Part II - Transformation

THE BIG OPPORTUNITY IN HIGHER EDUCATION

Being Relevant in the Experience Ecosystem
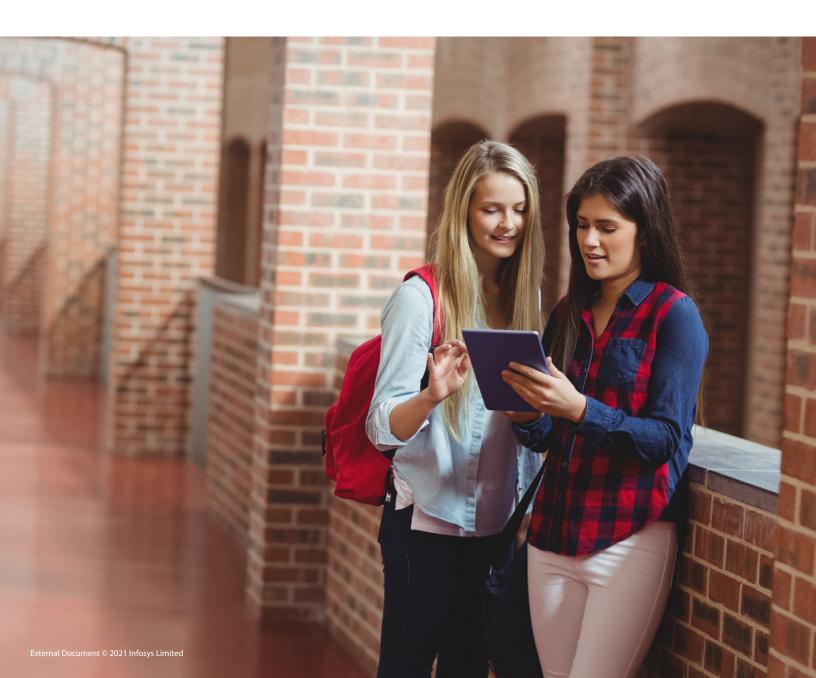
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> ## " The first problem for all of us, men and women, is not to learn, but to unlearn. "
>
> — Gloria Steinem

After the pivot to online learning systems during the pandemic, institutions need to evaluate where they are on their long-term digital transformation journey. This is a great moment to think about how tech innovations can help universities not just survive but thrive in the new economy.

Now that skills training, technical certifications and micro-credentials are taking precedence over traditional degrees, it's inevitable that educators start asking how tech interventions can help them keep up. But before we jump into that, let's look at the state of the sector today.

The Current Scenario: Types of Higher Education Institutes and Where They Are on the Digital Transformation Journey

Categories of Popular Learning and Teaching Platforms Today + Their Salient Features

	Top Tier Institutes	Niche	Affordable / State Sponsored	'For Degree' Institutes
Market	1 – 2%	10 – 20%	40 – 50%	5 – 10 %
Value Proposition	Stellar brand equity and industry partnerships	Industry partnerships and campus ecosystem	Affordable and facilities	Affordable
Current State	Reinforcing brand and accelerate key partnerships	Fast mover, staying hungry, being niche	Disrupted by digital, united by purpose, need support on digital blueprint for bringing services online	
Immediate Plans	Focus on seamless physical and virtual integration	Strengthening physical and virtual integration	Designing and developing plans for integration	Unsure
Technology Infrastructure	Hybrid	Hybrid	Pre-cloud	Pre-cloud
Revenue Streams	Student enrolments, sponsorships, IP revenue	Student enrolments, sponsorships	Student enrolments, state funds and grants	Student enrolments
Key Investments	People, campus, R&D, student success	People, campus, R&D, student success	People, campus	People
Entry Gating	Low acceptance rates	Low acceptance rates	General acceptance	Mostly open
Student Profile	Mostly domestic students and few international students, corporate learners for online content and certificates		Domestic students	Open mix
Services	Own faculty and content including internal admin teams	Own faculty and content including internal admin teams	Own / guest faculty	Own / guest faculty
Delivery Ecosystem	In-person and blended (with WebEx/Zoom sessions)	In-person and blended (with WebEx/Zoom sessions)	In-person	In-person
Learning Content	Mostly monolith courseware and separate online content (own)	Mostly monolith courseware and separate online content (own)	Monolith courseware	Monolith courseware and free online content

1

Top Tier Institutes

The greatest names in education.
The great challenges they face.

These are the names that always top the lists of the top institutes in the world. Their stellar reputation drives applications from domestic and international students. They have been vanguards of education for the past two centuries and have in essence shaped modern education as we know it. Their model of learning is based on in-person education with large campuses that provide a wide range of generalizations and specializations.

There's a high value placed on degrees received from these institutes. They thrive with the help of a strong alumni network and legacy R&D partnerships with industries that drive revenue from various types of IPs.

But all is not hunky-dory. Their unplanned hybrid model involves high costs to maintain on-premises IT and reliance on non-secure public clouds.

The strong focus on degree compromises their just-in-time educational and micro credential offerings. So they're not on the radar of students with unconventional career paths. Their monolithic courseware and traditional classroom teaching formats do not work for the needs of the digital natives.

The online component of the teaching mostly consists of WebEx or Zoom sessions, which is inadequate for retaining attention. The fidelity to tried-and-tested formats can harm the learning experience of the students too. While these institutes have made some strides towards modernization, the journey is only beginning.

2

Niche Institutes

The biggest subject matter specialists.
And the big hurdles they encounter.

These are the specialized institutes that dominate in certain fields. They're known for their science, engineering and technological prowess, or for their strength in arts, design and humanities. They are the preferred choice for students looking to pursue a career in that particular field.

However, they too have legacy learning and teaching ecosystems with monolithic courseware. In terms of enabling remote learning, there is an over-reliance on digitizing in-person classroom sessions through Zoom or WebEx. So certainly there is room for strengthening virtual learning experiences, and creating a seamless integration between new and old pedagogies. The most important question is how to play to their strengths and become more than a knowledge base for a certain discipline. Instead, how can they become an aggregator for proficiency, expertise, research and industry built around a discipline?

3

Affordable / State Sponsored Institutes

The institutions made for the majority. And the crux of their concerns.

These institutes get the greatest number of applications because they offer good value to a majority of students. The quality of educational experience, though conventional, meets some of the student benchmarks.

However, there is room for improvement in their learning ecosystems, through tech interventions, even with limited budgets. For instance, a move from monolithic courseware to building adaptive, self-guided learning pathways for students, or a change from investing primarily in people and on-campus facilities to adopting cloud infrastructure and building engaging digital learning experiences. These steps will actually lead to more applications from unconventional learners and build a reputation for the institute, so it is not hindered by monetary limitations of government sponsorships.

4

'For Degree' Institutes

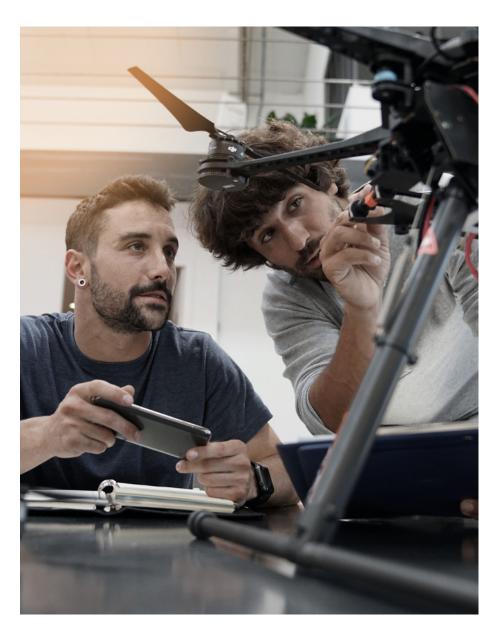Brands looking to get established. And the problems they're confronting.

These institutes attract students who just want the degree. Being a graduate or a post-graduate enables them to widen their job search and get that weightage as a candidate. These institutes are new and

looking to establish a certain credibility. They've had the most difficulty adjusting to the current disruptions.

For them, a shift to more technologically advanced platforms and modernized learning environments would attract the new-age learner and earn an enduring loyalty from the students of today.

The advantage they possess is that their lack of legacy is actually an advantage. Without the burden of a mindset and machinery cast in a previous era, they can rapidly pivot and adapt to changing realities with a new outlook and a new digital infrastructure to match.

Whatever the type of university, they are all facing digital disruption in varying magnitudes.

Next Up in Higher Education: The Types of Institutes That Will Emerge Tomorrow From the Disruptions of Today

Categories of Future Learning and Teaching Platforms + Their Salient Features

	"Brand" Players	Disruptors	Completely Virtual and Aggregators	Industry Owned / Partnered
Value Proposition	Stellar brand equity and industry partnerships	"Market ready" learning programs and multiple realms for different opportunities	Learning experiences vs defined schedules, adaptive learning capabilities	Industry marketplace opportunities
Degrees	Degrees	Unbundled degrees with micro credentials	Own degrees / micro credentials and aggregator combining micro-degrees from universities	Market ready skill certificates, job integrated degrees and micro credentials, rewarding corporate learning and certifications
Technology Infrastructure	Integrated apps and platforms	Integrated apps and platforms	Sentient experience platforms	Integrated apps and platforms
Revenue Streams	Student enrolments, sponsorships, IP revenue	Expanded student enrolments, sponsorships, industry contracts and subscriptions	Global student enrolments, state funds and grants	Student enrolments and subscriptions
Key Investments	Cloud, people, campus, R&D	Cloud, people, R&D, digital media content and marketing	Cloud, guest faculty, digital media content and marketing	Cloud, digital media content and marketing
Entry Gating	Low acceptance rates	Low acceptance rates for niche programs and general acceptance for all other offerings	General acceptance for all offerings	General acceptance for all offerings
Student Profile	Mostly domestic students and few international students	Domestic students and international students lifelong learners	Global students	Corporate employees
Services	Just-for-knowledge learning	Just-for-knowledge learning, just-for-jobs learning	Just-in-time learning	Just-for-jobs learning, just-for-knowledge learning
Delivery Ecosystem	Blended	Blended	Virtual only	Virtual-first and physical sessions on need basis

1

Brand Players

Still relying on their stellar equity. But will that be enough?

Possibly the trajectory for top-tier institutes will involve making modifications in their technology infrastructure and delivery ecosystems, with the weightage shifting more towards digital modes. Investments will be made in production and distribution of digital content but this will be still limited in terms of interactivity.

However, that's not to say larger leaps cannot be made. In fact, brand players can lead the way in digital learning, but it will require fundamental shifts across the student lifecycle. From onboarding and teaching to assessment and recruitment, choosing a platform-first approach will help accelerate digitization while delivering a seamless student experience.

As a result, they will continue to attract the more conventional student seeking a just for knowledge learning experience. Cloud, people, campus, R&D will remain the main cost centers, with revenues being generated from typical channels such as student enrolments, sponsorships and IP products.

The big focus will be the ecosystem play and how to leverage existing equity to become a bridge among industry, academy, government and community. The role of the university will essentially evolve to being an education ecosystem orchestrator and distributor.

2

Disruptors

Staggered but massive investment in digital. How will it pay off?

For these institutes, unbundling their degrees and adding to the roster of micro credentials will help attract non-traditional students. Their market-ready learning programs will also offer many industry-led opportunities, thus inviting more applicants.

The ecosystem will serve the needs of just-in-time learning, just-for-knowledge learning and just-for-jobs learning, ensuring popularity with domestic and international learners. To maintain and grow a platform like this would require a high investment with cost centers such as cloud, people, R&D, digital media content and marketing.

But this would also create an equally big list of revenue centers like expanded student enrolments, sponsorships, industry contracts and recurring subscriptions to its courses by loyalists. Offering a harmonious blend of real and virtual pedagogies, the courseware delivered through integrated apps and online platforms will stand out.

Digital, distributed, disruptive: this is the evolution of the new learning order.

3

Completely Virtual Aggregators

What will change for the
e-learning platforms of today?

Offering a mix of their own brand diplomas or micro-credentials developed in partnership with the industry, or bundled micro-degrees from accredited universities, these aggregators will have more widespread acceptance and prestige.

Powered by AI and sentience, they would have more applicants joining in from across the globe, as well as pedigreed international guest faculty. Using a mix of elastic and edge infrastructure, with no physical footprint, these platforms would enjoy significant cost savings.

These savings could be funnelled back into creating an adaptive, flexible, interactive education ecosystem that would be valued very much by non-traditional knowledge seekers. In fact, because of the level of customization of courses, built to meet the different learning capabilities of the students, there would be a significant reduction in drop-offs and disengagement.

4

Industry-Owned / Partnered

Piggybacking on industry equity. A skills-only micro-credentials platform.

Made as a direct response to the needs of the marketplace, this will operate like an external human resources arm, training, reskilling and upskilling employees to

cater to ever evolving requirements. With a virtual-first approach, and physical sessions only on a need basis, the focus here will be on designing engaging digital content that facilitates quick understanding and long-term retention of the subject matter.

Its reputation will be built on its association with different companies, creating short-term courses tied to their core competencies. For instance, certifications in customer service in association with Amazon, or a logistics-related program built in partnership with UPS. These skill certificates would have industry-wide acceptance because of the big names attached to them. There would be an assured set of takers for these

certifications if companies make certain hours of training mandatory on these types of platforms. Aside from enrolments through industry tie-ups, subscriptions to course bundles could be another revenue stream.

As you review these categories of education platforms, keep in mind that a university must remain competitive in each of these categories so that it's in the consideration set for any student. Technology adoption will help deliver the change faster, but right now, many different entities are in different stages of their journey. So let's take a look at how tech evolution has impacted education over the years, and what this means for the future.

The Evolution of Higher Education: Different Eras of Technological Adoption by Universities

A Quick Snapshot of the Journey of Educational Institutes Through Technological Transformations

Pre-Cloud Era

- Desktop-driven
- Client server/web
- Enterprise softwares
- Hybrid model
- Hybrid infrastructure
- Pre-cloud skill sets

Cloud-Native Era

- Web- and mobile-driven
- Service-oriented
- Modular platforms
- Agile model
- Elastic infrastructure
- Human + machine

Apps andPlatform Era

- Mobile and smart products
- Ecosystem-oriented
- Business platforms
- Hyper productivity
- Elastic and edge infra
- Human + gig + machine

What Next?

- Sentience
- AI-first processes

1

Pre-Cloud Era

Very Limited Use of Tech

During this era, most of the coursework had an analog footprint. Any kind of digital content created was designed only for desktops. The infrastructure was hybrid but over indexed on in-premises IT setup. This was costly and inefficient.

2

Cloud-Native Era

Tech Oriented Towards Administrative Use

In this time, most of the expanded digitization happened along the managerial chain. Processes such as student registration, selections, assessments, grading were automated to a degree, requiring human interventions at specific points. With an elastic, agile infrastructure model, universities did achieve long-term cost savings and scalability.

3

Apps and Platform Era

Tech Focused Towards Delivering Experiences on Smart Devices

As smartphones have become ubiquitous, apps have gained popularity with universities, leading to creation of integrated ecosystems that utilize multiple online platforms. Using a mix of elastic and edge infrastructure has helped in teaching, learning and job seeking functions. But there is space to do so much more.

4

Sentience and AI-Led Era

Complete Integration of Tech in Teaching and Learning

This is the future. Apps with built-in artificial intelligence (AI) will help select and recruit the right students and staff. Chatbots will deliver a better guiding experience. AI and IoT-based analytics will discover hidden patterns to aid student success. Blockchain technology will help secure student credentials and transactions. Machine learning tools will create analytics and visualizations that lead to better decisions. An open standards-based development platform will build and deploy more engaging, enriching apps. The possibilities are endless.

If the past year has shown us anything, it is that change isn't just inevitable: it is the key to survival and success. Sentience and AI are the future of learning. Here are the three main shifts that must take place as you transition into the Sentience and AI-led era.

Universal Features of All Teaching and Learning Institutions of the Future

Synchronous Classroom

Asynchronous Classroom

> Learning will not be a rite of passage but learning will be a lifelong pursuit
>
> Learning will be a lifelong pursuit and will also go micro
>
> Learning will become just-in-time expertise to provide a product or service in the micro economy

Synchronous Guidance Offline

Asynchronous Guidance Online

> Great teachers will find a global audience and the world will see many more great teachers
>
> Open and modular architecture will be the differentiator which helps to scale diversity and choice as well as access to expertise

Fully Digital Self-Service Online

> Every student will script their own unique learning journeys. Anytime, any type, anywhere - personal learning by everyone and on-demand

1 Synchronous and Asynchronous Classrooms

Enabling students to script their learning journeys, anytime, anywhere.

This helps the new-age learner who might work part-time or prefer to study remotely or has other considerations to take care of. Combining in-person pre-scheduled classes with on-demand sessions ensures true inclusion.

2 Synchronous and Asynchronous Guidance

In-person guidance supplemented by sentience-driven personalized guidance.

Chatbots and gamified experiences facilitate unlimited learning and help students chart their own path. This, when combined with analytics-driven interventions by the educator, create a holistic learning and feedback loop for the student.

3 Fully Digital Self-Service

A dashboard that empowers students to plan their education from end-to-end.

Control is handed back, so students can access content across disciplines and use collaborative learning tools the way they want. They will also be positioned to customize their courseware as well as defining their own learning paths.

> According to Nandan Nilekani, Chairman of Infosys, the universities of the future will be integrated, intelligent platforms that distribute the ability to teach and learn. Those that get there faster will reap the rewards of having transformed for the digital normal.

The Shift Is Inevitable: Adopting Sentience and AI First Can Help in Many Ways

It Can Enhance Campus Experience and Operations By:

- Delivering cost savings, flexibility and a framework to bring innovation on campus
- Securely warehousing student population data
- Offering greater interoperability and access
- Enabling expedited app development and deployment
- Automating the use of chatbots for instant engagement through mobile cloud services
- Shaping next-generation campus experiences that support retention
- Streamlining institutional operations
- Accelerating leading-edge research

It Can Enhance Business Productivity and Build Reputation Through:

- Apps with built-in Artificial Intelligence (AI) to help select and recruit the right students, academic and professional staff
- Chatbots to deliver a better student experience 24/7
- AI and IoT-based analytics for discovering hidden patterns and guiding student success
- Blockchain technology that helps student credentials and transactions
- ML tools for creating analytics and visualizations that lead to better decisions
- An open standards-based dev platform for building, deploying, connecting and enriching apps
- Natural language processing that helps meet the needs to international students and affiliates faster

Systems built with advanced AI have been proven to attract more enrolments, improve retention rates and build real business value in addition to an enriching student experience. These systems can deliver cost savings, streamline institutional operations, accelerate research and defend against breaches in security. There's a clear, demonstrable return on investment on the technology, and a clear path to becoming the educational institute that defines the digital future.

Want to know how this can happen? Stay tuned to know more about what adopting sentience and AI means for your institute.

The Author

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In his tenure at Infosys, which spans 23+ years, Thirumala Arohi (known as Thiru) has managed many vital client relationships for financial services clients in Europe before taking on the current role of Head of Education, Training and Assessment (ETA). The ETA department is one of the key business enabling departments at Infosys. Thiru drives various learning interventions to enable the workforce to be future-ready.

In this journey of creating next-gen learning experiences, ETA has progressed well in establishing and enhancing digital learning platforms that enable 'anytime, anywhere, on any device' learning. Several partnering agreements are in place with universities and MOOCs like Udacity and Coursera in leveraging their programs. Along with driving content digitally, the learning and development arm of ETA also focuses on developing holistic skills in the areas of business, behavioral and leadership such as design thinking.

Infosys Cobalt is a set of services, solutions and platforms for enterprises to accelerate their cloud journey. It offers over 14,000 cloud assets, over 200 industry cloud solution blueprints and a thriving community of cloud business and technology practitioners to drive increased business value. With Infosys Cobalt, regulatory and security compliance, along with technical and financial governance comes baked into every solution delivered.

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