Universities and Unicorns project

Report 1 of 4

Emerging Edtech Trends in the Higher Education Sector:

Executive summary

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1 About the project

This project introduces new ways to understand and analyse the digitalisation of the higher education (HE) sector. It investigates new forms of value creation and suggests that value in the HE sector increasingly lies in the construction of digital assets. Furthermore, the project examines whether and how actors in the HE sector (universities, companies, investors and others) are changing their innovation and business strategies in the pursuit of new, digital assets. This has significant consequences. Assetisation implies a change from creating value via the market exchange to extracting value via the ownership and control of assets.

Universities are increasingly monetising and selling their services, contributing £13.4 billion in education exports to the British economy (HM Government, 2019, p.15)[1]. While universities are pushing the boundaries of the HE sector by expanding into new markets and creating new services, they are also fundamentally changing their operations through digitalisation. The digitalisation of HE is supported by an emerging education technology ('edtech') industry, which is experiencing a significant rise in investment. For example, digital products and services in the HE sector are materialised via digital platforms, such as virtual learning environments or research management systems. When students and staff engage with these platforms as users, edtech firms collect an unprecedented amount of personal and other user data.

The data that is being produced by various platforms offers significant monetisation opportunities. However, there is currently limited research on how, by whom, and in what form these digital changes are taking place and their consequences for universities, staff, and students. Scholars, media and other commentators often define personal and other data as a new commodity similar to oil. But data and data products do not act like conventional commodities. While oil is used up once consumed, data is reproducible at almost zero marginal cost. New data

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[1] HM Government. (2019). International Education Strategy: global potential, global growth. London: the Department for Education and the Department for International Trade.

products and services can be monetised through subscription fees, an app, or a platform that does not transfer ownership, control, or reproduction rights to the user. Furthermore, data use creates yet more data, and the network effects thereby increase the value of these platforms. There is a new quality at play in the monetisation and marketisation of these new data products and services in the HE sector. Investigating this new quality lies at the heart of the UU project.

1.1 The research questions of the project are as a whole:

- How is digitalisation transforming the HE sector, and what are the relations between digitalisation and data assetisation?
- What kind of digital assets are being created in the HE industry, by whom, and how? How are these assets predicted to generate future value in the HE industry?
- What synergies and tensions exist between investors, private companies and universities in constructing assets and future value in the HE industry? How might tensions be resolved?
- What are the regulatory and contractual challenges in managing asset ownership, rights and future financial flows? How can these challenges be addressed?

1.2 The timeline of the project:

- Phase 1 (January 2021 – July 2021): Mapping of financial flows in edtech for higher education
- Phase 2 (August 2021 – February 2022): Qualitative case studies of universities, edtech companies and investors
- Phase 3 (March 2022-August 2022): Interim data analysis and knowledge co-production with the Stakeholder Forum
- Phase 4 (September 2022 – February 2023): University and public consultation
- Phase 5 (March 2023 – June 2023): Analysis and dissemination

1.3 The structure of the project:

The project structure includes the Core Research Team, the Academic Advisory Board and the Stakeholder Forum.

The four reports in this series present interim findings and discussion only from Phase 1 of the project. These reports address the mapping of emerging trends based on quantitative mapping of edtech companies, investors and investment deals in HE, and qualitative critical discourse analysis of select investors.

2 Methodological summary

In Phase 1, we employed two methodological approaches. For the quantitative mapping, we constructed three databases that we populated with data downloaded from Crunchbase and complemented with our own classification scheme. First, the edtech companies database includes data on 2,012 companies that we identified as relevant for our project. Second, the investors' database includes data on 1,120 investors that we identified as relevant. Finally, the investment deals database includes data on 1,962 investment deals that we were able to identify as relevant. We then undertook basic descriptive statistical analysis to examine the emerging trends relating to these three components of the edtech industry in HE.

For the qualitative critical discourse analysis, we analysed various documents produced by edtech investors. These included: (a) publicly available videos (i.e. YouTube), (b) investment manifestos, (c) professional interviews, (d) global financial reports, and (e) market intelligence charts. These texts are primarily designed for company-external communication, and they are understood to be instrumental in the communication of both leadership and crisis/change within the context in which the texts are produced and distributed. The overarching purpose of the texts analysed is primarily informative and self-promotional, and secondarily agenda-setting. Our approach to data analysis and interpretation was predominantly qualitative and was anchored in the field of Linguistics. Methodologically, the analysis follows canonical steps in Critical Discourse Studies

(Fairclough, 1995, p. 133)[2]: (a) rigorous description of the (multimodal) texts; (b) interpretation of the possible meanings afforded by the texts; and (c) explanation, which focuses on the relation between discursive and social (economic, political and cultural) processes.

Both these analyses together represent a systematic approach to identifying trends in the edtech industry. As potential trends and insights emerged from our analysis, we shared them with our Academic Advisory Board, which consists of world-leading academics specialising in higher education studies, economic sociology and science and technology studies. Furthermore, we shared the trends with our Stakeholder Forum, which consists of key stakeholders and practitioners who are knowledgeable about edtech in HE. These discussions were meant both to challenge and check our emerging insights and generate further questions for exploration. We incorporated the feedback from both groups in the four associated reports. Finally, we are now taking into account the identified trends and feedback as we move to the next phase of the UU project, i.e. case studies and interviewing experts in the field.

3 Quantitative summary

In our quantitative mapping, we identified the following key trends:

3.1 Edtech activities are growing

Edtech in HE is expanding fast. Most edtech companies active in HE were founded in the past two decades, while the more substantial growth is noted in the past 10 years. The amount of financial investment in these companies is increasing significantly, particularly since 2015. We noted especially high investment in the first half of 2021 in comparison to previous years. As companies

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[2] Fairclough, N. (1995) *Critical Discourse Analysis: The critical study of language*. London: Longman.

mature and move to the later stages of funding, they raise more investment and attract more capital.

3.2 Edtech activities are growing in all regions but unevenly

Edtech activity grew across all world regions. However, the overall intensity of activities is unequally distributed as measured by the number of new companies founded and the money they raised. The money raised by companies headquartered in Northern America was substantially higher (US$8.9 billion) than those from Asia (US$2.1 billion) and Europe (US$2.0 billion), most likely reflecting current differences in valuation practices, market potentials, and industry maturity. Venture capital is the investment funding type that we noted had the steepest growth.

Our analysis also suggests that the gap between Europe and North America is less pronounced than commonly reflected in edtech market intelligence sources and popular discourse. We further found that edtech companies in the USA and Europe had diverse primary offerings. On the other hand, the Chinese edtech companies in HE focused on offering content. This could be driven by a regional focus on pre-secondary education over HE.

3.3 Rising valuations and the number of mergers and acquisitions indicate a consolidation

While the data indicated that the relative growth in founding new edtech companies might be slowing, the money that companies raised through investment deals is growing rapidly. By way of example, companies had raised almost double the investment by July 2021 (US$4.4 billion) than in all of 2020 (US$2.3 billion), which was already a big jump from 2019 (US$41.4 billion). This suggests that the sector is becoming more capitalised, driven by investment in companies with a proven track record. There is also some indication of consolidation as 12% of the

companies we mapped in this report have acquired and/or been acquired. In addition, we noticed a rise in the number of edtech 'unicorns', i.e. companies with more than $1bn valuations[3].

3.4   Business to business intermediation is associated with cross-sectoral usage and big investments

HE institutions are key customers for edtech companies, being a key revenue source and conduit for reaching students and staff, who can also be customers. Business to business (B2B) is the primary service model representing half of all the companies included in this study and just over half of the money raised. Business to customer (B2C) models came second as measured by the number of companies and investments. They tend to raise less money per company, which may reflect investors' preference for institutional over individual purchasing power; or that markets targeting individuals are less mature with consequently lower levels of investment. Companies headquartered in Latin America and the Caribbean were a noticeable exception in this trend, as investments leaned more toward the business to customer models.

3.5   "Data-rich" solutions emerged as a limited and unequally distributed operation

The majority (88%) of the edtech companies on our list did not utilise "data-rich" solutions to generate added value through, for example, artificial intelligence, machine learning, or blockchain technology. This indicates a potential tension between the common discourse around edtech's disruptive potential and its causes on the one hand,[4] and edtech solutions that are in majority data-sparse on the other hand. The companies that claim to offer "data-rich" solutions tended to do so through business to business service models. HE institutions were the most common customer of such companies. This indicates that there seem to be two groups of markets emerging. The first is the edtech companies targeting institutions with platforms in

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[3] See HolonIQ's list: https://www.holoniq.com/edtech-unicorns/

[4] See the Universities and Unicorns report 3 of 4: *A critical analysis of investors' logic in business discourse*

which value seems to lie increasingly in data-rich solutions supporting automation, behavioural nudging and personalisation. The second is the edtech companies targeting individuals with platforms where the value seems to lie in intermediation between individuals and the scale of operation.

4 Qualitative summary

We conducted a critical discourse analysis of the output investors' communications. We focused on empirical material produced by select investors in edtech companies active in HE. The key findings are the following:

- EdTech investors and companies are rendered as opaque, abstract collectives and are positively represented as 'enablers' and 'disruptors' of educational processes.
- Governments are rendered as generic, collective entities and depicted as necessary funders of the process of digital transformation.
- Universities or HEIs are mainly negatively represented as potential 'blockers' of processes of digital transformation, and they are depicted as failing their students due to their lack of scalability and flexibility.
- Individuals within HEIs are identified as numbers and increasing percentages within unified collectives, students routinely cast as beneficiaries in 'consumer' and 'user' roles, while educators are activated as 'content providers'.
- Metaphorically, the EdTech sector is conceptualised as a 'ship' on a 'journey' towards profit, where HEIs can be 'obstacles along a path' and the global pandemic and other push factors are conceptualised as 'tailwinds'.
- The EdTech market is conceptualised as a living organism that grows and evolves independently of the actors involved in it. The visual representations observed

reinforce these patterns and emphasise the growth of the EdTech market in very positive terms.

- Push factors identified by investors driving the EdTech sector include the SARS-COVID-19 global pandemic, the digital acceleration being experienced in the sector prior to the pandemic, the increasing number of students requiring access to HE, and investors' actions aimed at disrupting the EdTech market.

- Pull factors encouraging investment in the sector are conceptualised in the shape of financial predictions. The visions put forward by EdTech investors become instrumental in the achievement of those predictions.

- The representation of the global pandemic is ambivalent, and it is rendered both as a negative factor affecting societies and as a positive factor for the EdTech sector. The primary focus is on the positive outcomes of the disruption brought about by the pandemic.

- Educational platforms are foregrounded in their enabling role and replace HEIs as a site for educational practice, de-localising educational practices from physical universities.

- Students and educators are found to be increasingly reframed as 'users' and 'content providers', respectively. This discursive shift is potentially indicative of the new processes of assetisation of HE.

5 Conclusion

In this document, we summarise key insights on the emerging trends in edtech in the HE industry. Please see the relevant three reports for more detail. The first report presents the quantitative mapping and descriptive statistical analysis of HE's edtech companies, investors, and investment deals. The second report presents the qualitative analysis of investors' discourse. And the final report presents our methodological approach in more detail. It focuses specifically on the quantitative side of this analysis.

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