We embrace digital innovation: IE University Library reinventing higher education

Written and presented by

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Abstract

The essential role of digital innovations in realizing libraries´ potential to enrich society, regardless of how extensively they already can and do use technology" is one of the ten Highlights on IFLA´s Global Vision Report, launched in March. The report also identifies ten Opportunities for the library field.

This presentation uses examples from the IE Library in Spain - which serves international students, academics and researchers of the IE University and IE Business School who demand data and information through the technology they use – to address IFLA´s Global Vision Highlights *2. "We must update our traditional roles in the digital age*" and *4. "We must keep up with ongoing technological changes".*

The IE Library anticipates the latest technological trends and integrates them into the user experience offering new formats and environments to provide an innovative, diverse and disruptive learning environment as an essential part of the current digital transformation in higher education.

Introduction

I have chosen my presentation title *"We embrace digital innovation"* because this is one of the ten Highlights on IFLA´s Global Vision Report, launched in Barcelona, Spain on 19 March 2018. The Global Vision Report highlights that "*we are united globally in our goals and values".*

The report also identifies ten Opportunities for the library field. The corresponding opportunity to "*We embrace digital innovation"* reads, *"We must keep up with ongoing technological changes. Ensuring all libraries have the right tools, infrastructure, funding and skills to seize the opportunities provided by digital innovations is a pressing need."*

However, as IFLA Secretary General Gerald Leitner said when presenting the Global Vision Report, *"a vision without execution is hallucination".*

The world is changing at an incredible speed. Technological and digital innovation are driving a profound cultural change. New technologies, new business models and new customers are challenging us to rethink, refocus and reinvent ourselves, and the services we provide now and in the coming years. The traditional view of the library no longer has room in the current globalized and hyper-connected XXI Century.

In the current world of disruptive change it is our professional responsibility to learn about the underlying trends driving the future, understand and explore the threats and opportunities

these bring, and respond accordingly as we continuously reflect on how to maximise the value we deliver to the communities we serve.

Why? Firstly, because the main purpose of any organisation is to satisfy customer needs and maximise their experience, and because delivering the best possible value to our users should always be our primary motivation for the work we do on a daily basis. Those who still prioritise meticulously preserving library collections and ensuring that libraries are temples of quiet study, over providing technology and connectivity to facilitate new ways of learning are working in "bad" libraries.

Also, because when opportunity knocks we should seize the moment. If we fail to understand the direction in which the world is turning, we fill crash and burn. "*The upside of a time of change is great opportunity*", says Sam Conniff Allende, the author of "*Be more Pirate or How to Take on The world and Win*". He goes on to say "*What comes next is really interesting, and it´s a generational shift. I have worked with young entrepreneurs for the last two decades and in the last few years something has changed. I look at it as the "side hustle" generation. I´ve yet to meet a twentysomething who hasn't got an idea or a project or a scheme, or at least one of their close crew has got something started. They are helping each other, they are teaching themselves online, they are raising finance. And that´s having an effect on their outlook of the world*." I have chosen this quote because it actually describes the majority of students we serve at IE Library.

With a 70% of international students and a common language, English, I would describe the IE students as digital natives, entrepreneurial, collaborative, intelligent and adventurous.

To understand what we do at IE Library, here is a little bit about the institution it serves and how we are reinventing higher education.

IE is a private university and business school with two campuses in Madrid and Segovia, Spain. The business school was created in 1973 by a small group of Spanish entrepreneurs. IE University followed in 2007. So far, it has produced over 60,000 graduates from 160 different countries. IE University and IE Business School are characterised by the diversity within faculty (over 200 full-time and 800 part-time lecturers) and staff, as well as students - from undergrads, MBAs and specialised masters to doctoral students, and a more senior professional profile within the Executive Education School.

IE University ranked first University in Spain, 7th in Europe and 24th in the world in the Global University Employability Ranking 2017 published by The Times Higher Education last November. That means that at IE we produce professionals best prepared to step into the world, professionals that companies definitely want to attract and keep.

IE University is built around four key pillars: innovation, entrepreneurship, academic rigor and the humanities.

This paper focuses on Innovation, which plays a key role in our institutional strategy. The aim is to bring forward the future of education. To achieve this, our university has invested 25 million Euros (almost 30 million US Dollars) in innovative approaches to education, experimenting with technologies – artificial intelligence, robotics, wearables, apps, virtual reality, etc. - in search for tools and methodologies that would reinvent education, providing an innovative, diverse and disruptive learning environment. At IE, we are looking for new ways to help students achieve

excellence and have an amazing academic experience with the help of the best new technology available.

Among other things, currently the institution is implementing a Big Data Strategy; analysing what type of historical and new data we hold and applying Big Data practices to understand academic and operational needs. We are also beginning to use Chatbots, as new communication channels to engage with prospective new students via virtual assistants. Another example is one of our latest projects,

The WOW Room, Window on the World

The WOW Room is a physical space located on campus with 48 screens that make up a digital tapestry of 45 square metres. The room has two tactile screens and cameras, latest generation computers, robots and holographic projectors. It benefits from software developed specifically for the project, and advanced videoconference that enable connectivity via a personal computer or laptop, from anywhere in the world. Over one thousand undergraduate and postgraduate students will be educated in the WOW Room in the new academic year.

The WOW Room simulates real-life situations that may require students to make decisions under pressure, design production processes for factories, negotiate in war zones and solve diplomatic conflicts between countries, and much more. The lecturers can be physically present or projected in hologram form. In addition to simulations, lecturers can use artificial intelligence and big data analysis on large screens, and use polling in real time to allow students to vote and debate on the issues discussed, and foster collaboration. Classes are recorded to enable access and content review.

We have developed a futuristic learning space that combines IE's academic excellence with the latest generation technologies to inspire the citizens and leaders of the future. This project, the first of its kind in Europe, breaks with the traditional onsite, blended and online education models to transform the learning experience. It consolidates IE's position as a pioneering institution in Europe in terms of development of innovative learning model. The WOW Room is only comparable to the HBX Live of the Harvard Business School, although IE goes further - and here is the interesting bit - by integrating library resources into the technology.

As our university attracts more and more students, we step forward into the future. We are currently expanding our campus in Madrid with an innovative and sustainable building project in a 35-storey tower in the heart of the financial district, due to be completed in 2020. This urban and high-tech campus will have a surface area of 50,000 square metres, with 7,000 square metres set aside for green spaces. It will hosts our new Vertical Library, which will deliver services to 6,000 students in our undergraduate programme.

The concept of the Vertical Library

Technology allows people to be connected in many and diverse ways and access all type of content without leaving their environment. It allows a student in any country of the world to study programmes that may be imparted in another part of the world without having to move.

At IE Library, our aim is to leave behind the current models of library service to open an alternative world of possibilities. To be present not only in the physical space of the library, but also in the actual class, in the Student Hub and other spaces on campus, as well as at home and in the workplace; in short, wherever the user is, providing new tools to support them and add

value during their university experience. That is why we are always in the lookout for the latest global trends to offer the ultimate user experience.

Mobile technologies and the internet have become mainstream - that is, are being used on a daily basis by a huge percentage of the population across all continents. Recent research shows that some smartphone users touch their phones a staggering 5,400 times a day. Apps are been used for almost everything; most of us have booked a taxi, a restaurant or a holiday through our smartphones, others monitor their sleep, count calories and track daily exercise; therefore it is just logical to offer our users a library app so they can be in full control of their library transactions.

My ie Library APP

In 2015, IE Library developed its first library application "My IE Library Account". It was one of the first library application created in-house and was awarded with the Spanish Library Spotlight during the 2016 OCLC Regional Congress.

From a mobile platform, My IE Library Account allows access to the IE Virtual Library and all electronic resources, as well as facilitating the user autonomous management of their personal library profile.

By downloading the application, students can manage their own circulation service, consult and manage their holds and search the library catalogue, accessing all electronic resources available in the IE Library. This allows our users to identify and access the resources that meet their needs from their smartphones, 24/7, 365 days a year from anywhere in the world.

Likewise, the application allows the payment management of those services that carry a charge, such as late returns, interlibrary loans, or borrowing special materials.

The application has been improved and the new version DiY IE Library App is just been launched. The IE library community can choose to download the application, or to access it from the Borrow & Return Smart Stations in our libraries - which are fitted with mobile phones and tablets for users to collect their own holds, search the catalogue, etc. with minimal interaction with the librarians.

Smart Spaces

With new developments in the application made by Spanish Start-ups, some of them from our own university, we have gone a step further. The physical barriers are broken and following the concept of Vertical Library, the application turns the library space into an intelligent space, thanks to beacons managed by geolocation.

This technology allows those within the perimeter of the beacon to silence their electronic devices within the area and, once outside, to automatically restore the sound, and to receive personalized notifications on their smartphone. These messages can be sent in bulk, or distributed by zones, type of device, or language and range from welcome messages, to alerts about new resources, services, schedules or events organized by the library and the institution, becoming therefore a service that can be extended to the whole organisation, integrating even more actively the library into the life of the organisation.

Virtual reality and immersive experiences

In January, Black Box VR won "Best Start-up" at the Consumer Electronics Show in Las Vegas with the world´s first virtual reality gym - a Virtual Reality handset and an empty room is all that

is required. Over in the UK Virtual Reality Fitness UK is testing Holofit, an innovative immersive fitness experience set to launch later this year – gym users wear a Virtual Reality headset and hop on a standard stationary bike, rowing machine or cross trainer to work out within a range of virtual worlds. Soon we will be able to cycle around the temples of Babylon, row with whales in the Antarctic, or explore space. So what is the point? Most of us know that we should be exercising more but it can be hard to stay motivated. Technologies such as Virtual Reality make the process genuinely engaging and fun and you can almost forget you are training despite the sweet running down your body.

Similarly, in IE library we have adopted Virtual Reality and Leap Motion, a gesture recognition device, to motivate our students to access library resources in a fun, interactive and touchless way. From the hands-free New York Times reading, to complete control of the computer without the need for hardware.

Students use this technology in course projects and assignments. For example, a group of students from our International MBA borrowed a Leap Motion device from the Library for an entrepreneur's project they presented both in class and at our Venture Lab international competition. They created a healthcare Start-up focused on a Leap Motion device that would help eradicate neck pain caused by many working hours using a computing mouse.

Tags Beat

Another technology we have implemented in the Library is IE Tags Beat, which combines Big Data, gamification and artificial intelligence. It is a new way of perceiving and accessing information through a gesture recognition device, which gives an immersive sensation, while artificial intelligence makes it possible to interact with the library online catalogue in real time and creates a bar recording the number of visits according to the times the student uses the gesture recognition device.

In the "By School" section of the web page Resources menu, there are lists of Virtual Library resources (databases, e-books, e-journals, newspapers, web resources, working papers, etc.). All the user has to do is position themselves in front of the subject they are interested in and, as they move in front of the monitor and the gesture recognition devise, the different resource categories are displayed, standing out to a greater or lesser extent depending on the previous number of visits. The user then chooses which particular resource to access.

This gamification of the information makes access not only much more intuitive, easy and enjoyable but also mobile. Thanks to the QR code that gets generated the user can transfer the online resource to their own mobile device.

Artificial intelligence

While many of our current interactions with computers are task-oriented, a new report by Trendwatching predicts a shift towards "virtual companions" designed to entertain, educate and even befriend us. Everybody is familiar with Siri; but did you know that Apple is hiring software engineers with a psychology background to "help her have serious conversations" with us? Research firm Gartner predicts we will have more chats with bots that with our significant others by 2020; while David Levy, author of "*Love and Sex with Robots*" affirms that we are less than 50 years away from marrying robots.

Humanoid robot Sophia made history in South Arabia when she was granted citizenship of a country for the first time. She took to the stage at a conference in Riyadh to express her delight. However, this was not her first stage appearance – Sophia had previously hit the

headlines for addressing no other than the UN. While Sophia's citizenship, described by some as bizarre and terrifying, is certainly controversial, it illustrates that technology is a basic element to understand change in the world – as well as the fact that robots are closer to us than ever, with some even in libraries among us…let me introduce you to

Pepper, our new library assistant

The last technological project of the library is Pepper, a female robot that can easily be programmed to complement the librarian, taking care of classic functions such as circulation.

Pepper is able to analyse verbal and nonverbal communication such as the position of someone's head and the tone of voice with a 3D camera and four microphones. This allows Pepper to recognize the emotional state of people, gestures, sounds and touch, creating an environment of empathy and connection that fosters a fluid and effective communication between robot and customer.

With a tablet incorporated, Pepper can access the catalogue and library website, answer queries and perform circulation tasks. For example, if a library user would like to search for a specific area of knowledge, Pepper (who has a map of the library with each area of knowledge clearly defined in her programme) would accompany the user to the specific area and talk him through specific items of interest. The same process applies to the Library´s electronic resources.

In this way, Pepper becomes a tool for research and development of new applications, as its work is not limited to the physical library but, also, to environments such as the WoW room.

Pepper has recently being joined by RobbIE, which allows students to connect to classes when they are unable to attend because they may be ill, had had a baby, or in other circumstances.

Conclusion

In conclusion, new times require new approaches, new services and new professional competencies.

In the case of academic libraries supporting the digital transformation taking place on higher education, once at the institutional level we have discussed and agreed a strategy to engage with the new generation of students by stepping into their own technological environment, the next step is to ensure we develop the required skills to deliver new services successfully.

However, the key to develop these new competencies and skills is not technology as such, but creativity, vision, and a desire to learn which drives our continuous professional development and help us to assimilate and use new technologies. To innovate we must be able to try things out without fear of failure, we should be given time and permission to explore things that may not work out…and, most importantly, we should have the capacity to embrace change without fear.

To conclude I would like to use a quote from Rafael Ramirez, the scenario-planning expert from Oxford University who was the keynote speaker at IFLA President´s Meeting in March. For me, the highlight of his presentation - on bringing scenario-planning into libraries to design new strategies to better prepare for the future - was when he challenged the audience by saying *"If you are not at the table, you are on the menu".* I leave you with this thought.

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