

Science matters: how business and management studies can shape the understanding of resilience as a capability and support the management of crises

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Abstract: Resilience in times of crisis is in many respects a core topic of business and management research. Numerous papers exist that address the questions how organizations can prepare for and react to different kinds of disruptions. The questions that need to be answered now are (1) how can these achievements be made visible and (2) how can they make a direct impact on crisis resilience – as it is needed right now and will further be needed in the future. In this essay, we argue that the key to answering these questions is to strengthen the scientific core of the discipline: the ability to generate, challenge, revise and expand knowledge and the exchange between scholars in academic discourse. Furthermore, we advocate a comprehensive model for crisis resilience that combines insights from different sub-domains of our discipline. We show how such a model can look like on the example of a Strategic Management Framework for Engineering of Organizational Robustness and Resilience, which brings together extant work on dynamic capabilities, service engineering and risk management.

Key words: Crisis resilience, Capabilities, Strategic Management Framework

Introduction: Several natural and man-made disasters have shown the fragility of today's business, economy and human society as a whole. Business and management scholars are well aware of this fact. For a long time, they have studied phenomena such as the bullwhip effect, where a minor deviation at the one end of the supply chain cascades to a major disruption at the other end. While information technology has helped to get this effect and similar others under control, it has at the same time tightened the coupling between business operations, which means that a pandemic must eventually bring almost the whole economy down, including parts that are themselves not directly disrupted, but suffer from disruptions elsewhere.

A reactive approach to disruptions is both: slow and expensive. Additionally, the less adequate the (re)actions during a crisis, the more likely that the crisis will get out of control. A far better option within the field of business and management is to design and develop

crisis resilience capabilities – to transform bundles of resources pro-actively into organizational capabilities and to foster the emergence of responsiveness capabilities with cognitive capabilities and dynamic capabilities for system adaptation and change, system innovation and system evolution.

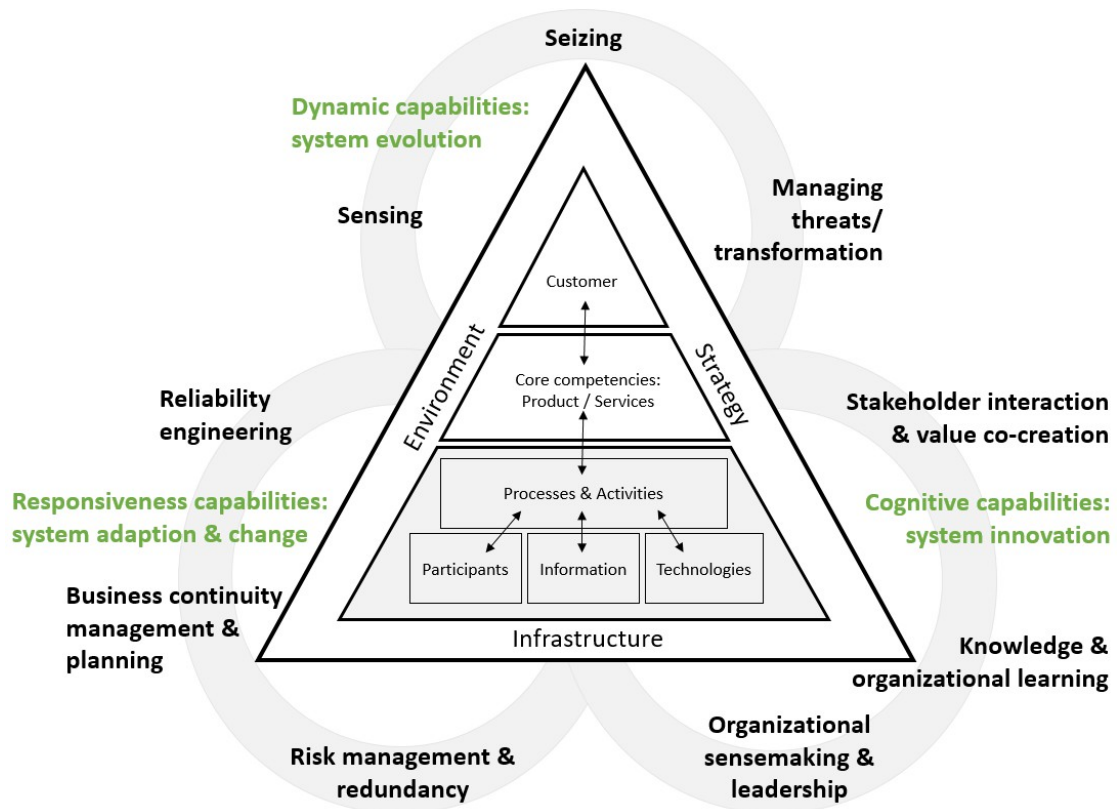
We have observed in our research about organizational robustness and resilience that (crisis) resilience is discussed in literature from multiple, heterogeneous academic perspectives. Various definitions exist, but they often lack conceptual elaboration. In most areas of industrial practice, the term (crisis) resilience does not seem to have entered the managers' and other organizational decision makers' dictionaries – although organizations experience continuous disruptions and organizational crisis. As experiences with the current pandemic confirm, industrial practice is often focused on a pragmatic scope of action that creates further threats and discontinuities, while a systematic treatment of risks and damages is neglected. What we are experiencing right now all over the world, however, can be an opportunity to show that business and management studies as a scientific discipline has more to offer. The required conceptual background to handle such crisis is available, as well as empirical evidence from practice. What still needs to be done is to make this knowledge actionable and venture the step from the safe distance of academia to actual interventions in practice.

VHB's call for inspiration: In reference to VHB's call for inspiration, the essay at hand argues that there is a lot of relevant knowledge about crisis resilience in different sub-domains of our discipline. Furthermore, research methodologies are available to test the applicability of this knowledge in practice and to learn how it can further be improved. Learning, of course, can only proceed where one is willing to admit that there is something to learn. In times of crisis, this might actually be easier than usual, because it is clear that advertising one's own competence is not enough. Right now, we can present ourselves as true scientist who take the idea of continuous development of one's knowledge seriously. We can do more than narrate stories and consult practitioners. We can use our expertise to show how a crisis is turned into an opportunity to understand more and act better. Furthermore, we can find out ourselves how valuable our knowledge is and how much it is needed, which is all too often forgotten in the triviality of daily routines.

The following work, based on Maurer (2020), illustrates what we mean by these statements. We draw on extant lines of research in business and management studies that have already provided lots of important insights and produced mature, empirically supported theory. We show how these lines of research can be put together in order to respond to the current pandemic. We combine work on dynamic capabilities, service systems and risk management to develop a comprehensive approach to the management of a crisis, as we are experiencing it with the spread of the Covid-19 virus: a disaster for business induced from the outside.

Using best practices from our discipline, we apply the modeling logic technique, to conceptualize new knowledge in what we call the "Strategic Management Framework for Engineering of Organization Robustness and Resilience". As depicted in following figure, this framework builds upon four layers: resources, responsiveness capabilities, cognitive capabilities and dynamic capabilities. The modeling technique – the adaption and merger of

theoretically predicted concept and empirically observed concepts – allows us to identify responsiveness capabilities and cognitive capabilities as addition to and in combination with an operative approach to systems management and a strategic approach to organizational development to engineer, design, control, maintain and continuously improve crisis resilience.



The Strategic Management Framework for Engineering of Organizational Robustness and Resilience makes use of theoretically predicted concepts – the Work System Framework (at resource management level) and Dynamic Capabilities (at strategic management level) – and empirically observed concepts: Responsiveness Capabilities (at operational management level) and Cognitive Capabilities (at tactical management level). The overall designation of resource management is “organizational capabilities: VRIN resource engineering” and aims to transform the organizational resources into Valuable, Rare, Inimitable and Non-Substitutable resources. The operational management level is about “responsiveness capabilities: system adaption & change” and consists of the concepts of “risk & redundancy management”, “business continuity management & planning” and “reliability engineering”. The tactical management level is about “cognitive capabilities: system innovation” and consists of the concepts of “stakeholder interaction & value co-creation”, “knowledge & organizational learning” and “organizational sensemaking & leadership”. The strategic management level is about “dynamic capabilities: system evolution” and consists of “sensing”, “seizing” and “managing threats/transformation”.

The importance of academic discourses: Often enough, scientific work is targeted at a publication in a good journal and considered finished as soon as this target is achieved. This way, however, the opportunities of learning from one's own work are reduced to a minimum. Business and management studies as a scientific discipline shows its value not by any single publication, but by the ongoing academic discourse. Academic discourse includes a variety of important processes of knowledge dissemination, exploitation and exploration. It shapes the research interests of the scientific community and determines the (explored, analyzed, used, etc.) data, information and knowledge as well as the achieved research results. Academic discourse provides feedback from heterogeneous scholars and enables us to reflect: it facilitates individual and collaborative learning and growth. In doing so, academic discourse takes advantage of heterogeneous perspectives and questions as feedback for further development of theory, methodology and applications. Academic discourse – either written or spoken in direct interaction or using printed, digital, and/or hybrid media – inspires creative processes, changes of perspective and constant improvement. The above-mentioned framework is meant to bring together different researchers within our field in a common dialogue on the crisis. This way, we hope to leverage the full potential of the discipline and inspire solution designs behind specific research interests, lecture topics and research grants.

Academic discourse in the wider field of business and economic stands out from other disciplines in the fact that the logic of the discourse mirrors an important topic within the discourse: innovation, which we approach here based on Schumpeter's theory. The dynamic entrepreneur relies on constructive destruction: novelty is achieved by questioning what exists and the continuing search for improvements. From its beginning, Schumpeter's approach to innovation was never just seen as a subject matter in the discourse, but rather as a principle that can inform the discipline as a whole. It draws on the historic way of thinking (Schmoller) and the subjectivism of the "Austrian School of Thought" (e.g. Menger). It marks a profound caesura in the field of business and management studies. Schumpeter's theorizing and conceptualization from both discourses enabled the shift from the "homo oeconomicus", a statistic and mechanistic perspective on entrepreneurs, to the "homo agens" (von Ludassy), a self-determined and dynamic entrepreneur. Schumpeter states that external and internal factors initiate profound change and innovation. He issues a call for a dynamic entrepreneur who introduces new combinations of means and methods of production, facilitates the development of new markets, the conquest of new sources of raw materials, and the breaking of monopolies. Schumpeter's dynamic entrepreneur still influences scholars globally and the further development of innovation theory within the field of business and management studies.

As depicted in the strategic management framework, we consider crisis resilience as an innovation capability at resource level, operational level, tactic level and strategic level, of a system. It builds upon the dynamic entrepreneur and the concept of constructive destruction. It includes resource transformation and the development of organizational capabilities (at resource level), system adaptation and change (at operational level), system innovation (at tactic level) and system evolution (at strategic level). Additionally, the framework captures the resource-based view for organizational innovation and, according to the fact that

resources are never the only input parameters to organizations, the capability-based view. It extends current theory in the academic field of business and management studies and introduces an applicable concept towards increased crisis resilience.

Crisis resilience, in this sense, is not only a side effect in systems: it is an essential property of a system and is formed by the design, development and engineering of organizational resources and “ordinary” capabilities, responsiveness capabilities, cognitive capabilities and dynamic capabilities. In contrast to common definitions, this approach describes an continuous and pro-active process of reflection and questioning of existing routines, processes and tradition. It is a never ending endeavour and starts before the systems slides into a hazardous events and/or crisis situation – a process of dynamic and constructive destruction.

Conclusion: Scholars in business and management studies and the VHB as their institutional representation are critical enablers for theorizing, conceptualizing, questioning and improving knowledge in the academic discourse about crisis resilience. They play a major role in dissemination and exploitation of theory and thus the further development of the academic field of business and management studies. Their contributions are invaluable and they can gain further importance, if we take full advantage of our qualification as scientists and the full knowledge in our discipline. With our ability to generate, question, expand and improve our understanding of business and society, we can play a decisive role in crises such as the current pandemic. To keep forces together in scientific reasoning about the pandemic, we suggest the Strategic Management Framework for Engineering of Organizational Robustness and Resilience. With this framework we can inform industrial practice about the development of capabilities but also inspire and orchestrate the ongoing academic discourse about crisis resilience.

Within the essay at hand, we take a step towards a comprehensive approach to crisis resilience business and management studies. We consider crisis resilience as a property of a system that consists on distinct capabilities at the resource, operational, tactical and strategic management level. It is synergistic to the concept of organizational robustness and is about the design, development and engineering of organizational capabilities, responsiveness capabilities, cognitive capabilities and dynamic capabilities. From our perspective, crisis resilience builds upon Schumpeter’s dynamic and self-determined entrepreneur: an entrepreneur that considers external and internal factors as well as renew, adapt, change and innovate in crisis situation.

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Further Reading:

Maurer, F. (2020). *Towards a Strategic Management Framework for Engineering of Organizational Robustness and Resilience* [Friedrich-Alexander University Erlangen-Nuremberg].
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