

# Cultural Change in Digital Transformation within Higher Education

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Digital transformation, Higher Education IT, Cultural Change.

## 1. SUMMARY

The role of information technology within higher education is changing radically with the progress of digital transformation. This implies significant changes in several areas. The focus has typically been in business change, in processes, and in modern digital technology. However, cultural aspects have recently been identified as the most important road blocker for organisations to take digital transformation forward. We have also seen how significant external events, such as the Covid-19 pandemic, can accelerate and redirect change at the cultural level.

This paper investigates the required cultural changes for digital transformation in the context of Higher Education. Firstly, we identify seven cultural elements that need to be addressed to cope with the change. Secondly, we provide a template that allows institutions to find the best approach for managing cultural change when introducing digital technologies. The template consists of four key areas: (1) reviewing the vision and the strategy, (2) managing change proactively and continuously, (3) navigating your way in the changing landscape, and (4) solving issues on the spot.

## 2. THE NEED FOR A CULTURAL CHANGE

Digital technology is affecting almost all aspects of higher education institutions (Grajek, 2020; Kähköpuro, 2015). The most obvious changes take place within the supporting technology and in the working processes using them. Typically, automation and self-service are being applied to areas where manual processes have traditionally been used. This work has usually focused on the back end of the business, leaving the forefront unchanged. When the use of technology extends to the customer-facing part of the business, this typically results in disruptions and radical changes in the business itself. These changes can be structured through digital capabilities (Kähköpuro, 2017).

However, it has been observed that the above changes can only reach their full potential if also the culture of the organisation changes to support the new role of technology. In a study by McKinsey, cultural and behavioural challenges have been identified as the most significant challenge to meeting digital priorities (Goran et al, 2017). In the same way, Hentrich & Pachmajer (2016) have identified digital culture development as one of the key value enablers in the transformation. The progression of digital transformation from technology to culture is illustrated in Figure 1.

Layer	Primary goal
Culture	Maximising benefits
Business	Front-end business improvements
Processes	Back-end business improvements
Technology	Cost efficiency

Figure 1. Progression of Digital Transformation through layers of impact.

### 3. KEY ELEMENTS FOR CULTURAL CHANGE IN HIGHER EDUCATION

In higher education, we have identified the following seven cultural elements to be at the core of the required cultural change:

- *Focus on the customer (FC)*. In the past, organisations have been optimising their operations from the delivery perspective and this has often left the customer bridging the gap between different parts of the service process. In higher education, this manifests itself through the number of separate student support functions that are not working together in an optimal way. With digital tools, the processes can be changed to provide a smooth end-to-end process and a seamless student experience.
- *Digital first (DF)*. The traditional model for service design has been to first build manual processes and then upgrade them into the digital world. This often introduces unnecessary steps in the process and limits flexibility. Turning this the other way around and designing the digital version first will allow organisations to create future-proof processes while still maintaining the possibility to introduce manual interventions wherever needed.
- *Calculated risk taking (CRT)*. The higher education sector has traditionally been risk-averse in its decision making, and this has introduced several controls, such as yearly planning rounds, budgetary controls, and complex governance models. To be able to survive in a rapidly changing business environment new approaches, such as “failing fast” will be essential and this will in turn change the current practices.
- *Agility (A)*. To be able to survive and thrive in a fast-changing digital environment, organisations need to be flexible and agile in their development activities. This way, they can adopt to changing requirements and use learnings obtained during the development work. As a result, the outcome will be better aligned with business requirements and user needs (Burchardt & Maisch, 2019).
- *Open innovation (OI)*. Accessing and exploiting outside knowledge while allowing internal experts to interact with the external world will be critical for keeping up with the rest of the world (Burchardt & Maisch, 2019). Higher education has been strong in this area amongst the sector itself but there has been a lack of exchange between the HE community and other business sectors.
- *Breaking silos (BS)*. To be able to exploit the full benefits of digital technology, cross-organisational processes are critical for the success of the organisation. This in turn requires working across silos and using cross-functional teams to create and support truly customer-centric services.
- *Data at the core (DC)*. To support fact-based decision making at all levels of the organisation, there is a need to have a consistent and holistic view of the organisation’s information resources. In higher education, the focus of data management has been on statutory reporting and operational activities. Consequently, there is typically a need to change the full flow of data from the source all the way to the decision-making process.

The above list of cultural change elements is not exhaustive, but it illustrates the nature of the overall challenge and provides a good starting point for addressing the change in a holistic way.

### 4. TYPICAL USE CASES IN HIGHER EDUCATION

Digital transformation is the process of using data and technology to drive change. The emphasis is on the application of new technologies to existing business problems. When new solutions are found, the use of digital technologies enables its rapid adoption and scaling up the change (EAB, 2020).

To understand the role and relevance of the identified seven cultural change elements, it is useful to analyse their impact when addressing well-known business problems in Higher Education through digital technologies. We will use the following four challenges to illustrate this:

- Student dissatisfaction,
- Slow pace of change,
- Inefficient organisation, and
- Coping with external disruptions.

*Student dissatisfaction* typically reflects the organisation’s focus on structures and operating processes rather than student interactions. Shifting the focus to the students is typically needed to

address this challenge (FC). This can often be implemented efficiently by using modern digital technologies (DF) rather than growing the student-facing part of the organisation - typical tools include student apps, automated processes, lecture capture to replace notetaking, etc. Typically, additional data and related learning analytics tools are needed for understanding the students better (DC). In many cases, student dissatisfaction stems from the inefficiency of student-serving processes that work across the organisation. Breaking the barriers in the organisation will address this (BS).

*Slow pace of change* is typical for the entire higher education sector. The sector has been in a stable state for decades and, consequently, the recent new requirements imposed for the sector are difficult to implement (e.g. improved efficiency, global competition, changing requirements of the employers, changing student expectations). Accelerating change can be done through several cultural elements, such as using agile methodologies (A), bringing in solutions from outside the sector (OI), promoting calculated risk taking (CRT) and removing structural barriers (BS). The use of digital technologies in implementing the changes will enable much faster expansion of new solutions (DT).

Organisations that have been stable for a long time are often *inefficient* and non-optimal in their operations. Inefficiencies can be addressed typically by first understanding the nature of the problem through better analysis and data (DC), and then addressing the identified issues through structural changes (BS) and improved and more flexible processes, often with an agile flavour (A). The change can be amplified by encouraging the organisation to reduce unnecessary controls with calculated risk taking (CRT). Again, taking the digital route will enable bringing in further efficiencies (DF).

*Coping with external disruptions*, such as the Covid-19 pandemic or Brexit for the UK Higher Education institutions, can be addressed with a well-structured approach. To keep the eye on the ball, it helps to have a clear focus on the business core - typically on the students (FC). Unprecedented circumstances require new solutions and borrowing them from outside the sector is often useful (OI). New solutions will have to be found internally as well and, consequently, it is important to explore solutions with agile methodologies (A) and prune them out if they do not deliver expected results (CRT). Understanding the situation through data and numbers is increasingly important, as gut feelings based on past experiences are not relevant or applicable (DC).

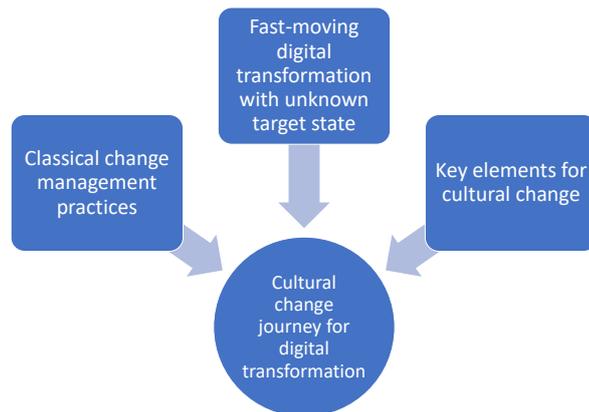
Figure 2 summarises the above four use cases and illustrates how the identified cultural change elements can be mapped to them. Individual business problems do not need all the identified change elements to be in place, but if an organisation is planning a step change in its overall business performance the full list of key elements is needed.

Key element	Business challenges			
	Student dissatisfaction	Slow pace of change	Inefficient organisation	Coping with disruptions
Focus on the customer (FC)	X			X
Digital first (DF)	X	X	X	X
Calculated risk taking (CRT)		X	X	X
Agility (A)		X	X	X
Open innovation (OI)		X		X
Breaking silos (BS)	X	X	X	
Data at the core (DC)	X		X	X

Figure 2. Cultural change elements and related business challenges.

## 5. CULTURAL CHANGE JOURNEY

To address the required actions in the cultural change journey, this section provides a template for planning the work. The template is combining culturally relevant elements from classical change management practices (Kotter, 1996) with elements that are particularly important for fast-moving digital transformation (Laczkowski & Winter, 2019; Burchardt & Maisch, 2019). Both aspects are linked to the seven key elements for cultural change identified in section 3. This interaction is illustrated in Figure 3. The required journey is different from traditional business transformations as the target state is moving constantly ahead, i.e. the goal is to build readiness for even further changes created by digital developments.



**Figure 3. Three viewpoints for defining the cultural change journey for digital transformation.**

The template for the journey consists of the following four key areas:

- Review the vision and strategy,
- Manage change proactively and continuously,
- Navigate your way in the changing landscape, and
- Solve the issues on the spot.

*Reviewing the vision and strategy* for the organisation is needed to understand better some of the new factors, such as the role of data in running and understanding the business, and the role of digital technology for supporting it (DF). Typically, there is no need to change the vision itself but the translation of the vision into concrete actions and outcomes may have to change significantly. Several activities are needed to address this. Firstly, with the new world created by digital possibilities, the aspirations of an organisation can be changed and stretched beyond the limits of the traditional business. People need to look beyond the horizon (OI, CRT). Secondly, the values of the organisation may need to be reviewed in the new context. For example, the word “excellence” (present in the values of a numerous higher education institutions) may have a new meaning in the digital world - perhaps something to do with the online presence and digital reach rather than traditional metrics. Thirdly, it is critical that the digitally enhanced vision and strategy have the full support of the top management across the organisation (BS). For the top management, the availability of accurate real time data is typically an eye-opening moment and can be used as a booster for change (DC).

*Managing change proactively and continuously* is critical for ensuring that the dynamic nature of digital transformation is addressed appropriately in the cultural change journey. Communicating the vision and the change journey widely in the organisation as soon as it is possible. Communication should include all identified cultural elements (FC, DF, CRT, A, OI, BS, DG) and related operational and structural changes. One of the key elements in digital transformation is the rapid growth of opportunities with new digital innovations and, consequently, there is a need to embed all changes as soon as possible. The next radical revolution may be right around the corner and the benefits of a successful project need to be delivered before it. Change management should also consider the fact that not everyone is ready for the change. In higher education like in most businesses, there are outstanding performers that are not necessarily “digitally fit”: the business so far has not required

them to move to the digital world. In change management, it is important to find ways to address this challenge in order not to lose critical business assets.

*Navigating the way in the changing landscape* is a task that will require special attention from the organisation in the digital battle. With digital transformation, cultural change should be mirroring the continuous development of the technology and the various possibilities that it creates. Consequently, there is a need to move fast in the direction that delivers best value for the organisation (A, OI). However, it is also important to review the situation and change direction if needed (CRT). With such a dynamic environment, it is critical to keep the organisation in a good shape and capable of delivering the required business. This will need appropriate communication and competence development, but it is also important to celebrate successes as soon as they emerge. This allows the people to see that the organisation is capable of navigating in the changing landscape even if it keeps changing around it.

*Solving issues on the spot* is a requirement imposed by the current nature of digital technology development. In typical business change projects, there are elements that can be deferred and addressed later in the journey typically when the required foundations have been laid out and there are better means to address the problems. In the digital world, the pace of change is very fast, and most issues need to be addressed immediately. Otherwise, the next new turn will take the focus of the organisation to new matters, and the unsolved problem will start festering in the background. While the actual problem solving is not a cultural issue, the approach itself is deeply embedded in the required cultural change.

The issues to be solved fall into different categories. Firstly, there are often operational problems, such as legacy applications, that will have to be fixed or replaced. This is a good target for agile and innovative change projects (A, OI, CRT, DF). Secondly, there may be legal and compliance issues, such as data protection and GDPR. These will have to be addressed through a business-driven joint effort (BS). Finally, there is often a need to build missing digital capabilities that may range from technical and service capabilities to organisational and process related ones (Kähköpuro, 2017). The answer is to seek cross-organisational and innovative solutions (BS, OI) where the driving force is typically coming from the business priorities (CF). One of the critical underlying capabilities is solid Information Management with the required technical elements for managing data appropriately (DC).

Figure 4 provides an overview of the cultural change journey. The first item, reviewing the vision and the strategy, is typically a one-time exercise. The other three areas are continuous processes that need to be put in place for the organisation to be successful. This reflects the nature of digital transformation as a *continuous process* where the organisation needs to have the ability to adopt new technologies as they emerge to address business challenges. It should be noted that this template is intended to address the cultural elements, and there is a need to have separate workstreams for implementing the desired roadmap.



Figure 4. Template for a cultural change journey for digital transformation

## 6. SUMMARY

In this paper, we have investigated cultural change in the context of digital transformation. Higher education has been used as an example for illustrating the findings.

Cultural and behavioural issues have been identified as one of the most significant barriers for organisation to be able to progress in their digital journey. To this end, we have identified seven key elements for cultural change in Higher Education and validated them by analysing several well-known business challenges. Cultural elements are involved in most, if not all, business driven changes where digital technology is in a key role.

To address the challenge, we have defined a template for a cultural change journey for organisations that are implementing a digital transformation. The template consists of the following four areas:

- Review the vision and strategy,
- Manage change proactively and continuously,
- Navigate your way in the changing landscape, and
- Solve the issues on the spot.

The first area is a one-time exercise but the other three are continuous processes that need to be embedded in the organisation. These areas can bring significant improvements in the identified key cultural elements, but the required business and technology changes need to be combined with the cultural change in a fruitful way. For most organisations, this probably remains the biggest challenge. This is also an interesting area for further research.

## 7. REFERENCES

- Burchardt, C., Maisch, B. (2019). Digitalization needs a cultural change – examples of applying Agility and Open Innovation to drive the digital transformation. *Procedia CIRP 84 (2019)*, 112-117.
- EAB (2020). Building a Digital University, Harnessing Digital Transformation to Improve Effectiveness.
- Goran, J., LaBerge, L., Srinivasan, R. (2017). Culture for a digital age. *McKinsey Quarterly, July 2017*.
- Grajek, S. (2020). How Colleges and Universities Are Driving to Digital Transformation Today. *EDUCAUSE REVIEW Special Report, January 2020*, 50-53.
- Hentrich, C., Pachmajer, M. (2016). *d.quarks: The Path to Digital Business*. Hamburg, Germany: Murmann Publishers.
- Kähkipuro, P. T. (2015). Case Aalto University - Digital Transformation in Higher Education. In *Collin, Hiekkanen, Korhonen, Halén, Itälä, Helenius (eds.), IT Leadership in Transition, The Impact of Digitalization in Finnish Organizations*. Aalto University publication series, SCIENCE + TECHNOLOGY 7/2015, 81-88.
- Kähkipuro, P. T. (2017). Essential IT capabilities for a successful digital transformation in Higher Education. *European Journal of Higher Education IT, 2017-1* (<http://www.eunis.org/era/2017-1/>).
- Kotter, J. P. (1996). *Leading Change*. Harvard Business Review Press.
- Laczkowski, K., Tan, T., Winter, M. (2019). The numbers behind successful transformations. *McKinsey Quarterly, October 2019*.

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