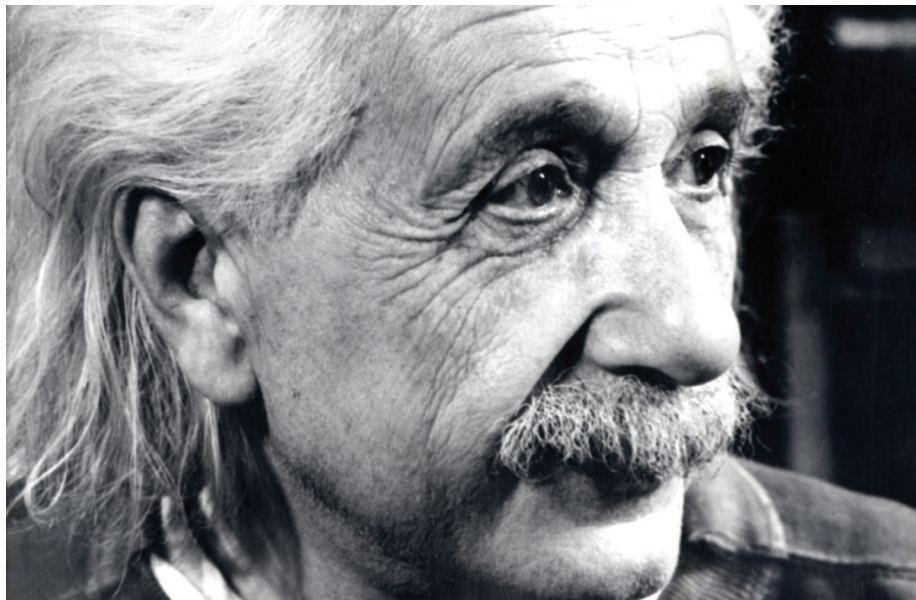




TECHNIQUES

I. Simplex

1. What is Simplex?



Einstein is reputed to have said that if he had one hour to save the world he would spend fifty-five minutes defining the problem and five minutes finding the solution. This is the opposite approach to the staff in most public and private offices, factories and construction sites. The Simplex creative problem solving process is a system developed by **Min Basadur** at McMaster University, Ontario which allowstime to be spent on finding the real problem. It then finds a solution and programmes the implementation. [1]

The Simplex creative problem solving process describes **creativity as a continuous cycle** and not as a single straight-line process. [2] Simplex can be understood as a complete 'process of creativity'. Basadur described individual, team and organizational creativity as a dynamic, circular four stage process of continuously finding problems, defining them, solving them and putting good solutions into practice. [3]

The Simplex process is designed to facilitate an individual, group or organization to discover, think through, clarify and define complex, ambiguous or strategic issues by placing maximum emphasis on the skills of problem generation and conceptualization prior to solutions and implementation. [3]

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2. How it is implemented?

According to Basadur creativity can be described as a dynamic, circular four stage process of continuously finding problems (generating), defining them (conceptualizing), solving them (optimizing) and putting good solutions into practice (implementing). [3]

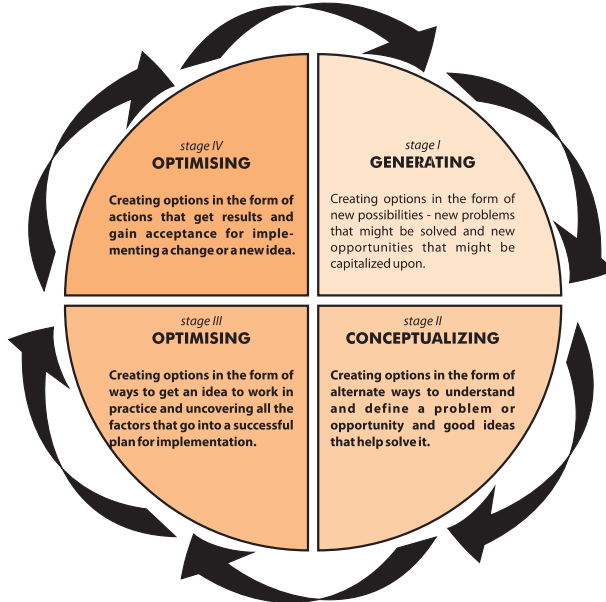


Figure 01: Four stages of the innovation process; Source: [3]

The process

The Simplex process consists of eight steps which are integrated into the four stages of the innovation process as follows:

- Generating:** problem finding (S1) and fact finding (S2)
- Conceptualising:** problem definition (S3) and idea finding (S4)
- Optimising:** idea evaluation (S5) and action planning (S6)
- Implementing:** gaining acceptance (S7) and implementation (S8)

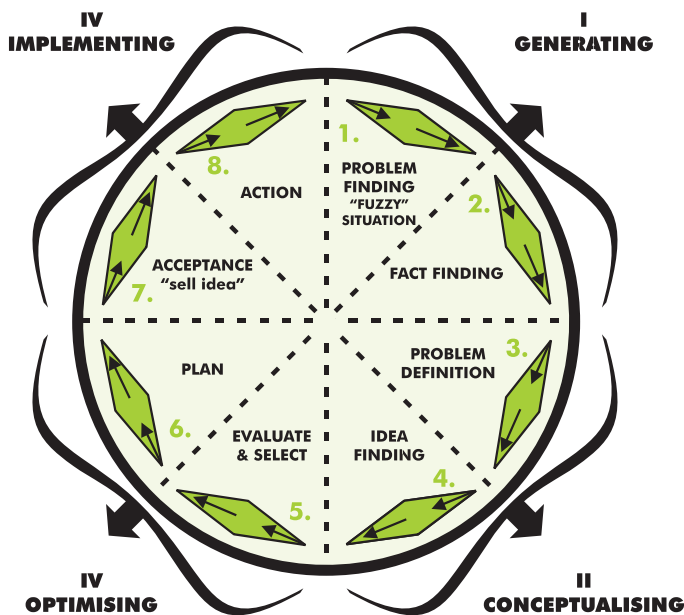


Figure 02: Integration of the eight steps into the four stages of the innovation process; Source: [3]

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Three skills are required for participants to use this creative problem solving process effectively: divergence – the ability to imaginatively list facts, ideas, solutions without evaluation, judgment or criticism, convergence – the skill as an individual and as a group to select the most important, insightful facts, ideas or solutions using judgment and evaluation, and the deferral of judgment – the ability to consciously separate the two actions. All three skills will be applied in each single stage of the Simplex creative problem solving process.

Step 1.

problem finding: This step consists of identifying present and future problems which require a solution. All problems will be listed and then one problem will be selected to be enhanced.

Step 2.

fact finding: The aim of this step is to list a wide range of facts. To establish these facts the facilitator asks the participants questions like:

- What do you not know about this fuzzy situation and what would you like to know?
- Is this a problem to you and if so why?
- What have you already tried to overcome this situation?

Again the most important issue is selected and the process moves on to the next steps.

Step 3.

problem definition: This step is to find out the exact problem that needs to be solved. The initial fuzzy situation is reformulated as problem statements like “How might we ...”. Up to ten problem statements should be formulated; the group agrees on one statement which will be considered in more detail. In a mapping process a problem definition map is produced. This part is the most powerful and unique to Simplex. Two questions are asked: “Why?” (= to broaden the problem) and “What’s stopping?” (= to narrow the problem). By using the two questions a series of related problem statements are developed. The answers to the “Why” and “What’s stopping” questions must be simple and clear. In a next step they following set of questions will be asked “Why else?” and “What else is stopping?” At the end of the mapping process the participants agree on one problem statement to take the next step of the Simplex process.

Step 4.

idea finding: Here the participants generate as many ideas as possible by using different creativity tools (like brainstorming, lateral thinking techniques, etc.). From this list the team decides on a short list with up to six ideas.

Step 5.

evaluation & selection: In this step the participants evaluate and select the idea to be the solution for implementation.

Step 6.

planning: The sixth step is the planning of the implementation. The participants agree on the selection of the stages of the implementation. Each stage includes the information of What, How, Who, When and Where.

Step 7.

gaining acceptance: Here the participants list the problems that the solution will solve, the benefits of the solution, their proofs, the objections to the solution and how they may be overcome.

Step 8.

action: Step eight consists of carrying out the items listed in steps six and seven. The process will only be completed when the implementation has been carried out and the action accomplished.

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As soon as the group has implemented the selected ideas, the solutions lead to new problems and fuzzy situations and the process starts again at step one.

3. What are the success factors?

Previously we outlined a step-by-step guide that needs to be followed when implementing a Simplex creative problem solving process. Let us now say a few words about some key considerations: [4]

Involvement

Successful process improvement demands the creative involvement of everyone from start to finish. Simplex engages participants in interactive, efficient discussion and decision making in team working sessions. Participants can be pleasantly surprised at their ability to create novel solutions, reach consensus and commit to concrete implementation plans.

Working on the Right Problems

Collecting and analyzing good data is essential and time consuming. Failure to do so can lead teams to solve the wrong problem. Simplex expands the ability to accurately capture, analyze and organize information to make reaching the right decisions obvious.

Removing Roadblocks to Implementation

Roadblocks to implementation always emerge. The Simplex process empowers participants to work through these roadblocks and maintain enthusiasm and commitment to the solution thus avoiding typical excuses for not taking action.

Quantitative Measurement

The fundamental objective of process improvement is to achieve measurable improvement in quality and efficiency. The team analyzes historical data to help identify the key indicators for benchmarking the impact of the new solutions. Teams are able to track progress, spot critical challenges, create new solutions and implement results continuously.

Independent Implementation Facilitation

The role of an independent implementation facilitator, solely focused on the project process, is extremely important for

developing ownership and support from the various participants. Being neutral, the facilitator is permitted to operate outside the content, and to focus on ensuring input from all the participants, while maintaining a high level of objectivity throughout the project.

Simplification

The team formulates and agrees on high-level, simplified process flow charts and other visual support tools. This helps them identify the most important improvement challenges, fresh solutions and specific metrics to document process improvements. Facilitated discussions are jargon free and in language all team members can understand.

4. Case study

Irish Spring [1]

The presented case study outlines the importance of defining an exact problem description. When Min Basadur was working as a production engineer at Proctor & Gamble he found products being developed that were solving the wrong problems.

In one case the R&D department spent six months developing a new green striped soap that was not required by the marketing department. The team had been trying to solve the problem "How might we make a green striped bar that consumers would prefer to Colgate's Irish Spring". Min Basadur spent a morning with the R&D group, and during that time they redefined the problem as "how might we better connote refreshment in appearance, shape and colour in a soap bar?" This led to a major new product line of a swirled blue and white bar called "Coast". This soap was an immediate success and has been produced for many years. This story shows the importance of defining the problem.

Lay the bags flat [3]

Another example of broadening the problem is a Frito-Lay packaging dilemma. An inter-functional team had been formed to reduce costs and to accept the challenge "How might we reduce packaging department costs?"

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The team's manufacturing members had identified a new packaging system which saved enormous amounts of time and money. The individual bags of potato chips were being packaged standing upright in larger boxes for delivery to customers. The new idea involved laying the bags on their sides in the boxes. The sales department team members were not at all satisfied with this solution because on delivery, customers like to open each box and count the bags before signing the receiving documents.

Thus the new idea would result in extra time and frustration for the customer and slow down the salesperson who would make fewer sales calls per day. Obviously, an important challenge for sales was "How might we continue to make our required quota of sales calls per day?"

By working together with the attitude of achieving full satisfaction for both sides, and by following the discipline of the Simplex creative process, a new problem definition was identified. "How might we lay the bags flat yet still allow the customer to quickly know how many bags are inside the box?" Several solutions immediately became evident, including providing each customer with a weigh scale so that opening the box and counting was unnecessary. Rather than argue and disagree over solutions which appear to conflict because they address two different challenges, the creative process resulted in a new expanded challenge that encompassed both original challenges.

5. List of References

Articles/Studies:

[1] Peter Wilson, 1997, Simplex Creative Problem Solving, *Creativity and Innovation Management*, 6(3), pp.161 – 167.

[3] Min Basadur, Pam Pringle, Gwen Speranzini and Marie Bacot, 2000, Collaborative Problem Solving in Problem Definition: Expanding the Pie, *Creativity and Innovation Management*, 9(1), pp.54 – 76.

Web sites:

[2] http://www.mindtools.com/pages/article/newCT_10.htm [4] <http://www.basadur.com>

Additional References:

Books:

Lumsdaine, Edward, et al., 2006, *Entrepreneurship from Creativity to Innovation: Effective Thinking Skills for a Changing World*.

Web sites:

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6. Glossary

Convergence: the skill as individuals and as a group to select the most important, insightful facts, ideas or solutions using judgment and evaluation.

Deferral of judgment: the ability to consciously separate the two actions of convergence and divergence.

Divergence: the ability to imaginatively list facts, idea and solutions without evaluation, judgment or criticism.

Out-of-the-box thinking: thinking that moves away in diverging directions so as to involve a variety of aspects and which sometimes leads to novel ideas and solutions; associated with creativity.

7. Keywords

creative problem solving process divergence

convergence

out of the box thinking

conflict management

creativity as a continuous cycle

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8. Questions

Question 1:

How many stages does the Simplex process consist of and what are they called?

Question 3:

List and explain the three skills that are required for participants to use the creative problem solving process effectively:

Question 2:

Which steps form part of the Simplex creativity process?

	Yes	No
a. team building		
b. fact finding		
c. communication		
d. evaluate & select		
e. problem definition		
f. idea finding		
g. documentation		
h. plan		
i. action		
j. reduction of costs		
k. acceptance 'sell idea'		
l. problem finding		
m. external audit		

Answer:

a.No
b.Yes
c.No
d.Yes
e.Yes
f.Yes
g.No
h.Yes
i.Yes
j.No
k.Yes
l.Yes
m.No