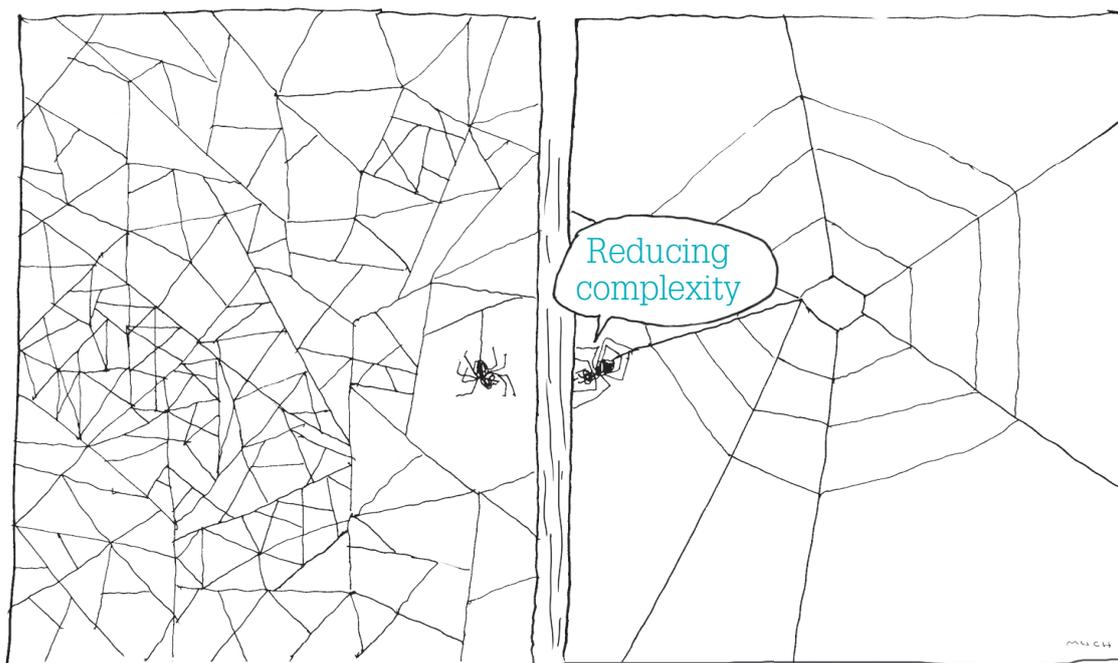# It's Complex

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A new paradigm for
## dealing with complexity

In the first period of the 21st century, we are facing a complex, chaotic and confusing environment for organizations. Market and non-market conditions are becoming increasingly unpredictable. A volatile and ever-changing economic landscape, a complex brew of rapidly advancing technologies and ecological challenges are creating uncharted territory for more and more organizations. **by István Kosztolányi and Kurt Mayer**

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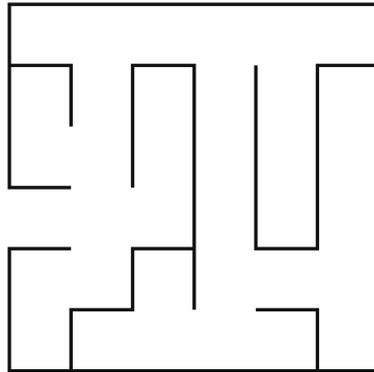
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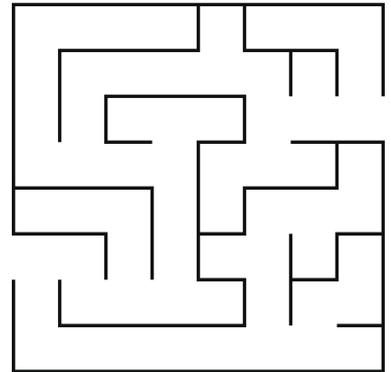Nowadays, organizational leaders operate in a vastly different terrain from those who led their companies to success in the earlier decades. In a VUCA environment, leaders and employees are finding out that their well-known approaches to leadership, solutions and decision-making fall short in the current climate. No wonder: Organizations in the industrial era focused on planning, information, human resource management, standardization and process management. Doing this well was the pathway to high performance and success. In contrast, the VUCA context offers increasingly complex playing fields and requires new approaches. Control can be based less on the familiar logic of planning, goal setting and processing. »Managing the Unexpected« relies more on skills of sensitivity, perceiving, addressing a problem in iterations, incremental steps and prototyping. This requires management that is a continuous cycle of approaching a problem step by step: to observe, to form hypotheses, to decide, to act, to observe.

Simple or complex?

The current business world is diverse and colorful. Increasing complexity is a phenomenon especially in the area of knowledge work and innovation. Nevertheless, other problems and issues in companies may still be embedded in a simpler context where a management approach based on cause and effect, and hence command and control, may be way more helpful.

But how can an easier problem context be differentiated from a more complex one? How can a decision-maker quickly understand the degree of complexity of the struggle he is involved in? And having appropri-ately recognized the problem situation, what is the proper response to the challenge?

About complicated systems and complexity

Understanding the difference between complex and complicated systems is important because each system should be managed with different leadership approaches. The metaphor that Sholom Glouberman and Brenda Zimmerman use in their fundamental article »Complicated and Complex Systems« is that every child is unique and must be understood and raised as an individual. Complicated systems are all predictable since these systems are mostly engineered; from a management perspective, we can understand them and (re-)create these systems. Complex systems require an understanding of unique local conditions, interdependencies as well as attributes of non-linearity to a certain degree, and a capacity to adapt as conditions change.

Complicated systems
According to Niels Pfläging, complicated systems operate in standardized ways: Imprecision is diminished. Non-objectivity and uncertainty are reduced as much as possible. Complicated systems operate in a linear way of cause and effect and are controllable by external forces. For example, an airplane like the Boeing 747 can be seen as a complicated high-precision machine. Engineers have well-proven knowledge of how this system works and know what the causes and effects are. If the airplane is built and this knowledge is applied carefully, it will fly; otherwise, it is in danger of crashing.
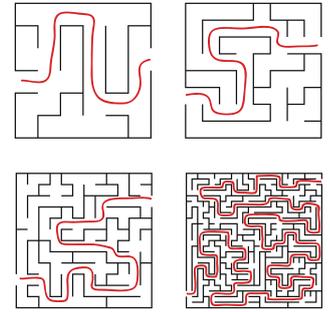
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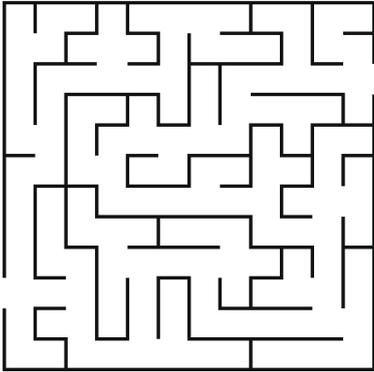
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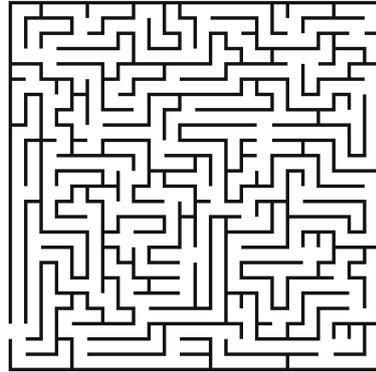
Solutions

Complex systems

Complex systems have the presence or participation of living creatures. They are living systems that can change at any moment. From the outside, such systems can only be observed; they cannot be controlled by external forces. The behavior of a complex system is non-predictable. In such a system, the level of error, uncertainty and illusion is higher than in complicated systems. Perhaps the system may show elements that operate in standardized ways. However, the crucial impact derives from the uncertain interaction of the system members. To give an example: A company decides to introduce new products into new market segments. Pilot teams are set up with a full capacity of resources and high level of autonomy to work out the solution(s) for the market launch through active experimentation. This means that among many other aspects of the complexity, they need to understand the nature of the new products, how the marketing and sales channels work, how customers will react and how supply truck drivers will feel about transporting far more diverse cargo than before.

In complex systems, the pathways and solutions of the industrial age with its markets of mass production and mass consumption become obsolete.

Dealing with complexity

With increasing complexity of contexts and situations, management is more about exploring, approaching temporarily, project-oriented acting and networking. It doesn't usually make sense to just reduce complexity. It's more about developing skills to deal adequately with it, on both a personal and a company level.

Personal level

As Pfläging puts it, the only »thing« effectively dealing with complexity is a human being: skillful people with ideas and mastery. While problem solving in a simple or complicated system is about analysis and instruction, it is about communication in a complex system. Employees, leaders and organizations have to adopt a non-linear approach to solving problems and must think out of the box. They have to learn to perceive the degree of complexity of the situation they are in. There is also a need for leaders to understand the deeper dynamics of the individual, personal change in complex situations where the »old« behaviors are mostly not valid, and the »new« preferred behaviors are not fully comprehended.

»Employeeship« is also evolving along complexity and new behaviors and interpersonal patterns appear on an individual level in complex adaptive systems. As an example, in a shared service center with a multidimensional service portfolio, a new organizational structure had been set up to meet the needs of the customers. This ended up with individual contributors having no direct managers on the one hand, and on the other hand, having at least five to seven service line coordinators. Will Allen says in his blog post »Complicated or complex – knowing the difference is important« at www.learningforsustainability.net that for this new way of working, it is crucial on the individual and personal level to understand and be capable of
— sense-making – a collective interpretation of weekly changing focuses in ever-changing »teams.«
— relationship building – working with new and undefinable patterns of interaction in order to perform the expected tasks. ▶

»Named must your fear be
before banish it you can.«

Yoda

———————

— loose coupling with colleagues – work in support communities of practice and with far more degrees of (personal) freedom.
— learning – act, learn and plan at the same time without formal learning frameworks.
— noticing emergent directions – building on what works »currently, here and now.«

Company level

In a complex environment, companies as well as individuals are forced to constantly and quickly change themselves, to find new viable organizational solutions and personal coping strategies. To master these new demands, »agile,« Scrum and Design Thinking are more helpful than detailed planning. Shared Leadership largely replaces hierarchical leadership. This also holds true for public organizations, as noted government observer Donald Kettl has detailed many times recently: the government of the future needs to develop three things to deal with increased complexity: knowledge-driven organizations, the agility to deal with non-routine problems, and the capacity to implement non-hierarchical solutions. The sustainable success of organizations is becoming more dependent on the following capabilities:

— To think in terms of organizational alternatives, transform themselves and deal with change.
— To find tailor-made organizational forms that fit to their culture, the competencies of their employees and the logics of their business.
— The ability to develop agile organizational structures to deal with stakeholders and be well-informed about changes in economy and society.
— To create an organizational environment and culture where employees have the autonomy to exploit their potential as well as receive personal support.

Especially in knowledge-intensive sectors, recent concepts like »cellular forms,« »modular forms,« »self-organization,« »project-based networks« or »Holacracy« mirror the increasing emergence of new dynamic and flexible forms of organizations with a strategic focus on entrepreneurship and innovation. In this new organizational context, the innovation paradigm seems to be changing as well, and the dimensions of stakeholder networks, sharing, collaborating, enabling, and appropriately designing multidimensional spaces for innovation are becoming critical for success.

In all of these concepts, one common fact is valid: on the road to appropriate and successful decision-making, there is no getting around a more systemic mindset and dialogical forms of communication. Sure, the stress of day-to-day business doesn't leave much space for reflection and learning. Pressure and urgency strongly support a logic of reacting and processing. This is precisely the reason why there is a need for clearly dedicated and well-designed spaces in which joint analyses and groupings can take place: spaces for dialogue and learning, where established views are shaken and cognitive maps are redrawn. This creates sensitivity towards future challenges and necessary change.

Another important point for the management of complex systems is what Pfläging calls the »improvement paradox«: In complexity, working on parts separately doesn't improve the whole. It actually damages the whole, since in a complex system, it is not so much the parts that matter, but their interactions and their fit. ●