

Future of Higher Education

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**Scope of
this document**

This document is the result of an extensive research process, coupled with the application of the methodology of futures design and complemented by the insights, ideas, references and reviews of a global set of recognized minds from the diversified Higher Education (HE) space and beyond.

Its aim is to provoke reflection and propose new thinking processes around established and original ideas, identify reference practices, technologies to watch and trends that cast light on what HE could become in 2030. It is more an exercise of imagination than documentation — the future resides first in imagination, then in will, and finally becomes a reality!

The proposed framework and content shall help Global Higher Education Institutions (HEI), Governments, NGOs, parents, students, teachers and enterprises to engage in broader conversations that last for a number of years, as well as to imagine additional scenarios and develop possible routes toward preferred outcomes.

It is not intended to be a conclusive set of recommendations, but rather to act as a lighthouse, engage with different narratives, build a movement towards a vision that is both compelling and achievable, begin breaking up barriers and boundaries and become a catalyst for change.

We created this document at a level where every institution may benefit from its content, where alternative paths may be pursued based on the directions proposed, and where each initiative may have different levels of application. A vision that also welcomes dissenting voices and ideas that can contribute by adding diverse paradigms that address broader issues.

Thinking about the future is a fundamental requirement for strategic planning (never more pertinent than in times of chaos and uncertainty). Yes, the future is not singular, it is impossible to predict, but collaborative scenarios around possible and plausible futures shall become part of every plan going forward.

Knowing that many valuable efforts already exist around the topic of the Future of Universities, we tried to add a new dimension to the conversation by reshaping ideas, bringing global voices and proposing a path for collective construction.

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MWCcapital hosts MWC in Barcelona and founded 4 Years From Now (4YFN), the startup business platform, present at MWC events around the world.

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We bring about fast, impactful change in education through our insights, network, global perspective, reach and innovative viewpoints. The firm is made up of an international and diverse team of industry-recognized experts, with a presence on four continents and extensive experience in the education and technology sectors. Our vast international experience provides a global vision with extensive knowledge of local regions.

We help companies, startups, NGOs and governments in the education space consolidate their international presence, accelerate digital transformation, grow strategically into new territories, connect with strategic partners and support plans for mergers and acquisitions.

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A photograph of a group of students in a library or study hall. In the foreground, a young woman with long brown hair is focused on typing on a silver laptop. Behind her, a young man with curly hair and glasses is also working on a laptop. Further back, another student is visible, slightly out of focus. The background shows shelves filled with colorful binders and books, creating a studious atmosphere.

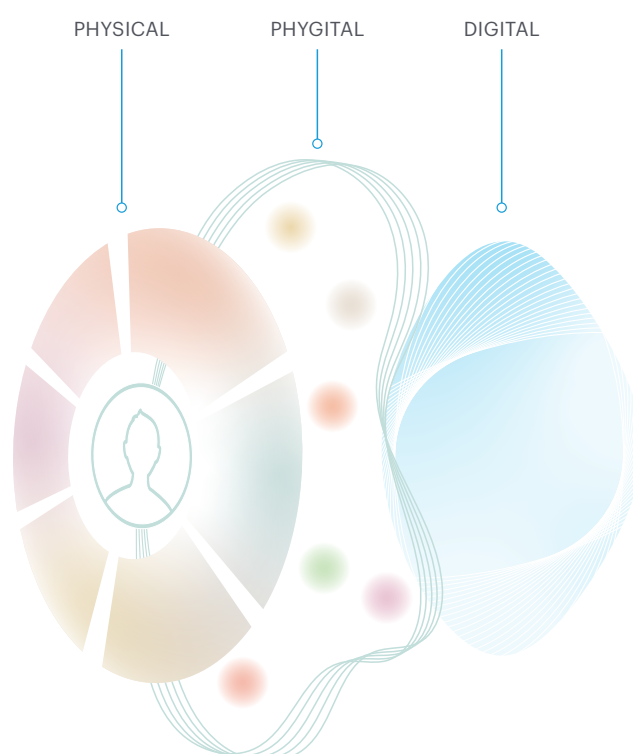
2 **Executive Summary**

Edtech is behind the great transformations in higher education such as platform models, immersive learning and the hyper-personalization of the student experience.

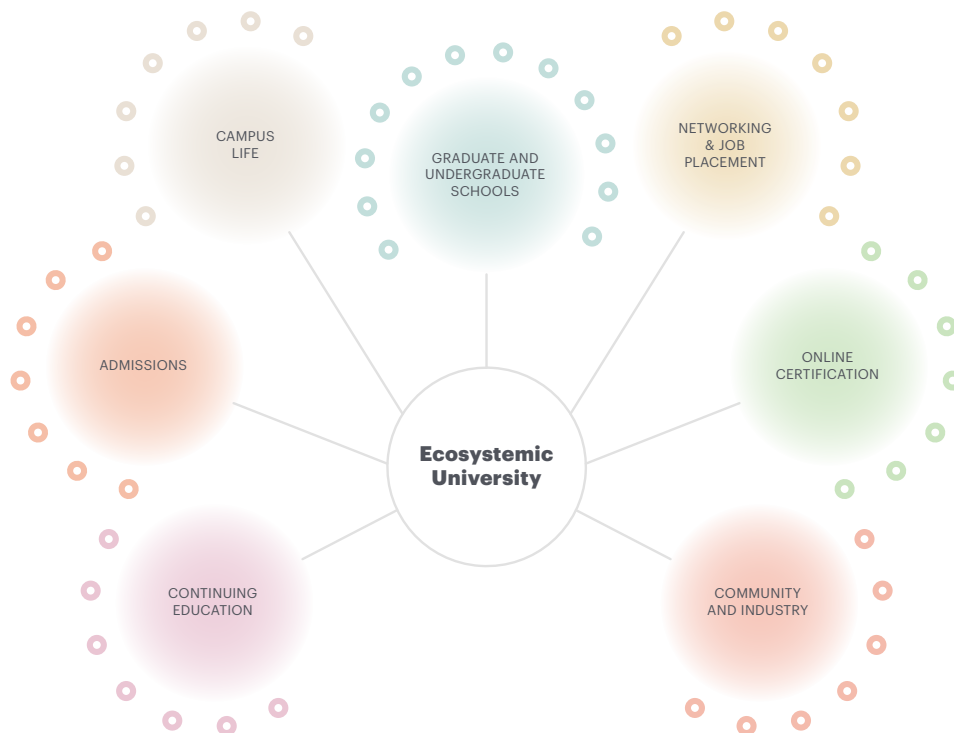
Digitization is consolidating trends that allow us to glimpse some of the great changes that the education sector will experience in the coming decades. Among these signs are:

- **Reconfigurations in the value chain:** MOOC platforms, which accumulate more than 220 million users are reintermediating the relationship between the student and the educational institution. At the same time, platform models are challenging universities' monopoly on content generation. Professors broadcast streaming content on channels like YouTube or Twitch for communities of thousands of learners while companies like Accenture or Google create their own online corporate universities.
- **Value propositions adapted to the new demand for skills:** digitization is continually reconfiguring the skills demanded by the market. This requires assuming the principles of agile organizations, more typical of startups. For example, some universities reach agreements with Bootcamps to offer training in the latest programming languages; others are fragmenting content through microcredentials, facilitating reskilling and upskilling beyond undergraduate and postgraduate training.
- **Immersive learning channels:** immersive technologies such as VR or AR lead digital investment in the education sector. Heralded by the rise of the metaverse, these technologies make it possible to improve the effectiveness of remote learning and the interaction between reality and digital layers of information.

Learning In 3 Dimensions



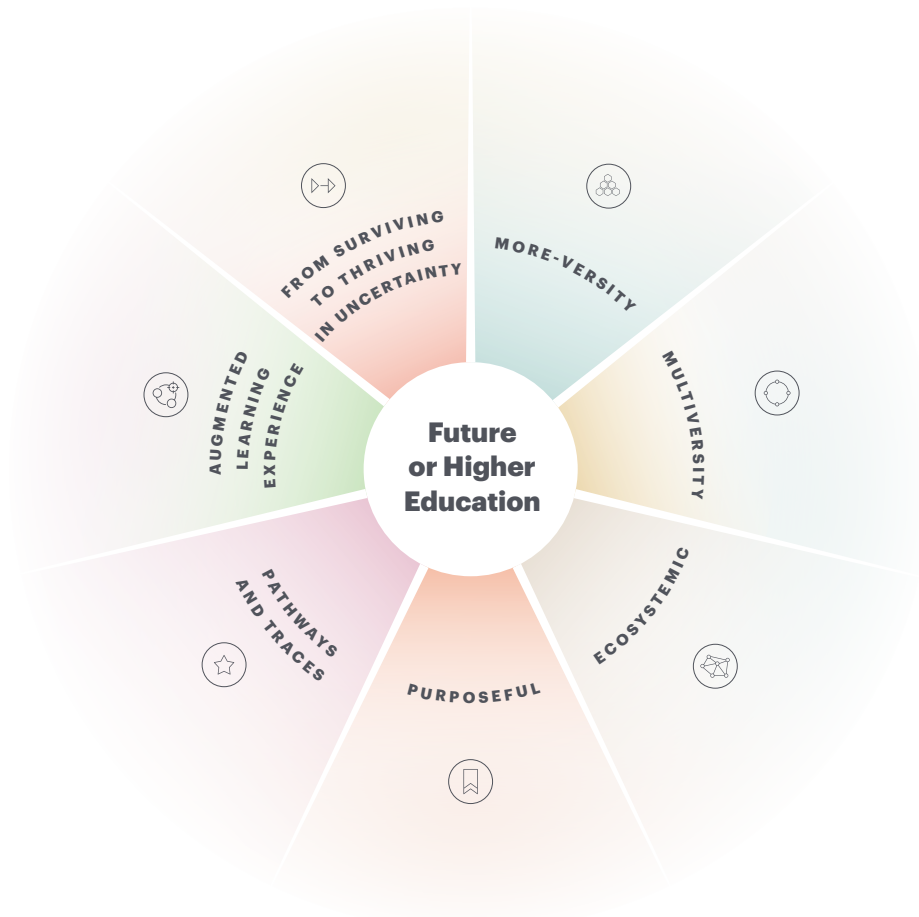
- **New student segmentations:** artificial intelligence and big data applied to the online campus allow the learning experience to be hyper-personalized based on the interests and abilities of each student. Likewise, life-long-learning needs mean that universities address increasingly diverse audiences.
- **Universities as part of an ecosystem of stakeholders:** universities become an engine of innovation for external agents such as companies or public institutions, through its knowledge and technology transfer offices. Likewise, microcredential models require that knowledge be certifiable and interoperable between the different university centers.



Introducing the university of the future: it is configured through layers shaped according to the degree of digital density, from the physical campus at one end to the metaverse at the other.

Starting from knowledge as a central part of its value proposition, the university of the future is configured through a framework of superimposed layers in which the degree of virtualization is the main differentiating aspect of each of them. Likewise, these layers are associated with different segments of students: from the exclusivity of students enrolled on campus to the massive nature of the courses or microcredentials offered online.

The 7 pillars of the future of Higher Education



1. **More Varsity: more relevant, for more people, for longer, with more options and possibilities**

Digitization will make it possible to democratize access to learning. This will give rise to a greater diversity of students and users. Even so, it will be necessary to guarantee the availability of adequate connectivity and devices for people at risk of poverty, through scholarships and new financial alternatives such as sponsorship by the employer or payment of tuition once studies are completed.

Shared micro-credentials, in the style of shared medical records, will facilitate life-long-learning and stimulate access to university education for people of all ages.

2. Multiversity: multiple disciplines, itineraries, formats and campuses

Training in silos evolves towards project-oriented learning and the resolution of complex problems, in which multiple skills that are disassociated from the concept of the subject are involved and developed. The level of learning achieved and not memorization become the main vector of evaluation in this new paradigm. The learning itineraries multiply.

The formats are also multiple (Metaverse, synchronous, asynchronous, MOOCs, omnicality) and the campus extends to new certifiable learning spaces: internships carried out in a company, volunteering carried out in an NGO, etc.

3. Ecosystemic: interaction with the ecosystem of actors in the education value chain increases the economic and social impact of the university

The economy of ecosystems and APIs will reach higher education. Companies, through the data generated by employment platforms, will offer universities the intelligence to generate training in line with market demand. These courses may be created for the consumption of their own students or for third-party user communities such as MOOC platforms. Open innovation will be the fruit of a bi-directional relationship between stakeholders such as universities, startups, corporations, researchers; universities will open their innovation processes to third parties and help third parties to innovate.

Technology will reinforce engagement with student communities, contributing to collective knowledge and support networks.

4. Purposeful: the university institution has a mission and students will look for schools with purpose and values in line with the changing priorities of the new generations

The university will tend to train not only professionals but to train people, worrying about their well-being.

In this line, the criteria that configure the university rankings should modify their variables. Rankings will appear based on the educational impact that creates value for the community, evaluating elements such as the type of employment that they contribute to generating, the social impact of that employment or the well-being of the students in substitution of elitist criteria such as the percentage of students discarded in enrollment or remuneration upon completion of studies.

5. Pathways and traces: training itineraries based on skills, abilities and areas of interest. Few entrances and many exits. And through multiple educational institutions

The entrance doors (the current degrees) are reduced and simplified while the exit options are endless. Learning becomes a personalized itinerary that combines content and skills from different disciplines and where digital skills will be increasingly essential.

The regulated and non-regulated training certification is collected in a skills passport enabled by blockchain, which unlocks access to the next stop on the training itinerary.

Technologies such as deep learning will allow students to be guided throughout this personalized itinerary and offer them the best training alternatives.

6. Augmented learning experience: digital technologies amplify the learning experience while transforming the role of the teacher

The zero marginal cost associated with the distribution of digital content turns knowledge into a commodity. The abundance of content creates new shortages, such as the ability to curate and select the most appropriate knowledge for each learner.

Software robots will automate manual processes such as serving students. Likewise, extended reality technologies will evolve to replicate and even improve what has made universities unique until now: the learning and socialization experience on campus.

7. From surviving to thriving in uncertainty: the new challenges resulting from a changing environment will give rise to leadership with new attributes such as a digital mentality, a vision of the future or being a facilitator of change

The uncertainty and context of permanent change resulting from digitization will require ambidextrous leaders, capable of making their current operating models very efficient while exploring new business models that could cannibalize and replace the current ones. Data-based decision-making and the adoption of the principles of agile organizations will be other skills required in higher education management.

2.1 Introduction

As we enter the third decade of the 21st century, the world has become more complex and more interconnected.

The abundance of knowledge and the scarcity of known paths for solutions to a different set of challenges will drive existing models of HE towards an accelerated and permanent transformation by introducing greater flexibility, innovative learning and teaching methods, alongside new forms of credentialism and the imperative need to nurture a broader ecosystem.

Innovation is a much more fragmented and varied endeavor today than ever before. As a consequence of falling barriers, more young companies in unsuspected places are pursuing many new avenues of invention, and a number of these involve new technological advances.

Deep technologies — innovations based on scientific research — will be a key part of the answer to many of today's global challenges. Solving the global challenges of this century — and driving local economic success — depends on the prompt and effective commercialization of new technologies.

To accomplish these goals, government, industry, community, educational institutions, investors and entrepreneurs will have to collaborate closer together to build solutions and enter into the market quickly and at scale.

In 2021, according to the data provided by the International Association of Universities, there were approximately **20,000 universities globally**. Every institution is immersed in a more global, diversified and complex environment. For learners and their families, learning choices become harder as the criteria for relevance and competitive advantages become increasingly more personal and contextual. The selection of paths to (and the weight of) potential returns will not conform to the traditional values of benchmarks among options.

Our signals clearly call for the end of the isomorphism path that has driven most Higher Education institutions (HEI) to preserve and emulate traditional structures of long-lasting perceptions of prestige and admittance value. Furthermore, these trends are forcing institutions to acknowledge the increasing gaps between their own self-perception and external criteria of excellence.

Scarcity has driven demand, has increased costs, and has created a strong correlation between selectivity and institutional wealth. Universities are moving from accepting the elite for a limited time to gaining subscribers from a diversified base of learners, for life.

The quality of teaching and learning — the main functions of any institution — are virtually impossible to measure and quantify. Especially as they are a direct result of each interaction and each individual. This is the main reason why we currently operate by using proxies, which include teacher reputation, teacher- learner ratios and many other factors as measures of quality. Technology will transform these challenges as it becomes prevalent in most learning experiences; it is generating vast amounts of data around learner engagement and the quality of each individual journey.

The global dimension is becoming more integrated into an institution's purpose. A new focus on quality, inclusion and sustainability is emerging in contrast to the traditional views of exclusivity, quantitative and competitive approach that are still prevalent, while learners from every corner of the world are able to be subscribed to many institutions at many stages of their life.

The main transformation occurs at the end of the era of dissemination of knowledge — which does not require a university anymore — to refocus on cognitive tools, active, experiential and social learning in an engaging learning environment by which learners and experts actively struggle together to find solutions to meaningful problems.

The role of all stakeholders has a profound impact as learners' commitment, determination and perseverance have to be emphatically supported by a diverse set of interventions to navigate risks, time, vulnerabilities, emotions, growth and downturns in a different balance between time vs. mastery.

Employers determine the real value of certifications and become an integral part of the learning ecosystem as work experience becomes a trusted signal and institutions permanently validate and expand learning and competencies.

The path to the future requires from institutions to act as Hubs for a diversity of services, products, experiences, technologies, partnerships, and signals that disaggregate, democratize, decentralize, support, validate, augment and expand their impact beyond boundaries of time, space, discipline, sector and age.

Technology is an enabler of coherence for an always-connected, adaptive, holistic experience that starts where the learner is and continues for a lifetime on an augmented omnichannel flexible journey.



3 **Signals of the Future**

It really makes sense to think about the future of HE as the challenges the world is facing are unprecedented and multi-dimensional: Declining public funding; massive impact from the pandemic; increased challenges to retain and attract learners; evident learning loss; alternative ways of learning, communicating and working, and a clear depreciation path of the traditional structure of a degree, among many others.

Thinking of strategic futures is a powerful weapon in times of highly changing situations.

The future cannot be predicted, but “alternative futures” can and should be proposed. One of the tasks of futures studies is to analyze alternative futures in order to make better decisions based on them.

Multiple public, private and civil organizations around the world have contributed to the development of the field of future studies, to the design of methods and instruments, to the generation and dissemination of content related to this area of specialization, as well as to the formation of networks that contribute to making futures a topic of conversation and an object of reflection for subsequent decision-making.

We use these tools in the common interest of better preparing for the constant and increasingly vertiginous change that HE will continue to face and to propose this field of knowledge as a relevant component for every institution going forward.

We propose the use of anticipatory thinking skills like someone flexing a muscle, preparing to watch for signs and patterns of change, with an emphasis on the design of future scenarios and the development of strategies associated with them.

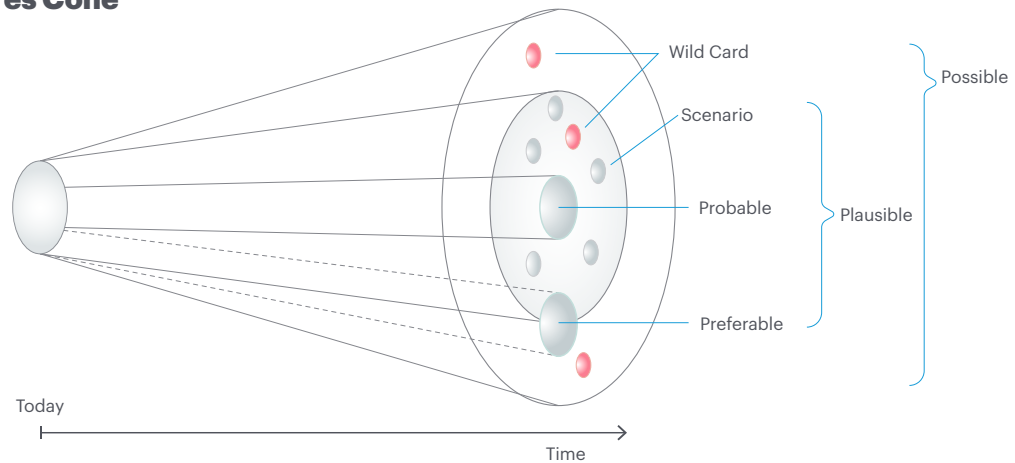
Experiential futures are “situations and stuff from the future to catalyze insight and change”; it is closely related to speculative design.

Speculative design places “new technological developments within imaginary, but believable everyday situations, that would allow us to debate the implications of different technological futures before they happen”. Most of the elements that you will find on this report can be classified as situations from the future.

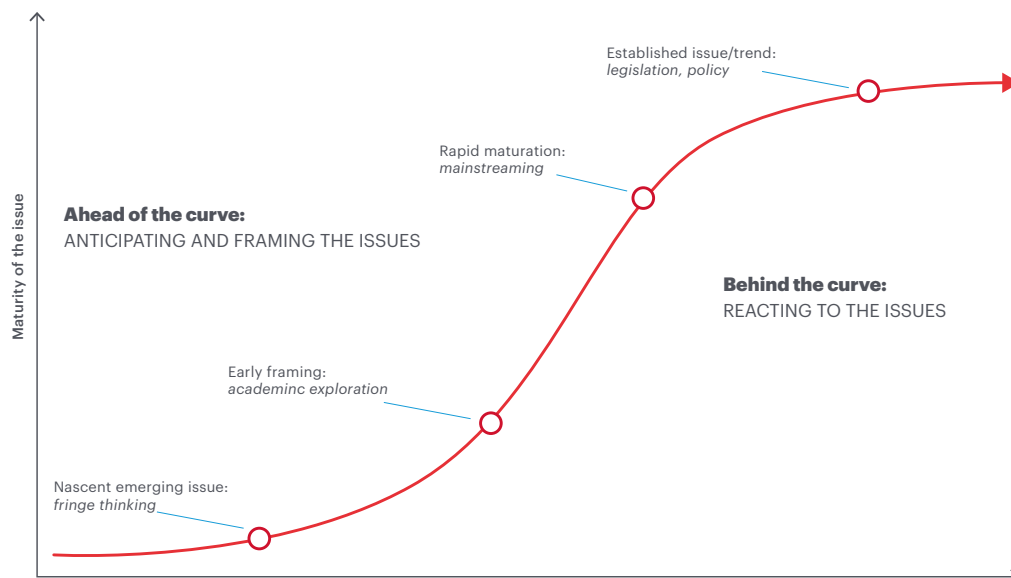
A key role of futures design theory is to probe the positive possibilities that might otherwise be overlooked and that may be unrecognized because they have been generated by unprecedented circumstances.

The next thing to do is to inspire the pursuit of those possibilities that are most desirable.

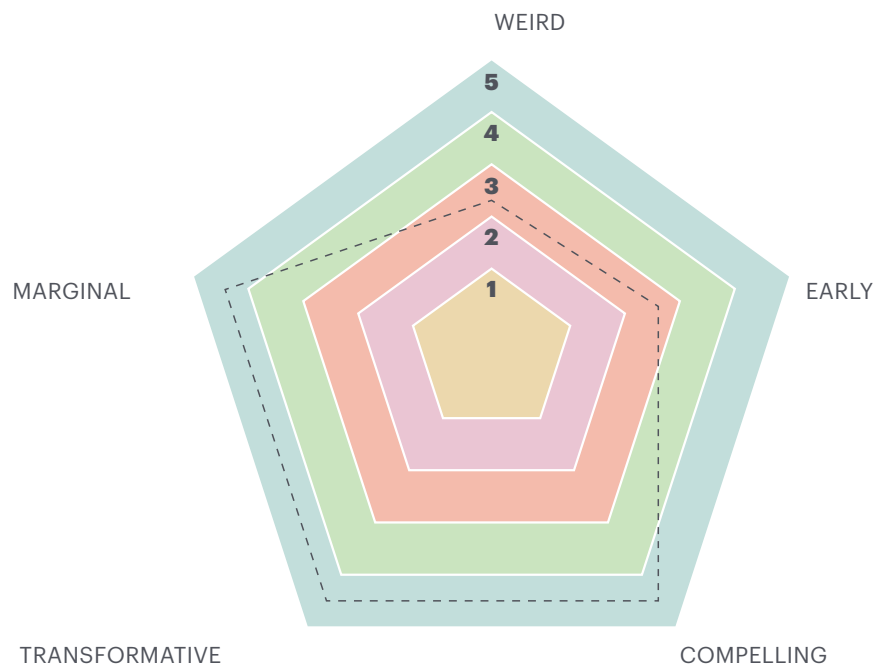
The Futures Cone



Selected signals (innovation with the potential to disrupt the status quo) were identified to propose our preferred scenarios for the future. Some of those signals respond to mature issues on their path to mainstream while others relate to more emerging issues that may or may not reach their maturity.



As the signals were being analyzed, we used *The Institute for the Future's* methodology to break down their characteristics and implications, to identify to what degree it challenged previous assumptions.



- **Weird Signal** indicates how much it deviates from what is generally closer to the mainstream.
- **Early Signal** indicates the estimated time before the signal becomes mainstream.
- **Compelling Signal** shows how captivating or surprising the signal is.
- **Transformative Signal** indicates the signal's potential power to change the status quo.
- **Marginal Signal** indicates how faint or peripheral this signal is at the moment.

3.1 Marginal

While there will be room for more premium campus oriented exclusive experiences the bulk (in volume) of HE will happen non-linearly across different programs, campuses, online, hybrid and face to face experiences, and in general with affordable price tags.

3.2 Early

Hyper-personalized learning will be based on predictive models that make use of learning data. Given a known set of data, the system should be able to achieve a certain output, so that the model is adjusted (trained) until adequate results are achieved.

New distribution channels: everyone can become a course or a knowledge center. If one person can reach further than CNN on a specific topic, why shouldn't a person reach further than Stanford in the university of the future?

HE of the future has more providers, more nimble, more specialized, that offer more verticalized programs focused on learning outcomes and practical employable skills.

3.3 Compelling

The HE of the future will be fluid, fast and adaptable. It will take different shapes and it will touch more stakeholders and constituents. It will interoperate, integrate and communicate better across institutions, providers and participants.

The future of all learner education will be hyper-personalized. Each learner will focus on having their "own" teacher, curriculum, content and path based on their own learning rhythm and competencies.

The combined processing power of all computers in HE campuses worldwide in the 90's fits today in a modern smartphone. Online and hybrid learning have transformed the role of campuses. A new wave of technologies 5G, AR/VR, virtual labs, AI, blockchain and complex simulations will re-shape the experience and offerings based on data, to advance knowledge and research to new heights in the university of the future.

3.4 Transformative

HE needs to think like an ambitious tech start-up, responding to personalized learning to maximize the use of data and insights to deliver hyper-personalized experiences that increase engagement and identify the best qualities of each learner and their top competencies.

Other industries have shown us that the main mechanisms for true transformation from analog to digital, from legacy to agile and modern are through agile leadership and open innovation. Banking and FinTech are good examples of this as also some leading global initiatives like Arizona State University.

The journey to the HE of the future walks through open Innovation paths.

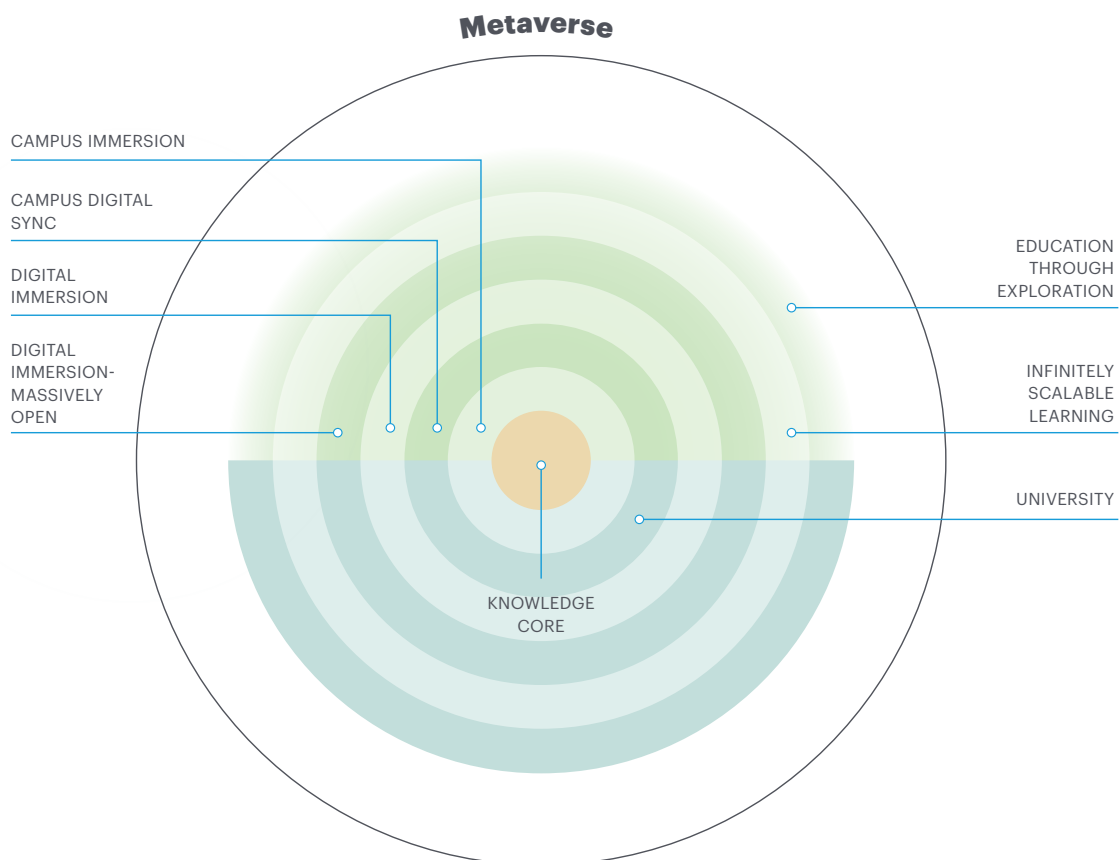
Very much like business cards have been replaced in China by QR code exchange, the need for speed, data exchange and data analysis will transform the HE of the future into a digital, interoperable and data-only operation. With algorithms powering decisions for content, research, programs and outcomes needs. This will go beyond instruction, and data and digital will be embedded in all the back-office, learner reach and operational processes.



4

Vision 2050: Layered University

With a modern, diverse life-long learner at the forefront of the purpose of every institution, and a core experience design as a critical element of differentiation, the university will be surrounded by a set of layers that integrate the full spectrum of services, paths, experiences, resources, partnerships and technologies to expand and augment their reach.



Adapted From Michael Crow, Arizona State University

Some will base this core on their physical spaces; their campus, their community, their country. Others will set the world as their campus, the internet or the metaverse, and others will select their niche based on knowledge, philosophy or service options. All these layers coexist in a consistent cohesive strategy that determines the purpose of any institution.

Each and every one of them will cement their success on a learner's commitment, determination and perseverance. As the type of learners become more diverse, multi-generational, global, most institutions will need to develop a set of services enabled by technology to support every single step of their lifelong journey and to integrate an ever-changing ecosystem of additional components as a Hub.

Each institution begins this journey from a particular existing core which will determine how fast and how much can be accomplished.

Each institution begins this journey from a particular existing core which will determine how fast and how much can be accomplished.

- 1. Core.** This is what the university stands for, it is the center of its identity. Inside the core are:
 - the strengths and potential of their faculty,
 - the value of their local / international /physical / digital / phygital presence,
 - the depth and breadth of their programs,
 - the diversity of their learners / cohorts / alumni / faculty,
 - their value-added services, partnerships.
- 2. Campus Immersion:** The role of the campus, capturing value in the use of differentiated spaces and face to face experiences for learners that have access to facilities.
- 3. Campus Digital Sync:** The use of apps to maximize the in-campus experience, the extension of the campus via XR/VR / Technology augments, expands and makes the in-person experience richer.
- 4. Digital Immersion:** Using digital technologies, the learners that are subscribed to the University remain engaged with the University, with no need for a visit to the campus or face-to-face experiences.
- 5. Digital Immersion is massively open:** The digital experience is offered to a massive market, no need to have formal ties with the university, the world is its market, independent programs are its products.
- 6. Infinitely scalable learning:** An extended community is subscribed to lifelong learning, the experiences are licensed for other institutions.
- 7. Education through exploration:** Informal learning happens anywhere, trips, contests, partnerships for experiential learning and research built on discovery and curiosity powered by the University.

Each layer can expand to additional segments and include different sets of audiences, different generations and stages of life, different formats of learning and teaching, and different methods to engage and serve their communities.

These layers can be designed to allow institutions to address different sets of learners:

- By the stage of learning they are at.
- By their speed of learning.
- By their depth of learning.
- By their breadth of learning.
- By their degree of physical vs digital experiences.
- By the intensity and frequency of support.
- By their connection towards local and global issues.
- By the type of validation required.
- By mixing and developing cross empathy among types of learners.

Some segments will experience differentiated levels of support:

- The more adaptable learner.
- The more vulnerable learner.
- The global learner.
- The always-on learner.
- The refugee learner.
- The indigenous learner.
- The in-campus only learner.
- The active collaboration learner.

All of them will be able to realize their full potential as the institutions are working to create environments conducive of learning, to transform each individual into a master learner and to keep them engaged for life. The learner will appreciate how universities recognize and validate experiences that come from all types of learning at all periods of their life.

As a consequence of the transformation towards this vision, there is a broader understanding that a university is much more than a place — it is a force. Where modern lifelong learners can be characterized as ARCHITECTS OF THEIR OWN FUTURE.

As an example, the initial layer determines the experience of attending an on-campus experience while, at the next layer, technology augments, expands and extends the on-campus experience to enable more value and perhaps a more inclusive experience. An additional layer may develop services and experiences on a hybrid phygital experience. Next, a fully open, massive experience delivered through a platform. The model goes on as each additional layer includes different segments, different formats, different partners and different experiences with flexible boundaries.

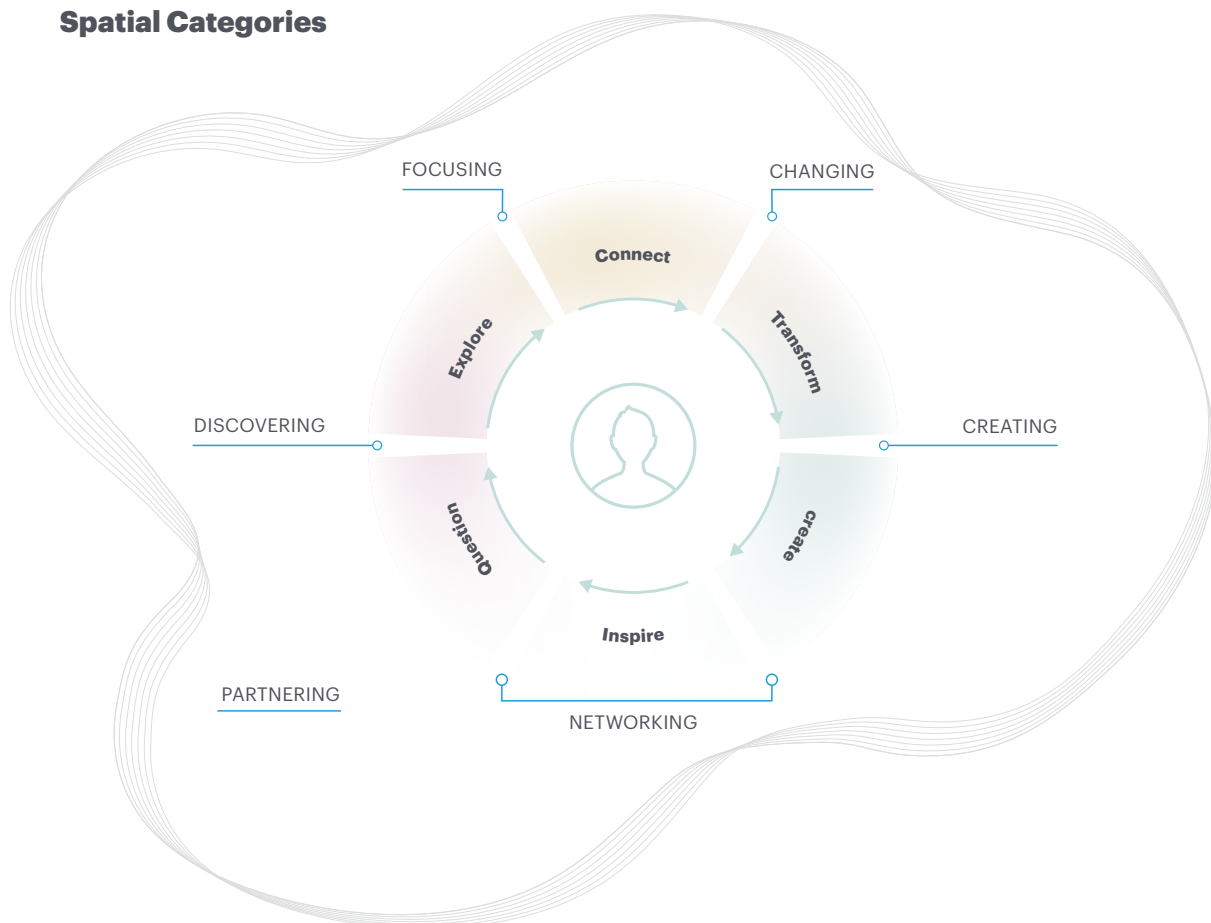
A powerful path toward the initial layer will depend on the ability to design **differentiated spaces on Campus.**

A university space or campus will allow the learner to exercise their option and make relevant decisions that determine their paths. The borders between learners and teachers will be diluted.

The diversity of individuals as the diversity of the experiences will become assets of enormous wealth. **Everyone learns** and engages differently and the interrelation and connection with others will be an essential part of learning.

A face-to-face encounter will have to be a fantastic experience, fabulous and unforgettable to offset the significant increase in energy expenditure, both personal and of renewable resources from the displacement to a physical campus.

Spatial Categories



The physical space will create a state of mind conducive to learning. It will become a different environment in which learners have to act differently than in other more common spaces. Learners in the future will be in a place that requires them to permanently adapt and create new environments.

The type of experience will be unmatched to any other space and cannot be replicable online.

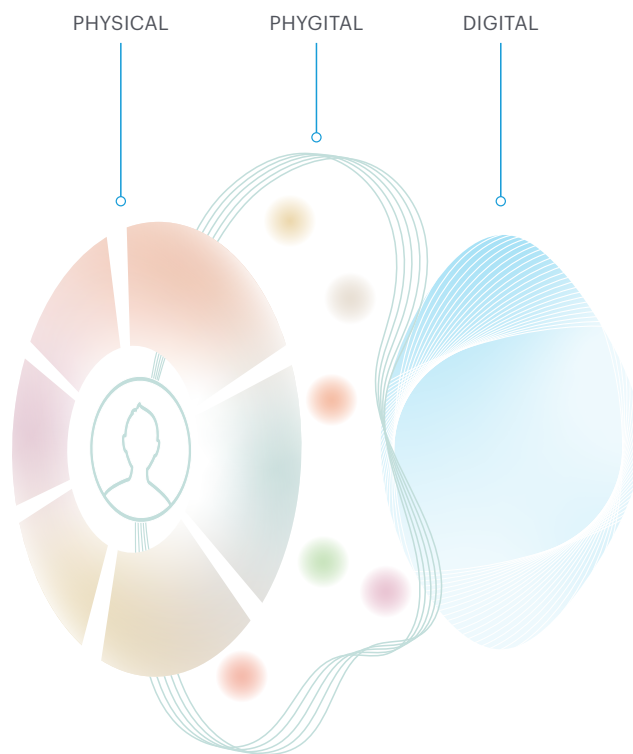
The physical environment will be designed to promote a state of permanent collaboration and co-creation. A scenario where it is important to recognize our own skills and talent as much as recognize them in others, a place where there are incentives to join forces and generate value together with others.

Physical.

Digital.

Phygital: the combination of physical and digital.

Learning In 3 Dimensions



1. Physical learning

Face-to-face activities with their differential value (trust, relationships, human emotions). The physical space provides learners with the necessary tools in their creative cycle of learning.

2. Digital learning

Complements, augments and expands the experience using digital tools.

3. Phygital learning

Combines the key features of the physical and digital realms, providing an expanded experience.

From the creative learning cycle and its processes, we defined a model of proposed types of spaces and facilities needed to drive innovative learning.

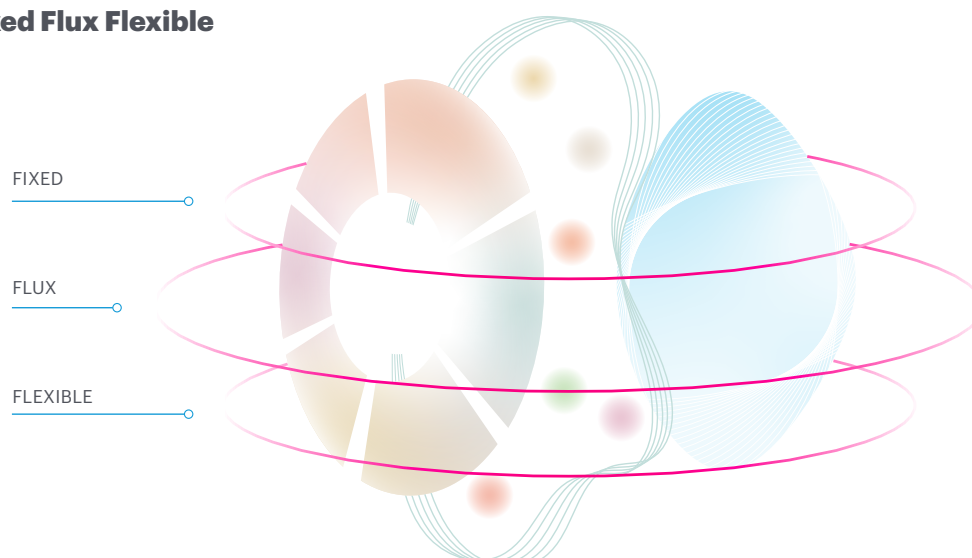
Specialized areas that confront learners to different types of spaces; all necessary for modern learning processes:

- **Meeting Area:** Meet and connect with others, mutual inspiration. A place where the journey is not undertaken alone.
- **Discovery Zone:** A place to start projects, launch proposals.
- **Focus Zone:** A place to reach maximum concentration, avoid distractions and reach depth.
- **Change Zone:** Discover new routes, exchange with areas outside your knowledge.
- **Creation Zone:** The place to experiment, to build, to design and prototype.

With such differentiated environments, learners freely combine the spaces according to the needs of their particular learning path.

An institution may work with three types of environments:

Fixed Flux Flexible



With these guidelines, they may design the differentiated areas to maximize learning from different perspectives and respond to three parameters:

- 1.** the type of people who use them;
- 2.** the time that the spaces will be in use, and
- 3.** the type of space it will be.

People

There are three types of learner profiles:

- Fixed: learner mostly in face-to-face mode.
- Flux: In-person visitor at specific events.
- Flexible: learner mostly on digital platforms combined with eventual face-to-face visits.

Time

Each profile has an associated time of use:

- Fixed: attends the institution with high-frequency.
- Flux: eventually attends the institution.
- Flexible: temporarily attends the institution.

Spaces

There are three types of spaces that cover the needs of all learner profiles:

- Fixed: They are closed and reservable spaces.
- Flux: They are open spaces, not reservable.
- Flexible: They are open and bookable spaces.

The 'Fixed, Flux, Flexible' system creates a new way of organizing the future educational institution and allows for broader developments.

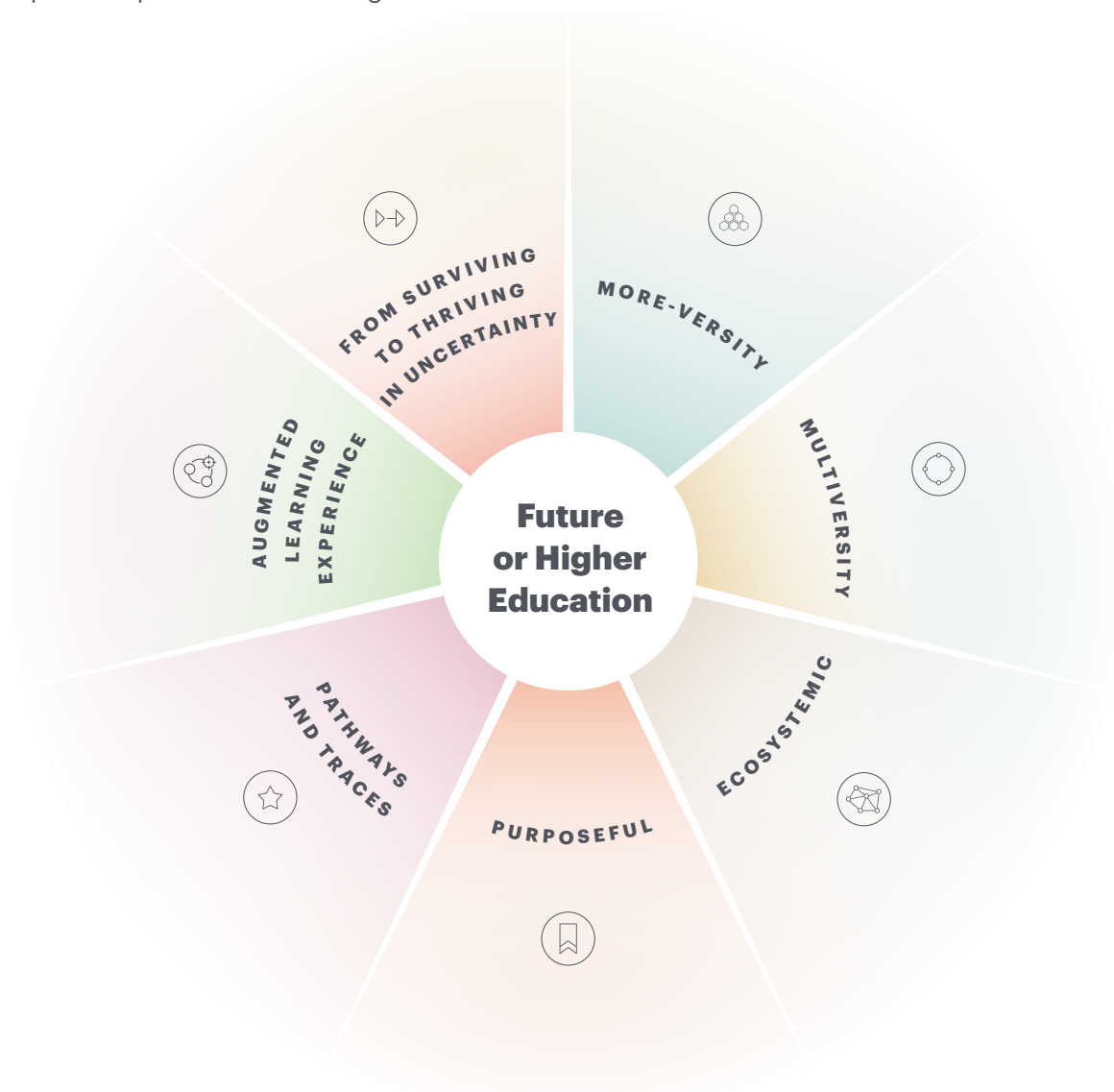
Thanks to the great spatial flexibility, the academic paths, the number and types of learners enrolled can be adapted according to their characteristics and according to the demand. These spaces may also expand into external modules and be part of an enterprise, a city or a park.

This organization, along with the 'Fixed, Flexible, Flux' system will enhance the acceleration of our development potential which lies in the differentiation in our learning environment. This core principle will enable a variety of options that amplify the scale, accessibility, diversity, flexibility and cost structures.

4.1 Pillars

From the initial signals we arrived at the vision of the layered university, (inspired by Arizona State University) and its potential to re-think each layer. Beginning at the core, we identified the forces that are under a path of depreciation while others begin appreciating; then we visualized the possibilities of a differentiated campus, interconnecting physical, digital and phygital realities under a model of fixed, flow, flux applied for space, time and people.

By pursuing this vision, the university of the future can aspire to become more relevant for the era of accelerated change, without losing its mission. The following pillars will open possible paths towards that goal.



These pillars will guide an institution in its path to establish a transformation agenda with specific goal setting at different degrees of development depending on their own capabilities, throughout the seven dimensions that we called pillars:

- 1. More-Versity:** More relevant, for more people, during more time, with more options and more possibilities.
- 2. Multiversity:** Multi-segment, multi-generation, multi-format, multi- certificate and multidisciplinary universities.
- 3. Ecosystemic:** Active nodes of open innovation, interacting with all stakeholders and assets, permanently reconfiguring to add value, to keep up with advances in knowledge.
- 4. Purposeful:** Meaningful purpose and perception, aware of their reputational risk and legitimacy for the learners and the community.
- 5. Pathways and traces:** Learner journeys that fit every learner and every stakeholder at every stage of the relationship at every level of intensity.
- 6. Augmented learning experience:** Active learning, social learning and experiential learning paths that connect with real life challenges complementing human endeavors with technological enrichment.
- 7. From surviving to thriving in uncertainty:** Leadership that creates innovative environments, allows for experimentation, failure and agile development of new products and services, lean processes and inter-relation between sectors.

In order to advance the transformation on each of these pillars, and determine their appropriate level of development, each institution shall develop capabilities in five different dimensions around each of the pillars to remain relevant and add value:

- 1. Digital transformation path:** From digital tools to digital mindsets, the role that technology plays on each pillar and the use of digital technologies to close gaps.
- 2. Broader socio-economic, environmental and cultural focus:** Achievable levels of access to communities that are above and beyond their traditional constituents: gender, age, location, social and economic backgrounds, closing the digital divide, alignment with SDGs, etc.
- 3. Holistic learning as a service experience:** Design services that support learner success on skills that never become obsolete and are suitable for many types of jobs.
- 4. Active open ecosystem:** Active nodes interconnected in all the academic and educational processes.
- 5. No-boundaries to validate and certify:** Start at your learning ability level and your personal learning historical background, master the learning process of a particular path on a particular level at a particular time and move on, keep your skills and experience portfolio for life.

1. More Varsity

"University success is directly linked to their ability to ensure that «every boat is lifted, and every boat is able to sail.»"

Michael Crow

President of the Arizona State University

The *More Varsity* maximizes the paths offered to learners, regardless of their age, ethnicity, gender, religion, etc. It is able to bundle, unbundle and *re-bundle* services in a way that addresses a broad set of learners.

Also, they are more relevant as they remain engaged with learners during more stages of their life, and validate more academic records from more learning paths.

Universities used to work in silos and their only responsibility was forming human beings and caring less about what was required for businesses, any skills or expertise would be developed later on in their professional career. Now, this has been changing over time and we can see that with the growth of continuous education. If universities want to be successful in the future, a transformation in this mindset is required.

Interview by **Nadine Diaz-Infante**, Associate Partner at McKinsey & Company



More diversity and more access

Ensure full representation and opportunities to access Higher Education. Inclusion and diversity at universities, by leveraging differences and producing human capital expressed in knowledge, skills, creative abilities and ethics. Active inclusion can be accomplished by creating an environment in which all people can thrive.

“Universities are in transition as their role today is being questioned as well as the return on investment that you might get from a HE Degree. We need to question who is HE serving today, who is having access and how are we retaining the students.”

Leo Schlesinger

CEO Alliat Group

Reference practice

MUST University was created in 2017 by a Brazilian mathematician who built the basis of the largest online institution in Brazil. He wants to create affordable education, with high quality and at large scale. Therefore, he has now created a full online school with dual degrees in English, Spanish and Portuguese. Additionally, to ensure access and diversity, they are starting to explore technologies for people with disabilities (people who cannot see or hear) with solutions that deliver quality education.

UNIVERSIA (Banco Santander) is investing in lifelong learning. They have offered more than 300,000 scholarships and aid.

More boats are able to sail

Without leaving anyone behind due to a lack of access to devices or connectivity. It considers universal, pedagogical and technological learning and curriculum design, as well as teaching strategies, adaptive learning, offering different assessments, methodologies and accessibility without undermining quality and integrity.

“We need to assess student learning outcomes because the results help us understand how to improve the design or delivery of the curriculum. When we do this on an ongoing basis, the outcomes should get better and better because our curriculum and the way we deliver it improves over time.”

Karen Yoshino

PhD, Higher Education Consultant

“Private and non-profit universities have different agendas. Within all that spectrum, there are universities that serve the privileged, some dedicate their resources to generate knowledge, others to have the best teachers, serve people with vulnerabilities, etc. The question is now: How can we make the most scalable and efficient experience at competitive pricing with the best quality? The only way is to become digital first: Create a central platform from which to serve a broad set of services.”

Leo Schlesinger

CEO Alliat Group

“The technology stack is critical to how we teach, attract students and how we support students. We created our own LMS, but switched to a third party when they met our quality standards; we have automated chatbots; developed learning science-driven content and formative assessments to provide feedback; we have our data in dashboards for the academic advisors and predictive analytics to make decisions; we are 95% cloud-based to have full redundancy of all our systems; we have APIs to connect applications, software assistants and software systems to customize information and analysis, and we have power-BI dashboards for learning and business analytics.”

Peter Cohen

President University of Phoenix

“We must enhance digital and hybrid learning in the Public Universities for everyone to have access. COVID pushed the public sector to accelerate technology adoption, but there is still more that can be done.”

Zunaira Munir (Zee)

VP of Global Business at OneScreen

“Prices in education have risen over time but quality doesn’t go in the same direction. Universities should be able to offer good quality degrees at a fraction of the price with the use of technology. You can hire great professors from anywhere in the world and access high quality content. This way, you can also reach a large audience in many parts of the world.”

Renato Souza Neto

Chairman MUST University

Reference practice

Tecmilenio (Mexico) is committed to a hybrid education that is flexible, efficient, diverse and meaningful for students. They offer face-to-face experiences with collective learning and immersive experiences to solve challenges. They created systems to value diversity, whereby the learners’ pace, motivations and contexts are highly respected.

More financial alternatives, more income sources

More financial support for learners guarantees access to HE and better opportunities. Therefore, financial flexibility; different pricing; different forms, frequency and intensity of grants, scholarships and loans are needed, as well as ensuring financial sustainability by reducing costs and becoming more efficient when allocating resources.

“Universities can innovate with subscriptions and turn content and knowledge into a commodity. This can become a strategy for lifelong learning as students can sign up for short courses and universities can use microcredentials to validate skills.”

Jordi Arrufi

Program Director at Mobile World Capital Barcelona

“We have financial advisors that work with prompts that come from AI. Sometimes, a small gap in financial resources keeps you out of school so we provide scholarships and often work to eliminate small debts or whatever is needed so we can keep our students on track for graduation.”

“Another path to financial sustainability is working together with businesses. If you develop the specific type of talent they are looking for, they can fund these careers. Students can reduce their debt and have a secured job or promotion after graduation.”

“Financial sustainability should be achieved if universities are run like businesses. Leaders should be comfortable matching costs to changes in revenues and be creative on how to get more revenue (for example, rent buildings you are not using to local businesses and allow them to be part of the campus).”

Peter Cohen

President, University of Phoenix

“There is still very unequal access to education. Instead of filtering students based on financial status, filter by people who really want to learn and provide them ladders to achieve their goal. Just consider that, to lower the cost, most universities lower the standards. This is not what we are aiming for.”

Ben Nelson

Chairman and CEO, Minerva Project

“We need to change the way we think about generating profits and change our business models. Instead of charging tuition for four years, can we charge a lifelong learning subscription for 60 years, and accompany the student throughout their life?”

Patricio Bichara Assad

Co-founder & CEO of Collective Academy

Reference practice

Aliat University: While student loans are discouraging people from attending university, an alternative is creating a centralized, affordable curriculum for a high quality degree, regardless of it being full time, part-time, online or on campus. You have to offer multiple channels for the multiple segments to be aligned with students' needs and provide services to all your universities as an Online Program Manager (OPM).“

ESADE, in partnership with Quotanda, has launched an innovative Income Share Agreement program for its students:

- This Income Share Agreement (ISA) is a contract between the school and students that provides the latter with up-front education funding. In exchange, students agree to pay a percentage of their future income (ie. 2-15% depending on the tuition amount financed) for a finite period of time (ie. up to 9 years).
- It's a compelling alternative to student loans as students who opt for ISAs only start paying when they get a job.
- With the repayments from students, ESADE will offer ISAs to more students.
- The objective of this ISA program is to enhance diversity at ESADE while demonstrating its commitment to generating great employment outcomes.

More technological

Quality education will be interconnected via connectivity and the accessibility to the internet and information. State-of-the-art universities will consider 5G, AI, Big Data; WEB 3.0, XR gaming, Data Science, Machine Learning, Deep Learning, Data Security, the Internet of Things (IoT), learners' digital identity, e-transcripts, adaptive learning, data asset management, knowledge repository, as well as the infrastructure for labs, bootcamps, etc.

"The digital divide needs to be addressed from the perspective of "meaningful connection", which implies having a quality connection but also connected devices and taking into consideration the context of that connection. It is about enabling a "meaningful access": the necessary infrastructure and network, access to affordable data packages and quality devices. Without this, it will not be possible to close the digital gaps that affect education and the workplace or even work towards guaranteeing the internet as a universal right."

Carina Lopes

Head of Digital Future Society Think Tank

"Revolution in education in a digital form is not defined by simply being effective at distributing content. It depends on every single interaction that every learner has with an intelligent platform that learns in real-time whether effective learning is happening or not and helps optimize outcomes. Technology is a complement — not a substitute — of the physical experience. In traditional learning, most teachers don't know whether there are shortcomings in real-time. Universities should develop their courses digitally first to optimize learning outcomes."

Leo Schlesinger

CEO Aliat Group

"Technology has changed the way we learn and will continue to do so. People are able to learn without attending physically, they can join other learners across the world for problem-solving tasks, universities can now offer virtual tours and hands-on activities completely digitally."

Maggy Al Khatib

Head of Edu-Cater Pro Training and Consultancy Center

"Universities should not confuse the addition of technology to the acquisition of learning. What universities need is custom-built technology that enables structured curricular and effective pedagogical approaches."

Ben Nelson

Chairman and CEO Minerva Project

“An institution of Higher Education will fail if it does not know how to successfully incorporate technology into the university experience. Technology can be incorporated on everything from teaching to help with employability and any and all interactions, including facing professional challenges.”

Jose Manuel Martínez-Sierra

General Director in Barcelona School of Management

“If a student is weak with any content or skill, you have to give them what they need and reinforce the content with the use of technology and AI. Additionally, education has to be ahead of work trends, not centuries behind as it is now. We need to use AI-based systems that mimic the work environment.”

Zunaira Munir (Zee)

VP of Global Business at OneScreen

“Universities have to understand the need to update their value proposition. Digital tools should be seen as advantages to improve the educational process.”

Casilda Güell Ampuero

Dean in OBS Business School

“At the UPF, we are carrying out pilot tests with VR/AR on health issues, as well as in humanities and culture (creating virtual museums).”

Oriol Amat

Dean, Universitat Pompeu Fabra (UPF)

“In the future, holograms, metaverse, and gamification will be broadly used, even blockchain will be used for transparency and verification of someone’s credentials. We need to leverage technology to make better decisions and to really adapt to our students’s needs.”

Eduardo Gómez Martín

President in ESIC

“Online communications will evolve towards more experiential and interactive formats that include part of the richness of gestures and expressions that the face-to-face format offers you.”

Eduard Martín

CIO & Intelligent Connectivity Director, Mobile World Capital Barcelona

More youngsters, more elders

Activities and connections to K-12 learners, institutions fostering a permanent exchange on digital records, reflecting the advances in knowledge. Catering to older generations with more relevant activities.

More consciousness

The institution will align resources and report on its progress to address environmental, wellness and ethical implications in the planet, the human experience and algorithmic performance.

"Systemic, institutional and historical biases and over-personalization can lead to new and the amplification of already existing biases. Therefore, you need to have a data ethics strategy and conscious development of algorithms and then prepare your teams to work through the operationalization of your ethical values."

Carina Lopes

Head of Digital Future Society Think Tank

"For many years we introduced technology to people, but now we need it in the right way or make better use of it. The Internet is a powerful thing, but used in a bad way is like giving a nuclear weapon to a baby."

Taddy Blecher

CEO Community Individual Development Association and Maharishi Institute

"Technology shows its real potential when you take advantage of all its functions. At the same time, you need to align your processes accordingly. Additionally, when you analyze available data, you simply make better decisions for students and universities alike. You can use your LMS with different APIs to create personalized learning experiences, you can understand your dropout rate, upload and send a standard curriculum, customize communication with students, etc. There are endless areas for improvement to achieve better learning outcomes and eventually save costs."

Felix Goh

Google Strategic Lead, Singapore | Education, Research, EdTech

“Future leaders have to be great coaches to motivate, inspire and engage their teams while caring about each member as an individual. They have to be futurists, tech-savvy, great communicators, emotionally intelligent and able to balance technology and humanity.”

Maggy Al Khatib

Head of Edu-Cater Pro Training and Consultancy Center

“Universities should promote a transformation of the culture where helping society makes you successful. This should be driven by the spirit of egalitarian democracies and the empowerment of all people, not by your advantages that come from where you were born.”

Michael Crow

President of the Arizona State University

Reference practice

Just as Peter Cohen, the President of the **University of Phoenix** said:

“We ensure equitable access for everybody to get Higher Education even when they have the minimal qualifications. If the student has the determination, perseverance and a high school diploma, we help you pursue your higher degree”.

The University understands who is their target group: 55% people of color, 60% first generation students and over two thirds have jobs or dependents. Therefore, they provide the first 60% of the university course for free and if they decide to leave, there is no debt. They understand this is the best path out of poverty, but a degree by itself is not enough. You need to develop communication and collaboration skills, critical thinking, creativity, etc. Teach what it takes to be employed in careers for life, not only academic knowledge of a certain field.

More global

A movement towards a more comprehensive and inclusive approach to internationalization. Integrating an intercultural dimension at every stage of learning.

“We have to develop future leaders with various mindsets and skills to understand and appreciate new cultures, seek diverse teams, lead employees with different backgrounds and know-how to succeed in new global markets.”

Maggy Al Khatib

Head of Edu-Cater Pro Training and Consultancy Center

“We don’t realize the potential of our species as we only allow a few people to improve their learning capabilities to be deeply empowered and skilled. We have to start thinking about scale, new types of institutions, how we can solve problems, but on a global scale (considering every group and community). Instead of a “for some people” we need to change to a mindset of “for all people”, where we empower every person to be a master and unbelievably creative learner. Learning is a central human function and we must provide learning opportunities for everyone, everywhere.”

Michael Crow

President of the Arizona State University

“Universities should have more internationalization and openness of their academic offer. This implies direct collaboration to embrace innovation and productive, international development.

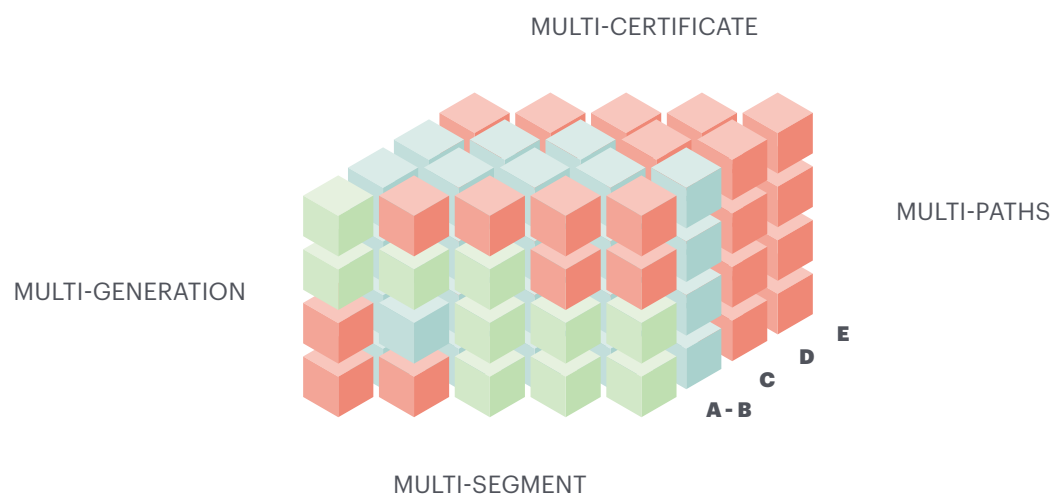
Segundo Duran Piriz

Academic Manager of Planeta Formación y Universidades

2. Multiversity

The multi-university is serving at the same time a multitude of generations, from a multitude of backgrounds, with a multitude of paths validating multiple abilities and keeping multiple records. The main challenge here has to do with the capabilities required to move from a traditional, homogenous path towards a broader path where many can experience it at the same time.

Multi-versity



The new type of multi-versities are purposeful and social scale institutions that are moving into a direction where they have many channels to operate through their faculty, all enabled by technology and where they have the ability to reach people at different places, stages of their lives, and at different moments in their careers. The key to all of that is the change of the perception of the university from something related to the measurement of learning to the measurement of the social and economic progress of the communities that they serve.

Interview with Michael Crow, President of the Arizona State University

Multi generational

The idea of learning in similar aged-based cohorts limits the reality of the multi-generational conversation, the diverse perspectives and the need to develop skills around these.

“When Universities become actual educational institutions, they will become centers of lifelong learning.”

Ben Nelson

Chairman and CEO Minerva Project

Multi Segment

Traditionally, institutions tend to serve homogenous learners coming from similar socioeconomic backgrounds. In the future, successful institutions will be able to serve a diverse set of learners from variable segments. This interaction will be valuable as an asset. Some segments would be impacted by the digital divide, and the institution would design to close these gaps.

“Universities of the future should eliminate entry barriers to ensure access and equity so that future students are motivated and supported to change careers, upskill and reskill at any stage of their lives.”

Carina Lopes

Head of Digital Future Society Think Tank

Multi Discipline

It implies moving away from siloed subjects into building skills that require a multiple of concepts to solve meaningful complex problems. It builds on human skills and lets the abundance of subject content flow more flexibly in time, depth and space as needed to create solutions.

“We need to develop experiences where students solve real problems and while working in interdisciplinary teams. Allow students to have different approaches to education and learning, gain new skills and knowledge.”

Geoff Perry

Executive Vice President, AACSB International

Multi Assessment

It considers the learning backgrounds of each individual learner as points of departure and assesses more than memory by ensuring creative applications of knowledge in collaborative settings. Assessment is part of the journey rather than the end of the learning journey.

“Just like the IT sector doesn’t ask for a Master’s degree but does require specific skills and certifications, that is how University should be. Allow different paths and courses, assessing what they already know and allowing students to engage with the content they want (or need).”

“Assessments are still traditional because of government and university requirements. We should start using technology with formative assessments, which in the end, impacts and allows diversity as you adapt to every student.”

Zunaira Munir (Zee)

VP of Global Business at OneScreen

Multi paths

Learners would be able to enter, progress and exit through different pathways that conform to a level of structure similar to a subway service. Any station may be a point of entry but the line has a path forward; every stop is certified and may open new options either to continue or change lines where appropriate. The degrees are one type of signaling but not the only one nor the final.

“Universities should allow students to be active to create their own learning journey. Universities have to adapt the student experience to real-life experiences and increase flexibility within the education system. Students can start studying in-person, then choose to go completely online, or even hybrid models.”

Torsten Fuerbringer

CEO of Simovative

“Universities should acknowledge that students will come back and forth in different modalities and formats with more degrees and certifications. The cycles of our professionals are becoming shorter, so we need to offer what they need.”

Renato Souza Neto

Chairman MUST University

“The physical and online campuses are complementary. It is important is to give students the opportunity to choose from diverse learning formats according to different moments of their lives. (postgraduate courses, masters, etc).”The concept of life long learning is expanding globally.”

Casilda Güell Ampuero

Dean in OBS Business School

“How do we create an omnichannel university? By being a customer- centric university. It is very important that universities meet students in every possible way in terms of time, geography, and even learning formats. For example, as a student, you can take any live program, then they can change it to asynchronous with recorded videos, lead activities with a study group, etc. It doesn't matter if it is live, recorded, onsite, online or in the metaverse. Students should be able to decide.”

Patricio Bichara Assad

Co-founder & CEO of Collective Academy

“The stackability of micro credentials will be signals for universities and the market that you master a skill. Nevertheless, they should come with practices, internships and apprenticeships to prove that you have the practical knowledge. There should be “career centers” to help students place themselves in jobs, create a talent network, keep track of their studies, their certificates and online courses (even if they are not in the same university) and help them create their learning journey.”

Nadine Diaz-Infante

Associate Partner at McKinsey & Company

“The new role of the university will be to offer what the students will need in the different stages of their lives as well as to offer them different solutions. They should be flexible enough to analyze each student's context and adapt to their needs. They should broaden the age segment and be able to guide individuals towards a change in their careers, reskilling for a new job, learning how to become an entrepreneur, etc. and even being able to offer spaces for those people who want to be updated on the main trends without learning them in depth.”

Eduardo Gómez Martín

President in ESIC

Reference practice

Minerva University traces learning routes based on cognitive skills, entry competencies, multi-disciplinary paths and its application to real life.

OBS Business schools do not have much regulatory rigidity, which implies a competitive advantage pedagogically. They offer badges, personal rankings, and have up-to-date educational resources in case students want to change careers, specialize in something else, etc. Their education strategy is based on lifelong learning.

Multi Campus

Universities will work collaboratively with the industry and other institutions to develop experiences through different channels, platforms and spaces at any time of the journey.

“We must envision students as full-time learners, not only students when they go to school. Think about it this way: Universities only think about a lecture in accounting, where students are having experiential activities and apprenticeships, managing the finances of a restaurant over the weekend.”

Patricio Bichara Assad

Co-founder & CEO of Collective Academy

Multi Certificates

They will both issue and validate academic digital records through an open, transferable and verifiable system that reflects the knowledge skills and abilities that they acquired during their life over a multitude of possibilities. Blockchain technology will be the main enabler of this process.

“Before, if you had a degree, you automatically had a job. Not anymore. Today, additional micro credentials have become a necessary way to prepare for the professional world and to differentiate yourself from the thousands of other job applicants.”

Hamza Chraibi

President and Founder at Arab Excellence

“We must disaggregate college degrees and map the skills you really need. Then, students should earn badges to demonstrate mastery and these credentials will be able to prove a person is job-ready. Working students can earn promotions as they master skills, and not only when they graduate.”

Peter Cohen

President University of Phoenix

The more accessibility to content and the greater decentralization in the acquisition of knowledge and micro credentialing, the greater the need for a Central Institution to regulate this.”

Ivan Bofarull

Chief Innovation Officer in ESADE Business School

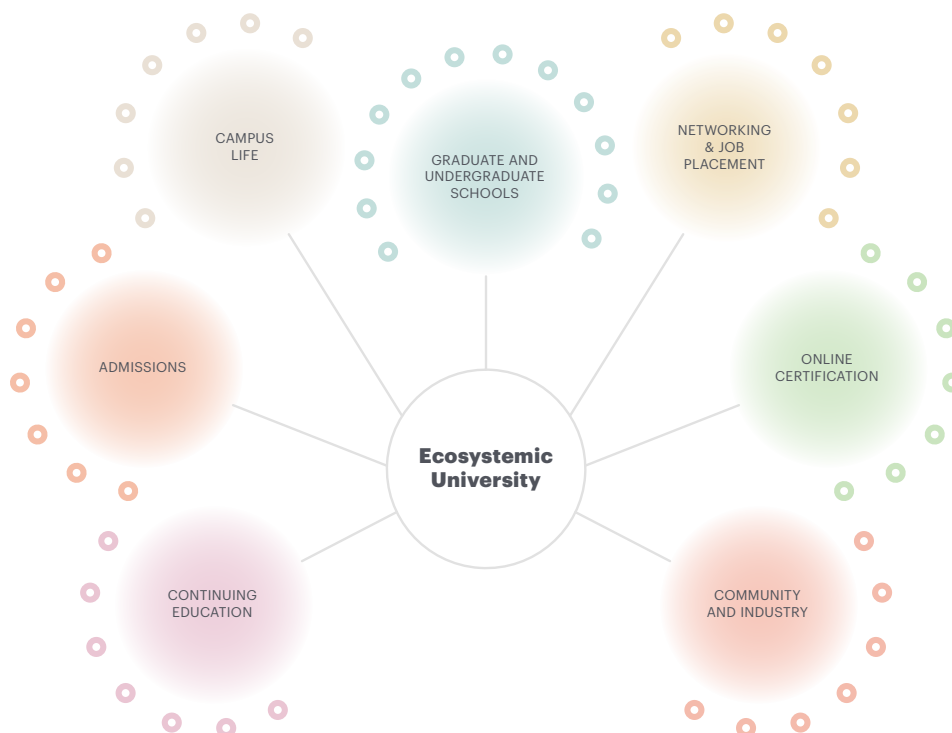
“We should be able to generate a shared “educational passport” in which each person could add their training, updates and relevant experiences that reflect their skills and abilities.”

Eduardo Gómez Martín

President in ESIC

3. Ecosystemic

The institution becomes an active set of interconnected nodes. Every process, every person and every asset is part of an ecosystem that is articulated to explore, expand and deliver value.



The members of today's digital ecosystems collaborate in ways that are fundamentally different from collaborations of the past.

The challenge is how to effectively set up and manage these ecosystems and use them strategically to maximize value — and gain a competitive edge. How each participant approaches the ecosystem affects its ability to achieve value as well as influence others and the whole.

Regarding partnerships and becoming ecosystemic universities, one of the main changes is that they are starting to move toward a culture of service, taking responsibility for outcomes at the community and regional levels and at the social level. It implies willingness to partner around goals and objectives of student attainment and social transformation, so it is about the broadening of the model while staying intellectually in control of the outcomes.

Interview with **Michael Crow**, President of the Arizona State University

Ecosystems operate on a win-win model. Each participant needs to think about not only its own goals but the goals of the whole and how it can help the ecosystem advance.

According to Boston Consulting Group, one key to the success of an ecosystem is for each participant to demonstrate the ability to build collaborative relationships that extend beyond those that already exist. To develop new solutions through the convergence of expertise from unconnected fields.

Ecosystems frequently adapt their management styles on the basis of feedback from stakeholders. This typically leads away from strict and vertical hierarchies toward more horizontal and informal ways of operating as loose associations with uncertain futures and paths of progress.

“Universities can create their own non-regulated/unofficial courses to sell them and gain more financial sustainability. They can even create alliances with businesses and design the content for their corporate universities, while increasing employability and understanding market needs.”

Jordi Arrufi

Program Director in Barcelona Digital Talent

“Universities should explicitly identify market, workplace, and societal factors alongside the goals for «an educated citizenry» in order to prepare students for successful participation as citizens.”

Karen Yoshino

PhD, Higher Education Consultant

“To be effective in today’s world, universities cannot do it all by themselves. They have to link and build effective ecosystems. That means enduring relationships with the private sector, employers, recruiters, and the labor market.”

Leo Schlesinger

CEO Aliat Group

“As knowledge and skills can be acquired anywhere, educational institutions should play the role of centralizing all of their channels and provide guidance and support for students based on individual needs and aspirations. They should constitute an attractive ecosystem in which students can develop themselves and learn from professors, mentors, alumni, entrepreneurs, professionals of the private sector or any relevant source (online or offline). They should also help students acquire the skills needed by the job market by allowing them to work on concrete hands-on projects in collaboration with the private and public sector.”

Hamza Chraibi

President and Founder at Arab Excellence

"All of us who are leaders in education, must understand how market niches work, and be at the forefront of educational innovation. We have to be ready to leverage collective intelligence and open a dialogue so that we can have feedback about market and training needs, and have the ability to react quickly and adapt to these demands."

Jose Manuel Martínez-Sierra

General Director in Barcelona School of Management

"Universities should add entrepreneurial skills to their curriculum, preparing students to better understand industry needs, where private public collaborations are key to transform knowledge into real market value."

"Universities need to develop an ecosystemic mindset, where collaboration and co-creation should be the levers of change. Through a scientific-entrepreneurial community universities would be able to focus on value creation, establishing new bridges with the industry and new funding models contributing to auto sustainability of research."

"Governments should put in place policies that encourage this exchange of knowledge promoting research-industry collaborations, building a new tech based industry."

Oscar Sala

The Collider Director in Mobile World Capital

"Education is a very big and crowded space, so it might be hard to excel. Universities should learn how to collaborate, create programs and share technology."

"We are an open ecosystem. For example, we are working together with Tec Milenio and we have created greater impact and better results because of each other. We have partnerships with content providers like EDx and Coursera, businesses like McKinsey, and organizations that work with entrepreneurs like Endeavor. If we are successful, it is because we only do what we are best at and partner with others that are the best in their core activities."

Patricio Bichara Assad

Co-founder & CEO, Collective Academy

“The key of success will rely on the collaboration between the university and the business world. Therefore. Certifications issued by academia in alliance with the professional world could be excellent means to guarantee relevance and pertinence.”

“We have ESIC Lab Tech that allows the student to interact with technology and become familiar with the main technological advances. We work closely with businesses to help them design and develop their competences; we have a professional development unit to understand market trends and needs and position our students, as well as using technology for marketing and business intelligence for better decision making.”

“Universities should have their independent Center for Innovation where they could research, test and analyze future trends as well as benchmark with other universities and fields.”

Eduardo Gómez Martín

President in ESIC

Reference practice

Aliat Group launched “Emprende”, an office and a program:

- 1.** Designed to allow students to know themselves and work out a plan for their lives (“discover your purpose and plan accordingly”).
- 2.** Determine the plan’s fit in the employability vs entrepreneurial ecosystem:
 - a.** Employability: The Group has alliances with the market, runs job fairs, lists job offers, organizes seminars, etc.
 - b.** Entrepreneurship: There are alliances with local entrepreneurs and companies, other universities, NGOs, business accelerators, investors and funds, mentors etc. They even organize a *Shark Tank* event for students to practice their abilities.

ESADE Business School runs the so-called “Ideas Challenge”, an accelerator program that springs out from the students themselves. It is an example of peer learning and focuses on addressing challenges with an interdisciplinary approach. Both the investment and the educational communities participate. The role of the teacher is modified to that of a mentor and guide for students.

Open Innovation

There are multiple learning resources available that might come from a broad set of nodes in the system; other universities, K12, NGOs, government, Investors, startups, researchers, teachers, learners, technologists, and other industries.

The use of open innovation will be activated to solve meaningful issues. It implies industry mentorship, resource and knowledge sharing, and deploying internal or external innovations in products, processes, business models, services, etc.

There are different ways Open Innovation can be present in universities. Working collaboratively with different stakeholders is needed, and improves the university's role in society, making sure that the outcome, be it startups, technology transfer, relational and intellectual capital are developed and shared. In an ideal future, universities will become a reference in the Venture Capital ecosystem by being at the center between viable ideas, efficient paths to market and strategic capital attraction at faster rates than today where each of these steps is disconnected.

A prominent example is Israel, also known as the Start-Up Nation. Since the late 1980s, the government has actively created policies to unlock the potential of the private sector. A key factor in Israel's innovation ecosystem is the strong interconnections between its people, which promote collaboration and the exchange of ideas. Public-Private Partnerships have propelled innovation and played a critical role in driving innovative industries where risk is encouraged and new ideas are experimented. Israel's open innovation model is built around the relationship between the government and university, partnerships, entrepreneurs and investors.

“The future of education has to be open: Open information and open knowledge. We can't create a future as individual silos or as individual countries, universities must be a platform.”

HE David Moinina Sengeh

Minister of Basic and Senior Secondary Education and Chief Innovation Officer
for the Directorate of Science, Technology, and Innovation

“How can the university achieve Open Innovation? Establishing a common language between science and the market where collaboration, where research and technology transfer is measured in terms of impact and value creation too. Itineraries from the lab to the market should be defined.”

Oscar Sala

The Collider Director in Mobile World Capital

“We created a knowledge transfer Vice-Chancellor and a knowledge transfer Commissioner to carry out open innovation based on internal talent. We are developing other strategies like introducing innovation and entrepreneurship as subjects in all UPF degrees; launching the UPF Knowledge Platform to transfer knowledge (videos, books, articles, podcasts) to society, and a setting up a department that creates startups.”

Oriol Amat

Rector en la Universidad Pompeu Fabra Barcelona (UPF)

There are a number of universities advancing student innovation and the relationship with other stakeholders to share assets, resources and knowledge.

Reference practice

Arizona State University has designed a competition that challenges and advances university student innovators who aim to develop hard tech ventures. This competition makes it possible for them to win prize money to help kickstart or grow their ventures. ASU partnered with some sponsors to this effect: Breakthrough Energy Ventures, ASU Ira A. Fulton Schools of Engineering and eSeed Challenge. BD, Amazon Web Services, AVNET, ONSEMI, SOURCE are innovation sponsors.

IE Business School, together with MAPFRE, created *VentureLab Insurtech Edition*. Participants can join Mapfre’s Accelerator program and compete for funds to launch their startup. This program sparks innovation and identifies disruptive proposals to reinvent the insurance industry.

UNAM and TEC Monterrey, two major universities in Mexico, have created a consortium with CEMEX and FEMSA (leading companies in the region) to promote research, technology transfer and entrepreneurship. Both institutions will contribute a seed capital of Mex\$10 million each to develop projects.

The city of Miami hosts a District of Innovation. There is an Innovation Center in South Florida where the government started working with universities, investors, companies and entrepreneurs. **MUST University** contacted local authorities to create a local hub to serve the Latin community in Miami and bring in people from Latin America to experience this ecosystem.

The Collider in Barcelona works with nodes that interconnect to permanently learn. It was set up for technology transfer, creating spinoffs and new ventures. It is a space for dialogue where entrepreneurs, scientists and the market work together to open new market segments with more opportunities for everyone. This effort is to ensure a permanent connection between knowledge and the market/industry.

The **Universidad Internacional de La Rioja** created the “UNIR ITER”, an international center for innovation with the purpose of promoting learning through technology. It is managed by researchers, developers and project managers who have extensive experience and expertise in pedagogical design, social science research, technological development, educational policy and research management. They work collaboratively with multinationals and NGOs.

Community Engagement

Universities will be at the center of the communication and connection with their stakeholders. Stakeholders, in turn, will take part in making decisions to improve the learner experience, develop opportunities, maximize the impact of socioeconomic conditions and expand their networks and partnerships.

“Universities should make alliances with job platforms as they know in real-time which job offer exists, the specific skills that are needed, the new or most sought-after professions and what does the market need.”

Jordi Arrufi

Program Director in Barcelona Digital Talent

“We have industry advisory councils to make sure students are getting the type of education needed by employers.”

Peter Cohen

President University of Phoenix

“Universities should train people to solve problems in the community. Create courses with human-centered design, find local issues and try to tackle them. Universities have to collaborate with startups, businesses and NGOs and create strong partnerships and not only a two-month internship for the students.”

Dr. Mohammad Harb

Founder & Director of the American University of Beirut Makerspace

“Universities, regardless of where they are, have to develop talent that is ready to work anywhere in the world. Universities should serve as knowledge hubs and help change management processes to ensure high competitiveness. Universities should always be ready to adapt to changes in socio-cultural contexts.”

Jose Manuel Martínez-Sierra

General Director, Barcelona School of Management

“The Education Community needs to understand which skills are valued and why they are important. We should encourage students to explore multiple learning paths, different careers and viewpoints of having a full-time job. Diverse university partnerships, networks and input from different stakeholders will help in achieving diversity in thinking”.

Geoff Perry

Executive Vice President in AACSB International

This community engagement must consider partnering with businesses to understand the market and prepare professionals with the necessary skills.

In order to stay relevant, direct partnerships and communication with the business community are essential. As a university, it is crucial to identify the gaps that exist in the community to ensure full understanding of the skills required and prepare students to fill those gaps. Constant dialogue is essential to understand the way these jobs will be modified because it might require different and more complex skills.

There is no way to create a lifelong journey for each student if universities and jobs are not completely connected. In the future, the private sector (businesses, EdTechs and consultants) should be involved in the creation of a curriculum which can positively impact every student's life and the future of jobs.

Interview with **Nadine Diaz-Infante**, Associate Partner at McKinsey & Company.

Learning and Innovation Hubs

The university as an interactive learning hub. These hubs are designed to create university startups, and have patents and technology transfer methods to become an integral component of an innovation system.

“Universities need to create maker spaces for students to be able to use advanced technology, develop skills and teach them how to optimize projects. These innovation hubs are opportunities for students to innovate, empower them with trust and confidence to be makers, create and imagine more. Moreover, these projects can even be monetized.”

Dr. Mohammad Harb

Founder & Director of the American University of Beirut Makerspace

“You don't need a huge infrastructure to offer a good experience — it's more about what you offer. Universities should be like hubs where they connect students to different stakeholders. They should function as WeWork companies and even schedule meetings with entrepreneurs to learn from their experiences.”

Renato Souza Neto

Chairman MUST University

Reference practice

Fraunhofer is referred to as a global role model for innovation. As an example, the Fraunhofer model is taught as a case at the Harvard Business School (Comin, Trumbell, & Yang, 2011).

- The Brazilian government launched an innovation initiative in 2011 that includes the set-up of **Embrapii-Institutes** (Empresa Brasileira de Pesquisa e Inovação Industrial), which were designed and implemented according to the Fraunhofer Model.

4. Purposeful

The purpose of a university is not invented or created: It is discovered, and it is a crucial factor to provide greater access to resources and collaboration.

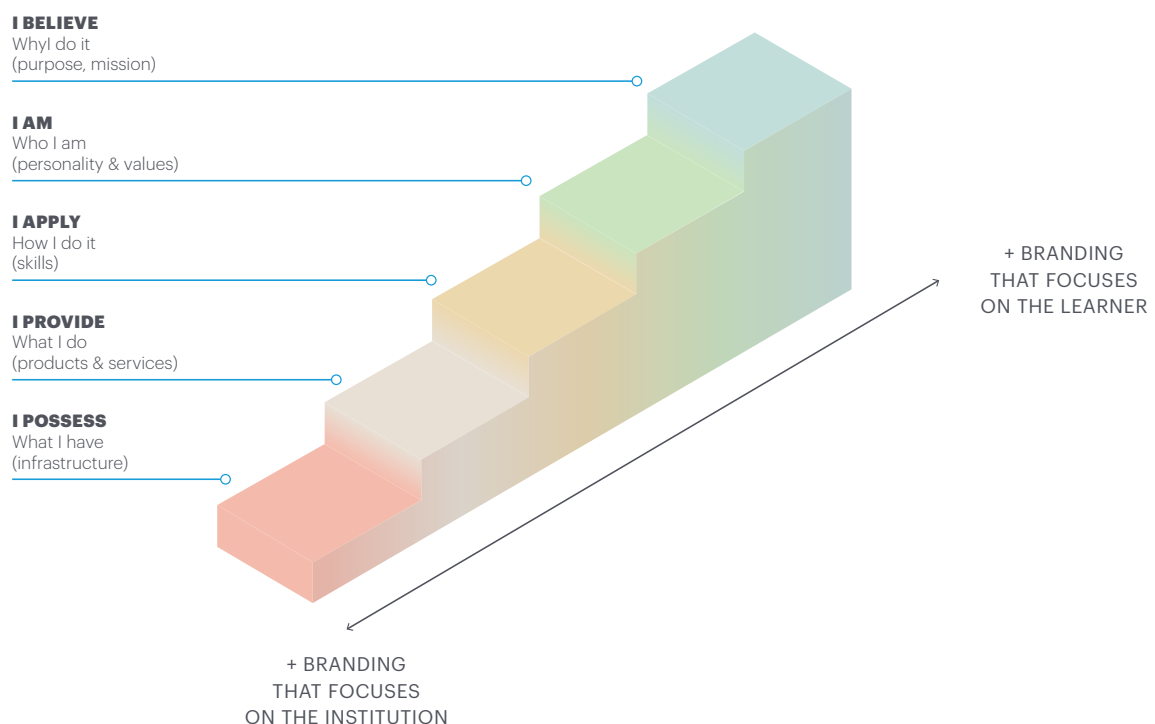
In the future, institutions will redefine their legacy based not on the rankings but on the alignment of their purpose to that of their learners. Responsiveness and adaptability to external factors will be of vital importance.

“Universities are in the business of sharing knowledge, a conception of the original universities. The core of what universities are doing now is not aligned to what society needs.”

Ben Nelson

Chairman and CEO Minerva Project

A world-class university will be a system of its own. It will be less dependent on the traditional education system of the country. It will aspire to create spaces to connect with brave and curious global learners, people with enthusiasm and tenacity to find what they are passionate about, what makes them shine, what creates an impact in the world and what drives their ambitions. To search for this, universities need to create an inspiring narrative that generates change and demonstrates the emotional quality of distinctive storytelling with impact.



Value proposition and rankings

Rankings are no longer merely based on academic qualifications and research, but rather on educational impact that is applicable, concrete and generates real, measurable value for the community. Consider borderless and new types of competition, such as Public-Private Partnerships.

“A University degree is a signal that compiles all the skills, experiences, brand and networks that support you. Where you study, there is a reputation and a brand associated. It's not only about what you «learnt» there.”

Leo Schlesinger

CEO Aliat Group

“The majority of students attend large public two and four-year schools close to where they live, and thus rankings of the top 200 colleges in a country often aren't relevant to most of the students applying to post-secondary institutions. We need to continue to work on providing a way to measure the return on one's academic and economic investment in HE. Should we measure earnings, or school costs, and how long after graduating?”

Peter Cohen

President University of Phoenix

“We need a classification system that is built on what the university is attempting to accomplish, not how many students they don't admit, something elitist that has been embedded around the world as a measurement of success. We need a ranking of performance against the university's mission.”

Michael Crow

President of the Arizona State University

“We should recognize more the experience of students and the employability path after they graduate. If you have a student that is completely satisfied with the experience, services and price that they got, word of mouth is a very powerful brand recognition strategy. For example, we don't use aggressive marketing; it's more about our reputation in the market and graduates' word-of-mouth publicity (our acquisition cost is very low).”

Renato Souza Neto

Chairman MUST University

"The sustainability factor must be considered, the same professor has the possibility of teaching simultaneously in several universities in the world without having to travel and consume resources."

Eduard Martín

CIO & Intelligent Connectivity Director, Mobile World Capital Barcelona

"Of course rankings should be about outcomes and return on investment, but also care about the type of jobs your students are getting, the new responsibilities they are acquiring, if their work team is happier, or if they are collaborating with their community. I believe organizations are going to change Educational Rankings based on the impact the graduates they are hiring are having on the workforce."

Patricio Bichara Assad

Co-founder & CEO of Collective Academy

"Rankings in the future will still be linked to outcomes. However, what could change is how you are achieving those outcomes, as well as including metrics of wellness and social mobility. During the learning path, universities should focus on the well-being of the students and the socioemotional skills integrated into the curriculum."

Nadine Diaz-Infante

Associate Partner at McKinsey & Company

Impact for learners

Considers the learner experience, their community and well-being. Therefore, the academic processes are carefully designed to be efficient; there are clubs and societies, policies and programs for well-being and mental health, and there is learner voice representation, mentorship and guidance for personal and professional lives.

Learners are considered agents of change with the possibility of actively designing the future, so the focus is on developing entrepreneurial skills, building innovative technologies, mastering soft and technical skills and turning problems into solutions.

There is an imminent need to develop the capacity to meet mental health needs. Among respondents of the survey by INSIDE Higher Ed and Hanover Research, universities have increased their budgets for mental health-related services, invested in telehealth services, increased the availability of appointments with mental health services, increased staffing for on-campus counseling consultations, allowed learners to have more flexibility with due dates for their coursework and placed an increased emphasis on inclusive care for BIPOC and LGBTQ+ learners.

Universities not only develop professionals; more importantly, they develop people. As they develop people, they also provide them with the professional skills, knowledge and tools to be employed, become entrepreneurs or do whatever they need to accomplish their dreams.

HE should not only be about achieving a degree. First and foremost, universities should focus on the student. The rest comes second.

There is no one-size-fits-all style of education; in particular, when you aim to serve those most in need and those that have the most shortcomings. Therefore, universities have to understand the baseline of their students. What was the quality of their previous Primary and High school education? Do they have the means to pay for their tuition or do they have to work and study? Are they really capable of studying online? What about their Reading comprehension or Math skills? Do they require additional tutoring or motivation?

Most universities do not have a curriculum that is relevant for the skills that will be required in the future. And it is not only a matter of providing hard skills but also the soft skills to persevere, work in teams, lead and communicate, understand who we are, where we are going and what type of citizen we want to become.

Universities have a role in developing full-fledged, responsible citizens that will contribute to society and achieve their full potential.

Interview with **Leo Schlesinger**, the CEO of Alliat Group

“We need to teach our students to think. And we start by identifying what's relevant. Right now, there is a complete disconnect between the time required to learn a skill and the time invested in education; it seems we only hire our teachers to speak.”

Ulrik Juul Christensen

CEO AREA9 Lyceum

“With the generalization of social media, classic educational classes are not able to compete to grasp the attention nor interest of the students. Therefore, if we want to have them involved, we should put the individual aspirations and needs of students in the center of education and make sure they are ready for the job market. Education should be about developing the right mindsets for youth to become responsible leaders, innovators, entrepreneurs but also proactive and fulfilled employees that are pursuing meaningful goals.

We have to understand that offline and online are just channels, and that we need to provide all the resources needed to students for them to achieve meaningful income generating opportunities and ultimately their purpose in life. The future of education is to centralize all the available opportunities in a structured and attractive way. Gamification and technology are at the core of the solution.”

Hamza Chraibi

President and Founder at Arab Excellence

“Ethics needs to be a cornerstone of how we do business. This is why it is important to develop soft skills in professionals, to include them in business training or any formal/informal education. We have a responsibility to develop citizens and leaders that embrace values and put their commitment to them before any economic benefits.”

Jose Manuel Martínez-Sierra

General Director in Barcelona School of Management

“Our OBS Student on Methodology” is based on a pedagogical proposition which is 100% online and offers flexibility to students. We focus on student follow up. We have daily follow-up of the students with an operational team and we evaluate our students satisfaction constantly.

Our OBS Master’s courses are taught in weekly activities, they have mandatory and additional resources, a weekly debate, continuous evaluation and we encourage activities that need teamwork to develop more communication and intercultural skills.”

Casilda Güell Ampuero

Dean in OBS Business School

“Universities are used to working in silos, so we need to start thinking about the programs and courses in a collaborative way. Their programs have to be more multidisciplinary and applicable to any career/life choice. The content is out there for free, so the key to learning becomes how you deliver classes. Our role as university leaders is how we support the faculty to achieve these changes.”

Patricio Bichara Assad

Co-founder & CEO of Collective Academy

“You must think about the student experience. It's hard to acknowledge, but if you think about the student experience that your parents had, it's probably very similar to the one you had. It's not only about the content, but the way you deliver it. Think about how you are leveraging digital education, artificial intelligence, virtual reality, etc. Are you including virtual reality for students learning medicine and watching a doctor performing a live surgery? Are you using high-end videos as an educational resource? Thinking about «What a perfect study journey looks like» is a priority today.”

Nadine Diaz-Infante

Associate Partner at McKinsey & Company

“We created «non-academic» experiences to deliver value as well as ensure they learn to create, curate and integrate learning resources.”

Juan Freire

Vice-Chancellor of Innovation and Transformation from Tecmilenio

“There is an increasing amount of stakeholders working around education, so the content and information becomes a commodity. The university has to be student-centric and act upon the student's needs.”

Eduardo Gómez Martín

President in ESIC

Reference practice

The President of the University of Phoenix, **Peter Cohen**, explained their vision: “We want to be an empathetic university and recognize the very demanding lives of our students and how hard it is to squeeze in time to earn a degree among other family, work and community priorities”. As consequence, they have created:

- Math and writing centers to get students back on track and help them succeed in their careers.
- Social and Facebook groups where mentoring, encouragement, recognition and community is provided.
- Support services: coaching, career advice, job placement, career assessment, tutors, professional development and alumni services.
- Social networks to leverage in the future.

The University of Phoenix considers themselves a “career partner” for their students. They believe it is the responsibility of a university not only to educate students but also help them get a job and support them in their professional life.

Digital revolution meets human evolution

“The role of education is changing the world. Education should be the lighthouse that helps students change society.”

Taddy Blecher

The biggest gains will occur as we factor in the human element, beyond delivering content and passing exams, education institutions with integrity care about what learners can become.

And that is what matters about education — it is about what the student needs and wants to be to feel successful, reach their potential and achieve things they are passionate about. The world changes so fast and students need to develop abilities to face life.

A ninja is a fighter that can take on any challenge. Learners become ninjas at their mastery to learn any discipline. The main mission is to awaken the consciousness of every human being to be completely self-sufficient and independent.

Experiences replace traditional teaching, are action-oriented, are built around powerful thinking and form new connections in the mind. We still need the values, content, tools and teachers, but experiences have to be an integral part of learning. Education should be experience-oriented, for that is how the world works. This means, among other things, organize learning around challenges and projects instead of textbooks.

Human potential develops from within, raising consciousness inside the mind. Any education system that does not develop human beings in a holistic way will have no future. If evolution is restricted to technology and neglects human beings, the imbalance will prove unsustainable.

The potential of every learner is much larger than what any traditional educational system can measure.

5. Pathways and traces

The modern learner recognizes that traditional education models are no longer sufficient for sustained success and a meaningful life. This learner seeks educational opportunities that are flexible and varied; offer the possibility to to create a highly personal learning journey; are based on sought-after skills, and respond to areas of interest and life events that empower their learning process.

Partnerships with other HED



The modern learner needs an education that lasts a lifetime and prepares them for life. Learners have the autonomy to chart individual pathways with various modalities, topics, time periods, contexts, and levels of rigor, providing a highly flexible landscape for personal growth.

The representation we propose is inspired by the London Underground system: one can access at any station and follow a pre-set path that interconnects with other directions and lines, and exit when the destination is reached.

In education, each station may represent a point of entry, a validation of previous experiences or skills. Every stop may give learners a badge, a certificate or validation that they did transit a journey. Learners may get to a point where the line offers alternative directions, other disciplines, other skills, the company of different travelers. Yet, learners remain motivated until they reach their destination, and their ticket is valid for life. Until your next ride, MIND THE GAP!

Personalized Educational Technology and omnichannel learning

When technologies are properly applied, they allow for intentional opportunities for revolutionizing learning models through flexible, practical, learner-oriented experiences through synchronous and asynchronous teaching delivery. Additionally, they provide equal opportunities and multiple channels and platforms to contact, interact and engage with the learners.

Current content blocks are generally too large to address and allow for personalized learning. In the current higher education landscape, content providers and assessment frameworks alike are unable to provide flexibility for personalized and decentralized learning content and assessment models.

The future of learning is modular and largely flexible. This will allow the learner to choose learning blocks to learn a skill.

Technology will help in assessing the learners' skill levels and personalize learning content depending on individual assessment outcomes. Currently, there are voices claiming 80-90% wastage of time and resources as the available content is available in a "one size fits all" format, with no customization for individual learner and learning capabilities.

"Technology platform providers need to understand underlying pedagogies and educational tasks in order to best serve their clients and become a support system for universities. Otherwise, these companies run the risk of over-engineering platform features and functions or totally missing the mark on what their customers need."

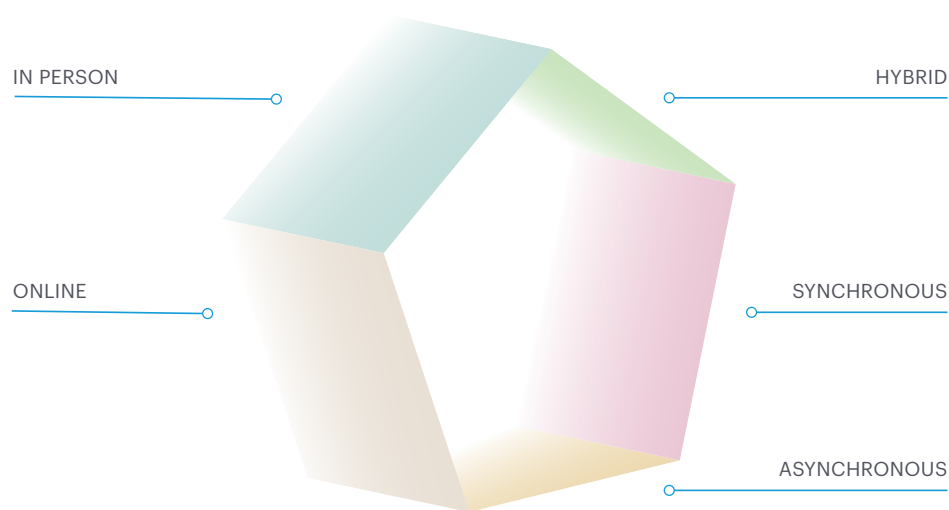
Karen Yoshino

PhD, Higher Education Consultant

"Leverage artificial intelligence and algorithms to track how students are evolving. It can be as specific as which type of exams they are good at and then create a learning path based on their needs. Technology has to manage the whole student lifecycle from prospective students to alumni and personalize the experience accordingly."

Thorsten Fuerbringer

CEO of Simovative



How will universities be able to cater to such smaller content and skills blocks?

By designing the most relevant learning experience for the most relevant learner at the most pertinent time and space, with the most appropriate level of support and intensity. Each channel represents both challenges and opportunities. An institution will need to carefully design for every channel and every level of support and intensity.

There is no one channel nor format that serves all learners in all contexts all the time. This means that, for example, an asynchronous delivery model may serve one purpose for one learner at one stage, but not always.

To be effective on this type of design you must always consider the returns that education can bring:

- A **return on learning** means that the outcomes are accomplished.
- A **return on investment** means that the cost to acquire learning is adequate to your financial capabilities and expectations.
- A **return on time** means that time is treated as a valuable asset, and it considers options where time is appreciated rather than depreciated.
- A **return on information** means that the experience provided insights about all different dimensions and that it can be improved based on evidence.
- A **return on trust** means that the learner can feel safe at all levels. The effort is recognized and validated by trustable sources.
- A **return on impact** means that disadvantaged learners, vulnerable learners or learners at risk received all means to reach their full potential. Gaps were significantly resolved.

Methodology developed by **Fernando Valenzuela**, 2020

Reference practice

AREA9 created “LearnSmart Products” to personalize the learning journey considering the student’s weak areas. Formative assessments with the required high accuracy, in conjunction with AI technology, will help students and universities find the appropriate path to acquire knowledge and skills. This approach has reduced dropout rates by 20-30%.

OneScreen developed software with AI to measure student engagement by analyzing gestures. After determining how engaged the student is, different types of personalized quizzes are automatically delivered.

Validation without Boundaries

Given the multiple entry and exit points, there are different educational paths crossing from vocational, technical and academic qualifications. There is regulation, validation and recognition between formal and informal education to validate competencies, credentials and skills. There will be bite-sized content and curriculum developed by publishers and content providers. There will also be increased collaboration between businesses, universities and governments. Digital credentials and skills wallets will be owned by everyone.

The key component of this strategy is to be able to distill the objects of validation and embrace an open-intake from previous experience:

- **Segment.** Any asynchronous media or activity, including videos, readings, quizzes, worksheets, trips, projects etc.
- **Course.** Mix of asynchronous media and activities, with a progression of synchronous classes, experiences, projects, and assignments.
- **Sequence.** Multiple courses arranged with connected topics and related skills clusters.
- **Certificate or Degree.** Structured series of course sequences culminating in a diploma.

What if universities, schools, and/or online programs could offer certificates in the form of tokens (NFT)? This would in many ways substantiate the achievement and make it easier to validate the claim.

- Transcripts and Records
- Scholarships and Entitlements
- Masterclass and Content Creation
- Learning Experiences

By Paul DelSignore

“Educational institutions are working with companies like Amazon, AWS or Google and adapting certification models. This is not aimed at replacing HE. Rather, it aims to change careers, allow more and better upskilling, and improve education overall.”

Felix Goh

Google Strategic Lead -Singapore | Education, Research, EdTech

“Educational institutions are working with companies like Amazon, AWS or Google and adapting certification models. This is not aimed at replacing HE. Rather, it aims to change careers, allow more and better upskilling, and improve education overall.”

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Google Strategic Lead -Singapore | Education, Research, EdTech

“In the future, Blockchain technology will be the new commodity. For education, it is going to be critical as proof of learning and experience. Once there is more disseminated and robust blockchain technology, you won’t have to prove your experience and knowledge as technology will validate it even without an intermediary. At MUST University, we are starting to do that by issuing certified digital diplomas to show to employers.”

Renato Souza Neto

Chairman MUST University

“Microcredentials are being used by students to position themselves in different networks. This type of technology is part of the future.”

Casilda Güell Ampuero

Dean in OBS Business School

“We have incorporated microcredentials and guided projects into the curricula. We want to add value to our students and guarantee they develop more practical skill sets and a competitive advantage when graduating.”

Isabel Fernández

Director of Universidad Alfonso X El Sabio

Leveraging Learning Data and Analytics

Data analytics will facilitate a more complete analysis of available learner data. These data will be gathered through various sources and used to customize learning content for individual learners; drive personalization in learning paths; inform teaching methodologies, and predict expected outcomes to make better decisions that consider complexity, impact and different integrations for the learner's career, interests and capabilities.

“With the digital component and the data, each student's experience can now be personalized. The leader is the owner of the data and universities should leverage it.”

Jordi Arrufi

Program Director in Barcelona Digital Talent

“A low passing rate of a particular module can be addressed by offering adaptive learning courses. Universities can adapt the content based on the mastery of the student. This way, universities can improve learning outcomes and overall student retention.”

Thorsten Fuerbringer

CEO of Simovative

“Universities used to have an LMS but now they are looking at training management systems and student management systems as well.

The main issue is the concurrent usage of multiple management platforms with different purposes. Universities need to look for partners to centralize efforts and leverage the information and data they are gathering.

Many processes, like assessments, are still very manual. We have to work smarter and use AI to collect more and better data.

AI is coming so fast that universities have to consider how to use it with agreed ethical standards.”

Felix Goh

Google Strategic Lead (Singapore) | Education, Research, EdTech

“Our next steps are incorporating AI and Virtual Reality. We want to be much more intelligent on what the student is doing and learning; tailor our attention to students by means of Machine Learning; get real-time feedback, and know how to personalize their experience based on their needs.”

Renato Souza Neto

Chairman MUST University

“Hyper-personalized learning leads to new opportunities through the ability to connect information. The usage of Data analytics in education institutions is becoming more common but still needs to go a long way to achieve its full potential. The more we learn by adopting and utilizing technology, the better the data about our students becomes. Accordingly, we can understand how well we are progressing as an institution, helping the students achieve their learning potential, and identify their strengths and goals.”

Geoff Perry

Executive Vice President in AACSB International

“Although regulation does not make it easier, we must take advantage of big data tools to understand the needs of the labor market and the profiles that are published on the platforms.”

Oriol Amat,

Dean, Universitat Pompeu Fabra (UPF)

Reference practice

Neoma Business School (France) is a 100% virtual reality campus with a 3D experience and courses in immersive virtual reality. Students do not have to attend in person but are able to interact. They have an effective engaging learning approach, personalized learning which comes from the data gathered.

The questions these types of campuses raise are: How can we scale this model? Should universities create this technology in-house? How should universities prioritize which processes to automate, enhance or improve to create these experiences for students? Which is the best learning approach for students?

Always present, always engaged

Learners are becoming more active in their learning and development. As a consequence, processes and tools need to measure learning outcomes such as gained competencies; the learners' ability to act, create and co-create, and critical and creative learning capacities. Many channels are used to keep the learners engaged, proactive, motivated and always learning.

"We need to understand that even the speed of learning matters to keep students engaged and actively learning. We also need more disciplinary learning and collaborative work."

Ulrik Juul Christensen

CEO in AREA9 Lyceum

"If students have a clear understanding of the competencies they are developing in their educational journey, they are better equipped and empowered to continue developing them. They have a learning target. At the same time, instructors have a teaching target. Student assessment is simply the mechanism that gives us evidence that the competencies have been achieved. Similarly, the assessment of learning outcomes is the mechanism that tells the institution the extent to which their teaching goals have worked or not."

Karen Yoshino

PhD, Higher Education Consultant

"Every aspect, policy, and process should consider whether *this is good for students*. For example, we have predictive analytics with AI that send prompts to motivate students, remind them of their purpose, and keep them focused on their goals."

Peter Cohen

President University of Phoenix

"Universities have to commit students to their education. The best example is to learn what will be taught in class with a flipped- classroom methodology."

Ben Nelson

Chairman and CEO Minerva Project

"We need to create collaborative and active environments where students and teachers learn from each other. Anyone should be able to add valuable resources to the lessons and provide project assignments for experiential learning."

Zunaira Munir (Zee)

VP of Global Business at OneScreen

“Instead of calling them students, we call them aprendedores (learners). We think learning is an active verb, whereas teaching is a passive verb. You, as a learner, have the responsibility to participate, build knowledge collaboratively, and put it into practice. Learning needs to be actionable (e.g. interacting with videos, discussing, and acting). We like to use the top verbs in Bloom's taxonomy.”

Patricio Bichara Assad

Co-founder & CEO of Collective Academy

“It is indispensable to create student-centered institutions that promote active learning methodologies, more agile and flexible universities that overcome bureaucratic obstacles, invest in new technologies and are more connected with the business world.”

Ricardo Díaz Martín

General Director of Universities, CAM

Reference practice

The **University of Phoenix** has introduced a competency-based program with the following characteristics:

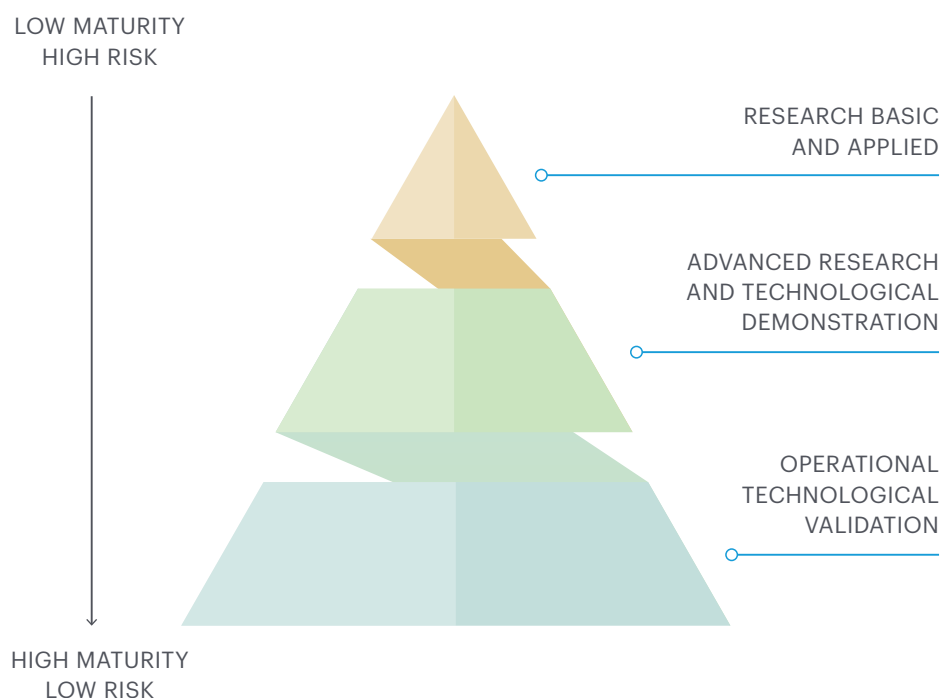
- Ensure there is convenience, time, money and quality needed for each student.
- Prior learning, assessments to know what students have already mastered and do not need to acquire.
- *A continue to fail while you master it “mindset”* (just like playing video games).
“It's ok to fail as long as I'm moving along the mastery path.”

Digital Divide

When new technologies are designed, they cannot be applied immediately. Instead, they are usually subjected to experimentation, in a context that becomes increasingly closer to real application. Only once the technology has been sufficiently tested can it be integrated into a product or process.

As the exponential massification of connectivity becomes a reality with 5G, 6G and prevalent, always-connected devices, universities will clearly need to specify the levels of technological maturity expected at both the infrastructure and human levels against the level of technological risk assumed and the technological leap undertaken. Network technologies such as 5G, IoT, SDN/NFV and others, will drive new service and network architectures, new operational models and new business models.

To accomplish this, universities can leverage the Technology Readiness Level (TRL) scale, adapt it to their educational purpose and use it as a mechanism to manage technological risk at each level of human and infrastructure maturity stage:



“In the future, we will replace all the standard processors with 5G- capable and AI for communication processes used for higher and better communication skills. This will imply major changes in higher education.”

Zunaira Munir (Zee)

VP of Global Business at OneScreen

Reference practice

There are solutions that make use of the IoT to facilitate access to the campus for students with visual impairment. They also make the educational offer more accessible for these students, turning the environment into truly Phygital campuses.

Fluid University

In the existing scenarios, the best success metrics are related to elements like placement rates and starting salaries.

The fluid university will need to evolve as the nature of work evolves too. Life expectancy continues to increase, and the idea of a specific time when people prepare for a work stage no longer reflects the real world of accelerated paths and interdisciplinary challenges.

In the past, we learned in order to work. In the future, we will work and continuously learn in an age of rapid reinvention of digital assets (scalable learning).

Scalable Product vs. Scalable Learning **John Hagel**, Deloitte

Bearing in mind a context defined by continuous and accelerated technological advances, universities should be considered “conceptual platforms” where individuals operate across expanding grounds; engage with very intense, scalable, on-campus learning across all segments and types of society; experience advanced, interactive, computer-enhanced, online learning, and benefit from emotionally-engageable, technologically-enhanced learning through virtual reality. Ultimately, learners require a highly individualized path with accelerated learning and individualized learning to be customized depending on individual strengths and weaknesses.

Interview **Michael Crow**, President of the Arizona State University

According to the World Economic Forum, freelancers will become the most prevalent workforce. Learning agility and adaptability will drive the fluidity of programs as learners remain engaged for life.

- **Learning agility:** Learning and unlearning.
- **Adaptability:** Managing to navigate amidst chaos and ambiguity, solving unstructured problems.
- **Human skills:** Demonstrating empathy, social intelligence, and creativity while keeping highly ethical values.
- **Agency:** Showing resilience, self regulation and self-awareness.

As we transition from the information era to the digitally augmented era, machine capabilities enter human cognitive labor domains. Older employees will no longer be only employed by old economy companies and young entrepreneurs will no longer be the driving force behind startups. A blended multi-generational workforce requires a different set of skills.

Fluid institutions will offer a set of general education courses that are designed to teach interdisciplinary skills and knowledge with a focus on cultivating core competencies (creativity, agility and adaptability) which are key factors for cognitive augmentation in educational and professional success:

By **Jeff Kowalski**, CTO Autodesk, Concept of Augmented Era

- Critical Thinking.
- Creative Thinking.
- Effective Communication.
- Effective Interaction.

The basis for this curriculum was pioneered at Minerva University.

Interdisciplinary curricula, which incorporate both personal and interpersonal skills, prepare learners to transfer knowledge across domains, work effectively in teams, and develop novel ideas. For example, learners need to understand how to apply fundamental concepts in computer science to solve real-world problems. Demonstrate the ability to think logically and systematically about problems, breaking them down into a clear, ordered set of concrete steps that could be implemented by a machine.

Designing projects and assignments centered on authentic problems, as well as immersion in genuine business and societal contexts achieving understanding through lived experience.

- 1. Learning Taxonomy:** the hierarchy of competencies, sub-competencies, and constituent skills and knowledge that Minerva defines for every partnership acts as the DNA of its program designs, enabling both consistencies across courses and flexibility for individual courses or program components.
- 2. Curricular Scaffolding:** by structuring curricula with "stackable" components that include multiple areas for application across domains, Minerva enables intentional intellectual growth and a progression toward personal choice (or individual freedom).
- 3. Fully Active Learning:** synchronous online or in-person, every class session is built for maximum learner engagement. This methodology has been shown to improve uptake, as well as retention and recall of key concepts.
- 4. Integrated Experiential Learning:** through direct connection with the academic programming, integrated experiential learning, in relevant contexts, reinforces — through application and sustained practice — the skills and concepts introduced in classes.
- 5. Frequent Feedback and Longitudinal Assessment:** the learning taxonomy is also the basis for the evaluation of individual learner progress and overall program impact. Instead of relying on a few, high-stakes exams and assignments, which measure understanding and recall at a single moment in time, Minerva combines frequent, low-stakes, formative feedback with higher-stakes summative assessment of key assignments and major projects.
- 6. Advanced Digital Technology:** by using digital technology as the basis of the delivery system, Minerva makes both instructional and learning data more visible, applicable, and interconnected. Activity in one synchronous session informs the next, concepts learned in one domain are reinforced in others, and learning outcomes are consistently monitored and measured.

Guided by WNelson and Ayo Seligman, Minerva Project.

“Learning to learn is more important than learning concepts. This skill will help you at any job position.”

Leo Schlesinger

CEO Aliat Group

“The future has to be more skill-based and with the abilities to relate with others, prioritize social relations, humanities and civic knowledge”

HE David Moinina Sengeh

Minister of Basic and Senior Secondary Education and Chief Innovation Officer for the Directorate of Science, Technology, and Innovation

“Our students really need support to advance in their career, so we are not only giving them a diploma or a degree but have developed services from pre-enrolment to alumni that include mentorship, career assessments and mapping of skills to courses needed to achieve what employers are looking for. We want to be a university that provides services for the life of your career, not the life of your degree.”

Peter Cohen

President University of Phoenix

**“Engaging and up-to-date curriculum can encourage creativity, critique, inquiry and the ability to solve problems.
Lifelong learning considers the changes in the market and jobs, therefore, entrepreneurial skills might be better than management skills, as it teaches to create, adapt and innovate”.**

Geoff Perry

Executive Vice President in AACSB International

“There will be an increasing amount of automation and digitalization in future jobs and the implications will be:

- **people have to either be very flexible in changing jobs, or**
- **they need to be able to learn different skills.**

We are moving towards higher cognitive and socio-emotional skills, because in a way, we must stay relevant to other forms of artificial intelligence. So in order to succeed, the skills needed are adaptability to new situations, coping with uncertainty and synthesizing messages. These skills can lead to even more positive outcomes like employment, higher income and job satisfaction either with students or when working in corporations. Universities including these skills in their curricula either in specific courses or embedded in different elements in the curriculum would take the lead.”

Nadine Diaz-Infante

Associate Partner at McKinsey & Company

"I think there are skills of an operating system (which makes all apps connect to each other) vs skills like apps. We have different apps, and we need to update them, reskill and upskill them. The operating system apps are skills like judgment, critical thinking, curiosity, judgment and some soft skills. The university has to change its role, a university has to be a hub of critical wisdom where students have to always strive for operating system apps as they can help you adapt in every moment in your personal and professional life. The university does not have to be the Netflix of education, for that there is already Google, Masterclass, Coursera, etc. They just have to develop the ability to be critical, so that you are always able to apply it."

Ivan Bofarull

Chief Innovation Officer in Esade Business School

"To train the professionals of the future, it will be necessary to train them with the ability to learn constantly and with an holistic approach, even more if we bear in mind the new careers arising. Soft skills should be prioritized in every career rather than technical ones, because in the future, students will need to know how to communicate, how to deal with emotional intelligence and learn continuously. Additionally, soft skills should be reinforced with digital skills. I think that the digital layer is going to be something transversal in every career but this has not yet reached its maturity, as it continues to be only a specialization in specific areas."

Eduardo Gómez Martín

President in ESIC

6. Augmented learning experience

The role of a future teacher, and educator in HE will be more of a facilitator who can enrich learners with their own experiences during the process of imparting knowledge.

Teachers & technology will increasingly work side by side, but teachers-centered skills will become more and more sought after as critical thinking, leadership and interpersonal skills become highly valued.

Technology is the catalyst to change in the workplace but teachers are the sustaining force behind the machines. Also, the XR technologies can help the teachers to amplify deep learning for all areas within the context of a maker space model. The learners will learn curricular concepts, guided by the teachers, and then they have the opportunity to apply that learning in a digital fabrication lab with XR technologies.

Active nodes

Teachers are specialists, tutors, mentors, facilitators, motivators and guides while learners own their learning process. There are co-teaching methodologies, e-tutoring, collaborative virtual and on-site environments, and learners are connected with other learners and relevant stakeholders to enhance the academic process, the up-skilling and reskilling.

“The role of the teachers is changing. We prepare our classes and assessments centrally, where algorithms are used to understand learning patterns, use bots to answer questions and automatize administrative duties. The only irreplaceable activity is teaching, and helping them with these tasks, there is time to connect with students, inspire, and even ask great questions to teach students how to learn for the future.”

Leo Schlesinger

CEO Alliat Group

“The teacher's job must adapt and grow as well. It is the role of teachers to encourage learners to take risks, to be creative, critical thinkers, problem solvers and embrace each opportunity that comes their way. Finally, teachers of the future must be data collectors, as well as analysts, planners, collaborators, curriculum specialists, intellectuals, problem-solvers, tech-savvies, and researchers, in light of a change toward a more personalized learner experience”.

Maggy Al Khatib

Head of Edu-Cater Pro Training and Consultancy Center

“Teachers should be mentors, find problems and support the community. It is not about only providing learning material, but teaching “learning to learn.”

Dr. Mohammad Harb

Founder & Director of the American University of Beirut Makerspace

"Instead of professors, we have mentors. We are using practitioners teaching what they live every day at work. Our mentors are subject matter experts from different companies, passionate about the topic while being good facilitators, and have a passion for sharing their knowledge. We like people that can integrate different perspectives and opinions and that can learn from different experiences."

Patricio Bichara Assad

Co-founder & CEO of Collective Academy

"Teachers not only have to be actively involved in research for academic purposes, but also they have to be closely related to the professional environment. They must generate specific and new value proposals."

Eduardo Gómez Martín

President in ESIC

"The great challenge for the university is the user experience, that the student has the best possible experience regardless of whether it is a physical, virtual or hybrid experience."

Eduard Martín

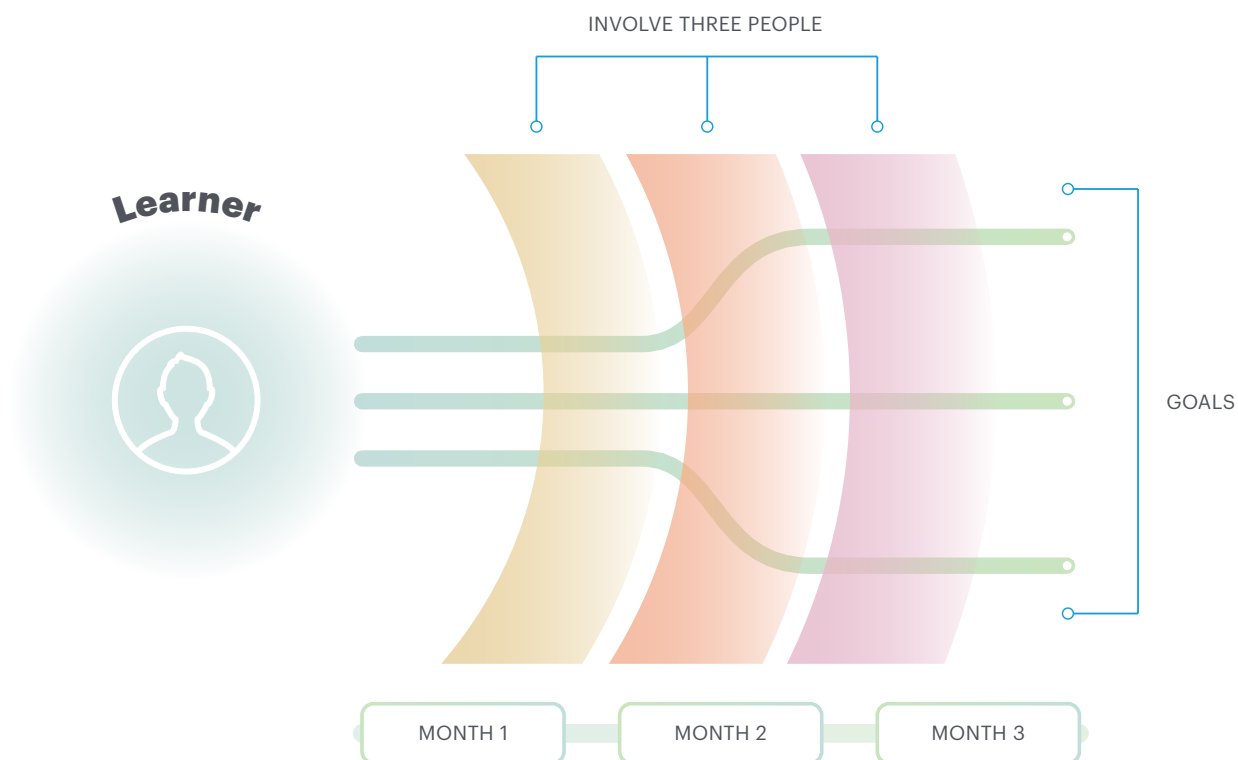
CIO & Intelligent Connectivity Director, Mobile World Capital Barcelona

Intentional learning model

Goal setting is measurable and attainable. For learning or improving a skill, learners set three goals, in three months and involve three people. This way, goals are measurable and attainable, learners are held accountable and there is constant supervision and support to motivate the learner through goal setting in their academic and professional life.

Reference practice

We want to highlight the 3x3x3 approach designed by McKinsey & Company. This intentional learning model encourages defining three development goals, over a three-month period and engaging three other people to support those goals and hold you accountable. It's a framework that we use in varying forms to help put intentional learning into practice to continually learn, grow, and achieve development goals.



Decentralization of learning

The content is available and accessible for everyone, knowledge dissemination can happen between teachers, campuses and even different universities. Students and teachers actively participate in a “creators economy” as well as using Open Educational Resources to democratize information.

“Dissemination of information might come in popular platforms, such as what is happening with TikTok and Youtube. Now everyone can plug information, and universities should take a huge role in curating it while technology providers will continue to leverage machine learning to scale it.”

“Universities should create “sustainable educational resources”: learning resources that cost a small fee (necessary to create quality content and compensate the authors), but enable dissemination of knowledge.”

Ben Nelson

Chairman and CEO Minerva Project

“Universities should take advantage of the best open content that is already in the market and incorporate it into their own educational offer. This allows for efficiency and effectiveness in the acquisition of knowledge, generates interaction and can be applied effectively in the professional space.”

Jose Manuel Martínez-Sierra

General Director in Barcelona School of Management

“In the future of education, universities will work with students to curate their own and individual learning path. Students can learn anywhere and even in other universities. In a world where everything is online, the curriculum becomes commodified and universities have to question which will be their value add. We don't have to do everything in-house.”

Geoff Perry

Executive Vice President in AACSB International

Reference practice

Chegg: it used to be a service for students. Now teachers are paid to upload their content, they democratize it between their users and sell it worldwide.

Reference practice

The Metaverse University: Teaching in the digital universe through avatars of different students who will have a virtual university campus will become a reality next September in Barcelona, where The Metaverse University will be located. In parallel to this virtual environment, a 600-square-meter face-to-face venue will be set up, whose location is now being chosen.

The target audience with which the university's virtual reality will open will be 18 to 54 years old; for all those people who “find the need to adapt to the digital transformation”. They will use microcredentials and will be updated every six months depending on the market and technology. Furthermore, there will be training in everything the blockchain is applicable to, like programming, creating NFTs, decentralized finances, and industry-related matters, such as traceability related to products that need to validate their origin. The driving force behind the project is entrepreneur Àlex Moga through his company Horizon Metaverse and with the technological support to create the metavers of Nubi.City, a virtualized and 3D remote work software platform. Nubi.City, based in Miami, is a business initiative under the responsibility of the entrepreneur Gustavo Medina, who is dedicated to creating virtual realities for companies that want to work remotely, such as Cargobot or Retemex.

He also works with the Sant Cugat company, Enchainté, which has developed its own blockchain. This startup will provide the blockchain software needed to certify the validation of titles and content purchased from Metaverse University through this technology. This will make it possible for the skills acquired by the student to be valid worldwide.

Initially, the training will be taught in Spanish — and “gradually incorporate English”, says Moga —, in 2023 the university is expected to open in other cities in Spain, starting with Madrid, Malaga, Valencia and Bilbao. Afterward, “the business can be scaled up in Latin America”, explains Àlex Moga. Moga does not rule out an alliance with other partners. “We could reach agreements with other platforms to create content in the format of animation, virtuality, 3D because this would increase the immersive capacity of the university,” beyond that there will be material in physical support. Metaverse University will have virtual meeting rooms, conventions, or congresses to address topics and debates on content related to the subject to which the courses are taught. In addition, Metaverse University will accompany its students with a mentoring service.

By Maria Teresa Coca (2022) in the New Barcelona Post.

7. From surviving to thriving in uncertainty

A perfect storm is forming, taking down old models of succession, and creating space for new leaders to emerge.

A new generation of leaders, firm in their values, driven by purpose, and cognizant that they are not the ultimate authority but a conduit for the will and well-being of their people. These are leaders with a conscious commitment to the welfare of all people and the courage to stand in their beliefs.

By 2030 "All members of the Baby Boom generation" will have reached the retirement age of 65 - with an average of 10,000 American Baby Boomers reaching retirement age every day between now and then;

Approximately 60% of Generation X will be 55 or over, past the current average age of 54 at which CEOs are hired; and

An influential wave of Millennials redefining the C-Suite and business, the Millennial way, will have firmly taken hold.

It's why barely a generation ago, people could work in one company their entire lives. It's why fabulously industrial expressions like "work your way up," and prescriptive military idioms like "moving up the ranks" are so entrenched in leadership culture.

It's why we picture a career "Ladder" because you couldn't get anywhere near the top unless you'd done every job on the rungs beneath. How else would you know how to lead?

One generation of Leaders would solemnly endorse their successors directly from those next-in-line, those leaders-in-waiting, from Generation Same-Same.

Generation Different just arrived, empowered by Technology, Social Trends and Workforce Shifts, is dreaming up tech to clean oceans, disrupting historic institutions and legacy industries with fin-tech and crypto, and skipping straight past brick-and-mortar retail with digital in their pockets.

They've had to be impressively resourceful. Generation Different leads by solving their own problems, getting things done, and making it up as they go along.

Got a great idea but you're not an executive? There's an app for finding people like that. Want to understand anything? There are online courses packed with knowledge it used to take years to learn. Need to build a collaborative team to help? There are start-up communities for this.

Generation Different hasn't been following traditional leadership paths. They haven't been building the skills and knowledge to work every single job on the Org Chart in sequence. Instead, they've been crafting the ability to Get Stuff Done.

Tomorrow's Leadership is less about the dictatorial all-knowing commander and far more about the enabling servant-leader, getting collaborative teams to work in more agile ways for more innovative outcomes.

Rather than apps and Org Charts, we'll need authentic human connection and true curiosity to find and enable our next leaders. Today's leaders must see and acknowledge where those who possess the uniquely human traits of initiative, imagination, resourcefulness, and collaboration are actually sitting in their organization.

We must wave goodbye to the assumptions of succession plans past and smile a big warm welcome at the opportunity to center human capability, knowledge, and savvy, regardless of generation, at the leadership tables of the future.

By Gifford Booth, CEO, The TAI Group, and AJ Moore BA / Director - Business adaptability for a digital world

HE institutions would need to enable leaders to learn and grow by connecting and learning from others. Risk-taking means that employees have regularly shared discussions to explore new concepts and ideas. Taking risks and learning from failure are valued concepts, and employees practice them in daily work processes.

The institution has had multiple generations and a balanced diversity of leaders at all levels. Reverse mentoring programs are common to build empathy between diverse leaders about their various perspectives. Targeted opportunities for networking and social exchange for leaders inside and outside of the organization are evident.

The Continuous Learning Technology Stack, Bersin by Deloitte / Dani Johnson, 2015.

The model for this scenario is to embrace an Evidence-based Entrepreneurship model: "We're on a permanent SEARCH for answers outside of the building" by talking and listening to relevant stakeholders and proposing "jobs to be done" by our institution.

The NSF I-Corps Program @ MIT The Scientific Method applied to Entrepreneurship

Define a temporary organization designed to search for a repeatable and scalable solution during a continuous cycle of:

- **Hypothesis:** our current thoughts
- **Experiment:** our defined activities
- **Insights:** our new learnings
- **Pivot:** new actions based on new learnings

In 2019, BCG and Hello Tomorrow Survey established that universities will be a determinant provider of indispensable inputs for success in taking a complex new technology to market:

- Access to sources of capital, and the expertise that venture capital firms can bring from previous experience in related domains;
- A network of advisors, peers, and mentors who can guide founders through the multifaceted challenges of commercialization — from legal matters to cybersecurity;
- Specialized and secure technical facilities such as labs and equipment to engineer and refine the product;
- A route to market, to access customers who stand to benefit from applying the technology.

HolonIQ developed the Higher Education Digital Capability (HEDC) Framework to map and measure digital capabilities in Higher Education institutions. They divided it into four dimensions (demand and discovery, learning design, learner experience, and work and lifelong learning). They included the consideration of how learners can be supported as they choose and change careers throughout their lives with continued education needs.

"Universities should think beyond Basic Research, creating the conditions to make and appropriate technology transfer to the market, through industry-research co-creation and promoting market oriented research activities funded by the industry."

Oscar Sala

The Collider Director in Mobile World Capital

"One of the most important characteristics of the leadership teams in universities is humility. Understanding that you don't have all the answers and that you have been away from the real world for many years. You must change your mindset to customer-centricity, being student-first. This means, determining if your programs are relevant (not expensive and boring), measuring and using the data to make better decisions, and measuring different things outside exams, including competency-based learning. This involves a lot of change management initiatives and, more importantly, have teachers get assessed instead of students."

Patricio Bichara Assad

Co-founder & CEO of Collective Academy

Academic and Business Intelligence

Holon IQ also realized the importance of putting institutional strategy, insights and customer (learner) focus at the start of the journey and establishing the importance of data to connect and personalize the learner experience at every stage and respond to the changing needs of learners, partners and markets.

Nevertheless, nearly 1 in 3 universities seek strategic partnerships to deliver digital capability. Larger universities are moving toward outsourcing digital capabilities since it's more expensive and it takes time to build their own capability set.

Data now connects every stage in the learner journey, enabling the creation of personalized communications across an array of channels and partners. Prospective learners are diverse and fragmented, requiring sophisticated tools and organizational capabilities to profile, segment, qualify and convert leads.

Universities will take strategic decisions based on their people, processes, technology, context and partners. With an institutional benchmarking, market insights and trends, and a learner focus, an institutional strategy will be outlined to deliver academic value and relevance. Further planning about business models, financial sustainability, learner enrollment and experience, internal processes, technology, teaching, learning and training will take place.

Estimated earnings and lifetime return-on-investment (ROI) for nearly 30,000 bachelor's degree programs across America were calculated by Preston Cooper and The Foundation for Research on Equal Opportunity. Individual financial returns to college are the paramount consideration for most students. Almost all students say access to a well-paying job is a primary reason for attending college.

**“It does not matter if it's a big, small, private or public University.
Your mindset determines your ability to innovate.”**

Thorsten Fuerbringer

CEO of Simovative

“To have the best leadership possible, universities should have Governance Boards with people in the Education, Financial, Marketing Sector, etc. Additionally, there has to be a differentiation between the ownership and governance board to guarantee the autonomy of the university.”

Renato Souza Neto

Chairman MUST University

“There is a phrase “you can make a big business by bundling, unbundling or re-bundling”. There is a life cycle of industries. Sometimes, to generate value, you create initiatives where you specialize in something (unbundle) or even rebuild services and re-bundle. I believe that higher education is going through an unbundle process, and in the future, it needs to re-bundle to generate value (reintegrate services).”

Ivan Bofarull

Chief Innovation Officer in Esade Business School

Lean Universities

Removing bureaucratic hierarchies and processes, break the path where academic disciplines are taught in rigid silos, and instead, find solutions globally and including stakeholders, plan and adjust all the time, adopt and adapt digital transformation, strengthen the entrepreneurial grit and everyone’s ability to bring creativity and innovation to solve complex and systematic problems.

There are many challenges in digital capability. According to Holon IQ, the greatest gap in digital capability is attributed to ‘technology’ for large universities. For small to medium universities, ‘process’ is the area of greatest need, followed by ‘people’.

“Although there are high costs to acquire or develop technology, universities can create innovative financial models because of heavy capex investment. There are many funds available or universities can work directly with EdTechs. It might cost in the beginning, but it has many advantages and great impact: accessibility and its scalability.”

Zunaira Munir (Zee)

the VP of Global Business at OneScreen

“A lean university provides services to increase the value proposition. A university should question whether investing in the best sports facilities vs research is the best use of their resources. A lean university:

- **Has great quality, teachers, content and technology.**
- **Is relevant for the future and the skills you need to succeed.**
- **Innovation: how do you keep up with advances that will come and invest in it.”**

Leo Schlesinger

CEO Alliat Group

“We need to incorporate the startup methodology into universities to make them agile, cost-efficient and give autonomy to the teams.”

Jordi Arrufi

Program Director in Barcelona Digital Talent

“Project managers and the methods of project management should be introduced into universities. Without skilled project management, attempts at change and innovation get derailed, delayed, or poorly implemented.”

Karen Yoshino

PhD, Higher Education Consultant

Reference practice

Additionally, we highlight an analysis by **Mario Barosevcic**, Principal at Emerge Education, where he created a blueprint for how to build a strong, differentiated challenger university.

Universities with no campus. Institutions with no faculty. Fully online enriching social experiences. Programmes with no courses or majors. Learning experiences with no textbooks. Meaningful employment as a default, not an exception. Student-oriented and co-created experiences. Pedagogically grounded and agile curricula.

Effective Leaders managing change

Structural changes or a culture of innovation can be difficult to navigate as there are several different layers affected by change management: the people, the departments, the academic or administrative teams and the overall institution. Most of the time, it's not welcomed and it becomes a burden when it's rushed, poorly handled or people do not understand its importance.

HE institutions are particularly under pressure to change because the field of education is constantly evolving, introducing new specializations, technologies, competitors, tendencies and new forms of pedagogy. But addressing change in higher education can be a huge task because there are so many different groups of people involved: stakeholders, faculty and staff, and students.

“We have to understand that younger generations are learning differently and there are paperless universities with digital curricula. We have to train people and make them more tech-savvy to adopt technology more easily.”

“The main obstacle in the adoption of technology is change management. We can use a modular approach to add technology components to make it more approachable, and always have training and support based on-time schedules and individual needs. If you are going to personalize learning experiences for students, this is something that has to be done with teachers and administrators.”

Zunaira Munir (Zee)

CEO of Simovative

“I believe that the biggest challenge is people adapting to change. That is why you should have a change management system.”

Felix Goh

Google Strategic Lead -Singapore | Education, Research, EdTech

“We need servant leaders that understand the needs of their consumers (students). Leaders need to acknowledge that organizations must innovate to stay relevant, to be willing to listen and change, support the staff, be flexible and give everyone the necessary resources to be successful.”

Peter Cohen

President University of Phoenix

“Let's build from tech possibilities instead of using technology, this new paradigm will create a new virtuous circle to generate impactful and sustainable innovation.”

Oscar Sala

The Collider Director in Mobile World Capital



5

Annexes

5.1 Annex 1: Voices and ideas

“There are careers with little technological training, but in the market, all professions are being transformed and the business models are changing (health sector, automotive sector, industry, etc. Digital and hard skills have to be included in every curriculum.”

“With the retail industry, we understand that the on-site did not disappear. This parallelism exemplifies that you can offer phygital experiences, making sure that the face-to-face interactions portray your brand.”

Jordi Arrufi

Program Director in Barcelona Digital Talent

“Higher Education needs to expand and promote the role of instructional design. While instructional designers are critical for online education, the principles of instructional design would improve the quality of teaching across all modes of delivery.”

Karen Yoshino- PhD

Higher Education Consultant

“We have to start using Proctoring Solutions and explore emotion analysis to see people's expressions during exams.”

“Fortunately, the market is pushing content providers to create better and digitized knowledge and curriculum.”

Felix Goh

Google Strategic Lead - Singapore | Education, Research, EdTech

“Universities have to provide useful skills to graduates: transferable skills and cognitive tools.”

“A well-meaning, but siloed teacher is not enough to provide quality education, technology can enable and boost frameworks for learning, interrelate information, structured curricula and needs altogether. Universities should ensure teachers have all the necessary tools to engage effectively as part of an all-inclusive educational plan.”

Ben Nelson

Chairman and CEO Minerva Project

"Education must be a comprehensive, participatory process of mutual learning. We must ensure students interact 24/7 to complement each other (as Harvard does even in the dorms)."

"We must support public universities to achieve all necessary transformation. This begins by creating the right regulatory framework that will allow them to thrive. Agreements, alliances, and networks between universities are essential. One university will excel and some things and another at other things, but together, if we create the necessary synergies that allow for mutual collaboration, the benefits of excellence will be for all."

Jose Manuel Martínez-Sierra

General Director in Barcelona School of Management

"Content providers play an important role in the Universities' Digital Transformation. They have to become more digital, interactive, adapt to learning paces, students needs and learning styles."

Zunaira Munir (Zee)

VP of Global Business at OneScreen

"Governments should promote a new paradigm in universities, shifting from current model based on publications of research and patents to a new model focused on value creation."

Oscar Sala

The Collider Director in Mobile World Capital

"Another thing that I think would happen is that, hopefully, the old vestiges of elitist models of separate learnings for gifted individuals vs less-gifted individuals disappear. We should have different types of universities as opposed to one university model."

Michael Crow

President of the Arizona State University

"There is abundance and scarcity. It is necessary to anticipate the different disruptions of companies, and observe exponential technologies and their possible combination, because they make something that was scarce or not very accessible something cheaper and more accessible. Therefore, when you create new abundance, new scarcities arise. Those who create a new standard are those who are capable of synthesizing what technology enables and joining with new scarcities. Access to knowledge before was something scarce and only those who went to school had access to it."

"It's always good to see what two or three adjacent industries are doing and compare yourself. As businesses do, universities should practice this."

Ivan Bofarull

Chief Innovation Officer in Esade Business School

"A University degree is a signal to the market that you have developed the skills, experiences, brand and networks that will support you during your career."

Leo Schlesinger

CEO Alliat Group

"MOOCs can be a complement to face-to-face teaching. Nevertheless, it must be taken into account that 90-95% of those enrolled do not complete them. Moreover, they can represent additional advantages in brand awareness by promoting the universities and helping in the recruitment processes."

"In my opinion, in the future, especially in the private sector, they won't be asking for degrees, but instead, they will focus on the competencies a student has. A university degree and where you studied will not determine the job you can get."

"Public universities have to adapt their offerings to guarantee lifelong learning. They need regulatory changes and resources to achieve it."

"The universities have great opportunities ahead by supporting the digital transformation of companies. I believe that large corporations can become the big players in the training sector, without replacing traditional universities, at least not those that are able to adapt."

Oriol Amat

Rector en la Universidad Pompeu Fabra Barcelona (UPF)

"The concept of ubiquity becomes relevant. The university has to create broad and inclusive learning environments, either face-to-face or hybrid, based on the learning outcomes (objectives and skills to develop)."

Eduardo Gómez Martín

President in ESIC

"Immersive reality is what will allow us to have an impeccable training experience, what better way to explain a process or an engine than being inside it and seeing how it works."

Eduard Martín

CIO & Intelligent Connectivity Director, Mobile World Capital Barcelona

5.2 Annex 2: Other content

Here is an example of the signal analysis process used as part of an extensive base that has been constructed to keep this report current in time:

Description	Link to existing examples or observations
<p>Data, credentials and students interoperability. Dual degree programs are growing ubiquitous the same way nomad and remote workers are. The micro credentials and MOOC boom is only the tip of the iceberg. In the HE of the future, students will design custom programs and granular participation in several schools and programs. Thus, among others, it will be paramount to have a free and transparent transcript, records, and achievements data flows that will allow for easier collaboration and accreditation. The Groningen Declaration Network 2016 is a good open effort. However, for the global, interoperable student of the future further advancements and adoptions need to occur in terms of program granularity, technology and data exchanges.</p>	<ul style="list-style-type: none"> • Groningen Declaration Network • Commission proposes a trusted and secure Digital Identity for all Europeans
<p>Collaborative Learning in Higher Education. (From a global perspective) As the Higher Education sector transforms and embraces a digitally integrated future, partnership building is vital to provide effective online learning. This means, groups of students who share a passion for something that they know how to do and who interact regularly to learn how to do it better, developing their skills and competencies, getting involved in new professional networks, developing their expert identity relative to that particular domain, accessing the community's resources, and so on. HEIs have been required to plan for sustainable initiatives which can enrich students' transformative learning experiences through virtual internationalization and to treat students as active learners, with a special focus on the international context.</p> <ul style="list-style-type: none"> • Within these learning collaborative programs, some learning data can be used to control for a wide variety of factors in order to obtain a more precise estimate for impact. • Partnering researchers are provided with a platform to share their work with policymakers in a position to act on the evidence and respond to the results of an evaluation at a state-wide or national level. 	<ul style="list-style-type: none"> • The Association of East Asian Research Universities (AEARU), NTU Plus Academy

Description	Link to existing examples or observations
<p>Data Security. One of the biggest challenges that educational institutions face is IT security. Most universities are incorporating Software-as-a-Service (SaaS) and collect more electronic student information than ever before. Sometimes it is combined with weak networks that result in data breaches.</p> <p>The average cost of a data breach in the HE sector was \$3.9 million in 2020. Much of that can be attributed to lost productivity or remediation costs, but some universities have also been forced to pay a ransom to gain access to sensitive data locked up by hackers</p> <p>For example, last year the University of California San Francisco paid a \$1.14 million ransom in Bitcoin to recover important medical research data.</p>	<ul style="list-style-type: none"> • UCSF ransomware attack: University had data protection but it wasn't used on affected systems • EDUCAUSE COVID-19 QuickPoll Results: Information Security During the Pandemic • What are Cybersecurity Threats? — Reciprocity • Cybersecurity in higher education: going from 'no' to 'know' - EdScoop
<p>Personal digital data asset management / knowledge repository.</p> <p>Digital Identity built on the Blockchain.</p> <p>Digital Wallet (token economy).</p> <p>Personal learning journey. Personal Learning Outcomes.</p> <p>Delivers a personal, secure, validated record of credentials from school, university, skills, and enterprise. Lifelong learning. Take your credentials, plus your learning resources with you throughout your personal learning journey: micro credentials and academic qualifications. Plus, learning assets, the individual's personal repository of knowledge, "smart notes" (personal learning assets).</p> <p>Digital CV+ covers academic rigor, but also validates soft skills and competencies.</p> <p>Built on the blockchain, secure and incorruptible, delivered on mobile. Tied to individual and secure telephone numbers, being the personal identifier.</p> <p>Research resource: <i>Verum / Habitat Learn</i> research paper to support, attached. Collaboration permission approved.</p>	<ul style="list-style-type: none"> • Commission proposes a trusted and secure Digital Identity for all Europeans • Further validation of signal and opportunity.
<p>Connected Learning Networks. Dedicated to preparing millions of kids for life and work in the 21st century will expand and create a challenge for universities to match their expectations.</p>	<ul style="list-style-type: none"> • How Connected Learning Networks Shape the Future of Education
<p>Flying under the Regulation Radar: University Partnerships with Coding Bootcamps.</p>	<ul style="list-style-type: none"> • Flying under the Regulation Radar: University Partnerships with Coding Bootcamps
<p>Accelerate your Higher EdTech venture at Arizona State University: Universities and private capital get closer.</p>	<ul style="list-style-type: none"> • ASU ScaleU
<p>Student Journey Management Solutions: These solutions, like EAB's Starfish, support students on the paths they take through their HE careers and include academic achievement, advising, career readiness, campus life, and financial aid.</p>	<ul style="list-style-type: none"> • Five Vendors to Watch: New Companies in the Higher EdTech Landscape - Welcome to Encoura

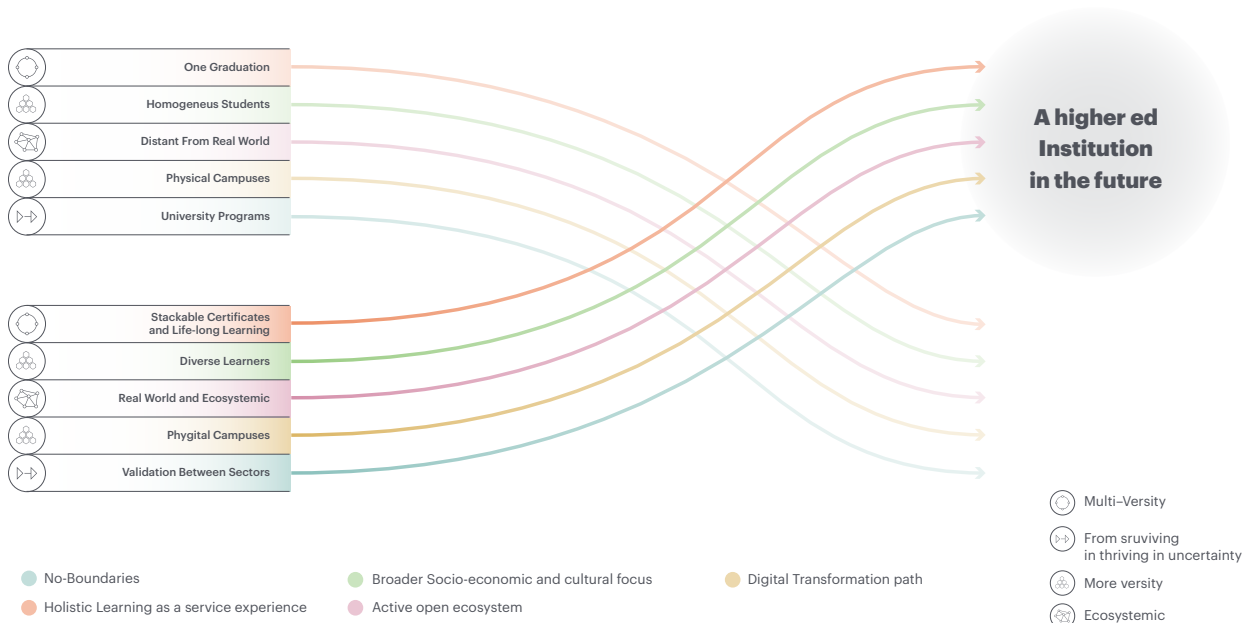
Description	Link to existing examples or observations
Student Engagement Solutions: These solutions, like Mongoose's Cadence, empower schools to engage with students and foster a sense of belonging, and include functionality such as enabling communication via different channels (email, text, chat) and empowering outreach and user collaboration.	<ul style="list-style-type: none"> • Five Vendors to Watch: New Companies in the Higher EdTech Landscape - Welcome to Encoura
edX sale backlash grows. Signaling the rising tensions between for-profit and non profit institutions.	<ul style="list-style-type: none"> • MIT digital learning dean quits as edX sale backlash grows Times Higher Education (THE)
Massive Catalog, everyone becomes a course: Massive content and distribution will drive telcos and entertainment to education.	<ul style="list-style-type: none"> • 157K Courses, 425M Enrollments: Breaking Down Udemy's Massive Catalog
Kroton and TIM Brasil have just closed a partnership to seal courses through an app.	<ul style="list-style-type: none"> • TIM e Kroton criam negócio para vender cursos mobile Brazil Journal
Students question the value of college.	<ul style="list-style-type: none"> • Students see less value in college, despite positive experiences
Big bet on apprenticeship programs to boost economic mobility.	<ul style="list-style-type: none"> • Students see less value in college, despite positive experiences
2U will acquire substantially all of edX's assets: private-public partnerships.	<ul style="list-style-type: none"> • Top online education from free courses to degrees edX 2U
SPACs have already taken education-related companies public.	<ul style="list-style-type: none"> • https://www.highereddive.com/news/why-spacs-are-eyeing-the-education-technology-sector/602430/
Students need a well-designed, affordable micro-pathway that leads to a high-growth job.	<ul style="list-style-type: none"> • Create micro-pathways that stack to degrees (and lead to good jobs) - Charles Koch Foundation
University of Nevada, Reno, works with Apple to give first-year students iPads and tech training opportunities.	<ul style="list-style-type: none"> • https://www.insidehighered.com/news/2021/06/07/university-nevada-reno-partners-apple-address-digital-inequity
The tech giant has expressed an ambition to transform education with artificial intelligence, raising fresh ethical questions.	<ul style="list-style-type: none"> • Google's AI plans make its education dominance more alarming
A new definition of value, and clear ways for students to identify it. The emphasis is on promoting economic mobility for all.	<ul style="list-style-type: none"> • Gates Foundation attempts to redefine 'value' in higher education

Description	Link to existing examples or observations
Examples of blockchain applications.	<ul style="list-style-type: none"> • Sign up to Insignias INTEF Open Badge Backpack and manage your competence-based digital badges.
Intelligent tutoring system signals Ai growth in education.	<ul style="list-style-type: none"> • ElectronixTutor: an intelligent tutoring system with multiple learning resources for electronics
Build your future in tech IBM and tech players become learning hubs.	<ul style="list-style-type: none"> • IBM SkillsBuild
Huawei launched the DigiSchool project: more and more Telcos and education will create new value.	<ul style="list-style-type: none"> • Building Futures: South Africa's 5G DigiSchool - Huawei
C-DOT and Intel deployed Wi-Fi 6 in a rural school trial in India to enhance new learning technologies, and improve signal coverage and streaming performance.	<ul style="list-style-type: none"> • Wi-Fi 6 Trials Report - Wireless Broadband Alliance
The EdTech Creator Challenge celebrates organizations and creators leveraging immersive and real-time 3D technology to make learning and education accessible to ALL.	<ul style="list-style-type: none"> • EdTech Creator Challenge — ASU+GSV Summit 2023
Dreamscape Immersive, the world's leading virtual reality company, and Arizona State University, the most innovative university in the United States, have teamed up to transform education through exploration.	<ul style="list-style-type: none"> • Dreamscape Immersive, ASU launch bold partnership to bring cutting-edge virtual reality to learners worldwide
Alternative models of universities & HE: Four years on one campus and only face to face lectures have been there for centuries. Different, better, cheaper and innovative new models have emerged.	<ul style="list-style-type: none"> • Higher education institutions must fight to adapt in a rapidly changing world - Economist Intelligence Unit
©Why are international schools so expensive? Good K-12 education can be offered in emerging markets to lower and middle income family children without prohibitive costs. Indonesia SIS Schools is a great example.	<ul style="list-style-type: none"> • SIS Group Founder and Chairman Jaspal Sidhu: Making Quality Education Affordable CFI.co • Making Quality Education Accessible for All Indonesians – A Vision for the Future
Unbundling Harvard.	<ul style="list-style-type: none"> • Unbundling Harvard: How The Traditional University Is Being Disrupted - CB Insights Research

Appreciation vs depreciation paths

By analyzing signals and trends we see a number of elements that have a “depreciation path” while others are on an “appreciation path”. We projected these into possible futures.

On the mission to transform impactful 2050 Universities



Bottom-up organic distribution from user to user is more efficient to scale the use of technology than the traditional top-down. All software companies are now born in the cloud, with better cloud collaboration and communication tools, the cost of working with a team across geographies and time zones is declining.

In the past all technology waves seemed to be linear: first it was the semiconductor wave, then there was the personal computer wave, then the internet wave, then mobile/social. Each of those lasted 10–15 years, then we moved on to the next wave.

What makes this era different from any other time in history is that today we have several big waves going on at once.

By Ajay Agarwal and Kevin Zhang, Ideas from Bain Capital Ventures.

Artificial Intelligence & 6G

With 5G networks becoming a reality around the world, we turn our attention to 6G. Unlike previous generations of mobile technology, which tended to introduce a single novel feature for users (1G let you walk and talk, 2G let you send texts, 3G got you onto the internet, and 4G let you stream), 5G promises a whole suite of dramatic improvements.

It uses entirely new wireless infrastructure to achieve speeds up to 100 times faster than 4G and promises to nearly eliminate any processing delays. It will also kick-start the internet of things since it was designed to connect billions of machines, appliances, and sensors at low cost without draining their batteries.

By Elizabeth Woykearchive, MIT Technology Review.

The hype about 5G is well-justified by the promised gains in terms of rate, accessibility and reliability of wireless services.

How can 6G be better than that?

Revolution never comes from within but is rather imposed by radical changes in exterior conditions. And that radical change, which is now beaming straight towards the wireless communication world ready to cause major disruption, is the rise of artificial intelligence (AI).

6G will, of course, offer even faster download speeds — the current thinking is that they could approach 1 terabit per second. It will enable rapidly changing collaborations on vast scales between intelligent agents solving intricate challenges on the fly and negotiating solutions to complex problems.

Computational intelligence bears the prospects of a trendsetting technology able to unlock solutions to previously difficult and large-scale problems outside of the current cloud-centric paradigm. Intelligent agents trained in the cloud using machine learning algorithms on Big Data will be deployed in the real world in the next decades.

By nature of the mobile society of the 21st century, it is clear that collaboration is the key and it can only be achieved via wireless communications.

By Razvan-Andrei Stoica and Giuseppe Thadeu Freitas de Abreu, Jacobs University Bremen

Metaverse (Web 3 + Blockchain + NFTs+ XR)

The internet is flowing out of our phones to merge with physical reality.

Web 3 is the internet owned by the builders and users, orchestrated with tokens, ownership and control is decentralized. Users and builders can own pieces of internet services by owning tokens, both non-fungible (NFTs) and fungible.

By Chris Dixon in <https://cdixon.org/>

The Metaverse will unlock massive opportunities for billions of people regardless of their race, religion, sex or geography. New categories of jobs, communications and even economies will grow from thought experiments to full-blown industries in the blink of an eye.

Metaverse is centered on the principles of universality and decentralization, and its all-encompassing vision of managing and securing our identity, history, communications, and payments in virtual worlds and in real ones.

By Alan Smithson, Metaverse.

During this decade, graphics will stop looking like 'graphics'. The speed limit for how high the resolution games can be is falling away and we'll see photorealistic virtual environments that appear like real life. It will also be digital digital twins of all objects.

By Aaron Frank, Singularity University

With spatial computing, game engines, and virtual environments like these, we're closing the gap between the difference of any experience you could have in real life (going to a concert, hanging out with friends, etc) and having that same experience mediated by a computer online such as the [Metaverse Festival](#).

The Metaverse Rules by Tony Parisi:

Rule #1: There is only one Metaverse.

Rule #2: The Metaverse is for everyone.

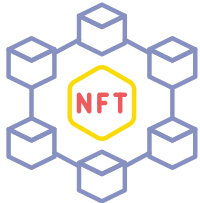
Rule #3: Nobody controls the Metaverse.

Rule #4: The Metaverse is open.

Rule #5: The Metaverse is hardware-independent.

Rule #6: The Metaverse is a network.

Rule #7: The Metaverse is the Internet.



NFTs

Tokens give users property rights: the ability to own a piece of the internet.

NFTs give users the ability to own objects, which can be art, photos, code, music, text, game objects, credentials, governance rights, access passes, and whatever else people dream up next.

By Chris Dixon in <https://cdixon.org/>

NFTs exist on top of blockchains like Ethereum. Ethereum is a decentralized global computer that is owned and operated by its users. It is likely that NFTs will radically shape the landscape of a new digital education.

Most discussions about non-fungible tokens begin by introducing the idea of fungibility, which is defined as “able to replace or be replaced by another identical item”.

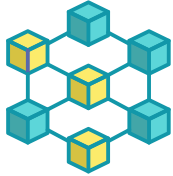
To get a better sense of what might constitute a non-fungible asset, just think about most of the stuff you own. The chair you’re sitting in, your phone, your laptop, anything you could go and sell on eBay. All of these fall under the category of non-fungible things.

By the Lone Hero Agency in <https://www.lonehero.art/>

NFTs mean the internet becomes a place where everyone has an inventory. The Metaverse is an interconnected collection of experiences, where you will carry your single identity, history, and inventory of assets around with you.

Additionally, the Metaverse might grow to become a more intuitive internet. Just like spatial computing interfaces are easier to use, visiting a website might become more like walking into a physical store, something our brains and bodies might better understand.

By Aaron Frank, Singularity University



Blockchain

Blockchain can empower individuals to design their own pathways over a lifetime of learning and work.

Blockchains are special computers that anyone can access but no one owns. Nevertheless, they can also introduce trust, transparency, and efficiency into an education system that can be difficult to navigate and use.

These benefits are multiplied by the power of blockchain to create secure and connected networks of education institutions, education technology (edtech) companies, and learners. Enabling the secure sharing and exchange of data, in a self-sovereign framework, shifts control of learning to the individual, and away from the institution. This shift offers the potential to transform the education ecosystem fundamentally.

By Don Tapscott and Alex Kaplan from the Blockchain Research Institute




XR (VR/AR)

“**Virtual Reality headsets** are seeing strong growth in 2021 from both consumer and commercial buyers,” said Tom Mainelli, Group VP for IDC's Augmented and Virtual Reality team. “We expect VR growth to continue well into the future as more consumer and enterprise use cases present themselves. Today, AR headsets are primarily focused on enterprise use cases, but we do anticipate consumer-focused headsets will gain traction in the later years of our forecast as major technology companies enter the space with new products.”

By The International Data Corporation (IDC)

AR/VR headset shipments, market share and five-year cagr by product, 2020 and 2024

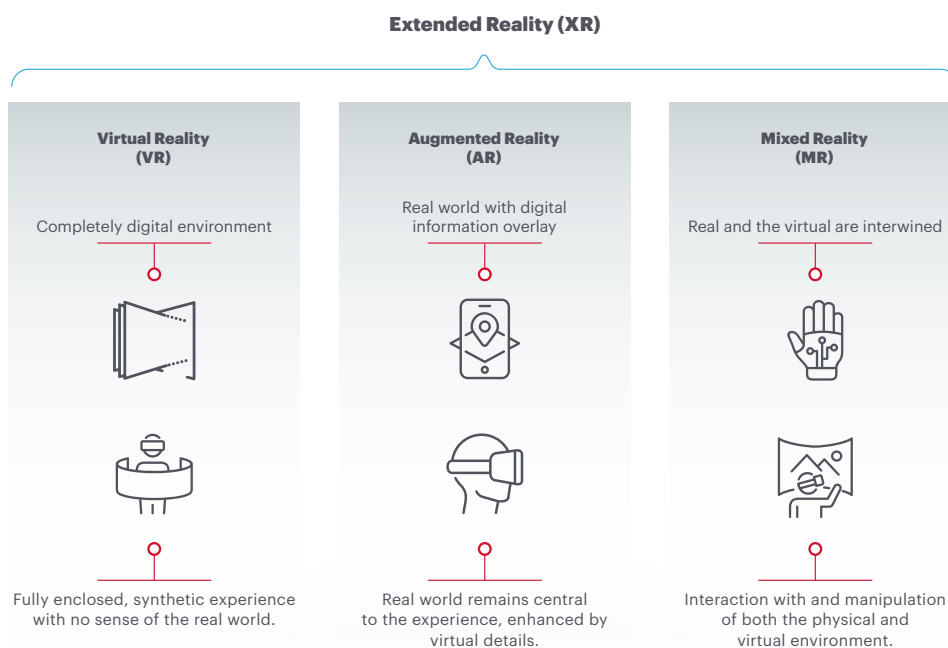
(SHIPMENTS IN MILLIONS)

Product Category	Product	2020 Shipments*	2020 Share*	2024 Shipments*	2024 Share*	2020-2024 Cagr*
Augmented Reality 	Screenless Viewer	0.03	0.49%	0.03	0.03%	-7.07%
	Standalone HMD	0.41	5.82%	24.00	31.28%	176.39%
	Tethered HMD	0.25	3.49%	17.08	22.26%	188.45%
Virtual Reality 	Screenless Viewer	0.39	5.55%	0.10	0.13%	-29.16%
	Standalone HMD	3.09	43.76%	25.25	32.92%	69.06%
	Tethered HMD	2.89	40.88%	10.26	13.38%	37.30%
Total		7.06	100.00%	76.71	100.00%	81.54%

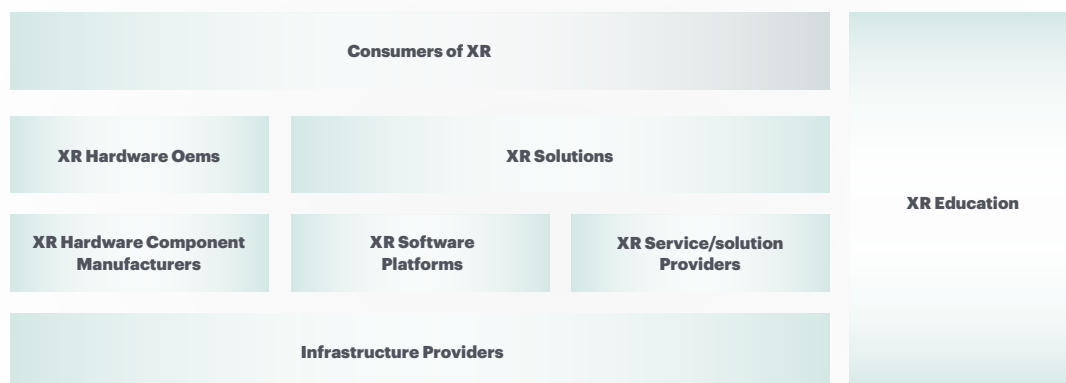
Augmented Reality

- Overlays digital data and images over your view of the real world.
- Uses a device that lets you see and interact with both the digital information and the physical world around you simultaneously.
- Virtual Reality: Immerses you in a digital environment closed off from the real world.
- Uses a device that lets you see yourself in and interact with a fully virtual world.

By IGI Global.



Source: <http://www.appliedart.com/blog/vr-ar-or-mr-what-s-the-difference-why-should-i-care>





7

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