



Management Decision

Emerald Article: Solving business problems using a lateral thinking approach

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Article information:

To cite this document: Stephen A. Butler, (2010), "Solving business problems using a lateral thinking approach", Management Decision, Vol. 48 Iss: 1 pp. 58 - 64

Permanent link to this document:

<http://dx.doi.org/10.1108/00251741011014454>

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Solving business problems using a lateral thinking approach

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Abstract

Purpose – Basing one's business decision on an approach that relies on experience may work sometimes. Experience is a useful part of the process, but it may also lock the decision maker into a method that cannot lead to an innovative solution. An alternative to this experience-based (linear) way of problem solving is a certain skillful way of thinking known as lateral thinking. This paper aims to present a simple alternative approach to managerial decision making.

Design/methodology/approach – Here lateral thinking is defined as methods of thinking concerned with changing concepts and perception. Various tests are suggested that show how it might be measured. These tests were originally developed to identify creative thinking ability. One of these tests is used in an illustrative decision aid to reduce a common decision-making "bias" labeled "hindsight bias".

Findings – The simple decision aid reduced the hindsight effect for those decision makers who were deemed to be limited in their lateral thinking ability. Those who could already think laterally were not affected by the decision aid. The decision aid was decision-making neutral for them.

Originality/value – Often, when attempting to improve decision making, the focus is on providing better information or models. Rarely is the cognitive ability of the manager specifically considered. Here, a simple decision aid has been suggested that appears to help managers adopt a different perception of the decision situation. For managers and organizations this is a low cost opportunity to achieve better results.

Keywords Lateral thinking, Decision making, Individual behaviour

Paper type Viewpoint

Introduction

Often decision makers take the traditional route to solving a problem. There are tried and true methods for approaching certain classes of problems. For instance, the decision to continue or to stop the production of a product requires certain information and the specific combination of that information. Some managers focus on the amount of investment that the product line has received or the percentage of completion. Others may emphasize the marketability of the product or the probability of a successful introduction to the market. Each group of managers is engaged in what appears to them to be a logical decision process, but it is very different in focus. Experience is a useful aspect of the process, but so is a certain skillful way of thinking. This approach is known as lateral thinking.

Lateral thinking is not an obscure skill. It is a latent power, which everyone has. It can be developed through training; requiring only a change in mental attitude. The term lateral thinking is due to Edward DeBono (1970) to describe a type of thinking that is unconventional. Normally, we follow our experience or the experience of others to build on previous ways of solving problems. We regard this as a logical way of problem solving. However, some problems do not lend themselves to this same logical



process. What is needed is an unconventional way of viewing and solving the problem. This new angle is what we regard as lateral thinking.

Paul Sloane provides a perfect example of lateral thinking. In the early nineteenth century the vast majority of people believed that the only way to travel faster was to breed faster horses pulling more effective carriages. No amount of effort in this logical, conventional direction achieved the breakthroughs seen when steam engines and then internal combustion engines were developed. Not building on a past, proven way enabled a solution to the problem of travel speed.

Not all lateral thinkers are scientists, mathematicians or inventors. We see examples in business also. In 1930 Michael Cullin (2009) thought laterally about how people shop for food. For years people would give a list to a clerk who would gather the item on the order. Cullin determined that each of us could do our own assembling and so the supermarket was “invented” and self-service became the norm in almost all retail endeavors.

Whenever conventional approaches to solving a problem appear incomplete or inadequate we should attempt to find new approaches based on fresh ideas and assumptions. We may regard lateral thinking as having four key factors. First, our assumptions about how the world works should be tested or questioned. If we assume too much or make a wrong set of assumptions, a solution could jump out at us. We may not feel the need to do anything more since the solution is obvious. In fact, we may have assumed away a superior solution.

A second key is to ask the right questions. On the surface this may seem trivial, but it is the order of the questions that is critical. Broad questions are needed to establish the framework. This is where many irrelevant or restrictive assumptions will be implicitly rejected. More precise questions are then necessary to discard irrelevant information, test various hypotheses, and determine possible solutions. We are collecting and sifting information as we go.

The third key is the essence of lateral thinking. We must make an effort to be creative. If the problem could be solved with conventional approaches, we would not need lateral thinking. What we need is the ability to be imaginative. We have all been in groups where “brainstorming” is encouraged. In a sense, this is an attempt to think laterally.

Finally, we will return to a well-reasoned, logical approach. The wild ideas we have proposed must be able to stand up to analysis, reasoning, and logic. Lateral thinking requires experience, reasoning, analysis, and logic not as a starting point, but as a way of refining creative ideas. Lateral thinking is not “off the wall” thinking. One may think of it as just starting from a different point, but using many of the same tools to find a solution. Creative thinking and logical thinking are complementary tools, not mutually exclusive alternatives.

A lateral thinking puzzle

There are a variety of ways to approach a situation or choice in a lateral thinking way. One is to ask questions of someone who knows an answer to the situation. Books on lateral thinking present puzzles for you to solve in a certain time period by asking questions. For instance, consider this situation: Why did a stockbroker continue to send out to people forecasts of stock price movements that he knew would be wrong? You have further information that the stockbroker was not a good predictor.

Possible answers and responses include that the broker had a position opposite the position that this negative information would influence people to take. Perhaps the stockbroker was being forced to forecast fraudulent numbers or being bribed to forecast these numbers. In each case there is an assumption that the poor predicting stockbroker knew the forecast was wrong. The broker may be trying to generate commissions. This seems to be a short-run strategy.

The suggested answer to this lateral thinking puzzle is that the stockbroker was trying to launch a business. The stockbroker bought a mailing list of 4000 wealthy people and sent half of them a prediction that International Business Machines stock would rise the next week. The other half received a prediction that the stock would fall. A week later, the 2000 names to which the correct forecast had been given were again split into two groups. Half received the forecast that Southwest Airlines' price would rise and the other 1,000 received a forecast that it would fall. Again, those who received the correct forecast were divided, and so on. After doing this six times, the broker was left with sixty-two people who had all received a sequence of six correct forecasts. Of course they thought the stockbroker was an excellent predictor of market movements.

The stockbroker then called each of them in turn and asked them to move their entire portfolio to the new business. They agreed, and the broker had the large portfolio base needed.

Investment traps

It is entirely possible that what is known as an investment trap could be overcome by lateral thinking. Investment traps occur when resources such as time and/or money previously expended on a project influence people to make decisions that they would not normally make. We often hear these expenditures referred to as sunk costs. A classic example deals with the investment in a stealth airplane (Arkles and Blumer, 1985). A variety of people have been given the following task:

As the president of an airline company, you have invested 10 million dollars of the company's money into a research project. The purpose was to build a plane that would not be detected by conventional radar, in other words, a radar-blank plane. When the project is 90 percent completed, another firm begins to market a plane that cannot be detected by radar. Also, it is apparent that their plane is much faster and more economical than the plane your company is building. The question is: should you invest the last 10 percent of the research funds to finish your radar-blank plane?

As many as 85 percent of the population has recommended completing the project, even though it is clearly an inferior airplane compared with one already on the market. We see this same type of behavior in other situations:

- The US Navy's *Alaska*-class cruisers were described as "white elephants" because the "tactical and strategic concepts that inspired them were completely outmoded" by the time they were commissioned – the Japanese heavy cruisers that they were designed to hunt down had already been destroyed.
- Montréal-Mirabel International Airport is North America's largest airport, but has been abandoned as a passenger airport.
- Ada programming language, commissioned by the United States Department of Defense (DoD). It was designed to be a single, standard language, particularly suitable for embedded and real-time systems. The DoD mandated the use of Ada

for many software projects in 1987, but removed the requirement in 1997. It is still used in many countries, but not widely. It came to be known as the “Green Elephant” for the color code used to keep contract selection unbiased. It was considered irrelevant for commercial applications, and its developers underestimated the power of the free market and successful tools such as C++, Java, and the Internet Protocol.

How do we work around this problem? The first step is to identify managers who may not be skilled in thinking in nontraditional ways.

Tests to determine thinking approaches or skills

There are a number of options we could use to identify employees who may be susceptible to the sunk cost “fallacy”. Educational psychologists and teachers concerned with creative thinking have for years studied this topic. I will discuss a few tests that may prove useful in identifying creative or lateral thinkers. The four most relevant may be the Embedded Figures Test, the Need for Cognition, Tolerance for Ambiguity, and the Uses Test. Each appears to be associated with the development of the skill of cognitive restructuring.

Embedded figures test

This test is intended to measure disembedding, a restructuring skill (Witkins *et al.*, 1971). In a paper-and-pencil task, a complex figure includes an embedded simple figure which the person identifies as soon as possible. There are twenty-four of these figures in the Embedded Figures Test. Proponents of this test believe that it is related to a person’s ability to deal with unstructured tasks. In our case this should be related also to lateral thinking ability.

Need for cognition

The scale here should provide information about one’s tendency to engage in and enjoy thinking (Cacioppo and Petty, 1982). It measures the extent to which cognitive activity is desirable or interesting. On the surface this may seem odd to search out difficult tasks, but we see examples of it in word scrambles or crossword puzzles. Examples of the 18 statements in this scale are:

- (1) I would prefer complex to simple problems;
- (2) I find satisfaction in deliberating hard and for long hours; and
- (3) I only think as hard as I have to.

The higher the score, the more need for cognition. There is evidence that people who score low on this scale tend to ignore, avoid, or distort new information and are close-minded. This would seem to be in direct contrast to a lateral thinker.

Tolerance for ambiguity

A person who is tolerant of ambiguity does not feel threatened by ambiguous situations (Norton, 1975). In business we often have information that is vague, unclear, unstructured and/or incomplete. This is the type of information that can be dealt with effectively by one who is capable of lateral thinking, as we defined it. A person who dislikes ambiguity is likely to dislike engaging in lateral thinking.

Uses test
The Uses Test is perhaps the simplest and most straightforward of the four ways of operationalizing the skill of lateral thinking (Guilford, 1959). This test is thought to measure the ability to call up many ideas in a situation relatively free from restrictions. The quality of the response is not very important. Also, this flexibility gives the manager a general freedom from standard approaches and permits restructuring of the information set and the solution approach. This appears to be similar to deBono's third key to lateral thinking (i.e. to be imaginative). The more uses for an object one can envision, the more flexibility there appears to be.

Using any of these tests or a combination of the tests should give the organization an indication of which employees have the intellectual flexibility skill to think in a nontraditional, lateral manner. This can lead to two approaches to improving decision making. First, the tests could be used to identify managers who differ in this skill, and this could then facilitate their assignment to particular tasks where this skill is most needed. Second, the less flexible managers can be trained in this skill. However, if training for this skill is not cost effective, it is possible to use the approaches taken by some of the tests and develop decision aids for the managers.

Decision aids

In order to improve decision making often it is necessary to craft an aid specifically for that decision situation. Here, it would be more advantageous to have a general decision aid (Butler and Ghosh, 2006). The trade-off is that it is not quite as effective, but it will work with any unusual scenario. The flavor of lateral thinking can be captured in Figure 1, as adapted from Dougherty *et al.* (1997).

If decision makers take the traditional route to solving a problem, their approach may look like the one illustrated in (a) of the figure. This is the tried and true method for approaching this class of problem. Only one information set and one way of combining that information is used. In (b) the situation is that many information sets or approaches will lead the manager to the same answer, and in (c) the different approaches lead to different answers (we do not specify which is the correct answer). These last two are in the spirit of lateral thinking and the decision aid should induce this multi-path approach out of the decision maker.

The aid should prompt decision makers to consider other outcomes or information leading to particular outcomes. Butler and Ghosh (2006) have used a simple variation of the Uses Test. By asking people what in the situation could cause there to be a

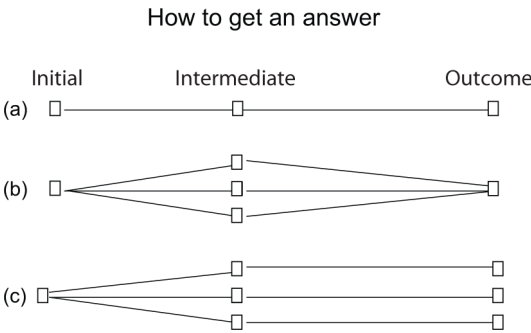


Figure 1.
Ways in which we may
think about problems

different answer or outcome and to list them, they were able to reduce decision making biases such as the one known as hindsight. In hindsight bias one is asked what the probabilities are of certain outcomes after the true outcome is known. Not surprisingly people tend to put a higher probability on the known outcome as if it should have been obvious. When they do not know the outcome they have no hindsight and exhibit no bias toward that outcome. Butler and Ghosh (2006) asked people to simply indicate by listing what information in a business case indicated that there might have been a different outcome. This is much like (c) in Figure 1 in that there are multiple outcomes available.

Butler and Ghosh (2006) found that simply prompting decision makers to push outside what they already knew significantly reduced the hindsight bias. Interestingly, this approach helped the people who scored lower on the various tests they used to approximate lateral thinking skill, and although it did help the people with lateral thinking skill, one should not expect it. These decision makers are already engaged in the behavior the decision aid is trying to induce. A fair assumption would be that the aid also would not hurt if the decision was extremely straight-forward such as (a) in Figure 1.

It may also work in the “sunk cost” scenario discussed above. Simply ask the decision maker what information is available that will predict a successful, marketable airplane. Then ask what information would tend to predict a waste of the remaining 10 percent of the research budget. Facing conflicting outcomes may be a powerful spur to the consideration of often neglected information.

Conclusion

Because some business problems do not lend themselves to decisions that result from a straightforward process of identifying the problem, considering a set of information and arriving at a decision and its ultimate outcome, an alternative approach to decision making is needed. A possibility is lateral thinking. Lateral thinking is somewhat unconventional in that it starts by calling into question assumptions usually made and substitutes a process of asking broad questions in order to establish a decision framework. The key to lateral thinking is that the decision maker is then asked to be creative in proposing a solution. These creative solutions are then put through a filter of well-reasoned, logical consideration.

To date, there has been very little research into the usefulness of lateral thinking in business decisions. There has been a good deal of acceptance of the idea as a general approach to decision making. This paper did not attempt to provide a rigorous test of the concepts underlying lateral thinking. Rather, the purpose was to introduce lateral thinking with short examples of where it may be beneficial, and where a decision aid based on lateral thinking may be helpful. Researchers may find this to be a fruitful line of inquiry.

Breaking the mold when it comes to the approach to a decision situation may be easier and less disruptive than we thought. If simple prompts can encourage managers to act as if they had the skill of a lateral thinker, then the cost is very low. Over time, the manager may even acquire this skill after repeated use of the decision aid approach. At that point the aid may do no good, but indications are that it will do no harm. A decision aid based on the discussion above showed that simple aids using questions to prompt the consideration of sometimes neglected information appears to be effective

(Butler and Ghosh, 2006). This initial success could be followed by other decision aids emphasizing different questioning of assumptions underlying various decisions settings.

Implications

This paper has implications for both research and practice. The concept of lateral thinking is not new, but the attempt to identify the individual characteristics of decision makers in order to recognize those who can be lateral thinkers is. With this knowledge we may be better able to understand those decision makers who use heuristics (rules of thumb) and those who seem not to need these simplifying strategies. The practical implication is that the identification of managers who can engage in lateral thinking will allow the organization to more effectively assign tasks to particular managers. It would also encourage the development of decision aiding strategies like the one presented above.

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Stephen A. Butler has been studying and writing about human judgment and decision making for over 25 years. His research has been published in *The Accounting Review*, *Journal of Accounting Research* and the *Journal of Theoretical and Institutional Economics*, among others. Much of his decision-making research has focused on the influence of information on auditors' and business managers' judgments. Stephen Butler can be contacted at: Sbutler8@missouriwestern.edu