International SEPT Program



Service Blueprinting

HANDBOOK

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PROTOTYPICAL PROCESS OF SERVICE ENGINEERING

Service Blueprinting is a tool that works within the Service Engineering process that enables the user to have a framework for viewing service improvement. Service Blueprinting alone does not lead to success; it is a visual tool designed to give valuable contributions to the service engineering process. What follows is a short description of the framework.

Service Engineering is a systematic process for developing new services. This is usually conducted in project form and follows a basic process flow. The 5 standard phases of the Service Engineering project process:





Overlap and feedback loops are integral to the Service Engineering phases themselves. For example, service prototyping will typically repeat phases 3 and 4 as the service is developed and improved with each run of the cycle. Repeating the steps continues until the service design requirements correspond and implementation can begin.

In the first phase, new ideas are found and their potential feasibility in the market is evaluated. In the second phase, concrete client and firm requirements for the service are collected. Phase 3, Service Design, defines the performance and provision of the services with Product, Process and Resource Models. Prior to market entry, the service must be tested; if the results are poor, the feedback loop is entered and the Service Design phase is repeated.

There are many methods to be utilized during the course of the Service Engineering processes. While some are appropriate only for certain phases, there are many that are applicable for multiple phases. Examples include: **Service Blueprinting**, QFD, TRIZ, Desktop Walkthrough, Personas, Filming, Service Prototyping and Service Simulation, as well as creativity techniques such as Brainstorming/Brain writing, Mind mapping and Morphological Analysis. The **Service Blueprinting** method is applied mainly in the Service Design phase. In order to successfully apply this method, the previous phases should be completed with the outcomes integrated into the Service Blueprinting. A thorough Service Blueprint is a sound base for further Service Design methods.

SERVICE BLUEPRINTING

Description

Service-Blueprinting is a service planning help tool. It can be used for developing new innovative services as well as for improving existing services. The method is also appropriate for ensuring the quality of service processes. It can also be used for new employee training or for showing clients a service cycle overview.

The Service-Blueprinting output consists of a graphically-presented overview of the service process and its activities. Service-Blueprinting allows for visualization of the service development process in its early stages. In each process step, contact points between client and firm (and physical element, if a tangible service) become visible. It is possible to identify failure points and discover areas for innovation as well. This technique eases the identification of cost saving potentials and offers an excellent base for further Service-process management.

Objective

Services are difficult to conceptualize in development, due to their intangibility. It not possible to "experience" services with prototypes alone. Service-Blueprinting is a tool that gives a better understanding of the services and their basic processes. The objective is to establish the activities of the service production in a graphical representation. Service-Blueprinting with its strong client-focus differs from other methods of process analysis; Service Blueprinting supports client satisfaction. Service Blueprinting considers not only the client requirements during the process design, but also the firm's internal requirements.

Information requirements

Before starting the Service Blueprinting, preliminary information is required.

Service Blueprinting is a complete service production process that summarizes points of client interaction as well as the invisible client process steps.

Required information:

- Client requirements for each client-targeted segment
- Documentation of processes and sub-processes of existing services
- Related resources for each process step (personnel, machines, accessories, etc)

• Time frame of the processes, duration of the step

Especially for new developments, some information may not be available, take care to note it when it is discovered during the process.

Identification of the relevant target groups and their requirements

The goal of a successful service development is to determine relevant target groups and identify their requirements. Target groups must be precisely defined and can be formed through differentiating characteristics such as age, gender, profession, lifestyle, etc. The development of these client groups and their requirements is not part of the service blue printing; rather it takes place in the "requirement analysis phase".

Process

The Service Blueprinting is based on the separation of the service into individual processes that can be assumed separately. The process progress chart is depicted horizontally. Each single component is on a different plane, ordered vertically. Each plane represents a level of closeness to the client, the higher the level the closer the interaction level is to the client

Planes

Service Blueprinting differentiates between five degrees of client interaction and integration (See Figure 1):

- The **client interaction** line separates the process steps of the service activities that the client carries out independently
- The **visibility line** separates the service activities that the client can see from the service activities which are hidden from view. Above the line, the process components that can be seen, heard, smelt or perceived are ordered.
- The **internal interaction line** separates activities that imply immediate relation to the client's order from support activities. Support activities serve as the preparation for the primary activities but do not belong to the client's order. Examples are the maintenance of a ski lift or the cleaning of an office.
- The **control line** separates the preparation activities from the general management activities.





Figure 2. Interaction planes of Service Blueprinting

Service Blueprinting differs from other approaches on process modeling and analysis, in that the vertical distribution is related to the responsible areas of each division. Assignment of responsibilities for each process step is also not shown visually. Here the client focus is to be considered; for many clients it is unimportant which divisions they need to be in contact with to get their service order properly accomplished.

Participants

The development team for a Service Blueprint should be represented by different service departments such as "service development", service provision and service support. In some cases, the inclusion of the client is also useful. Before starting, the objectives of the Service Blueprinting process must be clear for each participant. Normally, it is not useful to follow every possible application from the beginning; focusing on one or two possibilities typically leads to better results.

Depicting the service flow as it should flow in the future is vital to the process. The depiction of every "special case" is counter-productive and eventually does not contribute to the accomplishment of the objectives and hinders the Service Blueprint process.



Service Blueprinting for new services

A client-oriented process course (Service Blueprint) for new services is shown in the following four steps. Further development will be completed step-by-step and is based on the client's process.



Figure 3. Service-Blueprinting-Process for new services

- 1. Definition of the ideal customer interaction process, from initial contact to the end of service interaction
- 2. Identification of the contact points between the client and service provider. This includes all client-perceivable process steps performed by the service
- 3. Identification of the interactions between the front office and the back office
- 4. Definition of time standards, tolerance levels and of the resources required

Depiction of the service process from the client's point of view

The first step in Service Blueprinting is the identification and delimitation of the service. Here, the service is modeled as it is perceived by the client. Keeping in mind optimal client satisfaction, the process is arranged so that it represents an optimal course for the client. It is important to consider that a Service Blueprint is valid for only one target group. For multiple target groups, the optimal service processes are often dissimilar. Therefore, an additional Service Blueprint should be considered for any additional target groups.

Example: Household appliance maintenance

Household appliance warranty registration and repair is conducted by different groups in different fashions. Older clients may be accustomed to visiting the original retailer personally; younger clients may choose to establish contact via the internet.

A flow diagram best illustrates the service process. Actions are represented by rectangles; process transitions are represented by arrows; Start/End points are rounded rectangles; and decisions/ramifications are diamond shaped.





Ideally, software can assist in creating a Service Blueprint. In its simplest form, the presentation is a linear process composed of individual sequential steps. Every potential influence on the process, inputs and outputs, must be represented. The developed process steps are inserted over the **visibility line**.

Identification of client contact points

The differentiation of the client actions and the service-providing firm actions is an essential concept of Service Blueprinting. In the second step, the contact points between the client and the firm are identified. The process steps that are performed exclusively by clients are placed above the **interaction line**. Process steps with direct contact between the client and the firm are located between the **interaction line** and the **visibility line**. Finally, the client-perceived activities performed by the firm, but do not imply direct contact, are included in the Service Blueprint.

Example: Restaurant

Meal selection is a client-concerning process. Meal ordering is a direct interaction between client and service provider. In the case of visible meal preparation (i.e. system gastronomy), there is no direct interaction between the client and the service provider, but is perceivable by the client.

Identification of Front and Back-end Integration

After identifying the directly perceivable activities, the next step is to define the unperceivable steps. The process steps will be placed between the **interaction line** and the **visibility line**. Depending on the objectives of the Service Blueprint, the processes of the two lower planes (support and control) may be included.



Example: Household appliance maintenance

Washing machine repair and maintenance is not always possible at the client's address. For some models it is necessary to pre-order the required spare parts. The acquisition stages are usually invisible to the client, but are part of a normal repair process for a business.

Resource definition, time standards and tolerance

Next, it is necessary to determine the process time frame. To do this, the estimated labor time, the related costs and the necessary employee count are required. Appropriate process durations are defined for each activity and enable the proper resource use calculation. The time standards must include possible deviations in order to obtain a realistic calculation. Thus, it is possible to test time-critical services and determine if they can be provided according to the client requirements.

Example: Household appliance maintenance

For each process step, time and resources used for the repair service were determined based on experience. This information is used afterwards for the simulation of the operation. It is possible to establish the ideal employee work load and optimal employee count for various service-order scenarios.



Service Blueprinting for existing services

The Service Blueprinting procedure is appropriate for existing services. By illustrating and analyzing the current status of the service process, it is possible to see areas of improvement within the service sequence. Creating visual representations aid process improvement by showing the flow and highlighting potential points for incremental adjustment.



Figure 4. Service Blueprinting Process for existing services

Service documentation and decomposition into component processes

First, the service processes must be documented; many methods such as observation/followup or service transactions monitoring are adequate. From the client's point of view, the process course can be carried out using the Critical Incident Method. Appropriate methods for the internal service processes component documentation are structured interviews and workshops.

Service Blueprinting presents the process steps in a chronological order; therefore the process depiction must be synchronized with service process decomposition. The next recommended step is to have the time and resource documentation.

Depiction of the service process

If the process documentation from Step 1 is still not in Service Blueprint form, flow diagram with ordered process steps and interaction planes, it must be converted to the Service Blueprint format in the second step. This can be performed with an adequate software package.

Determination of resources and time standards

During the third step, the real process roles must be transferred to the Service Blueprint. In the simplest cases, each process step can be ordered into a previously defined executable role. Using the RACI-Model (Responsible, Accountable, Consulted and Informed) is useful for bigger service organizations. In addition to having responsibility for the process step or component process, the advisor and information provider role should be established. Finally, the Service Blueprint is completed by sequencing the process step resources and measuring the time for process completion.





Analysis and rearrangement of service processes is not an original piece of the Service Blueprinting; other methods should be used for analyzing services. The completed Service Blueprint should be examined. Any modifications to the service process from the analysis phase are documented in the Service Blueprint.



Example: Service Blueprint



Figure 5. Example Service Blueprint: Household appliance maintenance



Figure 5 illustrates a service blueprint for household appliance maintenance service. There are two main objectives of the Blueprint. The first is to analyze and see the customer interactions, while the second is to have a map that enables better estimation of the typical costs and time needed for a typical case. For the purpose of simplification, the two deepest levels of the Blueprint were not included.

The starting point of the service process is the breakdown of the machine. The client at this stage contacts the service company. Typically, the client will describe the problem from their perspective and an appointment to visit the appliance is made. Next, the repairperson arrives on-site; in the event that the client is not there, a second appointment is made. After speaking with the client about the problem, the repairperson examines the appliance and makes a repair cost estimate. For repairs that require no additional parts, the estimate is given to the client and once the terms are agreed to, repair can begin immediately. If the repairperson has to order parts or secure special tools, a follow-up appointment with a time estimation is given. After successful repair, the firm provides an invoice for services rendered. Finally, the client makes payment and the process is finished. In this company, follow-up customer service is considered a separate service function.

As figure 5 shows, not all of the process steps flow in the same level. The description of the problem, the arrangement of the appointment, and the payment of the invoice are not conducted by the service provider; for these steps of the process, the client is responsible. The steps that appear in the onstage level are all perceivable by the client; he/she is integrated in the process. The backstage processes (spare part ordering, repairperson travel, invoice preparation, etc.) are not perceivable by the clients.



FURTHER APPLICATIONS OF THE SERVICE BLUEPRINT

The Service Blueprint of an existing service displays the real moments of the service provision. It is possible to have a better understanding of the process and service success factors. Further analysis of the service can be done with different goals in mind. Possible objectives could be to increase client satisfaction, to diminish the process step times, to reduce costs, or to increase the service quality. The Service Blueprint can also be used as a starting point for process cost analysis. Service Blueprint-based simulations can aid in service analysis. Some examples are Service Simulation and FEMA.

Service Simulation

Further service process analysis is conducted by using simulations. Depicting a service with the Service Blueprinting does not automatically guarantee its validity. With help of simulations, trouble spots in the Process Design can often be exposed.

In order to determine the minimum and maximum service achievement times, the individual process steps must have their times established beforehand. The time at which an event takes place must be differentiated from the event's duration. Potential waiting times, which can often take up a large portion process time, are often not included in the plan, therefore they are difficult to plan as a "constant" in the process. Waiting times typically appear where processes are blocking or competing with one another. Only through process observation (observing the process flow and which of the processes compete or conflict with others) over an extended period is it possible to make conclusions about service operation process and cycle times. Computer simulations can assist in finding potential bottlenecks due to a lack of resources and help order the process steps appropriately. With the use of simulations, it is possible to test time and quality distributions of the service-related demand to determine the optimal solution.

Some results of service simulations:

- Times
 - o Times of individual process steps
 - o Duration of complete transactions
 - \circ Waiting times of processes
 - Waiting times of single process steps
 - o Resource idle time
- Costs
 - o Process costs
 - o Process step costs
 - Resources costs
- Work load
 - o Resource work load





This information can be used after the adjustment of the Service Blueprint. By conducting repeat simulations it is possible to validate process modifications. Instrument Service Simulation is an effective method for iterative improvement of the Service Blueprint and the service processes.

FMEA – Failure mode and effects analysis

In addition to service process simulation, Service Blueprints are a good starting point for identifying possible failure points in the service provision. The critical points in the service provision are typically client contact. These contact points are easy to identify with Service Blueprinting because of the interaction and visibility lines.

The FMEA Method has three phases:

- Identify What could go wrong?
- Analyze What is the probability of failure and the potential consequences?
- Take action What can be done to avoid the failures or to diminish the heavy consequences?

For this phase, valuable information can be obtained by means of Service Blueprinting; developed solutions should also be documented in the Service Blueprinting.



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