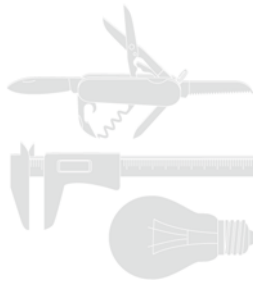


DESIGN FOR SIX SIGMA^{+LEAN} TOOLSET

SCOUT



Scout



Term

Scout, Scout phase



When

Before embarking on a DMADV project



Goal

- Find, evaluate and develop promising business opportunities
- Create prerequisites for a quick and successful implementation of innovation projects with DMADV

Overview Scout

Scout	DEFINE	MEASURE	ANALYZE	DESIGN	VERIFY
					
- Generate and describe business opportunity	- Set project scope - Start project - Manage project	- Identify and specify customer requirements	- Develop basic concept and prove feasibility	- Develop, test and implement detailed design	- Ensure commercial success - Close project

The Scout Phase serves the purpose of finding new and attractive business opportunities which are likely to lead to commercially successful products and services. In order to discover and evaluate them, the procedure in the Scout phase is adopted as follows:

SCOUT		
Define search fields	Generate ideas	Develop business opportunities
Central question: In which search fields are ideas for business opportunities to be generated?	Central question: Which ideas are to be developed into business opportunities?	Central question: Which business opportunities are to be implemented with DMADV?
Procedure: • Define Idea Scorecard • Analyze patents • Analyze markets • Evaluate technologies • Analyze competitors (Benchmark) • Analyze trends	Procedure: • Search for jobs to be done, identify unfulfilled needs • Analyze functions • Compare unfulfilled needs and functions • Derive ideas • Prioritize ideas	Procedure: • Display unfulfilled needs • Describe offer for the customer • Define business model • Identify value contribution • List assumptions and prerequisites which are critical for success • Evaluate risks • Prioritize business opportunity
Result: • Criteria for idea selection • Relevant search fields	Result: • Prioritized list of ideas	Result: • Prioritized business opportunities

The development of a business opportunity starts with the definition of a search field. It is analyzed and determined in which market and technology segment the most interesting opportunities and potential are available at the time.

The second step is then within this search field to generate a number of specific ideas with the help of different approaches. These ideas are then developed into business opportunities in the third step.

In all three steps the results are developed systematically and prioritized repeatedly with the help of the same criteria so that the result of the Scout phase is an attractive and completely documented business opportunity. All required information necessary for the ensuing innovation project has been compiled in a compressed way.

1. Define search fields

Search fields are scoped market and technology segments within which the customers expect the fulfillment of specific tasks. Where these requirements are insufficiently fulfilled and/or "unmet needs" exist, opportunity for innovations are available..

In such segments the potential for commercial success is particularly high and above-average margins can be achieved. Ideally, search fields are already described by an innovation strategy derived from a business strategy.

The identification of search fields can also take place in different ways e.g. systematic patent analyses can hint at new developments and technical trends with high innovation potential. Also, general or industry specific trend observations can indicate important developments in area of production, marketing, sales and supply chain. In the course of a competition analysis which looks at market positioning and fulfillment of functions, providers can also derive relevant search fields from existing product innovations.

How promising individual search fields identified in this way are for a company can be evaluated by previously defined criteria. These may have been adjusted to the relevant market and industry environment.

Typical criteria for evaluating the attractiveness of search fields:

Category	Evaluation Criterion	Evaluation (9,3,1,0)
Strategy	• In line with corporate strategy • In line with innovation strategy	
Unfulfilled needs	• Strength of unfulfilled needs • Effort due to changeover on the customer's part • Unique Selling Proposition compared to competition	
Market attractiveness	• Turnover potential • Market growth • Intensity of competition	
Technology	• Availability of functions • Internally and externally available technologies	
Risk	• Technical risk • Market risk • Implementation risk (capability and capacity)	
Sum		

The category of unfulfilled needs is especially decisive for the prioritization of search fields with respect to chances for commercial success. Where tasks are only insufficiently fulfilled from the customer's perspective an appropriate offer to the customer is particularly attractive.

In order to be able to prioritize the search fields it helps to assign a value for each category between "very attractive" (9) and "very unattractive" (0). By summing up the values of various categories an attractiveness ranking of search fields can be set.

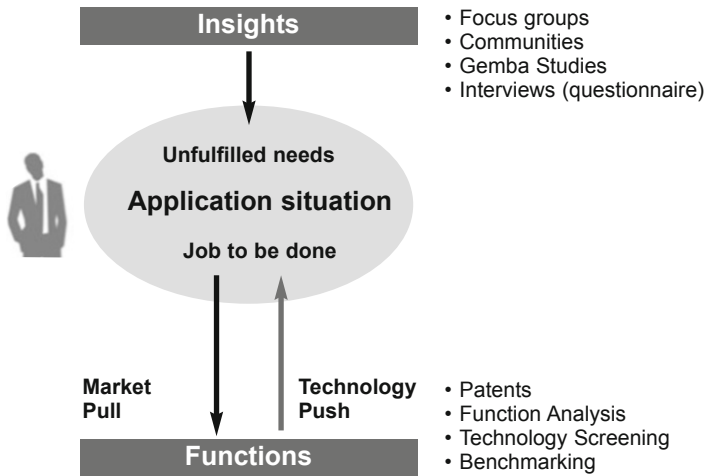
2. Generate ideas

In order to find an attractive business opportunity in the most promising search field, ideas for commercially successful products and services must now be generated. The basis for this promising and/or good idea is the customer requirements in a specific application situation – the so-called "job to be done". Where these needs are not fulfilled, i.e. where "unmet needs" exist, needs for new product offering and services exist.

In order to generate ideas for such new offers two, basically different, procedures can be applied: If the focus is on the analysis of insufficiently fulfilled customer needs a "Market Pull" approach could be adopted. Here, insights are gained with the help of different tools about which unfulfilled needs currently exist in the market and hence derive suitable potential offers.

If the search for ideas is primarily based on existing available technologies and functionalities for which suitable markets and applications are to be found a "Technology Push" approach could be used. The technology offer is also added to and/or optimized with respect to the customer needs in the new alternative market.

Mapping "Technology Push" and "Market Pull"



In both cases it must be examined first which "jobs to be done" the customer expects and in what specific situations. It is important that all application situations and the existing needs of customers and/or individuals involved in the process are taken into consideration. For this purpose the search field along the value or process chain is broken down into its essential steps as shown in the following example. The involvement of individuals who are engaged or working in the process, the environment as well as tools used will define the requirements in the different situations of application.

Below is an example of how this might look when looking at the delivery and assembly of a seat in a bus manufacturer's assembly plant:

Process steps	What are the essential steps in the process or value chain?	1. Deliver seat to plant	2. Transport seat internally	3. Assemble seat in bus
Sub-steps	What are the essential tasks when this product is used?	- Book receipt of incoming goods - Unload shipments	- Draw up transport order - Find seat - Transport seat - Unpack seat - Throw away packaging	- Prepare installation - Assemble seat
Persons	Who is involved?	- Driver - Receiver of goods - Warehouseman	- Warehouseman - Internal transport	- Work preparation - Assemblyman
Places	Where and in which environment do the activities take place?	- Gate of plant - Trans-shipment point - Location	- Trans-shipment point - Storage space in assembly hall	- Assembly hall
Tools	Which tools and products are currently being used?	- Cardboard boxes - Delivery note of paper	- Forklift	- Standard tool – spanner
Jobs to be done	Which task is to be fulfilled for the customer specifically?	- The warehouseman needs to recognize to which assembly place the packaged seat is to be delivered	- The right unpacked seats are to be delivered to the assembly line in due time	- The seat is to be installed in a stable and reversible way within a short period of time

For a comprehensive identification of all jobs to be done surveys of all essential individuals involved in the process, Gemba Studies and customer interviews are absolutely essential. Only by doing this can reliable statements be made about how often and how urgently certain requirements for the product and/or the process occur and how high the dissatisfaction resulting from poorly fulfilled requirements is.

Based on this information the unfulfilled needs can be identified:

Job to be done	Importance	Frequency	Dissatisfaction	Strength of unfulfilled need
1 The warehouseman needs to recognize to which assembly place the packaged seat is to be delivered	3	9	3	81
2. The right unpacked seats are to be found at the assembly line in due time	9	3	3	81
3. The seat is to be installed in a stable and reversible way within a short period of time	9	9	9	729

The evaluation of the jobs needed takes place for each of the three categories, as in the above example, importance, frequency and dissatisfaction on a scale from 1 to 10. Next the three evaluations are multiplied. Based on the resultant value inferences on the strength of the unfulfilled needs can be made. Future generation of ideas using Brainstorming Workshops is driven by the most important unfulfilled needs.

The Brainstorming Workshops pursue the goal of finding and documenting as many ideas as possible for eliminating the unfulfilled needs.

In order to create a working environment which is as creative and as inspiring as possible, the idea generation team should be as heterogeneous and as unconventional as possible. This does not only concern the diverse knowledge areas but also age, sex, and background. Apart from involving creative and knowledgeable company employees external experts should also be invited to participate.

After a briefing has been conducted, all ideas are written down and collected e.g. on idea cards during the Workshop.

Category: Process step:		Name:
Title of idea:		
Relevant unmet needs:		Potential solution/offer:

The ideas which were captured in this way can now be further combined, summarized and visualized by the workshop participants before being prioritized. This prioritization takes place according to the same criteria that were used in assessing the search fields. Afterwards the most promising ideas can be developed further.

3. Develop business opportunity

In order to be able to develop an accepted and promising business idea from the prioritized idea, a more detailed specification of the offer and an evaluation of the technical, organizational and economic feasibility are required. Moreover, the patent-related framework, the market and competitive situation and the customer acceptance of the offer should be analyzed, meaning that the interdisciplinary cooperation of marketing, development, production and customers is necessary.

As soon as the favored idea is seen as feasible, a promising business opportunity can be formulated and presented taking into account the following:

- Describe the identified and prioritized unfulfilled needs
- Describe the offer for the customer
- Estimate the value contribution (NPV) with target turnover and margin
- Describe assumptions and prerequisites which are critical for success
- Evaluate the risks
- Draft the project Time Plan
- Estimate the budget

Several developed business opportunities can now be prioritized, once again, with the help of common criteria (e.g. strategy, unfulfilled needs, market attractiveness, technology and risk).

Having developed a business idea in this way it is more likely to be received positively by potential sponsors.

A promising and commercially successful product can be created from an innovative idea in the subsequent DMADV phases.

Design for Six Sigma + LeanToolset

Mindset for Successful Innovations

Staudter, C.; von Hugo, C.; Bosselmann, P.;

Mollenhauer, J.-P.; Meran, R.; Roenpage, O. - Lunau, S.

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