



A Strategic Institutional Response to Micro-Credentials: Key Questions for Educational Leaders

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ABSTRACT

This article responds to the rise of the micro-credential movement. It evidences the heightened attention politicians, policy-makers and educational leaders are giving to micro-credentials by framing the discussion in several recent high-level policy developments, an exponential growth in the number of academic publications and the increasing level of interest shown by popular media. It follows that micro-credentials appear to be high on the change agenda for many higher education institutions (HEIs), especially in the post-COVID-19 environment.

However, the emergence of the micro-credential raises several crucial questions for educational leaders, set against fear of missing out. Importantly, the paper identifies a significant gap in the literature regarding leadership and strategic institutional responses to micro-credentials. Indeed, there is a dearth of literature. Leadership is crucial to the success of any educational change or innovation, so five key questions are presented for institutional leaders. They challenge institutions to make strategic decisions around how they engage with and position micro-credentials. If micro-credentials are part of an HEI's change agenda, then serious consideration needs to be given to the type of leadership and internal structures required to develop and execute a successful micro-credential strategy. Consideration must also be given to fit-for-purpose business models and how to mitigate potential risks. We hope to bring these strategic questions to the table as institutions plan, envision and develop their micro-credential strategies.

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INTRODUCTION

Micro-credentials are ‘the latest shiny new thing’ attracting the interest of educational leaders, policy-makers and politicians (Brown & Nic Giolla Mhichil 2022: 1). Indeed, Usher (2021) claims that micro-credentials are like ‘catnip to politicians’. Hardly a week goes by without news of a micro-credential initiative in some part of the world. Brown et al. (2021) reveal through a major literature review of the field undertaken for the European Commission that 54% of the micro-credential literature, including major reports and academic journal articles, was published in the last two years. Notably, of the 78 publications produced since the beginning of 2020 and up until the beginning of September 2021, 34 (45%) relate to European developments. North America contributed 33 (42%) of the publications, with 16 from Canada and 17 from the United States. The proliferation of micro-credential literature has continued in 2022, with 48 publications on the Micro-credential Observatory website at the beginning of November (National Institute for Digital Learning 2022).

Similarly, the number of articles on micro-credentialing published in newspapers around the world in the English language has grown exponentially. Of the 1,538 articles appearing in the Nexis newspaper database that refer to ‘micro-credentials’ since the first piece was published in 2011, 1,285 (82%) were produced since the start of 2020. Table 1 shows that to date the most articles in any given year appeared in 2021, with 483 entries listed in Nexis. As of November 15th 2022, 476 newspaper articles have been published, the majority originating in North American publications (55%).

YEAR	TOTAL NUMBER	EUROPE	NORTH AMERICA	ASIA	AUSTRALIA AND OCEANIA
2011	2	0	2	0	0
2012	1	0	0	1	0
2013	1	0	1	0	0
2014	0	0	0	0	0
2015	9	0	6	0	3
2016	11	1	7	1	2
2017	32	1	12	1	18
2018	78	3	21	5	48
2019	119	1	44	5	68
2020	326	18	96	28	133
2021	483	22	239	43	92
2022	476	32	261	69	104
Total	1538	78	689	153	468

Table 1 Newspaper items featuring micro-credentials in English publications.

The year 2022 was a significant year for discourses around micro-credential development, as several major new policy initiatives have been launched in the past year. In Australia, for example, the Government released in March a *National Micro-credential Framework* (Australian Government Department of Education, Skills and Employment 2022). Also, this year, UNESCO published a seminal report as part of its effort to develop a common global understanding and definition of micro-credentials following a consultation process involving 47 experts working in the area representing diverse regions and sectors (Oliver 2022). Following an extensive consultation process over two years in Europe, in June 2022, a *Council Recommendation on a European Approach to Micro-credentials for Lifelong Learning and Employability* was formally approved (European Commission 2022). The significance of this development is that all EU Member States agreed to work to adopt a common European approach to micro-credentials with a well-articulated definition. The definition states:

‘Micro-credential’ means the record of the learning outcomes that a learner has acquired following a small volume of learning. These learning outcomes will have been assessed against transparent and clearly defined criteria. Learning experiences leading to micro-credentials are designed to provide the learner with specific

knowledge, skills and competences that respond to societal, personal, cultural or labour market needs. Micro-credentials are owned by the learner, can be shared and are portable. They may be stand-alone or combined into larger credentials. They are underpinned by quality assurance following agreed standards in the relevant sector or area of activity (European Commission 2022: 5a).

Set against this backdrop, the purpose of this article is to consider what is required to develop a strategic institutional response to micro-credentials. After all, micro-credentials provide an opportunity for a strategic reset (McGreal & Olcott 2022). Importantly, educational leaders have choices and should be intentional about their plans. However, the micro-credential movement is not benign, and institutions must be aware of the risks and rewards of unbundling traditional credentials. Brown and Nic Giolla Mhichil (2021) caution there is a danger of the micro-credential being a ‘wolf in sheep’s clothing’. Indeed, Ralston (2021) goes further in a strong critique suggesting that micro-credentials are imbued in the *laissez-faire* market-driven language of the new learning economy. He claims:

The craze represents a betrayal of higher education’s higher purpose and a loss for students and faculty who continue to see university learning as more than vocational training (Ralston 2021: 92).

This critique illustrates that micro-credentials evoke bigger questions requiring educational leaders to critically distinguish between hype and hope. As micro-credentials come in many different forms, educational leaders must identify and critically weigh up their strategic drivers as part of any institutional response. However, the leadership literature on developing and implementing micro-credentials is sparse. A title and abstract search of the Scopus database using the terms ‘micro-credential’ and ‘microcredential’, and ‘leadership’ reveals only six articles. Four of the six were published in the last two years. A similar title and abstract search of the Web of Science database using the terms ‘leadership’, and ‘leaders’, and ‘micro-credential’ found only four publications.

The key point is that a significant gap exists in the literature. This gap also extends at the institutional level as a Canadian survey found that less than half of the responding institutions have a framework or strategy to guide their micro-credential development (Pichette, Rizk, & Brumwell 2021). If micro-credentials are deemed a strategic fit for an institution, then educational leaders should consider:

- How do you strategically position them?
- What type of institutional leadership is required?
- What type of internal structures are required?
- What type of business model(s) are required?
- What could possibly go wrong?

These key questions build on those raised by Olcott (2022a) for US educators. The paper is designed to address each question to help institutions and educational leaders craft their strategic responses to micro-credentials. We hope the paper makes a useful contribution to the burgeoning field from a strategic leadership perspective and enables institutions to plan, develop and effectively execute successful micro-credential strategies aligned with their wider vision, mission, and values.

STRATEGICALLY POSITIONING MICRO-CREDENTIALS

If micro-credentials are on your institutional change agenda, then how do you strategically position them? The answer to this question depends to a large extent on why an HEI chooses to embark on a micro-credential strategy. The fear of missing out (FOMO) or efforts to conquer them because they exist, a variation of the Everest Syndrome (Maddux 1988), are not strong foundations for a successful micro-credential strategy.

Having a clear sense of purpose is crucial to an institution’s strategic thinking about micro-credentials. As Figure 1 illustrates, there are many different drivers and attractors promoting micro-credentials. The above-mentioned *Council Recommendation* provides a synthesis of

the conglomerate of factors that have merged to add weight to the importance of micro-credentials. While many of these factors are not unique to micro-credentials and there is a complex interplay between them, broadly they fall into two categories.

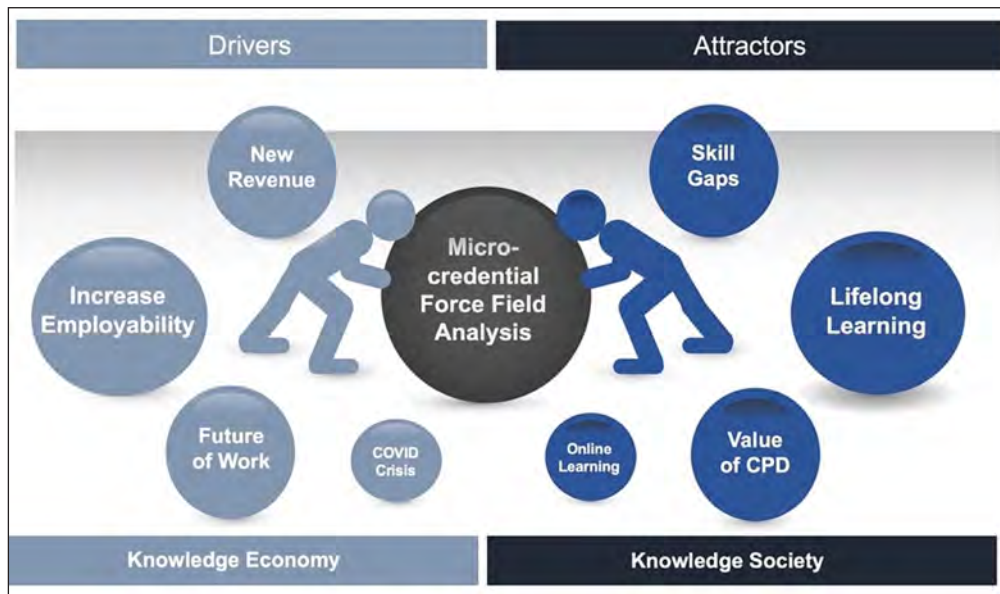


Figure 1 Driver and attractors for the growth of micro-credentials (Brown 2022b).

From a Knowledge Economy perspective, micro-credentials are seen as a means of recruiting people for the fast-changing labour market through reskilling or upskilling. Brown et al. (2021) report from their analysis of the literature that ‘increasing employability’ is the most dominant driver, with 63% of publications referring to this factor as underlying the micro-credential movement. In a similar vein, micro-credentials have been part of government responses to foster a job-rich recovery from the COVID-19 crisis, although this issue features in only 15% of publications (Brown et al. 2021). More pragmatically, an increasing interest in micro-credentials across different business and education sectors may be fuelled by the financial attraction of generating new revenue by opening access to new markets. After all, HolonIQ (2021) estimate the global online degree and micro-credential market will total US \$117 billion by 2025. As Olcott (2022a) observes, at the heart of the current interest in micro-credentials is economics and competition.

HEIs are beginning to understand that there could be a new untapped market of potential learners including alumni, an ever larger group, who have already earned credits through MOOCs (Massive Open Online Courses) and other online offerings from different providers. This presents an opportunity for HEIs to increase enrolment and revenue, while better aligning learning in the academy with the skills needed by industry (Sjö & Hellström 2019).

From a Knowledge Society perspective, micro-credentials are a vehicle for creating a more inclusive culture of lifelong learning where everyone can thrive. Brown et al. (2021) found that the aim of ‘promoting lifelong learner’ featured as a driver or attractor in 48% of the published literature. Notably, in the EU context, micro-credentials are central to implementing targeted initiatives in the *European Pillar of Social Rights Action Plan* to reduce poverty and promote inclusion and accessibility to training and educational opportunities for a wider range of learners (European Commission 2021). They are also seen to play a valuable role in delivering on EU policy targets to advance both the digital and green agenda. However, these societal goals do not feature prominently in the international literature. For example, the aim of ‘increasing equity for underrepresented groups’ appears in only 8% of publications (Brown et al. 2021). The key point is that a broad spectrum of multifaceted drivers and attractors underly the micro-credential movement. Jansen and Schuwer (2015) note that HEIs have different motivations for entering the micro-credential market, such as visibility, reputation, innovation, responsiveness to learners, generating income, or reducing costs (cited in Kato, Galán-Muros & Weko 2020: 21).

The question for educational leaders is what weight do you place on these Knowledge Economy and Knowledge Society drivers and attractors in your micro-credential strategy? What is the main driver and what explicit deliverables underpin your decision to invest in micro-credentials?

Importantly, these drivers are not always inherently aligned to deliver common outcomes (Brown et al. 2021). While at risk of over theorising the choices facing educational leaders, the underlying drivers often reflect quite different worldviews. The current language of crisis, disruption, and re-imagination in the age of the micro-credential offers a kaleidoscope of competing perspectives with different images of the future. A type of multifocal vision is required to critically read and untangle these images (Brown 2022a). Figure 2 attempts to illustrate through the dual lenses of the Knowledge Economy and the Learning Society how competing languages of persuasion imbued in the open badges, alternative credentials and micro-credentials movements promote very different social, economic, and educational outcomes.

On the one hand, the concept of unbundling inhabits the contested terrain of globalisation, fast capitalism, and neo-liberalism. Arguably, the micro-credential symbolises laissez-faire principles of individual choice, education as a personal commodity and the goal of creating an unrestricted global higher education market.

On the other hand, they provide a real opportunity to challenge the status of traditional qualifications, democratise access to higher education and deliver a more equitable and inclusive culture of lifelong learning. Brown's (2022b) kaleidoscope metaphor reminds us that the education system is the outcome of a rich colour palette with conflicting political, ideological, and philosophical assumptions. Extending the metaphor, the rotations of the kaleidoscope reveal key differences between competing and co-existing micro-credential discourses, with four distinct viewpoints.

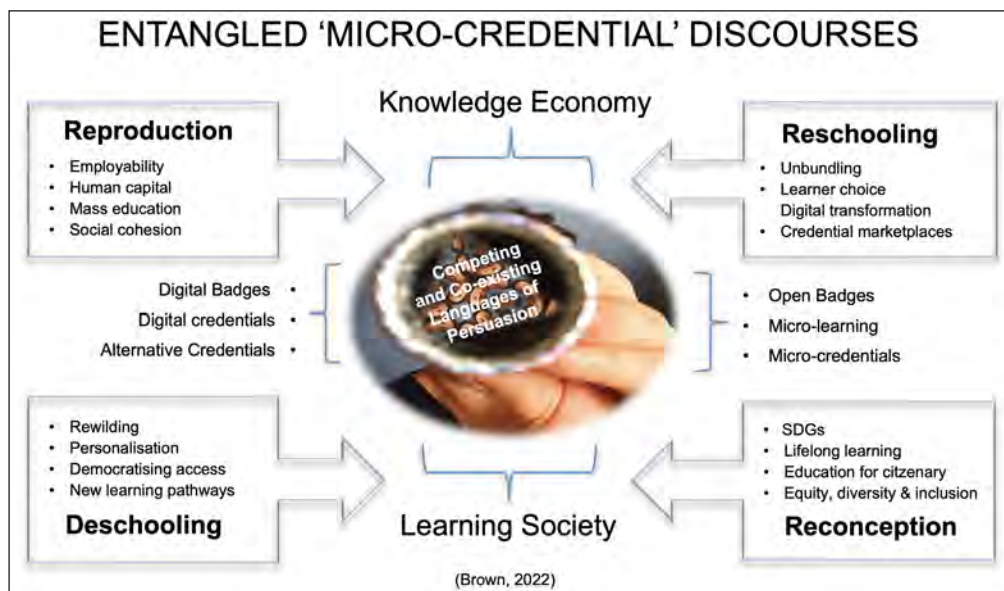


Figure 2 Competing languages of persuasion underlying the micro-credential movement (Brown 2022b).

The *Reproduction* discourse reflects the view that HEIs are major agents of social and cultural reproduction. Accordingly, the discourse places strong emphasis upon mass education, social cohesion, and preparation for future employment through upskilling and reskilling. Formal education is the shifting agent and producer of human capital needed by the economy in the form of a trained and skilled workforce.

The *Reschooling* discourse responds to the call to reform the traditional education system by promoting the language of unbundling, learner choice and digital transformation. An inherent contradiction in this discourse is that micro-credentials promote new learning pathways and credential marketplaces—yet supplementary short course offerings do little to challenge the status of traditional degrees. While micro-credentials are framed in the language of learner choice, they reinforce the message that education is a personal commodity, which has a currency measured against employability, career advancement and the accumulation of wealth.

The *Deschooling* discourse reflects a constellation of perspectives that argue traditional degrees are losing their 'sheepskin effect' (Technológico de Monterrey 2019) in providing life advantages. The discourse supports both the rewilding and unbundling of learning to

help break down the walls of the academic Ivory Tower. While the language of openness, personalisation, and democratising access is infused throughout this perspective, the discourse also unintentionally supports the goals of deregulation, libertarianism, and the laissez-faire free market. For this reason, 'deschooling' is a double-edged sword as it can promote a set of values quite different from education as a public good.

The Reconceptualist discourse promotes a counter-narrative arguing that new lifelong learning pathways support active citizenry and greater participation in all aspects of society. It also positions the micro-credential movement as a powerful lever to achieve the United Nation's Sustainable Development Goals (SDGs), specifically SDG 4: Education for all as well as SDGs 5 and 10, reducing gender and other inequalities (UNESCO n. d.). The underlying assumption is that the problems facing humanity cannot be solved by continuing to do what we have always done. There is a basic need to reconceptualise the higher education system to challenge an inherently unjust knowledge economy to deliver a more equitable, socially just, and sustainable future.

In summary, the above discourses reveal how different interest groups and stakeholders borrow the same language of micro-credentials to legitimise their agenda. In so doing they seek to influence and take ownership of the micro-credential movement to serve their own intentions. Thus, the concept of hegemony is central to understanding how micro-credentials are entangled in these perspectives (Brown 2022b). The risk is that educational leaders seeking to harness the transformative potential of micro-credentials may end up collaborating with the enemy by diminishing the quality and impact of higher education or playing into the hands of neo-liberalists. In less binary language, what this means is that micro-credentials are enmeshed within the politics of digital transformation, which is far more complex than is typically understood.

A fundamental question arising from this line of analysis is what type of higher education system do we want new and emerging micro-credentials to serve? The answer to this question is inextricably linked to broader social imaginaries; our ideas about what constitutes the good society (Brown 2016). The important takeaway is that micro-credentials invite us to ask deeper questions about the future of higher education. Educational leaders have an opportunity to shape this future. Importantly, not all micro-credentials are equally created by design. Figure 3 shows that HEIs have choices in the language they use to position them within their recognition frameworks. A supplementary approach does not have to be the default model. After all, this conception of micro-credentials is hardly disruptive. While this positioning is safe for many HEIs, arguably, it suggests that a micro-credential is subordinate to a traditional degree.

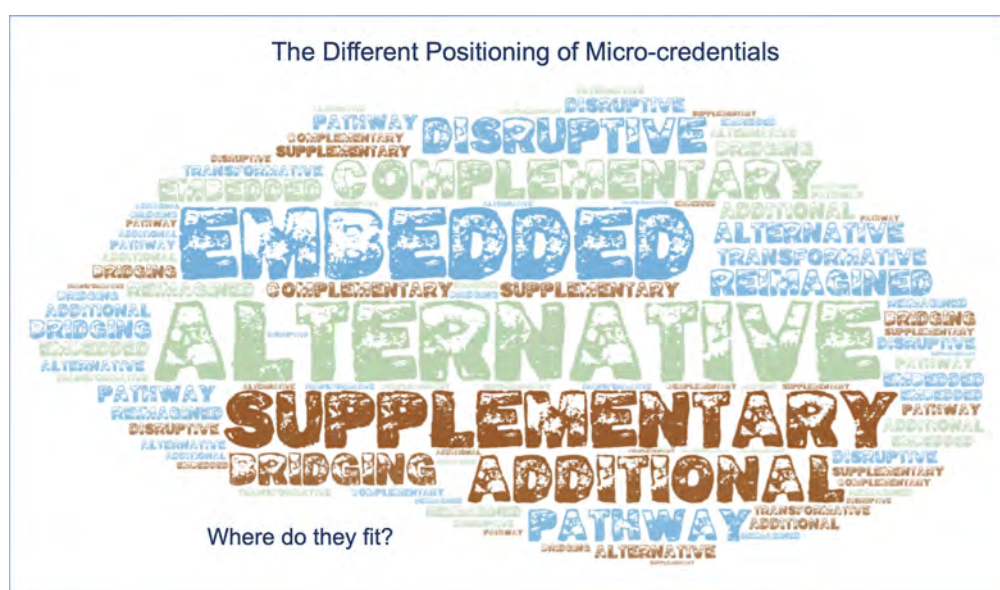


Figure 3 How language positions micro-credentials differently in the credential ecology.

That said, are we expecting too much of the micro-credential to challenge traditional cultural mores? Notably, Brown et al. (2021) found that only 2% of the published literature positioned micro-credentials as a means to 'disrupt traditional 19th Century recognition models'. Similarly, less than 1% of the literature positioned the micro-credential as a means of 'reimagining new

partnership models' for higher education. On a more optimistic note, 24% of publications advocated to 'embed micro-credentials in mainstream education' to create a more inclusive credential ecology. Also, there is an important distinction between a supplementary model of micro-credentials that offers no credit or stackability, as opposed to one that provides credit and a bridge to the completion of a macro-credential. Although it should be clarified that in many institutional contexts there is currently a lot more credit on offer than stackability. While the two approaches are not mutually exclusive, the question is whether you want to maintain a clear distinction between micro-credentials and macro-credentials or rather design a more integrated credential framework?

In the United States (US), the State University of New York (SUNY) provides a mature example of the integrated positioning of micro-credentials on a large scale. SUNY is the largest comprehensive university system in the US. It brings together 64 institutions serving nearly 1.3 million students. With over 500 micro-credentials in more than 60 discipline areas it demonstrates how a consortium of institutions has been successful in developing stackable, credit-bearing micro-credentials to provide career and academic pathways for adult learners. This success is no doubt due to the definitions, guiding principles and implementation plans arising from the work and recommendations of the SUNY Micro-credentialing Task Force (2018). The composition of the Task Force and its recommendations illustrate the types of questions and crucial decisions that institutions need to consider in a micro-credential strategy.

Another important strategic consideration centres around the size, mode, and diversity of offerings in your micro-credential portfolio. How small is small? What load, study hours or credit value will you set for micro-credentials? Will they be available across all delivery modes? How many micro-credentials does your institution envisage it will offer? What will give your micro-credential portfolio coherence? Are they just a collection of short courses cobbled together across faculties, or will you develop a unique selling point (USP) which tells your institution's story? For example, some of the European university alliances are framing micro-credential developments around the SDGs. The ECIU University, known as a leading pioneer in micro-credentials, has a common commitment to SDG 11, with a signature pedagogy of Challenge-based Learning (CBL) (ECIU 2022).

In contrast, the University of Western Australia offers scholarships for the completion of micro-credentials as part of its commitment to international development. This example raises the question of what types of learners are you targeting and where are they likely to reside? Will you focus on bridging courses for secondary school students or second chance adult learners? Alternatively, are the target market undergraduate students or do you wish to position micro-credentials for the wider 'learn as you earn' market at the postgraduate level? Is there an opportunity to attract cohorts of students working with industry partners or target international students through online delivery to reach new markets? These questions reiterate the point that a clear sense of purpose is crucial to an institutional micro-credential strategy.

ADDRESSING INSTITUTIONAL LEADERSHIP

This section assumes that your micro-credential strategy sets the general direction of travel, but its success depends heavily on the right leadership. It asks what type of institutional leadership is required? Who will drive the strategy? Do you need a senior academic or an experienced administrative leader? Do you look within your institution or recruit someone from outside with the type of leadership experience and toolkit required for establishing a new business operation? What specific leadership qualities are you wanting from your leader? While the current leadership literature on micro-credentials is little help in answering these questions, there is a wealth of literature on educational leadership and what it takes to successfully lead and execute major teaching and learning projects. This literature should inform your planning and decision-making as appointing the right leader for your institutional context is essential.

Figure 4 synthesises some of the leadership models and personal qualities identified in the literature. A laissez-faire approach to leadership is understood to be the least effective and unlikely to engage key stakeholders. If your micro-credential strategy is modest and positions them as supplementary offerings, then a transactional leader may be all your institution requires. However, transactional leaders can be autocratic, bureaucratic, democratic and/or

charismatic, so consideration must be given to the type of behavioural traits and qualities that best fit your requirements. Transformative leaders are typically characterised as being highly ethical, adopting a coaching and affirmative approach where colleagues perceive them as trustworthy with a pacesetter work ethic and growth mindset.

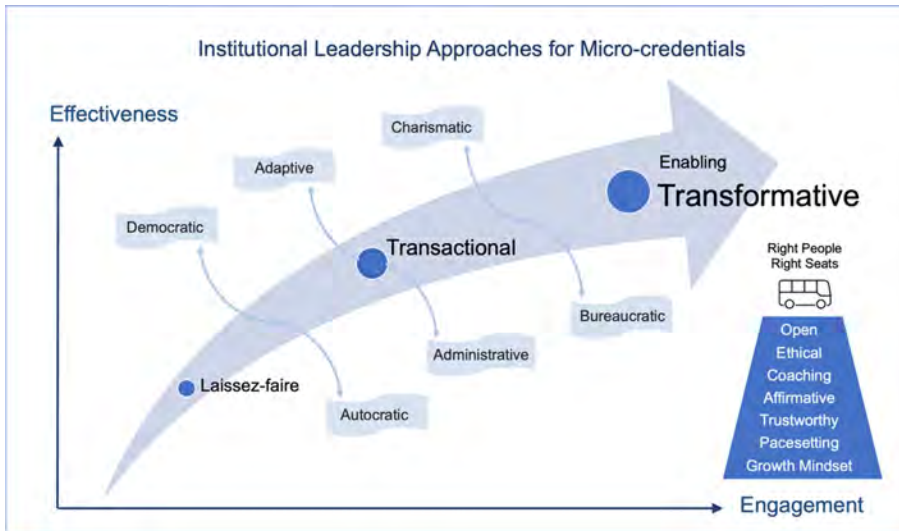


Figure 4 Transformative qualities for leading a micro-credential strategy (Brown 2022b).

Fullan and Scott (2009: 97) in their seminal book on turnaround leadership for higher education conclude that the common quality of effective leaders is they ‘listen, link, leverage and then lead, in that order’. Contemporary leadership models raise red flags about the ‘lone ranger’ leader as they recognise the importance of fostering micro-leaders throughout the institution. More specifically, Complex Leadership Theory (CLT) refers to this as *enabling leadership*, which rejects the top-down style of command and control by leaders, as sustainable educational innovations depend on harnessing diffused power across coupled systems (Schophuizen, et al. 2022). The basic lesson is straightforward, transformative leadership requires a whole team. As Christensen and Eyring (2011: 381) put it, you must “get the right people on the bus and in the right seats”. As three male authors from distinct cultural backgrounds—we would be remiss not to emphasise the importance of ensuring diversity in deciding who sits in these seats. Transformative leaders value competing viewpoints as debate, disagreement and even resistance can be a valuable source of insight.

Figure 5 outlines the range of people to be included in an effective micro-credential leadership team. It presents the core team proposed by Bigelow et al. (2022) and identifies many other key interfaces through the institution and beyond. While the importance of the initiative lead cannot be underestimated, the development of a suite of micro-credentials requires employer engagement, subject matter experts, and specialist pedagogical, learning design and educational technology support. The role of the leadership champion who ideally is a member of the senior executive team is also crucial.

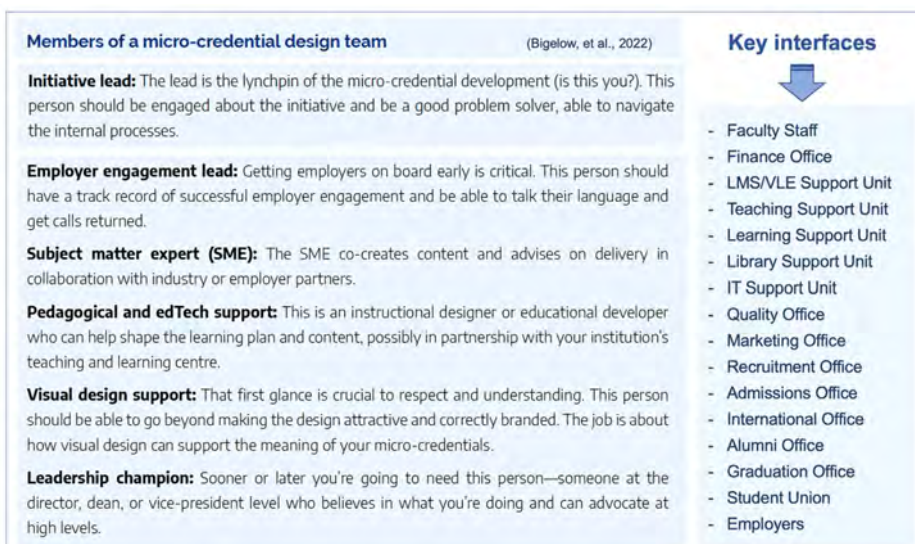


Figure 5 Internal stakeholders who should be included in an effective micro-credential team (adapted from Bigelow et al. 2022).

But a successful micro-credential strategy depends on many stakeholders, so institutional silos should be avoided at all costs. An effective strategy should have strong interfaces across the institution, such as a micro-credential advisory board or active community of practice. Crucially, a transformative micro-credential strategy must engage faculty staff as there is likely to be indirect resistance to the unbundling of traditional degrees. As Olcott (2022b: 7) writes, “Why would anyone get aboard the change train if there are no potential benefits for supporting that change?” Also, students registering for micro-credentials should not be left without learning support and development opportunities. Instructional considerations are just one part of an institutional micro-credential ecosystem. The literature shows that support should exist beyond the classroom as student success can depend on academic coaching, development of library skills, career planning, access to disability support services, and so on. This point underscores the utility of thinking about the wider systems and infrastructures required to support new students in a rich micro-credential ecology. In the context of online learning, these systems and infrastructures are usually institutional markers of excellence (Moore & Piety 2022).

Importantly, the Chief Financial Officer should be around the table and your micro-credential strategy should remain high on the agenda of the institution’s senior leadership team. This raises the question of who provides overarching governance? Do you establish a management board or use an existing committee to provide this strategic oversight? Also, there is merit in establishing a wider Micro-credential Advisory Group with representatives from across the institution to ensure as many stakeholders as possible are engaged in the initiative. Additionally, the role of your Information Technology Services Unit should not be forgotten as somewhere in your strategy you will need to consider procurement and support for a technology solution to issue digital badges for your micro-credentials.

Figure 6 presents 12 principles for enabling a culture of micro-credential leadership in HEIs. Such a culture sets priorities, is outcome focused, evidenced based and makes it clear who is responsible. Such a culture is accountable, transparent and shares ownership across the organisation. People are well-networked, understand the importance of strategic partnerships and can zoom in and out from the small detail to the bigger picture. Most of all they are strongly team-focused, pacesetting and transformative. While none of these principles are particularly unique to micro-credentials, they bring the late Peter Drucker’s famous words to mind that “culture eats strategy for breakfast” (cited in European Universities Association 2022: 4). Therefore, particular attention needs to be given to the climate, atmosphere and practices that develop around your micro-credential strategy. It can be the ‘secret sauce’ that influences the way new innovations mesh with longstanding values, beliefs, and educational practices.



Figure 6 Supporting an enabling culture of leadership for micro-credentials (adapted from Fullan & Scott 2009).

When it comes to strategy development, there is a crucial question of whether educational leaders should develop a new standalone micro-credential strategy or rather embed the strategy in an existing plan or initiative that already promotes adult lifelong learning and/or continuous professional development. This choice depends to a large extent on the institutional context. To date, there is no evidence of whether one approach is more effective than the other, although building on a previous strategy using existing teams and structures may help during a pilot phase.

CONSIDERING INTERNAL STRUCTURES

This section builds on the last point concerning the question of structures. It asks what type of internal structures are required? The answer to this question depends on your short-and longer-term ambitions for micro-credentials. A supplementary model of micro-credentials is probably better suited to adapting current structures, whereas a more ambitious strategy may require completely new internal structures. While there is evidence that a growing number of HEIs around the world have established new micro-credential departments, there is hardly any publicly available information on how these units were formed, where they morphed from and what was considered during their establishment. [Figure 7](#) addresses this gap in the literature by making explicit some of the options for educational leaders. It presents four scenarios to support a micro-credential strategy.

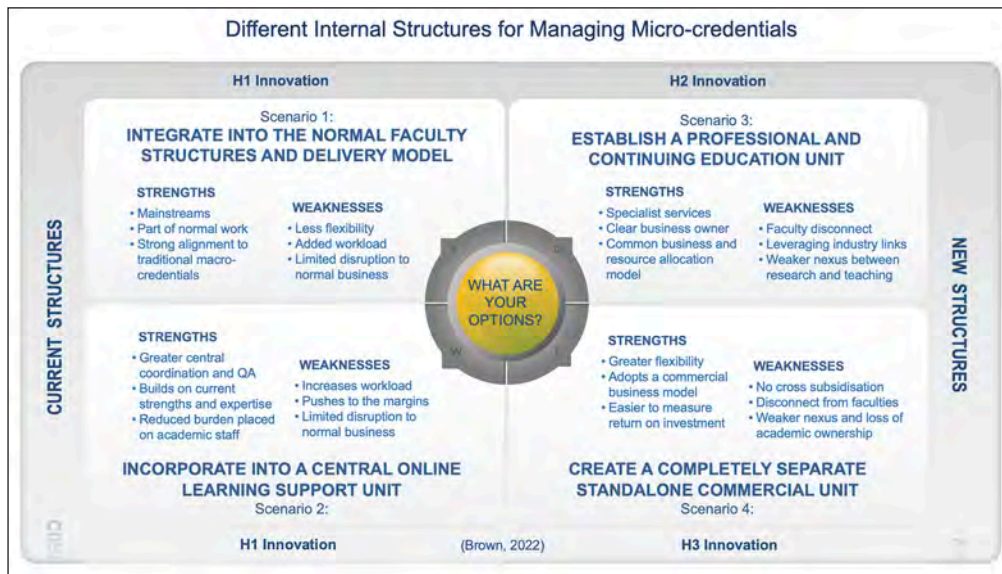


Figure 7 Example of different internal structures for managing micro-credentials (Brown 2022b).

In Scenario 1, the responsibility for micro-credential design, development and delivery is incorporated in normal faculty structures. This helps to mainstream micro-credentials as part of normal work and ensures stronger alignment with existing macro-credentials. However, the additional workload placed on academic and support staff in faculties is not insignificant and should be understood in terms of opportunity costs. Put another way, more time engaged in teaching activities is less time for research and publishing in prestigious journals. There is also less flexibility as micro-credential offerings should fit the normal lifecycle for student administration and course delivery within the academic year. Although Scenario 1 structures do require strategic planning and added workload across design and implementation teams, there is less room for disruptive or transformative innovation, as business-as-usual operations sustain only incremental innovation.

In Scenario 2, the responsibility for managing micro-credentials is given to an existing central unit that already supports online learning across the institution. This scenario assumes that most of your micro-credentials will be offered online. It has the advantage of building on existing capabilities and expertise and offers greater central coordination and quality assurance of micro-credential development. While this structure helps to reduce the workload placed on subject matter experts by using central services, it adds to the work of this team. Also, it risks pushing micro-credentials to the margins of core faculty activities with little or no impact on normal business.

In Scenario 3, a new Professional and Continuing Education (PACE) Unit is established to manage the development of micro-credentials across the institution. The role of this unit is to coordinate business development and faculty engagement as well as branding, marketing, and recruitment for all the institution's short course offerings, including both credit-bearing and non-credit bearing micro-credentials. In the past, many institutions supported extension activities through continuing education offices, but their offerings were usually non-credit bearing (McGreal et al. 2022). This scenario offers clear business ownership for all manner of

short courses and specialist services designed to support the growing continuing professional development market. There is also a transparent resource allocation model to share income and monitor the return on investment. However, business development opportunities remain dependent on industry links, which usually reside in faculties, and the research teaching nexus does not feature prominently in this model.

In Scenario 4, the ownership for micro-credentials is placed in a separate new commercial unit that operates outside of normal institutional structures. This structure offers greater flexibility regarding mode, pace and place of learning and makes it easier to manage and monitor the performance of individual courses along with the overall financial return on investment. While there are many advantages to adopting a commercial model outside of the normal business, cross subsidisation of micro-credential offerings is less likely as each short course is normally expected to pay its own way. Moreover, the link to faculties and traditional macro-credentials is relatively weak, risking the loss of academic ownership.

Mapping these different structures for supporting micro-credentials to the Three Horizons Framework (Baghai, Coley & White 2000) for planning and fostering an innovation culture within your organisation offers further insights into the advantages and disadvantages of each scenario. This seminal innovation framework provides a structure for businesses and organisations to assess potential growth opportunities without neglecting their core business.

Figure 8 illustrates the differences between the three horizons.

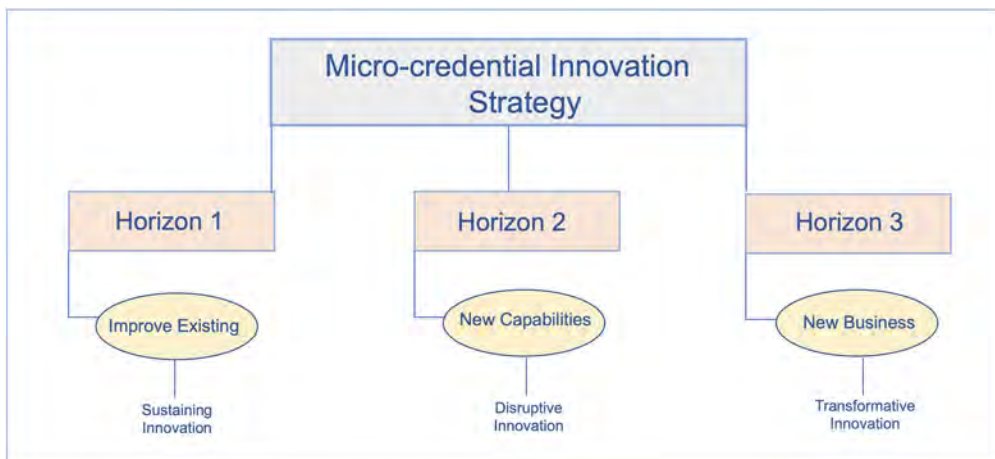


Figure 8 The Three Horizon Framework for planning innovation (adapted from Baghai, Coley & White 2000).

Horizon 1 is the dominant system at present. It represents 'business as usual' where the focus is on sustaining minor innovations as part of continuous improvement in a planned and orderly manner thereby ensuring that uncertainties and risks are minimised. Of the four scenarios described above, Scenarios 1 and 2 fall within the category of H1 innovation.

Horizon 2 seeks to expand the organisation's core model, improving its main capabilities to achieve new targets or reach new customers. It paves the way for a more disruptive state where people are encouraged to adopt entrepreneurial mindsets to try things out in response to the way in which the landscape is changing. This horizon is all about harnessing new opportunities. The establishment of PACE in Scenario 3, has the potential to advance H2 innovation fostering a more entrepreneurial approach to micro-credentials. In Canada, for example, the launch of the 'PowerEd' hub at Athabasca University can be seen as an attempt to harness H2 innovation. In addition, MOOCs can now be considered as part of the core model of many HEIs. Class Central, a portal that aggregates offerings of MOOCs and micro-credentials, has reported that, excluding China, since 2011 there have been some 220 million learners enrolling in courses from 950 universities (Shah 2021).

Horizon 3 creates a new business. It challenges organisations to think outside of the box and what they would do if they could start again without restrictions. Efforts are focused on developing new ways of doing things that may become the future model when the current model is no longer fit for purpose. This horizon is about transformative innovation and revolutionary change. It follows Scenario 4 is the closest to meeting the criteria of H3 innovation.

Australia provides an interesting example of H3 innovation. In 2022, the University of New South Wales launched ‘Mentem by UNSW’ to work directly with business and government agencies to provide ‘contextualised learning’ for cohorts of employees. CEO, Arvind Sampath reported that Mentem aims to provide a mix of formal and on-the-job learning designed to fit into employees’ daily lives (Menezes 2022). Rather than designing a suite of micro-credentials and pre-packaged small volumes of learning to deliver to individual employees, Mentem takes a different approach. The assumption is that no two businesses are the same. Therefore, the organisation’s subject matter experts are embedded in the professional development from end to end to ensure any upskilling aligns with its strategic objectives. By also including employees in the design of the upskilling, Mentem hopes to support self-sustaining learning organisations. This new venture ‘has set itself the ambitious goal of upskilling 500,000 workers by 2030’ (Hare 2022).

In summary, the Three Horizons Framework offers a lens for looking to the future without losing sight of the present. The basic idea of the framework is that a transformative organisation needs to work simultaneously on the vectors of innovation across all three horizons (Cawood & Vasques 2022). In this way an organisation can position itself for continuous, long-term growth and development. The horizons help educational leaders to visualize what an ambidextrous micro-credential strategy could look like. Through the lens of H2 and H3 innovation, visionary leaders are challenged to consider ‘Big Hairy Audacious Goals’ (BHAGs) that might on first impression be seen as ridiculous.

IDENTIFYING THE MOST APPROPRIATE BUSINESS MODEL(S)

This section picks up on the theme of business models. It asks what type of business model(s) are required? There is already literature on business models for online delivery. Orr, Weller and Farrow (2018) provide a global comparison of these models in which they identify the five business strategies:

- *Fixed core model*
- *Outreach model*
- *Service-provider model*
- *Entrepreneurial model*
- *Entrepreneurial model with fixed core*

Presant (2020) was the first to differentiate between different business models for micro-credentials. Table 2 expands on this useful work by outlining the various business models available to institutions. While Brown et al. (2021) show that the sole institution model is the dominant approach in the literature, with 72% of publications reporting business models adopting this model, it does not have to be this way. Again, the SUNY example and European universities alliances show how a consortium can accelerate micro-credential development. Another example of a peer consortium is the OER universitas (OERu), “an international network of over 40 partner institutions across five continents... who collaborate to assemble freely accessible, high quality, accredited online courses from OER” (McGreal et al. 2022: 294).

The opportunity for industry-led initiatives or co-construction of micro-credentials with business and government agencies is illustrated through the Mentem example. In Ireland, the Irish Universities Association (IUA) is coordinating a national micro-credential project funded by the government where active industry engagement is being sought, but member institutions are still free to pursue their own initiatives. For example, a recent partnership between Dublin City University (DCU) and Skillnet Ireland, a government agency dedicated to promoting workforce learning, has resulted in the development of four micro-credentials aimed at aviation managers. They can be taken individually or stacked together to achieve a Graduate Certificate.

Another business model is partnering with professional bodies or non-government organisations (NGOs). While non-credit bearing, Athabasca University has partnered with the Commonwealth of Learning to offer several short courses in the practice of blended learning. Also at Athabasca University, PowerEd, its enterprise unit to promote micro-credentials, has partnered with the Institute of Health Economics (IHE) to develop a new four-course micro-credential in health

	SOLE INSTITUTION	INSTITUTIONAL BUSINESS UNIT	PEER CONSORTIUM	INDUSTRY LED OR PARTNERSHIP	PROF. BODY LED OR PARTNERSHIP	NGO LED OR PARTNERSHIP	MOOC LED	OPX LED
Description	College or university-wide	Commercial unit or Subsidiary	Strategic alliance	Major company or organisation	Discipline or sector body or association	Independent organisation or charitable trust	MOOC platform	Commercial supplier or partner
Example	PowerEd	Mentem	ECIU University	Skillnet Ireland	British Mental Health Foundation	Institute of Health Economics	Courseva, EdX, FutureLearn	FourthRev
Effort	MED	MED	High	MED	MED	MED	LOW	LOW
Horizon	H1	H2/H3	H2/H3	H1/H2	H1	H1	H2	H2/H3
Risk	LOW	MED	MED	LOW	LOW	LOW	LOW	MED
Autonomy	HIGH	HIGH	MED	MED	MED	MED	MED	LOW
Speed to Market	MED	HIGH	LOW	MED	MED	MED	HIGH	HIGH
Costs	MED	MED	MED	LOW	LOW	LOW	MED	MED
Impact/Benefits	LOW/MED	MED/High	MED/HIGH	MED	MED	MED	LOW/MED	MED/HIGH
Return on Investment	LOW/MED	MED/High	MED	MED	MED	MED	LOW/MED	MED/HIGH
Strengths	Centralised approach with high autonomy over brand, product suite and design and development model	Potential for fast, flexible and “agile” response to changing market needs and opportunities	Bigger footprint, safety in numbers, with shared values and goals driving a vibrant community of practice	Packaged, tested solution with proven brand recognition and cohorts of students	More agility due to one decision-maker and leverages existing community of practice	More agility due to working with just one partner and potential for external funding	Proven online platform and existing market of learners around the globe	Strong industry connections and business model for course development
Weaknesses	Constrained by traditional institutional structures, core business model and organisational culture	Disconnection with faculties, weaker research/teaching nexus and potential for mission creep	Governance can be cumbersome and hard to sustain over time without external funding	Loss of autonomy and potential conflicting goals with more of a vocational focus	Loss of autonomy and potentially reputation if you fail to deliver	Loss of autonomy and need signoff for each step of the process	Loss of brand recognition and limited system integration	Loss of autonomy and high percentage of revenue is shared with partner

Table 2 Summary matrix of micro-credential business models (adapted from [Present, 2020](#)).

economics. IHE is an independent, not-for-profit organisation with key expertise in the health sector. Partnerships with professional bodies can be shaped in different ways. For example, the UK Open University's micro-credential on 'Embedding Mental Health in the Curriculum' offered through FutureLearn is endorsed by the British Mental Health Foundation.

This example reveals two business models missing from Present's (2020) original analysis. First, micro-credentials offered through MOOC platforms and second the growing range of developments occurring in partnership with the OPX sector, which is a term that refers to the entire spectrum of commercial service models supporting higher education (HolonIQ 2019). In the UK, for example, FourthRev specialises in partnering with industry leaders to develop career-focused education for working professionals, with the added value of a micro-credential from one of the world's best universities.

Regarding MOOCs, an OECD (2021) report shows that the number of micro-credentials offered on some of the most popular platforms increased by as much as 80% between May 2020 and May 2021. Micro-credentials delivered through MOOC platforms offer institutions some advantages. They allow greater flexibility in delivery, add a valuable layer of external quality assurance, and provide a market of learners predisposed to undertaking online professional development.

This section demonstrates that the decision of which business model is the best fit for your institution depends on many factors, including your ambitions and how you choose to position micro-credentials. Also, the preferred business model(s) is likely to influence your thinking about appropriate internal structures, which further emphasises the number of crucial dependencies that educational leaders should consider when developing an institutional micro-credential strategy.

MITIGATING RISKS

This last point raises the question, what could possibly go wrong? What would be the nightmare scenario for a failed micro-credential strategy? The answer to this question conjures up the 3Rs: Reputation, Recruitment and Revenue. A nightmare scenario might lead to loss of reputation due to a failed new business venture. Moreover, poor recruitment of new students due to insufficient attention to the demand-side of micro-credentials is another risk. There is also a risk that micro-credentials attract students who might normally pursue a macro-credential, with a resulting loss of income as they fail to continue their studies. This risk has implications for the price HEIs decide to charge students for micro-credentials as the wrong revenue model could easily undermine and potentially dismantle traditional macro-credentials. Importantly, failure to meet your financial targets and high costs associated with developing short online courses compared to larger ones generating more income should also be of concern, even when they assemble and adapt lower-cost OER. These worst-case scenarios, and others, highlight the importance of ensuring that educational leaders follow best practice in terms of risk management. Most large HEIs have a risk management framework, which is your friend in terms of further identifying and mitigating risks. At the core of this paper are many of the strategies required to minimise risk and to enhance the chances of a successful institutional micro-credential strategy. However, as part of prudent strategic planning, it would be advisable for your institution to have a 'plan B' or exit strategy should your micro-credentials fail to achieve the income and recruitment targets you have set for them. After all, micro-credentials would not be the first educational innovation that fails to live up to the hype and without the right leadership some institutions may need to walk away from them.

CONCLUSION

This article sought to help educational leaders to craft a strategic response to the burgeoning micro-credential movement. It reveals a lack of literature around leadership and raises several key questions. In so doing the paper addresses a lack of knowledge and common understanding that "has been recognised as a central challenge to the coherent implementation of micro-credentials across higher education systems" (OECD 2021: 5). Our challenge to educational leaders and the institutions they serve is to make better informed and more strategic decisions in the way they engage with micro-credentials. The micro-credential is not necessarily benign.

Indeed, investing in micro-credentials may be a risky venture without vision, strategic leadership and alignment with your institutional mission. How you position the micro-credential from the outset is crucial as this influences the type of leadership, structures and business model(s) that best serve your strategy. Another key takeaway is that micro-credentials have many faces. Accordingly, there is no simple blueprint to the development and successful execution of a micro-credential strategy. For instance, educational leaders may need to consider when a strategy is needed as initially a more organic approach driven by practice may help to seed bottom-up pilots, which can in turn influence strategy development through agile iterations. Above all, we have shown that educational leaders should be weighing up many different considerations, while offering a compelling strategy and business case for how their institution can benefit from micro-credentials. A serious investment in micro-credentials is not for the faint hearted and can require a long-term commitment.

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