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The University of Danang

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USAID Partnership for Higher Education Reform

Policy Analysis in Online Education

International Experiences and Recommendations
for three Universities Participating in the USAID Partnership
for Higher Education Reform project

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Table of Contents

Foreword vi
Acknowledgments vii
About the authors viii
Part I. Overview 1
I. Introduction 1
II. Objectives 2
III. Scope of the report 3
IV. Structure of the report 3
Part II. Overall Approach and International Experience 4
Section I. Guiding Frameworks 4
I. A brief history of online education 4
II. Models for online education 7
III. Four-phase academic value model 11
IV. Quality assurance 14
V. Financial sustainability 15
Section II. International Experiences and Case Studies 18
I. Case study 1: Design innovator 18
II. Case study 2: Productivity innovator 21
III. Case study 3: Scale innovator 23
Section III. Online Education at Indiana University 26
I. Foundations 26
II. Preparations 35
III. Experiences 37
IV. Successes 37
V. Quality Assurance 39

VI. Financial sustainability 41
VII. Pros and cons of the IU's online education and some recommendations 41
Part III. Online Education in Vietnam 43
Section I. Overall Context in Vietnam 43
I. A brief of history of online education in Vietnam 43
II. The national approach and regulatory framework 44
III. Integrated analysis of development, quality, and sustainability 44
Section II. Online Education at the University of Da Nang 45
I. Foundation 45
II. Preparation 48
III. Experiences 52
IV. Integrated analysis of development, quality, and sustainability 56
Section III. Online Education at Vietnam National University – Hanoi 59
I. The context and current situation of online education in VNUHN 59
II. Development plans 61
III. Integrated analysis of development, quality and sustainability 65
Section IV. Online Education at Vietnam National University – Ho Chi Minh City 66
I. The development history and current context 66
II. Development plans 67
III. Integrated analysis of development, quality, and sustainability 68
Part IV. Synthesis, Conclusions, and Recommendations 69
Section I. Synthesis 69
I. Development model 69
II. Quality model 71
III. Financial model 74
IV. National policy and regulations 74
V. Conclusions 74

Section II. Recommendations 75

I. Institutional development 76

II. Quality assurance 77

III. Financial sustainability 77

IV. The national policies and regulations 78

V. Specific recommendations for each university 78

References 81

List of Figures

Figure 1: Recent higher education transformation eras 4

Figure 2: Online education growth phases 5

Figure 3: University-firm partnership stances 10

Figure 4: Four-phase academic value model 11

Figure 5: Quality domains and parameters 15

Figure 6: Partnership stance for design innovator case study 19

Figure 7: Partnership parameters for design innovator case study 19

Figure 8: Partnership stance for productivity innovator case study 22

Figure 9: Partnership parameters for productivity innovator case study 22

Figure 10: Partnership stance for scale innovator case study 24

Figure 11. Partnership parameters for scale innovator case study 25

Figure 12. The training scale and annual admissions, graduations of the CCE 45

Figure 13. The online program for distance learning at the UD 53

Figure 14: Online training ecosystem of VNUHN 61

Figure 15. Components of the online training model at VNU 63

Figure 16: Development strategy steps 69

List of Tables

Table 1. Models of Online Education 7

Table 2: Online education model benefits and limitations 7

Table 3: Example of blending of education phases and activities 16

Table 4: Designing financially sustainable blended education 17

Table 5. Statistics of higher education and distance learning in Vietnam 43

Table 6. Student sizes and structures of the two open universities 44

Table 7: Associate units for getting up training station 48

Table 8. Admissions for distance learning from 2020-2022 at VNUHCM 66

Table 9. Student population and granted degrees for distance learning of VNUHCM 66

Table 10: Parameters and investment questions 70

Table 11: Online quality framework questions and evidence 71

Table 12: Planning blended education phases and activities 74

Foreword

This policy analysis is delivered as part of the Partnership for Higher Education Reform (PHER) between Indiana University (IU) and three partner universities in Vietnam including: Vietnam National University-Ho Chi Minh City (VNUHCM), Vietnam National University-Hanoi (VNUHN), and the Danang University (UD). PHER is sponsored by the United States Agency for International Development (USAID). The five-year initiative is to support modernizing Vietnam's leading universities and strengthen Vietnam's higher education system in alignment with USAID's Higher Education Program Framework. The PHER project conducts a policy analysis each year on a specific theme. Such policy analyses are intended as two main parts. The policy briefs are short, stand-alone documents that present findings and recommendations on specific topics of national interest, advocating for a particular position, vision, strategic ideas, or options. The main bodies of the analyses provide comprehensive and specific information with the overall context.

The topic for this year is online education. The aim is to distill international experiences and lessons learned to provide easily understandable advice for the three partner universities (3Us). It largely focuses on institutional policy and potential changes needed to effectuate movement toward any preferred future model online education. Vietnam is currently embracing a digitization strategy across its public universities, yet the internal policies are not fully developed to support ready adoption of a new vision. PHER seeks to engage the 3Us in exploring a range of best practices in online higher education worldwide.

Around the world, transformations in recent years have ushered in a new era of online higher education. In the first two decades of the internet, education technology tended to be led by engineers and managers who understandably focused on technological fundamentals and innovations rather than broader educational and institutional returns. The decades ahead look different. Rather than focusing on technology, contemporary academic leaders leverage different online platforms and experts to enable more productive and higher quality higher education. Online education will no longer be an often low-cost, emergency alternative form of higher education. Rather, it is shifting into the mainstream. This shift has been driven by the maturation of relevant technologies and platforms, the growth of tech-friendly university leaders, the disruption of related industries, the rise of sector-dedicated online firms, and of course the pandemic-induced shift to many more things becoming available online.

The focus is on three facets of online education: (i) institutional development; (ii) quality assurance; and (iii) financial sustainability. The strategically framed analysis of international and national developments yields important insights. It affirms the importance of online mode as a form of higher education and also the transformational nature of digitalization for future higher education overall. The case studies bring out the brilliant, diverse, and dynamic innovation already underway, which offer kernels for future growth and development.

Richard Hopper
PHER's Chief of Party

Anh Tran
PHER's Principal Investigator

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Abbreviations

3U	3 Universities (VNUHN, VNUHCM, UD)
APEC	Asia-Pacific Economic Cooperation
ASU	Arizona State University
AVP	Associate Vice President
BLR	Blended learning ratio
BS	Bachelor of Science
BUILD-IT	Building University-Industry Learning and Development through Innovation and Technology
CCE	Center for Continuing Education
CDIO	Conceive Design Implement Operate
DAAD	German Academic Exchange Service
DEI	Digital Evolution Index
DL	Distance Learning
DUE	University of Economics - The University of Danang
DUT	University of Science Technology - The University of Danang
EMVITET	Empowering Vietnamese VET Teachers for Transformation towards Education 4.0
EQA	Education Quality Assurance
EVCAA	Executive Vice Chancellor of Academic Affairs
GDP	Gross domestic product
HEEAP	Higher Engineering Education Alliance Program
HEI	Higher education institution
HLC	Higher Learning Commission
ICT	Information and Communications Technology
IEQA	Institute of Education Quality Assurance
IQA	Internal Quality Assurance
IRF	Initial Request Form
IT	Information Technology
IU	Indiana University
IUPUI	Indiana University Purdue University Indianapolis
LAMP	Liberal Arts and Management Program
LCMS	Learning content management system
LMS	Learning Management System
MOA	Memorandum of Agreement
MOET	Ministry of Education and Training
MOOC	Massive Open Online Course
NASATI	National Bureau of Science and Technology Information
OBE	Outcome-based Education
OCAP	Office of Collaborative Academic Programs
OLC	Online Learning Consortium

OOE	Office of Online Education
OPM	Online Program Manager
PHER	Partnership for Higher Education Reform
PHKT	UD Campus in Kon Tum
PPP	Public-private partnerships
QM	Quality Matters
NC-SARA	National Council for State Authorization Reciprocity Agreements
UD	The University of Danang
UES	University of Science and Education (University of Danang)
UFLS	University of Foreign Languages Studies
UITS	University Information Technology Services
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
UST	University of Science Technology - The University of Danang
UTE	University of Technology and Education
VKU	Vietnam-Korea University of Information and Communication Technology
VNPT	Vietnam Posts and Telecommunications Group
VNUHCM	Vietnam National University, Ho Chi Minh
VNUHN	Vietnam National University, Hanoi
VULII	The Vocational and University. Leadership Innovation Institute
WCET	WICHE Cooperative for Educational Technologies

Executive Summary

Overview

This policy analysis is delivered as part of the Partnership for Higher Education Reform (PHER) between Indiana University (IU) and three partner universities in Vietnam including: Vietnam National University-Ho Chi Minh City (VNUHCM), Vietnam National University-Hanoi (VNUHN), and the Danang University (UD). The five-year initiative is to support modernizing Vietnam's leading universities and strengthen Vietnam's higher education system in alignment with USAID's Higher Education Program Framework. The PHER project conducts a policy analysis each year on a specific theme. The topic for this year is online education. The aim is to distill international experiences and lessons learned to provide easily understandable advice for the three partner universities (3Us).

Around the world, transformations in recent years have ushered in a new era of online higher education. There is a pressing need to develop online education in Vietnamese higher education in ways that ensure quality and sustainability. It is vital, therefore, to further enhance the development, quality, and financial sustainability of online higher education. To this end, this policy analysis shows through strategic and case study analyses how online higher education can be quality-assured and sustainable. It provides practical resources for experts involved in institutional change. Through these endeavors, the policy brief helps establish robust internal online education quality assurance systems and transform university finance to achieve greater institutional autonomy.

Vietnam is currently embracing a digitization strategy across its public universities, yet the internal policies are not fully developed to support the ready adoption of a new vision. Therefore, the focus is largely on institutional policy and potential changes needed to effectuate movement toward any preferred future model of online education. PHER seeks to engage the three partner universities in exploring a range of best practices in online higher education worldwide.

The goal is to stimulate dialogue on institutional policy considerations, help each university define its own direction, and begin the process of generating organizational coherence to support the implementation of online education plans. As the above remarks convey, this analysis focuses on online education quality and productivity at the institution level. While by no means a comprehensive treatment of the topic, this policy analysis furnishes formative and substantial contributions to understanding a major facet of higher education.

The framework and overall approach

The frameworks focus on three facets of online education: (i) institutional development; (ii) quality assurance; and (iii) financial sustainability. They are drawn from existing research and policy literature. They necessarily focus on different types of matters and details and would normally be handled in different areas of a university. The approach will be rendered in a sequence that makes broad sense in terms of institution and education development logic. The frameworks are used to explicate steps for development and productive management.

Development model

How higher education institutions position themselves in relation to online education depends on the development model they adopt. This, in turn, depends on first, the institutional stance adopted towards online-related partnerships, and second, the specification of detailed functional requirements.

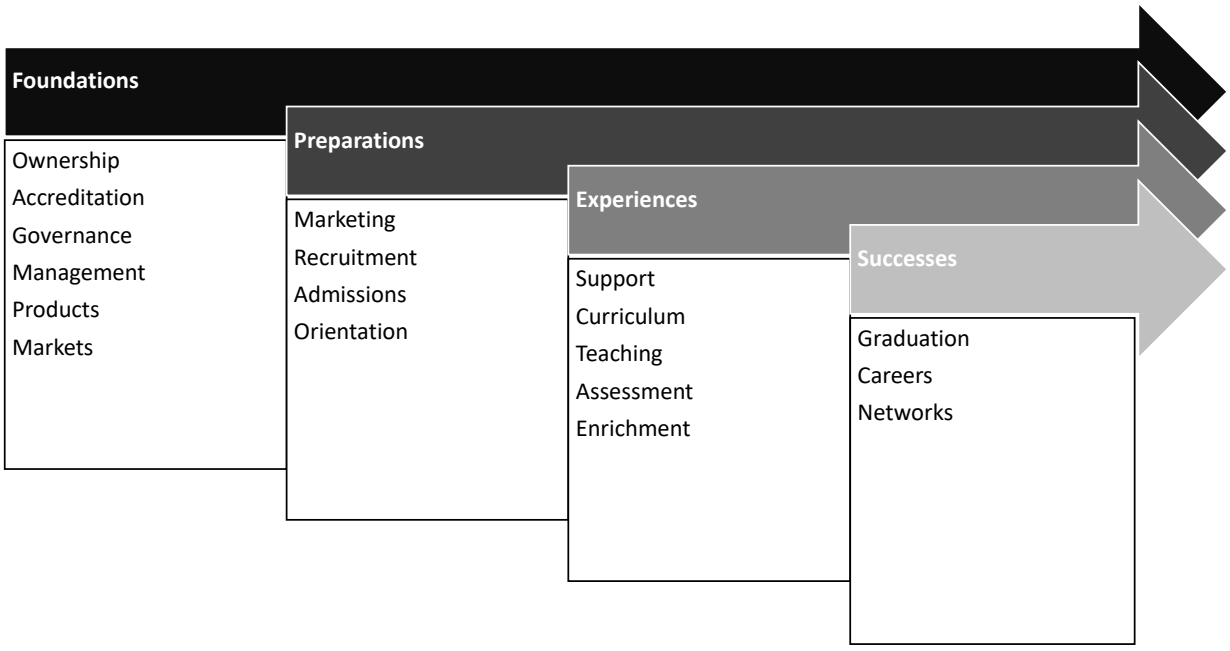


Figure E1. Development framework

Source: Hamish (2020)

Figure E1 presents the overarching development framework. The model deconstructs education into four phases, with a suite of activities or facets under each phase sequenced in loose, top-down logic. It presents educational activities and conditions for which institutions, as opposed to students, governments, businesses, or other agencies might be considered responsible. Universities can use this framework to identify functional requirements and specify partnerships to advance these phases.

Quality assurance

While quality assurance in higher education has proliferated into myriad theories, methods and practices, current interests lie in practical measures relevant to the development, quality and financial sustainability or productivity of online education. Figure E2 presents the general framework. This reflects a synthesis of existing international efforts to reify the broad idea of 'quality culture'. In particular, quality is differentiated into nine domains, each of which is underpinned by principles of good practice and evidence. The nine domains are shown in the middle band of Figure E2, including leadership and management through learning outcomes. The principle underpinning leadership and management, for instance, is that leadership and management actively support the realization of quality online and blended education by developing strategic plans, creating performance indicators and by influencing the culture of quality within an institution. Evidence might be sourced through strategic plans, leadership, institutional budgets, evaluative actions, or staffing structures. Clearly, enacting quality assurance and improvement in each of these domains is a considerable amount of work, though it is helpful to use them to frame guiding questions.

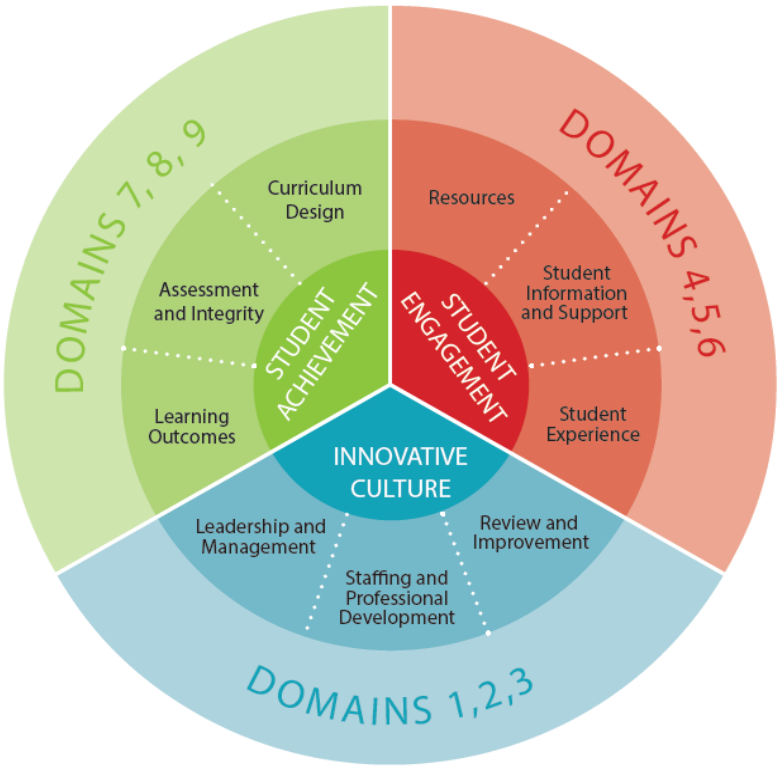


Figure E2. Quality domains and parameters

Source: APEC (2017)

Each of the quality domains in Figure 2 plays out in varying ways across each of the phases and parameters shown in Figure 1. This is why shifting from traditional to online education shines a light on prevailing situations and spotlights things going well along with areas in need of improvement. For example, shifting support services into a blended model requires consideration of resources and staffing, and of the student experience and leadership. Moving to fully online teaching would emphasize quality concerns pertaining to curriculum, assessment, learning outcomes, professional development, and student experience.

Financial sustainability

Ensuring the financial sustainability of online education amounts to ensuring that digitalization decisions are well-made and delivered. For each of the activities in the value creation model, this amounts to determining the extent of 'blendedness' or 'hybridization' of each. Short- and long-term financial implications flow from such decisions.

Table E1. Designing financially sustainable blended education

Activities	Infrastructure	Resources	Experiences
Support	BLR%	BLR%	BLR%
Curriculum	BLR%	BLR%	BLR%
Teaching	BLR%	BLR%	BLR%
Assessment	BLR%	BLR%	BLR%
Enrichment	BLR%	BLR%	BLR%

Table E1 presents the framework articulate to determine the extent of blendedness for each activity in the 'experiences' phase of the development model, looking across infrastructure, resources, and experiences. In each instance, the blended learning ratio (BLR) needs to be determined to identify what is to be retained in traditional in-person or onsite arrangements, and what is to be moved online. For instance, BLR=0% means fully in-person, while BLR=100% means fully online. While financial sustainability means different things in different contexts, what is ultimately being sought is to use online education to enhance productivity.

National policy and regulations

National policy and regulations in Vietnam are nascent regarding online education. The Ministry of Education and Training (MOET) regulated that the number of credits conducted through online platforms are capped at 30 per cent of the total required credits for a degree-granting program. Sustainability and quality assurance are major concerns in building online programs in Vietnam. Therefore, there are no fully online programs yet. Blended programs are the most viable option. It is indeed challenging for universities to build online education as a complementary to the traditional modes to take advantage of the digitalization era. This issue needs to be addressed.

Recommendations

Institutional development

- **Make online education a priority in higher education.** The digitization of higher education has become a global mainstay. Universities in Vietnam need to undertake reforms to ensure they can reap the benefits of online education. Universities should proactively transition to blended and online education to improve access to education, reaching students in remote and rural areas. Developing online education capabilities also supports Vietnam's digital transformation and integration into the global knowledge economy, spurring economic growth.

- **Define your strategy and desired outcomes.** It is clear to define the desired outcomes clearly and succinctly for online education at your institution. As with any initiative, the outcomes should be clear, quantifiable, and achievable. Top-level leadership must champion the initiative, and the strategy for achieving these outcomes must be direct and defined. Most importantly, this strategy (as well as the desired outcomes) must be based on your specific organization and its context. There is no universal approach to online education, and simply adopting what has been successful at other universities is unlikely to result in anything but the most modest of successes.

- **Build on existing innovation and capability.** Vietnam universities need to capitalize on their unique organizational history, institutional capability, and regional context when defining online learning strategies and outcomes. Doing so will expedite the development of distinctive, quality, and sustainable forms of online higher education in Vietnam. Universities can use and build upon existing infrastructure, platforms, and applications to transform current educational services to accommodate online learning. Partnerships with online learning platform providers and service firms can be used to augment university capabilities.

- **Consider organizational innovation.** Online education isn't just about technology and remote classes. In most cases, delivering strong, quality online education requires changes to organizational structure. Traditional universities are generally built to bring students into an organizational system. Therefore, it can be somewhat rigid and expect the students to adapt to its structure. In online education, the higher education institution (HEI) is brought into the student's world and, as such, must adapt to the student's needs and expectations.

- **Refine organizational structure.** Universities need to reform and expand online education by: (i) identifying how to finance online education infrastructure, resources, and experiences; (ii) defining various strategies for development; (iii) establishing offices to develop curricula, develop teachers, support students, and assure quality and scalability; and (iv) implementing evaluations to assess and improve the effectiveness and determine sustainability of online educational programs.

- **Generate buy-in.** For online education to be successful in Vietnam, university leaders must generate buy-in from internal and external stakeholders. Internal stakeholders at all levels (e.g., administrators, academic leadership, and rank-and-file faculty) must be developed to provide support for online education. External stakeholders (e.g., workforce leaders, governmental officials) must also be convinced to support online education (specifically, your style of online education). The primary stakeholder, however, is the student, and therefore, considerable outreach and marketing must be conducted to ensure the overall acceptance of online education as a good investment of personal resources and time. If those impacted are not convinced about the value of online education, there will be resistance or a lack of adoption. It is imperative that leaders make the case for why online education is necessary to advance the mission of Vietnam's higher education.

- **Focus and implement well.** Given the lack of overall acceptance of online education in some settings, care must be taken to generate demonstrable success that will foster support among those who are suspicious. Going big is risky, and failure undermines buy-in. Leaders should consider a plan that would implement "proofs of concept" or "pilot projects" with achievable milestones that will open up opportunities for scaling as successes are met.

Quality assurance

- **Focus on quality.** The development and growth of online education in Vietnam affords novel and transparent opportunities for quality assurance. The formation of dedicated online education or teaching support centers, the provision of student support services, and the development of innovative teaching and learning methods benefit not just online students but all students. Encourage transparency in course design so that internal critiques can respond directly to actual issues. In the end, students who receive a quality education will become valued by employers and create a future reputation for the quality of their education. The best way to build confidence is by demonstrating strong outcomes and student satisfaction in online programs. Universities should adopt a proven quality framework, such as the Quality Matters (QM) framework presented in this report, to guide the development and implementation of online education.

- **Offer faculty professional development.** Well-trained and resourced faculty play an essential role in the success of all quality online programs. Faculty engaged in online programs need to be trained in the areas of online curriculum development and online teaching. The quality of online programs depends on the instructors' baseline skills for integrating pedagogical practices to enhance learning outcomes across all types of students. Moreover, guidelines should be established for faculty workload and incentives to teach and advance online education. Online Learning Consortium (OLC - https://onlinelearningconsortium.org/), Educause (http://www.educause.edu/), WICHE Cooperative for Educational Technologies (WCET - https://wcet.wiche.edu/), and ASEAN University Network (AUN https://www.aunsec.org/) offer robust resources for faculty professional development in the areas of digital learning.

Financial sustainability

- **Invest in long-term outcomes.** Online education is a transformative change, meaning it is causing fundamental changes to who, what, how, and when education is delivered and who is consuming it. New populations are being drawn into (or back into) higher education, and new organizations (not simply HEIs) are providing it. HEI's, therefore, should build out structures, policies, and funding mechanisms that will support this transformation and be willing to extend their horizons for success and value further into the future. In the end, we should be emphasizing not the transition to *online*, but the transformation of *education*. Online education is a long game, but when done effectively, it can transform the future of higher education in Vietnam. Beyond simply offering online programs, Vietnamese universities can leverage online education to build new revenue streams, increase academic offerings, expand enrollment, and increase mission impact. University leaders should view online education not simply as a nice add-on but more as a non-negotiable. One of the best long-term investments in the future of Vietnam's higher education is to allocate resources to establishing and growing online education.

- **Align resources with defined goals.** For online education to be financially sustainable, universities need to align their limited resources with realistic goals and proven strategies. By linking spending directly to defined online education goals, universities ensure resources are allocated efficiently and avoid wasting money on non-essential areas. Aligning resources to goals also prevents mission creep, preventing the expansion of programming and activities without the resources to sustain them long-term. With resource alignment, it's clearer where funds should go and easier to track spending, enabling transparent monitoring and financial accountability.

- **Optimize the level of hybridization.** The financial sustainability of online education results from prudent optimization of decisions regarding the hybridization or digitalization of education. The value creation and productivity of online education come from strategic decision-making around the extent to which a given academic function or business activity is retained as traditionally delivered or shifted online. The key question is: To what extent should online services either replace or augment traditional education activities? How this question is answered in terms of each educational activity and condition determines the financial sustainability and broader value proposition of online education. Universities should use the financial sustainability framework presented in this briefing to guide their decisions.

The national policies and regulations

- **Approve fully online programs.** Current national policies and regulations for higher education need to be reformed to allow institutions to develop fully online programs. Until the current cap of 30 percent of credits conducted through online platforms is removed, Vietnam will not be able to capitalize on the benefits of online education and the transformation it brings to Vietnam's higher education ecosystem. All fully online programs developed should adhere to quality assurance standards comparable to face-to-face programs, a standard practice at most universities in the United States, including places like Indiana University analyzed in this paper.

- **Guided by quality assurance.** National universities engaged in fully online programs should be guided by a proven quality framework, such as APEC's Quality Domains outlined in this briefing. While "quality" in higher education varies for different stakeholders and can be defined, improved, and assured in myriad ways, the key is cultivating a "quality culture" throughout Vietnam's higher education system. When the focus is on quality, improving online education can benefit all students, not just those learning online.

Specific recommendations for each university

The University of Danang

- Propose MOET to allow the UD to pilot a fully online degree program. Identify a degree program that is amendable to MOET approval, suitable for online delivery, and attractive to potential online learners. One of the primary goals for this new fully online degree program is to prove to MOET that the quality will be either equal to or better than the face-to-face programs.

- A central office focusing on the alignment and advancement of online education for the whole university is important. UD's Center of Continuing Education (CCE) can function in this capacity. While the ultimate structure and function will depend on its overall strategy, this type of office will drive decision-making about important initiatives, such as (i) academic program development, (ii) marketing and recruitment, (iii) student services, and (iv) quality control and compliance.

- Provide practical training and financial incentives for qualified lecturers to engage in online education. Training should focus on three main areas: (i) online courses and program development, (ii) online teaching strategies, including the effective use of technology, and (iii) on-going professional development.

- Centralize learning management system and student information system for all learners. Having one place for course activities and student records will allow UD to transition current in-person courses to blended and fully online modalities without compromising data integrity.

Vietnam National University – Hanoi

- Design a rigorous study comparing student learning outcomes and satisfaction between in-person courses and online courses. One of the best ways to build confidence is to show objectively that students in online courses achieve comparable or better outcomes compared to those in face-to-face courses.

- A central office focusing on the alignment and advancement of online education for the whole university is important. VNUHN's Institute for Education Quality Assurance (EQA) can function in this capacity. While the ultimate structure and function will depend on its overall strategy, this type of office will drive decision-making about important initiatives, such as (i) academic program development, (ii) marketing and recruitment, (iii) student services, and (iv) quality control and compliance.

- Provide practical training and financial incentives for qualified lecturers to engage in online education, including those who are currently teaching blended programs. Training should focus on three main areas: (i) online courses and program development; (ii) online teaching strategies, including the effective use of technology; and (iii) on-going professional development.

- Centralized learning management system and student information system for all learners. Having one place for course activities and student records will allow VNUHN to transition current in-person courses to blended and fully online modalities without compromising data integrity.

Vietnam National University – Ho Chi Minh City

- A central office focusing on the alignment and advancement of online education for the whole university is important. It could belong to the Academic Affair Department. While the ultimate structure and function will depend on its overall strategy, this type of office will drive decision-making about important initiatives, such as (i) academic program development, (ii) marketing and recruitment, (iii) student services, and (iv) quality control and compliance.

- Identify potential fully online academic programs targeting non-traditional undergraduate students (e.g., older adults without a college degree) and working professionals (e.g., workers in industrial parks and production facilities). Currently, VNUHCM's distance learning programs are focused on traditional students and concentrated in information technology (IT). Offering non-IT online programs and targeting different student markets are essential strategies for VNUHCM to scale its overall enrollment. IU's Programs of Scale (ProS) provide a model for how to operationalize this growth.

- Initiate practical training and financial incentives for qualified lecturers to engage in online education. Training should focus on three main areas: (i) online courses and program development; (ii) online teaching strategies, including the effective use of technology; and (iii) on-going professional development.

- Centralized learning management system and student information system for all learners. Having one place for course activities and student records will allow VNUHCM to transition current in-person courses to blended and fully online modalities without compromising data integrity.

Part 1. Overview

I. Introduction

Online Education (sometimes also referred to as Distance Learning or Distance Education) is education that delivers instruction to students who are separated from the instructor or instructors, and that supports regular and substantive interaction between students and instructor(s) either synchronously (students are required to log in and participate in class at a specified time each week) or asynchronously (online learning that allows students to view instructional materials each week at any time). Technologies used for instruction may include the following: Internet; one-way and two-way transmissions through open broadcasts, closed circuit, cable, microwave, broadband lines, fiber optics, satellite, or wireless communication devices; audio conferencing; and video cassette, DVDs and CD-ROMS, if the cassette, DVDs, and CD-ROMs are used in a course in conjunction with the technologies listed above (University of Houston 2023).[1]

Around the world, transformations in recent years have ushered in a new era of online higher education. In the first two decades of the internet, education technology tended to be led by engineers and managers who understandably focused on technological fundamentals and innovations rather than broader educational and institutional returns. The decades ahead look different. Rather than focusing on technology, contemporary academic leaders leverage other platforms and experts to enable more productive and higher quality higher education. Online education will no longer be an often low-cost, emergency alternative form of higher education. Instead, it is shifting into mainstream. This shift has been driven by the maturation of relevant technologies and platforms, the growth of tech-friendly university leaders, the disruption of related industries, the rise of sector-dedicated online firms, and the pandemic-induced shift to many more things becoming available online.

Non-face-to-face instruction has been an interest and has developed gradually in Vietnam for decades. Distance learning has been applied since the early 1990s with the establishment of two open universities in Hanoi and Ho Chi Minh City. Among 21 institutions granted the right to enroll in distance learning programs, 17 of them have been able to enroll students (Vũ Hữu Đức, 2021). According to the statistics from MOET, the enrollment for distance learning in the 2019-2020 academic year was just over 13 thousand students, accounting for 2.9 percent of the total national enrollment. The number of distance learning students was nearly 40 thousand, accounting for 2.4 percent of the total number of students. It was down from over 154 thousand in the 2013-2014 academic year, accounting for 9.2 percent of students. Non-traditional learning has been on a downward trend in Vietnam with the expansion of the traditional ones. However, the potential growth for both is still massive as Vietnam's tertiary enrollment rate in 2021 was just 35,4 percent, much lower than countries in the region, such as 42.6 percent for Malaysia in 2020, 44 percent for Thailand in 2022, 63.6 percent for China in 2021, and 102.5 percent for South Korea in 2020 (World Bank, 2023).

[1] In Vietnam, as defined by the Ministry of Education and Training (MOET) in the most recent Draft Circular on Distance Education: *"Distance education is a form of education using mainly computer and telecommunications networks in which: teaching activities are carried out remotely or directly at main campus or training coordination institution; except for practice, internship, practical experience, self-study, and online-tutor."* As the definition in Vietnam is closed to the common understand in the world, the online education in this report is understood as the conventional definition and the two terms are interchangeably used.

With digitization sweeping higher education globally, there is a pressing need for such change in Vietnam. Therefore, digital transformation and the application of information technology in education and training has been a prioritized policy in Vietnam. It is reflected in the project "Strengthening the application of information technology and digital transformation in education and training for the period of 2022-2025 with an orientation to 2030," approved by the Prime Minister in the decision numbered 131/QD-TTg and a similar one for the period of 2016-2020 approved by the Prime Minister in 2017. When the COVID-19 pandemic happened, the government authorities asked higher education institutions to deliver online classes and lectures within their capacity. Since then, interest in online education has increased substantially. Many institutions have tried to develop online education (or, more typically, blended learning) programs.

However, the reality shows that it is challenging for Vietnam to achieve its goal. As Mruthyunjayappa (2021) notes, "In today's fast-paced digital world, Vietnam fails to reap the full benefit of technological changes. Vietnam has a Digital Evolution Index (DEI) score of 46.79, which is low when compared with scores for other Southeast Asian countries, including Malaysia (69.03), Thailand (53.04), Singapore (98.82), and Indonesia (47.72)". More specifically, there have been several notable barriers to online education in Vietnam. First, online education has a negative public perspective as a low-quality or secondary tier. Second, there are regulatory restrictions on providing fully degree-granted online education programs. The Ministry of Education and Training (MOET) has capped the number of online credits at 30 percent of the total required credits for a degree-granted program. Therefore, there are no fully degree-granted programs yet. Sustainability and quality assurance are significant concerns in building online programs in Vietnam.

The three universities (3Us) in PHER, including Vietnam National University-Ho Chi Minh City (VNUHCM), Vietnam National University-Hanoi (VNUHN), and the University of Danang (UD), have been pursuing plans to develop online education. Distance learning at the UD is considered the most advanced among the 3Us as there are no open universities in the central as there are in Hanoi and HCMC. The UD's Center of Continuing Education (CCE) was established in 1996, several years after the two open universities above. Its online program is the first ever and considered the most completed in Vietnam (Vũ Hữu Đức, 2021). The UD set the vision for its CCE to become a regionally-recognized center by 2030 as part of its development strategy and vision (The University of Danang, 2023d). Starting almost from scratch, VNUHN has just approved the project to pilot online education with the practical goal of developing general courses required for all member universities (VNUHN, 2023). Similar to VNUHN, online education has just been at the beginning stage in VNUHCM. Building online programs is an essential goal of the development strategy of VNUHCM (VNUHCM, 2021). The project to build a Massive Open Online Course (MOOC) has been underway. The development stages and focuses vary among the 3Us, but they must resolve the same fundamental issues.

It is vital, therefore, to advance the quality and productivity of online higher education. To this end, this policy analysis aims to show how to develop and assure quality online education. It seeks to establish how online higher education can be quality-assured and productive. It aims to provide practical references for experts involved in institutional change. Through these endeavors, the policy analysis seeks to help establish robust internal online education quality assurance systems and transform university finance to achieve greater institutional autonomy.

II. Objectives

This policy analysis is delivered as part of the Partnership for Higher Education Reform (PHER), a five-year initiative to modernize Vietnam's leading universities and strengthen Vietnam's higher education system in alignment with USAID's Higher Education Program Framework. The PHER project supports the development of a policy analysis each year on a specific theme. Such policy analyses are intended as two

main parts. The policy briefs are short, stand-alone documents that present findings and recommendations on specific topics of national interest, advocating for a particular position, vision, strategic ideas, or options. The central bodies of the analyses provide comprehensive and detailed information with the overall context. This year, PHER aims to develop a Policy Analysis for Online Education, distilling international experiences and lessons learned to provide easily understandable advice for the three partner universities in Vietnam.

Vietnam is embracing a digitization strategy across its public universities, yet the internal policies are not fully developed to support the adoption of a new vision. Therefore, this analysis will primarily focus on institutional policy (qui chế nội bộ của ba đại học) and potential changes needed to effectuate movement toward any preferred future model online education. PHER seeks to engage the three partner universities to explore various best practices in online higher education worldwide. The goal is to stimulate dialogue on institutional policy considerations, help each university define its direction, and begin the process of generating organizational coherence to support the implementation of online education plans.

III. Scope of the report

As the above remarks convey, this analysis focuses on online education quality and productivity at the institutional level. It does so with the three case study universities (3Us) in mind. Most broadly, the briefing seeks to provide context and framing to guide change at these universities.

The focus is mainly on the university level to provide good practices and experiences for the three universities to consider in building their online education. Development strategies, quality assurance, and financial sustainability are three key focus areas with practical approaches for individual higher education institutions.

The national policies and regulatory framework will address the need for individual universities to promote online education. Therefore, recommendations for national policies are just on specific issues. This narrow focus is considered one of the significant limitations of the paper.

IV. Structure of the report

After the overview, the remaining parts of the report are structured into three main parts. Part II - Overall approach and international experience includes overall approach and framework, international experience, and the experience building the online education at Indiana University. Part III – The online education in Vietnam includes the overall context of Vietnam, the online education at the University of Danang, the online education at Vietnam National University – Ha Noi, and the online education at Vietnam National University – Ho Chi Minh City. Part IV – The final section includes synthesis and analysis, conclusions, and recommendations.

Section I. Guiding Frameworks

This section sets out a series of strategic frameworks which guide the policy analysis. Adopting strategic frameworks like these is important to put technologies, institutions, and education settings in context, ensuring a measured approach to adoption and quality-assured deployment.

The frameworks for online education focus on:

- Institutional development, in terms of ownership, governance and management structure and partnership.
- Quality assurance, in particular student experiences and outcomes in areas relevant to academic standards.
- Financial sustainability, and more broadly productivity, giving particular attention to efficiency and financial viability.

I. A brief history of online education

While often glorified by techno-zealot hype, the digital transformation of higher education is now a mainstream topic. Indeed, building on prior eras of massification and internationalization, it is not too courageous to conjecture that digitization may be the major driving and even transformational force (Figure 1). Penetration has indeed unfolded in step with Amara's law, which refers to overestimating the short-term effects but underestimating the long-run impact of technology. While online education has been growing and diversifying over recent decades, particularly in the last five years, these changes have culminated to an extent that technology has started focusing on education rather than the other way around.

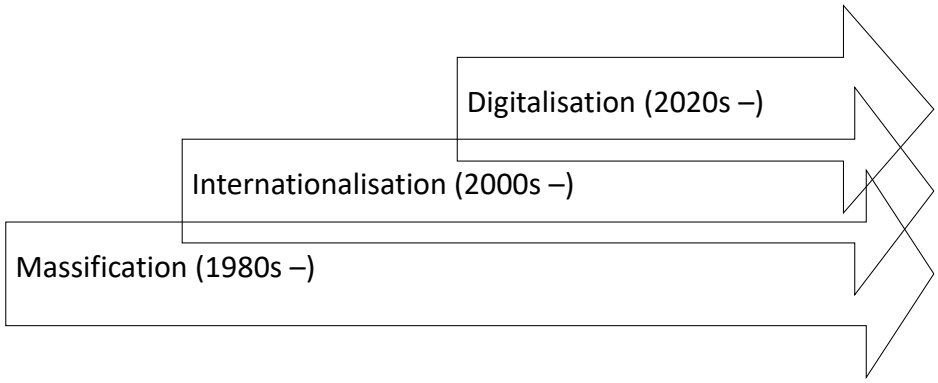


Figure 1: Recent higher education transformation eras

Source: Beaton, Gao & Coates (2022)

In recent decades online education and the education technology (or 'EdTech') which drives it has solved sufficient software solutions and matured in sophisticated ways that add integrated value to higher education. While lagging 'MedTech' and 'FinTech', the maturation of EdTech has been rapid in the last two decades and particularly in the last five years. This critical analysis opens out the field, revealing the flourishing digital transformation of higher education, and furnishing a prelude to later analyses.

EdTech growth can be distinguished into three educationally framed phases. Adopting an educational not technological gaze means that all the technology in the world is irrelevant unless it touches and transforms how institutions and people create and share knowledge. Figure 2 depicts the phases. While difficult to pigeonhole in terms of dates or technologies, and playing out differently in different contexts, the analysis starts at the turn of the century, shortly after the massification of the internet (Coates, James & Baldwin, 2005; Guro, 2019).

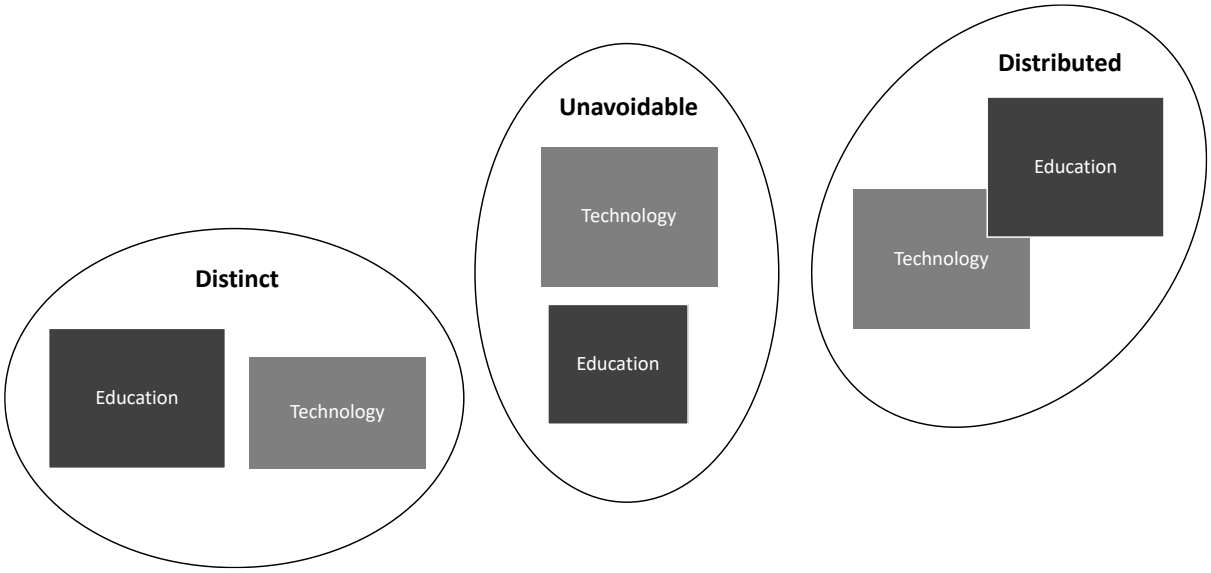


Figure 2: Online education growth phases

Source: Coates (2020)

The first 'distinct' phase ranged from the turn of the century for around a decade. The turn of the century was a formative moment for IT given the Y2K scare, which engaged even people who had thus far managed to avoid computers and the internet. Many people had email and internet access, many acquired their first smart mobile phone during this period, and universities adopted enterprise-level education platforms. Certainly, technology was separate from education, and easily avoidable. Learning advisors were hired to help faculty transform overhead transparencies into PowerPoint slides and upload these to rudimentary learning management systems. Major global universities explored the potential of the internet for open courseware and programmed learning. Conservative analysts debated how universities should engage with phenomena which posed an existential threat, writing books about the death of the campus and traditional academics.

A more mature 'unavoidable' phase emerged towards the end of the first decade of the century, maybe running for the next seven to ten years. This second phase was epitomized by smart phones, massive open online courses, video conferencing, and an abundance of online curriculum materials. Major knowledge-relevant global firms grew up, particularly on the internet but also in and around key education activities and conditions. Universities relaxed as it became clear that higher education was more than the sum of potentially solvable and codable parts. Accessible knowledge resources did not deflate the value of the credential nor dissuade people from enrolling in formal programs. Coders found it difficult to deliver on their promise to program and automate teaching, administration, and student support. During this time technology not only became unavoidable but also swamped core facets of higher education. Chief information officers wielded platforms with the potential to 'solve' and perhaps even supplant education.

The third and contemporary 'distributed' phase started somewhere around 2015 when it became clear that education and institutions could be enabled by technology, not the other way around. EdTech matured in its capacity to help configure education in ways that help people learn. The availability of powerful platforms and software was important, but more important was finding ways to exploit these systems for educational and institutional advantage. Commercial capability and in particular marketing techniques played a role in this development. This contemporary phase signposts an important milestone in which large service firms integrate technology which supports an array of conferencing, messaging, scheduling, tracking, reading, and assessing. Embracing much more than technology, these firms grew to coordinate human, physical and virtual resources into ecosystems which are genuinely starting to reconfigure education reach, experiences, operations, and outcomes. The scale and sophistication of this change also undergirds genuine promise of greater transformation to come.

Such growth and development have not come without challenges. The United States presents an interesting case study. Traditionally, online education in the United States was derived from extension or continuing studies units within large universities and therefore was treated as an 'alternative' form separate from traditional education. In the early 21st century, for-profit institutions like the University of Phoenix, Kaplan University and Cappella University became first movers at scale in the online education space. Backed by significant capital, and unencumbered by the mission of traditional universities, these for-profits used extensive marketing campaigns, aggressive recruitment tactics and streamlined course design and delivery to rapidly increase enrollments in their programs.

The 2008 financial crisis heightened the appeal of online education, and access to federal financial aid for online programs proved a catalyst to the consumption of online education within the United States. Coupled with this trend, traditional public and non-profit colleges and universities in many regions faced anemic student pipelines. To bolster declining enrollments, many publics and non-profits turned to online education.

Reports of predatory recruitment and financial aid policies, however, forced state and federal governments to establish an increased regulatory environment for programs offered remotely. The result was the establishment of expectations for state authorization requiring individual institutions to obtain state-specific authorization before enrolling students residing in that state. Regional accrediting agencies established guidelines for distance education to be used during site visits and self-studies. To facilitate state authorization more easily, the National Council for State Authorization Reciprocity Agreements (NC-SARA) was established to create of network of authorization reciprocity for institutions and states in the U.S. Added to this, a heightened attention towards consumer protection has also influenced requirements surrounding online education. Most recently, an emphasis on disclosing the applicability of online credentials toward state licensure has grown, requiring schools to disclose whether academic programs will apply to the various licensure programs in the states that students reside in.

Over the past decade, this increasing regulatory scrutiny has increased, and the landscape continues to change. There has been a trend of for-profits leaving the space or being purchased by public institutions. For instance, Kaplan University has been purchased by Purdue University, and Grantham was purchased by the University of Arkansas. This appears to reflect a shift in the provider landscape of online education in the United States. It also showcases the maturation of EdTech, and online education noted above.

For public and private non-profit institutions, a primary challenge is balancing the need and interest in online education with their traditional face-to-face educational experience. The pandemic escalated the urgency of this evolution. Moreover, the lines between online and face-to-face education have blurred for all students, and colleges struggle to meet student expectations in all forms of higher education. To explore these challenges members of the Big Ten Academic Alliance authored a white paper After the Pivot. This

analysis exemplifies many of the post-pandemic trends that universities face as well as offers approaches to addressing these challenges.

II. Models for online education

1. Operational models

During the pandemic, members of University Academic Affairs in the United States drafted a series of models to better understand the changes that were occurring across the online education landscape. Models were developed in conversation with external entities, like EAB and Eduventures. Table 1 shows the main models used by US universities for online education in 2021.

Table 1. Models of Online Education

Model Name	Brief Description	Exemplar
Evolutionary	Traditional campus department and school, campus faculty coordination committee	IU Online Ohio State University
The Mega University	Independent from traditional model, potential competition	Arizona State, Liberty, Phoenix, New Hampshire, Purdue, Global, Western Governors
The Online Campus	Co-owned with online entity and traditional campus department/school	Penn State World Campus, Colorado State Global Campus, Maryland Global Campus
The Online Program Managed Campus	Programs technically owned by university, but heavily influenced by expectations of OMP to ensure marketability	Valparaiso University
The Aggregator	Co-owned with external provider and traditional campus department/school	EdX, Coursera, University of Illinois's iMBA, Georgia Tech

Each model has its benefits and pitfalls based on the level of collaboration by faculty and administration, ownership of program, and the ability to deliver a cost-effective model. Table 2 sketches the pros and cons of each model.

Table 2: Online education model benefits and limitations

Model	Benefit	Limitation
Evolutionary model: This is also referred to as an 'authentic' or 'collaborate' model of online education. This model focuses online education as a natural and evolutionary component of education in the United States rather than a separate enterprise. sketches the benefits and limitations.	Ensures consistency and compatibility with on campus programming. Students receive instruction from faculty they are already familiar with and are employed by the university and not contracted out. The model allows the university to retail maximum tuition dollars with the intention of the institution using existing financial structures to generate and disperse income. It provides flexibility to operate within existing systems, which also allows for quick implementation of administrative changes. Ability to scale programs to accommodate larger numbers of students when additional funding is added.	Can be perceived as slow in developing programs with multiple levels of shared governance structures put into place.

Mega University: The primary market for this type of school is 25+. Emphasis on concierge, frictionless student services.	Low instructional costs and scalable. Student acquisition and services is a priority. Strong funding available for marketing. Profits can be shared back with the traditional campuses through mechanisms such as trademark and licensing agreements. Emphasis on alternative models such as competency-based education.	Low academic oversight. Impersonal as students are units or data points and not individuals. This model also awards a separate degree from the traditional campus leading to questions of value, lack of prestige and brand confusion.
Online Campus: The primary goal of this model is growth and revenue generation.	A separate academic and administrative structure allows for faster action in developing and delivering programs as well as pivoting to changes in the market. Although it is a separate entity, it retains closer ties with the traditional university and can align with the existing brand.	There is the potential for competition with traditional programs and the cohesion with standard university governance is questionable. This model may be experiencing limitations in continuing growth and innovations can fail to translate to the traditional mission of the flagship university.
Online Program Manager Campus: This model is popular for campuses that do not have the infrastructure or start-up costs to launch online programs. An OPM is usually hired or contracted by the main campus to create the initial launch of a set of programs in a timely manner. This can include all aspects of the student and degree build lifecycle from marketing and recruitment, to advising and degree creation.	Speed of developing an infrastructure that already exists and can be replicated.	There is questionable ownership of intellectual property and a huge loss of administrative and academic control. This model also relies heavily on an unbalanced revenue share model, giving a large amount of tuition dollars to the OPM. Universities must sign a contract with the OMP and if the university decides to sever ties with the OPM after the end of the contract, much of the infrastructure that was built leaves with the OPM.
Aggregator Model: Similar to an OPM, this model also involves the partnership of a third-party company. The main difference is that the third party chooses which degrees partner on and they do not compete within the same space across multiple universities.	Quality perceived to be on par with the other institutions using the same platform. Although a pro and a con, these degrees are pre-packaged and "off the shelf". Pricing is very competitive, but innovation is rare as making changes can be costly.	As mentioned above, innovation is rare and the third party may choose to partner on only one degree, leaving all other degrees to be managed by the main campus causing pricing confusion.

2. Partnership models

Online education almost always involves partnerships. As not even the most prestigious or endowed university controls the internet, information technology infrastructure, information systems operations, applications, or what faculty and students do, the shift to online necessarily invokes 'partnerships.' Universities cannot go online without online partners, just like they cannot use whiteboards or wads of paper without the firms that make these. They are usually unavoidable. They are also helpful, for without them large public universities often feel that the shift online is business as usual. It is not.

The word 'partnership' is used throughout this analysis and is important to clarify. Partnership simply refers to forming new individual or institutional collaborations to facilitate online learning. This may be university-to-university, faculty-to-faculty, university-to-firm, or university-to-platform. The options are endless, and simply go to the need to form new arrangements to facilitate a shift to online education. Working with the same people in the same structures will not enact the shift required to move from a traditional to an online model of education. Importantly, "partnerships" does not imply any kind of

commercial arrangement between a faculty or university. A scan of international practice shows that collegial partnerships are often the most fruitful.

Why, in principle, would universities seek to engage in such partnerships? The reasons vary, but the value propositions extended by education service firms clarify a few main drivers. These partnerships, for instance, bring:

- New perspectives, which flow from blending commercial ethos, speed and drive with academic culture and capability.
- Student-centred service design, which involves careful deployment of physical and digital artefacts, workflows sculptured around learner needs, and data-driven forms of interaction.
- Expanding markets, making higher learning accessible and attractive, taking out the pain-points, and supporting differentiated learner journeys.
- Differentiated workforce models which make well-coordinated use of discipline experts, teachers, support staff and advisors.
- Shifting the education production function, by creating high-quality learning resources which can be scaled.
- Partnering quietly and confidently to reinforce and advance established university brands.

The frameworks are drawn from existing research and policy literature. They necessarily focus on different types of matters and details and would normally be handled in different areas of a university. In this policy brief they will be rendered in a sequence that makes broad sense in terms of institution and education development logic. The frameworks are used for the case studies and, following this, to explicate steps for development and productive management.

How higher education institutions position themselves in relation to online education depends on the development model they adopt. This, in turn, depends on first, the institutional stance adopted towards online-related partnerships, and second, the specification of specific functional requirements.

It is helpful to explain what is meant by 'partnership stance'. The nature and standing of the university substantially influence the relations formed with other firms. In commercial, competitive, or reputational terms, this goes to the nature of an institution's market and its standing within that market as well as various other institutional orientations. A complexity here is that there is no easy way to clarify higher education markets as attempts at simplification invariably tend towards eradicating particularities which distinguish and differentiate institutions. A small and very focused institution may be located within or close to a major tech firm opening all kinds of unique opportunities, whereas a large university may have a highly devolved structure which hinders the systematization useful for online education.

While different types of institutions have different structures and rationales for and approaches to progressing partnership arrangements, it remains helpful to identify arrangements of relevance to online education. These may vary to institutional hierarchies established in recent decades, though an abundance of resources most likely would reveal common patterns. In particular, three case studies convey patterns evident from analysis of the formation of technology start-ups and university engagement.

Design innovators. Universities with concentrated research intensity tend to have had a creative approach to online education. Indeed, such institutions have spawned many contemporary online education service firms which have achieved international reputations. They appear to flow from entrepreneurial professors, specific university-industry linkages, and student start-ups. These universities and firm arrangements can be referred to as 'design innovators' as they create online futures. These universities tend to be very campus based, though they use myriad platforms to augment, enrich and

distribute traditional practice. They also provide resources and capabilities for developing education ideas and technologies.

Productivity innovators. Another type of university is those with fewer resources which have tended to rely on online technology to enhance productivity. These 'productivity innovators' are often mid-tier or provincial universities which look to forge service arrangements with existing institutions to reduce costs, expand scale, and sustain quality.

Scale innovators. Universities with even fewer resources rely not just on services but also on shared content and curriculum resources to scale provision. These 'scale innovators' typically with limited staffing and infrastructure, will look to adapt standardized resources, make the best of thin physical infrastructure, and deliver contextualized programs.

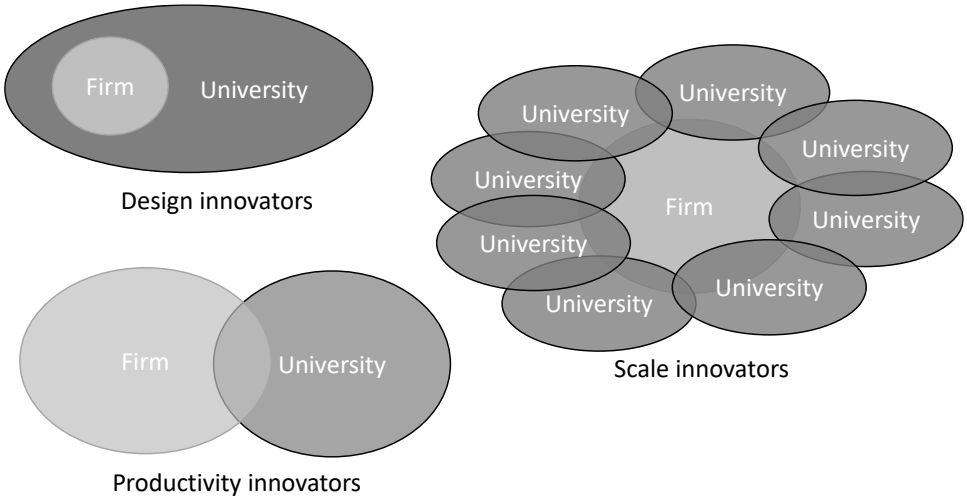


Figure 3: University-firm partnership stances

Source: Coates (2020)

Figure 3 depicts these varying partnership stances. These stances condition the kind of deal of interest to universities and the value firms can offer. Design innovators, with relatively more institutional power and resource, might identify problems, opportunities, and spinoff start-ups. Firms here are positioned as derivative entities. Productivity innovators, by contrast, strike selective ventures which augment strengths and compensate for university-specific limitations. Firms are engaged in horizontal ways. With scale innovators, the focus is on how less branded educational programs can be distributed into new communities. These stances offer helpful guidance in identifying benchmark case study universities.

To examine different kinds of partnerships it is helpful to set out the various education services which might be plugged into different partnership arrangements. A four-phase academic value model is proposed. The frame stems from research and innovation conducted in the United States, China and Australia which has mapped the academic and corporate building blocks of higher education (Borden & Coates, 2017; Radloff, Coates, James & Krause, 2012; Coates, Kelly & Naylor, 2017; Coates, 2018; Bokor, 2012; Coates, Liu, Zhong, Liu, Hong & Gao, 2019).

III. Four-phase academic value model

1. The model

Figure 4 presents the 'four-phase academic value model'. The model deconstructs education into four phases, with a suite of activities or facets under each phase sequenced in loose, top-down logic. It presents educational activities and conditions for which institutions, as opposed to students, governments, businesses, or other agencies might be considered responsible. Student participation in purposeful education activities is critically important to education success but is not the initial or prime responsibility of the institution.

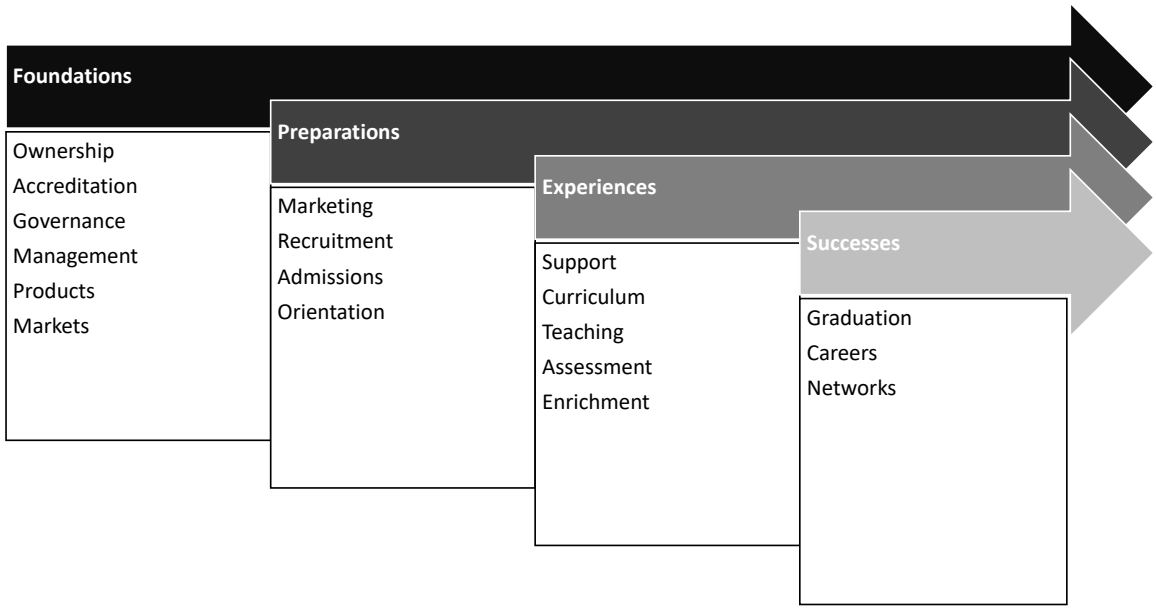


Figure 4: Four-phase academic value model

Source: Coates (2020)

The point of this frame is not to build more theory, but rather to offer a succinct structure for analyzing current and forecasting actual practice. This frame is sufficiently specific to highlight interesting education activities, underpin subsequent analysis, and support practical application.

Foundations. The foundations phase sets out the fundamentals which undergird education. This includes corporate considerations such as ownership and management arrangements, academic products, and market considerations. Important academic foundations touch on governance arrangements and course accreditation. Simply put, together these factors mark out what product and service is owned, how it can be offered, how the offering is led and managed, and how it is packaged and for whom. Clearly, without these general regulatory and leadership arrangements in good order subsequent activities are difficult. These are the hard and soft infrastructure or platforms which underpin education provision.

Preparations. The preparations phase marks out the underpinnings of any program of study. Marketing incorporates market clarification, market creation in many cases, and the usual activities of product specification, pricing, promotion, and sales (student recruitment). Admissions is the penultimate step, involving both formal administrative procedures and individualized forms of enculturation. The final step involves orientation, in which the student is engaged and embraced by the educational opportunity. To

cope with the expansion of higher education in recent decades such activities have often been relegated to administrative divisions, though being essential to academic success. They are essential for ensuring a good fit between individuals and institutions, people, and programs, and setting the preconditions for success.

Experiences. The education experience is the obvious heart of academic value creation, though specific elements must be delineated to ensure they are given full play in in consideration of institutional permutations and reconfigurations. The experience includes academic and administrative support, the production and provision of curriculum and learning resources, formal teaching and learning, assessment of learning outcomes, and broader beyond-class or informal professionally or socially oriented enrichment activities. There is surely much more to the higher education experience than suggested by this functional decomposition, though these rudiments appear to be the substrate for institutional understanding and redesign.

Successes. The fourth and final phase is about educational successes. At a functional minimum this is about graduation activities, moving to a job or further study, and building networks and moving into social and professional communities. Finer graduations can be distinguished, but these seem sufficient to analyze institutional partnerships.

This four-phase academic model helps articulate institutional innovation. In a traditional university all phases and activities would be conducted by the university itself. Instead, various innovative partnerships can be imagined in which different facets of the framework are handled by either the university or an online services firm. Referring to mostly commercial literature (e.g., Bokor, 2012; All Campus, 2019; Dipietro, 2018; Garrett, 2018; Hill, 2018; Kryczka, 2017; Straumsheim, 2015; Wiley, 2019), it is helpful to depict a potential partnership. These can be plausibly imagined as a deal between a public university and commercial education services firm.

2. Roles of universities and partners

In terms of the foundations phase, for instance, it is common for a deal to be struck between a commercial firm and an accredited higher education institution. The commercial firm brings resources and capability, and the education provider brings prestige or reputation, access to protected markets and academic intellectual property. The deal may stipulate shared governance and management arrangements, product and service standards, and characteristics of target student markets.

Institutional partnerships can play a very active role in the preparations phase. By way of example, specialist commercial marketing services may augment existing university operations, and extend the value-creation potential of higher education into new non-traditional segments. This arrangement owes as much to the innovative nature of the educational offer as it does to expertise in client-/student-centric online marketing that uses multiple platforms to reach non-traditional global markets. Unconstrained by space, though sometimes subject to broader regulatory restriction, commercially driven firms may target all who are eligible to learn. These firms may then guide prospective students through the application and enrolment steps, providing advice on course selection, eligibility, study load and suitability of study mode based on their specific circumstances. The process is consultative and designed to establish a credible, high-quality prospective student pipeline. The firm may handle logistics to admit students to the partner university. This may be underpinned by the commercial firm's integrated technology ecosystem which captures and documents student information and tailors the admissions process.

The experiences phase is core to what happens during higher education. It is helpful to illustrate partnerships in relation to support, curriculum, teaching, assessment, and enrichment.

Supportive partnerships, for instance, focus not just on campus-based students. They may also cover purely online students and the large majority who move, consciously or otherwise, across modes of engagement. Better understanding each student's perspective enables the design of learning environments and support services in ways that ready individuals for study success. Specialist services firms have developed targeted approaches to help students progress through study to graduation. These begin with the technology ecosystem which collects data that helps identify and develop proactive interventions across all aspects of learning design and delivery. The approaches continue with dedicated retention teams consisting of advisors and coaches who analyze interactions and student engagement across various learning systems and support services, conduct ongoing cohort analyses and propensity modelling research, and provide targeted reinforcements designed to improve engagement, performance, and retention. All aspects of the student experience are continually monitored and reviewed, allowing pain-points to be remedied across the entire organization, whether through adjusting processes or introducing additional or personalized support programs.

Transformation of curriculum and learning resources lies at the heart of partnership arrangements. Such partnerships enable an effective, scalable way of translating face-to-face curriculum to online focused resources. Commercial teams of learning designers and education technologists work collaboratively with partner university academics to create online learning materials. This involves consultation, building, review and approval. Typically, university academics: provide curriculum, learning outcomes and learning materials, then review and approve all learning materials, and provide oversight and ongoing expertise. Online learning specialists ensure alignment to online learning pedagogy, translate, and build learning materials for online environments, and ensure alignment with accreditation and quality frameworks. Learning resources may be monitored and rebuilt after teaching periods, drawing on institutional research insights.

Teaching may be distributed between commercial firms and partner universities, and between people and technology. Both university faculty and commercial teaching experts (academic directors, coaches and learning advisors) plan and deliver programs. Service firm experts are trained in online teaching and receive ongoing professional development. Teacher/student ratios may be specified to ensure quality. Teaching may be supported and augmented by integrated learning platforms.

Online assessment materials may be sculpted into redesigned learning resources as part of the overall curriculum rebuild. This can ensure alignment with accreditation requirements, learning outcomes, and any parallel teaching that is purely face-to-face (Coates, 2018). Assessment can be supported by a range of collaboration, marking and authentication technologies.

Higher education study is much more than learning. Universities tend to provide broader forms of enrichment spanning the spectrum of social, economic, and cultural support and opportunities. A plethora of firms have formed to give life to many such activities, providing opportunities for social ventures, internships, cultural engagements, and personal development.

The final successes phase of the value model corresponds to education outcomes. The assessment of specific capabilities is packaged into a graduation event led by the accredited university. Career outcomes and progressions are also important, as is the formation of broader academic and professional networks. Broader careers development can be linked with the employment market, for instance, via skills mapping then backward enhancement and curriculum alignment. Building alumni networks has been in the sight of universities only for the last few years. Given the mobility of graduates, and the size of the cohorts, this is obviously a space in which online networking is vital. It remains a space for further growth.

In summary, this mapping of the nature and extent of blended partnerships assists in charting education and commercial arrangements, partnerships, and prospects. It clarifies how the development of education

services plays out in different ways depending on education arrangements and contexts. Universities have a long history and are likely to prevail as a higher education model for many years more. Nonetheless, work functions, and who delivers them, will change in response to shifting with organizational and educational norms. As UNESCO puts it, there is a growing role of "non-state actors" (UNESCO, 2020b: 2). The analysis reveals the necessity to step well beyond conventional public sector approaches to studying higher education and universities. The relationship between state agencies like regulators, funders and policy institutions, and accredited institutions like universities, is a decreasing part of the contemporary story. Generating insights with explanatory power will become increasingly difficult if inquiry is limited to referencing conventional forms of institutional management and evaluation. Looking within universities to better understanding their relationships with education services firms is crucial, because such understanding carries implications for learning and teaching, for academic programs and departments, and not least for institutions and countries.

IV. Quality assurance

While quality assurance in higher education has proliferated into myriad theories, methods and practices, current interest lies in practical measures relevant to the quality and more importantly productivity of online education. It is important to unpack these concepts and spotlight frameworks to steer strategy and drive practice.

'Quality' as an idea, is essentially amorphous, and generally raises the question 'quality of or for what?'. Though various models have been adopted, there is no agreed or mature theoretical or international approach to the regulation and quality assurance of online education. As clarified by Harvey and Green (1993) and Gibbs (2010), 'quality' in higher education varies for different stakeholders and can be defined, improved, and assured in myriad ways.

Clearly, there are numerous quality dimensions to each of the phases and facets presented in Figure 4. While it is important to take a holistic view of online education, the current analysis focuses on the experience and successes phases. This is because it concentrates on arrangements which fall largely within an institution's control, and on education. Governance, management, and other forms of academic administration which are associated with the foundations and preparations phases are outside the scope of this brief. 'Quality', in this interpretation, goes to how institutions are working through each of these domains to support students to engage and achieve academic, social, and professional outcomes.

While diverse national, institutional and industry practice makes clear that there is not one model of quality, attempts have been made to specify the most important parameters and gather these into a framework. An important innovation, located in the Asian context, was advanced by Australian researchers on behalf of Asia-Pacific Economic Cooperation (APEC) (2017).

Figure 5 presents the general framework. This reflects a synthesis of existing international efforts to reify the broad idea of 'quality culture'. In particular, quality is differentiated into nine domains, each of which is underpinned by principles of good practice and evidence. The nine domains are shown in the middle band of Figure 5, including 'leadership and management' through to 'learning outcomes.' The principle underpinning 'leadership and management', for instance, is that "Leadership and management actively support the realization of quality online and blended education by developing strategic plans, creating performance indicators and by influencing the culture of quality within an institution" (2017: 10). Evidence might be sourced through strategic plans, leadership, institutional budgets, evaluative actions, or staffing structures. Clearly, enacting quality assurance and improvement in each of these domains is a considerable amount of work, though it is helpful to use them to frame guiding questions.

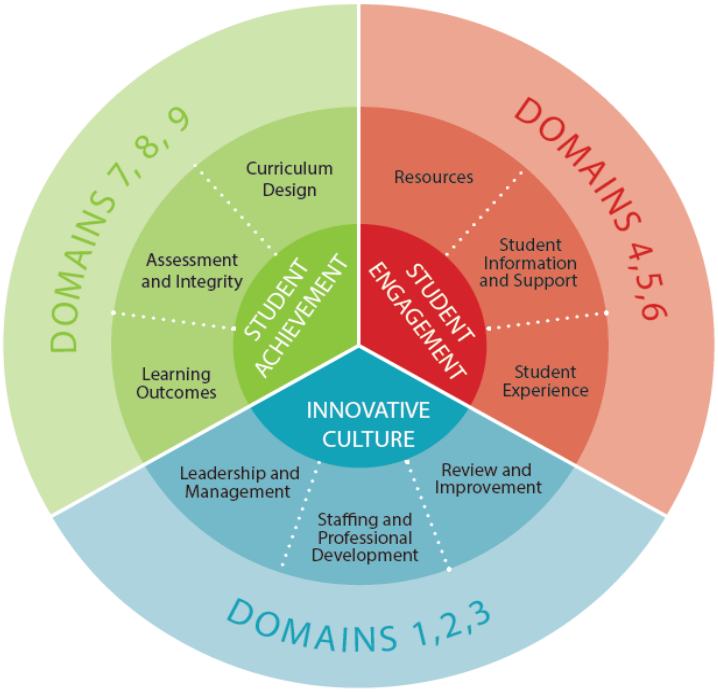


Figure 5: Quality domains and parameters

Source: The APEC (2017)

The APEC (2017) report analyzing the transition from traditional to online education shines a light on prevailing situations and spotlights things going well along with areas in need of improvement. For example, shifting support services into a blended model requires consideration of resources and staffing, and of the student experience and leadership. Moving to fully online teaching would emphasize quality concerns pertaining to curriculum, assessment, learning outcomes, professional development, and student experience.

V. Financial sustainability

Ensure financial sustainability and more importantly the value creation and productivity of online education has more to do with strategic decision-making than derivative economic calculations. In particular, what matters are decisions around 'hybridization', or the extent to which a given academic function or business activity is retained as traditionally delivered (e.g., paper-based or in-person) or shifted online (e.g., blended or fully online activity). The key question is: To what extent should online services either replace or augment traditional education activities? How this question is answered in terms of each education activity and condition determines the financial sustainability and broader value proposition of online education.

Two examples bring out the point. First, traditionally, teaching and curriculum materials ('courseware') may have been delivered using printed books, paper handouts, and printed assignment and exams. A decision may be made to shift all such courseware into electronic platforms. This may enhance reliability, streamline delivery, and reduce redundancy and waste. It will also likely require large up-front change costs associated with professional development, content transformation, infrastructure investment, and project management. Second, a decision may be made to shift away from in-class teaching, enabling students to engage with lectures in 'flipped' formats. This may make learning more flexible, reduce pressure on physical infrastructure, and help engage new learner segments. It will, as well, require

considerable investment in the production of reasonable quality materials, raise administrative questions around privacy and intellectual property, and require careful tracking to ensure students working alone are actually engaging with materials.

Ensuring the financial sustainability of online education therefore amounts to ensuring that partnership decisions are well-made and delivered. For each of the activities in the value creation model, this amounts to determining the extent of 'blendedness' or 'hybridization' of each. Short- and long-term financial implications flow from such decisions. Charts of accounts and actuarial brilliance flow accordingly. Following Coates et al. (2022: 71), Table 3 plugs the above two examples into the four-phase academic value model and adds the "blended learning ratio" (BLR), or amount of 'blendedness'. Clearly, this ratio will change over time and across functions even within a university based on discipline and other contexts. Evidently, something can be fully in-person/onsite and fully online, or a mixture of the two. The concept of 'blendedness' can be further differentiated into change associated with infrastructure (e.g., servers, classrooms, devices), change associated with middleware or resources (e.g., teaching and curriculum and assessment materials), and changes associated with people and experiences (e.g., support staff, teachers, students).

Table 3: Example of blending of education phases and activities

Phase	Activities	Example 1 BLR	Example 2 BLR
Experiences	Support		
	Curriculum	100%	
	Teaching		50%
	Assessment		50%
	Enrichment		

As this analysis shows, rather than focus on financial considerations alone, it is more useful to embrace the broader topic of productivity. In turn, it is helpful to offer a brief introduction to what is meant by 'productivity'. In colloquial terms 'productivity' evokes the idea of doing more, better, faster, for less. The basic idea is that productivity (P) involves increasing outputs (O) relative to inputs (I) which leads to the basic formulation: P = O / I. This can be achieved by increasing outputs or reducing inputs, or various combinations of the two. The question then goes to defining outputs and inputs. Outputs can simply be considered to be whatever facets of education quality are defined and measured. Inputs are typically of a financial nature, though in higher education it is useful to measure productivity in terms of alternative, non-monetary inputs.

These examples surface important insights which have been well recognized in recent decades and help shape current analysis. These are worthy of presenting directly:

- Online education is not necessarily cheaper than traditional forms of delivery.
- There can be large transition costs with transition to online delivery.
- Online education is often used to expand reach and enable more people to participate in higher education.
- Costs need to be factored in around faculty professional development and student support.
- Online education may work as a 'large-scale business card' for the university and build brand for the core campus-based institution.
- Online education requires more explicit planning and delivery, leading to greater transparency and efficiency.
- Different fields and institutions will invest in different ways and see different returns even from similar investments.

These observations help derive a framework which can be used to plan and analyze financial sustainability or productivity. This is shown in Table 4. For each activity, the distribution of online or onsite resources can be specified for infrastructure, resources, and experiences. Such planning can be used to prototype difference financial (cost and revenue) implications taking account of existing capabilities and desired futures.

Table 4: Designing financially sustainable blended education

Phase	Activities	Infrastructure	Resources	Experiences
Experiences	Support	BLR%	BLR%	BLR%
	Curriculum	BLR%	BLR%	BLR%
	Teaching	BLR%	BLR%	BLR%
	Assessment	BLR%	BLR%	BLR%
	Enrichment	BLR%	BLR%	BLR%

A final word on the link between quality and productivity in the context of non-priced operating environments such as higher education. Productivity makes inherent reference to quality in the sense that it makes little sense to consider productivity without quality. The quality of inputs and outputs must be considered for a comprehensive institutional productivity analysis, noting that productivity can vary at different quality levels or contexts. This point regarding quality touches on an important aspect of productivity which is unpacked later—while conclusions about productivity may or may not explicitly indicate quality, it is imperative not to fixate on productivity as an isolated, mathematical, and decontextualized concept. Productivity indicators inherently inform quality analyses, and vice versa.

Section II. International Experiences and Case Studies

Three case studies are presented, focusing on a small suite of benchmark institutions in relevant higher education systems. Systems (or sectors, or subsectors) rather than countries were selected as many countries have multiple higher education systems which differ materially in terms of online education. One benchmark institution was sampled from each system. Institutions were selected according to apparent partnership stances and parameters according to Figure 3 and Figure 4, noting that much relevant information is confidential, fragmented or undocumented. Interest is in major public universities which have shifted education provision online. The case study analyses are based on publicly available information. First, each case study institution is presented by way of an overview, then analysis of its partnership stances and parameters. Next, the online education quality and productivity framework is applied.

I. Case study 1: Design innovator

1. The context

The first case study focuses on a university can be categorized as a 'design innovator' as it is a technical university which has played a leading national role in developing high quality and productive online education, and then in launching a listed firm which has grown internationally. The case focuses on Swinburne University of Technology, located in Australia. This case is important as it provides a roadmap that may be considered by one of the 3Us.

Australia has a largely national system of higher education which has been progressively regularized and matured through policy reforms over the last three decades. The country has had a long association with distance education given the sparse population and large landmass. Since the turn of the century, it has also been a pioneer of international education. These factors, along with declining public investment in higher education, have combined to seed much institutional and governmental innovation around online education. Australia's universities have readily adopted online and hybrid education as a means of scaling education in cost effective ways. Government regulation and funding has been generally supportive. While there remain restrictions around the provision of online education to particular groups of students, and accountability is monitored through a trove of national statistics, institutions are generally encouraged to deploy online education solutions. This stance continues with contemporary shifts towards micro-credentials, post-pandemic blended education, and the recognition that today's learners are living in a highly digitized world.

The case study university has existed in various forms for over one hundred years. Today, it has more than 20,000 students, and around 3,000 staff who work across multiple campuses. They traditionally focused on very science- and lab-oriented forms of education. Research was concentrated in specific areas, with a heavy institutional emphasis on teaching. In response to national policy reforms around 2010, the university saw an opening to develop a sophisticated online education platform. At the time, the university was led by an entrepreneurial engineer who recognized the growing potential of maturing online education. The university's industry-focused ethos facilitated the formation of commercial partnerships and a risk-managed approach to institutional and educational transformation.

2. Online education development

A startup was created. The university formed a joint venture with an internet service firm to create a separate company to construct this education startup, ensuring corporate separation but key points of academic and administrative integration (Figure 6). For the internet services firm, this partnership diversified its education profile giving access to government-subsidized students at an institution with a

proven track record in online education. For the university, the partnership provided access to an equity partner and rapid exposure through a mature internet platform reportedly touching around 20 per cent of the world's GDP. This corporate arrangement is important as it enables the company to operate commercially, tap into academic expertise at the university, separate production from delivery, develop and service accredited courses of study, access a much wider pool of public and private funds, and grow into countries and market segments well beyond the reach of the existing university. This situation seeded novel academic and corporate dynamics to underpin a new approach to online education.

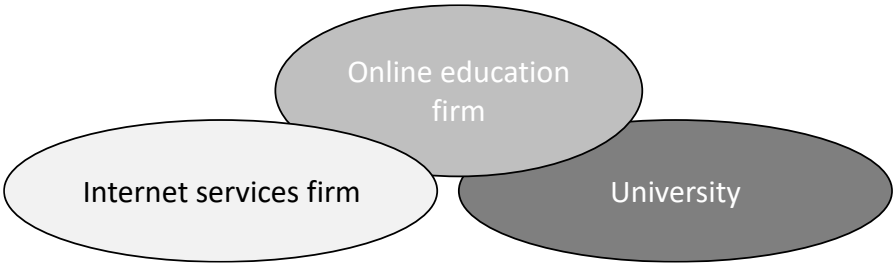


Figure 6: Partnership stance for design innovator case study

As this partnership stance conveys, the online education startup company furnished a dynamic means for constructing online education. Figure 7 deploys the four-phase academic value model (Figure 4) to depict the transformation. The 'traditional university' is depicted on the top showing all education activities as being managed internally by the accredited education provider. There are no shared arrangements with online firms. Many universities still operate like this. The base of Figure 7 presents the situation arising from the blending of the university and online education company. This blended parameterization depicts activities and conditions in-sourced by the university, out-sourced to the online company, and jointly managed through various forms of co-sourcing. This is a more innovative model in which the institution with university accreditation takes care of externally required and interpersonal matters, while the commercial organization oversees as productive services as possible.

Traditional university

Foundations	Preparations	Experiences	Successes
Ownership	Marketing	Support	Graduation
Accreditation	Recruitment	Curriculum	Careers
Governance	Admissions	Teaching	Networks
Management		Assessment	
Products		Enrichment	
Markets			

Blended Model

Foundations	Preparations	Experiences	Successes
Ownership	Marketing	Support	Graduation
Accreditation	Recruitment	Curriculum	Careers
Governance	Admissions	Teaching	Networks
Management		Assessment	
Products		Enrichment	
Markets			

University
Services firm
Shared arrangements

Figure 7: Partnership parameters for design innovator case study

Partnership parameters. This blended parameterization has been designed to harness strengths and opportunities availed by the university and internet service firm owners, and by the online education company. Diving into two of the parameters helps explicate the value-creating arrangement. First, the online education company has taken on marketing, pushing the university into new mature age lifelong

learner markets that have remained difficult for traditional universities to reach in ways that sustain often busy working students through to graduation. New approaches to admission and prior experience and learning recognition have been developed, new course and hybrid study formats have been deployed, and new pricing and revenue structures have been adopted. Second, student support has been almost entirely shifted into online education companies. This has enabled the deployment of marketing techniques, commercial platforms, and specialist personnel to focus on engaging and retaining students and helping them succeed. Rather than locate students within a public university bureaucracy in which they typically bounce between a raft of administrative and academic procedures and obligations, the online education company has designed a student experience which specifies touchpoints, spotlights gain-points and pain-points, maps metrics and intervention strategies, and actively intervenes to help students finish learning modules, assessment tasks, and then to graduate.

Quality assurance. Shifting provision into the blended arrangement has helped to mature and transform many facets of quality assurance. It has helped the institution, more specifically, to support students to engage and achieve academic, social, and professional outcomes. Much of this improvement has come through the 'sprint innovation projects' delivered to redesign the education products, services, and experiences. These projects involve taking academic and administrative functions back to first principles, examining student and commercial as well as academic considerations, defining required resources and infrastructure, building, and testing prototypes, and working up through pilot instantiations to operate the innovation at scale. Such innovation is much harder to achieve in large, traditional public universities, where even making transparent existing arrangements or surfacing data can be difficult, let alone impelling desired change. These sprint innovation projects are deployed in ongoing ways across all facets of the four-phase academic value model. By way of example, rather than putting in place a variety of means (e.g., surveys, data analysis, complaints processing, management reviews) to evaluate the current student experience of legacy education arrangements, the online education company used user experience (UX) techniques to design an optimal student experience, specify metrics and supports, and implement data platforms and resources to respond in timely ways to student needs. A longer analysis could unpack this quality assurance work in more depth and analyze innovations with respect to other academic phases.

Productivity and financial sustainability. The blended model has enhanced productivity in several ways. Key contributions to productivity have included:

- Enabling forms of finance which are difficult for public universities to access, including private and public equity, and various forms of debt.
- Separating education development from delivery to avoid costly and high-risk additional higher education accreditation.
- Clarifying corporate and academic governance arrangements to enable more streamlined oversight.
- Developing new education products, especially in terms of curriculum, assessment, and credential resources, to create and service new market segments.
- Commercial marketing to tap into and recruit new mature-age / 'worker learner' / lifelong learner markets which generate new and sustainable revenue streams.
- Enhancing student support to reduce course churn and student attrition, protecting revenue and enhancing student success.
- Engaging professional learning designers to streamline the production, publication and re-use of curriculum resources.
- Redesigning teaching to look beyond the single faculty model and instead engaging a range of specialists to create richer and more efficient delivery.
- Creating smart assessments which are woven into the broader supported experience, as well as teaching and curriculum, to test student capability and provide ongoing and summative feedback.

- Embedding work and careers advice into each step of learner to inspire engagement and help line graduates up for professional advancement.
- Instituting staff and institution-level arrangements which incentive all staff to look beyond delivering their role and focus on graduating students.

II. Case study 2: Productivity innovator

1. The context

The second case study focuses on a university categorized as a 'productivity innovator'. This university, Universiti Sains Malaysia, which is located in Penang in Malaysia, lacks the globally competitive capabilities required to build its own online platforms, but is sufficiently established to form sophisticated partnerships with online firms to boost productivity. Specifically, it has sought to use online arrangements to reduce cost and expand scale while sustaining quality. The case is relevant to the 3Us context as it provides an example of how a university can forge novel partnerships to strengthen and advance existing education services.

Malaysia has recognized that advancing higher education plays an important role in the country's broader development. As detailed by Che Mee (2016), between 1990 and 2010, there was a sixfold increase in undergraduate degrees and a tenfold increase in postgraduates. Malaysia is planning to increase the enrollment to 70% by 2025 which is about 2.5 million students. It is forecasted the private higher learning institutions will accommodate more students than public universities, that is 867,000 students compared to 764,000 students. In 2015 Malaysia released a blueprint which included guidance on the development of online learning as a means of responding to growing demand for higher education (MOHE, 2015). This blueprint sketched several reforms needed to advance the higher education system and institutions over the next decade. These reforms encompassed all areas of higher education operations, contributions, engagements, and resources. In casting the reforms in this way, the blueprint sought to engage and structure diverse strategic approaches to online and blended education.

University Sains Malaysia was established around 60 years ago. Today it has around 24,000 students and 2,500 faculty. The university is a broad-spectrum research institution which operates across numerous fields of education. It is located on one main campus, which links with nearby specialist facilities. The institution was selected by the country's education ministry to be fast-tracked into a globally competitive world-class university.

2.The online education development

University Sains Malaysia responded in turn to the national higher education plan. The university had adopted a learning management platform in the early years of the millennium, initially propagating it throughout departments, then later integrating it within an institution-wide system with underpinning departmental support. These institutional, educational, and technological developments provided foundations for subsequent institutional planning and innovation. Specifically, the foundations were distinguished into important pillars. The first pillar is technological infrastructure, ensuring reliable distribution across locations. The second focused on organizational structures and processes to support blended learning. A third pillar focused on support and training for blended learning. After a decade of development, an institution-wide center was established to consolidate and advance ongoing innovation. Today, the university has grown e-learning resources in ways that enhance and streamline campus-based education. Figure 8 depicts the early and mature phases of this institutional innovation.

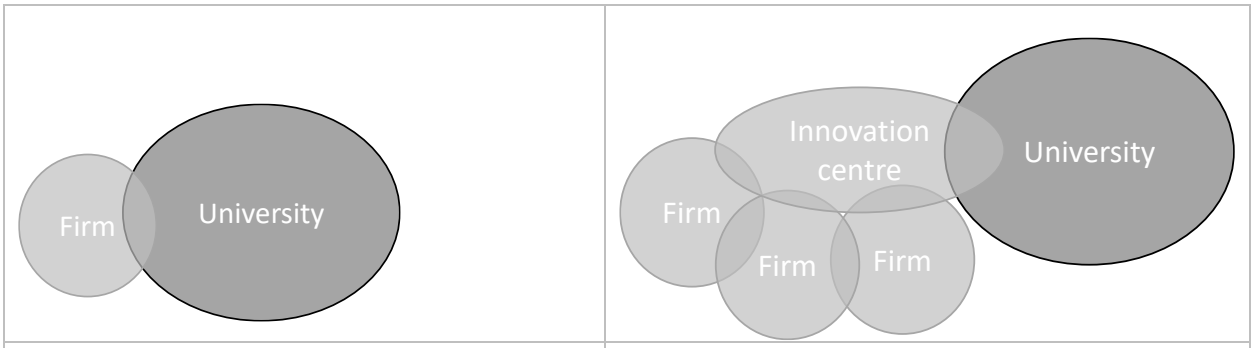


Figure 8: Partnership stance for productivity innovator case study

Partnership parameters. The above partnership stance is typical of many large public research universities which moved into online education over the last twenty years, spurred by national policy agendas, platform innovation and institutional reforms. Figure 7 deploys the four-phase academic value model to depict the transition from a traditional university to one in which a variety of online platforms are bled into various facets of institutional operations. The 'traditional university' is depicted on the top showing all education and corporate activities as being managed internally by the accredited university. The base of Figure 7 shows how the university has leveraged partnerships with online platform providers to advance productivity. This parameterization shows how the university has used these platforms to enhance the education offer.

Traditional university

Foundations	Preparations	Experiences	Successes
Ownership	Marketing	Support	Graduation
Accreditation	Recruitment	Curriculum	Careers
Governance	Admissions	Teaching	Networks
Management		Assessment	
Products		Enrichment	
Markets			

Productivity model

Foundations	Preparations	Experiences	Successes
Ownership	Marketing	Support	Graduation
Accreditation	Recruitment	Curriculum	Careers
Governance	Admissions	Teaching	Networks
Management		Assessment	
Products		Enrichment	
Markets			

University
Online platform
Shared arrangements

Figure 9: Partnership parameters for productivity innovator case study

It is helpful to dive into specific examples of blended learning. According to the university blended learning may be implemented via:

- Adapting the hours in a week, for instance by changing three face-to-face hours into two supplemented by one hour of guided online instruction.
- Adapting the weeks, by switching between face-to-face and online provision either in clusters or in alternating weeks.
- Adapting by topic or task, whereby the mode of education is driven by the topic to hand.
- Adapting in very fine-grained ways based on specific facets of student, teacher, or curriculum.

Regardless of the specific mode, formulars have been prescribed to ensure equivalence of study load, credit hours, and capacity to achieve required learning outcomes.

Quality assurance. The blended arrangement carries implications for the assurance of quality. The institution-wide center plays an important role in this regard. It deploys a multifaceted strategy to use online learning as a fulcrum for improving the quality of teaching and learning. By this logic, online education is not a separable facet of education or risk, but a key means for advancing the university's education towards achieving the national reforms and blueprint. This is a different and less radical approach to using a broad online logic as a disruptor to transform existing arrangements. Accordingly, the academic innovation center seeks to deliver:

- Professional development for academics related to innovation, education trends, and management.
- Professional development for support staff to help advance student development.
- Quality-assured adoption of digital platforms in education programs.
- Discussion of innovative approaches around blended learning, flipped classrooms and gamification.
- Support to construct externally facing branded products such as open education resources and massive open online courses.
- Services for developing lifelong learning and micro-credential resources.
- Ad hoc support for advice and support around online innovation and teaching and learning.

Productivity and financial sustainability. Incorporating online platforms into education has shaped and been shaped by institutional interest in productivity. As a large public institution, productivity is framed in terms of growing the institution and its national and international standing rather than as input-side reduction. Rather than finance-or infrastructure-oriented considerations, therefore, key productivity initiatives have been focused on showcasing institutional contributions such as by:

- Implementing contemporary and emerging tools for teaching and learning to engage students and showcase the university's innovative edge.
- Making transparent traditional academic approaches in areas like assessment as a basis for implementing more consolidated approaches.
- Ensuring that faculty reflect on their professional practice and how they can enhance student experience.
- Showcasing successful initiatives to engage broader adoption, and academic innovation; and
- Supporting the implementation of digital infrastructure, content and teaching and technical support to boost the production of quality 21st century learning outcomes.

Ultimately, through such ambitious reform, as per national policy the university seeks to become a lighthouse for stimulating broader educational transformation which enhances the standing of the system overall. This, in turn, generates engagement from students, industry and professional stakeholders.

III.Case study 3: Scale innovator

1. The context

Universities with fewer resources, or fewer resources in a particular area, have relied not just on third-party digital services but also on shared content and curriculum resources to scale provision. The university chosen as the case study of a 'scale innovators' has adapted standardized resources to deliver contextualized programs. This university is the Botswana Open University.

Botswana is a usual country given its nature and growing role in regional and international higher education. Botswana is wealthy and stable country in Southern Africa which is transitioning its economy from resources to services with an obvious reliance on higher education. The country has established and

renovated regulatory and funding structures over the last decade, including with the establishment of the Botswana Qualifications Authority in 2013. Government policy has been favorable to higher education innovation, including in relation to online education which relies on the extensive broadband system established to join-up the sparsely populated country. Within the tertiary system, Botswana Open University has played a particularly innovative role developing and help other institutions to design quality education using open and distance learning.

2. Online education development

Botswana Open University was launched as a university in 2017, being upgraded from a training-focused institute. The university is an open university with a vision "to inspire excellence and present life-long learning opportunities globally". Currently, the university delivers 40 courses across four schools, with an annual enrolment of around 14,000. The university is executing a strategy to increase enrolment and become globally recognized by 2035. The university operates through a hub and spoke or headquarters and regional campus model, whereby the main campus produces resources which are delivered into five other campuses. Each of these other campuses in turn support up to a dozen learning centers which are located in an array of facilities. The university also has a mobile learning center to reach otherwise unreachable students. The university leverages the country's world-standard broadband network. Figure 10 depicts the institution's partnership stance.

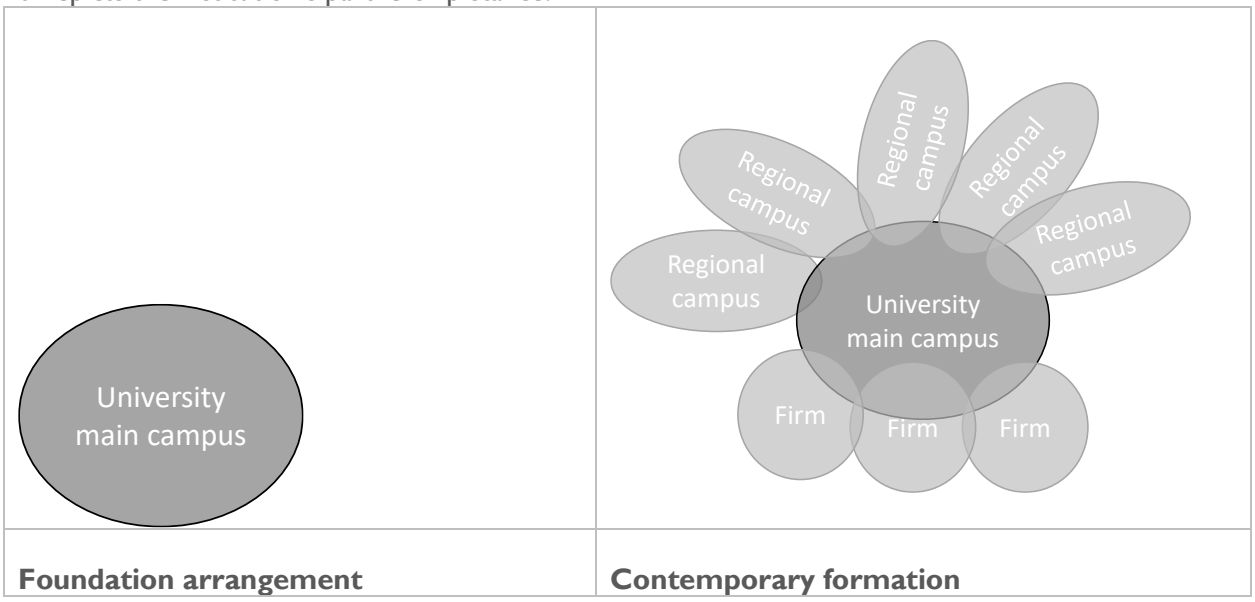


Figure 10: Partnership stance for scale innovator case study

Partnership parameters. The partnership stance was developed to enable people in remote and hard to reach communities to access reasonable quality higher education. The hub and spoke model have been used widely around the world during massification to build institutional and system capacity. Figure 11 deploys the four-phase academic value model to depict the sharing of academic and corporate functions between the main and the regional campuses. This shows how online education has been used to scale the institution into new areas and markets.

Foundations	Preparations	Experiences	Successes
Ownership	Marketing	Support	Graduation
Accreditation	Recruitment	Curriculum	Careers
Governance	Admissions	Teaching	Networks
Management		Assessment	
Products		Enrichment	
Markets			

Main campus
Regional campus
Shared arrangements

Figure 11. Partnership parameters for scale innovator case study

A university-wide center for technology-enhanced learning and teaching provides leadership and support in the use of innovative instructional technologies in order to enhance the development of learning and teaching and other general use of technology in keeping with the university's strategic direction of leveraging technology to achieve academic excellence. The center aims to be at the forefront of innovative quality online/blended learning, delivering programs in a blended mode using flexible technology supporting teaching and learning through an open distance mode. Overall, the center: provides training and support to teaching and support staff through professional development opportunities in the form of workshops, seminars, and short courses; conducts departmental and individual consultations for integrating innovative digital technologies into the design and development of programs and courses; provides support in the general use of technologies for other activities such as virtual teaching, meetings etc.; researches, develops, tests and evaluates instructional technology applications and frameworks appropriate for the open and distance learning environment; develops appropriate procedures, policies and support structures for instructional technology including equipment acquisition, maintenance, integration and usage; creates a learning community of competent and confident users of instructional technologies and other technologies; and produces educational and instructional technology media.

Quality assurance. In terms of external quality assurance, the university is treated the same as any other provider. The same regulatory approach and standards are used, the same approaches to external review are used, and the same data and statistics are used. An office of quality oversees internal quality work. This includes: monitoring quality enhancement policy; overseeing the institution's quality management system; developing and implementing the institution's teaching and learning strategy; coordinating the advancement of standards and guidelines for developing, implementing and monitoring quality academic programs in the institution; receiving reviews and advising schools concerning the quality of proposals for new programs or major revisions to existing programs; overseeing the five-yearly process of program reviews conducted by external reviewers and produce annual summary reports for academic committee; raising awareness on quality matters and quality improvements to all staff in order for them to develop a continuous culture of quality enrichment; and ensuring that assessment practices and procedures promote ethical conduct.

Productivity and financial sustainability. The prism of 'scale' provides an important productivity perspective for this institution. Particularly important considerations include that:

- Higher education has been made available to a very large portion of the population, many of whom would not have had access.
- Graduation rates are higher than other benchmark providers in the country and around the world.
- The hub and spoke model have lowered the cost of infrastructure, resources and delivery.
- The university has proven a new model of higher education provision and success.

Section III. Online Education at Indiana University

This section provides a high-level overview of online education as it has been developed at Indiana University. It is meant to serve as a broad introduction to the history of the program, its key attributes and organization, the primary goals set before it, and the broader social, enrollment and regulatory environments in which it resides. While many aspects of IU Online have been tailored to its unique circumstances and goals, we nevertheless believe that other national and international institutions can glean insights from its organization, history, and achievements. Since this is meant to be a brief high-level overview, much important detail has been omitted; however, when possible, the authors have provided links to additional resources for those readers who hope to learn more about IU Online and online education in the U.S.

The structure is based on the four academic value model and the three key components; thus, the rest of this section includes: foundations, preparations, experiences, successes, quality assurance, financial sustainability, and pros and cons of the IU's online education and some recommendations.

I. Foundations

1. Development history

IU established the Office of Online Education (OOE) in 2012 to create a coordinating body to manage a unified brand (IU Online), ensure uniform and efficient regulatory oversite and compliance, and control internal competition amongst IU campuses. An emphasis on collaboration was essential to realizing benefits from resources shared by those campuses participating in the collaborative programs. In 2011, and 2012, university leadership conducted two reviews of online education, and further analysis in 2015 determined the following models existed in the U.S. as outlined in *Moving Forward 2.0*.

- **Grassroots model**-each campus develops their own programs, allowing for duplicative programs and internal competition based on reputation and cost (UMass Online)
- **Centralized model**-centralized office determines which campus will deliver which online program (Penn State World Campus)
- **Separate organization**-academic units have no authority to deliver online programs (U Maryland-University College)
- **Flagship campus does not offer online programs**/comprehensive teaching campuses deliver online programs (Michigan)
- **Flagship campus delivers online programs**/comprehensive teaching campuses do not deliver online programs (Ohio State)

Upon examining these models, IU chose to establish a collaborative model which created online coursework and programs within the current academic structure of the university, rather than separating it from traditional face-to-face programs. This was based on the belief that online education was becoming an expectation for all students to some extent, that quality would be more easily guaranteed if courses and programs were developed and taught by the same faculty, several student populations (e.g., adult students, returning students) were permanently moving to online programs making face-to-face enrollments a challenge at several campuses and efficiencies could be gained by aligning online and face-to-face courses and programs.

A key intention of the model at these early stages was to provide a less intrusive means for all IU campuses to acculturate to online education, but to eventually have online education evolve within the campuses

themselves. This would allow the campuses to internally develop a culture and mission of online education.

In 2015, the role of OOE expanded to include student services and marketing. It had become clear that campuses themselves were not able to provide the same level of support for online students and that commitments to marketing were insufficient to generate adequate growth. In addition, the university needed stronger central leadership to drive decisions to conclusion and develop a more centralized core of services beyond oversight of compliance. However, the emphasis was still on developing infrastructure through the campuses. For example, for student services, OOE partnered with specific campuses to provide admissions financial aid counseling, success coaching, and career advising. In each of these cases, OOE funded specific campuses to "extend" their services and leadership to the other campuses.

In 2021, coming out of the COVID-19 pandemic and transitioning to new executive leadership both at the presidential and Vice presidential levels, the university began greater centralization of student services, phasing out the partnerships with campuses that had been found to be underperforming.

The university again conducted a series of reviews to explore models of online education. In particular, IU wanted a model that would allow IU to attract and serve much larger numbers of students through online programs and to meet those students' expectations for program quality and service experience. After the reviews, IU identified the following five above models of online education: Evolutionary, the Mega-University, the Online Campus, the Online Program Managed (OPM) Campus, and the Aggregator.

The result has been the identification of a set of programs that can foster enrollments of 1,000 to 2,000 students apiece (called internally Programs of Scale or ProS) and the rapid aggregation of student services within OOE. The latter also includes the creation of a student advising unit for both graduate and undergraduate programs within OOE. A final review of academic governance of online programs is currently being conducted to explore ways of retaining robust faculty ownership of the curricula but to do so in a more responsive manner to capitalize on opportunities that may arise.

Currently, IU provides 226 online programs and majors for 7,972 students. There were 3,103 online degrees awarded in the academic year of 2021-2022. Students from 56 US states and territories and 63 countries have joined IU's online programs (IU Office of Online Education, 2023). IU's online education is quite well-known in the United States and around the world. IU's online programs are among more than 1,800 programs surveyed by U.S. News. Its rankings in 2023 includes: #1 in Best Online Master's in Business Programs (Excluding MBA), #1 in Best Online MBA Programs (tie); #8 in Best Online Bachelor's in Psychology Programs; #21 in Best Online Bachelor's Programs (tie); and #20 in Best Online Bachelor's in Business Programs (tie) (USNEWS, 2023).

2. Ownership, governance, and management

a. Ownership and partnership

Since IU Online is not a separate campus of Indiana University, ownership of online academic programs follows traditional lines of ownership (i.e., they are owned by campuses and the academic units within them). Program approval follows all steps necessary for traditional programs with the exception that they must also be reviewed by the Office of Online Education and the Office of Collaborative Academic Programs to ensure (1) there is sufficient market demand for the programs, (2) all regulatory steps are fulfilled (e.g., questions of licensure), and (3) reviewed for potential collaboration across campuses.

In the case of collaborative programs (programs involving multiple campuses), a faculty committee develops and maintains the academic curriculum, and the campus leadership (e.g., departmental chairs, school deans and campus leaders) agree to jointly manage the degree. In this case, ownership is held jointly. In cases where enrollment is sufficient to support an academic program director for the collaborative program, and faculty member is selected to serve in this role and convenes the faculty committee and interfaces with the campus deans. OCAP serves as the administrative support in these cases.

b. Governance and management

Single campus programs are governed and managed through the academic departments who "own" the degree. In the case of collaborative programs, governance is shared across the participating campuses. In cases where enrollment is large enough to support a faculty program directly, one is selected from amongst the participating departments to provide leadership and management of the program.

OCAP provides management support to the faculty committees and/or program directors for the purposes of program and course assessment, course offering planning, conflict resolution, accreditation and state approval support, and policy analysis. OOE provides the management for regulatory compliance, student services, recruitment and marketing, and program analytics.

3. Online-Conducive Environment

Students in online programs create their own classroom by bringing their own technology and connectivity to the classroom. Therefore, a successful implementation of online education depends upon an external environment that is conducive to the adoption of online education. For IU Online, which focuses on extending access to a broad population with low levels of access to cutting-edge technologies, several broader social changes in technology adoption trends have been instrumental to its success:

- ***Smartphones.*** The increasing power and availability of smartphones have made the use of remote learning tools even more available. Given that much online coursework can be consumed and completed on smartphones, the physical aspects (e.g., setting up a home learning station or studio) of completing online coursework have become lease daunting. In a sense, the classroom no longer requires even a backpack let alone costly home technology and space. It fits in your pocket. Also, mobile connectivity is increasing on par with Wi-Fi for basic interactions (video, file sharing, research on the web) and has made the smartphone the "go to" form of tech for most students of all ages.

- ***Wi-Fi and High-Speed Internet.*** Over the last decade, the availability of high-speed internet has greatly increased—predominantly to enable streaming and multiple devices in households. Online education has been able to ride on the heels of this increased connectivity in ways that make connectivity in the home approach the connectivity that formerly was found only on campus or professional settings. The widespread availability of routers and modems to enable Wi-Fi has meant that many users depend less on wired connections at home and therefore are comfortable bringing technology with them. The wide availability of free hotspots in local businesses and libraries makes for convenient access points to the Internet and online classrooms for those who lack connectivity at home.

- ***E-commerce.*** The increasingly pervasive use and comfort with the internet for the purposes of conducting daily business has generated broader acceptance of all things digital–including online education. Services like Amazon, Uber, Netflix, Venmo, and Spotify have transformed the general acceptance of digital services as a first choice for an increasingly large proportion of the

population. Online banking is increasingly a standard, and social media has brought even socializing with friends and family into the digital world. This transition of other elements of a person's life into the digital world has increased their comfort and acceptance of online education. In addition, students develop their expectations for user experience and quality based on these same services.

These trends, as well as possibly others, have been essential in changing the general perception of online education as lacking quality and unfamiliar to be an acceptable and even preferred modality of education. The general transition of all aspects of life in the U.S. to online generally accelerated this transition across the U.S. population.

4. Technology

A key advantage of IU's infrastructure is its unified enterprise systems approach and harmonized policies and business practices for technological management across its 7 campuses. This consolidated infrastructure allows for a faster implementation of centralized program management, sharing of courses for campus to campus and adoption of a common technological terminology. Issues of systems integration were greatly reduced or eliminated.

Examples of enterprise-level infrastructure include:

- Student information system (Peoplesoft) for admissions, student aid, financials, and admissions
- Learning Management System (Canvas) for course delivery
- Videoconferencing (Zoom) for virtual meeting and lecture capture
- Video Storage (Kaltura) for video delivery
- Remote Proctoring (Examity) for test proctoring

Because IU Online leveraged existing technology platforms, reporting on online education could leverage current data structures that aligned with current reporting. This meant that, once appropriate definitions could be agreed upon and field values updated, when necessary, business insights could be shared through already existing channels and in ways more easily understood by university decision makers.

Centralized technological management is central to ensuring highly vetted, reliable, scalable and secure technologies. Adoption of technology is managed through central university policy and is a fundamental asset to providing a consist, supported and safe online experience for students. OOE maintains a strong relationship with UITS to explore new technologies for university adoption.

5. Program Development

At IU Online, we collaborate across all seven Indiana University campuses to deliver high quality, cost-effective and student centric degrees. We have programs that are delivered by a single campus as well as degrees offered by multiple campuses. Each campus must submit a request to propose an online degree and at the Office of Online Education, we determine the viability of that degree based on market driven data as well as the current resources available. Based on our extensive experience in selecting the right degrees to offer in an online format, we have assembled a list for you to consider when to determining if an online degree is right for your school:

- What does the market need – Look at where the jobs are OR is there a need for such a degree in your community. We offer degrees with high growth potential such as business and technology, but we also serve the state of Indiana with degrees in education and the liberal arts and sciences.

- What programs already exist – If your university already has an existing program on your campus, the transition to an online program is much more manageable than creating a degree with no history of success in a face-to-face format. This also allows you to take the faculty and content taught to be used online, making the transition seamless.

- Can courses in the degree be taught online? We have come a long way in this area. We used to not be able to offer courses like chemistry and biology online, however with instructional design help, we can now do a lot of interactive activities that would never have been thought of in a distance education/online format.

- Does faculty expertise exist? This may seem like an obvious question, but in order to build a program, the faculty need to already be in place. Most universities and colleges are not in a place financially where they can hire an entire department to create an online program. This is why we wouldn't take on building a degree in something like architecture or mechanical engineering. We do not have that type of expertise at IU. We do however have expertise in most disciplines that can be taught online like the humanities, social sciences, technology, education, and business.

- Finally, we want to consider if this is going to be a master's degree or a bachelor's degree. A master's degree is shorter, but often time requires some knowledge of the subject area before entering, but now always. A bachelor's degree will be much larger, upwards of 120 credit hours and we will need to take into consideration things like general education credit and transfer credit. When looking at a bachelor's degree, we need to make sure that the degree is one in which students can transfer in to because many of the students who are seeking undergraduate degrees are coming in with a substantial amount of transfer credit. A key question for an undergraduate degree is whether or not it is "transfer friendly."

6. Degree timeline

It can take anywhere between 18-months to a few years to create an online degree using the collaborative model. Although not ideal, this is how IU ensures that every participating campus has a say in the curriculum, learning outcomes, admissions requirements, and progression towards degree completion. Below are the steps used at Indiana University to develop an online degree. Recently, IU has had a larger role in ensuring that degrees move through the various stages of the governance process, making the approval process faster.

Before going through the entire degree build timeline, we would like to share the guiding principles behind the collaborative model which is available on the IU Online website:

- Collaboration is the standard.
- There will be no internal competition between, or duplication of, fully online degrees unless they are readily distinguishable by potential students on terms such as price, subject matter, admission requirements; most fully online degrees will be collaborative among campuses that choose to participate.
- The collaboration requirement applies to fully (i.e., 80% or more) online degrees only; campuses may offer independent hybrid degrees (21% or more in-person) and individual online courses. Campuses are encouraged to consider a portfolio of delivery formats.
- Participation in fully online degrees is open to all campuses with capacity to offer relevant courses; participation is required for none.
- No campus shall prevent another campus with capacity from offering or participating in a fully online degree.

- Use normal university processes.
- Students are assigned a home campus of enrollment for the purposes of registration, enrollment data, general education requirements, tuition and fees, and the granting of the degree. Online students may transfer among campuses on the same terms as other students.
- OOE works with the campus academic officers to develop the administrative elements of collaborative programs.
- OOE works with the academic officers to convene the faculty of participating campuses to develop the shared curriculum. The disciplinary curriculum for fully online degrees is developed by the disciplinary faculty of the participating campuses; students meet the general education requirements of their home campuses.
- Collaborative online programs go through the normal curriculum approval processes in place at each participating campus. The Academic Leadership Council will grant final approval of online curricula, subject to further approvals by the Board of Trustees, Commission for Higher Education, and Higher Learning Commission, as needed.
- Commitment to quality
- Online students will receive a seamless, user-friendly experience in a shared services environment supervised by the Office of Online Education; OOE will use existing campus administrative and support capacity whenever feasible.
- OOE has established and will maintain a system (Quality Matters) of assuring a quality, highly engaging educational experience, and transferability among campuses; online courses with the same course name and number are equivalent to in-person courses for the purposes of academic credit and inter-campus transfer.

Once the above guiding principles have been reviewed by all campuses, the first phase of the degree build process begins. In most cases a campus will propose a degree using what is called an IRF (Initial Request Form) indicating the degree type (Bachelors or Masters), the discipline and, the reason for requesting this degree online. A copy of the IFR form can be found as an additional resource at the end of this document.

In recent years it has become more common for the Office of Online Education to do a market analysis of a particular degree in the online education space to see what is already being offered, what has the potential to grow enrollments and what has the potential to create jobs for graduates. If OOE determines that there is a gap in the market that can be filled by Indiana University, we will create a proposal and present it to the campuses. Although this is a less traditional model, this is how the BS in Computer Science was developed and approved in record time with the collaboration of 5 campuses.

Once an IRF is submitted, we determine if the degree will be delivered by just one campus (single campus degree) or multiple campuses (collaborative degree). A single campus degree is one that is only delivered by one of IU's seven campuses. This means that it falls into two buckets. 1. It may have been developed before the Office of Online Education existed and there were no university wide rules and guiding principles behind an online degree, or 2. No other campus has the expertise to deliver this degree. Here are two examples:

- IU East has a B.S. in Psychology degree. This degree was developed years before other campuses decided to enter the online education space. Based on the guiding principles of "no competition without distinction," no other campus can develop this degree. This is under bullet two of the guiding principles above.
- IUPUI (Indiana University Purdue University Indianapolis) has a doctoral degree or PhD in Philanthropic Leadership. There is no other IU campus that has a school of Philanthropy and therefore the expertise for this degree only resides on one campus.

If a degree is determined to be a single campus degree, the school proposing the degree is responsible for the creation of the degree, and having it moved through the various faculty governance and accreditation processes. If the degree is determined to be a collaborative degree, which many new degrees are, the administrative function comes back to The Office of Online Education and Office of Collaborative Academic programs and the collaborative degree build process begins.

The major benefit to collaboration is the ability for multiple campuses to join together to deliver a degree that they would not have the ability to do so on their own. This may be because of a lack of faculty resources or online teaching knowledge. Working together across campuses allows IU to expand its portfolio of online degrees to utilize the expertise in teaching and research across all seven campuses.

From this initial stage of the development process, we now engage with other campuses and the process below is followed:

1. An email asking each campus' EVCAA or Executive Vice Chancellor of Academic Affairs) if they would be interested in preliminary discussions to develop a degree. When available, we will share the proposed campuses' IRF. This step is important because it requires the EVCAA who is essentially each campus's Chief Academic Officer to begin the shared governance process of incorporating deans and faculty into the discussion. The call for initial participation goes out to all campuses for graduate degrees and all campuses except the Bloomington campus for undergraduate degrees. At this time, Bloomington does not participate in undergraduate online degrees. A deadline is given for when campuses need to respond with interest. Usually there are 3-5 campuses involved, but we have some degrees that have all seven involved (such as the MA in History).

2. After we have confirmation from the tentative participating campuses, we send out an MOA1 (Memorandum of Agreement) document. This is an internal agreement between campuses that shows an interest in having faculty discuss the possibility of a new degree. It requires signatures of each EVCAA, but does not require a campus to participate, only engage in discussion.

3. The next phase is the MOA2. This part of the degree build process takes the longest and has the most negotiating. A representative from OOE/OCAP convene a group of discipline experts that have been nominated by their schools to work on a curriculum that can be shared across all participating campuses. This process usually takes at least three months and requires substantial research and preparation. Syllabi are collected, comparison and benchmarking of other online and face to face programs need to be made as well as an inventory of faculty resources. During the MOA2 phase we usually have no less than 4 meetings. The OCAP/OOE representative does all the administrative work ahead of time to make sure that the first meeting is productive. This includes doing market analysis of other programs, collecting learning outcomes from each campus's face to face program and collecting all syllabi of similar courses to be compared by faculty. We also use Microsoft Teams to organize these documents and provide video training on how to use Teams before the first meeting. Below is a list of topics and outcomes needed by the end of each meeting:

    a. Meeting 1: Introduction, review of IRF, begin development of Program Learning Outcomes (start with the end in mind). Do a general look at the proposed curriculum and note major issues that should be addressed or research that must be done before the next meeting.

    b. Meeting 2: Continue working on PLO's if not complete. Review admissions requirements and other entrance topics. Begin a more substantive review of proposed curriculum and

determine viability. Discuss which campuses offer which courses and how knowledge can be shared. Topics may include the need to streamline course numbers, sequences, and course names. It is also important to always tie the curriculum to the program learning outcomes. The courses selected should reflect what the faculty want a student to be able to do and have learned by the time they have graduated. The second and third meeting are often the most contentious but is where the most work gets done. By the end of meeting 2 a very rough draft of the curriculum should be created. Representatives should take this back to their departments for feedback.

c. Meeting 3: Session three is about aligning the curriculum based on department feedback. There is often a lot of discussion involved and when the group cannot come to a consensus, a vote is taken. If there are 5 campuses involved, then 3 votes are what is needed for a requirement to be added or removed. For example, there was a discussion about calculus during the computer science degree build. One campus required Calculus I, II and III, three campuses required Calculus I and II and one campus only required Calculus I. In this situation, there were three campuses that had the same requirement and two that did not. The other two campuses had to agree to use the requirement of Calculus I and II because that is what is used by 3 out of the 5. By the end of the third meeting, the curriculum should be 95% complete and will be taken back again to each department for final feedback.

d. Meeting 4: This meeting should take place about a month after the third meeting for the committee members to get feedback from all parties involved. If major issues arise during meeting 3 and 4, we try and address over email, but can meet ad hoc if needed. Meeting four is generally for minor tweaks and a final vote. Once the meeting has ended, a document will be sent to the faculty who participated to sign that they have finished the curriculum build process and it has gone through all of the necessary campus shared governance processes.

4. The final stage of the MOA/build process is the MOA3. This is a relatively straightforward part in which the deans from each school meet to discuss the schedule, course rotation and how students will be split up by campus. This usually only takes one meeting but can sometimes take two. Once the schedule rotation is agreed upon, the final MOA goes out for signatures from both the Deans and the EVCAA's.

5. Once the MOA process is complete, the OOE/OCAP representative writes the ICHE form (Indiana Commission of Higher Education). This document can be up to 25 pages and includes everything from a market analysis of the degree and benchmarking of other programs to faculty qualifications, descriptions of target audiences and financials. Once the document is complete it is sent to each participating campus to be voted on by carious entities. It usually starts with the degree granting department, then moves to the school, then to the campus curriculum committee and finally to the faculty senate. Once it is approved by the faculty senate, the proposal has completed its journey through the campus. However, keep in mind that the proposal needs to make it through every campus and each campus is on a different timeline. This is often where degrees can get help up based on the frequency of committee meetings.

6. After the proposals have made it through all committees, it is brought to the Indiana University Board of Trustees for a vote at their quarterly meeting. All IU Online degrees have been approved and we do not anticipate that to change. Press releases are usually issued after a degree is approved.

7. After a degree goes to the Board of Trustees, it must then go to our state accrediting body, the Indiana Commission for Higher Education. Using that document prepared for the campuses, a representative from OOE/OCAP presents the degree to the commission at their quarterly meeting. We provide an overview of the degree, including the rationale for the degree, the target audience as well as job prospects post graduation. We field questions from various committee members and at the end of the meeting a decision is made on if the degree will move through for accelerated approval. I am glad to say that we have never had a degree not pass this process. As well trained administrators who know the ins and outs of each curriculum we present, we must be able to speak to the credibility and viability of any degree we add to our portfolio.

8. The final step from a degree build perspective is the regional accrediting agency, called the Higher Learning Commission or HLC. Each campus is responsible for completing paperwork for HLC, however we provide whatever documentation they need to expedite the process. Once HLC has approved the degree, it is ready to be added to the inventory of degree offerings at Indiana University and marketed to prospective students.

7. Student services

Student services are integral to the delivery of online education. Without being embedded in a physical campus environment, students lack the casual benefits of campus life and an academic community. Complicating this further is that online students are busy outside of class. At IU the majority of our online students hold full-time jobs, care for family members, and have community responsibilities. Because they are typically older, they have already established lives that they cannot (and will not) discard for the sake of full-time residential education. Therefore, online student services not only have to be delivered at a distance, but they must also be designed to fit into a student's otherwise packed lives.

Simply retrofitting current services is not acceptable for online programs. For example, simply holding advising sessions via Zoom is rarely acceptable for online students. They expect systems built specifically for them that can be accessed 24/7 with information specific to them. Communication may need to occur asynchronously to accommodate their hectic schedule. Having staff available to help solve issues may not simply be helpful, but instead will be essential to meeting these students' expectations.

OOE has increased the number of services and their robustness since 2015. Having initially attempted to build these services within the service centers already provided through the campuses, OOE is now creating centralized services directly through its organization.

Like online course design, student services must meet student's expectations:

- Mobile-first.
- Multiple-platform friendly (e.g., MS Windows, iOS, iPad, iPhone).
- Low bandwidth.
- Shorter, more intensive courses.
- Asynchronous is the gold standard.
- Transfer-credit and prior-learning friendly – Students want the ability to be able to either start as first semester freshman or transfer from one college or university to another. Without a streamlined transfer credit policy, students will choose a program that accommodates their prior learning. Programs must prepare this before launching the degree to make sure that students do not run into roadblocks when transferring. If it is hard to transfer, schools will not see the enrollments needed to allow a program to run. In IU Online's case. IU has credit articulation agreements with community colleges in Indiana; however, transferring from other 4-year schools

can be difficult depending on the major or degree. We do allow up to 6 credits to transfer for master's degrees and 60 credits for a bachelor's degree.

- More entry points (5-6 per year *minimum*) - Students want flexibility. Once they decide that they want to enroll in a program, they do not want to wait 3-9 months to start. In the United States, if we do not offer multiple admissions terms, another school will, causing us to lose students to competitors. We do acknowledge that some programs can allow for this, and some cannot. Because of this, we adjust admission terms based on the degree. For example, offering multiple admissions terms for undergraduate and graduate business degrees is very popular. It can be more difficult for master's degrees in education because they often enter in a cohort format.
- Non-credit – Students increasingly value having opportunities to take non-credit coursework that can then be turned into credit. This provides students with an opportunity for low-risk trials of academic programs before committing to the program. In addition, non-credit coursework can be used alongside for-credit coursework to award electronic badges or certify skill competencies that are developed alongside coursework.
- Applicable content – Content needs to be relevant and directly correlated to jobs. We are seeing a transition away from the traditional course design which would require a student to learn and be assessed on nonrelevant content. It is important to focus on what a student will need to be successful in the next course, especially in the areas of technology as those degrees build on each other. Having courses that create employable and "job-ready" students upon graduation is paramount.
- Personal connection – Students also want more interaction with faculty and staff from their college or university. We have touch points from the point that a student expresses interest in a degree to the point of graduation. This includes guided onboarding, success coaching, advising, and career services. Each one of these services is accessible via text message, phone, email, or our specifically designed learning management systems.
- Empathy – Students have life events that can often prevent them from continuing or require them to take a break. We want our students to feel like there is a plan for them to return when they are ready.

II. Preparations

1. Marketing, recruitment, and student acquisition

One strategic vision for online education in the U.S. is to expand the population who are pursuing higher and continuing education. To do so, universities must engage in significant advertising campaigns. Unlike the recruitment of high school students (and to a lesser extent, students enrolled at community colleges), the U.S. does not have a "pipeline" system that involves preparation in high schools, national aptitude tests, coordinated recruitment activities and the social structures (similar to a "rite of passage"). For online students, there is no unified pipeline for recruitment which means that online programs must expend significant resources to acquire students. This can generally mean that the acquisition cost of a newly enrolled student could be between $2,500 and $4,000. For some programs and students, this cost can be much higher.

IU leverages a single brand (IU Online) and a predominantly digital recruitment strategy to ensure efficiency. While building on the strong brand of Indiana University, the single brand also avoids market confusion caused of separate campus brands, eliminates bidding against itself for digital advertising, and reinforces (and is reinforced by) the overall branding deployed by IU.

Focusing on digital advertising allows IU Online to target specific audiences who have high probabilities of being interested in (1) continuing their education and (2) doing so online. While effective at recruitment,

digital marketing does not have the same effect on promoting general awareness (and acceptance) of online education that traditional marketing because it is not visible to those outside of the target market. IU Online, therefore, conducts separate "awareness campaigns to supplement the targeted recruitment campaigns.

2. Orientation

Orientation to IU Online programs take a hybrid approach. For students in undergraduate or collaborative graduate programs, orientation (called onboarding) begins at the point of admission with follow-up from the Guided Onboarding (GO) Team. This team is a coordination between admissions, onboarding, success coaching and advising to focus on an integrated approach to transitioning students into IU Online academic programming. The GO Team remains with the student through re-enrollment to the second semester and provides a "continuity of care" through the student's initial semester of enrollment. The focus of the GO Team is:

- To provide a concierge service for students
- To connect students with university resources and to manage a successful hand-off.
- To provide solutions in a single contact.

Fundamentally, the GO Team is to provide a simplified "store-front" of the university's complicated bureaucracy.

In addition, the GO Team also leverages asynchronous online modules to familiarize students with the university and online systems. For example,

Start Your Journey is a series of modules to provide students with general information about navigating Indiana University's offices. It can be completed asynchronously and collects additional information about students (like work commitments and academic goals) that will be helpful for advisors.

IU Online Test Drive is a collection of online course "samples" that students can peruse to understand how IU Online courses may be constructed and the expectations of online coursework.

3. Student Services from admission to initial enrollment

Services available from **admission to initial enrollment** include:

- Online Test Drive module (an online course meant to give prospective students an introduction to various courses to better understand what online education looks like)
- Online Onboarding module (an online course that provides students with an asynchronous, online orientation to Indiana University and studying online)
- Immediate connection to Online Onboarding Specialist
- IU Online Community connection
- Learning Online (website learningonline.iu.edu, that is being developed to provide current students with descriptions and connections to student services)
- IU Online Social Media.
- Post-admit communication plan.
- Facilitate connection to advising & registration.
- Welcome Campaign communication plan.

III. Experiences

1. Curriculum

Curricula for IU Online programs are developed by faculty within the discipline. If a program is delivered through a single IU campus, the development, maintenance, and delivery of the curriculum is through standard curricula management processes.

For collaborative programs which include multiple campuses, the curricula are approved through the 3 MOA process which involves joint development, maintenance and approval through ALL participating campuses and their approval mechanisms (including their curriculum committees).

2. Teaching

All faculty teaching assignments are managed through the campuses per normal operational procedures. Faculty hiring, including any adjunct faculty, is managed through the campuses. Faculty evaluations are assessed through standard university, campus, and departmental evaluation practices.

3. Assessment

Assessment of single campus programs follows the assessment processes in place for that departments' and/or campus's assessment policies and procedures. For collaborative programs, OCAP facilitates the process with leadership from the program director and the program's faculty committee. OCAP works with OOE to assemble data for self-study as well as support the writing of the self-study.

IU Online utilizes the Quality Matters framework and encourages courses to undergo QM review when they are developed. In addition, OCAP works with collaborative programs to embed program assessment rubrics into select courses to collect assessment data with regard to the completion of program outcomes.

4. Student services from enrollment to graduation

From **enrollment to graduation**, examples of student services include:

- Peer mentoring.
- Peer tutoring.
- Financial literacy.
- Career preparation.
- Math & writing support.
- Retention based social media outreach.
- Semester-based engagement opportunities and communication plan.
- Continued engagement in the IU Online Community.
- Targeted outreach to at-risk populations.
- Guide graduation preparation and connection to alumni relations.

IV. Successes

1. Graduation

IU Online focuses on "recruiting students to graduate." Retention efforts begin at the point of admission with the assignment of success coaches and advisors. Given that the typical student who enrolls in an

online program is older, busier, and more time-conscious than typical traditional-aged students, efforts to retain and graduate students have to be different and more robust than those in our on-campus programs. As "degree completers," these students have already shown a propensity to "walk away" from higher education—usually not because of academic performance, but more likely because of other opportunities of value to them (e.g., employment, family).

Because most online students do not enroll as "full time, first time" students, typical measures of success either exclude them from cohorts or poorly represent their goals. As such, OOE tracks "Gross Retention Rates." These rates match enrolled students from the prior semester and compare it to the current semester. Those who have either enrolled or graduated are considered retained. For the Fall 2023 semester, 83% of students were retained from the spring semester.

For measures of graduation, we assess the number of certificates and degrees completed during the year. We have yet to determine an adequate measure of "time to degree." Given that online students are often part-time and bring in credit from prior higher education experiences, determining an appropriate "time to degree" may be a personalized metric. Creating an arbitrary timeframe may prove more harmful in assessing success than simply tracking overall completion at this time. In 2021-22, 3,103 degrees and certificates were awarded from IU Online programs.

2. Careers

Perhaps more than on-campus students, connection to workforce benefits is critical to online programming. Most online students, because they are already working, expect online coursework and programs to have immediate application to their workplace. While the degree itself is important, what they are learning along the way, and how to apply it to their employer, can be of fundamental importance and value to online students.

Unlike on-campus students, who are most likely beginning a career AFTER completion of their degree, online students may already have significant work-experience that they continue to develop ALONGSIDE the online program. Online education, therefore, is not an interruption from the workforce, but a colinear experience. Online students may have different intentions underpinning their pursuit of higher education, for example:

- Obtain a new job at a new company in the same field.
- Obtain a promotion at their current company.
- Transition to a new career in a different field.
- Obtain skills for their current position.
- Personal interest.

Because of this, online programs must be closely aligned to the workforce—particularly by making explicit relevance between skills learned in courses to workplace-valued skills. In addition, skills acquired need to be certified in ways that students can share them with current and potential employers.

For IU Online programs, IU is undertaking a process of connecting courses with employer-valued skills using external products to evaluate course syllabi for skills. IU Online then provides programs with the ability to issue electronic "badges" so students can post newly acquired skills to social media or share directly with employers.

In addition, IU Online leverages campus-based career services offices to support students in job searches. The university also provides access to online modules (e.g., like IU's Career Edge or iGrad) to help students gain professional development opportunities.

3. Networks

As students and alumni of Indiana University campuses, online students have access to networking opportunities available to on-campus students, as long as those opportunities have moved into an on-line friendly format. Some campuses (e.g., IU East) or programs (e.g., the Kelley School of Business's graduate programs) have been more proactive in fostering large networking opportunities for current and former students. In some cases, the online classroom itself provides a networking experience. For example, because many students in online programs are currently working in large forms, students in on-campus, full-time programs want to interact with them as networking opportunities for future enrollment. All students in online programs are eligible for membership in IU's extensive alumni network through the IU Alumni Association.

Online education also provides an opportunity for continuing engagement for all alumni. Through continuing education, both non-credit and advanced degrees, online education can play a role in offering continuing value and networking in a more accessible way than prior face-to-face events.

V. Quality Assurance

1. Start with the end in mind – Reverse Course and Degree Design

At IU Online we abide by an extensive assessment process that is staffed by three senior assessment managers. Each assessment manager works with individual programs from the start of the degree proposal process and refines the assessment process as faculty continue to "close the loop". Closing the loop is a term used for taking the assessment findings and adjusting the program to either (1) change learning outcomes to better reflect the program's overall goals, OR (2) adjust the courses to better reflect the intended learning outcomes that were first established. Below is a high level overview of our assessment process:

- Program Learning Outcome Development – What are the PLO's (Program Learning Outcomes). These are the skills, knowledge, and expertise that you want a student to have mastered by the time they complete the program.
- Program Learning Outcomes should use Blooms Taxonomy to identify the different levels of understanding or application that a student should achieve for each outcome. Blooms uses action oriented verbs to describe each learning outcome. Blooms Taxonomy evaluates using six categories starting with the most basic and ending with the most advanced. The categories are: Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating. Best practices consider all levels, however undergraduate degrees can have more lower level Blooms verbs, but graduate degrees should fall under the top four categories.
- The next step is to determine which courses address those predetermined PLO's. Keep in mind that a PLO can be addressed in more than one course.
- The next part can be difficult for some instructors to incorporate. This includes identifying which assignments, not just the course addresses a particular outcome, then design a rubric to make sure the student is assessed properly.
- Once the semester is over, data should be pulled to see what percentage of students met each learning outcome. This includes not just the quantitative data, but also reflections by the faculty in a qualitative format. An assessment report should be written for all faculty to see so recommendations can be made.
- The final step is "closing the loop" which again involves looking at all of the data collected and having the faculty make changes to either the courses, assignments, rubrics or learning outcomes to achieve higher learning outcome compliance.

One of the concerns of faculty during this process is when the percentage of students who meet the program learning outcomes is low, they may see that as a reflection of their teaching. That is not the intention of this process. The learning outcomes, rubrics and assessment format are designed by a group of faculties and the data is provided in aggregate. It also does not impact a student's grades.

Although our process is very elaborate, online programs are held to a higher standard than face to face programs. Because of this, we want to ensure that we go above and beyond what is normally expected of programs. All assessment reports are shared with campus leadership including Deans, Program Chairs and Executive Vice Chancellors. Each of these constituents has been extremely happy with our process and feels very comfortable and even proud to share the findings with our accrediting bodies. Our model is based in best practices and evidence based research on how to conduct program assessment.

2. Instructional Design

At IU Online we invest heavily in instructional design of asynchronous courses. Indiana University instructional designers are professionally trained in best practices in instructional design and are experts in Canvas, the Indiana University Learning Management system. The investment of quality instructional design is large and requires an advanced level of technological skills on the part of the ID as well as strong relationship building to gain the trust of each faculty member they work with. The goal is to have the students be challenged by the course content and academic material and not how to navigate the course itself. Designers create professional videos, use the latest instructional design tools, and incorporate all the academic content that an instructor wants to cover over the span of 8, 10 or 16 weeks.

3. QM (Quality Matters)

Our courses are designed to accommodate all types of learners and the course design abides by basic QM standards even if they are not QM certified. If your faculty are interested in QM guidelines and QM certification, additional information has been provided in the appendix. Basic QM standards that we require all courses to include the following components as a minimum.

- Course Overview and Introduction
- Course and Program Learning Objectives
- Assessment and Measurement
- Instructional Materials
- Learning Activities and Learner Interaction
- Course Technology
- Learner Support
- Accessibility and Usability*

Because Online education is oftentimes viewed as being of questionable quality, demonstrating quality assurance is of twofold a point importance. First, quality in and of itself there's a fundamental aspiration of any Indiana University course or program; Therefore, ensuring quality as a primary value of what are you online does period. Second, ensuring quality and demonstrating this through transparency is about most importance in creating internal buy in and support for online education. Some of the harshest critics of online education come from within institutions themselves, and being a collection of campuses there is often internal suspicion of course work and programs from another campus even in the face to face form format.

Indiana University online as an approach to developing online courses and programs that assures conversations of quality begin with the same faculty the same administration and the same governance

structures that exists for face to face programs. From the very beginning online programs face the same scrutiny and our derived from the same Faculty who would otherwise be developing face to face programs period. Therefore, IU Online is fundamentally derived from the same quality assurance process that develops any other program to be offered period. In fact, online programs face greater scrutiny in many cases because they not only go through one campuses faculty and academic government governance, they go through multiple faculties and governance structures dash sometimes as many as seven different structures period.

VI. Financial sustainability

Beginning in Fiscal Year 2024, IU Online is funded through a tuition revenue share on credit hours. For credit hours from students in online programs, 30% of the tuition routes to IU Online while the remaining 70% goes to the campus. For students in online classes as part of an on-campus program, the revenue share is 2%. This model replaces a per credit hour fee for online courses, regardless of modality of program.

Because this revenue system is tied to credit hours, it will provide a sustainable growth for inflation (via tuition increases) and volume (through enrollment increases). It is critical that the budget for online education should be connected to growth in those credit hours in order to adequately scale student services, invest in new technologies, and expand marketing.

VII. Pros and cons of the IU's online education and some recommendations

IU's approach to online education has several positive aspects:

- It leverages the current quality assurance and expertise already available within the university. This particularly benefits us in view of regulatory and compliance expectations.
- It builds up—rather than competes with—the traditional campuses.
- It retrains tuition revenue within the university and invests in university infrastructure rather than outsourcing this infrastructure with costly revenue share.
- It provides "exchangeable" between programs of differing modality (e.g., online courses can be used by students in face-to-face as well as online programs, creating efficiencies and avoiding duplication of instructional resources and university infrastructure).
- It acknowledges that online education is not a separate form of education but an evolution in overall education that will impact students of all types, including those who want a traditional on-campus experience.
- It allows innovation to be shared across modalities. New technologies, pedagogical approaches, course assets can be shared across modalities for mutual benefit.

While far from perfect, this model worked best—and has been revalidated as the most suitable by recent external and internal reviews—for Indiana University. It does have one significant drawback. By leveraging the governance structures of all 7 campuses, the navigation of multiple approval and policy frameworks is cumbersome at in many cases unclear. The result of this governance structure inhibits the nimbleness of academic programming in responding to student needs and expectations and the lack of clear delineation of areas of authority and responsibility can future delay decision-making.

The IU's online model is a good reference for large public universities where there have been many layers of relationships between the corporate level and the subsidiaries and among units within the university. Recommendations for other institutions when considering implementing an enterprise online education stem:

- ***Define your strategy and desired outcomes.*** It is clear to define the desired outcomes clearly and succinctly for online education at your institution. As with any initiative, the outcomes should be clear, quantifiable, and achievable. Top-level leadership must champion the initiative, and the strategy for achieving these outcomes must be direct and defined. Most importantly, this strategy (as well as the desired outcomes) must be based on your specific organization and its context. There is no universal approach to online education, and simply adopting what has been successful at other universities is unlikely to succeed in anything but the most modest of successes.

- ***Generate buy-in.*** Given the controversial impressions of online education, extra effort must be devoted to generating acceptance, let alone support, of online education. **Internal stakeholders** of all levels (e.g., administrators, academic leadership, and rank-in-file faculty) must be developed to provide support of online education. **External stakeholders** (e.g., workforce leaders, governmental officials) must also be convinced to support online education (specifically, your style of online education). The primary stakeholder, however, is the **student**, and therefore, considerable outreach and marketing must be conducted to provide overall acceptance of online education as a good investment of personal resources and time.

- ***Invest in long-term outcomes.*** Online education is transformative change, meaning it is causing fundamental changes to who, what, how and when education is being delivered by and who is consuming it. New populations are being drawn into (or back in to) higher education and new organizations (not simply HEIs) are providing it. HEI's, therefore, should build out structures, policies and funding mechanisms that will support this transformation and be willing to extend their horizons for success and value further into the future. In the end, we should be emphasizing not the transition to *online*, but the transformation of *education*.

- ***Consider organizational innovation.*** Online education isn't just about technology and remote classes. In most cases, delivering strong, quality online education requires changes to organizational structure. Traditional universities are generally built to bring students into an organizational system. Therefore, it can be someone rigid and expect the students to adapt its structure. However, this is reversed in online education: the HEI is brought into the student's world, and as such, must adapt to the student's needs and expectations.

- ***Focus and implement well.*** Given the lack of overall acceptance of online education in some settings, care must be given to generating demonstrable success that will foster support amongst those who are suspicious. Going big is risky, and failure undermines buy-in. Leaders should consider a plan that would implement "proofs of concept" or "pilot projects" with achievable milestones that will open up opportunities for scaling as successes are met.

- ***Quality, quality, quality.*** Critics abound, especially within the organization. Build confidence by demonstrating strong outcomes and satisfaction. Encourage transparency in course design so that internal critiques can respond directly to actual issues. In the end, students who receive a quality education will become valued by employers and create a future reputation of the quality of the education.

Section I. Overall Context in Vietnam

I. A brief of history of online education in Vietnam

Since Doi Moi in 1986, distance learning, whereby some class activities take place outside the physical classroom, was officially applied in Vietnam in the early 1990s with the establishment of two open higher education institutes (in the decision # 451/TCCB, dated 06/15/1990 by the Ministry of Higher Education and Vocational Training (Ministry of Education and Training, (MOET). While DL has been part of higher education in Vietnam, it has been in a downward trend. Among the 21 institutions granted the right to offer DL programs, only 17 have been able to enroll students. According to the MOET statistics (Table 5), DL enrollment during the 2019-2020 academic year was over 13,000 students, accounting for 2.9 percent of the total enrollment. The number of DL students was nearly 40,000, accounting for 2.4 percent of the total number of students. However, this is a dramatic decline, compared to 154,000 students during the 2013-2014 academic year, accounting for 9.2 percent of students.

Table 5. Statistics of higher education and distance learning in Vietnam

	2013-2014	2019-2020	Change (%)
Enrollments	496,895	447,483	-9.9%
Distance learning		13,175	
Student pool	1,670,023	1,672,881	0.2%
Distance learning	154,134	39,600	-74.3%

Source: Ministry of Education and Training (2023)

The development of the two open universities reflects the overall picture of DL in Vietnam. In 1993 they were renamed Hanoi Open University (HN-OU) and Ho Chi Minh Open University (HCMC-OU). Their focus and operations have changed gradually; they have become conventional universities. DL is just a portion of their training. As illustrated in Table 6, the number of DL students in HN-OU decreased by nearly half for the last decade, accounting for half of the total students in the academic year 2022-2023. The DL students in HCM-OU accounted for less than a third of the entire students.

Table 6. Student sizes and structures of the two open universities

No	Item	2011-2012	2022-2023	Change
I	**Hanoi Open University**			
1	Total students	55,085	34,137	-38.0%
2	Fulltime students	19,411	15,171	-21.8%
3	parttime students	2,364	1,758	-25.6%
4	Distance learning	33,310	17,208	-48.3%
II	**HCMC Open University**			
1	Total students		32,777	
2	Fulltime students		19,994	
3	Parttime students		2,080	
4	Distance learning		10,703	

Source: Published Reports from Hanoi and Ho Chi Minh City Open Universities (2023)

Online education, whereby all learning activities take place online, has been of more interest since the pandemic. However, a fully online degree program has not been approved. The distance learning degrees at the University of Danang (UD) are the closest to a fully-online program that's available in Vietnam (Vũ Hữu Đức, 2021). In those programs, students are required to be physically present for orientation, final exams, and graduation (The University of Danang, 2023b)

II. The national approach and regulatory framework

Vietnam's government and education institutions have been applying information technology in education for a long time. However, regulations for online education have just been officially issued. The first project to promote the application of information technology in education is "Strengthening the application of information technology in management and supporting teaching-learning activities, scientific research to contribute to improving the quality of education and training in the 2016-2020 period, with a vision to 2025," issued by the Prime Minister in the Decision No. 117/QD-TTg, dated 25 January 2017. Since then, it has gradually evolved. On 25 January 2022, the Prime Minister updated the project for 2022-2025 with an orientation to 2030 in the decision numbered 131/QD-TTg.

The first comprehensive online education regulation in Vietnam's higher education is outlined in MOET's Circular No. 12/2016/TT-BGDDT, dated 22 April 2016. It addressed issues related to online education, such as the learning management system (LMS), the learning content management system (LCMS), blended learning, and e-learning. Regulation requirements for undergraduate programs are found in Circular No. 08/2021/TT-BGDDT, dated 18 March 2021, and for graduate programs are found in Circular 23/2021/TT-BGDDT, dated 30 August 2021. The requirements stipulate that the number of credits conducted online platforms cannot surpass 30 percent of the total required credits for a degree-granted program.

III. Integrated analysis of development, quality, and sustainability

The potential expansion for both traditional (in-person) and non-traditional (online) education in Vietnam is still massive. Vietnam's tertiary enrollment rate in 2021 was just 35.4 percent, much lower compared to other countries in the region, such as 42.6 percent for Malaysia in 2020, 44 percent for Thailand in 2022, 63.6 percent for China in 2021, and 102.5 percent for South Korea in 2020 (World Bank, 2023). However, it is indeed challenging to promote online education. As summarized by Vũ Hữu Đức (2021),

online education in Vietnam is still modest due to resource insufficiency and limited government support, especially for public higher education institutions. Currently, online education is limited to individual courses and mostly supports face-to-face programs. Some higher education institutions have had combinations of distance learning and online programs, but the scales are modest. Vietnam's higher education institutions lack resources and experience in developing online education.

According to public perception, online learning is typically seen as low-quality (Nguyễn Thị Ngọc Diệp, 2017). This perception is difficult to overcome. Therefore, as the 3Us develop their online education, they will need to prioritize quality assurance. Therefore, the focus on quality assurance is integral throughout this report.

Section II. Online Education at the University of Da Nang

I. Foundation

1. The development history

The University of Danang has conducted distance learning very early. It started since the establishment of the Center for Continuing Education (CCE) in 1996 in the Decision No. 498/GD-DT, dated 02/02/1996 by the Minister of Education and Training (The University of Danang, 2023a). As an affiliated unit of UD, CCE is responsible for the organization and management of enrollment, training, and quality assurance of distance learning and online programs (non-formal education). In 1999 CCE began to organize distance learning in economics, engineering, pedagogy, and foreign languages. From 2006 till now, CCE has implemented e-learning/online training for the majors of English Language, Law, Business Administration, Accounting, and State Management. For the past 25 years (1996-2021), the CCE trained 28,837 graduates (Lê Thành Bắc, 2021). However, the number of admissions and graduates has decreased significantly over time. It has recovered in recent years, but it is still far below the peak in the late 2000s (Figure 12). The current training scale of the CCE is 4,722 students.

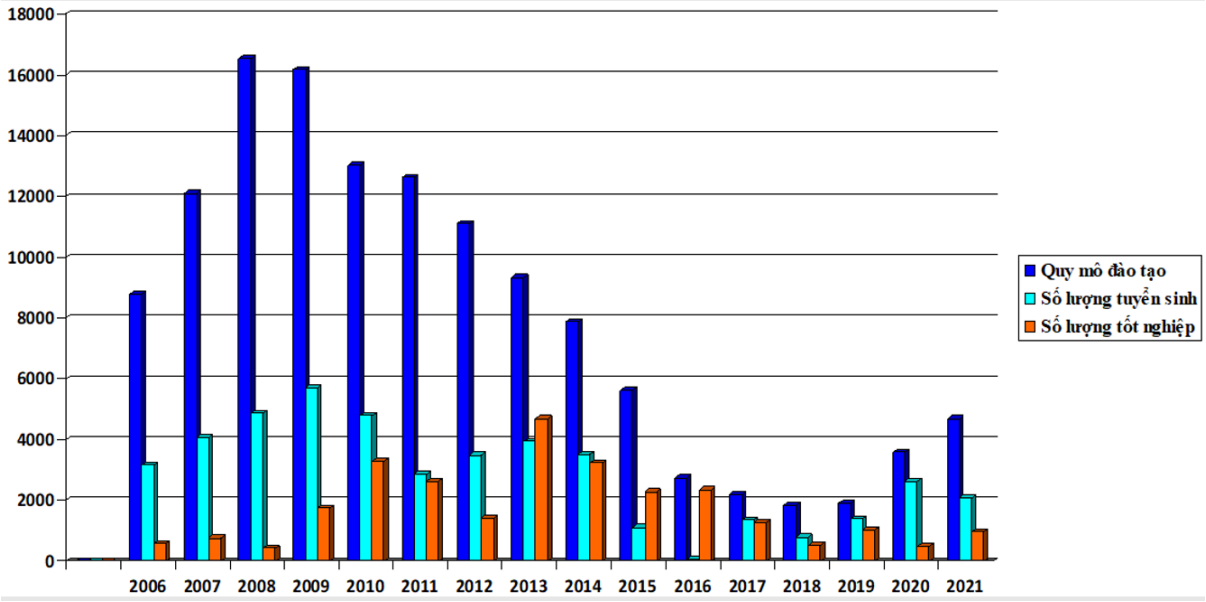


Figure 12. The training scale and annual admissions, graduations of the CCE

Source: Lê Thành Bắc (2021)

As reviewed by Vũ Hữu Đức (2021), the online program for distance learning at the UD is the first and the most completed in Vietnam.

2. Governance and management

a. Regulations and guidelines

Based on regulations of the Ministry of Education and Training (MoET), UD has issued regulations and guidelines related to online training, specifically as follows:

+ Guide to ensure the quality of education for courses by online training method at UD, specifically: quality assurance of teaching-learning process, testing, and evaluation of courses/modules in online training; ensure the quality of teaching technology, organize technical support for lecturers and learners; requirements on collecting students' feedback on the course and improving the course (Regulation No. 1222/DHDN-DBCLGD dated April 6, 2020).

+ Regulations on educational quality assurance for online assessment at UD and requirements on academic integrity in online testing and assessment (Regulation No. 2970/DHDN-DBCLGD dated September 01, 2020).

+ Regulations on organizing the evaluation of semester projects, theses, and graduation theses for undergraduate students and graduate students of UD in the online format (Decision No. 2058/QD-DHDN dated June 04, 2021).

+ Guidelines for organizing the evaluation of doctoral theses for UD's PhD students in the online format during the COVID-19 pandemic (Guideline No. 3099/HD-DHDN dated September 10, 2021).

+ Regulations on organization of enrollment for master's degree training in the online form (Decision No. 3183/QD-DHDN dated September 17, 2021).

+ Regulations on organization and management of university-level distance learning at UD, including regulations on training methods; conditions for training organization; training program and study period; planning and organizing teaching; assessing learning outcomes and awarding diplomas; responsibilities and interests of officials, lecturers, students and the handling of violations against students (Decision No. 3456/QD-DHDN dated October 12, 2021).

+ Regulations on online training and blended training of UD with specific regulations on the requirement for organizing online and blended training; rights, roles, and responsibilities of relevant stakeholders (Decision No. 866/QD-DHDN dated March 9, 2023).

Based on regulations & guidelines of the MoET & the UD, UD's member units have also developed specific regulations and guidelines on online education as below:

+ University of Science and Technology (DUT): develop guidelines for evaluating projects theses and graduation theses in the online form (Guideline No. 1606/HD-DHBK dated June 15, 2021). In addition, DUT has also collected comments on the 1st Draft Regulations on the organization of online training, now developing the 2nd Draft.

+ University of Economics (DUE): issued Regulations on organizing the defense of graduation projects, theses, and graduation theses for undergraduate students and graduate students of DUE in the online format (Decision No. 819/QD-DHKT dated June 10, 2021); The process of organizing the online

graduation project defense (Decision No. 840/QD-DHKT dated June 18, 2021); The process of organizing the online theses and graduation theses defense (Decision No. 1039/QD-DHKT dated 9/7/2021); Regulations on organization of the final exam in the online form (Decision No. 1124/QD-DHKT dated July 27, 2021). Regarding the examination and assessment in the online format, the DUE has also developed specific instructions for learners and examiners: instructions for online essay exams, online multiple choice exams, online oral exams; instructions for postponing the exam or being absent from the online final exam; guiding the centralized E-Learning exam at the university (for full-time bachelor students taking the final exam of the second semester of the academic year 2022-2023); guide examiners in conducting the online essay exam…

+ University of Science and Education (UED): issued regulations and guidelines, including Regulations on the organization of assessment of theses and graduate theses for students and graduate students in the online form (Decision No. Decision No. 1034/QD-DHSP dated June 18, 2021), Regulations on organization of assessment of doctoral dissertations and doctoral theses for PhD students in the online form (Decision No. 1163/QD-DHSP dated 12 July 2021); Instructions for organizing the final exam in the online form (semester 1, the academic year 2021-2022) (Guideline No. 1235/HD-DHSP dated November 24, 2021).

+ University of Technology and Education (UTE): issued Regulations on the organization of university-level training by credit-based training system, which contains basic provisions related to online teaching and learning (Decision No. Decision No. 475/QD-DHSPKT dated September 17, 2021; develop guidelines for organizing the end-of-course exam by online method in the context of social distancing due to COVID-19 (Guideline No. 679/HD-DHSPKT dated November 30, 2021); guide the process of defending graduation project in online form (Guideline No. 377/HD-DHSPKT dated July 12, 2021).

+ Vietnam-Korea University of Information and Communication Technology (VKU): issued the Regulation on the use of information systems in teaching (Decision No. 751/QD-DHVH dated October 7, 2021); guidance on evaluation of graduation projects and theses in online form (Guideline No. 925/HD-DHVH dated July 6, 2021); regulations and guidelines on online examination and examination (Guideline No. 920/HD-DHVH dated 5/7/2021); online exam screen recording guide; guide the creation of exam questions and put them into the E-learning system to serve the organization of online exams…

+ Faculty of Medicine and Pharmacy: issued Official Letter No. 56/KYD-DT dated April 16, 2020 on ensuring the quality of education in the form of online training; regulations on organization of online examination and evaluation of the Faculty of Medicine and Pharmacy (Decision No. 216/QD-KYD dated July 27, 2021); guidelines for assessment of theses in online form (Guideline No. 235/HD-KYD dated August 2, 2021).

+ UD Campus in Kon Tum (UD-CK): issued guidelines on organization and management of online training (Guideline No. 95/HD-PHKT dated April 21, 2021); on project evaluation, graduation thesis, and final exam in the online form (Guideline No. 323/HD-PHKT dated June 21, 2021).

+ CCE: has developed a guide to organize the final exam for distance learning programs in the form of online in the situation of social distancing due to the epidemic. Covid-19 (Guideline No. 429/HD-DTTX dated September 8, 2021).

b. Partnership

CCE has cooperated in online training with 28 associate units for setting up training stations, which are provincial Continuing Education Centers, universities, colleges and intermediate schools in provinces and cities across the country.

Table 7: Associate units for getting up training station

No.	Associate units for setting up training stations
1.	CCE of Khanh Hoa province
2.	Forestry University's Campus in Gia Lai
3.	Chu Văn An CCE
4.	UD Campus in Kon Tum
5.	CCE of Quang Tri province
6.	CCE of Ben Tre province
7.	Ninh Thuan Province Center of Continuing Education & Career Counselling
8.	Buon Ma Thuot University
9.	Pham Van Dong University
10.	CCE of Phu Yen province
11.	The Central Transport College VI
12.	CCE of Hue province
13.	CCE of Quang Binh province
14.	Mien Tay Construction University (Vinh Long province)
15.	Binnh Duong University
16.	Bao Loc Economics and Technology Colleges
17.	Dong Nai Technical College
18.	Can Tho University of Engineering and Technology
19.	Ba Ria-Vung Tau Technical College
20.	Cai Be Technical - Vocational College
21.	CCE of Dak Nong province
22.	Ho Chi Minh City School of Education Administration Officers
23.	Nguyen Van Troi College
24.	Dalat College
25.	College of Technology, Economics and Fisheries
26.	CCE of Tien Giang province
27.	Nha Trang Tourism College
28.	Quang Trung University

II. Preparation

1. Marketing and student acquisition

Update enrollment information on the CCE's website (https://cce.udn.vn) and training stations; Facebook; Google Adwords advertising...

The process of admission and enrollment registration is implemented following Regulation No. 2182/QD-DHDN dated July 6, 2017 of the University of Danang.

2. Resources for online education

a. Human resources and capacity building

+ DUT has implemented training for lecturers on 8 successful online teaching and learning skills at the Workshop on Teaching and Learning in the Digital Era in February 2022 within the framework of the BUILD-IT Project; training for lecturers on methods of course assessment and assessment in the online form at the series of seminars on Evaluation Methods and Measurement Tools in May 2022, January 2023 and March 2023 in framework of the BUILD-IT Project.

+ DUE has organized training courses on organizing online teaching and learning through online teaching support software such as Zoom, Google Meet, and MS Teams for all lecturers of the University.

+ UTE organized a training course on the use of information technology applications, digital tools, and innovation in teaching methods for lecturers in the period 2020-2022. DUE has sent 5 key lecturers to participate in the implementation of the EMVITET project on capacity building on information technology application in higher education. Through the project, the capacity of lecturers and technical staff has also been enhanced to meet the requirements of implementing online training or combined training.

+ VKU has organized training courses on exam organization for officials, lecturers, technical support staff, and training managers; training online exam questions, watching online exams, and teaching online for lecturers.

+ Affiliated units such as the Faculty of Medicine - Pharmacy, UD-CK, and CCE have also organized training sessions, guiding staff and lecturers on compiling electronic learning materials; online teaching techniques and methods; test method - assess the course in the form of online; training lecturers, exam administrators, and technical support staff on information technology skills related to the training management system and learning content management system before the exams and participating in the competition. participate in recording video lectures; nominate staff to participate in seminars on online education and improve the quality of online education...

+ Recently, UD and its member units sent 22 lecturers to participate in online and face-to-face training courses on teaching innovation within the framework of the PHER project.

+ CCE is a unit that organizes a complete online training program for the distance learning system (non-formal education). The teaching staff are full-time lecturers of UD's member universities and lecturers of distance training stations at the associate units of CCE.

b. Digital resources and e-learning materials

UD's member universities have digital resources and e-learning materials that partially meet the implementation of online training such as books, scientific reports, graduation projects, theses, dissertations, databases, etc. fee-based electronic databases such as Science Direct, ProQuest Central, Fiinpro, and the NASATI National Bureau of Science and Technology Information Database; Free access, open source electronic databases and resources obtained from the course material link. However, the number of e-learning courses directly serving learners is still quite limited.

c. Facilities

+ DUT and UTE have an online training system built on the Moodle platform and currently running at http://lms.dut.udn.vn, https://lms.ute.udn.vn. The data is organized and managed by each semester and each faculty, for each faculty there will be classes of sections managed by the faculty. Each section class corresponds to a course on the LMS. Each lecturer and student is provided with an account to use, the teacher who logs in will see the classes they are in charge of, and the student who logs in will see the classes they have registered for. DUT and UTE use virtual machines rented from vendors and cloud servers to install LMS systems. In addition, the University has also built a tool to transfer the data of classes from the training management system to the LMS system. Update work is usually done at the beginning of the semester, then additionally adjusted multiple times as the training data changes. The server is installed with the licensed Kaspersky Small Office security software. The data is automatically backed up to the cloud and manually backed up periodically stored outside.

+ VKU has facilities to support online training during the Covid-19 epidemic, including Cloud systems, workstations, network systems, centralized data backup systems, network equipment (Routing Routers), switch core (Switch Layer 3), switch distribute (Switch Layer 2), switch access.

Below is information about VKU's online training system:

Website	**Functions**
https://vku.udn.vn/	Main page
https://daotao.vku.udn.vn/	Training
https://elearning.vku.udn.vn/	Online LMS
https://elearning2.vku.udn.vn/	
http://lms.vku.udn.vn/	Online examination platform
http://thi1.vku.udn.vn/	
http://thi2.vku.udn.vn/	
http://thi3.vku.udn.vn/	
http://thi4.vku.udn.vn/	
http://thi5.vku.udn.vn/	
http://beta.vku.udn.vn/	Online exams record archive
https://meeting.vku.udn.vn/	platform to support online teaching

+ DUE has its own E-learning system at the address: http://elearning.due.udn.vn

+ The University of Foreign Languages Studies (UFLS) has its own website for study, exam preparation, and exam - online test: https://exams.ufl.udn.vn/#/home

+ UED also has its own website https://hoctructuyen1.ued.udn.vn/ for online training.

+ UD's member universities and affiliated units have information technology infrastructure to ensure online training during the Covid-19 epidemic.

+ UFLS and DUE also have studios, virtual studio systems, and marketing practice studios.

+ CCE uses shared facilities in UD with a system of working rooms for management work, classrooms, online studios, curriculum storage, learning materials, server systems, connection infrastructure Internet connection, data backup system, LMS training management system, LCMS learning content management system https://hoctructuyen.udn.vn/ have close links with the learning management system LMS.

d. *The teaching methods have been applied at the member universities and training units under the University of Danang*

- Teaching online through popular software such as Zoom, Google Meet, and Microsoft Teams.

- Direct teaching combined with an online LMS system through electronic lectures.

- Teaching through practical video platforms, and hands-on experimental videos.

- During the Covid-19 pandemic, practical courses - experiments on mechanical equipment still have to wait until the epidemic stops or organize classes with a limited number of students before they can teach and learn.

e. Online testing and assessment methods have been applied at member universities and training units under UD.

- Online face-to-face exam and thesis defense on Zoom, Google Meet, and MS Teams.

- Supervised online self-study exams on LMS, E-learning, or MS Teams system.

- Combine one of the essay/majority/thematic assessment forms with a report or online essay exam on MS Teams.

- Take online multiple-choice tests on LMS, E-learning, MS Teams, or other software with similar features and assurance of security.

- Other assessment methods are decided by the Faculty/Department.

- Particularly, the UFLS also organizes mid-term exams, at the end of the course, and surveys on foreign language ability for students of the UFLS, and students of the member universities of the UD on the "Exams system" at the Website: exams.ufl.udn.vn).

3. Orientation and development strategy

a. Strategy to 2026, vision to 2030 of the University of Danang related to online training

The key tasks and solutions outlined in the Development Strategy of UD to 2030, with a vision to 2045 (Resolution No. 23/NQ-HĐH dated April 28, 2023) related to online training are:

- Developing UD according to the model of an innovative and integrated university, which emphasizes continuing to invest in modern teaching and learning technology to develop forms of distance learning, promoting the system. online training, prepare technical infrastructure, large database to apply the Internet of Things and artificial intelligence in teaching.

- Strengthen the application of information technology and digital transformation in training, scientific research, specifically the application of information technology and databases in supporting the innovation of teaching-learning content and methods. assessment and scientific research.

b. Development strategy and plans for online education

In the time coming to the UD, there will be activities related to online training as follows:

- The CCE continues to conduct training for students of the distance learning system; step by step update and modernize online training technology when conditions permit.

- For formal training and work-by-study: consider implementing online training within the framework of blended learning following the regulations of the MoET is up to 30% of the total volume of the training delivered using the online classroom. The UD may choose appropriate courses for this form of online learning such as general courses (Foreign Languages or Political Theory) at UD's member universities.

- When the national policy to allow or allow piloting of online training completely or almost completely (except for a few modules that are required to teach in face-to-face form), the UD will consider additional pilot implementation if there is a project to support or meet the necessary conditions and funds for investment and implementation.

III. Experiences

1. Online education programs

a. The online program at the CCE

Recently, the UD has launched the first online program for distance education with 8 steps illustrated in Figure 13. Students have been able to take courses to learn and take the midterm exams online, then the final exams will be in person.

The study period is from 4 to 8 semesters (from 2 to 4 years) depending on the learners and the majors; recognition and award of a diploma upon completion of the training program and meeting the regulations of MoET.

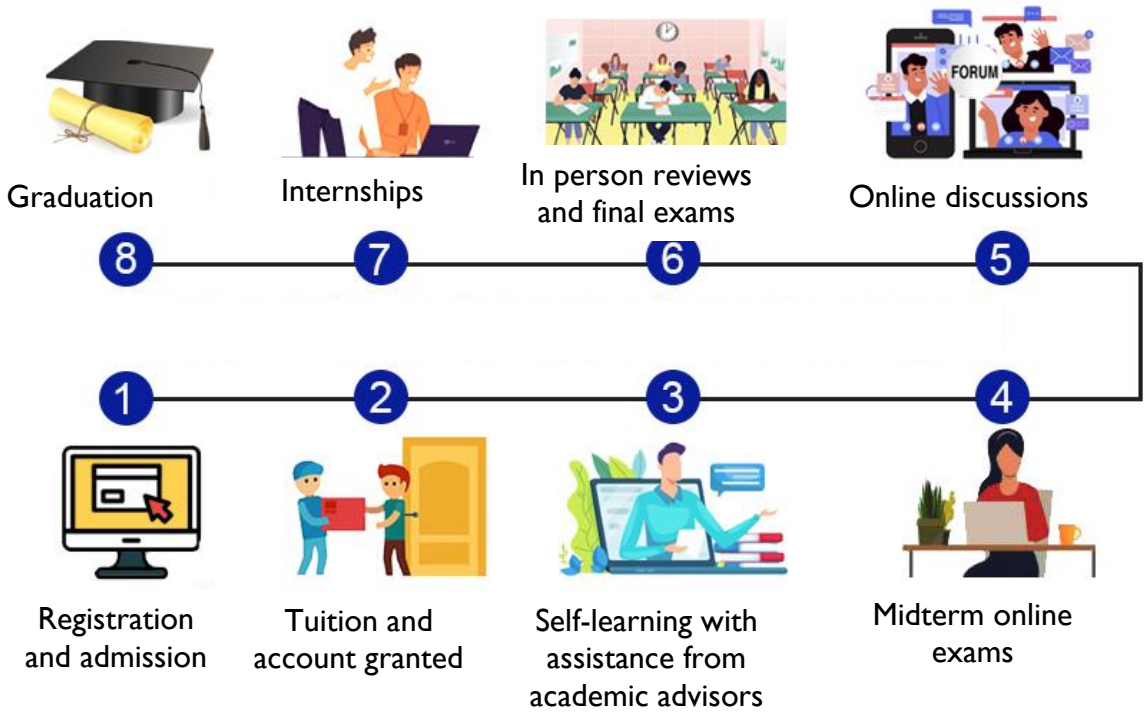


Figure 13. The online program for distance learning at the UD

Source: CCE-UD

b. Blended programs

Since the Covid-19 pandemic has passed, most of the courses at all levels of training (undergraduate, master, doctoral) of the units in UD are organized mainly according to face-to-face form.

Several member universities have experimented with organizing teaching in the form of direct teaching combined with online (no more than 30% of the online teaching time as prescribed by the MoET) such as DUT for the course Physics 1, or Faculty of Medicine and Pharmacy for basic gastrointestinal endoscopy nursing, Diagnostic and therapeutic endoscopy.

2. Student services from enrollment to graduation

- Policy to support and ensure the interests of learners are implemented under Decree No. 81/2021/ND-CP of the Government and current regulations of the UD.

- Regulations on transfer-credit are specified in Regulation No. 2999/QD-ĐHĐN dated July 14, 2023 of the UD.

- The CCE builds communication and interaction channels with learners through the discussion forum section on the learning content management page (LCMS) https://hoctructuyen.udn.vn; Website https://cce.udn.vn; Email; Phone.

- Monitor the learning progress of the learners: the CCE issues training plans by academic year and by semester, emailing students at the beginning of each semester. The learning management system (LMS)

and the learning content management system (LCMS) have functions to set the conditions for completing tuition fees to view textbooks and documents. To complete the exams according to the semester plan, students must complete reading the textbook and confirm viewing on the system.

- Guide graduation preparation: CCE sends the graduation internship plan and assigns instructors, then based on that, the lecturers will organize online tutorials for students.

3. Advantages, difficulties and challenges in the process of implementing online education

a. Advantages

Teaching and examination

- The attention, timely direction, and facilitation of the leaders of UD and its member units for online training during the Covid-19 period.

- There is good coordination between functional units of UD member higher education institutions and affiliated training units in organizing databases, organizing classrooms and exam rooms in public universities. tools such as MS Teams, Zoom, Google Meets, and LMS systems.

- Instructors can use many different online teaching and assessment methods, supported by technology when using online assessment software on Zoom, Google Meet, MS Teams, LMS, test portal, exam.net,… help learners have different experiences.

- Currently, there are many professional online training programs in the world such as https://www.coursera.org/, https://www.edx.org/,... Especially, the unit that is implementing the PHER project, Indiana University (USA) has also had very successful online training courses.

Learning materials

- During the Covid-19 period, lecturers are forced to make efforts to digitize and develop digital learning resources and e-learning materials for online training.

- The training units join the group of shared library network of UD, which is convenient for connecting, sharing, and accessing online learning resources suitable for training disciplines.

- Guidelines, guiding documents on the digital transformation of library activities, and the ability of staff to adapt document digitization skills.

Facilities

- Most LMS systems are based on open-source Moodle, so administrators can actively adjust when necessary. The school built its data update tool, so the data conversion from the training management system to the LMS is quite flexible.

- IT infrastructure, Digital Library, E-learning system can effectively support online teaching during the Covid-19 period.

b. Difficulties, challenges

Teaching and faculty

- Regarding guiding documents: Circular 08/2021/TT-BGDĐT of the MoET stipulates that for training in the form of formal and work-study, a maximum of 30% of the total volume of the program Training is done by online classroom. In case of natural disasters, complicated epidemics and other force majeure cases, training institutions shall comply with the guidance of the MoET. In addition, online training guidelines also need to be updated regularly to meet and integrate with technology tools and online training software.

- The actual implementation of teaching during the Covid-19 pandemic shows that online training is only available for theoretical courses. Experimental-practice modules face the big challenge of online training. During the time of Covid-19, the practical courses, experiments, internships, internships, physical education, and defense education must still be carried out in a direct form. Many courses still have difficulty in ensuring the equivalence of output standards between the two forms of online and face-to-face training.

- After the Covid-19 pandemic, lecturers have almost returned to normal teaching in the traditional direct form for regular students. In some cases where instructors need to teach make up or in some other special cases, units may allow some lessons to be taught online. The implementation of teaching in the form of integrated face-to-face and online learning (blended learning) is still slow, has not achieved the set goals, and there are very few courses organized in this blended learning form. Teachers and students still prefer teaching and learning face-to-face rather than online. The requirement to switch to online training is a huge psychological challenge for both lecturers and students.

- CCT is a fairly complete online training unit for distance learning students of UD, but enrollment in some majors is still difficult due to the declining demand for these majors. The reason may be that society's trust in the quality of online training is still not the same as face-to-face training.

- To have a methodical infrastructure and technology for online training, it is necessary to have significant funding for the modernization of physical facilities, technology, software, and e-learning materials to meet the needs of the future. The increasing demand for the online training process, while the effect of investment in online training is not clear in Vietnam because the number of people studying in this form in Vietnam is still only a few. limited level.

- Online training capacity is not equal among lecturers, many lecturers are still not properly trained in online teaching. Some lecturers are still slow when working on online teaching software. Skills in using specialized software and tools for creating electronic lectures (for example, video recording and editing tools, video effects tools, ...) as well as online exercises and activities The interactive nature (online quizzes, study games, etc.) of many lecturers is still limited, especially the elderly lecturers. Some studios exist but are not currently widely used by instructors in preparing electronic lectures. Therefore, most of the content of online lectures is not rich and lively.

- From the learner's side: The IT infrastructure where students live is still limited, which makes it difficult for students to participate in online learning sometimes. Some students have difficult family circumstances, do not have a smartphone or computer, do not have an Internet connection or have a slow Internet connection or many family members use online devices at the same time. so learning is sometimes interrupted. Some students have to use the Internet at service points to complete the exam, the final exam. Many students do not have their study corners, so the study space as well as the online exam for students is not following the regulations set forth by the school.

Assessment

- The capacity of the server infrastructure system and transmission line is still limited, so it is not possible to organize the exam with a large number of candidates. It is necessary to upgrade and improve some functions of the online exam system. Currently, there is not enough funding to equip modern online exam monitoring tools and software such as online proctors.

- Exam administrators have little experience in organizing online exams and using online applications, so they are still confused about organizing and dealing with problems in online assessment. The number of examiners arranged for the online exam room must be increased, so the cost of organizing the exam has also increased significantly, significantly affecting the school's budget at the beginning of the year.

- There are still difficulties in checking and evaluating online, how to ensure the validity, reliability, fairness, and anti-fraud in the assessment. There is still a part of students who violate the exam regulations during the online exam because it is difficult to control cheating, exam regulations, and academic integrity when learners can sit at home to participate in online exams. online (for example, learners can communicate via mobile devices, social networks, take exams to send out via social networks, etc.). Some students do not have the skills to deal with transmission problems or the application platform to organize the exam.

Learning materials

- The source of electronic learning materials for online teaching is still very modest, so it takes more time and money to perfect and develop in the direction of diversity and multimedia to meet the requirements. of online training or face-to-face combined online training.

- Digitization equipment is invested in semi-automatic form, so it still requires a lot of time in processing and editing digital documents along with ensuring copyright regulations and enforcing copyright in the operation of the mail. institute.

Facilities

- Infrastructure conditions, IT infrastructure is still limited. Investing and upgrading information technology infrastructure and digitizing equipment requires funding and time for the implementation process and requires staff's ability to access technology and use the equipment. When the number of students accessing is large, the system is still overloaded. The transmission line and participating capacity need to be upgraded to meet the operation of the LMS system.

- The online exam software system is still limited in features. There is no money to buy accounts with online exam application providers. Currently, units are still using free tools like MS Teams, so there are still many limitations.

IV. Integrated analysis of development, quality, and sustainability

The University of Danang (UD) has a good track record in conducting distance learning and online education. Its online education is among the most advanced in Vietnam (Vũ Hữu Đức, 2021). One reason for its success could be its strategic location in the central coast of Vietnam where it is far from the two biggest centers (Ha Noi and Ho Chi Minh City).

However, due to the rapid growth of traditional (in-person) higher education, online learning has been in a downtrend in recent years. Therefore, any online learning initiatives should be carefully and strategically considered.

Since building new online programs is costly, existing capacity and current assets should be optimally leveraged. Two issues should be considered going forward:

First, the UD should consider restructuring and promoting the Center of Continuing Education (CCE) to be in charge of the online education for the whole university, like the Office of Online Education at Indiana University. CCE will work with the member universities to build online and blended programs. It is important to avoid the bureaucratic burdens within the system, especially for the member universities. Therefore, the role of CCE is to support the member universities, instead of managing and ensuring compliance.

Second, the UD should consider seeking MOET's approval to pilot a fully online program. This aligns with MOET's goal of promoting digital universities. Granting the UD to pilot a fully online program is a prudent step for MOET.

To prepare for the trend of online training effectively in the coming time, the University of Danang (2023c) proposes that stakeholders study and consider some of the following recommendations:

1. The national regulations and guidelines

First, the national government should develop specific regulations and guidelines for 100% online learning for particular student populations, such as those studying National Defense Education and Physical Education, organized directly in the locality. They should also consider a tuition policy that attracts online learners to study and earn degrees in the formal training system while working and studying in the initial stage.

Second, the national government should develop specific regulations and guidelines about quality assurance and quality accreditation in online education. The public will gain confidence in online education when they are assured that the quality of online learning is comparable to traditional, face-to-face learning (refer to Quality Matters (QM) quality standards).

Third, the national government should develop requirements for fully online programs. Programs that do not require in-person experiments or practices should be prioritized. Other requirements include quality enforcement, reasonable enrollment policy, ethical marketing to potential students, and evidence-based benefits and effectiveness of online training.

2. Faculty development

UD should provide practical training and financial incentives for qualified lecturers to engage in online education. Training should focus on three main areas: (i) online courses and program development, (ii) online teaching strategies, including the effective use of technology, and (iii) on-going professional development. Any faculty development initiative should encourage lecturers to digitize documents, compile electronic lectures, and grow their skills and effectiveness as online instructors.

UD should train lecturers to be able to do the following tasks: (i) develop content and prepare documents and lectures for online courses; (ii) design interactive and creative lectures to engage learners; (iii) use specialized software and tools to create lectures, teaching videos, exercises, interactive online activities, and effective online tests and reviews.

UD should also train staff on copyright enforcement and the development and distribution of digital learning resources.

3. Facilities, learning materials and student support systems

UD should invest in upgrading its IT infrastructure (e.g., servers, transmission lines, management software, digital equipment, eBooks, online databases, etc.) to better serve online teaching and learning activities effectively.

UD should invest in relevant software to support lecturers in creating engaging online content and students in their online learning. This software can help with video production, graphics design, audio editing, curriculum development, virtual reality simulation, and online exam support. When it comes to online assessment, it is critical to have valid, reliable, and fair online proctoring software that discourages cheating in testing and evaluation.

UD should train and guide learners to use online platforms and tools. The goal is to help learners complete their courses and gain a deep understanding of curriculum content and structure. It is also critical to provide technical support for learners while they are learning and taking online assessments.

UD should build a system to collect and record learners' feedback. This data can be used to promptly advise, support, and encourage learner participation and interaction. The goal is to optimize the online learning experience for all students.

Section III. Online Education at Vietnam National University – Hanoi

I. The context and current situation of online education in VNUHN

1. Overall context and preparation for online education

VNUHN has paid attention to and invested in digital transformation, governance, and quality assurance. It has built and implemented digital university projects, teaching innovation policy, online training platform, and established the Digital University Administration Center. VNUHN has promoted digital transformation. The focus is on digitizing staff and student data and strengthening the implementation of online administrative procedures and online training. The digital university architecture of Vietnam National University, Hanoi, to 2025, vision to 2030 has been issued. It is based on Vietnam's e-Government architectural framework, version 2.0. The Plan for IT application and development of the digital university to 2025 at VNU, Guidelines on information security and database security on information technology platforms of VNU, and the Smart University Urban ICT Framework of VNUHN in Hoa Lac have been issued. These are essential bases for implementing the policy of developing online training at VNUHN.

VNUHN has been interested in building a legal corridor and a technical foundation for the quality of online training by issuing executive management documents on online training, online administrative innovation, quality assurance, educational development, and innovation in training activities. Specifically, these documents include the following:

- Guidance No. 278/HD-ĐHQGHN on the implementation of innovation in teaching activities at VNUHN in the period of 2019 - 2025;
- Guideline No. 1345/HD-ĐHQGHN issued on May 6, 2020, guiding the quality assurance of online training activities at VNUHN;
- Decision 2598/QD-ĐHQGHN issued on September 10, 2020, on the organization and management of online training at VNUHN;
- Decision No. 4326/QD-ĐHQGHN issued on December 27, 2021, on promulgating the Regulation on the working regime of lecturers;
- Decision No. 4391/QD-ĐHQGHN issued on December 29, 2021, on the issuance of Regulations on online training and development of electronic lectures at VNUHN; and
- Decision No. 286/QD-ĐHQGHN issued on February 8, 2022, on the Science, Technology, and Innovation Strategy of VNUHN in the 2021-2030 period.

VNUHN has a large force of multi-disciplinary scientists and experts and policies to attract and develop a contingent of highly qualified and excellent scientific scientists. There are programs to attract international scholars, including highly skilled Vietnamese scientists abroad. In addition, VNUHN has established a Scientists Club for highly qualified scientists, operating in a multi-disciplinary and multi-disciplinary university environment, with the core being basic science. VNUHN can provide many online training services and consult on educational development policy for many educational agencies and organizations.

In 2022, VNUHN began participating in the PHER project implemented by Indiana University for five years with funding from the United States Agency for International Development (USAID) and The World Bank. The project aims to modernize the three leading universities in Vietnam, including VNUHN, VNUHCM, and the University of Danang. The project consists of 4 essential pillars, including (i) renovating university governance (governance), (ii) improve the quality of teaching (training), (iii) strengthening research and innovation (research) capacity, and (iv) promoting university-business linkages (connections). In the pillar on improving training quality, the project aims to achieve three main goals: (i) developing the expertise of trainers in the design of modern courses, (ii) digitizing the curriculum to increase access to high-quality

teaching resources, and (iii) establishing a Learning Community to encourage collaboration between institutions. The project also supports universities to build and complete an innovation center for teaching and learning, develop spearhead training programs, and build and operate several online training programs. With the support from the PHER project, it is possible to restructure and manage the Institute for Quality Assurance of Education as an online training and educational development institute while optimizing the project's results.

2. Institute of Education Quality Assurance – the hosting unit for online education

The Institute for Education Quality Assurance (IEQA) was established in 1995. With nearly 30 years of experience in educational quality, IEQA has been asked by the VNUHN's Board of Directors to expand its focus on university comparison and ranking, teaching support, and vocational education. The IEQA has gained a lot of experience and theoretical background to gradually implement the online training model and research on university governance, quality assurance, and educational technology in the new context.

Given its long history and extensive experience, IEQA has been tasked by VNUHN to contribute to the innovation of online teaching and training in four distinct areas.

First, IEQA has been organizing and managing online and blended teaching training for VNUHN through its learning management system (LMS) (lms.vnu.edu.vn). The LMS is built on a modern technology platform, capable of expanding, connecting, and interfacing data with the training management software system and other software. With this system, IEQA can support courses from academic units throughout VNUHN. Under the direction of VNUHN, IEQA has built a completely online training program on "New teaching methods and information technology application in teaching." About 1,000 VNUHN lecturers have completed in this eight-module asynchronous training program.

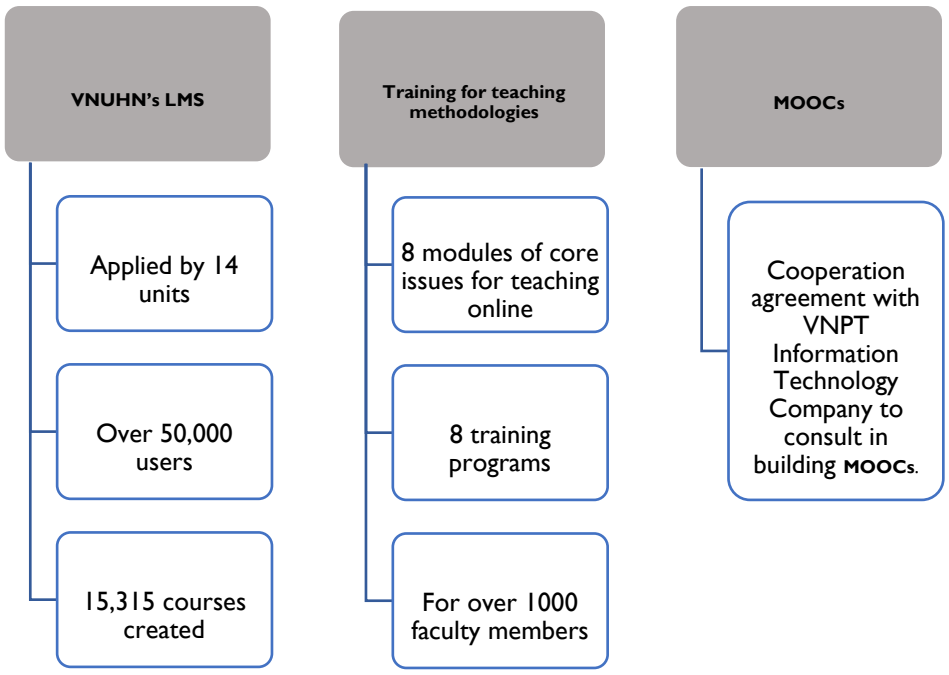
Second, in 2022 IEQA contracted with VNPT Information Technology Company, a branch of Vietnam Posts and Telecommunications Group, to build a massively open online course (MOOC) software system. This system can support courses in any discipline, and an unlimited number of learners can self-register for these courses. The first version of this system is expected to launch in the third quarter of 2023, and online training activities can start shortly after.

Third, IEQA has been charged with developing digital content. IEQA operates the Technology Application Department (TAD) and develops digital learning materials, focusing on 4.0 technology at VNUHN in Hoa Lac. The TAD facility can be used a studio for producing teaching content and a space for testing, customizing, disseminating, and training on the use and application of new educational technology solutions. TAD also connects the production studios to the E-learning system and the smart university ecosystem at VNUHN.

Finally, IEQA, under the direction of VNUHN's Board of Directors, has established the Teaching Support Center. The Center organizes training programs for VNUHN lecturers, focused on "New teaching methods and IT application in teaching for students." In the first 18 months (from August 2021 to February 2023), the Teaching Support Center has offered six training sessions through the VNUHN LMS system for more than 1,000 lecturers and teachers in different departments.

Figure 14 outlines the online training ecosystem of VNUHN built by the Institute of Education Quality Assurance (IEQA).

Figure 14: Online training ecosystem of VNUHN



Source: VNUHN

IEQA has drafted two important documents to further develop the online training ecosystem and advised the Board of Directors to issue them. These documents aim to improve teaching capacity and develop policies on recognition and respect. The Teaching Competency Framework and the Teacher of the Year Award honor VNUHN teachers who have made outstanding contributions to the educational cause. They represent IEQA's efforts to improve teaching quality and recognize excellent educators.

II. Development plans

1. Objectives

As stated in the project to pilot online education by VNUHN (2023), the objective is to establish a foundation on apparatus, policies, content, and technology for implementing online education and strategic tasks on digital transformation and training innovation at VNUHN.

2. Goals

The goals include:

- Building and implementing an online training model at VNUHN following international standards and practices.
- Building an operating model of the unit specialized in online training at VNUHN.
- Building, developing, and providing online courses and high-quality online training programs for students inside and outside VNUHN, meeting the conditions for credit conversion and degree recognition /certificates/certifications between educational institutions.

- Building a system of documents for management and administration, toolsets to ensure the quality of online training, and creating a mechanism for coordination and cooperation in the construction and development of online training components.
- Providing online learning platforms and services that meet online training standards following international practices and regulations in Vietnam.
- Connecting and cooperating with reputable domestic and international individuals and educational units to build and develop online training.

3.Expected results

The expected results include:

- At least five (5) general modules are developed and trained according to the MOOCs approach.
- Establishing 01 unit specialized in online training.
- One (1) online training platform according to the MOOCs approach (in collaboration with partners to build).
- At least six (6) documents on management and administration of online training at VNUHN, newly built.
- At least three (3) tools to guide the organization of online training.
- One (1) document regulating the functions and tasks of the Online Training Center.
- One (1) set of criteria for selecting subjects and training programs to digitize content and organize online training according to a combined or fully online approach.
- One (1) report analyzing and evaluating online training models in major higher education institutions in the world and in Vietnam.
- One (1) report on survey and assessment of online training needs at VNUHN and domestic educational institutions to locate development direction, product system, and online training service.
- One (1) report on the evaluation of test implementation results in order to upgrade and complete the built modules and propose strategies to develop further online training courses.
- VNUHN LMS system is upgraded once.
- The infrastructure system for the production and transmission of online training content has been upgraded and completed.
- Five (5) training courses to improve the capacity of lecturers and staff involved in implementing online training.
- One (1) document guiding the organization of services and procedures to support students on issues related to online training from registration to the end of the study program.
- Task summary report and component reports within the task framework.

4. Main activities

The online training model at VNUHN is made up of five (5) core elements, as shown below.

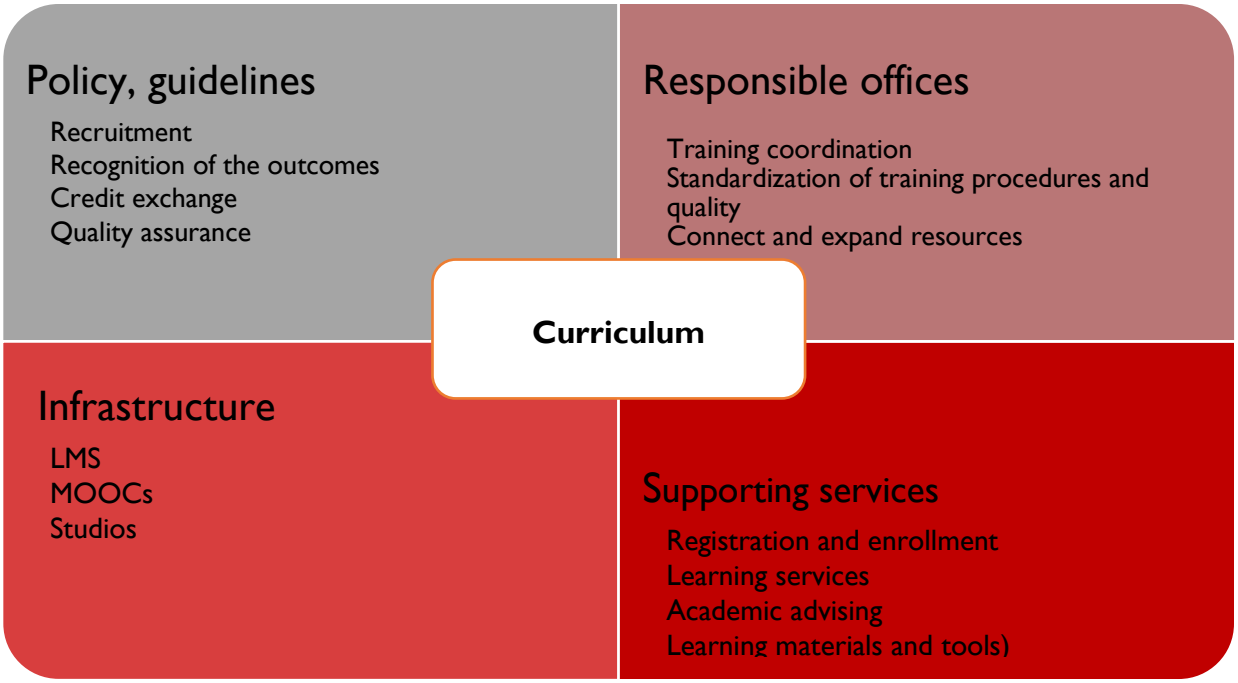


Figure 15. Components of the online training model at VNU

Source: VNUHN

The training content system functions as the hub of the online training model, connecting learners, content, and training programs. This content system has four pillars. First, there is a system of documents, operating policies, and online training activities, including regulations related to enrollment issues, recognition of results, credit exchange, and quality assurance. Second, there should be a specialized unit to coordinate, standardize, and ensure quality of online training, support and advise learners, and connect and develop resources. Third, it is necessary to have a robust technology infrastructure, with the LMS and LCMS systems for VNUHN internal training and the MOOC platform for public and mass training. Finally, it is necessary to build a system of consulting and support services for learners to ensure training quality. These components are implemented according to the following contents:

a. Building a system of documents to implement online training

The online training model must meet international standards for online training, current MOET regulations, and VNUHN online training standards.

VNUHN uses the model of cooperation (collaborative structure) for its online training. Different units at VNUHN can either provide or participate in online training activities. Learners from any unit in VNUHN can register for courses on VNUHN's common online training platform.

VNUHN online training will adhere to the principle of non-competition, avoid duplication among training units, and focus on the unique strengths of each unit in terms of expertise and team.

Online training activities must meet the principles, regulations, and requirements of quality training standards, ensuring there is no difference between online training and in-person training.

The online training model has become an indispensable element in the training ecosystem at VNUHN in particular and Vietnamese education in general.

b. Establishing a unit specialized in online training

VNUHN needs to establish a specialized unit to deliver online training in a synchronous, effective, and professional manner.

This unit develops training , markets training offerings, ensures quality standards, and disseminates online training for units inside and outside VNUHN.

Initially, IEQA will establish the Online Training Center (OTC). Over time, the scale and scope of this Center's will become as an independent unit within VNUHN.

The vision of OTC is to become a leading unit in the country, providing online learning services and programs for students inside and outside VNUHN. OTC will also provide policy advice and offer technical assistance related to the development and quality of online education.

VNUHN's online training model is organized around the principle of cooperation between specialized units and training units sharing infrastructure, resources, and lecturers. This non-competitive approach avoids the duplication of resources while adhering to VNUHN's standards for a flexible and affordable educational model.

c.Developing online training content

Outcome-Based Education (OBE) Approach: Online courses and training programs will use the OBE approach. Training materials, teaching methodology, assessment, and learning activities need to directly support learners in achieving the stated outcomes.

Quality: Online training content is built by experts in the field of educational science and meets the accreditation requirements of quality.

Feedback: Courses and training programs should regularly solicit learner feedback on their progress and understanding of the training content.

Flexibility: Online training content must be flexible and adaptable to meet the needs of a wide range of learners.

d. Development of online training platform and infrastructure

Ensure consistency, synchronization, and integration of the existing digitization systems of VNUHN, optimizing costs and investment resources.

Meet the technical and technological standards for the online training system being applied at leading higher education institutions in the world.

Ensure modernity and compatibility with many different online training systems and expandability when needed.

Easy to access and use, ensuring a high level of learner engagement and satisfaction.

e. *Building a system of online learning support and consulting services*

Provide individualized support services, meeting the different needs and goals of learners.

Provide diverse, timely, and on-going support and advice for learners.

Provide learners with centralized support and tutorial services throughout their learning journey.

III. Integrated analysis of development, quality and sustainability

VNUHN has just started the first stage of online learning. It will focus on general courses for degree programs and a master's degree for local government officials. The Institute of Education Quality Assurance (IEQA) is assigned to be in charge of online education.

There are advantages in teaching online for the general courses. First, it can utilize the economies of scale to create cost-savings. Second, it can create a convenient way for students to take their required non-major course. However, there are also challenges. First, courses on state and general laws, including Marxism and Leninism, are politically sensitive topics. If they are not taught well in an online context, those promoting this approach might get in trouble. Second, resistance, especially from faculty, is usually high. Therefore, the three issues below should be addressed:

First, the quality of online courses needs to be either comparable or better than face-to-face courses. Achieving this outcome will be the most important way to advance online learning and minimize any concerns about this delivery modality.

Second, we must mobilize support for faculty members who are teaching online courses, including those in blended programs.

Third, we must clearly define the role and responsibilities of the IEQA and member universities conducting online programs or courses. Administrators can leverage a collaborative approach to minimize unnecessary bureaucracies and politics.

Section IV. Online Education at Vietnam National University – Ho Chi Minh City

I. The development history and current context

1. The development history

The Center for Information Technology Development (CITD) was the first unit offering distance learning in VNUHCM. Today, four member universities offer distance learning programs. Moreover, blended learning has been applied, especially during the Covid pandemic. The distance learning and online education have been promoted in recent years. However, the results are still modest. As in Table 8, the numbers of admission in the last three years are modest, not meeting expectations. Among VNUHCM's 90,000 students, only 2,000 are distance learning students (Table 9).

Table 8. Admissions for distance learning from 2020-2022 at VNUHCM

No	Institutions	2020		2021		2022	
		Plan	Actual	Plan	Actual	Plan	Actual
1	Technology University	500	21	500	-	500	-
2	Science University	500	334	500	348	500	270
3	Information Technology University	100	65	300	207	300	353
4	Social Sciences and Humanities University	100	18	100	16	100	13
Total in VNUHCM		**1.200**	**438**	**1.400**	**571**	**1.400**	**636**

Source: VNUHCM (2023)

Table 9. Student population and granted degrees for distance learning of VNUHCM

No	Institution	2020	2021	2022
I	**Numbers of students**	**1.197**	**1.538**	**1.970**
1	Technology University	50	69	68
2	Science University	791	1094	1426
3	Information Technology University	322	351	452
4	Social Sciences and Humanities University	34	24	24
II	**Granted degrees**	**74**	**56**	**82**
1	Technology University	2	1	0
2	Science University	37	16	59
3	Information Technology University	35	39	23
4	Social Sciences and Humanities University	0	0	0

Source: VNUHCM (2023)

Current distance learning programs are based on traditional face-to-face programs. However, none of the distance learning programs are accredited.

The training programs in the member universities have followed the regulations and policies of VNUHCM and their own procedures. Each member university has developed the learning management system (LMS) by itself. They have applied new technology, training methods, and quality assurance in traditional programs.

2. Advantages

- Information technology for distance learning is applied in six of the seven member universities. Online teaching has accounted for a significant portion of the whole program.

- Curriculums for full-time and distance learning programs are similar. All distance learning programs are based on traditional face-to-face programs. Therefore, it is possible for quality assurance.

- Blended learning have been offered for full-time programs since 2017. Therefore, it has been applied to online and distance learning. VNUHCM has had experience in designing and running online programs.

3. Challenges

- Insufficiency of infrastructure for distance and online learning. There is a lack of main facilities such as equipment, storage capacity.

- Insufficiency of teaching and learning material. Huge financial resources and human power are needed to develop and update teaching and learning material.

- A lack of diversification. The current programs are mainly on information technology. It is very difficult to develop programs in other fields. As illustrated in Table 8, the Technology University has not been able to recruit students in the last two years and the University of Social Sciences and Humanities has been able to recruit a small number of students for the Vietnamese studies program.

- Marketing campaigns and recruitment process have not reached potential participants. This is reflected in the low admissions.

II. Development plans

With positive changes in higher education law, VNUHCM hopes to promote distance education in following ways:

1. Long-term development plan for distance learning that adapts to social needs

- Targeted at learners who cannot afford the traditional face-to-face higher education. The market niche includes workers in industrial parks, veterans, and other groups. These learners want to study other majors, not just information technology and Vietnamese studies.

- Modularize the curriculums and implement micro-credentials. Non-traditional students want flexible modules and micro-credentials, allowing them to accumulate credits toward a full degree.

2. Improve education process

- Online testing and evaluation are important components and required resources. To develop online programs, these issues must be addressed.

- The digital transformation in education will required resources and the participation of all stakeholders, including faculty, students, and staff.

3. Consolidate the curriculum linkages

- Credit transfer is essential to online education because it creates flexibility for students and equivalencies for institutions.

- Offering online Advanced Placement (AP) programs for can provide a bridge for high school students to go to college.

III. Integrated analysis of development, quality, and sustainability

VNUHCM is at the early stage of online education, and it needs to focus on two major areas. First, it needs to focus on unique market niches, ones that are complementary to traditional students. The largest portion of potential learners in these market niches are workers in industrial parks and other production facilities. The greater Ho Chi Minh City region is a national industrial hub with a lot of workers. The second area of focus is balancing the autonomy of member universities with the need to collaborate and efficiently use limited resources. The central administration can focus on building the online testing and evaluation system and designing mechanisms for credit transfers and joint programs among the member universities.

VNUHCM needs to address issues related to organizational structure, online education vision, and financial sustainability. First, VNUHCM needs to choose a suitable organizational structure in which the functional activities and responsibilities between the corporate level and the member universities are clearly defined. Currently, programs are conducted by the member universities, but the coordination of shared facilities and common policies happen at the corporate level. Second, VNUHCM needs a long-term vision for online education, focusing on niche markets of non-traditional students. Third, VNUHCM needs to focus on financial feasibility and sustainability. While an initial investment of resources are needed, all online programs will need to be financially self-sustaining in the long term without any reliance on subsidy. Those benefiting from positive externalities of any program should pay for them either through the state budget or other mechanism.

Section I. Synthesis

This analysis explores international experiences for the 3Us to develop quality and sustainable online education in their own contexts. A development strategy is presented which integrates the frameworks presented above and articulates practical guidelines for application with the 3Us and beyond. Essentially, what questions need to be asked? Figure 16 recaps the main steps which underpin the due diligence which undergirds a holistic development strategy.

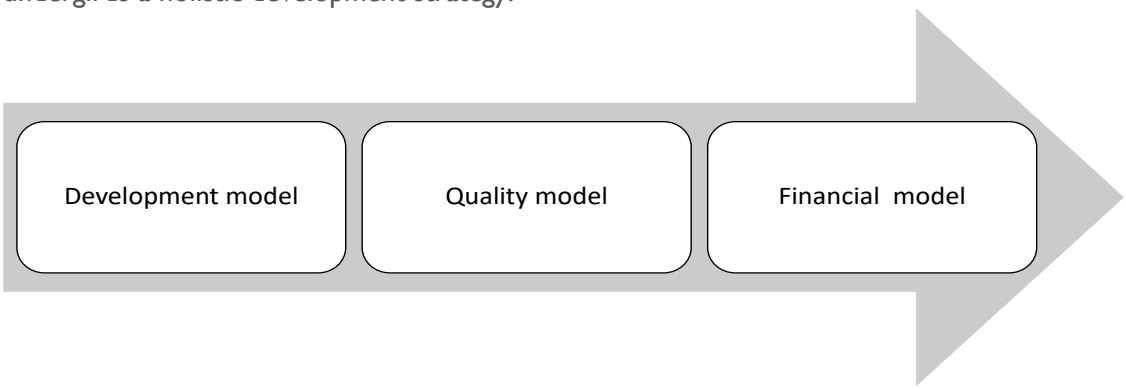


Figure 16: Development strategy steps

I.Development model

Combined, the partnership stances and parameters go to the kinds of development considerations important for 3Us to answer as they structure joint ventures. It is not easy to do everything. Therefore, partnership is essential. Specifically, it is helpful to unpack what universities should look for in searching to construct various forms of online education.

First, what is the most useful partnership stance? This primary concern is of course the most complex. It begs all kinds of basic executive deliberations. Primarily, what is the market power of the university in terms of digital firms? What infrastructure and opportunities exist for the institution in terms of negotiating with appropriately mature technology firms? Does the university have the capability to grow its own technology? Is the market space fresh and needing the university to acquire curriculum as well as teaching and support resources? As these questions convey. Market power is complex, particularly in higher education. Key parameters include geopolitical situation; global/national sub-/market/s; national sector structure; sectoral standing/positioning; field/curriculum relevance; existing education infrastructure; and change appetite/need. Each institution has its own tapestry of dynamic financial and academic complexities which will shape such deliberation and movement. It's entirely likely that a single institution, via faculties, may adopt multiple differing stances.

The next concurrent or derivative questions, involve specifying partnership parameters. Table 10 presents salient questions. Review of the questions conveys that these emphasise finance and governance and business. Technology and culture are important enabling concerns. This structural approach resonates closely with frameworks being pursued by UNESCO (2020) as part of the global education monitoring report for probing the role of non-state actors in education. These questions underpin subsequent case studies.

Table 10: Parameters and investment questions

Phase	Facet	Elite innovators creating premium solutions	Productivity innovator deploying services to expand offering	Scale innovator serving large communities
Foundations	Ownership	What kind of service firms would help respond to external market opportunities?	Can the university buy or invest in start-up firms?	What kind if joint venture adds value to the institution and service firm?
	Accreditation	What springboard and shield does prestigious accreditation provide for new education ventures?		Does reliance on external firms create or raise regulatory risk?
	Governance	How can the universities governance capability be leveraged or extended for venture creation?	What added oversight is required to monitor the academic and business facets of a partnership?	Does the professional education service firm add governance strength to the provider?
	Management	What commercial, innovation and education management capabilities are required?	What new management partnerships should be formed?	Do any management services need to be out-/co-/in-sourced to support value-adding partnerships?
	Products	What are the core programmatic strengths of the university and what needs exist in the community?	What products will help build the university's scope and scale?	What kind of leasing arrangement can be made regarding programs, courses and learning resources?
	Markets	What new markets can the university serve either directly or indirectly?	Can service partnerships help the university generate more and different returns?	Can the platform help people identify, access and engage in higher education?
Preparations	Marketing	How can the service firm extend the university's established brand?	What new brands and segments can the education business services firm open up?	
	Recruitment	Can internal admissions systems be deployed for added volume of recruitment?		Can the service firm join-up marketing, recruitment and admissions?
	Admissions	What admissions arrangements can be optimized and parlayed into potential spinoffs?	What are the regulatory obligations regarding admissions	
Experiences	Support	What additional support services might be converted into valuable online ventures?	Can support professionals co-work with the university and service firm?	Does the services firm offer additional forms of responsive student support?
	Curriculum	What curriculum resources can be converted into online materials?		Can curriculum materials be borrowed from an existing content platform?
	Teaching	Can faculty or teachers be trained to extend the reach or depth of the university's contributions?	What is the optimum blend of traditional and novel teaching practices?	What technology could help extend the reach of programs?
	Assessment	What innovative assessment platforms can be developed to boost academic productivity?	Can existing materials be used to augment education resources?	Can assessment materials be leased from an existing content platform?
	Enrichment	Can platforms and courses be developed to enrich or extend conventional forms of learning and participation?		Can the service firm offer enrichment activities which engage non-traditional learners?
Successes	Graduation	How can the university create queen-bee networks and solutions which help position people into jobs and careers?	Can a graduation management firm link-up academic progress and facilitate graduation services?	
	Careers		Can productivity be enhanced by enhancing how students and graduates transition out of the university into future study or careers?	
	Networks		What networks could be generated by tapping into a professional career platform?	Can a networking platform help the institution tap into potential teaching personnel?

II. Quality model

What questions can guide the development of quality online education? Table 11 elaborate the of the four-phase academic value model showing key questions and potential evidence. As noted, each of these quality domains plays out in varying ways across each of the phases and parameters in the development model. The questions can be used to ensure quality assure online education arrangements.

Table 11: Online quality framework questions and evidence

Domain	Questions	Evidence
Leadership and management	• Do the institutional missions, goals and objectives include the delivery of quality online or blended education? • Are leaders aware of how online or blended programs are quality assured? • Do key documents, such as institutional quality assurance policies, provide for online or blended delivery? • Is there a dedicated leadership position or organizational unit responsible for the quality or management of online or blended education?	• Strategic plans and other key documents include a vision for providing quality online education. • A leader, who is an expert in the field of online education, is appointed to the staff. • Institutional budgets reflect investment in online infrastructure or systems. • Timely actions are undertaken in response to cyclical reviews of online or blended programs. • The institution has appropriately dedicated staff to deliver online learning capability.
Staffing profile and professional development	• Are professional development strategies designed to help staff increase online student engagement? • Is the staffing profile aligned to the achievement of articulated learning outcomes in all delivery modes? • Are technical and academic staff members trained to appreciate both the pedagogical and technical aspects of online learning? • Do the online environments facilitate interaction between support staff, academic staff and students?	• Staff induction, training and professional development opportunities targeted to online learning are formalized through institutional policies and initiatives. • Staff contracts allow time for student access and engagement in online environments. • Workforce planning documents identify staff with specific online education skills and experience. • Budgets account for academic and technical support staff for online education and include allocated resources for professional development. • Student evaluations of online learning include feedback about the quality of teaching. • Staff members are recognized for excellence in teaching and learning in online settings and in engaging students in an online environment. • Investment in online professional development is measurable and results in improvements in staff expertise in teaching online.
Review and improvement	• Are online and blended programs regularly reviewed in relation to access and usability, course design, and the provision of information? Do the reviews evaluate support services, resources, and staffing? • Are planned activities scheduled and undertaken for the collection of stakeholder feedback? • Are institutional leaders, managers, and staff aware of quality assurance processes? • for online and blended courses? • »Are students encouraged to provide continuous feedback for online and blended education? Do students actually participate in internal student surveys?	• Internal quality assurance is governed by an institutional policy with delegated authority. • Internal audit documents planned review cycles and data collection periods. • Staff members have the appropriate skills and experience to identify and act on issues related to the provision of online learning environments, including collection of online data within learning management systems. • Reporting of review and improvement actions taken as a result of feedback is communicated broadly to staff and students. • Minutes of the academic board meetings (or equivalent) demonstrate that feedback and data have

Domain	Questions	Evidence
	• Is there a delegated department, unit or individual responsible for institutional data collection, analysis and reporting? • Do leaders and managers receive reports demonstrating the review and improvement of online and blended education within the institution? • Various challenges must be considered when reviewing and improving online courses. Figure 3: Challenges to meet provides an overview of these challenges.	informed course changes and improvements within acceptable timeframes. • Quality assurance web illustrates the key elements that need to be considered in the development of a quality assurance framework. • Other evidence may include incorporation of detailed national policies for development and improvement (if there is a national policy).
Resources	• Are there provisions in budgets and forecasts for investment in technical infrastructure to support online and blended learning? • Are students able to access compatible computer systems and networks on and off campus? • Do current and prospective students have enough information to decide if online study is suited to their needs? • Does the institution offer appropriate and adequate internet access to all students? • Does online and blended learning involve more than just the upload of content to a student learning system? • Are appropriate learning resources and student information available online? • Use of open educational resources?	• Institutional budgets account for investment in appropriate technical infrastructure. • Subscriptions or licenses to online educational resources and software tools are purchased. • On-campus spaces support the use of online technology, including adequate outlets for charging devices and reliable Wi-Fi connections. • Agreements with Distributed Resource Centers for testing or invigilating elements of the curriculum that requires trained face-to-face assessors or exams. • Resources are shared and developed across faculty.
Student information and support	• Do students studying online have access to institutional student support services? • Are the communication methods suitable for online and blended learning students? • Do institutional websites, platforms and learning management systems contain accessible and clear information that directs students to a range of support services? • Does the institution have mechanisms to identify students who may be at risk through analytic applications that monitor log-in patterns and through other demographic information including language or technical proficiency? • Can students use online platforms to contact staff? • Do students have access to the correct information about an online course prior to admission and do students have the requisite skills to be admitted to the online course?	• Policies determine when educational interventions are needed to support students at risk of failure or discontinuation of studies. • Data on student engagement and performance monitors student retention in online and blended learning. • Students provide feedback on student support mechanisms. • Guidelines for online student behavior and etiquette foster positive interaction. • Chat rooms and other interactive features are moderated by staff. • Students who have discontinued or transferred out of the program complete exit surveys. • Student feedback relates to the provision of online learning and the adequacy of information provided before and during study.
Student experience	• Do course design and assessment methods incorporate a range of interactive features that engage students in group work and encourage personal interaction with other students? • Does the information for the course include information about engagement opportunities and promote activities that will foster a positive student experience? • Are students aware of opportunities to engage beyond their studies, including learning communities?	• Activities for interaction are embedded in the course design. • Each student has access to other students' photos, names, and contact details. • Digital platforms are designed to distinguish between academic and more socially oriented aspects of the student experience. • Regular updates and communication are sent and received between institutions and online students.
Curriculum design	• Does the institution have clear standards for courseware development?	• Teaching and learning plans articulate the role of curriculum design in the development of online and blended education.

Domain	Questions	Evidence
	• Is each unit of study designed with the learning outcomes of the program and the qualification level in mind? • Does the design reflect pedagogical approaches to curriculum design, not just technical design? • Are innovative, interactive and engaging features embedded in the online and blended curricula? • Is the curriculum design coherent? Does it develop disciplinary and generic skills progressively over the duration of the course?	• Courseware development processes and/ or quality standards are used during the development of new courses. • Course development committees or equivalent have members who are able to effectively assess the quality of online or blended programs. • Employers or industry representatives are consulted so that the program design aligns with workforce needs and expectations. • The curriculum has been reviewed by external experts and piloted for design issues. Feedback is noted and implemented where necessary. • Student feedback about the quality of the program is sought regularly. Course updates incorporate this feedback.
Assessment and integrity	• Does the institution offer a range of assessments which are aligned to specific learning outcomes and that include discipline-specific and generic skills? • Does assessment cumulatively develop learning outcomes and provide students with an opportunity to demonstrate learning outcomes? • Are assessment rubrics mapped to program learning outcomes and graduate attributes? • Do examination boards (or equivalent) consider online performance data in relation to other cohorts? • Do course development committees (or equivalent) approve assessments for online learning?	• Policies govern online assessments, including academic integrity, moderation, and progression. • Assessments are mapped against learning outcomes at the program and qualification level. • Clear guidelines about the nature of assessments and the grading rubrics are provided to students. • Performance data demonstrates online and blended students are attaining suitable levels of achievement. • Institutions respond to student feedback and complaints about assessment. • Policies and procedures are in place to manage and uphold the integrity of assessment. • A rigorous process is in place to monitor and evaluate assessment data for continuous improvement purposes. • Assessment activities should utilize the capability of learning technologies.
Learning outcomes	• Are the learning outcomes for online and blended programs clear, accessible and realistic? • Are the learning outcomes communicated to prospective students, current students and staff? • Are the learning outcomes aligned to a qualification framework, relevant standards, professional accreditation requirements and workforce needs? • Do the learning outcomes for online and blended programs encompass specific subject matter knowledge as well as generic skills such as problem-solving, collaborative, communication, analytical and ICT skills? • Is the development of learning outcomes evident in the curriculum and assessment? • Are assessment tasks mapped to each learning outcome?	• Student information and/or online handbooks include program learning outcomes. • Course development and assessment policies, documentation and processes demonstrate how the learning outcomes were developed. • Course content and assessments reference frameworks, standards, and other requirements. • Student performance data is collected, analyzed, and validated to ensure that each student who graduates has demonstrated the program learning outcomes. • Cohort analysis is undertaken to determine the performance and progression of students studying in online and blended environments compared with face-to-face students. • Benchmarking activities with similar external programs is undertaken to ensure learning outcomes are consistent across the sector. • Feedback from graduates and employers demonstrates positive graduate outcomes including employment, professional recognition, and further learning. • 'Real world' skills in a virtual classroom details how work-integrated learning can form a component of online education.

Source: APEC (2017).

III. Financial model

Table 12 introduces a planning model designed to optimize investment among onsite and online higher education infrastructure, resources, and experiences, for each of the activities which comprise the experiences phase. Getting this strategic settings right is essential to ensure online education is financially sustainable and enhances productivity. But there is no magic or universal formula. In certain instances, duplicating effort across both modalities will make sense and realize the largest dividends from academic talent and resources. In other contexts, staying fully onsite or online may make the most sense. Table 12 repeats the planning model with guiding questions to help define the blended learning ratio.

Table 12: Planning blended education phases and activities

Activities	Infrastructure	Resources	Experiences
Support	What student support and query management platforms can reduce the hassle factor for learners?	In what ways do online platforms promote efficiencies around student support?	How can online supports blend in to enhance students' lives and outcomes?
Curriculum	What online or hybrid platforms help resource and scale curriculum?	What investments in learning resources will enhance quality and scalability?	How can platforms and applications enhance students' engagement with curriculum?
Teaching	What integration can be achieved between LMS, CMS and SMS?	Can teaching costs be reduced and distributed to more students with online delivery?	What kinds of digital resources will enhance teachers' experiences?
Assessment	Can secure assessment platforms help streamline and enhance assessment resources?	Can online assessment establish student achievement of learning outcomes in robust and authentic ways?	Can online resources enhance the authenticity and validity of assessment and learning outcomes?
Enrichment	How can the university embrace applications students use for enrichment?	What portable resources can be prepared to enhance enrichment programs?	Can online platforms underpin more sustainable approaches to student enrichment?

IV.National policy and regulations

Digital transformation is a national priority set in the Resolution of the 13th Congress of the Communist Party of Vietnam. For education, it is reflected in the the project "Strengthening the application of information technology and digital transformation in education and training for the period of 2022-2025 with an orientation to 2030" approved by the Prime Minister in the decision numbered 131/QD-TTg. However, both the public and policy have not been ready for online education yet. It is indeed challenging for universities to build online education as a complementary to the traditional modes to take advantage of the digitalization era.

V. Conclusions

This policy analysis reviews practices and experiences for the 3Us to reference for building online education. With the focus on three key facets of online education: (i) institutional development; (ii) quality assurance; and (iii) financial sustainability and based on the four-phase academic value model, below are key points.

Development model. It is important to choose appropriate development models for the 3Us as established and large institutions. There are two main layers for this issue including internal harmony and integration, and external partnership. First, internal harmony and integration are important for success. Regarding the structure complication, the 3Us are quite similar to IU. Clear definition and assignments of roles between the corporate level and member universities. IU should a reasonable reference for the 3Us to build the online education. IU chose to establish a collaborative model which created online coursework

and programs within the current academic structure of the university, rather than separating it from traditional face-to-face programs. This model has worked efficiently as reflected in its rankings and enrollments. Online and face to face programs have complemented each other instead of competing. Schools have been able to utilize their capacity and advantages to develop online programs. The Office of Online Education plays the leading and facilitating role. Second, external partnership is crucial for success. It is hard to find successful cases in which universities have tried to do everything. As shown in the case studies, universities should choose reasonable partnership models to develop online education.

Quality model. Uncertain public perceptions of the non-traditional education are not unique to Vietnam. Pairing the quality of online education and the face to face one is a key to the success of IU and other universities. Through careful design, development, implementation and assurance, IU and the other case study universities have shown it to be possible that there need be no difference between the online degrees and the other ones.

Financial model. When the quality is comparable, the online programs are usually much more affordable for the participants as they do not have to bear relocation and related costs. Moreover, many of them still keep their current jobs associated with their income sources. Therefore, the tuition of the online programs should be comparable to the face-to-face ones. It is to send the quality message and ease the low-quality perception of the public.

This discussion has sailed through much hotly debated territory. As UNESCO writes, "Few topics in education generate as much passion as the role of non-state actors. The wide range of opinions on the topic has much to do with divergent perceptions of rival properties of education: whether it is a public or private good, a form of consumption or of investment" (UNESCO, 2020b: 3). Even if this debate could be contained, other risks must be countered such as those associated with privacy and security, culture and epistemology, faculty workforce, and the transparency around public finance. Contemporary developments bring out that transformation appears unstoppable, even, and especially if it is 'discrete'. Nonetheless, constructing an investigative agenda around these huge topics is a challenge and opportunity for researchers, evaluators, and practitioners alike.

This policy analysis has focused on education, but many broader questions must be raised. Corporate perspectives around public-private partnerships (PPP) are obviously critical in understanding the risks and rewards of blending public universities with private finance and ownerships. Much of this work, however, has focused on infrastructure and related operations, rather than core education services. The same benefits arise, including resource increases, broadening provision, and access, working around workforce constraints, and supplying additional private-sector expertise. Universities need the entrepreneurial and corporate capacity to govern, procure and manage such arrangements. Most broadly and importantly, they need to be able to negotiate and optimize inherently conflicting commercial, political, and educational considerations. Robertson, Verger, Mundy and Menashy (2014) consider these ideas. To inform institutions about this issue, in early 2019 the Chronicle of Higher Education ran a series on the 'new era of outsourcing' and 'P3s' revealing, among much else, that interest in future partnerships gravitated around core academic and support services. Carlson (2019) presents evocative case studies. Robertson and Komljenovic (2016) paint conceptual substrates which undergird this topic, and detail fascinating P3 case studies.

Section II. Recommendations

There is a pressing need to develop online education in Vietnamese higher education in ways that ensure quality and sustainability. Three frameworks are proposed to guide this development. Adopting strategic frameworks like these is important to put technologies, institutions, and education settings in context.

These frameworks focus on these facets of online education: (i) institutional development; (ii) quality assurance; and (iii) financial sustainability.

The strategically framed analysis of international and national developments yields important insights. It affirms the importance of online mode as a form of higher education and also the transformational nature of digitalization for future higher education overall. The case studies bring out the brilliant, diverse, and dynamic innovation already underway, which offer kernels for future growth and development. These broader observations yield recommendations below:

I. Institutional development

- **Make online education a priority in higher education.** The digitization of higher education has become a global mainstay. Universities in Vietnam need to undertake reforms to ensure they can reap the benefits of online education. Universities should proactively transition to blended and online education to improve access to education, reaching students in remote and rural areas. Developing online education capabilities also supports Vietnam's digital transformation and integration into the global knowledge economy, spurring economic growth.

- **Define your strategy and desired outcomes.** It is clear to define the desired outcomes clearly and succinctly for online education at your institution. As with any initiative, the outcomes should be clear, quantifiable, and achievable. Top-level leadership must champion the initiative, and the strategy for achieving these outcomes must be direct and defined. Most importantly, this strategy (as well as the desired outcomes) must be based on your specific organization and its context. There is no universal approach to online education, and simply adopting what has been successful at other universities is unlikely to succeed in anything but the most modest of successes.

- **Build on existing innovation and capability.** Vietnam universities need to capitalize on their unique organizational history, institutional capability, and regional context when defining online learning strategies and outcomes. Doing so will expedite the development of distinctive, quality, and sustainable forms of online higher education in Vietnam. Universities can use and build upon existing infrastructure, platforms, and applications to transform current educational services to accommodate online learning. Partnerships with online learning platform providers and service firms can be used to augment university capabilities.

- **Consider organizational innovation.** Online education isn't just about technology and remote classes. In most cases, delivering strong, quality online education requires changes to organizational structure. Traditional universities are generally built to bring students into an organizational system. Therefore, it can be someone rigid and expect the students to adapt its structure. In online education, the higher education institution (HEI) is brought into the student's world, and as such, must adapt to the student's needs and expectations.

- **Refine organizational structure.** Universities need to reform and expand online education by: (i) Identifying how to finance online education infrastructure, resources and experiences; (ii) Defining various strategies for development; (iii) Establishing offices to develop curricula, develop teachers, support students, and assure quality and scalability; and (iv) Implementing evaluations to assess and improve the effectiveness and determine sustainability of online educational programs.

- **Generate buy-in.** For online education to be successful in Vietnam, university leaders must generate buy-in from internal and external stakeholders. Internal stakeholders of all levels (e.g., administrators, academic leadership, and rank-in-file faculty) must be developed to provide

support of online education. External stakeholders (e.g., workforce leaders, governmental officials) must also be convinced to support online education (specifically, your style of online education). The primary stakeholder, however, is the student, and therefore, considerable outreach and marketing must be conducted to provide overall acceptance of online education as a good investment of personal resources and time. If those impacted are not convinced about the value of online education, there will be resistance or a lack of adoption. It is imperative that leaders make the case for why online education is necessary to advance the mission of Vietnam's higher education.

- **Focus and implement well.** Given the lack of overall acceptance of online education in some settings, care must be given to generating demonstrable success that will foster support amongst those who are suspicious. Going big is risky, and failure undermines buy-in. Leaders should consider a plan that would implement "proofs of concept" or "pilot projects" with achievable milestones that will open up opportunities for scaling as successes are met.

II. Quality assurance

- **Focus on quality.** The development and growth of online education in Vietnam affords novel and transparent opportunities for quality assurance. The formation of dedicated online education or teaching support centers, the provision of student support services, and the development of innovative teaching and learning benefit not just online students but all students. Encourage transparency in course design so that internal critiques can respond directly to actual issues. In the end, students who receive a quality education will become valued by employers and create the future reputation of the quality of the education. The best way to build confidence is by demonstrating strong outcomes and student satisfaction in online programs. Universities should adopt a proven quality framework, such as the Quality Matters (QM) framework presented in this briefing, to guide the development and implementation of online education.

- **Offer faculty professional development.** Well-trained and resourced faculty play an essential role in the success of all quality online programs. Faculty engaged in online programs need to be trained in the areas of online curriculum development and online teaching. The quality of online programs depends on the instructors' baseline skills for integrating pedagogical practices to enhance learning outcomes across all types of students. Moreover, guidelines should be established for faculty workload and incentives to teach and advance online education. Online Learning Consortium (OLC - https://onlinelearningconsortium.org/), Educause (http://www.educause.edu/), WICHE Cooperative for Educational Technologies (WCET - https://wcet.wiche.edu/), and and ASEAN University Network (AUN https://www.aunsec.org/) offer robust resources for faculty professional development in the areas of digital learning.

III. Financial sustainability

- **Invest in long-term outcomes.** Online education is transformative change, meaning it is causing fundamental changes to who, what, how and when education is being delivered by and who is consuming it. New populations are being drawn into (or back in to) higher education and new organizations (not simply HEIs) are providing it. HEI's, therefore, should build out structures, policies and funding mechanisms that will support this transformation and be willing to extend their horizons for success and value further into the future. In the end, we should be emphasizing not the transition to *online*, but the transformation of *education*. Online education is a long game, but when done effectively, it can transform the future of higher education in Vietnam. Beyond simply offering online programs, Vietnamese universities can leverage online education to build

new revenue streams, increase academic offerings, expand enrollment, and increase mission impact. University leaders should view online education not simply as a nice add-on but more as a non-negotiable. One of the best long-term investments in the future of Vietnam's higher education is to allocate resources to establishing and growing online education.

- **Align resources with defined goals.** For online education to be financially sustainable, universities need to align their limited resources with realistic goals and proven strategies. By linking spending directly to defined online education goals, universities ensure resources are allocated efficiently and avoid wasting on non-essential areas. Aligning resources to goals also prevents mission creep, preventing the expansion of programming and activities without the resources to sustain them long-term. With resource alignment, it's clearer where funds should go and easier to track spending, enabling transparent monitoring and financial accountability.

- **Optimize the level of hybridization.** The financial sustainability of online education results from prudent optimization of decisions regarding the hybridization or digitalization of education. The value creation and productivity of online education comes from strategic decision-making around the extent a given academic function or business activity is retained as traditionally delivered or shifted online. The key question is: To what extent should online services either replace or augment traditional education activities? How this question is answered in terms of each education activity and condition determines the financial sustainability and broader value proposition of online education. Universities should use the financial sustainability framework presented in this briefing to guide their decision.

IV. The national policies and regulations

- **Approve fully online programs.** Current national policies and regulations for higher education need to be reformed to allow institutions to develop fully online programs. Until the current cap of 30 percent of credits conducted through online platforms is removed, Vietnam will not be able to capitalize on the benefits of online education and the transformation it brings to Vietnam's higher education ecosystem. All fully online programs developed should adhere to quality assurance standards comparable to face-to-face programs, a standard practice at most universities in the United States, including places like Indiana University analyzed in this paper.

- **Guided by quality assurance.** National universities engaged in fully online programs should be guided by a proven quality framework, such as APEC's Quality Domains outlined in this briefing. While "quality" in higher education varies for different stakeholders and can be defined, improved, and assured in myriad ways, the key is cultivating a "quality culture" throughout Vietnam's higher education system. When the focus is on quality, improving online education can benefit all students, not just those learning online.

V. Specific recommendations for each university

1. The University of Danang

- Propose MOET to allow the UD to pilot a fully online degree program. Identify a degree program that is amendable to MOET approval, suitable for online delivery, and attractive to potential online learners. One of the primary goals for this new fully online degree program is to prove to MOET that the quality will be either equal to or better than the face-to-face programs.

- A central office focusing on the alignment and advancement of online education for the whole university is important. UD's Center of Continuing Education (CCE) can function in this capacity. While the ultimate structure and function will depend on its overall strategy, this type of office will drive decision-making about important initiatives, such as (i) academic program development, (ii) marketing and recruitment, (iii) student services, and (iv) quality control and compliance.

- Provide practical training and financial incentives for qualified lecturers to engage in online education. Training should focus on three main areas: (i) Online course and program development, (ii) Online teaching strategies, including the effective use of technology, and (iii) On-going professional development.

- Centralize learning management system and student information system for all learners. Having one place for course activities and for student records will allow UD to transition current in-person courses to blended and fully online modalities without compromising data integrity.

2. Vietnam National University – Hanoi

- Design a rigorous study comparing student learning outcomes and satisfaction between in-person courses and online course. One of the best ways to build confidence is to show objectively that students in online courses achieve comparable or better outcomes compared to face-to-face courses.

- A central office focusing on the alignment and advancement of online education for the whole university is important. VNUHN's Institute for Education Quality Assurance (EQA) can function in this capacity. While the ultimate structure and function will depend on its overall strategy, this type of office will drive decision-making about important initiatives, such as (i) academic program development, (ii) marketing and recruitment, (iii) student services, and (iv) quality control and compliance.

- Provide practical training and financial incentives for qualified lecturers to engage in online education, including those who are currently teaching blended programs. Training should focus on three main areas: (i) Online course and program development, (ii) Online teaching strategies, including the effective use of technology, and (iii) On-going professional development.

- Centralized learning management system and student information system for all learners. Having one place for course activities and for student records will allow VNUHN to transition current in-person courses to blended and fully online modalities without compromising data integrity.

3. Vietnam National University – Ho Chi Minh City

- A central office focusing on the alignment and advancement of online education for the whole university is important. It could belong to the Academic Affair Department. While the ultimate structure and function will depend on its overall strategy, this type of office will drive decision-making about important initiatives, such as (i) academic program development, (ii) marketing and recruitment, (iii) student services, and (iv) quality control and compliance.

- Identify potential fully online academic programs targeting non-traditional undergraduate students (e.g., older adults without a college degree) and working professionals (e.g., workers in industrial parks and production facilities). Currently, VNUHCM's distance learning programs are focused on traditional students and concentrated in information technology (IT). Offering non-IT online

programs and targeting different student markets are essential strategies for VNUHCM to scale its overall enrollment. IU's Programs of Scale (ProS) provides a model for how to operationalize this growth.

- Initiate practical training and financial incentives for qualified lecturers to engage in online education. Training should focus on three main areas: (i) Online course and program development, (ii) Online teaching strategies, including the effective use of technology, and (iii) On-going professional development.

- Centralized learning management system and student information system for all learners. Having one place for course activities and for student records will allow VNUHCM to transition current in-person courses to blended and fully online modalities without compromising data integrity.

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