§ 3 Moral Hazard and Herd Behaviour in the Financial Crisis

Bruno S. Frey and Reto Cueni

Contents

I. Repressed Voice and Costs of Non-Herding.......................................................1
II. Literature on Herding-Behaviour.................................................................3
III. The Costs of Non-Herding.................................................................7
IV. Different Types of Non-Herding Costs.........................................................9
V. How to deal with the Costs of Non-Herding in Organisations......................11
VI. Costs of Non-Herding in Practice.................................................................13
VII. Conclusion..................................................................................................17
References........................................................................................................19

I. Repressed Voice and Costs of Non-Herding

After the outbreak of a crisis, a large number of people often say that they foresaw the imminent disaster. When asked why they did not warn someone before it happened, they usually say they did but got attacked and silenced or they feared the negative consequences of predicting a disaster. The reasons given are interesting because they reveal the underlying costs of being critical, and they show that information can get lost due to these costs.

The last financial crisis provides many examples of employees who expressed their pessimistic view of the oncoming market and got mobbed and sidelined until they resigned or were fired.1 The financial industry profits the most when the market prices of securities rise or are presumed to rise. Thus, the financial industry’s best interests are served when positive economic outlooks persist and negative forecasts are rejected.

---

1 For example, in E. Robinson, ‘Research Renegades’ (2009, November, Volume 18, Number 11) in Bloomberg Markets Magazine 32-44, three equity analysts tell their stories of being punished by peers and supervisors because they forecasted a negative economic trend in their industry sectors; ex post, all of them put forth a correct analysis, but they all resigned because they could not stand the pressure. An article in The Economist (2009) describes the problems of negative forecasts and how they are suppressed by the financial industry.
From an economic point of view, this mechanism leads to a waste of resources because it generates biased information in favour of positive ratings about future economic trends. This asymmetry generates distorted asset and resource allocations. In financial markets, there is ample evidence that such an asymmetry exists.²

In order to understand this asymmetry, it is important to see why so many people involved in the financial industry are punished for speaking up or why they mask their negative expectations. An employee’s cost of speaking up and not herding with the others has to be elicited. Once this cost is defined, it is important to identify institutional factors that can reduce this cost. Furthermore, the link between the herding behaviour of employees in a specific company and the herding behaviour of the various companies in the financial market has to be examined. If a link can be established, the individual costs of non-herding can be seen as one of the crucial factors in the origin of financial crises. These individual costs could lead to herding behaviour in many companies in the financial market.

We identify the possible costs of non-herding. At the bottom of the cost range, the subtle psychological pressure of individual co-workers arises and induces the social pressure of a team or whole department. At the top, when the pressure gets very high, workers may even feel compelled to resign their jobs or may be dismissed.

In the spirit of BLINDER and CHOI, we conducted a series of interviews with high ranked executives and chairpersons of banks, insurers, and hedge funds of different sizes in order to attain a

comprehensive picture of the financial industry.³ We use the statements of those we interviewed to explain, contrast, and challenge our theoretical approach and hence to connect the ideas developed to real world examples. A comprehensive analysis of an extended sample of interviews is provided in CUENI and FREY.⁴

This paper is organised as follows: in the next section, a brief literature review is presented. In section three, we explain the phenomenon of the costs that lead to herding behaviour in the decision processes of companies. In section four, different types of non-herding costs are expounded. In the fifth section, we formulate several propositions about the non-herding costs and confront them with statements from the interviews of the practitioners; the last section concludes.

II. Literature on Herding-Behaviour

An important precursor is LE BON, a famous French sociologist, who discussed the problems arising from herding behaviour and the psychology of the crowd 1985.⁵ Four years later, THORSTEIN VEBLEN, the first economist who dealt explicitly with herding behaviour, analysed mass consumption and tried to explain why people tend to buy what others buy.⁶ His idea was further developed by HARVEY LEIBENSTEIN and his famous study about ‘bandwagon effects’.⁷ At that time, the phenomenon of herd behaviour was mainly studied by sociologists and social psychologists, most prominently by ASCH, FESTINGER and BANDURA.⁸ Also important are the sociologists, as

Granovetter’s and Burt’s work on collective behaviour, threshold models and reference groups helps us to understand when and why herd behaviour can emerge.⁹

Focusing closer on our topic of herding behaviour in organisations, we identify four important approaches based on sociology and social psychology literature. In the context of decision-making processes, Janis’ theory of groupthink explains why individuals perceive pressure not to dissent.¹⁰ Noelle-Neumann’s theory of the ‘spiral of silence’ points in the same direction; her thinking in particular treats mass communication and the origin of majority opinions in public debates.¹¹ The concept of diversity addresses the same problem from the opposite perspective: Bantel and Jackson propose diversified teams in order to integrate ways of collecting and processing information into a decision process.¹² Finally, the research on hidden profiles contributes important insights to the problem of collecting information in groups in order to reach a correct decision: Schulz-Hardt et al. demonstrate that dissent in teams is a facilitator for decision quality.¹³ This finding reveals the relevance of the present analysis of non-herding costs.

---


¹³ The term ‘hidden profile’ originated from the work by G. Stressed and W. Titus, ‘Pooling of Unshared Information in Group Decision Making’ (1985) 48 Journal of Personality and Social Psychology 1467-1478; S. Schulz-Hardt, F. C. Brodbeck, A Mojzisch, R. Kerschreiter and D. Frey, Group Decision Making in Hidden Profile Situations: Dissent as a Facilitator for Decision Quality (2006) 91 Journal of Personality and Social Psychology 1080-1098 define the idea of the experiment: ‘The correct solution was not identifiable on the basis of the members’ individual information and could be detected only by pooling and integrating the members’ unique information.’
From an economic perspective, herding behaviour can be studied by analysing payoffs and network externalities. Interestingly, one of the best examples of an analysis of a payoff interaction between rational and truly selfish individuals stems from socio-biology: HAMILTON’S (1971) study of selfish herds revealed that the clumping of animals is an indirect outcome of the selfish behaviour to put another member of the herd between itself and a predator. As in the case of decision-making in teams, the individual’s concern is to refrain from being outside the herd. As long as an individual goes along with the opinion of the majority, he can hide in the herd, especially if the decision was wrong ex post. If anticipated, this herd behaviour serves as an individual risk-reducing strategy that creates negative externalities for the other individuals in the organisation.

Connecting the mechanism of hiding in the herd and the agency problems between supervisors and subordinates or clients and managers leads us to reputational herding. In 1990, SCHARFSTEIN and STEIN provided a seminal model that considered two managers whose abilities were not known to any observers (e.g., clients or supervisors). The observers inferred the managers’ abilities by comparing the investment decisions of the managers. After each period, the observers updated their information according to the investment payoffs from the managers’ strategies. The managers were paid based on the observers’ assessment of their abilities. The outcome of the model is always that one manager follows the other’s lead. The strategy results in a loss of information because the manager who follows ignores his private information. As the observers do not know, ex post or ex ante, what they should expect as the best investment strategy, they compare the two managers. As long as the managers take the same action, neither of them is blamed for a bad payoff.

The institutional setting of an organisation’s performance measurement is therefore a crucial point whenever non-herding costs are analysed. ZWIEBEL’S extension makes the model even more realistic.

---

because in Zwiebel’s version it is not always better to fail conventionally than to succeed unconventionally.\textsuperscript{15} The benchmarking of the managers’ performances allows mediocre managers to hide in the herd, but the most able managers still have an incentive to deviate and build up an outstanding reputation.\textsuperscript{16}

Similarly, Prendergast and his theory about ‘yes men’ directly explore how conformity can emerge when firms use subjective performance evaluations. Instead of collecting and communicating important information about a project, the workers will try to elicit and represent their supervisor’s opinion in order to please him and to further their careers.\textsuperscript{17}

There is also empirical evidence for the existence of herding behaviour due to reputational and career concerns. Graham explicitly tested and supported the model of Scharfstein and Stein empirically.\textsuperscript{18} Hong, Kubik, and Solomon showed that there were reputational incentives for herd behaviour of equity analysts.\textsuperscript{19} If a younger analyst deviates from the consensus forecast and does not succeed, he has a much higher probability of being dismissed than a senior analyst. This suggests high pressure for beginners to build up their reputations with conventional forecasts. Also, the newer experimental literature demonstrates in the lab how reputational concerns of managers can lead to distorted decisions.\textsuperscript{20}

\textsuperscript{15} This saying is attributed to John Maynard Keynes.
RAJAN provided evidence that there is a link between the herding behaviour of individuals in an organisation and the herding behaviour of organisations in the market. During an economic upturn, managers start to relax their standards for loans and to set aside rules for loan-loss reserves. In order to reach the same profitability, other bank managers imitate these actions. As RAJAN shows, in case of an economic downturn, the loans of the skilled managers also do poorly and thus neither of the managers is punished reputationally as they can hide in the herd.

The literature about informational cascades has to be mentioned in this context too. However, this strand of the economic literature is only important in the present context as informational cascades demonstrate how information can be lost. This happens because the first mover in a cascade randomly makes a decision, whereas the following movers ignore their private signals and imitate the decision of the first mover, assuming that he had better information than they did. KURAN and SUNSTEIN combine the idea of informational cascades and reputational concerns with the concept of availability cascades. They explain how availability cascades are used in the political process of opinion formation.

The literature of whistle-blowing also deals with a closely related topic. Although studies about whistle blowing are mostly focused on negative topics such as unfair treatment of employees or even

criminal behaviour, they discuss the process of speaking up in organisations. In general, this literature belongs to the broader phenomenon of ‘voice and silence in organisations’. The mainly theoretical literature was recently extended by empirical studies, which provide better insight into the incentives and rational choice behaviour of employees when they have to decide to blow the whistle or not.

The next section focuses on the costs of non-herding and distinguishes the various links to the literature on herd behaviour.

III. The Costs of Non-Herding

Whenever several people make a decision, the costs of non-herding arise. In a typical situation, one could imagine an investment committee in a bank, consisting of eight members. Assume that these members are equally ranked (later, we also discuss the case when there are people of different hierarchy levels). These eight members of the committee have to decide about a specific investment with one of them being in charge of the investment project. This manager makes a presentation about the anticipated assets and drawbacks of the investment. Subsequently, the usual question and answer round starts, but nobody asks any crucial questions, the questions only scratch the surface of the possible problems. After having answered the harmless questions, the committee votes on the investment and unanimously adopts it. All of this happens although the investment project is not at all above suspicion, a fact that the project leader is well aware of.

Why did the committee members not ask more critical questions about the project? The individual members of the committee have several reasons not to mention any fundamental issue: nobody wants

---

to prolong the meeting, nobody wants to raise his or her voice against the project because an explanation would be required, nobody wants to be the loner, and as long as no other member of the committee speaks up, all members keep quiet. Because this happened several times before, nobody feels like taking a stand against the investment project this time around.

These are only a few examples of the possible costs members of committees could face during a decision-making process. We want to show, however, that such situations reveal typical characteristics and mechanisms. First, if a committee member raises his voice, he or she faces the costs of doing so immediately. In contrast, the possible benefits lie in the future and can only be calculated after the project is realised. The member does not know in advance whether he or she ever will get any benefit out of it while the costs are imminent. This shows two types of asymmetries: one in the temporal dimension between short-term costs and long-term benefits, another in the probability of the costs and the benefits. The costs are rather clear, whereas benefits are very uncertain and difficult to calculate.

Second, the costs of non-herding have to be borne alone by the individual member of the committee, at least at an early stage, until other members join in the critique. The critic cannot benefit from a cost- and risk-sharing mechanism and hide in the herd.

If we add to the typical situation described above that the committee members are of different rank, principal-agent problems arise. Assume that the supervisor of a committee member presents an investment project. To argue against this project gets even more costly for the subordinate member. The supervisor is likely to decide future promotions of the inferior member as well as his future pay. These costs illustrate that any dependency on a supervising person can influence the costs not to herd dramatically for a specific committee member.
For the organisation itself, the problem of the non-herding costs is twofold. On one hand, the costs not to herd induce other members to imitate such behaviour. By doing so, the individual members do not contribute their private information during the decision-making process and vote for decisions, which do not align with their personal evaluations. The imitating behaviour results in a loss of information, which is the major cost of herding behaviour for the organisation. On the other hand, the non-herding costs depend on a self-reinforcing process. The longer the committee members do not raise any issues, the higher the costs not to herd and the lower the incentives to speak up. The costs of non-herding create a vicious circle, which can harm the organisation in several ways. Chosen paths cannot be changed, and new and better investments are missed or ignored. As the decision involves many steps and is designed as a bottom-up process, there are non-herding costs on each level reinforcing the herding behaviour in the organisation. These two mechanisms are responsible for the problems that arise from the non-herding costs in organisations. Therefore, organisations should try to reduce the costs of non-herding.

**IV. Different Types of Non-Herding Costs**

The costs of non-herding can arise from various sources, affecting all individual employees. We pool these different sources into three categories: costs due to personality, costs due to conflicts between equally ranked employees, and costs between employees and their superiors.

Depending on self-perception, role behaviour, and identity, the costs of non-herding can affect the individual employee in different ways. People who like to expose themselves or see their role as the devil’s advocate perceive the non-herding costs to be lower than assumed.
Another source for non-herding costs lies in the relationship between the employee and his co-workers or peers. In order to function, teams or committees experience a pressure to be uniform, and the members create their own social identity. The more homogeneous a team is with respect to important aspects (professional background, education, gender, etc.) the more likely groupthink occurs. These diverse phenomena of social interactions in teams influence the individually perceived costs of non-herding; the more conformity is needed to be accepted as a member of the team, the higher are the costs if the individual employee deviates from the prevailing opinion. The employee is usually in competition with his peers, which can reduce the costs not to herd as it provides an incentive for the employee to speak up and distinguish himself. In contrast, competition can also raise the costs if the employee and his peers are rated by a superior manager, as shown below.

The last source of non-herding costs stems from the character of the principal-agent relationship. In addition to the above-mentioned sources, an employee and his superior’s supervisor’s relationship as well as the employee’s personality have a massive influence on the costs of non-herding. The costs of non-herding to an employee can vary heavily. If the superior has to evaluate the employee’s performance and if this evaluation determines bonus payments, future project assignments, or promotions, the employee’s non-herding costs strongly increase. Due to career and reputational concerns, the employee’s incentive to raise an issue about a project supported by his supervisor is likely to vanish. If the superior is accorded much respect in the committee due to his or her impressive track record and large amount of experience, the employee’s costs to be critical increase even further.

These sources spawn a wide range of non-herding costs for the critical employee starting with small hostilities to mobbing and sidelining or even towards a career-ending transfer of the employee or his dismissal. After having discussed the types, perils, and sources of the costs not to herd in
organisations, we analyse the possibilities to reduce them. Several propositions are developed in the following section.

V. How to deal with the Costs of Non-Herding in Organisations?

This paper suggests that the institutional setting is a major factor influencing the non-herding costs for organisations. There are fundamental principles shaping the rules of the game in organisations.27

We first identify factors at the micro level and then move to the macro level. At the micro level, which covers the committee and its decision makers, there are seven different factors:

1) The composition of the committee,
2) Agenda setting in meetings,
3) Information flow about the projects,
4) Formal communication procedure (order of speaking),
5) Informal communication (informal pre-meeting),
6) Decision rules (voting procedure) and
7) Allocation of responsibility (to the head of the group or to each member equally).

These factors define the design of the committee and the rules therein. They have a strong direct influence on the costs of non-herding for an individual committee member. Assume that the project leader has the power to select the members of the committee or to set the agenda of the meeting. This enables him to raise the costs for a possible critic by electing a higher number of supporters of the project (or even exclude all possible critics). He could also place the vote on the most critical project at the very end of the meetings agenda in order to minimise the time available for a proper discussion. The project leader can also heavily regulate the flow of information about the project. In

addition, the formal communication rules—like the order of speaking in a meeting—the decision-making procedure and the allocation of the responsibility for the decisions taken are factors that take place at the micro level of an organisation. Nevertheless, they can be influenced by decisions and settings at the macro level of the organisation.

We distinguish four institutional factors at the macro level:

1) Hierarchical structure of the organisation,
2) Wage policy,
3) Human resource policy and
4) Ownership.

The first point captures the intuition that the stronger the hierarchical structures in an organisation, the higher the costs not to herd. If there are only a few workers or managers on the same hierarchy level, the allocation of power and responsibility is so clearly defined that there are few incentives to be critical and speak up. If the organisation is dedicated to a more cooperative or participatory style of management, then there are fewer levels of hierarchy, and more employees are on the same level. This provides a platform for discussion among equals and thus may help to reduce the non-herding costs.

The second element deals with the problem of how to remunerate the employees in order to reduce the costs of non-herding. The literature of reputation-based herding suggests that if a large part of the salary is performance-related and performance is measured relative to other employees or another benchmark, behaviour that deviates from the benchmark is very costly.
An organisation’s human resource policy reduces the non-herding costs by selecting the right employees. If the organisation is able to select open-minded people who are unafraid to stand up for their opinions, the cost of non-herding is reduced, as one can assume that these people perceive lower costs of non-herding due to their psyche.

Finally, we propose that personally liable partners in banks are more interested in carefully aggregating information, therefore reducing the costs of non-herding in order to reveal as many critical issues as possible. In contrast, we assume that in a stock corporation with a large free-float few employees have the incentive or the power to raise critical issues due to the diffusion of responsibility.

The propositions introduced in this section are now compared to statements made in interviews by practitioners.

VI. Costs of Non-Herding in Practice

To check if our theoretical approach to influence the costs of non-herding is also valuable in practice, we conducted interviews with practitioners of the financial industry. From June to August 2010 during the first wave of our study, we interviewed six practitioners in the greater area of Zurich, Switzerland’s banking capital.\(^2\) To attain a reasonably broad insight into the various types of financial institutions, we interviewed two managers from big Swiss banks, two managers from a mid-sized regional bank, one manager of a small investment boutique who was also a former CEO of one of the larger Swiss private banks, and a CEO of a small fund of hedge funds. In addition, our sample varies with respect to the sector and the position of the person. Two analysts worked in the investment banking sector, two managers in the private banking sector, one person was involved in

\(^2\) A comprehensive analysis of an extended sample of interviews is provided in Cueni and Frey, n 4 above.
the top management of a universal bank, and the remaining manager leads a company in the hedge fund industry. The sample comprises one woman and five men. The sample includes companies ranging in size from 30 to over 60,000 employees. The median number of employees is 5,000 and the mean around 20,000.

An outline was used in all the focused interviews, but the order in which the questions where posed varied depending on the course of conversation.\textsuperscript{29} The shortest interview lasted about an hour, the longest about one and one-half hours. The interviews were analysed by applying scaled and structured content analysis.\textsuperscript{30}

In general, all participants confirmed that there was a problem of repressed voice in the decision-making processes of organisations. They agreed that there were individual costs involved leading to silence and herding behaviour. Explaining the various costs to non-herding employees, all managers stated that they experienced a wide range of costs during their careers starting with delicate psychological pressure to conform and culminating in dismissals. Several respondents offered such remarks as the ‘bears got mobbed’\textsuperscript{31} or ‘everybody knew the critics and sooner or later they were not anymore invited into the important workshops’ with ‘from then on your days are numbered.’ Responses like these reveal additional types of costs such as a deterioration of career opportunities and reduced bonuses due to criticism and conflicts.

All six interviewees mentioned various institutional factors to reduce the non-herding costs when asked broadly how to deal with these costs. To the question about the characteristics of the costs of

\textsuperscript{29} The term was coined by R. K. Merton and P. L. Kendall, ‘The Focused Interview’ (1946) 51 \textit{The American Journal of Sociology} 541-557; the procedure is explained in S. Kvale, \textit{Interviews: An Introduction to Qualitative Research Interviewing} (Thousand Oaks: SAGE, 1996).


\textsuperscript{31} The term ‘bears’ refers to people who forecast an economic downturn, see, for example, \textit{The Economist} (2009).
non-herding, all managers responded that they perceive the costs to be self-enhancing over time; other characteristics were also addressed such as the temporal asymmetry between short-term costs and long-term benefits. An equity analyst explained that sometimes he does not speak up in order not to force others to stay longer in the meeting, ‘just as a matter of kindness,’ although he does not fear any consequences.

The majority of the respondents supported the hypothesis that there is a link between the non-herding costs of individuals in the organisation and herding behaviour of the organisation in the financial market. On the question of why every member of the leading top management level is exposed to the costs of non-herding, the interviewees responded that these managers also have career concerns and therefore must maintain their reputation. Whenever they deviate strongly from their benchmark, they immediately face the costs of non-herding. Subordinates, shareholders, and the media will ask for explanations.

Four of the six interviewees spontaneously brought up several points at the micro level when asked which institutional factors influence the costs of non-herding in meetings. All seven factors mentioned at the micro level were addressed by at least one respondent. Surprisingly, although the answers took many forms, the interviewees stressed the importance of informal communication before or after the meeting (whenever a decision has not yet been made) in order to reduce or avoid the costs of non-herding. Without asking, the CEO of a small hedge fund company explained the company’s rules on how to proceed in investment committee meetings: they try to rule out every imbalance by randomising the order in which the topics are discussed or who starts the discussion. In addition, all of the members of their investment committee have veto power. Interestingly, over the period of four years, a veto was only cast once. The respondent stated that the mere existence of the veto leads them to consider each member’s opinion.
The majority of the respondents were aware of the importance of institutional factors at the micro level. However, in their companies, rules about the procedure of meetings or other decision-making boards are ill-defined (except in the hedge fund firm). The former CEO of a large Swiss bank mentioned that during his time in office every member of the executive board had to sign a declaration that obliged him to dissent from other members whenever he had a different opinion. Although this was not a credible move, the CEO wanted to make clear that dissent is important in order to find the right solutions and to take proper decisions.

Concerning our propositions of institutional factors at the macro level, the respondents exhibited a more heterogeneous picture. The question regarding the hierarchical structure of the organisation and the style of management was affirmed by five of six respondents: the more cooperative or participatory style of management, the lower the costs not to herd. Only two interviewees argued that the size of the company has an influence on the non-herding costs. Interestingly, one of these two respondents worked with a mid-sized universal bank in the investment banking division, whereas the other respondent worked in the private banking division of a large Swiss bank. One respondent claimed, ‘[t]his is not a matter of size, normally even in big banks the daily work environment does not differ between a big bank and an institute of small or medium size.’

On the issue of an organisation’s wage policy, four of six respondents were convinced that a large performance-related part of the salary increased the costs of non-herding. One interviewee explained his view by stating that contributing private information was a public good and the existence of large personal incentives sabotaged the provision of these kinds of goods. One of the two negative respondents noted that only the existence of performance pay kept the employee attentive as he could lose much money when he does not provide all of his private information. Only two managers
reported that they were aware of a human resource strategy to select self-confident people in order to maintain critical thinking in the organisation; one of them even introduced such a policy in his firm.

When asked if ownership structure can influence non-herding costs, an unclear picture was revealed: four of six responses affirmed that it might be better to have a strong and influential main shareholder who has a potential downside risk and thus is mostly interested in aggregating all possible information. A former CEO of one of the larger Swiss private banks argued that it depends heavily on the intention of the main shareholder, saying ‘[a]s long as he is truly interested in the firm, this might help to further critical thinking in the organisation, if not, it might even be counterproductive.’ There is also no clear evidence on the question of whether the existence of a personally liable partner in a firm can influence non-herding costs. Half of the respondents confirm the proposition and half of them denied it.

VII. Conclusion

The outbreak of a financial crisis reveals an oddity: before the crisis sets in, only a few people warn of its imminence. Whenever the crisis strikes, many say that they saw the disaster coming. When asked why they did not warn anyone before the outbreak, they usually say that they feared negative consequences. Anecdotal evidence from the financial industry suggests that co-workers and supervisors mobbed and punished employees who made critical statements about the economic trend. Several employees noted that they faced a wide range of different costs, starting from social pressure to conformity and culminating in dismissals. By hindering agents in financial markets from speaking up and revealing their true opinion about future economic trends, non-herding costs waste resources, resulting in distorted allocations of assets. In addition, the individual costs of non-herding can lead to a herding behaviour of organisations in financial markets.
The present paper sheds light on the costs of not going with the financial herd. Two important characteristics of the non-herding costs are identified: they are self-enhancing and hold an asymmetrical relationship to possible benefits—the costs are imminent and foreseeable whereas possible benefits lie in the future and are uncertain. We propose various institutional factors in organisations aimed at reducing the costs of non-herding. In order to analyse if the problem of non-herding costs exists in practice and to challenge our theoretically derived propositions, we conducted several interviews with practitioners working in the financial industry. The respondents cover a wide range of the various types of financial companies such as big universal banks, mid-sized private banks, or small hedge fund firms.

All the practitioners affirmed that the existence of the costs of non-herding in today’s financial companies leads to problems with aggregating information and proper decision-making. They support the use of institutional factors to reduce non-herding costs. The managers and financial analysts identified several propositions at the micro level of the decision-making process and at the macro level of the overall organisational setting, which are already deployed in practice or must be considered in the future.