



# Creative Problem Solving



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## About the Tutorial

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Creativity is a crucial factor in business today and any manager without creative insights into a business cannot handle the multiple requirements of an increasingly adaptable customer base. Before we move on with that, we need to first give a proper meaning to the word "Creativity", and then explain the difference between "Creativity" and "Innovation", as these are the most interchangeably used, and easily mistaken terms.

In this tutorial, we will discuss in detail about the benefits of Creative Problem Solving.

## Audience

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In this tutorial, we will understand the meaning of creativity and focus based on the values and significance of creative problem solving in relation to build situation handling abilities in Working Professionals and Business Executives.

## Prerequisites

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This tutorial was designed to establish a relation between General Training Methods and Employee Engagement. The readers need to have a basic knowledge about the various Employee Development Programs conducted in organizations.

## Copyright & Disclaimer

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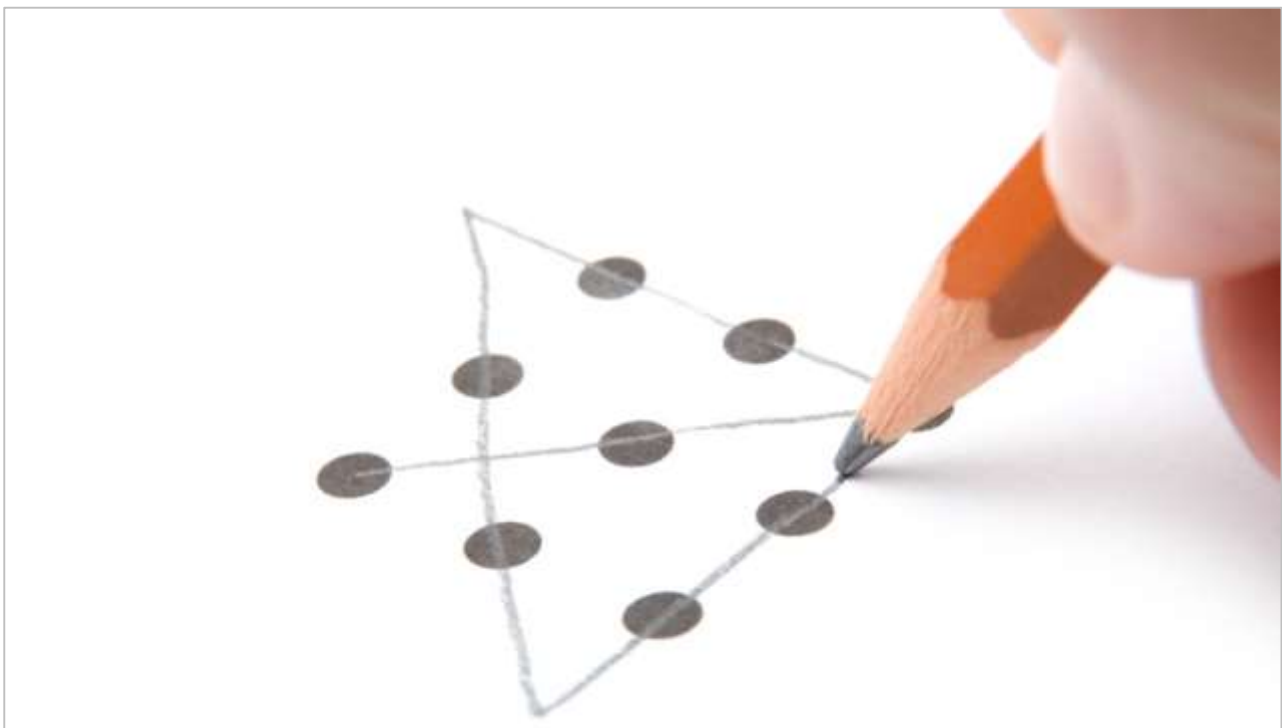
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# 1. Creative Problem Solving – Introduction

Creativity is a crucial factor in business today and any manager without creative insights into a business cannot handle the multiple requirements of an increasingly malleable customer base. In this tutorial, we will understand the meaning of Creativity and Focus based on the values and significance of creative problem solving in relation to building situation handling abilities in working professionals and business executives.

Before we move on with that, we need to first give a proper meaning to the word "Creativity", and then explain the difference between "Creativity" and "Innovation", as these are the most interchangeably used and easily mistaken terms.



## **Creativity is a Priceless Gift**

Creativity brings inside an individual some significant skills to analyze any discussion from multiple points of view. It cultivates the ability of dismantling any information and processing it in different ways, so that newer facts can be explored and understood.

All of us must have some creativity because we can manage to find ways to handle new situations when faced with it. Creativity is closely associated with the skills of imagination and often a creative thought is difficult to put in words, because it involves thinking deeply about a subject and coming up with different facets to it.

## What is Creative Problem Solving?

Defining **creativity** is not easy, as there are multiple points which involves an ability to come up with new and different viewpoints on a subject. It involves breaking down and restructuring our knowledge about the subject to gain new insights into its nature. However, any definition of creativity is complicated because the concept has many dimensions.



Creativity is the process of organizing our learning, reasoning and logic in such a manner that we can get a better understanding of the situation that we are considering. **Maslow, the famous American Psychologist**, had envisioned Creativity in two levels of evolution:

- Primary and
- Secondary

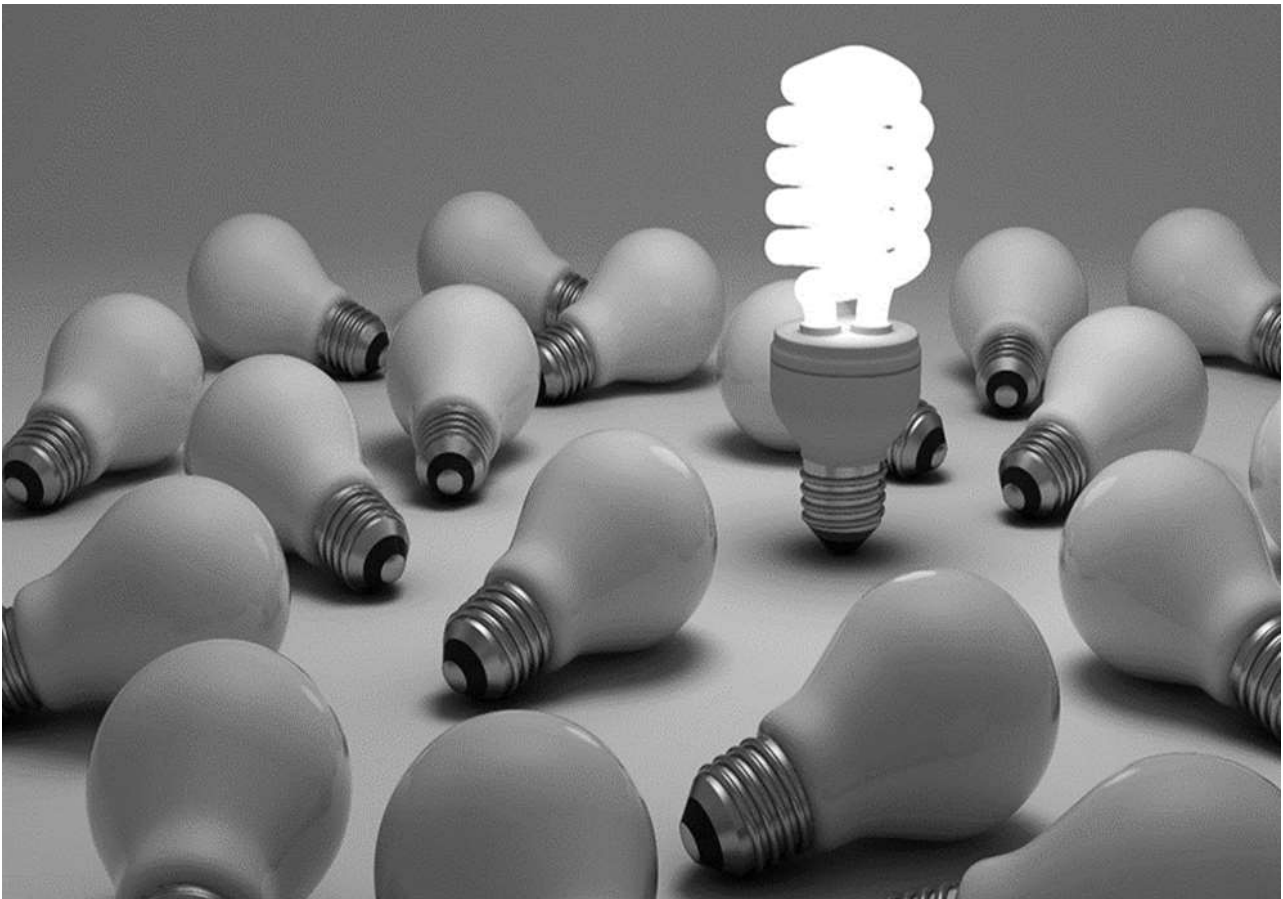
As per him, Primary Creativity was the reason behind all new ideas, innovation, etc. and Secondary Creativity is more induced in nature and was obtained through working together and observing other people's behavior and functioning. He also observed that the primary creativity was found abundantly in children, but the same children lost this creativity when they became adults.

## 2. Creativity in Business

Logical thinking involves **a series of progressive steps**. The new knowledge we get is a logical forwarding of the facts that we already have with us. In that sense, it is not something really “new”, but more of a conclusion of thoughts. That is exactly where organizations have begun understanding the value of creative problem solving.

There is now a dearth of ideas at the top level of the management as to which new direction a company can be taken in. In other words, the secondary creativity has been all but depleted. There is a **huge demand for original ideas**. They may be impractical, but they should be unique and original.

The process of Creative Problem Solving uses complex tools of memory associations and mechanisms to produce alternative insights onto an existing problem. This is not possible by using the conventional methods of problem solving.



In the world of business, **new scenarios are created every day** and each one of them needs a novel way to deal with it. This is because the existing rules and guidelines won't be sufficient in providing the perfect solution to any problem. To tackle the new scenarios, there is a lot of innovation needed in problem solving. A lot of research has gone over creative problem solving in the last decade and almost every organization has a creative team looking for the next big idea. Earlier, a good academic background and experience was sufficient to build a successful career.



Now, the most valued asset of a candidate for selection is his/her creative problem solving, especially if he/she is being considered for any leadership profile.

Business houses now know that they can never have complete contingency planning for all possible sudden scenarios. New contingencies can create unfavorable working conditions for people working in the organization, hence they need a competent person at the top who can come up with solutions. It is not only about finding solutions to problems.

# 3. Creative Skills of a Manager

A creative person can come up with better ideas and select people who are better at helping him in his plans. He can see things from a new perspective, have a different vision and is better at inspiring people by their talents. Some of the most frequently used skills of a manager are:

- Making efficient use of the time at hand.
- Addressing a prospect's needs and desires.
- Improving a product's appeal for the customers.
- Use cost-cutting methods to increase working efficiency.
- Improve the focus, motivation and productivity of the staff.
- To identify new, profitable ventures and business opportunities.

While many managers will be able to address the demands of the first 5 responsibilities, it is the last point which makes it so tough for the managers to function. That is exactly where creative problem solving steps in. A creative manager will be able to observe the areas in which people need services.

Using that observation, they can find innovative ways to market products and motivate their customers to take decisions. Problems that need creative problem solving are 'open-ended' in nature, i.e. these problems have more than one solution. Executives nowadays need creative problem solving to help them in managing their organizations in four critical points:

## Planning

Planning consists of the following objectives.

- Finalizing the mission of the organization.
- Finalizing the organizational objectives.
- Gauging the organizational behavior and strategies against that of its competitors.
- Doing an effective SWOT (strengths, weaknesses, opportunities and threats) analysis.

## Organizing

Organizing consists of the following pointers.

- Deciding the roles and responsibilities in an organization.
- Grouping different but mutually complementing jobs in an organization.
- Deciding the level of authority and clearance to be given to different designations.



## Leading

Leading consists of the following objectives.

- Boosting productivity in the workplace.
- Providing the best training to people for better performance in their jobs.
- Being a good listener and offering good alternative approaches to roadblocks.

## Controlling

Controlling consists of the following pointers.

- Deciding the tools of control, such as policies and deadlines.
- Setting performance standards and periodic performance reviews.
- Checking whether objectives are being met and standards achieved.

In the next chapter, we will discuss the various conditions in which creative problem solving is required.

## 4. Creative Problem Solving – Stages

There are **six stages of creative problem solving**, where both divergent and convergent thought processes are used. These steps are essential for the search for data and then the narrowing of data.

During the convergence, the data that is very close to the point of issue or close enough to warrant further consideration are selected. Specific related and relevant items are individually known as hits and a cluster of such hits are known as 'hotspots'.

### The Objective Finding Stage

This stage employs divergent thinking to list the problems. Convergence is then used to identify the relevant areas for further discussion. 'Hits' and 'hotspots' are identified finding priorities, importance of the problem, its urgency, and its nature.

### The Fact Finding Stage

Next is the fact-finding stage, where understanding of the problem is increased by collating of relevant information. This also helps new ideas to be generated. 'Hits' and 'hotspots' help to see the problem in a new light.

### The Problem Finding Stage

In this stage, all the previous-stage 'hits' are used to identify the most productive problem listings.

### The Idea Finding Stage

In this stage, creative problem solving teams look for potential solutions. Mainly divergent activity is used to bring out many ideas using idea-generation aids.

### The Solution Finding Stage

All the implementable ideas are filtered out and their feasibilities are checked.

### The Acceptance Finding Stage

It is a divergent activity that helps to implement solutions successfully via:

- Listing possible hurdles and ways to overcome them
- Developing implementation and contingency plans
- Generating Action Plans for working

Many people get used to traditional ideas, and this is often one of the main barriers to creative problem solving. Because of this thought, people and organizations tend to fall into a variety of traps when trying to become more innovative.

Arranging for group sessions where individuals brainstorm on ideas reduce the risk of making mistakes as individuals and it will also reduce personal prejudices. By sharing a problem with people or by making our ideas heard, we will be getting the chance to understand other people's reactions and suggestions.

## 5. Creative Problem Solving – Conditions

Creative problem solving is required when there is absence of any consensus regarding goals. Disagreement over proposed solutions are bound to crop up if they haven't been previously faced because this leads to goals becoming uncertain.

Let us take the aviation industry as an example. The way in which the various airlines have been receptive and conscious of their flyers' problems is a lesson to all the other industries. They have taught other organizations the value of approaching problems with creativity. They themselves have become more creative in their thinking and the way in which they approach problems.

### Example 1

For example, it was observed by the management of Air Canada that their logo – a bright red maple leaf inside a red circle with a white background – was not cutting much ice with the Canadian Flyers, who have reserved feelings towards their Government. This logo for them bore too much association with bureaucracy.



Air Canada funded a comprehensive study and the end result of the survey was that the Canadians hold many home values endearing to themselves. The management decided to focus on these qualities in their logo and tone down the Government association. In the new logo, they designed the maple leaf in an earthy hue with an evergreen tail.

## Example 2

British Airways did a similar thing with their creative problem solving. Colin Marshall came up with the notion in the 1980s that employees would not treat customers in a better manner until they received better treatment themselves. Keeping this in mind, Marshall arranged for a seminar to train employees on relationships they might have with others.



This significantly boosted the staff morale and gave rise to the creative idea of installing TV cameras in passenger waiting zones, so that they can file complaints immediately on landing. These complaints were responsible for a change of uniforms for the entire staff, improved appearance of planes – both interior and exterior, new passenger lounges and promotional features for the airlines.

## 6. Paradigm Shift in Problem Solving

A paradigm is a **collection of rules and guidelines** that helps us achieve success within the boundaries. These boundaries are drawn keeping in mind the definition of success and failure within that system. Paradigm shifts are complete movements away from the prescribed structure and is different from constant or linear improvement.

While sticking to a paradigm, it may create momentary success, it may also make people overlook possible business opportunities or even threats to their business. Two rivals may analyze the same chance or threat in two unique ways and the one with the best response will surely gain a better advantage.

Hence, a paradigm shift is one of the best things to happen in business and should be encouraged. It is important to note here that Creative problem solving is responsible for bringing different thoughts that are normally not brought out through traditional methods and approaches of problem solving.



### Case Study: From Steam-Driven to Petrol-Driven Cars

The steam car was initially considered a flop invention; it was too cumbersome and projected a lot of difficulty in controlling it. The first coal powered engine or the first petrol vapor powered engines were also not considered successes as they created so much noise distraction on the public highways that the police banned their further uses.

It was **Edward Butler** who had produced what many would say a “futuristic model” of a petrol-driven tricycle, with a two-cylinder motor, a carburetor and ignition through a spark plug produced by a dynamo in 1884. Those were the **Red Flags Laws** days, when driving any such vehicle may carry grave consequences if their speeds moved up from 4 miles per hour on roads and two miles per hour in built up areas.

The name “Red Flags” came from the stringent laws passed on using any such forms of commutation, where the owner of any such vehicle must employ another person walking in front of the vehicle carrying red flags and warning



people of an oncoming vehicle, which was still okay for the owners of these cars as the earlier laws awarded death sentences for such inventions.

It was Creative problem solving that made these gentlemen pursue their dreams and complete their inventions, even on the face of dire consequences. These creative thinkers can be credited as the fathers of the modern lifestyle of the 21<sup>st</sup> century.

## 7. Creative Problem Solving – Characteristics

Efforts to establish a connection between intelligence and creative problem solving has been taken many times, but after years of research, psychologists have concluded that creativity is not the same as intelligence. Someone can be much more creative than intelligent, or vice versa without any influence on the other parameter.

With productive thinking, the objective is to create different approaches and consider even the least obvious or likely approaches. Creative problem solving creates a willingness to keep looking for different approaches, even if a promising solution has been found to a problem.

Rigid thinking tends to produce an inability in solving problems because such problem-solving methods rely on the past experiences to be successful. Such problem-solving methods, are thus, called reproductive thinking.



The main reason for highly productive creative thinkers to create so many rich, varied and divergent ideas is that they look for a new perspective that no one might have considered. The first step of creative problem solving, hence, is to re-visualize a problem in many unique ways. The first few ways of viewing a problem might be too reproductive to come up with unique solutions.

With each different layer of restructuring, the understanding of the problem improves, which brings the thinker to the root of the problem. At this point, a creative thinker abandons all the reproductive thinking steps that stem from their past experiences and re-conceptualizes the



problem. Another noted ability of creative thinkers is that they can manage to operate between ambivalent opinions and incompatible subjects.

### **Example**

Edison's first invention of a light bulb which is the earliest system of lighting involved combining wiring in parallel circuits with high-resistance filaments in his bulbs. The idea of using parallel circuits and resistance wires were two opposite thoughts that did not come to the conventional thinkers of that time, but Edison could see the connection between two incompatible things.

## 8. Qualities of a Creative Person

Creative people themselves won't know how creative they are. It is for the others to discover and utilize. Onlookers can identify a creative person from the way in which these people conduct their lives.

The people who exhibit creative behavior have a unique set of qualities, some of which are listed below:

- Challenge Status Quo
- Avoid Assumptions
- Are naturally curious
- Always explore all possibilities
- Have vivid imagination
- Think of the future
- Don't believe in an ultimate idea
- Never think anything impossible
- Like taking risks
- Can adapt to changing circumstances
- Can connect seemingly disparate events
- Are visual thinkers
- Can identify patterns
- Look beyond the first 'right idea'

### Acquiring Creative Problem Solving Skills

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Research has proved that creative problem solving is not just an innate, inborn quality and it can be taught to others. People can be made to think in more creative ways if they start following some basic principles of creativity, which are mentioned below.

#### Fluency

The ability to keep coming up with creative ideas one after the other. This is developed by organizing creative problem solving sessions during which the participants will be encouraged to provide different ways to use day to day objects like tooth brush, eraser, pens, etc. Once this is over, the same approach can be used with work related themes.

#### Flexibility

The ability to come up with different ideas, which are not variations of a single idea. Flexibility can be improved in participants by presenting them with a scenario and then keep adding a new condition once a consensus has been reached. It will keep the people on the verge of their thinking as they must come up with different solutions for the changing situations.



## **Elaboration**

The ability to give detailed viewpoints or perspectives of the idea. Elaboration can be enhanced in the candidates by asking them to describe an event or a hobby in detail. Keep asking them and leading them for more details till they say that they cannot add anything more to what they have already said. Furnish some additional information on those events or hobbies to help their recollection and check if they have anything new to add.

## **Originality**

The ability to think about unique and original ideas or improvements in the existing ideas. Originality can be learned following a first come, first serve basis of answering to questions.

For example, as soon as the question "How to use potatoes in cooking?" is asked, the facilitator should start taking questions immediately and keep telling that only 6 more unique answers will be accepted.

## Successful Problem Solving

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Just as with any process where imagination is involved, creative problem solving also faces major roadblocks of two varieties: **Individual** and **Organizational**. Many organizations develop their vision for the future while looking at the past for learning experiences. Because of this approach, they draw their plans about situations and scenarios they have already faced. This does not necessarily prepare them for the challenges of tomorrow as they have already lost their powers of anticipation.

It is this **blocking of ideas** that prevents the growth of creative problem solving. It is the existence of these blocks that makes the creative problem solving process a difficult one to practice without an initial environment provided for it.

Successful problem solving follows **three steps of creative problem solving**:

### Recognizing the Task Environment

The first step of creative problem solving involves perceiving the events surrounding the problem, then interpreting the events and understanding the nature of the task an individual must participate in, so as to get to the resolution.

### Empathizing with the Problem

In this step, the people are supposed to be specific about the goal. They need to finalize what needs to be done in respect to the goal and what actions will expedite achieving the goal. There needs to be a transparent approach to the roots of the problem without jumping into any premature conclusions.

### Processing Available Information

This is the most important step because the real creative problem solving is used in problem solving comes to practice here. The available information, along with the information processing style of the problem solver holds great importance here.

## 9. Blocks to Innovative Ideas

A creative approach towards problem solving has resulted in the design of training applications which focus on personal feedback and counselling. Many strategic blocks can be addressed through creative problem solving techniques, when it comes to creating values. Values, however, are a more difficult problem, but creating an awareness of personal values in the individual offers some respite.

Mental blocks towards creativity can be **strategic, value oriented, perceptual** and **self-confidence** related blocks. The real idea must be to facilitate the process of producing ideas. Because of these techniques, new ideas and insights will be formed. The techniques of free thinking are used as a leading sentiment to evoke, construct and reconstruct the knowledge stored in our memory.

Arranging for group sessions where individuals brainstorm on ideas reduce the risk of making mistakes as individuals. These sessions will also help in reducing personal prejudices. By sharing a problem with people or by making our ideas heard, we will be getting the chance to understand people's reactions and suggestions.

### Sensory Gating

**Sensory Gating** is a process that the brain uses to adjust to stimuli. Our brain has a direct connection to filter out distracting stimuli and performance. Negative emotions like stress, anxiety, and depression can switch the chemistry of the brain and limits the effectiveness of sensory gating. So, to prevent this imbalance, **Re-Gating** is important.



Creativity is not an entity you can command at will. It is very environment dependent and can be summoned only under the proper stimulation and with proper co-workers. So, the myth that

creativity can be summoned as per requirement is bogus. It should depend on the proper grooming and encouragement of the management.

## **Strategic Blocks**

Inability to produce insights or thinking out un-implementable ideas point towards blocked thinking. Often people themselves admit that they are in a block. However, this block is a subconscious one. People with creativity blockages often are found to have a negative mindset and approach towards their work and life, in general.

## **Value Blocks**

The biggest challenge for creative problem solving comes when people tend to mistake outdated business doing methods as values. Often, creative problem solving training programs face objections from mid-managers, who argue that they have always done things in a specific way.

These methods, which has delivered them results, are the trusted ones for them, so they feel that they shouldn't deviate from these methods. These people fear change and don't want to take risks. Naturally, they will be at a fix when it comes to facing newer scenarios in the future.

## **Self-confidence Block**

Sometimes, a low level of confidence on one's own abilities creates a fear in the minds of the people and makes them hesitant towards any form of change and creative problem solving. Their reluctance to take decisions out of the box is because they are afraid of failures or being laughed at.

## **Barriers to Innovative Ideas**

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Many people get used to traditional ideas and this is often one of the main barriers to creative problem solving. Because of this thought, people and organizations tend to fall into a variety of traps when trying to become more innovative. Some of the most common issues people face when they try to solve every problem using traditional methods are:

- They zero in on non-issues.
- Finalize one idea too quickly.
- Often finalize a half-baked idea.
- They cannot impress their ideas upon the management.
- They are afraid to change or challenge any established methods.

Some of the other major blocks are as explained below:

### **Managerial Control**

Managerial Control tends to overpower creativity. The creative thinkers should be provided with as much autonomous working style and freedom as possible.

### **Short-range Thinking**

Creative problem solving should be used to find out long term solutions and benefits of the company as opposed to finalizing the short-term gain policies.

## Analysis Paralysis

Because of constant analysis of ideas and polishing them, creativity gets lost in the process, often because every polishing of the creative idea will take it nearer to an established process.

## Rigid Hierarchical Communication

Strict lines of command are not a suitable mode of communication for the creative people. When they come across an idea, they would like to know its feasibility. The tendency to look for a big payoff needs to be curbed.

## Market Vs Technology-driven Product Planning

Many people tend to give undue importance to market research. The idea should be to focus more on marketing orientation, however it shouldn't be at the cost of good ideas which come out of R&D and which never get off the ground.

## Pressure to Achieve more with few Resources

The R&D departments are often marked out for cost-cutting methods. They like to save as much as possible, so that they can ask lesser from the management. However, an ideal creative environment needs to be as free from the pressures of performing better with lesser resources as possible.

## Case Study: How Swiss Watches Lost their Market

The Elgin watch company is often used as an example of companies who did not take care for their market myopia. They fell on their way from being one of the most reputed names in the watch making business to shutting shop forever. The company lived in denial of the changing demands of the market place and risked losing customers for its most widely known product – a pocket watch with an excellent life span.

English watch makers were the pioneers of watch making in the early eighteenth and nineteenth centuries. They were responsible for all the latest technological breakthroughs; however, their biggest issue was that they did not move with the times, which took them out of the competition with the other major Swiss and American watch manufacturers who understood the needs of their customers better.

It may seem rather obvious to us today that to survive in the marketplace, a company should adapt its strategy to meet the changing wants and needs of its customers. However, the watch industry possesses several quirks and it does not necessarily always respond in the way one would expect. Nor does the unexpected always result in a total failure.

The Swiss watch industry dominated world markets with its fine clockwork movements, elegant designs and quality in the 20<sup>th</sup> century. Till that time, the value of a watch depended on its accuracy and time keeping. High quality Swiss watches used to come with 'Officially Certified Chronometer'





certificate handed out by the Swiss authorities, which used to take its price well beyond the reach of the common man. Apart from accuracy, features such as self-winding movements, elegant design, gold metal casing and other things used to add to the appeal.



However, a scientific breakthrough came and quartz movement technology was discovered. Using this, it was possible by all watch manufacturers to mass produce these accurate watches. Although this technology was invented by the Swiss, they didn't implement it, fearing a meltdown in their own market. However, other companies slowly caught up to it and the Swiss watch market ended up losing 25% of its market share.