What makes the Controller (more) successful?

The Dream- Car- Report the idea workshop in International Controlling Association 2012.

By Andreas Aschenbrücker, Peter Horvath and Uwe Michel

It was **1974** when **Albrecht Deyhle** illustrated the famous drawing **the Controller-manager dialogue** (see Figure 1). The Controlling is first of all a behavioural control, therefore most important is what happens ' under the table'. If we look at it in practice, we see that the cooperation between Controller and manager has a focus on rational things, that is the ones that lie 'on the table'. If we are 'rational', we don't realise how the behaviour that happens 'under the table' influences the Controlling.

The Management board of the International Controlling Association (ICV) and the idea workshop recognised that there is a need to work out the practicable knowledge and then to put it into practice. Important stimuli for the decision to investigate behavioural aspects of the Controlling were delivered by new insights from psychology. They show **that our rationality is frequently influenced by**

Figure1: Psycho-logic and logic under and on the table (first Deyhle 1974, Deyhle & Radinger 2008, p 701)

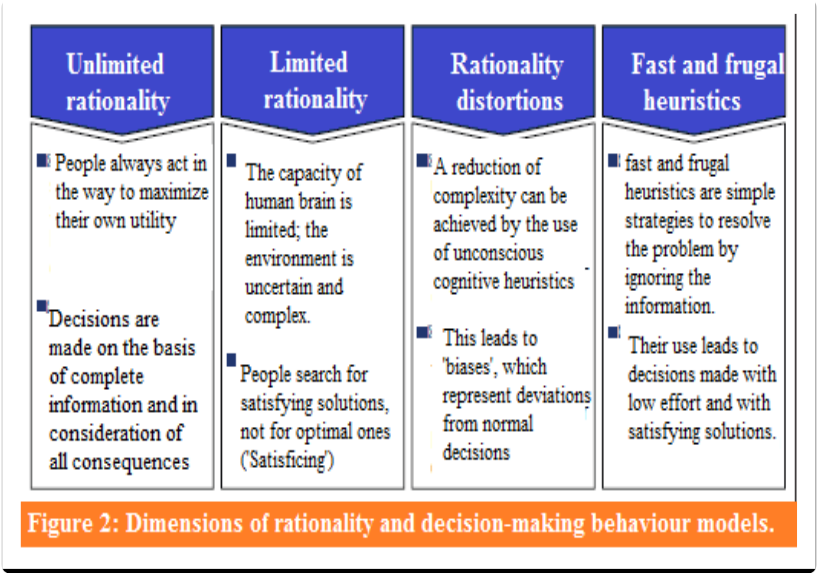

Figure 2: Dimensions of rationality and decision-making behaviour models.

distortion:

This article is a summary of the Dream- Car- Report " What makes the controller (more) successful : It all depends on the behaviour!" from the idea workshop in ICV. The core team participants of the Idea Workshop 2012 were:

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- Deutsche Lufthansa AG
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- TRUMPF Werkzeugmaschinen GmbH
- voestalpine Stahl GmbH

The following article is divided into four parts. Just after the introduction, it explains what **is understood under behaviour** and what is the role of rationality and the **use of different ways of thinking** and the cognitive heterogeneity in the cooperation between Manager and Controller. The answer to the question **how do the Manager and Controller make the decisions** will depend on different understandings of rationality. The analytic model of homo economicus was strongly criticised in the last decades. The thesis on unlimited

rationality of people's decisions has been replaced by the assumption of limited rationality. Therefore we need to ask the question of what does a Controller have to regard under the assumption of limited rationality. We will also show under what circumstances using **simpler forms of decision-making** leads to more satisfying solutions than analytical methods. For each part of the article we would like to present recommendations for more successful and behaviour-oriented controlling.

The homo economicus is dead!

The decisions made by Managers, Controllers and people are influenced by **cognitive limitations (ability deficits)** and **motivational factors (willing deficits)**. The way of making decisions depends very strongly on how we understand rationality.

In Economics, we understand r**ationality** as the 'strive' to the long-term success of the company and the appropriate assignment of the available resources, i.e. resource-benefit ratio (see illustration 2). The concept of decision-oriented Controlling assumes that people's rationality is unlimited. Rational behaviour means in this sense, that people know how to use all the different options and always calculate which decision is the best. The Controller must give the Manager all the most relevant information, so that the Manager can take the optimal decision.

The Nobel laureate Herbert A. Simon (1955,1956 and 1959) presented as the first thesis that people's capability of making rational decisions is not unlimited. The reasons he mentions, are the limited processing capabilities of the brain and the complex, uncertain future. They both prevent having the knowledge of all the options and of their respective benefits. Simon introduced a term for it: '**bounded rationality**'. The consequence of bounded rationality is the fundamental inability of people to make optimal decisions.. Therefore **Simon** claims that people do not look for the optimal solution but search for the most satisfying one. This decision-making behaviour is described by him as 'satisfying'. As soon as the option reaches one's level of aspiration or the aspiration level of the company, it is selected and the search for the other possibilities is closed, even if better 'models' were possible.

The idea of bounded rationality was picked up by Daniel Kahneman and Amos Tversky (1974) and they proved that human decisions differ from the Homo Economicus theory. **Instead, people use cognitive heuristics, for example the availability heuristic, in order to reduce the complexity of a decision.** The availability heuristic describes the phenomenon where decisions are made on the basis of the currently available information. People decide to buy a particular sort of coffee because it is known or they saw it on TV. **The consequence of the reduction of complexity are cognitive distortions** (so-called 'biases') in human behaviour, deviations from ideal of rational decisions. These arise because decisions can not be made on the basis of knowing all options and their benefits. Or maybe you know all the kinds of coffee in the

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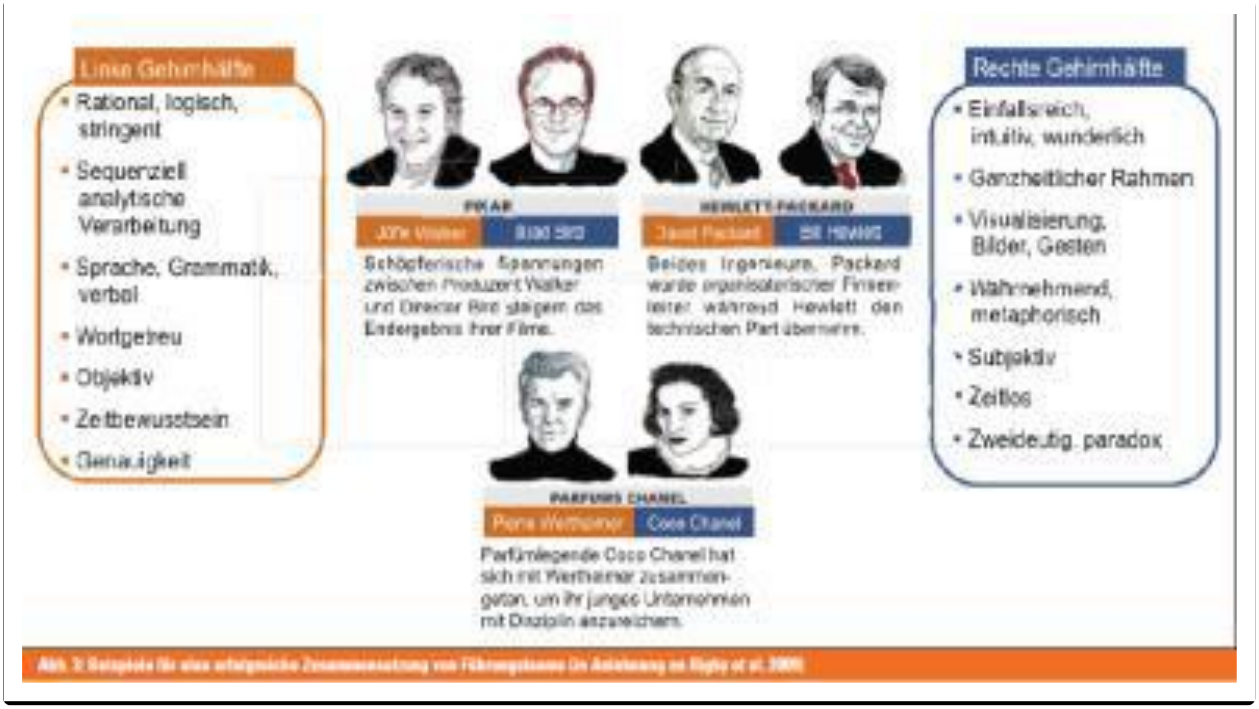

supermarket and you can classify their taste and assess their value?

The only German Nobel laureate for economics, *Reinhard Selten*, points out that **sub-optimal decisions are an integral part of the concept of bounded rationality.** A rational ideal of different decision is no exception, but a rule (see *Selten* 2001). The ABC Group *Gerd Gigerenzer* and the staff of the Berlin Max Planck Institute for Human Development develop a model of human decision-making behaviour, which in addition to cognitive restrictions considers also human striving for 'satisficing' (see *Gigerenzer* et al. 1999).

Through the description, development and scientific investigation of 'fast and frugal heuristics' the research group eliminates a popular prejudice: simple problems can be solved by intuition, complex problems, however, must be processed at a higher cost, and these will lead to appropriate better results.

Gigerenzer represents the antithesis that 'fast and frugal heuristics' - **simple strategies** of solving the problems and making the decisions that ignore the information- **often lead with little effort to good or even better results.** The choice of a known type of coffee based on the recognition of a brand is not understood as a deviation or error. The principle, choose the product which you know, is, according to the researchers at the MPI, a successful strategy to ensure making a good and efficient decision. The goal of a decision is not the optimal solution of a problem (the discovery of the absolute best type of coffee at the expense of large amounts of time and money), but as in Simon's "satisficing", a solution we are happy with (a cup of good coffee). Both models of human decision-making behaviours as well as their implications for a behaviour-oriented Controlling will be discussed further later on. Prior to this, however,

Figure 4: Recommendations for use of the cognitive diversity for Managers and Controllers.

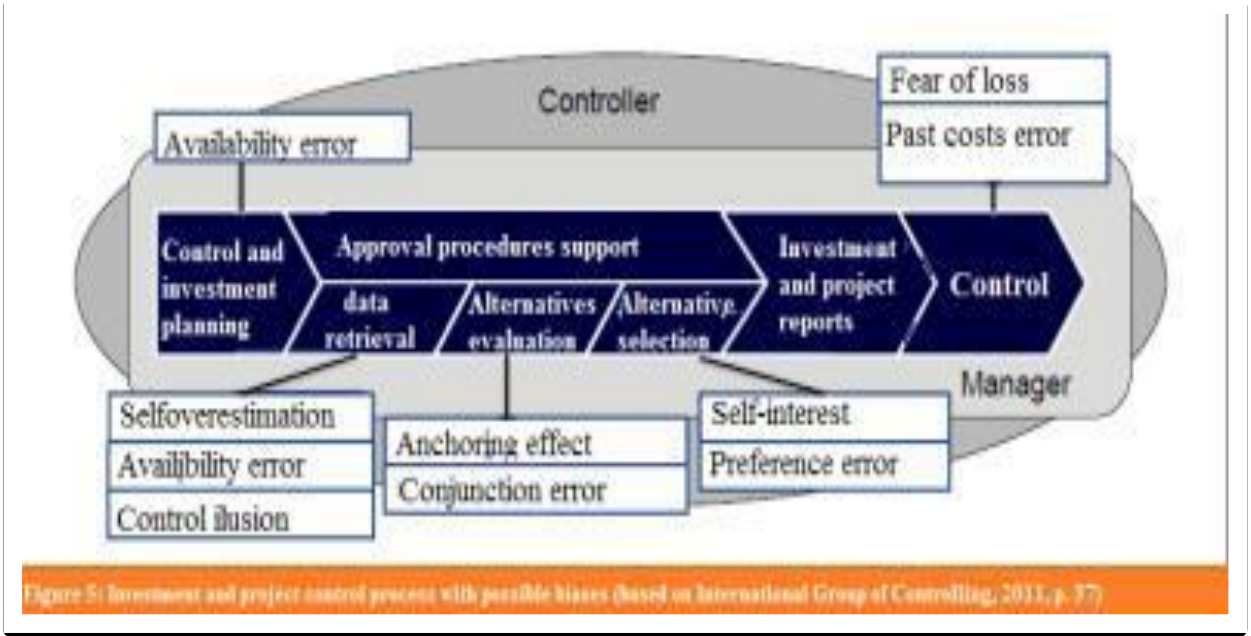

Figure 5: Investment and project control process with possible biases (based on International Group of Controlling, 2011, p. 37)

another important aspect of the cooperation between people should be discussed: diversity.

How to note and use the diversity between Controller and Manager

Diversity describes the variety and differences of people. In recent years, diversity management completed a **transformation from the fairness-approach** and the consideration of equality and justice issues, **to a resource perspective**. Companies should try to benefit from the diversity of its employees.

The focus here is on the **cognitive diversity** rather than the demographic one (ethnicity, gender or age). What is meant is for instance educational background, seniority and functionality of a person. Page defined cognitive diversity by four categories (see, Page 2008, p. 7):

- variability
- perspectives and
- interpretations of what is perceived and
- the problem-solving strategies and
- forecasting models.

Leaders make the decisions based on their personal interpretations. These on the other hand depend on their experiences, values and personalities (Upper Echelon theory: *Hambrick and Mason* 1984).The cognitive heterogeneity and richness of the perspectives among executives influence the decisions of the management team and thus the company's success.

However, it must be recognised that **too wide a diversity may lead to growing communication barriers and conflicts** arising from stereotyping and social categorisation. Several types of conflicts are possible (see *Gebert* 2004):

· Objective and value conflicts

· Relationship conflicts

· Physical and task conflict

Goals and values conflicts arise when different team members pursue fundamentally different goals or have different values. These conflicts are not desirable and should be avoided, for example **relationship conflicts,** where a collaboration is being prevented due to emotional stress. On the other hand, there are **property and task conflicts** that are desired and should be sought, if they are constructive. During the debate on how a new target should be achieved, many ideas and solutions are born.

Figure 6: Recommendations for avoidance of cognitive distortions

If the companies are able to deal with this increasing conflict potential, the cognitive diversity becomes an important resource. The knowledge base available to the company will increase and and the information accessibility and processing of information will improve. According to *Rigby, Gruver* and *Allen* (2009) the management teams are particularly successful, if they unite a good mix of cognitive skills. Successful teams consist of analytical and creative thinking people (see Fig.3).

When it comes to cooperation between the manager and Controller it can mean a Controller's **better involvement in the strategy and decision-making processes.** The effectiveness of the strategy process can increase through the integration of the Controller and his analytical way of thinking. Controllers also act as independent experts and can help to formulate fair and measurable goals as well as enable the reaching of a better integration of strategy formulation and implementation. Effective strategy processes may increase the company's success as the company can make better decisions. It is then particularly important how good the cooperation between the Controller and the manager is. (*Weber & Vait* 2008).

Diversity does not necessarily become a beneficial resource. Companies need to support it actively. This begins with the selection process of new employees and includes further education and training. **benefits of cognitive diversity is particularly endangered through communication and collaboration barriers.** Within working groups, as well as in business generally it is mandatory to provide a mutual trust, have a common goal and exercise direct communication. This is especially valid in the cooperation of managers and Controllers.

Consideration of behavioural aspects in controlling processes.

The consequence of bounded rationality of human behaviour is the **unconscious effort of cognitive simplification strategies, so called cognitive heuristics**. Decisions influenced this way usually depart from normative ideal of rational decisions. It leads to decision anomalies and cognitive distortions.

An example of a cognitive distortion is an **'availability error'**. This is a phenomenon where decision-making is based on present or easily accessible information. Supervisory board members assessing management's performance rely on information provided by the management. Financial managers use the Black-Scholes formula for price calculation of derivatives although it has been outdated for ten years. *Dobelli* (2011) compares these examples with the use of a wrong city plan instead of none.

The knowledge of the systematic irrationalities of human actions is a starting point to improve the humans decision-making, by the use of the latest findings from other disciplines such as psychology. (see *Ariely* 2008).We want to clarify this on the example of the project and investment controlling and show what

consequences rationalism has on the work of the Controllers.

The goal of the project and investment Controlling is an active support for management by planning investments and projects, and sticking to the quality and cost goal. Figure 5 shows typical process steps and possible cognitive distortions of the managers and Controllers.

In the project and investment planning, the support of the Controller is mostly limited to calculations of probability. It is important to consider other viewing perspectives when generating ideas. **There is a danger of focusing on project and investment alternatives that are known or have been successful in the past *(availability error).***

The data procurement includes prediction of the expected payments and receipts of the investment and the estimation of the risks associated with cash flow. The complex business environment leads to the point that forecasts for the future are reflected inadequately. An overestimation of their own abilities (boasting) leads to too optimistic forecasts of costs, revenue streams and time predictions. **The illusion of control** created by the pure knowledge of contexts makes the manager believe that there is a possibility of influence, even if objectively it does not exist. This leads to the misconception that the developments could be positively affected by his actions.

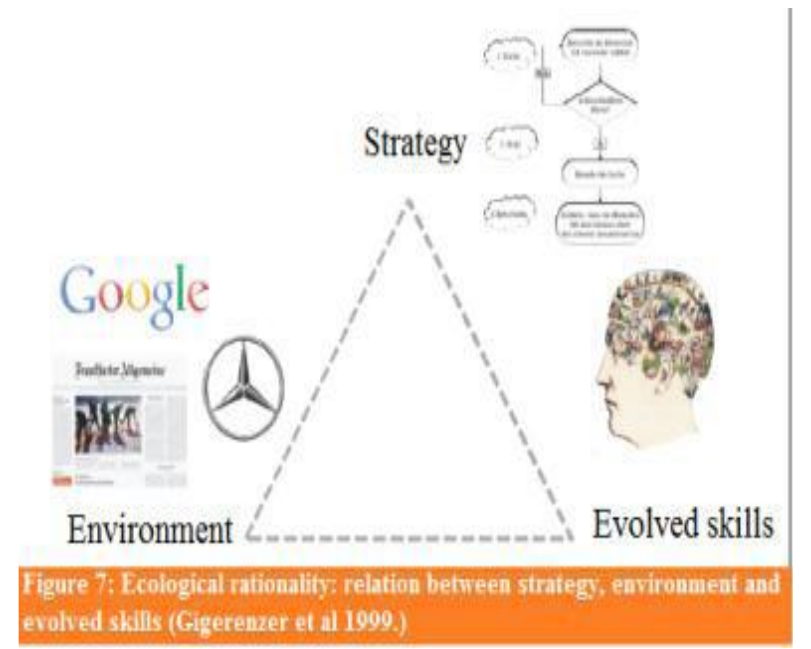

Figure 7: Ecological rationality: relation between strategy, environment and evolved skills (Gigerenzer et al 1999.)

The alternative evaluation will provide the basis for subsequent selection of alternatives. Theoretically, the alternative that should be chosen should have the highest net present value and promise the highest corporate value. However, reviews are always based on valuations of expected cash flows, including associated value and volume developments. The use of simplification strategies and cognitive distortions are the consequence of this complexity.

People judge estimates often unconsciously through an '**anchor**' or a point of reference. For example, the starting point to predict the production costs in the next period is to use the current production costs and the change in the previous period. **The future cost will then be explored in defiance of the possible change of environmental and external factors.** Numerous studies prove that the kind and amount of the estimates vary depending on the 'anchor'. (**anchoring effect)**.

Commentary and detailed descriptions show that two events having similar context, for example an increase of fuel prices and the decline in demand for air transport services are connected, although they are independent from each other. The arrival of the two events is perceived as more likely than the arrival of only one of these events, which is statistically seen as an error **(conjunctional error).**

The alternative choice is influenced by actors self-interest and their personal preferences **(preferences error).** Another mistake is the recursive evaluation with modified assumptions, so that the preferred project appears as desirable.

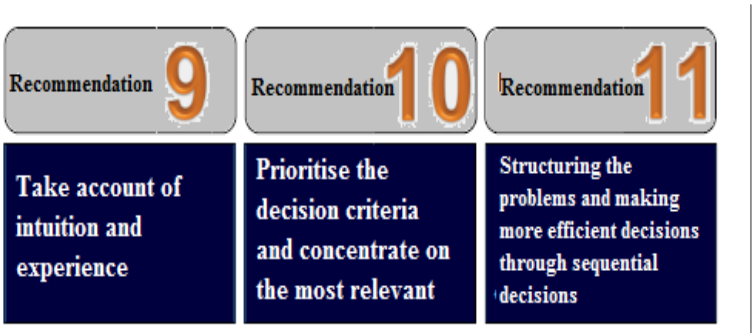

Figure 8: Recommendations for use of fast and frugal heuristics

During the project implementation, ongoing project and investment reporting is required. In case of any differences the project may be terminated. Although managers can decide to lead a project for as long as possible, regardless of the chances of its success. Their decisions should consistently appear and the already existing costs should 'not be in vain **(errors of past costs)**. Loss or the termination of a project would mean for the manager much more than just the possibility of having a new interesting project **(fear of loss**).

The occurrence of cognitive distortions in theory is well known, however, measures in practice and also in the literature have been so far neglected. **Knowledge of cognitive distortions and development of awareness for its influence is the first assessment to compensate the effects.**

Controllers should try to objectify problems through critical questioning of assumptions and inferences (see Figure 6). The motivation to make the decisions in one's own interest, may thereby be reduced. The underlying information has special influence on the decisions. The controller must be aware of the effect of the presented data. It is important to bring the alternative perspectives into the field of view of the decision maker. Besides obvious solutions, there are always other alternatives. However, it should not cause an information overload.

One possibility to reduce the amount of terminated projects caused by the fear of loss, is the delegation of responsibility to a project decision-making body. The introduction of clear guidelines, for example Milestones, that specify which project progress has to be reached and when, makes the termination of projects easier and reduces the amount of **emotions during the discussions.**

Particularly in the assessment of risks, managers should rely on the methods of Controllers. Difficulties in dealing with probabilities can often be solved through the proper use of the instruments of the probability calculation.

Further Information

Both models of decision-making behaviour presented in the previous and following chapters are not complementary. They contradict each other in certain areas: The use of *fast and frugal heuristics* can lead to efficient and satisfactory solutions and the use of heuristics can lead to cognitive biases. This is due to the differences in the understanding of what heuristics are.

The idea factory in ICV has neither the competence nor is it its task to decide (neither heuristically or analytically) which model is right and which is wrong, or whether the decision is possible. Our goal is to show :

- which cognitive distortions can occur in the controlling processes in decision-making behaviour of managers and Controllers,
- what are *fast and frugal heuristics*, in which situations they represent simple and efficient solutions and what is needed for *fast and frugal heuristics* to be used in business.

Simple and efficient heuristics of deciding - development and use

The need for using vast resources in the face of uncertain, opaque and complex decisions comes from a desire to optimise. The researchers of the MPI Berlin confront this typical behaviour of Homo Economicus with the **modern man image of homo heuristicus** - a man who, in the search for effective solutions very often ignores information and relies on his

intuition in the case of uncertain decision-making situations (*Gigerenzer & Brighton*, 2009). An example of such a decision of the homo heuristicus is as follows: there is a restaurant with a lot of happy customers, whereas the other one is empty; our intuition tells us that there is probably a good reason for people preferring the first restaurant. We will choose the restaurant with bigger amount of people.

Homo heuristucus selects specialised strategies, that are matching the problem, from all available arsenal (**adaptive tool box).** The key assumption is: that the optimisation, with finite resources and limited rationality, is in practice usually not only impossible but often not even desirable. **Despite lower cost, the use of *fast and frugal heuristics* provides good and sometimes even better results.**

Imagine that you have to decide which city has more inhabitants: Detroit or Milwaukee. Homo economicus will collect all available knowledge about both cities, to answer this question (for example if the city owns large industrial areas) and then choose the alternative. If we ask this question to a group of people in Germany, about 90% will choose Detroit. If we ask the same question to Americans , it would only be 60%.

Germans have usually only vague Information about both cities. They decide to choose Detroit because they recognize the name of the city, while they have never heard of Milwaukee. This fact allows the **application of the recognition heuristic**: If there is only one object from two recognised,then it has higher value, for example amount of population. Inspite of the naiveness of this rule, we are able to list some profitable investment portfolios or predict the winners of elections.

Even if both of alternatives are familiar to you, and you have a knowledge about alternatives, you do not have to always consider them. Which city has more inhabitants: Stuttgart or Berlin? Most of the people will choose Berlin. and they will wonder for example if one of this cities is a federal capital? The **'Take The Best' heuristic** is used: Observe the criteria of relevance, terminate the search if there is a difference with regard to a certain criteria.
It is clear that *fast and frugal heuristics* do not guarantee correct answers. However empirical results have shown that less effort and waiving of the use of all available information can lead to equally good or even better results than the optimisation procedures. Analysis of the conditions,under which these two results occur,reveal the key elements: **Firstly, it provides simple rules and more robust predictions because it avoids the adapting of any flexibility to random data models. On the other hand it is necessary to match the strategy of evolved human abilities(abilities that man has earned during evolution) and certain environmental structures. This is called ecological rationality**(see figure7).

The recognition heuristic uses the evolved ability of our advanced recognition memory and relies on the fact that relevant objects in our environment happen more frequently (for example they are mentioned more often in the Media). The Take-The-Best Heuristic is based on the human capacity to prioritise relevant criteria and to use existing redundancies in the environment to make good decisions based on less information. Real decisions are more complex than the above mentioned examples of cities, therefore there is the question whether *fast and frugal heuristics* are used also in the decision situation and corporate practice.

To answer the question whether a customer is a an active buyer of a company's products, we use complicated mathematical models. *Wübben* and *Wangenheim* (2008) proved that the **Hiatus Heuristic**: **'**The customer will not ask for any products in the future if he did not buy any in the last six (nine /twelve) months' provides the same or similar results as the mathematical optimisation methods.

The father of the portfolio theory, the Nobel Laureate Harry Markowitz, did not build his retirement pension with the models developed by himself. He distributed his financial resources equally to N shares. He used the **1/N-Heuristic**: Distribute all resources equally to all available alternatives. The

profitability of this naive **diversification strategy** has also been proved in numerous studies (see DeMiguel, Garlappi, & Uppal,2009). The described examples show that use of *fast and frugal heuristics* is possible in corporate practice. In many decision-making situations they influence decisions made by Controllers and managers. The question whether *fast and frugal heuristics* are superior to analytical methods cannot be answered. Each case needs to be checked separately. We need to discover under what conditions simple rules lead to good results with low effort.

However, the use of *fast and frugal heuristics* is not recommended for all cases . They should be used in defined situations only, in line with clear rules. For this purpose it is necessary to analyse typical corporate decisions. It is necessary to identify situations that cannot be solved with the help of analytical methods, but which can be solved with *fast and frugal heuristics*. The selection of appropriate decision-making situations as well as supplying necessary information is the task of the Controller (see Figure 8).

Controllers may access aids on decision-making, which suggest a rational and comprehensible approach. The decision on what kind of instrument they will use and the interpretation of the results is subjective. A little bit of scepticism is therefore advisable. Especially if after the use of instruments and methods, the conclusions contradict the intuition. This should not be neglected. The inclusion of intuitive judgements helps to verify results of analysis and make understandable, verifiable and transparent decisions based on intuition (see Müller & Sauter 2011, S. 38 – 39).

An important task of the Controller is to prioritise the decision-making criteria. This way a Manager will not be overloaded with information. What is relevant, is that a decision made like this leads to arbitrariness. It is conceivable that one needs to consider several criteria. Decision trees are particularly useful, as they structure the search for a solution and make it less complex.
This will result in the manager becoming more efficient.

Editorial staff: The complete Dream-Car-report can be found on the website of the International Controller Association (ICV) and can be downloaded for free.