

## Higher-order dynamic capabilities:

### Exploration and testing links with companies' performance in the crisis

Until recently, companies were seen through the prism of their resources, not only tangible, but also intangible, such as knowledge. However, for several decades, the business environment has been constantly changing. Globalization, fast technological progress, universal access to the Internet or constant legal changes bring both opportunities and threats. As a result, for contemporary enterprises, not only resources are important, but also so-called dynamic capabilities - capabilities that allow to adapt to constant changes.

Researchers quickly concluded that these capabilities are hierarchical. At the lowest zero-level, there are ordinary operational capabilities that are needed to run day-to-day business, to solve current problems. At the next level, there are change-focused dynamic functional capabilities. Their effect may be, for example, improvement of the product or service. At the highest level of the hierarchy, there are higher-order dynamic capabilities (HDC).

Such capabilities are particularly needed for an enterprise in a situation when changes in the business environment take on a sudden, unpredictable nature, e.g. during a crisis. High velocity of the environment causes that the company is not able to cope without changes that go beyond the standard framework of activity. Higher-order dynamic capabilities enable a company to approach such a situation in a creative, unconventional way. By looking at the resources and forms of activities in a creative way, it is possible to find new, completely different ways to use them in the new reality (e.g. when a passenger airline begins to use its resources to transport goods, or a car manufacturer produces respirators).

However, there is really little empirical research on HDC, which is a clear research gap. Most of the research to date has studied higher-order dynamic capabilities on a very general, abstract level, their nature and special significance have been described. The few empirical studies on this subject most often focus on fast-changing technological sectors and large innovative enterprises. However, most companies have so far operated in a medium velocity of environment, and thus there was no need to use HDC. Therefore, these capabilities have been difficult to observe and study. The current crisis is affecting nearly all areas of the economy and all companies. So there is perhaps a unique opportunity to research HDC in other industries or in smaller enterprises. HDC are currently using in many areas of the economy, as the pandemic generates threats for many companies but also opportunities for others. High velocity of the environment will enable to achieve the aims of this research project:

- a) *exploration the specific processes and activities, companies undertake to adjust to the high environmental velocity with regard to main dimensions of HDC,*
- b) *developing the measurement instrument to measure scope/intensity of HDC,*
- c) *testing the empirical link between higher-order dynamic capabilities and companies' performance in the time of crisis,*
- d) *exploring and testing empirically the moderators of this link.*

Research will be carried out in several stages. The basis will be a systematic literature review, in particular international scientific articles. In the second stage, qualitative research will be carried out. This stage will consist of two parts. In the first place, secondary data will be used, examples of the use of higher-order dynamic capabilities during the current crisis will be searched on the basis of information obtained from sources such as internet platforms, news services, press, online forums. This data will be analyzed and categorized. In the second part of the qualitative research, in-depth interviews will be conducted with about 20 managers of Polish companies especially involved in such activities. The third stage of the project is quantitative research. Based on previous exploratory studies and literature review, a questionnaire will be prepared and a survey will be conducted on a randomly selected sample of Polish companies. The results of this research will be analyzed with the help of an appropriate statistical program, using structural equation modeling method.

The results of the research will be the empirical acquisition and systematization of knowledge about the relationship between higher-order dynamic capabilities and the companies' performance in the crisis and identification of factors affecting this relationship.