Technology and Innovation at university libraries (The IE Library as a case).

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What is Instituto de Empresa (IE Business School and IE University)?

The library is for teaching and research in IE.

- Permanent e-syllabus (courses reservation) Link.
- Integration of the library catalog, using a search box in learning.
- Ability to add widget "IE Search Library".
- Permanent e-literature (courses reservation) Link.
- Access to such ebooks is given for an unlimited number of matching users.

Practical applications in the IE Library.

- Google glasses.
- Augmented Reality.
- Gesture Recognition (Layar, Myo, etc.).
- Internet of Things.
- Innovative technologies and digital marketing tools.
What is Instituto de Empresa (IE Business School and IE University)?

IE is an international institution dedicated to the formation of the business elite with a global focus, entrepreneurial spirit and a humanistic approach. IE has a team of more than 500 teachers who currently teach students from over 90 countries through university degrees from IE University, master programs, PhD and executive training from Executive Education.

The role of the IE Library is to be an innovative, modern and enterprising business whose main objective is to support the IE by providing access to required information, in addition to facilitating preservation and dissemination.

It has two headquarters: IE Business School, located in Madrid, and IE University, located in Segovia, through which all services are offered. For its entire management of an integrated system escalation in web, the EI Library has cloud-based generation software (WorldShare Management Services). The catalog contains more than 250 million records of prominent American libraries and other institutions as well as 76.2 million from libraries around the world, located in 170 countries.

The WorldShare Management Library Services allow IE to belong to a global network dedicated to improving the relevance of the library through cooperation and savings by shared services. The WorldCat union catalog records growth through library cooperation. In addition to this it is also, promotes resources and experience of libraries on the Web, unification of the management of both the user and the library staff and finally determining the future with focused research libraries. In the last decade, the cooperative has invested more than $130 million in developing new solutions for the changing needs of libraries.

For the IE Library, we must emphasize that the technological information as well as specifically virtual information and challenges of applied digital library, are areas of knowledge that are extremely important for innovation and success in teaching and research in our organization. These are considered powerful tools and techniques for
effective management, continuous librarian-client relationship and potential customer with direct application and following up the results.

The library in teaching and research of IE.

During this season, specifically for teachers and researchers, they have implemented the following services with the aim of facilitating access to information, through innovative technologies, while the library was being built on the online campus.

Permanent e-syllabus (courses reservation) Link which enables electronic management of all materials included in the bibliography of the syllabus and other documents deemed relevant to the development of the subject.

Integration of the library catalog using a search box, in the electronic edition of the syllabus, which allows it to highlight compulsory and recommended literature of the subject.

Also, for students, teachers and researchers have implemented the following services:

Ability for the user to add widget, "IE Search Library", to the login page of the online campus, offering the ability to perform simple or advanced searches in the library catalog.

E-literature (courses reservation) by Permanent Link that enables electronic management of all material selections, which includes those in the literature curriculum and all materials that you consider relevant to the development of the course or program in addition to that which belongs to the IE Community.

From the obtained results page when you search the catalog, open the chosen document type electronic book (ebook), by clicking on the link "View now" of a particular result, you can see that access to such ebook is given for an unlimited number of matching users. This is possible thanks to the acquisition of the license type MUPO (Multi-user perpetual license) for each ebook, which ensures that the teacher and students at the
same time can simultaneously consult, underline, print and make notes in their textbooks in class.

With all this, it is possible to integrate the library into the physical classroom, in the virtual campus, blogs, social networking, in presentations as Prezi and all channels of dissemination of existing information today as well as in the future through the permalink (permanent copy the URL for this page) existing in the catalog of the library are IE.

Practical applications in the IE Library.

Here we will explain some of the practical applications that are being used in the IE Library, in tandem with innovating new technologies in terms of access to information.

Among these we will try:

• Google glasses.

• Augmented Reality.

• Gesture Recognition (Layar, Myo, etc.).

• Internet of Things.

• Innovative technologies and digital marketing tools.

Regarding the Google Smart glasses, which have been created by the company's Mountain View, this is a device (wearable-wearable) with which we are able to stay connected to the Internet while still enjoying the world around us.

It basically has a lens, reflected in the glass, creates a tiny screen in the upper right part of our vision and from where we can see documents in virtually any format: text, maps,
videos, elevations, floor plans, photos, etc. You can also make videos and photos with your built-in camera.

Google glasses allow us to consult the IE Library catalogue and read the full text of the information found.

Smart glasses allow us to hear and see the retrieved articles for journals and electronic books as well as scan, print, email, share, add tags, save, and thanks to the artificial intelligence translated into many languages in real time. ... In short, a world of possibilities.

According to Forrester's Google glasses will be the next Iphone as far as usability and possession is concerned.

The recognition of gestures can be achieved by the Leap motion, a device with which the user scans the library in a whole new way. Leap motion controllers detect how naturally you move your hands and lets you use your computer in a whole new way. Notes, tours, turn the page, change the size of the elements of the screen ... it does things that have always thought were not possible but now are.

Regarding the augmented reality (AR), this is a technology that allows a digitally enhanced view of the real world as well as giving the user the ability to connect with the most significant content of everyday life and therefore Library. With the camera and sensors on a smartphone or tablet, augmented reality (Augmented Reality) adds layers of digital information - videos, sounds, photos, maps - directly on the objects that surround us.

The Layar app <https://www.layar.com/products/app/> for iOS, Android, BlackBerry and Google Glass, were downloaded using the self Layar Creator to build interactive campaigns of the library, such as the letter of library services.

Another example is the Myo Thalmic bracelet <http://youtu.be/Ch0XBGOVnT0> the muscle to talk, the listening Myo bracelet. This allows you to use the electrical activity in your muscles to wirelessly control your computer, phone and other favorite digital
technologies such as the IE Library. With the movement of the hand, it will transform the way you interact with the digital world.

Finally, the anticipation of what is going strong is the gesture-based computing and the Internet of things. An example of this is that existing devices expanded sensory perception type Google Goggles <https://support.google.com/websearch/topic/25275?hl=es&ref_topic=1733205> it is currently available for devices that recognize any object using photos taken with a mobile. In addition, it brings search results, related information and developments that are expected with large value added services for libraries.

Digital marketing is not a new type of marketing but refers to conventional marketing implemented via new tools based on information technology.

It is important to combine these new approaches to marketing with the formats and methods which have proved effective over the years. Indeed, the joint use of on-line and off-line tools in a single marketing campaign creates a more lasting impression of brand values and, although the internet is an indispensable means of communication, which gives a very good return on investment, it would be a mistake to depend exclusively on it for all the IE Library's marketing, communication and publicity. The key lies in finding a combination of formats, which may be referred to as "marketing mashup".

New marketing options are constantly appearing, these include hashtag, widgets and twitters. Their use, together with conventional publicity, is of great interest when targeting the young and not-so-young users of the IE library, as they allow us to show publicity and "use or sell" products and services in the library more quickly, economically and intuitively, while monitoring their effectiveness.

We can expand the information we already know about digital marketing tools in the IE Library by considering digital marketing tools as applied to the 4Ps in the traditional and service marketing mash up.

There is no doubt that leading university libraries face an increasing number of new challenges. Users are no longer passive consumers of publicity messages, but are
increasingly interested in receiving more information via a medium which allows them to interact. Internet marketing currently has the best return on investment (ROI) of all forms of commercial promotion but to make it more effective it is essential not to lose sight of general marketing strategy and to develop digital marketing projects which tie in perfectly with other, more traditional forms of marketing.

To achieve this it is vital to be totally familiar with the on-line publicity ecosystem, all the types of publicity available on the internet and, above all, to assess and optimise internet marketing campaigns to obtain the best return. A digital market should not be developed in isolation but from its very conception designed to combine fully with the IE Library's traditional marketing, so that it helps us to achieve the overall objectives set.

It is worth pointing out that some tools are more suitable than others for effective marketing in different areas (for example, an advert game may be used for promotion and publicity as well as its primary use as a branding tool). Not all of them are suitable for all the services and products available from the IE Library; because of the nature of the market some are more appropriate than others for the target public using a particular product or service.

To optimize the marketing mash up, consideration must be given to the suitability of the digital marketing tools depending on the target groups for which they are intended for, the type of organization and the market or sectors where applicable groups.

Digital marketing facilitates the appearance of personalization, participation (marketing permission), peer-to-peer (multidirectional) contact and modeled predictions (contextualization). Moreover, there is an improved return on investment (ROI).

1. Personalization refers to designing products and services specifically tailored to meet the needs of users or customers. It is based on listening to consumers, giving them the chance to choose, valuing their participation. In the IE Library we have examples such as the chat service, immediate on-line attention to suggestions for acquisitions, the development of new products in line with their suggestions and contributions, etc.
2. Participation (or permission marketing) requires customers to become involved in the marketing mashup. Consumers are the central protagonists thanks to the power they are granted by technology. The IE Library uses/takes advantage of this and invites the user to be another member of the library project, sharing their experiences with other potential customers and acting as ambassadors for the university library's brand. The key is the development of appropriate settings, creating communities and rewarding participation.

One example is the presence of the IE Library in the Twitter community where interaction with users takes place.

Another is the use of Flickr and YouTube to post videos, training and photos of the IE Library from the client's viewpoint. The user whose contribution receives most votes could win a camera donated by one of the partner entities in the scheme.

3. Peer-to-peer publicity refers to opinions and recommendations passed from one user to another. It involves socialising marketing messages, building confidence, making it easier to share information. One example is the on-line catalogue, when clients use it they can add tags to individual records, thus recommending items to other users.

4. Predictions using contextual modelling allow us to analyse the on-line behaviour of clients and other interested parties. The information compiled automatically is analysed so that a marketing strategy which is relevant to their behaviour can be developed. This feature has a direct influence on the way decisions are made and managed in the IE Library.

Digital marketing applied to the IE Library allows us to learn from clients and consider consumer preferences, while respecting their privacy. Amazon and Google provide successful models of digital marketing from which university libraries should learn.

One of the most common errors in discussions of digital marketing is to think that it is restricted exclusively to digital publicity but nothing is further from the truth. Banners, interstitials, e-mail marketing and microspot videos, rich media ads, blogs, electronic
coupons, podcasting, and virtual communities and marketplaces are all as popular as other formats used for publicity which libraries can take advantage.

It is important to point out that these tools referred to are not only useful for publicity via electronic channels in various formats; they can also be used to meet the IE Library's needs in all areas of marketing. It is just a question of identifying the most suitable for each university library according to its market, competitors, sector and strategy. In doing so, they can then be combined with traditional tools for marketing products and services in order to develop an enhanced marketing mashup which will lead to an improved ROI for the marketing plan.

In IE Library digital marketing tools used in the following areas related to the Library are used: product and brand, price, distribution and sales, publicity, promotion and communication.

It also considers digital tools which provide information about the market in which we are competing in and the target users on whom the marketing plan focuses to generate leads which can bring new clients. Monitoring tools are also examined, as the tools available and the measures taken are of little use if their effectiveness is not measured, so that improvements can be made in the choice of tools and the way in which they are used.

They include the following: e-segmentation or on-line analysis of demand, electronic monitoring of competition using knowbots, internet marketing research, e-surveys, on-line panels and focus groups, e-datamining/warehousing, on-line enhancement of off-line data, e-geomarketing and WRM or establishing profiles from browsing history.

Monitoring tools include WebMetrics/log analysis (server activity), marketing decision support systems, electronic audience measurement, electronic customer relationship management (e-CRM), on-line monitoring of returns on marketing, electronic models for tracking and analysing use or sales, e-GRPs.

Below we have detailed from the marketing strategy viewpoint the tools available to digital marketing to achieve marketing objectives based on information technologies.
1. Regarding products: Viral marketing, electronic models for product definition, online product testing, electronic catalogues, search engine marketing (SEM), evaluation sites (product positioning on comparative websites), website product configuration, e-portfolios and e-learning marketing.

2. The following digital tools are available for brand generation: electronic sponsorship, interactive 2.0 websites, e-alliances/bartering, digital corporate image, IPTV Corporate Channel, domain management, e-presentations (slideshare branded channel), blogs, online games marketing (e-games and m-games), thematic Wikipedia entries, and search engine optimization (SEO).

3. Regarding prices: 24x7 open budget systems, online loyalty schemes (using points), electronic management of surplus, dynamic pricing (using Twitter and other utilities), online geographical alignment of prices, e-skimming, electronic models for prices, and e-auctions.


5. Digital tools for sales include the following: e-commerce portals, internet market places, cybermalls/virtual retailing, user chat, real time sales, e-client management, semantic search engines, e-customer service, on-line user support and after-sales service, e-phone marketing/internet call-back, video-conferencing, electronic models for formulating offers, digital management of the sales force.

6. The following tools are used in the area of product promotion: electronic management of the point of use or point of sale, digital point of purchase advertising, electronic models for promoting products, landing pages, promotional micro-sites, e-quizzes and electronic competitions, electronic coupons (e-coupons and m-coupons), screensavers, wallpaper and animated cursors, e-cards and podcasts.
7. Among the digital tools used for publicity we find: banners and skyscrapers, interstitials, layers and flyers, pop-ups/pop unders, micropots and m-videos, advertorials, contextual marketing (content network), text messages, e-mail marketing, electronic transactions, rich media ads, media hub/off-&on-line marketing, proximity marketing.

8. Digital marketing tools for communication include; stakeholders sites (internal communication for employees (intranets), shareholders (internet) and distributors (extranets)), SMO (Facebook app), e-public relations, using professional networks such as Xing, Plaxo and LinkedIn, business virtual communities, newsgroups and newsletters, widgets, distribution lists/RSS marketing, chats with personalities, e-launch (launching new products, firms and divisions on line), net events (e-events), electronic press releases, news clippings, and e-press rooms.

The first steps in planning digital marketing consist of carrying out customer and market studies as in the traditional marketing model. In our case the study focuses on the users of the IE Library, who will be referred to as the clients.

**Conclusion.**

The implementation of all these aspects detailed prior, heavily suggests to us to follow the wave of innovation in addition to meeting the challenges of digital libraries in knowledge, technology and the increase of virtual information in universities which will ultimately allow the clients to continue making the best decisions.


