



Prof. Dr. Roman Beck, Prof. Dr. Wolfgang König, Dr. Immanuel Pahlke,
Dr. Martin Wolf

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A cooperation of the Center for Financial Studies and Goethe University Frankfurt

House of Finance | Goethe University
Grüneburgplatz 1 | D-60323 Frankfurt am Main

Tel. +49 (0)69 798 33684 | Fax +49 (0)69 798 33910
policycenter@safe.uni-frankfurt.de | www.safe-frankfurt.de

Mindfully Resisting the Bandwagon – IT Implementation and Its Consequences in the Financial Crisis¹

Roman Beck, Wolfgang König, Immanuel Pahlke, Martin Wolf

Introduction

Although the "financial meltdown" between 2007 and 2009 was initially caused by a vicious circle arising from herding behaviour in the subprime market for credit default swaps, a "mindless" IT implementation of participating financial services providers played a major role in the facilitation of the underlying bandwagon (Beck 2010). Economic scenarios of high dynamism and volatility demand a rapid and mindful technological adaptation of exposed financial services providers. Otherwise economic crises that are characterized by high uncertainty are likely to lead to inconsiderate mimicry and bandwagon phenomena in business models (Abrahamson and Rosenkopf, 1990).

"Mindfulness" is defined as a firm's "rich awareness of discriminatory detail and a capacity for action" (Weick et al., 1999, p. 37). In essence, mindfulness serves to optimize decision-making processes by explicating and proactively integrating the human tendency to irrationality. The required cognitive capabilities of mindfulness encompass reasoning to withstand the unconscious behavior of humans that often substantially contradicts rational reasoning. Mindful technological adaptation is especially crucial for financial services providers to retain a competitive position as well as to comply with regulatory requirements that arise from the BASEL II and the upcoming BASEL III accord.

Due to an increasing extent of IT-based digitization and intertwining between financial services providers, bandwagons are likely to spill over to associated financial institutions and markets, thus elevating the likelihood of both systemic and operational risks. Eventually, this negatively affects the realization of (IT-based) business value (Fiol and O'Connor, 2003). Moreover, bandwagons can even lead to critical losses resulting in a deterioration of equity that serves as underlying for the lending process, which is mandatory for financing the real economy. This is even more critical in a

¹ For an extended version of the underlying scientific research article please refer to Wolf, M., Beck, R., and Pahlke, I. (2012): Mindfully Resisting the Bandwagon – Reconceptualising IT Innovation Assimilation in Highly Turbulent Environments, *Journal of Information Technology* (27:3), pp. 213-235.

highly dynamic industry, such as the financial services industry, where transactions usually only take milliseconds. Furthermore, the growing percentage of trading originating from automated algorithmic trading applications is likely to amplify the prevailing market movement which is particularly critical in a downturn phase of a market. For instance, in a downturn phase, uncertainty resulting from incomplete information on future market developments and current risk exposures most likely leads to a heuristic decision-making behavior of market participants that inconsiderately follow the herd instead of adhering to guidelines of rational decision-making under uncertainty.

In these scenarios, financial services providers tend to justify their decisions with the consensus of the “herd” rather than aligning their IT and business strategy to their unique needs and the environmental contingencies. As an outgrowth of the late behavioral finance research stream and current developments in psychological research, our study analyzes if the cognitive state of mindfulness, with regard to reflectivity and meta-knowledge, could be one potential “vaccine” to mitigate the depicted problems. Here, mindfulness reflects the awareness of inherent tendency of fallacy and irrationality of humans and thus can be one effective means to better resist negative implications of bandwagon phenomena with regard to the generation of (IT-induced) business value.

Our research aims to build a bridge between the neo-classical assumptions of perfect rationality in decision-making and current developments in neurosciences and psychology that account for cognitive biases and limitations. Particularly, extant research indicates that humans tend to resolve arising cognitive dissonance by reducing informational complexity and concurrently applying “simplification” heuristics, such as mimetic behavior, in critical decision-making situations. Recent research in the realm of IT implementation in the finance sector mainly focused on the influence of institutional pressures (as a first extension to the prevailing economic-rationalistic paradigm of decision-making) on the organizational assimilation of different IT innovations (e.g., Liang et al., 2007). Little empirical research has, however, been conducted on analyzing the interplay of mimetic pressure resulting from environmental turbulence (Fiol and O’Connor, 2003), and a cognitive state of mindfulness (as a control for irrationality in decision-making).

Organizational mindfulness and an organizational culture of reflectivity and substantial strategizing can be regarded as a means for organizations to overcome uncertain situations of high volatility which otherwise potentially lead to disastrous negative consequences. In the context of IT implementation, organizational mindfulness is assumed to help identify, explicate, and resist pure mimetic IT assimilation behavior where it might harm business operations. Our research assesses the in-

terplay of mimicry as one instance of institutional pressures (and the presence of irrationality) driving the IT innovation assimilation process and organizational mindfulness (as meta-knowledge of irrationality and potential vaccine) against the background of a highly turbulent environment, as illustrated by the last financial crisis.

Interplay Between Institutional Pressure and Mindfulness in Highly Turbulent Environments

The financial crisis from 2007 to 2009 reflected an extraordinary period of time with regard to the extent of market volatility. Rapid changes in the market and in technological demand, subsumed by the concept of environmental turbulence, lead to an increase in uncertainty. Rapidly changing markets demanded financial services providers to assimilate IT innovations that were suitable to deal with such rapid changes. It can be assumed, that uncertainty about future market developments, market conditions, and current risk exposure might seriously influence the generation and realization of IT-enabled business value. Our first guiding research objective was therefore, to explore, *how environmental turbulence affects (i.e. amplifies or mitigates) the influence of mimetic pressure and the realization of business value stemming from IT implementation? (see H2 and H5)*

In a market crisis, some financial services providers overcome the challenges of the crisis in a better way than their competitors or are even able to potentially exploit them to a certain degree. This significant difference in realized business results can be partly attributed to a more developed cognitive state of reflectivity (represented by the so-called mindfulness construct). This state enables the alignment of IT implementation projects with environmental contingencies.

The “rather mindful” financial services providers identify changes in the market earlier and are therefore able to derive highly contextualized IT strategies that account for market and organizational specifics. More than that, they are able to determine if an arising bandwagon phenomenon might be rather beneficial or harming to their firm objectives. Consequently, the second guiding research objective was to *assess differences between rather mindful and less mindful firms in dealing with mimetic pressure in their IT implementation projects, against the background of environmental turbulence*. Based on 302 complete responses from the Anglo-Saxon financial services industry, gathered during the financial crisis, we empirically analyzed the relationships aforementioned and depicted in Figure 1.

As one specific instance of a complex and thus particularly demanding IT innovation, our study analyzes the implementation of Grid-based architectures. In essence, Grid-based architectures serve

to meet the volatile IT resource and IT service demand of organizations in highly turbulent environments. Following the seminal definition by Foster (2002), a Grid is a system that coordinates IT resources that are not subject to centralized control, uses standards, open protocols and interfaces, and delivers non-trivial qualities of service. Accordingly, Grid-based architectures enable heterogeneous and geographically dispersed IT resources to be virtually shared and accessed across an industry, organization or workgroup. Increasingly, large-scale enterprise applications are no longer run on dedicated, centralized computing facilities. Instead, they operate on heterogeneous Grid resources that may span multiple administrative units, across different locations within an organization. Recently, the core concepts of Grid computing transitioned to the domain of Cloud computing (Weinhardt et al., 2009) which is assumed to facilitate a paradigmatic change in the dynamic provisioning of IT resources.

Institutional Pressures

In general, one can distinguish mimetic, coercive, and normative pressure as the three different types of institutional pressures (DiMaggio and Powell, 1983). A highly turbulent environment, such as prevails in the financial services sector, makes the industry susceptible to mimetic behavior (Fiol and O'Connor, 2003). Thus, even if the consequences and benefits of an IT innovation are poorly understood, *mimetic pressure* fosters its implementation, if adopting firms are perceived as successful by their environment.

Coercive pressure arises from societal expectations, such as when firms are expected to conform with policies and regulation from the government (i.e. BASEL II, BASEL III, and MiFID), customers, or the competitive environment. Finally, *normative pressure* arises from the ongoing process of professionalization, which is further enforced by the close collaboration with suppliers, business partners, and governmental promotion. Since the focus of our study is on the interplay between mimetic pressure and organizational mindfulness with regard to IT-based business value generation, we conceptualize normative and coercive pressure as controls to account for other confounding institutional influences.

Empirical Results and Discussion

The empirical results (see Figure 1) emphasize that in particular mimetic pressure (so-called herding) drives the top management to support IT innovation assimilation initiatives (see H1, H3). Successful competitors, initiating new bandwagons, are likely to seduce other firms (i.e., the top management) in the same market to join the bandwagon, without necessarily considering their firm-

specific circumstances (see H1, H3). In addition, the empirical results indicate that the influence of mimetic pressure on top management is amplified by a highly turbulent environment (see H2). Thereby, environmental turbulence eventually leads to cognitive dissonance in decision-making and results in (unreflected) mimicry.

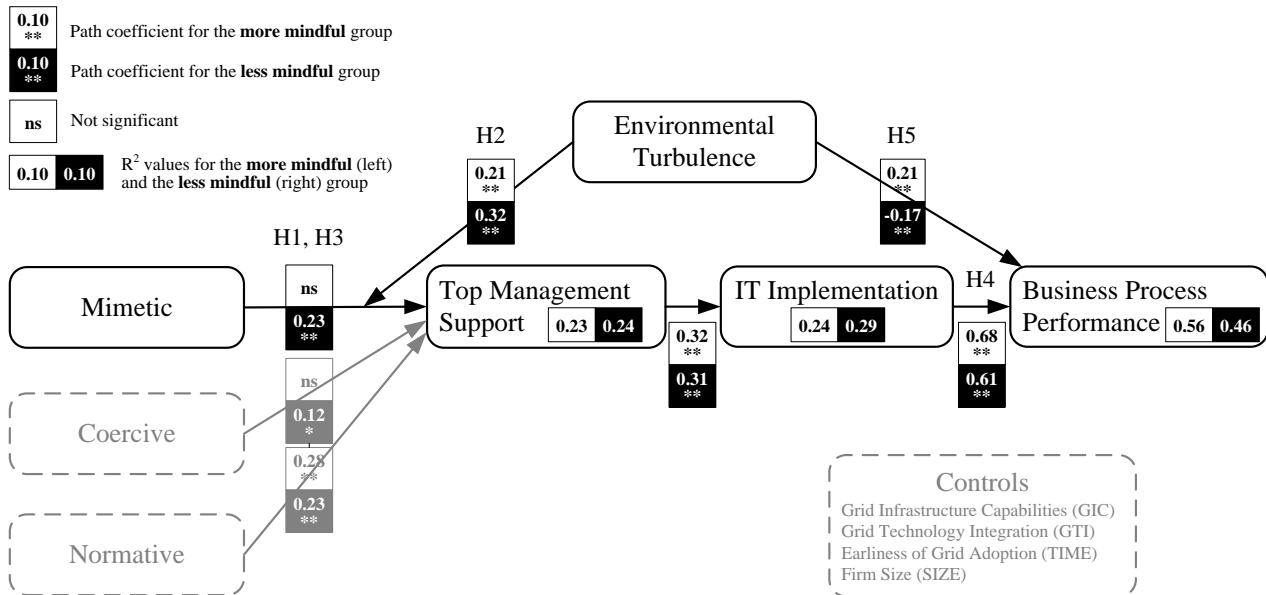


Figure 1: Results of the group comparison (low vs. high organizational mindfulness)

In essence, the results of the study indicate that the cognitive state of organizational mindfulness lowers the negative influence of extraordinary market volatility on top management (see H2). In rather mindful firms, the top management is less likely to be negatively affected by mimetic pressure caused by environmental turbulence (see H3). This can be attributed to a more developed managerial style of “reflection in action” that prevails in mindful organizations. By “reflection in action” is meant that managers exhibit the capability to actively learn and realign from prior and current experiences. “Transformative” change, as initiated by bandwagons and crises, benefits and further develops this capability.

We find first evidence that rather mindful (i.e., more reflective and nuanced) financial services providers realize more business value from IT implementation at the business process level than less mindful firms (see H4). Finally, the results indicate that more mindful firms are likely to exploit environments of high turbulence to a certain degree (see H5).

Managerial Implications and Conclusion

Although the "financial meltdown" between 2007 and 2009 can be substantially attributed to herding behaviour in the subprime market for credit default swaps, a "mindless" IT implementation of participating financial services providers played a major role in the facilitation of the underlying bandwagon. The problem was a discrepancy between two core complementary capabilities: (1.) the (economic-rationalistic) ability to execute financial transactions (to comply with the herd) in milliseconds and (2.) the required contextualized mindfulness capabilities to comprehend the implications of the transactions being executed and the associated IT innovation decisions that enabled these transactions.

Not all top managers were able to "mindfully" comprehend the strategic implications of IT innovations such as Grid computing, that allow millisecond transactions and generate the need to match these transactions with real-time counter-party credit risk calculations. The results of our study indicate that the development of a cognitive state of organizational mindfulness is one effective means to identify and mitigate IT implementation approaches that eventually serve as "fire accelerants" (see H2, H3).

Mindfulness in IT innovation implementation might not even be restricted to the originating firm but may potentially even immunize other less mindful firms as the significant positive influence of normative pressure on top management support indicates. This is valuable ground for future research. As an additional key scientific challenge for the future, an estimation of the required ratio between mindful financial services providers and less mindful firms that is necessary to ensure "herd immunity" against crises, should be determined.

In the end, organizational mindfulness could be propagated by the same means as the financial crisis itself: mimetic pressure. A majority of mindful firms can force their less mindful competitors to imitate their successful behaviour. Furthermore, normative pressure, such as expressed professionalization tendencies in the value chain, is likely to even enforce this positive spill over effect on other financial services providers.

From a managerial perspective, financial services providers can increase their immunization with regard to dangerous herding behavior in the following manner: An organizational culture (as documented in the mission statement) should encompass and especially value reflectivity and sustainability in decision-making processes. For instance, the developed mindfulness measurement

scales (as proxies for the awareness of irrational contingencies in decision-making situations) could complement prevailing risk management approaches that focus on primary (quantifiable) process data (reflecting the assumption of perfect rationality in decision-making). In detail, an assessment and quantification of mindfulness could be part of a holistic balanced scorecard approach that integrates the suggested measures for mindfulness as part of the learning and growth dimension. To develop and sustain this mindfulness, some human resource consultancies already offer (psychologically-grounded) trainings to sensitize for the consequences of cognitive biases and limitations. Mindfulness should be one critical focus of HR and managerial career development.

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