

Digitalization and innovation require an objective

Innovation and digitalization - two key words that have often been synonymous with each other for a few years now. There is a trend to show the possibilities that innovation and digitalization offer for your company in the most beautiful colors. But in retrospect, the expectations a company has placed in these topics are not always fulfilled. How often initiatives from innovation and digitalization are shipwrecked is usually concealed - and often not even analyzed internally. As a result, many good approaches and ideas fizzle out.

In order to avoid this and to create sustainably successful innovations, one should be clear about what exactly is meant by this. The following questions are suitable for this:

- What do we understand by innovation?
- Why do we want innovation? Who should benefit from it or what is its motivation?
- What contribution can digitalization make?
- How much time, resources and attention do we devote to innovation?
- How do we deal with resistance to innovation?

These questions are only supposed to be answered quickly and easily. If one studies the questions in greater depth, it soon becomes clear that some conceptual preparation is necessary to achieve the desired results.

A fundamental question is, for example, what the company wants to gain through innovations. Are incremental changes sufficient or is it a disruptive idea that completely redefines a market or application? Both are, of course, legitimate, but innovation management must be oriented differently depending on the chosen focus. The project team must then also be put together differently according to this pre-selection. Thus, for incremental changes, experienced employees are in particular demand. Conversely, for disruptive approaches, those who are still fresh in day-to-day business and

think processes in a new and "unencumbered" way are important.

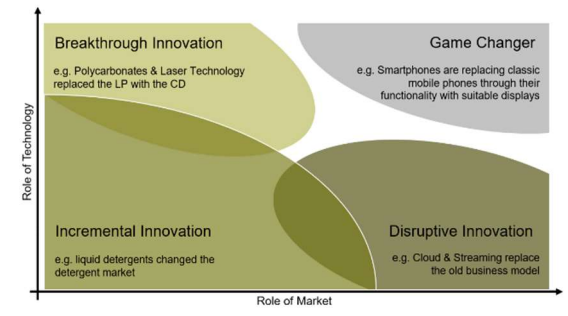


Fig. 1: Types of innovation in the force field of market and technology

In the first case, the degree of innovation is limited in itself, while in the second case (disruptive as well as breakthrough innovation (see Fig. 1)) the implementation capability is typically difficult. In these cases, market, process and customer knowledge is essential to avoid or mitigate these pitfalls. Particularly with something radically new, it is essential to also consider the investment and marketing costs. In this case, not only is the development itself time and cost-intensive, but also the introduction to the market costs a lot: the user must first be convinced of the advantages of the completely new product. In other words: a new technology or new process ideas alone are not a good motive for the search for innovation.

This also - and especially - applies to questions of digitalization. We often observe that companies under the cloak of digitalization place far too much emphasis on the "technically possible". The main question is what data is available and what can be done with it. Technology should be a means to an end. Here, too, the focus must be on the customer or the market with its needs. It is not about the possibility of digitizing something per se, but for example about the question which specific problems of my customers I can solve with the help of digital technology.

Careful thematic preparation is therefore essential if innovation and digitalization projects

are to be successful. After all, an innovation only becomes a successful innovation if the transition to day-to-day business works. Often the innovation fails not because of its own quality, but because of organizational and emotional reasons. In our experience, uncertainties in dealing with the new, a "not invented here" attitude or simply a lack of incentives to ensure "upscaling" are by far the greatest disturbing factors.

That's why we at Sapherior do not approach this topic via separate innovation labs or creative spaces. Instead, we focus on the composition of the teams, the comprehensive dialogue between the participants in the company and

the exchange with the customer - no matter whether it is about process changes, new business models or product innovations. In our eyes, digital processes and new offerings only make sense if the planned return on investment is considered from the very beginning. This is important not least because it then becomes clear from the outset that it is not possible - and should not be possible - to tighten all conceivable digitalization levers at the same time. This is the only way to ensure that digitalization and innovation do not become an end in themselves but develop sustainable benefits for your company.

Innovations in the chemical industry

The chemical industry is a sector whose products and production processes are generally characterized by stability and profitability. Chemical innovations themselves, such as polycarbonate, and disruptive innovations are the exception nowadays. Rather, in recent decades improved transparency and the use of learning curves (CIP) have been the triggers for changes in production routes or for new products.

However, this situation will change: Sustainability and environmental protection play an increasingly important role in society today. Therefore, chemical companies are also called upon to find new, more far-reaching answers. This can already be seen in many sustainability reports that are published annually. Topics such as recycling management, biorefineries or Carbon Capture & Storage (CCS) processes make it clear that a lot is already in progress that will fundamentally change the conditions for chemical production. The following two examples show how different the contributions of chemistry can be here:

- (1) The Grillo process for MSA: With this process, methane, despite its inertness, can be functionalized in a cost-efficient process to methanesulfonic acid (MSA), which has many applications in the electroplating, electronics, pharmaceutical and detergent industries. But why is this process revolutionary? The use of methane would be a potential substitute for petroleum-based raw materials, but so far it has required too much energy and produced very low yields. In the new process, a considerable functionalization could be achieved under moderate conditions, without expensive catalysts and with more than 90% yield. The result is a "green MSA" that can be produced without toxic intermediates or environmentally harmful by-products and with relatively low energy consumption. A process that has the potential to change the market for acids in the long term.
- (2) AkzoNobel's Intertrac tools: Digitization plays a key role in the development and marketing of new services. The Intertrac Vision tool was developed for the shipping industry and can make predictions about the fuel and CO₂ savings that can be achieved by using special anti-fouling coatings on the hull. It uses data from the original "Intertrac" tool, which can analyze local hull fouling on trade routes. Combined with hydrodynamic analyses, this results in the optimal coating. Thus, in addition to the protection of the ship, a saving in fuel and thus in CO₂ emissions can be achieved. Sensibly applied digitalization - not an end in itself.