stakeholders as well as visual comparison of methods for improved solutions selling process, it is concluded that service blueprint is most suitable tool for process visualization, to fulfil desired objectives of this research work.

4.2.2 Participatory workshop for process improvement

The co-creation is a great strategy for improvement within organization. The environment of co-creation is possible to create by opportunities for people, to gather at on place for collaboration. Service design is big advocate of co-creation as it is focused to involve various stakeholders for improvement in existing services or development of new services. It is an important aspect of SD to involve end-users in the design process from very beginning of service

development process. The main objective of service designers is to provide facilitation methods for co-creation between various stakeholders and support their insights expressions (Tuulaniemi 2011, 116-117).

The participatory workshops are vastly used in service design process for facilitation of co-creation. The participants of workshop ranges from service provider, end users or different stakeholders for sharing insights and co-creation. Co-creation is readily associated with communication and collaboration activities in order to explore results (Tuulaniemi 2011, 118).

The objective of this research is similar i.e. method selection to create an environment that supports discussion, analysis and co-creation for organizational process improvement. The participatory workshop is very suitable choice to gather related stakeholders at one place and facilitate co-creation process for desired objectives. Hence, participatory workshop is chosen as SD tool for process improvement, to fulfil the desired objectives of this research.

4.2.3 Learning related to Service design methods and tools

The quantitative data gathered from survey, filled by 12 participants of the workshop, was analysed by using likert scale 1-7, based on four evaluation criteria and the results are shown in Table 15.

Evaluation criteria	Average results based on likert scale 1-7
Visualization supporting communication	5,75
Knowledge gain from visualization	5,58
Workshop supporting collaboration	5,91
Workshop environment supporting free discussions	6,33

Table 15: Quantitative data result from survey

Based on likert scale 1-7, the results for communication support and knowledge gain through visualization were rated as 5,75 and 5,58 from the participants. These results are slightly lower than results related to workshop setup (5,91 and 6,33) but still in good range. This qualitative data also depicts positive effects on internal communication and collaboration. The benefits of service blue print and participatory workshop were acknowledged by participants. Some opinions of workshop participants are mentioned as follow:

“Service blueprint was very beneficial to understand whole process”

Participant X

“It’s really good to have such workshops for understanding the big picture”

Participant Y

“Best practice to identify new ideas for improvements in existing setup”

Participant Z

It is evident from results in Table 15 that SD tools and methods had good impact on internal communication and collaboration. The insights gathered from the empirical study is presented in following sections.

Learning about Service blueprint

Both quantitative and qualitative data support the fact that employees of case organization considered it beneficial to utilize service blueprint for the visualization of internal process and its transparency for communication and collaboration between different departments of the organization. The participants understood role and activities in structured way, for each unit thought out the solution selling process.

One main objective of participatory workshop was to gather the insights of participants about service blueprint. The facilitator’s notes, observations and survey were utilized for this purpose. The learnings from gathered insights are utilized to propose improvements in the service blueprint based on existing practices of case organization, hence improving internal communication and collaboration in solution selling proves.

The learnings from empirical study are characterised on various aspects such as scope, size, structure and accuracy and presented in Table 16.

Aspect	Learning about service blueprint
Scope	It supports better understanding of targeted audiences
Size	It is easy to present and fits in presentation material
Structure	It is possible to adjust accordingly for value proposition
Accuracy	The level of details can be adjusted according to requirement and interest of audience

Table 16: Learnings related to service blueprint for process visualization

The accuracy of service design method is vastly dependent on the amount of the information contained by visualization. It will be difficult to focus on the particular activities and their

analysis if the scope is expended largely. Similar issues are associated when excessive amounts of details are presented in the visualization. Therefore, visualization scope can be selected, keeping in view target audience so that they can easily understand the process and able to participate in discussion, related to process visualization.

During action intervention stage of research study, it was identified that when the process visualization expands too much and cannot be presented on an A4 sheet or power point slide, it is not convenient to capture the whole process. This may result into confusion of audience as well as difficult for them to grasp the whole picture in one glance. Moreover, it was also identified that what are most important phases to be focused and respective stakeholders. Therefore, the final version of improved service blueprint was prepared for the improved communication and collaboration, keeping in view these aspects.

The structure of visualization is also very important to consider so that it will not confuse the audience but serve the purpose of visualization.

The insights about scope of participatory workshop were also noted by the facilitator during and after workshop feedback. The scope of workshop was defined by the service blueprint presented in workshop and originally considering whole process. But it was identified that scope could have been narrower. Initially the participatory workshop was focusing on whole process but later on it was more focused towards the communication and collaboration of ES sales support and Machine factory, due to their importance in solution preparation process.

Learning about participatory workshop

A very good amount of feedback has been received from participants of workshop. It is depicted from feedback that participants enjoyed the discussion and feel good about sharing their point of view with other participants.

The ideas of open discussions with other department's stakeholders was greatly appreciated by participants. These open discussions support and enhance the clarity of roles and responsibilities within the process, since participants shared their experiences and viewpoint to each other. This is also beneficial to identify the root causes of various issues in the process, by understanding the process from other stakeholders.

In addition to feedback from participants, the colleagues who got to know about workshop during as well as after it is held, they also give feedback that participants had looked very motivated and committed about workshop process. The participants recommended other colleagues to participate in these kinds of workshops. This feedback was received by the four persons which were not participated in the workshop.

Based on these feedbacks and facilitator's observations, it can be concluded that workshop was successful to serve the purpose of supporting communication and collaboration of internal stake-holders. The participants from various units were comfortable to talk about problems and for constructive discussion to identify practical solutions.

For successful organization of participatory workshop, the learnings from empirical findings are presented in Table 17.

Aspect	Learning about service blueprint
Preparation	Carefully plan the arrangements in advance
Schedule	Prepare realistic schedule with refreshment breaks and stick to it
Scope	Align the scope and content with respect to participants
Environment	Select carefully location and surrounding to create supportive environment for free constructive discussion

Table 17: Learnings related to participatory for process improvement in case organization

These aspects of preparation, schedule, scope and environment are of most importance for successful participatory workshop arrangements, so as to improve internal process of the solution selling organization. Preparation aspect is about planning the resources and arrangements for work-shop that are to be utilized during workshop. The organised participatory workshop in case organization was well planned with respect to this aspect. No only it had positive effect on overall work-shop but also facilitated the communication and collaboration between participants. Schedule was noted as an important factor for the successful workshop organization. The workshop participants had a bit negative effect due to long sessions and small break in between. It is found from action intervention that the organizational process improvement workshops should not be arranged in long session and there should be appropriate breaks between sessions. The participants' energy level and motivation will be positively influenced with scheduled breaks.

It is also very important to align the scope and content of workshop with respect to audience as it results in improved engagement of participants and results of participatory workshop. It is identified from empirical study that inviting everybody for workshop, focusing on process improvement, is not beneficial. Also lack of interest and relevance from scope of workshop might bring communication and collaboration difficulties between participants. The selection criteria for workshop should be based on direct involvement with process and interest for the process improvement.

The environment of participatory workshop is also very important. The empirical study revealed that location and surrounding of workshop should support free, open and constructive

discussion. This will have great positive impact on communication and collaboration between participants of the workshop.

4.3 Summary

There are three stages in empirical study. Analysis of every stage is done by utilization of gathered data. An in-depth understanding of current internal process of case organization is obtained by problem diagnosis. The interview process was done, ranging 20 interviews which was utilised for visualization of current process in the form of service blueprint.

During action intervention stage, a participatory workshop was organized, and prepared service blueprint had been presented in this workshop. The feedback of participants of workshop was collected, about applied service design method for visualization process.

Reflective learning was last stage of empirical study and in this stage, accumulated learnings from previous stages had been utilized to propose and implement new internal process in case organization for efficient solution selling, by improved communication and collaboration between internal stakeholders, especially between ES sales support department and machine factory which is major feeding factory in solution proposal.

From empirical study, five visualization were obtained for the current internal solution proposal process of case organization. The main service blueprint is prepared for overall understanding of whole process, considering all related units of case organization. The rest of the visualizations are prepared for focused approach of dedicated phase in the complete process. Based on the key-insights gathered from employees of organization, a new internal process proposal, in form of service blueprint, is prepared for improved communication and collaboration during solution proposal preparation process in the case organization. The actions to support the new internal process proposal, for enhanced communication and collaboration between internal stakeholders in solution selling organization, are also presented.

In addition to that, the analysis of applied service design and their effect for communication and collaboration improvement are also covered in reflective learning stage.

5 Discussion

5.1 Service design methods and tools for organizational process

The aim of research study is to find the solution of two research questions as mentioned in chapter 1, where the first question states:

Research Question 1: what service design methods and tools are suitable for the visualisation and improvement of internal process of a solution selling organization?

The answer to this question is elaborated in two sections; service design methods and tools for visualization and service design methods and tools for improvement. The both sections are presented respectively, in later part of this chapter.

5.1.1 Service design methods and tools for visualization

The literature review has been done to identify service design methods and tools for visualization purpose. There are a lot of service design methods and tools available in the existing literature, hence there are various option for selection of the suitable SD methods and tools with respect to visualization prospect. In this thesis, the selection of SD methods and tools for the visualization, the researcher has applied categorization of SD methods according to Tassi (2009). A broad set of the method selection criteria has been considered to select the Tassi's categorization, thanks to its worthwhile benefits. It is perhaps also possible that if researcher selected different categorization of the SD methods and tools, the available option to choose will be a bit different.

The appropriate SD method for visualization of internal process of solution selling organization, is expected to meet four criteria such as graph representation, suitability of design process for implementing activity, consideration of all stakeholder and interaction content.

It is concluded from literature review that service blueprint is most suitable according to above stated criteria. The service blueprint is a visualization method that represents function and activities of service creation and management. It provides reliable information of all stakeholders and their role in the service (Lim and Kim 2014; Shostack 1984).

In empirical study, it is learnt that there are four main aspects related to service blueprint when it is utilized for visualization of organizational process of a solution selling company. These aspects are scope, size, structure and accuracy.

The main service blueprint for case company was provided in complete version as well as detailed sub-version for better visualization. Bitner et al. (2007) mentioned that service blueprint is pre-pared for creation of a common picture, for all stakeholders. In this research study, similar approach has been utilised for case organization. The service blueprint has

been prepared for the visualization of internal process, of solution selling case organization. The main aspects of pre-prepared service blueprint are explained further as follow.

It is concluded by empirical study that size of service blueprint can affect in many ways such as easiness of sharing, interest of audience and process of introducing service blueprint to targeted audience. Hence, size of service blueprint was adjusted so that it fits an A4 sheet or one slide in MS PowerPoint.

The scope is also very important to consider as it is directly related to in-depth understanding of audience. The better understanding of audience enhances their ability to apply the receive knowledge from daily activities as well as to some extent of the internal communication and collaboration. In this research study, the focus was narrowed towards the communication and collaboration of ES sales support department and Machine factory, due to their high importance in solution preparation process. This is considered for the scope of new proposed service blueprint for the solution selling case organization.

Based on existing literature, the fundamental elements of blueprint can be adjusted according to requirement of case (Lim and Kim 2014; Shostack 1984; Bitner et al. 2007). Therefore, the last horizontal line of service blueprint was chosen as “support”, for case organization in this research study. The prime objective was to make service blueprint so that all internal stakeholders could understand the overall internal process of organization.

There are no strict rules in existing literature for SD methods and tools utilization. The empirical study revealed that structure of method could be modified and adjusted according to the requirements, as long as it is introducing value to target audience. Based on empirical finding and literature review, the service blueprint for internal solution selling process of case organization was prepared.

5.1.2 Service design methods and tools for improvement

The literature review suggests that all service design methods and tools are beneficial and facilitating for creation of new services or improvement of existing services. The selection of SD methods and tools is usually done according to case and the adjustment can also be done as per requirements (Stickdorn and Schneider 2011; Shostack 1982; Bosworth 1995; Junginger 2015; Curedale 2013). One main objective of this research study was to identify suitable SD method which can be utilized to improve communication and collaboration of internal stakeholders of organization.

In this research study, participatory workshop was chosen for this purpose to create co-creation for employees of organization. It is concluded from empirical results that improvement in communication and collaboration between internal stakeholders is effectively supported by the participatory workshop.

The participatory workshop is also referred as design workshop in literature. It provides many benefits to an organization such as collaborative approach and feedback opportunity. The participants of workshop share their experience, express their point of view, provide valuable insights according to their perspective, discuss improvement ideas and overall co-creation is achieved (Farrell et al. 2001). Keeping in view these benefits of participatory workshop, the researcher also utilized the participatory workshop and observed similar behaviour from the participant of the workshop during empirical study of this thesis.

The literature review suggested recommendation for organization of successful participatory workshop. These recommendations mainly comprised of preparation, activities to be done in workshop and role of facilitator. The researcher utilised these recommendations in the organization of participatory workshop during empirical study of this thesis.

According to empirical study results, several aspects of the participatory workshop can be considered to improve organization process of case organization. These aspects have significant impact on constructive communication between participants. These also assist equal and fair participation from all participants in discussions and reaching to common understandings.

The learning accumulated from empirical study suggested four learnings for the aspects to be considered for successful organization of the participatory workshop, to improve the internal organizational process.

First aspect is preparation. It is about planning the resources and arrangements for workshop that are to be used during the workshop. It can significantly affect overall workshop and the communication and collaboration between participants.

Second aspect is schedule and it is proved very important for the successful workshop organization. It is concluded from empirical study's results that workshop should not be arranged in long sessions and should have appropriate breaks between sessions. The participants' energy level and motivation to participate in the workshop can be influenced by this aspect.

Third aspect is scope and it is very important to align the scope and content of workshop for the audiences, for proper engagement of participants and improved results of the workshop. The participant's lack of interest and relevance from scope of the workshop might bring the communication and collaboration difficulties between the participants and less or no valuable insights will be gained from workshop.

The environment of participatory workshop is also very important aspect. The empirical study revealed that location and surrounding of workshop should support free, open and constructive discussion. This will have great positive impacts on the communication and collaboration between participants of the workshop.

5.2 Improvement in solution selling process

The second research question of this study is:

Research Question 2: How service design methods and tools support and improve cross-functional communication and collaboration of internal stakeholders in solution selling organization, for efficient solution selling process?

Considering the previous chapters of this research study, the answer to the second research question is presented.

It is concluded from the results of survey, done during participatory workshop, that service design methods and tools have positive affect on communication and collaboration of internal stakeholders in solution selling organization. This conclusion is in-line with literature review which suggest that service design implication provide many organizational benefits (Stickdorn and Schneider 2011; Shostack 1982; Tuulaniemi 2011).

The results of empirical study revealed that service blueprint and participatory workshop are very beneficial and effective for deep understanding of solution proposal preparation process, in the solution selling organization. Moreover, deep understanding is not limited to creating process visibility only, but it also covers the ability to utilize gathered knowledge in daily work as well as improved communication and collaboration between various departments of the organization. The existing literature also suggest that deep understanding of customers is one of the service design goals (Stickdorn and Schneider 2011).

The service blueprint, presented in empirical study, display the role of each department of organization at various stages of complete process of organization. Ultimately, it provides the visualization of a sequenced process. The literature review also revealed that service design is holistic and sequencing (Moritz 2005; Polaine et al. 2013; Stickdorn and Schneider 2011) and this thesis also presented these features of service blueprint.

In the large solution selling organization, common understanding of the solution preparation process might be not straight forward, due to involvement of the various internal and external stakeholders/sub-suppliers. In addition to that, newcomers to the process might also find difficulties to properly understand the whole solution preparation process. The service blueprint and participatory workshop proved very beneficial to provide the common understanding of solution preparation process. These both also supported the visualization and improvement of organizational process. Such benefits of service design methods and tools are also mentioned in existing literature (Stickdorn and Schneider 2011; Tuulaniemi 2011).

The case company, as solution selling organization, had room for improvement, to achieve efficient and effective solution selling process. Also, well-organised integration of newcomers in the process was another challenge.

Hence, the service blueprint of whole process can be supportive material for deep understanding of whole process as it provides overall picture of solution proposal preparation process, collaboration between various departments, involvement of departments and their roles at different stages.

For the improvement in organizational process, it was revealed that service blueprint and participatory workshop were very suitable. In the participatory workshop of case study, the starting point of discussions was facilitated by service blueprint. The literature review suggested that improvement of organizational process is one of the organizational benefits of service design. Moreover, it was result of, visualization of service as sequenced process which is another organizational benefit (Stickdorn and Schneider 2011; Polaine et al. 2013; Tuulaniemi 2011). The visibility of processes is presented by such visualization. Such visibility facilitated to improve the communication between stakeholders. It also facilitated during workshop, for collaboration related to improvement in existing services and processes.

It is revealed from empirical study that the participatory workshop is very useful to create an environment where participants shared their experiences, viewpoints and suggestions as well as learned valuable lessons from each other. This finding is also supported by the literature review (Farrell et al. 2001; Pavelin et al. 2014; Koloski 2012).

In this research study, service design methods and tools were utilised for deep understanding of organizational process which enabled the participants of workshop, to address pain-points of internal collaboration and investigate improvement ideas related to organizational process of solutions selling. In large organizations, such as case organization, many people from different departments do not meet frequently and communication and collaboration between different departments is rather challenging. In such scenarios, the information for the communication can be provided by service blueprint and the collaboration between departments of the organizations can be facilitated by participatory workshop. The application of SD methods and tools enhance the efficiency of solution selling process in the case organisation. The case company has already started utilization of improved service blueprint, prepared in this research study.

5.3 Value of the thesis

5.3.1 Value to case organization

In modern business world, leading organizations are shifting their paradigm towards solution selling, such as case company. The solution selling process involved many internal and

external stake holders. One major challenge in solution selling business is optimal solution selection and its efficient delivery. The level of Internal communication and collaboration within solutions selling organization has great impact on solution business.

In this research study, the development in internal procedures of organization is seen as a measure to improve the solution selling business. The prime objective of this thesis is to implement and evaluate the service design methods and tools, from perspective of development in solutions selling process by improved collaboration and communication between various departments of the organizations, for efficient solution business. The research thesis focus was to identify that how service design methods and tools can be utilized for improving the communication and collaboration of internal stakeholders within a solution selling organization, for efficient solution selling process.

The most suitable service design methods and tools for the visualization of internal processes of the organization and to facilitate the improvements within the organization were identified and applied as service blueprint and participatory workshop, in this thesis, for the case company.

The service blue print of the existing internal process of case company had been prepared which represents the previous complete solution proposal preparation process. It is presented in Figure 12. The empirical study results were utilized to prepare a new version of the internal process visualization in form of service blueprint. This new service blueprint presents the proposed actions towards the internal process of case organization, for improved solutions selling process of the case organization. It is presented in Figure 22.

These proposed changes have been implemented in case company which receives very good feedback from the respective stakeholders and a clear improvement in the solution proposal process has been noticed. The case organization also considered to utilize the similar approach with their other major sub-suppliers. The most significant benefits to the case company has been listed in Table 18.

Actions	Details
The role of machine factory in solution proposal process, being a major feeding factory, has been changed as per new service blueprint during the budgetary proposal phase.	The machine factory, being major feeding factory, is involved in the back-stage role. This helps ES sales support department to obtain realistic estimation of products. This practice supports more precise budgetary solution proposal preparation in case company.

Actions	Details
<p>The communication protocol between the machine factory and ES sales support has been adapted as per new service blueprint.</p>	<p>The machine factory has been involved in back-stage role, right from beginning of the process. The communication between ES sales support and machine factory is done more frequently by regular meetings, combined efforts to review and comment the customer specification instead of just relying on e-mails or short calls only. This improvement step enhances the efficiency of reviewing process of customer specification for solution proposal preparation within the case company.</p>
<p>The number of external review meetings with customer has been reduced for more efficient solution selling process.</p>	<p>The ES sales support and machine factory started practice of side by side participation in external review meetings with customer. This setup supports on-time decision making as well as reduces numerous backs and forth movement of comment/deviation list.</p> <p>This in-turn increases the efficiency of the solution proposal preparation process within the case company</p>
<p>The priorities of the on-going projects have been shared between machine factory and ES sales support department on weekly basis.</p>	<p>The ES sales support department starts sharing the priorities of cases in pipeline with machine factory. A protocol for prioritization of the cases and optimization of the workload has been agreed within different stake holders of case company.</p> <p>This results in enhancement of the communication and collaboration between ES sales support department and machine factory, which in turns positively affect the robustness of internal process of case organization.</p>

Actions	Details
The communication channel between ES sales support and machine factory has been channelized as per new service blueprint.	The communication channels have been agreed and their utilization has been started between ES sales support department and machine factory. This has increased the efficiency of machine factory to provide product's proposal to ES sales support department.

Table 18: Most significant benefits to case company with new service blueprint.

5.3.2 Value to solution selling in general

In a nutshell, this thesis presents service design discipline, its applicability and boundaries for solutions selling organizations. The framework of this research study is also applicable to other solution selling organizations, which are involved in the big projects and their solutions is based on various sub-suppliers. The thesis results can be utilised not only to analyse existing collaboration process within the organization but also enhance the cross-functional communication and collaboration within solution selling organization, for improved solution business for the organization.

5.4 Limitation and future work

The prime objective of service design methods and tools is to facilitate through understanding of service provider, customer and complete service environment (Moritz 2005; Stickdorn and Schneider 2011; Tuulaniemi 2011). However, due to time limitation in this research study, the main focus of research was to improve the communication and collaboration of the internal stakeholders in solution selling organization, for efficient solution selling process. Therefore, a research with closer involvement of customers and external stakeholders, in addition to internal stakeholders, would be valuable. In this scenario, the process visualization result could be different which might require different improvement ideas, due to the fact that more stakeholders will participate in the communication and co-creation of improvements in the solutions selling process of organization.

The case organization involved many departments and feeding factories in solution proposal process but in this research study, only one major feeding factory "Machine factory" was considered in empirical study of research. For more organized and improved organizational process, other feeding factories participating in solution proposal process, should have been considered as well.

Another point to be noted that empirical study in this research had one iteration. Hence, the learnt knowledge through this iteration, about service design methods and tools in relation to internal communication and collaboration, is applied in the scope of this thesis. It will be beneficial to conduct a long-lasting research, to find actual and more coherent influence of the service design methods and tools on the communication and collaboration of the internal stakeholders and organizational process, in the solution selling organization.

6 Conclusions

The prime objective of this thesis is to develop an improved solution selling process with service design methods and tools, by improving the communication and collaboration of internal stakeholders in a solution selling organization as well as to evaluate the suitability of service design methods and tools for this purpose. The focus was maintained to investigate that how communication and collaboration of the internal stakeholders within a solution selling organization can be improved, for efficient solution selling process. In addition to that, it is also considered that which service design methods and tools could be selected, for visualization of internal processes of organization and to facilitate the improvements within the organization. The focus also included the aspect of evaluation, that how these service design methods and tools facilitate communication & collaboration between internal stakeholders of organization.

The selection of suitable service design methods and tools, to improve the communication and collaboration between internal stakeholders of the solution selling organization, had been done on the basis of literature review. Moreover, the benefits of applied methods have been elaborated by empirical study's findings in this research thesis. The work done in this research thesis, provide following key conclusions.

It is indicted by the thesis results that **service blue print and participatory workshop are very suitable to facilitate the deep understanding of solution proposal process across the solution selling organization.** The complete service process is visualised as sequenced process by service blueprint, as it introduced all stakeholders and their roles in the process. This sequence visualization enables common understanding of the internal process of organization, for all internal stakeholders. It provides the big picture of internal processes and facilitate the communication between internal stakeholders. Furthermore, the participatory workshop is very beneficial to create an encouraging environment for effective communication between cross-functional departments/units of the organization.

It is also concluded from finding of this research study that **service blueprint and participatory workshop are very beneficial to facilitate for the improvement of the solution selling processes within the organization.** The participatory workshop is very beneficial to facilitate cross-functional communication and collaboration between various stakeholders as it creates an environment for the participants of workshop, to share experience and knowledge, understand viewpoints of each other as well as transparent information sharing and constructive discussion about the improvement ideas. In the participatory workshop, the starting point of discussions for the communication and visibility of the internal process of organization is provided by service blueprint. In participatory workshops, the discussion is focused exclusively on subject of workshop and hence such workshop facilitates very effectively, to achieve concrete ideas for improvement of internal organizational process.

In this research study, **the empirical study results were utilized for preparation of a new version of the internal process visualization in form of service blueprint.** This new service blueprint proposes the improvements in internal process of case organization, for improved solutions selling process of the case organization. This improved solutions selling process has been implemented in case company and significant improvements in the solution proposal process has been noticed. It is presented in Appendix 3.

One future work proposal is to extend the research scope for investigation that how customer visibility in the visualization of organizational processes can be approached. Moreover, the scope of future research can be extended to consider all subcontractor/feeding factories involved in solution proposal process so as to provide a comprehensive picture of the entire internal process of solution selling organization.

It would be interesting to follow-up the case company that in longer run, what benefits are seen by implementation of proposed improvement ideas for all sub-suppliers and to what extent these affects or contributes towards the improvement of internal processes of the case organization. However, it requires much longer and deep study, to achieve the desired analysis and results.

References

Printed sources

- Avison, D., Lau, F., Myers, M., and Nielsen, P. 1999. Action research. *Communications of the ACM*, 42(1), 94-97.
- Baskerville, R. and Wood-Harper, A. 1996. A critical perspective on action research as a method for information systems research. *Journal of information technology*, 11(3), 235-246.
- Bitner, M., Ostrom, A. and Morgan, F. 2008. Service blueprinting: A practical technique for service innovation. *California management review*, 50(3), 66-94.
- Bosworth, M. 1995. *Solution selling: Creating buyers in difficult selling markets*. Burr Ridge, Ill.: Irwin Professional Pub.
- Brady, T., Davies, A. and Gann, D. 2005. Creating value by delivering integrated solutions. *International journal of project management*, 23(5), 360-365.
- Curedale, R. 2013. *Service design: 250 essential methods*. Topanga, CA: Design Community College.
- Eades, K. and Kear, R. 2006. *The solution-centric organization*. New York: McGraw-Hill.
- Eades, K. 2003. *The New Solution Selling: The revolutionary sales process that is changing the way people sell*. New York: McGraw-Hill.
- Farrell, M., Ryan, S. and Langrick, B. 2001. 'Breaking bad news' within a paediatric setting: an evaluation report of a collaborative education workshop to support health professionals. *Journal of advanced nursing*, 36(6), 765-775.
- Foote, N. W., Galbraith, J. R., Hope, Q., and Miller, D. 2001. Making solutions the answer. *The McKinsey Quarterly*, 3, 84-93.
- Galbraith, J. 2002. Organizing to deliver solutions. *Organizational dynamics*, 31(2), 194-207.
- Holmlid, S. and Evenson, S. 2008. Bringing service design to service sciences, *Management and engineering*. In: *Service science, management and engineering education for the 21st Century*. *Service science: Research and innovations in the service economy 2008*, 341-345
- Junginger, S. 2015. Organizational design legacies and service Design. *The design journal*, 18(2), 209-226.

- Kuosa, T. and Westerlund, L. 2012. Service design: On the evolution of design expertise. Estonia: Print Best.
- Lim, C. and Kim, K. 2014. Information service blueprint: A service blueprinting framework for information-intensive services. *Service Science*, 6(4), 296-312.
- Mager, B. and Sung, T. J. 2011. Special issue editorial: Designing for services. *International journal of design*, 5(2), 1-3.
- Meroni, A. and Sangiorgi, D. 2011. Design for services. Great Britain: MPG Books Group.
- Miettinen, S. and Koivisto, M. 2009. Designing services with innovative methods. Helsinki: University of Art and Design, 28-43.
- Miettinen, S. and Koivisto, M. 2009. Service designer's methods. In: Designing services with innovative methods. Keuruu: Otava Book Printing, 60-77.
- Miller, D., Hope, Q., Eisenstat, R., Foote, N. and Galbraith, J. 2002. The problem of solutions: Balancing clients and capabilities. *Business horizons*, 45(2), 3-12.
- Pavelin, K., Pundir, S. and Cham, J. 2014. Ten simple rules for running interactive workshops. *PLOS computational biology*, 10(2).
- Polaine, A., Løvlie, L. and Reason, B. 2013. Service design: From insight to implementation. New York: Rosenfeld Media, LLC.
- Segelström, F. and Holmlid, S. 2011. Service design visualisations meet service theory: Strengths, weaknesses and perspectives. Linköping University, Sweden.
- Shepherd, C. and Ahmed, P. 2000. From product innovation to solutions innovation: a new paradigm for competitive advantage. *European journal of innovation management*, 3(2), 100-106.
- Shostack, G. L. 1982. How to design a service. *European journal of marketing*, 16(1), 49-63.
- Stickdorn, M. and Schneider, J. 2011. This is service design thinking: Basics, tools, cases. Amsterdam: BIS Publishers.
- Stickdorn, M., and Zehrer, A. 2009. Service design in tourism: Customer experience driven destination management, 8.
- Storbacka, K. and Pennanen, R. 2014. Solution business: Building a platform for organic growth. Switzerland: Springer.

Susman, G. and Evered, R. 1978. An assessment of the scientific merits of action research. *Administrative science quarterly*, 23(4), 582-603.

Tuulaniemi, J. 2011. *Palvelumuotoilu*. Hämeenlinna: Kariston Kirjapaino.

Electronic sources

Cruise industry news. Accessed 09 January 2019.

<https://www.cruiseindustrynews.com/cruise-news/19431-cruise-ship-orderbook-hits-new-record-at-113-ships-268-854-berths.html>

IDEO. Method cards. Accessed 27 January 2019.

<https://www.ideo.com/post/method-cards>

Koloski, B. 2012. Don't Have a meeting, Throw a workshop. Accessed 12 February 2019.

<https://uxmag.com/articles/dont-have-a-meeting-throw-a-workshop>

Luma Institute 2014. Vision statement: A taxonomy of innovation. *Harvard Business Review*, 92(1-2), 30-31. Accessed 24 January 2019.

<https://hbr.org/2014/01/a-taxonomy-of-innovation>

Segelström, F. 2013. Stakeholder engagement for service Design: How service designers identify and communicate insights. PhD. Linköping University Sweden. Accessed 24 January 10 2019.

<https://www.diva-portal.org/smash/get/diva2:647878/FULLTEXT03.pdf>

Shostack, G. L. 1984. Designing services that deliver. *Harvard Business Review*. Accessed 15 February 2019.

<https://hbr.org/1984/01/designing-services-that-deliver>

Moritz, S. 2005. Service design: Practical access to and evolving field. Accessed 15 January 2019.

https://issuu.com/st_moritz/docs/pa2servicedesign

Tassi, R. 2009. Service design tools [Storyboard]. Accessed 27 February 2019.

<http://www.servicedesigntools.org/tools/13>

Tassi, R. 2009. Service design tools [System map]. Accessed 27 February 2019.

<http://www.servicedesigntools.org/tools/28>

Tassi, R. 2009. Service design tools. Accessed 27 February 2019.

<http://www.servicedesigntools.org/>

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Appendix 1: Interview field guide

A brief introduction of topic.

Current working process:

- Would you please explain the current working process for solution proposal to the customers, starting from customer's request for proposal (RFP) until solution proposal to customer?

Main interview questions:

- How do you first get the RFP of customer?
 - a. What is your first interaction with customer?
 - b. Would you explain it step by step?
- After receiving customer's RFP, what are the next steps towards solution preparation?
 - a. Describe the role of ES sales support department in solution preparation?
 - b. Describe the role of other MP departments in solution preparation?
 - c. Describe the role of product feeding factories in solution preparation?
 - d. Who is the major product feeding factory?
 - e. Describe the role of major feeding factory as product feeding factory in solution proposal?
 - f. Describe the current process of interaction between major MR departments and feeding factory. What is your role in this process?
 - g. What channels/modes of communication are used between MP departments, other departments and feeding factories?
 - h. While interacting with major feeding factory, what actions are taken by ES sales support department to convey the requirements of end customer, to feeding factory sales department.
 - i. By what actions feeding factories respond to the query of ES sales support department.
 - j. Are there cases where feeding factories sales department interact with end customer directly?
 - k. Are there some tasks/activities that happened in the backstage?
 - l. During solution proposal preparation, what activities are visible to end customer? Are there some activities which are not visible to end customer?
 - m. How many other departments are involved in communication channel between ES sales support and feeding factory? What are their roles?
 - n. What are the common issues related to solution proposal preparation, which are occurred between ES sales support, other departments and feeding factories?
 - o. What are the methods and working practices in place to rectify these common issues?

- p. How ES sales support department and feeding factories collaborate with each other in solution proposal preparation?
- q. How the timelines are set by ES sales support department and how other departments and feeding factories follow those timelines. What happened if the timeline is not fulfilled?
- r. Describe your role in whole process?

- Brain storming for Improvement ideas:
 - a. Where the communication and collaboration work best in the whole process?
 - b. Are there any pain points in the solution proposal preparation process, with respect to communication and collaboration between ES sales department, other departments and feeding factories?
 - c. How would you like to participate in the process to improve it?
 - d. What changes/improvements you would like to do in the current process?
 - e. How you would like to implement these changes/improvements?

- Interview closing:
 - a. Wrap up discussion?
 - b. Did I miss anything?
 - c. Is there anything you would like to mention/discuss with more?
 - d. Is there anything you want to ask from me?
- e. Thanks!

Appendix 2: Survey form “Critical feedback”

To what extent, the visualization of the internal process supported the discussion during the workshop?

1	2	3	4	5	6	7
None						A lot

How much knowledge you gain about organization’s internal process from the visualization in the workshop?

1	2	3	4	5	6	7
None						A lot

To what extent, workshop supported collaboration between participants?

1	2	3	4	5	6	7
None						A lot

How well workshop environment support participants, to express and discuss their views freely?

1	2	3	4	5	6	7
Poor						Excellent

What has been good about process visualization? What you would like to change/improve in the visualization?

What was the best and the worst part of the workshop according to you.

How the communication and collaboration in the case company, can be improve by implication of these methods (Blueprint, participatory workshop)?

Any other comment or suggestion?

Appendix 3: New improved service blueprint

- Sales
- Sales Support
- Design
- R & D
- Feeding Factories
- Engineering
- Project Management

