EXCEPTIONAL RESEARCH THAT MAKES AN IMPACT

August 2021

CASE STUDY: CREATING A DIGITALISATION STRATEGY THAT WORKS

New technologies such as the Internet of Things (IoT) are driving change at an unprecedented rate, and have the potential to transform every aspect of the way a company does business. However, there is a lack of guidance on what a successful IoT digitalisation strategy looks like.

Researchers from the University of Cambridge and the University of Sheffield, together with industry collaborators, have worked to address this gap by developing and testing guidelines for industry best-practice.

THE CHALLENGE

Digital technology continues to open new opportunities for customer engagement, and the growing accessibility of data is enabling companies to go beyond traditional metrics to track customer experience in more sophisticated ways.

However, digitalisation represents both an opportunity and a threat for firms, and the need to take decisions in a constantly shifting landscape means that deciding what to do and how to do it is hugely challenging. For those companies that do make the right decisions, the rewards are significant, whether through incremental improvements (better products and services and lower costs) or through a complete reinvention of their business model to create new value for themselves and their customers. Since each firm is different and there is no 'one-size-fits-all' solution, companies need to know how to formulate a digitalisation strategy that works for them.

Funded by Pitch-In, a team of researchers from the University of Cambridge and the University of Sheffield have developed a digital transformation strategy blueprint for manufacturers.

THE PROJECT

To understand the key factors that enable a successful formulation of IoT digitalisation strategy, the research team carried out in-depth interviews with 20 manufacturing companies and surveyed a further 290, ranging from some of the world's largest multinationals, with up to 80,000 employees, to firms with fewer than 50 members of staff. The companies covered a wide range of sectors, including aerospace, chemicals, food and drink, machine and equipment manufacturing, and pharmaceuticals.

By looking at the determinants of IoT adoption such as the strategy formulation roles, the organisational context and the environmental context, the team categorised the firms according to where they were in their digital transformation journey. They found that firms take very different approaches to digitalisation, with some eager to exploit new technologies to achieve 'first mover' advantage where others prefer to minimise their risk by taking a more incremental approach.

Using the data, the team developed a framework to show how key dimensions of strategy formulation affect the strategising process, which in turn affects the content of the strategy, and, ultimately, a firm's performance.

UNIVERSITY OF CAMBRIDGE Department of Engineering
IfM MANAGEMENT TECHNOLOGY POLICY
Pitch-In
UK Research and Innovation

EXCEPTIONAL RESEARCH THAT MAKES AN IMPACT

Their analysis showed that for firms in early digitalisation phases, the nature of the strategising process has an important impact on its outcome. The comprehensiveness of the process, how well structured it is, and the speed with which it is developed and executed have a significant impact on the extensiveness and comprehensiveness of the strategy itself.

For those firms at a more advanced digitalisation stage, the same results were seen, but with less of an impact on speed.

The team identified the following factors that may help firms develop successful digitalisation strategies:

1. **Appoint diverse teams.** Appoint people with different experience and backgrounds at different levels within the organisation and representing all key functions.
2. **Don't be afraid to tackle complex problems**. Problem complexity can be your friend: the more complex the problem the more comprehensive your approach is likely to be and the greater the need for structure.
3. **Be willing to experiment**. Being able to experiment is critical in these two phases, resulting in a more comprehensive, better structured and faster process.
4. **Bring in external support**. Utilising external support will improve process comprehensiveness and structure. Asking for support from external sources at this stage can help speed up the process.
5. **Make sure leaders are 'ratifiers' and champions**. Management roles are critical at the implementation and operating stage of the process.
6. **Keep experimenting**. Being able to experiment is still important in the later phases where it can speed up decision-making.

THE IMPACT

And as s a result of the project, the researchers produced **a report for manufacturers** with guidelines that can enable them to develop successful IoT strategy formulations.

Furthermore, an executive training programme was designed and launched at the Institute for Manufacturing, University of Cambridge to help firms to strategically design and manage their future digital services and customer experience.

The new course, **The new era of customer experience: Optimising engagement across digital, physical and social channels**, aims to help attendees understand how new technologies and business models are changing the way organisations interact with their customers, and how companies can navigate the new era of customer experience.

The blueprint was tested with established manufacturing firms (e.g. CEMEX, Caterpillar, ABB, BAE, Thales) in Cambridge and Sheffield through interviewing their IoT/CTOs/digital managers.

SEE ALSO

Zaki, M., McLeay, F., Henneberg, S., Leischnig, A. (2021) **'How to create a digitalisation strategy that works.'**

PROJECT AND TEAM

MGT3: IoT Digitalisation and strategy in manufacturing firms.

Dr Mohammed Zaki, Institute for Manufacturing, University of Cambridge and Professor Fraser McLeay, University of Sheffield.

PITCH-IN

Pitch-In aims to collaboratively identify and address barriers to the successful development, introduction and further exploitation of Internet of Things technologies across four key sectors: Cities, Energy, Health and Wellbeing and Manufacturing. The project is funded until 2021 through Research England's **Connecting Capability Fund**.