



# Project Management at the Edge of Chaos

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Alfred Oswald • Jens Köhler • Roland Schmitt

# Project Management at the Edge of Chaos

Social Techniques for Complex Systems

 Springer

Alfred Oswald  
IFST – Institute for Social Technologies GmbH  
Stolberg, Germany

Jens Köhler  
BASF SE  
Ludwigshafen, Germany

Roland Schmitt  
Weinheim, Germany

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## Foreword by Heinz Schelle

Some time ago, when Alfred Oswald asked me to write a foreword for this book, I agreed without hesitation. I was very familiar with the book “The Collective Mind Method. Project Success through Soft Skills” (Note: English translation of the German book title), which he had published with Jens Köhler in 2009. I had discussed it at length in the journal “projektMANAGEMENT aktuell” (issue 5-2011) and still consider it one of the most important German project management books of the last few years with its central message being that people should be used in projects according to their strengths. To accomplish this task, a comprehensive set of instruments is offered.

The current aim of the authors, now including Roland Schmitt, is also to provide appropriate social techniques. This time it is the authors’ intention, to master the complexity of projects embedded in social interactions. For a long time in our discipline, it was almost exclusively about getting a grip on the complexity of developing technical systems. The most impressive example is probably the contributions that NASA and the United States Department of Defense have provided for project management development. In this context we can consider network planning, and in the context of the planning and development of programs, such as the Apollo program, sophisticated configuration management, which in some cases is even considered an engineering discipline. “New Taylorism” as a term for this import from the United States was by no means entirely unjustified. In any case, man as acting subject in projects, is not present in these concepts.

This very biased, even rightly called, technocratic approach, has long dominated our view of projects, perhaps for too long. Even today, it still dominates in many textbooks. It was relatively late that the perception expanded to projects as social systems. One of the protagonist in German-speaking countries was the Austrian Consulting Group Neuwaldegg. In the meantime, our knowledge of social systems has expanded considerably. Organizational psychology, behavioral economics, Synergetics and neuroscience can be mentioned here, as a scientific disciplines that have greatly contributed to this new perspective.

The undertaking of the three authors – to provide the tools for “optimum tuning of social interactions” and the management of complex systems, based on a viable theory and model with their motto: “nothing is more practical than a good theory”, thus has

considerable potential. The authors succeed in making complex material easily understandable, interspersing with a variety of stories and extensive application examples.

The authors regretfully note that the subjects of complexity and self-organization in social systems are not covered at school or university or during vocational training. And most certainly not in politics. Current discussions on how to deal with the refugee problem clearly demonstrates this. Thinking in simple linear cause-effect relationships predominates. Every day, we can see that measures decided and implemented by governments ad hoc in blind activism, do not even consider even slightly predictable and relatively short-term side effects.

It is therefore imperative that the “method gap in dealing with complexity” is closed. This is the aim of the authors with this work. I congratulate the team and wish the book and the ideas contained within it, a wide distribution.

Univ.-Prof. Dr. Heinz Schelle

Honorary Chairman of GPM German Association for Project Management e.V.

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## Authors' Preface to the English Edition

This book is a translation of the German edition of our book “Projektmanagement am Rande des Chaos”, published by Springer-Vieweg in 2016 and 2017, respectively. Despite the vast array of existing management literature, we nevertheless see a gap in the area of management dealing with theories and models in complex contexts, e.g. as required for complex projects. We have therefore taken a completely new approach and transferred the fundamental principles of the universal phenomenon of self-organization as described in the theory of Synergetics, from the natural sciences to leadership of organizations and projects. We believe that this approach will provide deep, new insights to the reader, with only a few parameters, the so called setting, control and order parameters, very well suited to determine the coarse-grained behavior of social systems such as organizations and projects. This will surely help move the focus away from usual nitty-gritty details, to a few, but important quantities, which will bring the reader directly to a solution for everyday problems at work in industrial and public organizations. Concentrating on micro-tier details and applying straight-forward linear concepts (as with Taylorism) is no longer sufficient to solve complex real world problems. Linearizing methods are simply outdated for the management of complex environments! We are sure that you, the reader, perceive this every day!

Individuals and their interactions are the center of our attention. We make transparent their behavior, motives, needs, temperament and culture, including their mutual dependencies, and we state how an extremely practical framework can be built upon an integral network of theories and models. “Nothing is more practical than a good theory” is what we genuinely believe! We hope that the reader can apply the material we have presented immediately in their field of business. If any reader feels that our management book is more abstract than an English management textbook, we encourage them to say out loud: “Nothing is more practical than a good theory” and then just apply it – to see an immediate benefit.

The book also contains entertaining dialogues and stories to elucidate our message. We have adapted some of the personal names and cultural specifics in the German edition to suit the English-speaking world.

With regard to the cited literature, we have used both English and German sources. We apologize if some of the sources are only available in German.

We truly believe that this book will enrich the English-speaking market of management literature and hope the reader enjoys gaining insight and becoming familiar with the material presented in the book.

Stolberg, Mutterstadt and Weinheim an der Bergstraße  
November 2017

Alfred Oswald  
Jens Köhler  
Roland Schmitt

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## Authors' Preface to the German Edition

Not another book on complexity and this time with a focus on project management! And to top it all, it deals extensively with models and theories! However, it is a book that is necessary and even imperative: In the current and future project world, we are dealing with interconnected, feedback systems, meaning we have arrived directly in the realm of complexity: It creates self-organization and thus completely new structures, intended or unintended, stable or chaotic. Complexity is not a phenomenon of our time, but is part of nature and furthermore, the basis of any form of life.

Unfortunately, the topics of complexity and self-organization in project management are far from having been covered widely, whether at school, vocational training or university. However, practice requires that we deal with complexity now: Think for example, of a composite of interconnected companies or a multi-component, networked IT system: Changes occurring in one place, suddenly result in unexpected changes elsewhere. A linear cause-effect analysis is no longer valid. Now, to a large extent, value creation in industry, occurs in projects. High values can be created, as well as rapidly destroyed. This book will contribute to closing the method gap for dealing with complexity, and further contribute to minimizing the value-destroying component in the everyday life of projects and help to lead the value-creating component to new, outstanding project solutions.

Complexity lies not only in the technologies used, but also in social interactions. Regulating and controlling these interactions by means of appropriate social techniques is the subject of this book and demands an engagement with theories and models. How do we wish to impart this information? One of the key messages of this book is: There is nothing more practical than a good theory.

Let us directly adopt this sentence and use a simple theory, the metaphor of the “iceberg”, as an elucidation of the very basis of the book: An 1/8 of an iceberg is visible above the water, but 7/8 is invisible below the water surface. Although this 7/8 is indeed invisible, it is by no means ineffective, with potentially fatal consequences for those at sea. When this metaphor is applied to the social system “project”, “traditional” project management methods and processes, which are above the “iceberg”, represent smaller, visible events – but the larger and more dominant part remains below the “waterline”, and this represents social factors.



The true purpose of this book is to make projects successful by the optimum adjustment of social interactions in a work world, which is increasingly dominated by knowledge work. This can be achieved by a framework of networked theories and models based on the latest scientific findings and adapted for project practice. For this purpose, among others, we use the latest research results in neuroscience and Synergetics, which are both topics of complexity research.

After a general introduction in Chap. 1, in Chap. 2 we address the relationship between social techniques and complexity. Fundamental definitions, such as “What is complexity?”, will be given. In Chap. 3, we discuss the foundations for complexity regulation options. With the fundamentals and possibilities of complexity regulation in Chap. 4, options for leadership in complex social systems are outlined, derived from models and based on concrete examples. With the help of the framework developed in the previous chapters, in Chap. 5, we compare known management systems and check their basic assumptions. Finally, Chap. 6 draws a conclusion and an outlook: This may encourage you to use the contents of the book and thereby sharpen your skills in dealing with complexity.

No less important than the main text in Chaps. 1 to 6, are the annexes: To achieve stringency and better follow the guiding thread for understanding necessary descriptions of important models and theories. Depending on personal knowledge background, it may also be useful to turn to look at the annexes first.

Examples in the book should also not be forgotten: For better understanding and to support the transfer of knowledge into practice, the following examples have been included:

In Chaps. 2 and 3, among other examples, you will be accompanied by Tobias Ehrlich and Heiner Priesberg, both employees of the fictional company MedicalFit, who explain certain content in depth, based on partly exaggerated dialogues.

In the key Chap. 4 “Leadership in Complex Social Systems” these dialogues flow into more extensive, accompanying application examples.

In Chap. 5 “Consequences for Management Systems”, three detailed, practice-relevant examples of fictitious companies are used for deepening knowledge.

For further illustration purposes, in several passages, various working examples taken from workshops have been incorporated into the text.

For better traceability, the text is structured in such a way that many cross-references and content clues are included. In addition, we have deliberately incorporated redundant information, so that content can be branded in the memory more easily.

Chapters 1 to 4 are preceded by quotations from the works of William Shakespeare and the crime author Fred Vargas. These aim of these quotes is to set the scene for the following text and invite associative play of thoughts.

We hope with the book and the associated different ways of approaching complexity, to provide a tool in your hands, which increases your knowledge and practice, based on your experience so far and helps you brace yourself for future situations in a complex environment.

We hope that this book will also contribute to diffusing complexity and self-organization on a wider scale.

Stolberg, Mutterstadt and Weinheim an der Bergstraße

Alfred Oswald  
Jens Köhler  
Roland Schmitt

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A book such as this is always preceded by continuous and intensive professional discourse in a stimulating practice environment. Therefore, we would firstly like to thank Prof. Dr. Heinz Schelle, a doyen of project management in the German-speaking community, for his continued interest in our work, and in particular for the foreword to this book. We would like to thank him and the GPM e.V. (German Association for Project Management) for the professional cooperation and enabling our ideas and concepts to be published.

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And last but not least, we would like to thank our families. For several years, they have been the stimulating force and support, to enable us to be able to actively push forward our objective, the development of project management. The insights we have gained are also relevant and interesting for the private, as well as the business environment.

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## About the authors

**Alfred Oswald** IFST – Institute for Social Technologies GmbH, Stolberg, Deutschland earned his doctorate in Theoretical Physics at the RWTH Aachen University. He is Managing Director of the IFST-Institute for Social Technologies GmbH consulting institute, responsible for project management, transformation and innovation management. He is head of the special interest group for Agile Management of the GPM (German Association for Project Management e.V.). His field of work is the efficiency and effectiveness of organizations through innovative social technologies. He has many years of experience in the management of innovative and complex projects, as well as in the transformation of project-oriented organizations into high-performance organizations.

**Jens Köhler** BASF SE, Ludwigshafen, Deutschland received his Diploma in Physics from Bonn University and already began tackling the subject of complexity in his doctorate. He focuses on the digitalization in research and development. His specialty is the regulation of social complexity to lever the efficiency and effectiveness of project teams, being inevitable for successfully forming the digital transformation.

**Roland Schmitt** Weinheim (an der Bergstraße), Deutschland first gained experience in managing business and software development processes after his studies in Electrical Engineering. For more than ten years he has managed IT projects in the logistic and transport sector at DB Systel GmbH in Frankfurt am Main. His postgraduate management studies at the University of Portsmouth in the UK focused his attention on the psycho-social aspects of cooperation between people. Since then, his research interest has been the transfer of theoretical findings of self-organization and neuroleadership into professional management practice.