The Influence of Irrationality on the Innovativeness of Variants and the Quality of Decision Making

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Abstract

The article focuses on the issue of irrationality in human conduct and its influence on managerial decision making and mostly the innovativeness of the variants. The first part specifies the starting points of this irrationality, which include particularly the fact that everything is relative. This is connected with so-called mental accounting and the prospect theory, the role of emotions and the subconscious. What is important is the deep-rooted loss aversion. The second part of the article already describes the specific traps which appear within the decision-making process. Each of the traps is described including a suitable practical example. The traps mentioned include information overload, framing of the problem, anchoring and value attribution, status quo, estimates and forecasts, procrastination, sunk costs and paralysis of choice. The aim of the article is to provide an overview of the various pitfalls that complicate and influence in a significant way the resulting quality of decision making and particularly the innovativeness of the solution. Their impact is illustrated using real examples.

Keywords: Irrationality; Managerial decision making; Innovativeness of the variants

1. Introduction

Irrationality has affected decision making since time immemorial. Its impact on a company’s prosperity has been increasing with the turbulence of the economic milieu and the rising degree of globalisation, which leads to a greater interconnectedness of the individual market entities. Management theory has a wide range of various methods and instruments for supporting decision making available, but most of these methods are based on the fact that people are essentially rational beings and in their relation to money act knowledgeable [1]. Unfortunately, this is only a theoretical supposition, as arises from a number of studies, which indicate that human decision making is not fully rational (e.g. [1], [2], [3], [4].
The manager on his path to a decision encounters diverse traps and snares, which reflect accurately the mentioned irrationality. One of the key areas affecting the quality of decision making is the creation of variants, i.e. innovative solutions. And precisely the mentioned irrationality barriers significantly influence this innovativeness.

2. Influence of Irrationality

One of the rationality barriers is the fact that everything is relative. If we wish to assess the suitability of a certain offer, we compare it with another one, with the past, with an analogous one etc. [1]. We always need some comparison. This fact, on the other hand, facilitates and accelerates decision making. This barrier is a significant hindrance to the innovativeness of variants. During the creations of variants, one subconsciously anchors in the past and numerous new solutions suffer from a burden from the past.

According to economic theory, if one koruna still has the same value, we can spend it on anything, but in fact people distinguish greatly between the money that they set aside for holiday, for the study of their children and the money that they have just won in the lottery. Following Thaler and Sunstein [6], most people (unwittingly) apply so-called **mental accounting**. Its essence is the creation of a kind of imaginary ‘pigeonholes’ with a certain interchange between these ‘pigeonholes’ but already at a certain exchange rate. The existence of this phenomenon leads to the fact that, in seeking a resolution, managers very often remain in a given pigeonhole and lack a certain dispassionate point of view. What does it consist in? New variants of the resolution of the given problem are primarily sought in the area where the problem is located and leaving this territory is very difficult.

Another two barriers appearing in connection with risk is loss aversion and the tendency to **overestimate the status quo**. Particularly the combination of both barriers can be relatively dangerous as presented by the Brafmans [5]. This fact is shown in the experiment by Prof. Bazerman [7], who offered students a twenty-dollar bill at an auction with the rule that whoever would be second would have to pay the offered price but would not get the twenty-dollar bill. A clear trap was simulated when the fear of loss led to throwing in as much as 204 dollars. In light of the mentioned trap, key significance goes to the formulation of the problem as presented by Kahneman and Tversky [8] using a simple experiment. According to their **prospect theory**, people experience the pain connected with loss more intensively than the joy connected with the gain of the same amount. It is supposedly as much as two times stronger. Precisely the formulation is crucial for the creation of the variations. An unsuitable formulation can lead to little willingness for the innovativeness of the solution.

Especially marketing uses the interesting **influence of the word ‘free’** on the rationality of the decision maker. It is confirmed in the experiments of Ariely [2]. A similar impact was recorded by the internet portal Amazon.com when offering postage free when purchasing two books. The sales volume rapidly increased with the exception of France, when a symbolic fee was paid when purchasing two books. An increase of the sales volumes did not occur until this fee was cancelled. This factor often leads to the preference of purchases and variations which are not new technology and are not innovative but are at the end of their lifecycle and free service is offered for them for instance. Nevertheless, it is necessary to mention here that sometimes the innovativeness of the solution is on the other hand increased, because the marketing strategy may on the contrary be the support of new products in precisely this form.

3. Traps in Decision Making

The mentioned aspects of irrationality can be projected into traps and pitfalls which ‘await’ the decision maker in every phase of the decision-making process. Their effect further strengthens in mutual coordination. For example, the dramatic first impression can anchor our mind, and then we selectively seek confirming information to determine the correctness of our intuition. We make a rash decision, and
thus we establish the status quo. As the sunk costs rise, we become ever more fettered, unable to find a suitable moment to change course.

3.1. Trap of Information Overload

People intuitively assume that the more information they are able to accumulate, the better their decision will be. In today’s world of internet browsers and extensive databases, it is relatively easy to acquire a great amount of information. This leads to a glut of facts and numbers in the belief that more information will contribute to a better result. This trap of information overload was demonstrated by P. Andreasen [1] in an experiment with investments on the stock market. In connection with that, Al Gore (1993) speaks of ‘exformation’, which he considers to be a large amount of information existing outside of our awareness and as another form of waste.

At the end of 2008, the representatives of the Federation of European Risk Management Associations (FERMA) agreed that complicated control measures – and thus the large amount of surplus data created in this way – distracted attention from important information, which contained real risks and helped form the conditions for the creation of the financial market crisis [9].

3.2. Trap of the Framework of the Problem

Human opinions are very sensitive to how the problem is presented and in which framework it is placed. People even evaluate the similarities in a different way depending on the direction – hence on from which direction they start the comparison. According to Belsky and Gilovich [1], the evaluation of similarity is governed by different regimes than the evaluation of dissimilarities. People who take a decision as a question of what to prefer have the tendency to concentrate on the positive aspects of the alternatives offered. On the contrary, people given the choice of which variant to exclude have the tendency to concentrate on the negatives. This fact arose from the experiment by E. Shafir [10]. The framework trap can assume various forms. It is moreover closely connected with other traps, e.g. with the pitfall of the status quo, the trap of anchoring or pitfall of sunk funds – see below on these traps. The trap of the framework of the problem is very closely tied to the innovativeness of the solution; an inappropriate framework of the problem can lead to a narrowing of the area in which the solution is sought.

3.3. Trap of Anchoring and Value Attribution

Anchors play an important role in an array of decisions from the least significant to the fundamental. Ariely [2] mentions the phenomenon called ‘random connection’. The principle is simple. Show people a new product and set a price – perhaps even entirely illogically and randomly. That first price becomes an anchor. As soon as the anchor presses in people’s memory, they will in future compare the prices of this product with it every time they encounter it. The first anchor is formed randomly and can arise from any number, but as soon as the anchor is set, it then influences not only the price we are willing to pay for the given product but also other prices which we will for offer for related products in future.

Also the influence of prejudices is connected with anchoring. The Brafmans [5] present an experiment when an unknown person was to substitute teach and the students received his/her curriculum vitae in advance. Both reference groups received the same with one exception, namely that in one curriculum vita he was listed as cordial and in the second as somewhat cold. In the assessment of the performance of the given pedagogue, the evaluations of the two groups were then diametrically different, although the groups were in the same class. The trap of quick judgements (prejudices) lies in the fact that these judgements
lead to selective perception. People have the tendency predominantly to notice the facts that are in accord with their own judgement or opinion and often not to see the objective facts that could prove the opposite.

These two traps have a distinctive influence on the innovativeness of the solution. The vast majority of methods of seeking new ideas are based on the principles of getting rid of anchors and prejudices. Analogies from other fields are sought, free associations are created etc.

An example where the trap of anchoring is almost institutionalised is the area of public tenders in the Czech Republic. In a situation when the customer is obliged to list the anticipated price of the order, it is no surprise that the offers of the individual candidates do not differ much. The recommendation against corruption elaborated by a government commission says that a subsequent competition registered in the public competition brings a reduction of the final price on average by 3.3 % [11]. An extreme case in this regard was the step of Prague’s Transport Company when it excluded the cheapest company from the competition in preparing the project documentation of metro line D – because of too low a price. Then, only two companies with the same owner remained in the competition [12].

3.4. Trap of the Status Quo

One of the most significant traps is a pitfall [13] which manifests itself in an inclining towards alternatives that maintain the status quo. We can generally observe this trend whenever a new product is introduced on the market. The first automobiles were expressively referred to as horseless carriages (and in many ways they were also reminiscent of carriages). The first internet newspaper in many ways resembled its paper predecessors. The origin of this trap lies deep in our subconscious and arises from the desire to protect our ego. To change the status quo means to undertake actively an operation and take responsibility for its result. Many experiments prove not only the magical attraction of the status quo but also the surprising rapidity with which it is established.

Also the attribution of much greater weight to what a person owns than to the same thing owned by someone else [1]. According to Ariely [2], ownership is one of the most important things in life and despite that our decision making on property is usually entirely irrational, because we are influenced by three great mistakes. Primarily, we have a tendency to create an emotional attachment to every single thing that we own. The greater the effort that was necessary to obtain the given item, the stronger the attachment is. It manifests itself practically in that when we own something, we tend to value it more than people who do not own it. We are even capable of forming a tie to a thing that we do not even own yet and whose purchase we are only seriously considering, which is referred to as virtual ownership. And thirdly, each party approaches the transaction differently and people are often not aware of it.

In business, where mistakes are punished, maintaining the status quo and postponing a decision can be an attractive strategy. For instance, many company takeovers end unsuccessfully, because the management of the company taking over hesitates to carry out the necessary radical changes of the organisational structure. They say: ‘Let’s wait until the situation calms down’. Over time, however, the existing structure strengthens and its possible change becomes more difficult. When the management misses the chance to make the change when it is expected, it can become bogged down in a very rigid situation.

The trap of the status quo might have the most serious influence on the creation of variations and the unwillingness to seek new innovative solutions. This is also connected with the set culture of the organisation when it often comes to the managers being ‘punished’ for mistaken decisions but they are not ‘punished’ for decisions when they remain in the status quo and do not resolve anything.

3.5. Trap of Estimates and Forecasts
Most people are proficient at estimating time, distance, weight and volume. That is because we estimate these variables often and we receive quick feedback on the precision of these estimates. Through daily practice, it is possible to achieve a high degree of reliability. Estimation in a state of uncertainty is nevertheless an entirely different discipline [13]. There are three other traps associated with the trap of estimates and forecasts – the trap of overconfidence in one’s self, the trap of creating reserves to be on the safe side and the trap of being influenced by recent experience.

These traps then usually lead to bivalent understanding of the concept of risk and uncertainty – managers either decide as if under the conditions of certainty or do not admit deviations from the anticipated value or under entirely uncertain conditions which leads to an unwillingness to make any decisions. In fact, however, the degree of risk and uncertainty is mainly (ca in 80 % of cases) between these two extremes [14].

This is also related to the deception of the gambler [15], when entities assume that the likelihood of a phenomenon which has not occurred for a certain time will be greater in the near future.

A significant economic loss as a result of a poor estimate of the price of oil was suffered by Czech Airways in 2009. In a situation of rising fuel prices, they concluded a one-year framework agreement with Shell for the provision of fuel at fixed prices. The price of oil subsequently dropped by almost a third (for more information, see [16]).

3.6. Paralysis of Choice

Since the connection between the various possibilities is relative (see above, part 2), we subconsciously seize on clues which aid us in making decisions. As presented by Ariely [2], a person seldom selects the absolutely most expensive possibility for instance. On the other hand, he/she often chooses the second most expensive. It therefore pays for example the owners of restaurants to add in the menu at least one very expensive item – even if they should never sell one portion of it, because it increases the sales of more expensive meals. In the same way, people are usually suspicious of the cheapest options.

In connection with the paralysis of choice, it is appropriate to mention crowd psychosis as presented by Belsky & Gilovich [17] ‘The fact of the matter is that sometimes people make mistakes because they behave like sheep, and sometimes they err because they behave like mules.’ An example of such behaviour is stock markets, because investors have the tendency to overreact to positive and negative news.

That some aspects of the behaviour of investors on the market do not change in time is evidenced best by the recent ‘black’ start of Week 33 of 2011. The Friday reduction of the USA’ rating by Standard & Poor’s from the highest level AAA to AA+ evokes a wave of mass selling. American stocks fell immediately the next Monday and ended trading with deep losses. This evoked massive fluctuations on the market and on fears of recession the Czech PX index dropped by 6 % (for more information, see e.g. [18]).

3.7. Trap of Procrastination

It cannot be said that the pathological procrastinators are lazy. On the contrary, a procrastinator is usually rather active, but he/she devotes his/her energy and time to more satisfying activities that provide contentment relatively easily and quickly. Ariely’s experiment considering this trap [2] concerned the setting of the deadlines for the submission of the students’ seminar work: the first group was to set the deadlines themselves, the second at the end of the semester and the final group received precise deadlines. The experiment led to interesting conclusions: the group that had to fulfil centrally set deadlines had the best results; the worst results were from the group that did not have any deadlines.
3.8. Trap of Sunk Costs

One of the ways the human aversion to loss is manifested in economic behaviour is described by Belsky and Gilovich [1] as the ‘sunk cost fallacy’. When making decisions on future investments, we take into account the already invested means, which leads us to the (often ineffective) spending of more money.

The trap of sunk costs may be one of the ‘most effective’ pitfalls laid for managers. And the costs do not have to be expressed only in money but can also be the time invested into some solution and even though it has already come to light that the solution is not ideal, it is continued in ‘from nostalgia’ and ‘sunk time and cost’. This pitfall is related to the loss aversion mentioned above.

The sunk cost fallacy more or less prominently manifests itself in diverse areas of life. An example can be a government that defends the necessity to waste more money on various over-budget projects by how much has already been invested in them or gamblers who have the tendency to raise their bets in a situation when they are not doing well and they are losing. A typical example is that a bank loans more money to a client who has gotten into difficulties with paying back the current loan.

A typical example from the Czech milieu from the early 1990s is the dispute over finishing or stopping the started nuclear power plant in Temelín, South Bohemia. Libor Dušek from the Liberal Institute warned on this trap: ‘The billions spent on building are so-called sunk costs and although they have an influence on if the whole project is profitable, they have no influence on whether it pays to complete the project. The choice faced by ČEZ (Czech Power Company; or the state as the main stockholder) is not ‘to build a power plant with 2000 MW for 83 billion?’ but to ‘complete a power plant with 2000 MW for 27 billion?’ Although the total costs for 1 kW of capacity reach the considerable CZK 41,500, the marginal costs (which are the only relevant ones for today’s decision making) are today only CZK 13,500 per 1 kW of installed capacity.’ (for more information, see [19])

4. Conclusion

Decision making is one of the crucial managerial functions. Poor decisions are often the result of ‘being stuck’ in some of the psychological traps which await a manager in the entire decision-making process. The more complicated the problem is, the more traps are laid, because the solution requires more information, more complex planning, the creation of estimates and the acquisition of the opinions of other people. The first step to increasing the quality of decision making is an awareness of which snares have been prepared. Only then can suitable measures to remove these traps be adopted.

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