Organizational Resilience – How Do You Know If Your Organization Is Resilient or Not?[i]

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There are two principle ways to approach resilience measurement; either to try to collect information about as many functions as possible in an organization or to use an indicator that will reflect how an organization is going to manage an unexpected event. I will describe both approaches and make a recommendation of their applicability to different situations.

Emerging uncertainties of global systems present a challenge to decision making. Two features that have a great impact on the nature of dealing with uncertainty are still mostly missing from the resilience studies (Rockefeller 100 Resilient Cities, Resilience Alliance, Lee et al. 2013). First, the models are frequently missing the main source of uncertainty: a reaction of a social system to a disruptive event or a shock. The feedback of the social system is often pushing our well-planned operations out of their trajectories and generates surprises. The second challenge of decision making – often an outcome of the surprises generated by the social system - is how to know what is needed for the situation in which we do not know what we do not know (ontological uncertainty). We will present a decision-support application to meet both of these challenges.

The global social environment is so complex that it would be unrealistic to hope that we will ever have sufficient information to reduce uncertainty (Anderson 1999, Courtney 2003). Within our research community (Global X-Network) we are dedicating our research to the study of uncertainties and the development of decision-making tools that are needed.

The framework used in this chapter (Ilmola et. al 2013) defines resilience by introducing four A's: awareness, adaptation, agility and active learning. For us resilience is not 'bouncing back', but bouncing actively forward.

[ii] The Global X-Network "GXN" is a self-organized network of Asian, European and North-American researchers that are studying uncertainty and surprise. Resilience development is one of the strategies (the other strategy is to invest in anticipation of changes) that can be applied to uncertainty. The network has studied resilience in national, regional and organizational levels. (www.globalxnetwork.com).

Performance

Capability to succeed in the environment that is dominated by uncertainty.

Awareness

Active learning
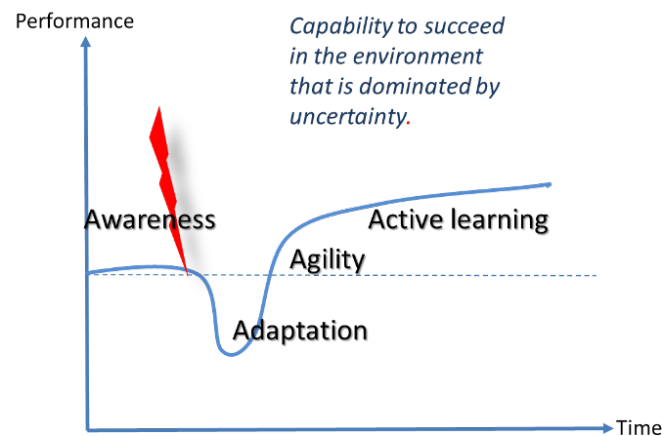
Agility

Adaptation

Time

Figure 1: Resilience measured by performance over time.

Trust Indicator - Social systems and surprises

Risk analysis is dedicated to deal with the "known unknowns" (epistemological uncertainty). Outside of this are "unknown unknowns" (ontological uncertainty), the reactions of social systems define the level of performance (in picture 1) of our organization. To understand the resilience of the social system, we need a brief description of some of the principles of the dynamics of social systems.

The main purpose of the social system is to distinguish itself from the other systems (Berger and Luckmann 1966) and from its environment. For this purpose, the social system is building, maintaining and defending its identity (Luhmann 1995). Part of the identity is the perception of values, rules and procedures. The shared perception of the environment outside (market) is necessary for predictability and efficient actions. The need for stabilization is so strong that the process will continue until the organization is so stable (=rigid) that even a small disruption will shake the system and even collapse it.

Surprises emerge from situations where the existing perceptions of reality are challenged, and we feel that we do not have enough information about the situation. When the existing procedures are not applicable anymore, people have to decide what to do; to optimize for their benefit or to improvise to maintain the organization's goals. In this situation, we use our identity as guidance, in the best of the cases we are guided by our identity, such as "in this company, we will never leave our customer in trouble" instead of maximizing our benefit.

According to research about the resilience of social systems (Ilmola and Casti 2013, Ikonen 2013, Kouvo 2014, Mayer, Davis and Schoorman, 1995, Sztompka 1999), it seems that the social systems that have strong trust are less prone to a selfish or even disruptive mass behavior. Trust can be defined as the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party (Mayer et al. 1995 p. 712). This trust can be a trust of peers, superiors or institutions (Kouvo 2014, Zhang and Wang 2010).

We claimed at the beginning of this chapter that we can prepare even for unknown unknowns and reached even one step further by saying that we can measure the capability to improvise when the situation is shaped by unknowns. Our recommendation is to focus on trust measurement.

The method is simple: we present to members of an organization a set of pictures (see Figure 2) ask them to define which picture is best describing their perception about the future of their organization and then to describe with a couple of sentences why they choose the picture. The explanations are analyzed with a simple text mining tool, and results will reveal positiveness/negativeness of trust on future.
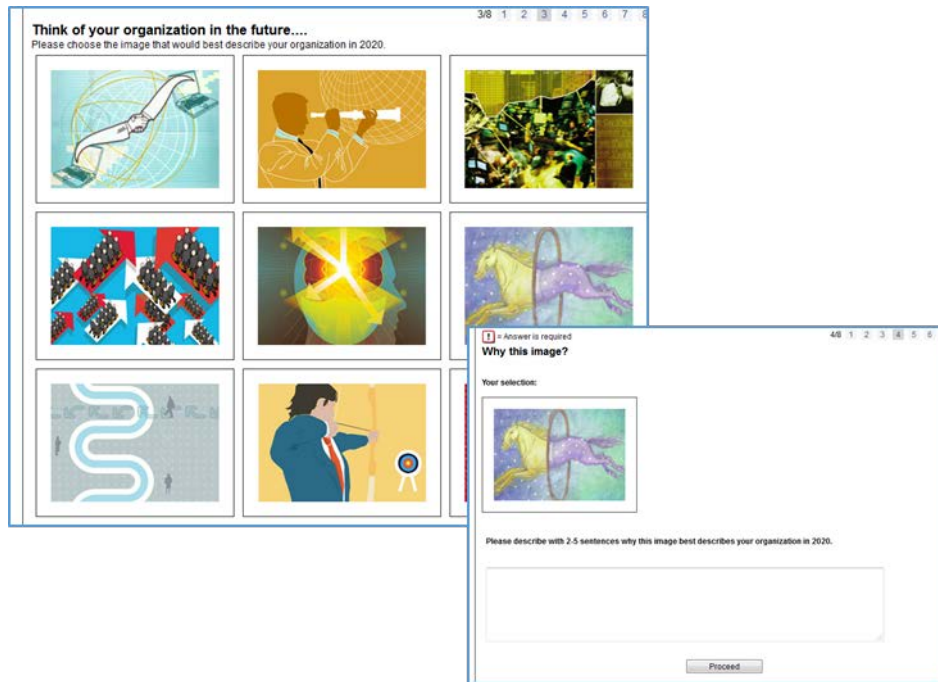

Figure 2: We are using an indirect way to reveal what people feel. First, a respondent chooses the picture that tells about today and the future, and then we ask him to tell us why this picture was the best one. Images themselves are not important, but the 2-3 sentences reveal a lot. The method is called semiotic image wall.

In our studies, we have found out that in those organizations where planning procedures are participative, the trust on the organization and its future is higher. When the Trust Indicator decribed above shows low results, it is time to invest in participatory strategy processes, or even to train extreme events together.

Resilience Profile - Vulnerabilities and sources of resilience

The systematic development of resilience as a capability requires an in-depth understanding of organizations' vulnerabilities and current sources of resilience. A single indicator cannot provide developers enough insight needed for well-justified resilience investments. The Resilience Profile approach is a step towards the deeper understanding of gaps between requirements and reality.

The Resilience Profile measurement system presented below is based on an analysis of resilience with several scopes; national (Ilmola and Casti 2012), regional (Ilmola and Rovenskaya 2016) and organizational .The aim of the approach is to identify and measure those features that build generic

resilience. The research has been case-driven, and exploratory. The choice was necessary because the theoretical frameworks available, such as Complex Adaptive Systems (CAS) theory (Anderson 1999) and ecosystems resilience literature (Folke 2006) are very generic.

The data needed for analysis is collected from people in an organization. A data collection methods suite consists of different methods such as surveys, systems mapping, structured participatory analysis, stories about previous shock incidents and Robust Portfolio Modeling (Liesio and Salo 2012).

The Resilience Profile consists of four main resilience dimensions (see Figure 3 below); operations, structure, planning, and resources. Each dimension is divided into 3-4 factors.

- 'Operations' consists of culture, the speed of reaction, trust, and experience (or exercises) of disruptive incidents.
- 'Structure' consists of structure, infrastructure and layers
- 'Planning/strategy' consists of an organization's perception of the environment, the vulnerability of key strategies, and the width of the focus (vision/mission) of the organization.
- The 'Resources' of the organization are described with four factors. These are a mix of competencies, redundancy, diversity, and mobility.
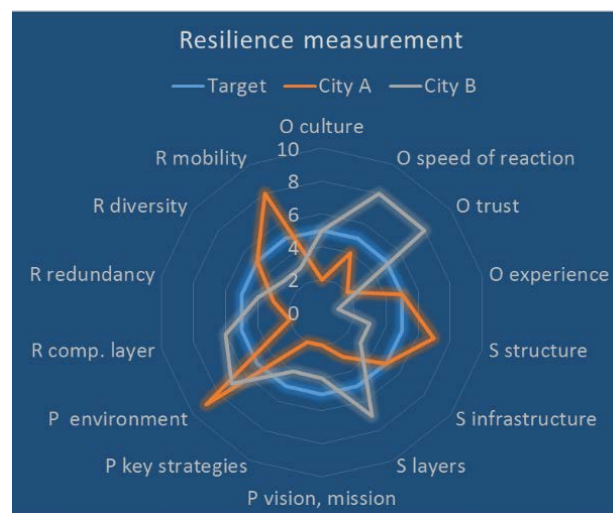

Figure 3: The Resilience Profile is divided into 14 specific features of four dimensions: O=operations, S=structure, P=perception, and R=resources. This figure illustrates and compares the profile of two cities.

The resilience analysis described above produces a report of an organization's resilience profile, comparison to another similar organizations and description of sources of resilience and key vulnerabilities.

Conclusions

I have presented above two resilience measurement frameworks, a 'fast-to-apply' indicator (the Trust Indicator) and a more detailed framework for identification of Resilience Profile. The Trust Indicator is recommended to use when uncertainties are typically "unknown unknowns" and

organization cannot invest a lot in resilience analysis. The Resilience Profile analysis is justified when resilience is an essential means of competition and the organization will systematically invest in resilience development.

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