

A new Digital Innovation Model for Higher Education after the Covid-19 Pandemic

Pekka Kähköpuro¹

¹ Brunel University London, UK, Orcid: 0000-0003-4130-9322
Pekka.Kahkipuro@brunel.ac.uk

Abstract

Innovation within the digital domain has been a significant source of business and operational improvements in almost all sectors. The progress of digital transformation and the response to the Covid-19 pandemic have changed the role of innovation in Higher Education. Digital innovation has moved from the fringes of the business to the core. This paper describes the changes that are taking place and the underlying dynamics of those changes. We also describe how the digital innovation process needs to be updated to accommodate new requirements and to meet new expectations.

1 Background

Digital technologies have been a source of innovations in organisations for years. Digital transformation refers to the business changes information technology can bring to the organisation. Higher education is no exception, and digital innovations have been used to boost to business in many ways (Kähköpuro, 2015, 2017). Typical models for managing and exploiting innovations have been discussed in the literature, see Davila, Epstein & Shelton (2006) for a good overview. These models have been working well in managing digital innovation in the context of traditional higher education work.

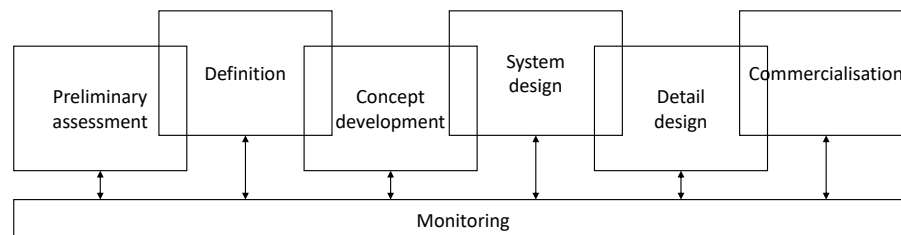


Figure 1. Traditional process for digital innovation.

The process for creating digital innovations is well understood, and several models have been presented to drive the commercialisation of initial ideas discovered in the beginning of the pipeline. Figure 1 illustrates a typical digital innovation process (Hellwig, Pawlowski & Schäfer, 2020).

However, we have recently experienced two significant changes that have altered the landscape. Firstly, digital transformation has enabled organisations to radically change their core business. This has changed the role of digital innovation from the fringes of the organisation to the core of it. A good example is the introduction of online programmes to replace traditional ones. Secondly, the Covid-19 has created an unprecedented disruption in the need for digital support for business, as traditional campus-based activities have been suspended or reduced significantly.

2 What happened in response to the pandemic?

When the pandemic hit the higher education sector in early 2020, three significant changes took place in most institutions. Firstly, there was a swift migration to online teaching with an immediate introduction of new working practices, new ways of using existing tools, and new tools to support previously uncovered needs. The change was visible in all activities, including teaching and learning, administrative work, assessment, attendance monitoring, student support, *etc.*

Secondly, organisations turned into remote working practices in most of their internal activities. Most professional services either transformed their service models into remote mode (*e.g.*, changing face-to-face customer interactions into online services) or introduced entirely new ways of dealing with the requirements (*e.g.*, using external service partners).

The third significant change took place once it was clear that partial restrictions would be present for a significant period even if the immediate peak of restrictions had been passed. This introduced the need for mixed mode operations in all areas. In teaching and learning, traditional blended learning practices are now being extended with new teaching models, such teaching events with both remote and face-to-face students in the same session. Likewise, meeting practices are being introduced to support arrangements where remote participants are interacting with participants in one or more physical meetings. Existing processes and practices are being extended to support both on-site and online participation in parallel, and this change is still ongoing.

The most extraordinary change, though, was the ability for most institutions to implement the above three steps in a very short time and with a high level of efficiency. This seems contradictory to the traditional conservative mindset and slow adoption rate of new practices in the sector.

3 Key differences from the traditional innovation model

To understand how recent innovations are different from the traditional approach, we are using the seven innovation rules presented by Davila, et al. (2006). Figure 2 illustrates the main differences between existing practices and the new model that is gradually being adopted by the institutions.

The essential change between the models is the closeness of innovation to the core business – education and research. Previously, the core was relying on traditional practices and taking digital technologies into use at a relatively slow pace through incremental innovation. More radical innovation was mainly operating at the fringes of the core business and, consequently, there was lack of focus and less support from the wider community.

Rule	Traditional HE approach	New model
1. Strong leadership and clear direction from the top	Large number of initiatives and evenly spread resources	Focused approach to secure business continuity
2. Integrate innovation with the basic business mentality	Innovation operating on the fringes but less so on the core business	Innovation addressing needs of the core business: teaching/research
3. Align the amount and type of innovation with the business	Innovation targeted for experimental improvements	Innovation targeted to secure/grow the volume of main business
4. Manage the tension between creativity and value capture	Creativity, diversity, and collegiality high in value	Ability to improve/maintain education/research high in value
5. Neutralise organisational antibodies	Slow progress is okay, there is no of sense of urgency	Pressure from core business ensures traction
6. Recognise the need for network of people and knowledge	Innovation through initiatives driven by single individuals/units	Sense of urgency increases networking and partnering
7. Create right metrics and rewards for innovation	Typical metrics: number of initiatives, patents, and papers	Core business metrics become the measure of innovation

Figure 2. Key differences between the traditional and the new digital innovation models.

In the new model, innovation is aiming at radical or semi-radical changes in the core business to ensure that it can survive and thrive in the changing circumstances. This draws the attention of the institutional leaders and changes the dynamics in many other ways as indicated by Figure 2.

4 Implications to the innovation process

The new innovation model is driven by the new requirements and it also changes the innovation process significantly. Unlike the traditional process in Figure 1, the new process starts from the expected outcome: the urgent business need or the experienced sense of emergency. The process also includes a number of iterative evaluation steps and possibilities of redesigning the tentative solution. An overview of the new process is illustrated in Figure 3. The iterative nature of the work in all stages indicated by the circular arrows in the diagram.

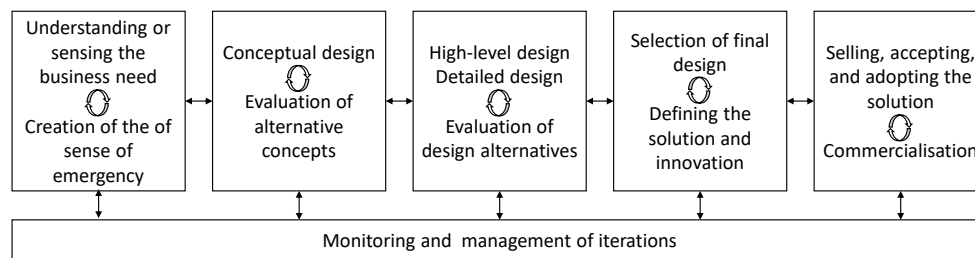


Figure 3. New process for digital innovation.

5 Conclusion

The role of digital innovation in higher education is changing radically. There are two primary reasons for the change. On one hand, the progress of digital transformation has increased the dependency of the business on digital tools and processes. On the other hand, Covid-19 has forced organisations to change their working practices from physical to digital.

Consequently, innovation practices have moved from the outer edge of the HE business to the core. This has increased the attention of the top management and has changed the nature of the digital innovation work. As a result, the innovation process needs to be updated to accommodate new requirements and to meet new expectations. Compared to the traditional process, the new approach starts from the expected outcome by exploring the business requirement and by understanding the need for change. The full presentation will explore the full details of the new innovation process with a number of practical examples.

6 Author biographies



Pekka Kähköpuro is Chief Information Officer at Brunel University London where he is heading the Information Services Directorate. Prior to joining Brunel, Pekka was Director of IT at Aalto University in Finland in 2010-2016 and, before that, he held various senior roles in the private sector including Nokia. He has been a EUNIS board member on two occasions (2011-2015, 2018 onwards) and President in 2015. Pekka obtained his Ph.D. in computer science from the University of Helsinki in 2000. He is a Fellow of the British Computer Society.

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