

# *INSPIRED BY THE PHOENIX – THE ROAD TO RESILIENT PRODUCTION*

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If the concept of resilience were to require a symbol, then it would probably be the phoenix. The myth of an immortal bird that regularly returned was first created in ancient Egypt. The phoenix is the ultimate example of resilience; a creature that even after being destroyed is able to return to its original form.

A system's ability to return to health after external disruptions and to absorb the shock of these largely unharmed has become a criterion for survival in recent years in complex, highly interdependent structures. This applies in equal measure to countries, individuals, ecosystems and production systems. In global production networks especially, we are confronted with numerous uncertainties: Rapidly-changing market demands, high levels of volatility, shortage of resources and external shocks call for a degree of flexibility and 'pliability' for which most companies are not yet adequately prepared. On this background, the issue of resilience in production takes on strategic significance.

## **Recognising the Signs and Spreading Risks**

One central factor for resistibility is the ability to anticipate forthcoming developments and be prepared for different scenarios. The speed with which the markets and their external framework conditions change is increasing rapidly. As a consequence, classical planning approaches and tools are speeding towards the limits of their capabilities. The establishment of early-warning systems, urged by management theory for decades,

is therefore gaining critical importance. After all, only companies that are able to spot weak signals early on and adapt structures and processes quickly will have considerable competitive advantages and safeguard the sustainability of their own business model. The

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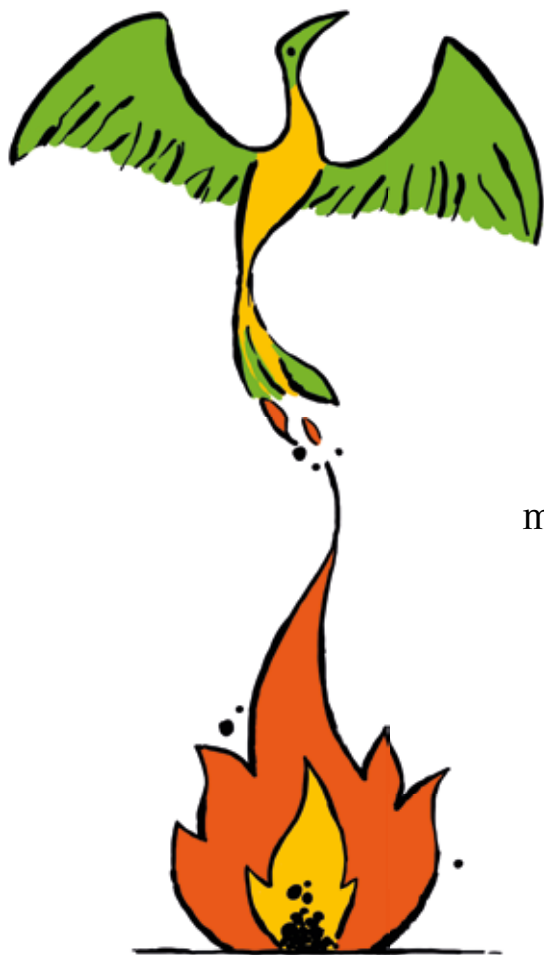
establishment of early-warning systems is therefore closely linked to risk management. The paradigm of a resilient organisation is not the exclusion of risks, but most importantly the attenuation of the effects of extreme events.

The most important levers for this are:

- Consistent diversification of the service portfolio and globalisation;
- The creation of localised structures and the avoidance of dependency on individual customers or suppliers;



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- The constant checking and adjustment of the individually appropriate real net output ratio;
- The definition of company-specific appropriate redundancies in production and logistics.

Essential for the effective use of these measures are the active and thorough integration of risk assessment in the design of value chains and the development of a comprehensive supply chain management strategy.

#### **Clear Structures, Transparency and Consistent Performance Management**

The resilience of production systems, however, is not just a question of foresight and risk management, but also a question of implementation. To also be able to implement the necessary adaptations effectively, technological and business management-related prerequisites have to be put in place too. These include, for example, short throughput times across the organisation or even the right stock allocation – for example by decoupling stock from critical sources and reducing finished products in favour of pre-materials, which leads to considerably more flexibility in the value chain. One approach that offers considerable potential is the consistent standardisation and modularisation of products, machinery, tools and processes. But the continuous training and development of employees also has a considerable role to play. In global production networks especially, this represents

a major step towards greater resilience for production. Although resources and capacities can fluctuate within the network in line with market requirements, external disruptions and distortions can be buffered much more effectively than in rigid systems.

The stable basis of a resilient company is excellent transparency in terms of clear organisational structures,

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processes and responsibilities, an integrated and homogeneous IT landscape and low levels of organisational complexity. One aspect that should not be underes-

timated in all this is the definition of a few key performance indicators (KPIs) that will facilitate focused and efficient performance management. As the level of complexity grows, companies tend to develop complex KPI systems to go with it. Possibly, these may reflect every aspect of entrepreneurial activity and be appropriate for all of the stakeholders within the organisation, but they cannot handle the requirements of a production system geared towards efficiency and resilience.

#### **Establishing a Culture of Resilience**

Safeguarding the resilience of production systems, however, requires more than just process-related and structural adaptations. First and foremost, it is a question of leadership principles and the culture that dominates within the organisation. This most importantly means accepting the general unpredictability of the future and the inevitability of risks and consistently focusing on the efficient management of unknowns. This can be achieved through constant learning, rapid decision-making processes and intensive horizontal and vertical collaboration. A resilient organisation is therefore no less exposed to economic, environmental or political developments, however it can handle extreme events and their impacts much more quickly and effectively.

A 'culture of resilience' also makes the company capable of learning and evolving, thereby safeguarding its competitiveness and its survival. Such a company might even, like the phoenix, have no need to fear fire.