Navigating Complex Waters:

Strategizing in the Higher Education Sector

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Abstract

The Higher Education sector has been subject to a series of fundamental challenges in the past decade. Education used to be considered as a public good, provided by non-profit organizationsthat were unexposed to market pressure and had a clear societal mission. Now, education is becoming a global service delivered by quasi-companies in an ever-more complex and competitive knowledge marketplace. To cope with these challenges, Higher Education institutions need an appropriate strategy, a necessity reflected in numerous calls for research on strategy in the higher education sector. This conceptual article seeks to contribute to this discussion and proposesa taxonomy of nine trends that will impact Higher Education and academia in the short- to medium-term. Drawing from these trends, we identify three core challenges that Higher Education institutions will face and that have fundamental implications for research and practice: (1) the need to enhance prestige and market share; (2) the need to embrace an entrepreneurial mindset; and (3) the need to increase interactions and value co-creation with key stakeholders.

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1. **Higher education:Between business reality and societal aspiration**

Higher Education (HE) has become a crowded global marketplace andas such is not immune to changes affecting21st-century society—an increasingly global, digital and dynamic environment.Scholars, opinion leadersand institutional decision makers, who actively shape the academic landscape, have attempted to predict how the field of HE will be influenced by environmental trends. There is a general consensus that the future of academia is and will be complicated, challenging, and uncertain; some authors view this future with optimism, whereas others foresee doomsday scenarios.

Most analysesof the current and future states of HEconverge on several conclusions. One such conclusion is that business ethos and practices are becoming acceptable in HE. Indeed, some authors have emphasized the need to adapt pure market and marketing logics tothe university setting(Gibbs and Murphy, 2009). Another common claim is that HEinstitutions need to develop competitive strategies: to assess drivers of change, to devise adequate responses to these changes, and thus, to develop policies and strategic guidelines that allow for evolution (or even revolution)to happen.

Universities have three basic missions: teaching, research and public service. These missions have always beenin tension with one another (Altbach et al., 2009). This tension has become even more salient in recent years, as the environment of the HE sector has become

increasingly marketized. On the one hand, to survive, HE institutions must behave like for-profit organizations, privileging revenue creation. On the other hand, they must also serve as nonprofit organizations, privileging the public good and serving as providers of knowledge and a path for educational development (Council of the EU, 2014).

Herein, we adopt the premise that the societal nature of HE, i.e., its role as a public good, is one of its core characteristics (Nedbalová et al., 2014), despite observations that some institutions have been tempted to neglect societal aspects in the rush for income and prestige. Thus, we suggest that any discussion of strategy in this sector should carefully consider the societal scope and nature of the organizations involved. This means that, in working to develop a path for its future, a given HE institution must focus both on the organizational level, i.e., sustain its ability to compete in the market (Friga et al., 2003), and on the sector level, i.e., maintain its capacity to provide value for society through knowledge creation and dissemination (Healey, 2008).

The increasing complexity and uncertainty characterizing today's society are phenomena that businesses have to cope with on a daily basis. Yet, in its role as a provider of public services, theHEsector has,until recently,been spared the need to deal with these developments. Currently, however, academic institutions have no choice but to develop adequate strategies that will enable them to address the new environment of an ever more competitive educational market.This conceptual paper contributes to the debate on the future of HEby providing an updated taxonomy of nine key trends that decision makers in the sector should consider, in addition to an outline ofthree strategic recommendations available to respond to these trends.

2. Trends and developments affecting higher education: A taxonomy

Usingprevious literature, such as the work carried out by de Boer et al. (2002), as astarting point, we identify the forces at play and develop an updated taxonomy of external trends affecting today's HE sector. Table 1 presents a comparison between previously identified trends and the contemporary trends that we observe. Particularly, we show that, although many of the former trends continue to affect the sector, several have taken on new meanings or have become more salient, demonstrating the need for an updated analysis of the main engines of change and their impact on the HE industry. In total, we come up with nine trends that university managers should be aware of in order to prepare themselves and to be able to act quickly to prevent future crisis, in line with the well-known adage, "*a stitch in time saves nine*".

Insert Table 1 approximately here

2.1.Turning of HE into a crowded and competitive marketplace

Marketization in HE refers to universities' acknowledgement of being part of a crowded marketplace(Schofield et al., 2013) and the consequent need to actasmarketplayers,and to market themselves (Friga et al., 2003). The sector's marketization isat least in part due to the massification of HE, which, together with the entryof private education providers, is drivingHE institutionsto compete to attract students and thus to maximize revenues. As a result, many HE institutions have adopted a more consumerist approach, catering more to students' wishes(Brown, 2011). This trend has negatively impacted academic standards (Altbach et al., 2009).

To compete in the marketplace, HE organizationsare required to engage in increasingly complexmarketing activities, encompassing multiple targets, media, and geographies (Gibbs and Murphy, 2009).Several studies have sought to observe how broad marketing concepts can be applied in the context of HE, such as service and relationship marketing, scope, adaptation needed and limits (Kaplan and Haenlein, 2009). Notably, the HE sector's attempts to catch up with other, more commercial sectors in terms of marketing practices areassociated with serious risks to the quality of education and research, as these areas may be neglected in the pursuit of recruitment (Nicolescu, 2009).

As a result of the marketization of the HE sector, management approaches and practices that are typical to private sectors are increasingly being applied to universities. This so-called managerialization trend raises questions with regard to the extent to which professors (and staff) should undergo professionalization (European Commission, 2013a) in order to enhance their capacity to act as academic-managers who launch and facilitate organizational reforms in educational systems(Deem and Brehony, 2005). Deem (1998), for example, who introduced the concept of "new managerialism" in HE, states that on the one hand, managers in academic institutions must take into account the learner-centric and knowledge-centric focus of HE, but, on the other hand, they must also adopt an entrepreneurial mindset, a business-like modus operandi, and act as leaders able to balance prestige-driven and market-driven logics in their decisions. The ability of HE managers to adopt such an entrepreneurial mindset is strengthened by the increasing autonomy of HE institutions, a product of the gradual deregulation and privatization of the sector, as well as contemporary governments' strong encouragement of universities to adopt self-organizing decision making models (Schofield et al., 2013; Sam and van der Sijde, 2014).

Thus, very broadly, the following strategic questions arise from the marketization of HE: *To what extent can the institution incorporate business practices based on consumerist*

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approaches to both education and research, while preserving its societal role? What should

be the role of academic-managers in guaranteeing quality, efficiency and competitiveness?

2.2. Privatization and deregulation of the HE sector

Many entities at both supranational and national levelsare contributingto the rethinking of academia, through various sectorial interventions and instruments. The tools at these institutions' disposal includeregulations, policies and recommendations; quality assurance procedures and standards; and public resource allocation (Altbach et al., 2009; Kaplan, 2014).

The HE sector has undergone substantial deregulation in recent years, most notably in Europe, but also elsewhere in the world. This deregulation hasincreased universities' autonomy, self-organization and accountability, yet it has also facilitated some level of privatization of the sector and entrance of new players.

Despite this deregulation,supranational entities continue to influence the HE sector. For example, the European Commission, as part of its Europe 2020 initiative, has issued recommendations on how to modernize HE in terms of the sector's digital agenda (European Commission, 2013a) and the competencies that it should foster in order to better prepare students for the jobmarket of the future (European Commission, 2012). At a national level, governments have a certain degree of freedom in translating European directives and recommendations into local context, considering both local economic circumstances and country-specificcharacteristics of the education system. Some local trends are common to multiple European countries; for example, public funding foruniversities has generally decreased across Europe (Altbach, 2004), which increases the importance of designing fundraising activities that target companies and alumni, and of developing executive education activities.

Governments should thus understand their future roles as regulators, investors, facilitators, or a mix thereof, and ask themselves: *"How can HE competition be redefined in order to promote the public good and encourage institutional accountability, responsiveness and innovation?"* University managers need to ask themselves: *"How should we deal with our newly gained autonomy in general, and, more specifically, what internal control mechanisms should be put in place in order to establish clear accountability?"* University managers should further ask: *"How and with which resources can we replace decreasing public funding?"*

2.3. Rivalry at international, national and institutional HE levels

In a global market, in which national economies compete with one another, HE institutions are key players in enhancing the positions and reputations of their respective countries, by fostering innovation (de Boer et al., 2002). This role implies that HE institutions maintain strong national affiliations. Yet, at the same time, HE institutions strive for internationalization— in terms of faculty, students, and curriculum—as a source of opportunities and resources(Altbach et al., 2009). Thus far, the internationalization process of universities has occurred more slowly than the globalization of businesses. Universities have often been internationally-oriented to some extent; for example,knowledge dissemination occurs as a result of international exchange in conferences, journals, etc., and educators strive to teach material as it is internationally understood (Healey, 2008). However,for many HE institutions, internationalization is notyet a central mission,even though the need to cultivate global awareness, understanding and cross-cultural intelligenceis well known and has been discussed repeatedlyfor half a century(Kedia and Englis, 2011).

As in the case of other trends presented herein, the internationalization trend can be viewed both as an opportunity and as a threat to HE institutions: on the one hand,

internationalization provides universities with access to a large pool of talents(and other types of resources), while on the other hand it exposes these same universities to other competitors who seek to capture the same resources. In particular, owing to internationalization, HE institutions compete for students and resources not only on a national level but also on a global level; national competition and global competition are distinct, but feed into each other (Marginson, 2006). To respond to the threat of competition from foreign HE institutions and new education providers,HE institutions must rely on strong institutional leadership, reputation and management.

For countries importing foreign students, international HE is a lucrative business (Altbach, 2004; Lee, 2014). HE institutions are thus eager to become global providers, by serving new geographies—e.g., by entering foreign countries with satellite campuses or through alliances with universities and other organizations abroad (Friga et al.,2003)—or just by enlarging the scope of their international recruitment for their home campuses (Altbach,2004).Thus, we will inevitably observe increasing competition at institutional, national and international levels, in which each geographical region becomes more and more crowded with institutions—established universities, new ones and private providers—competing to attract students, professors and other vital resources (Schofield et al., 2013).

Thus, HE institutions that seek to cope with the trend of internationalization must answer the following questions:*"What is the competition on a national scale as well as in key markets abroad?""How is it possible to prevent the gaining of market share by international HE institutions as well as by new entrants in one's national market?" "Which internationalization strategy is the most sustainable and viable?"*

2.4. Digitization of key processes and activities in HE

Information and communication technology (ICT) is changing the rules of the game in many sectors, including HE, by disintermediating the value chain. Demand for HE is increasing worldwide, to such an extent that it can no longer be accommodated solely by traditional offline channels for education provision. These channels are being supplemented and even replaced by digital channels, and private education providers have proliferated, in some cases supplanting traditional education providers, particularly those that do not invest in distance education (Altbach et al., 2009). Use of ICT in HE caters not only to increasing demand but also to the expectations of Millennials and younger digital natives, who seek out learning environments that match the digital environments to which they are accustomed (McHaney, 2011).

The implications of ICT for HE strategy are numerous. First, decision makers must make strategic choices about the degree of digitization that should be incorporated into their HE institutions' agendas. In order to remain competitive and attractive (Council of the EU, 2014), traditional universities must adopt a customer-centric perspective and keep pace with modernization (European Commission, 2013a) and digitization trends (European Commission, 2013b); that is, they must privilege the digitization of activities that students consider important .

Second, ICT advancements have reduced and even eliminated barriers to the entry of new education providers (such as the need for a physical campus). Thus, traditional universities must now compete with private electronic universities, small private online courses (SPOCs), and massive open online courses (MOOCs), which are gaining market share. University managers should take this competitive aspect into account when considering the objectives and potential returns of digitization, and when planning the implementation of the digitization process (EPRS, 2014).

In sum, we suggest that HE institutions should address the following questions when attempting to respond to the trend of ICT expansion: *"Which activities and processes mustbe immediately digitized and which should be added in a second, later stepof digitalization?" "What is the role of Web 2.0 and social media in HE learning processes, educational activities and universities' interactions with key stakeholders?"*

2.5. Impact of the knowledge society on HE

Knowledge creation and dissemination has always been a key component of any HE institution's mission, and a university'spublication output constitutes a fundamental metric of its quality and performance. On an external level, an HE institution's publications serve as vital indicators of its reputation and prestige, often considered as key components by several rankings as well as accreditation bodies. Accordingly, the number and type of publications that a faculty member has producedserve as important internal criteria for merit and promotion.

The growing importance of knowledge, research and innovation are changing the social role of universities (Välimaa and Hoffman,2008).HE's contribution to society stems both from providingeducation and nurturing talent and from the advancement of research to produce applicableknowledge as a strategic resource (de Boer et al., 2002). The production of knowledge, and the assessment of its value,are influenced by the need to commercialize this knowledge in order to gain funding (Altbach et al., 2009).Universities have often drawn criticism for adoptingmyopic and unreasonablepublishing strategies: too often they encourage publications that are written from a purely academic perspective, focusing on scientificresearchthat is publishable in top academic journals that are read mainly by other academics. This policy neglects other stakeholders—practitioners and students *in primis*— whose support iscrucial for the acquisition of resources. This approach results in a missed

opportunity for universities of guaranteeing future funding and revenues (Cotton and Stewart, 2013). On the other hand, the massification of HE has contributed to some extent to the "scientification" of society, meaning that a growing base of people is able to access the research that universities produce and to assess its quality.

ICT developments have a substantial role in the advancement of knowledge society. The digital environment has vastly increased the number of sourcesof knowledge available,as well as the ease and immediacy of accessing such sources (McHaney, 2011). The increased access to knowledge brings substantial benefits to many HE stakeholders. From a researcher's perspective, for example, online resources such asscholarly databases enable research to be rapid, comprehensive in scope,and efficient; likewise, the same infrastructures make the researcher's own work visible and accessible,potentially enhancing its impact. Yet practitioners in many sectors, from HE to journalism, have criticized this easy access to online information, as electronic resources are not always reliable,which calls into question the quality of research outcomes.The question of the impact of knowledge accessibility on research quality is still at the center of scholarly debate.

In defining its strategy for knowledge creation, any HE institution should ask themselves: *"What is the positioning that the institution aims to achieve via its publications?"* *"Which types of publications should be encouraged for the purpose of enhancing the institution's reputation and creating value for its various stakeholders?"*

2.6. Digital natives and their desire for an augmented HE experience

Web 2.0 and social media (Kaplan and Haenlein, 2010; Kaplan, 2012)have been widely adopted by the public and have become highly influential in information seeking, and more generally in all phases of purchase behavior. Current university candidates are digital natives, who act as rational and informed customers (Temple and Shattock, 2007).

Thus, universities should strategically leverage their Internet and social media presence as a means of reaching these candidates.

The tech-savvy of digital natives influences more than these individuals' university selection: It affects the basis of interaction between students and professors in the educational process (McHaney, 2011). In particular, digital natives seek out participative and collaborative forms of value co-creation with their professors. Thus, to cater to the expectations of such students, both HE managers and academics should be willing to embrace new digital solutions and ensure adequate use of technology and new emerging platforms in daily educational processes in order to provide maximum learning outputs and institutional benefits (EPRS, 2014).

The expansion of Web 2.0 and the continuous proliferation of digital media, environments, applications, platforms, and devices are disrupting HE as we know it. Students expect the university experience to reflect the environment to which they are accustomed. They seek to approach learning through social networking and other forms of convenient, digitally-based and multimedia-based delivery systems, offering immediate and personalized interaction (Budde-Sung, 2011). To cater to these expectations, it is insufficient to simply add technologies to current pedagogies and practice; it is necessary to completely rethink current practices, on the basis of interaction and co-learning with students.

As public service organizations, HE institutions should adopt a student-centric perspective and ensure that they profoundly understand the needs of incoming generations. Answering the following questions can contribute to this endeavor: *"How different are the needs and expectations of digital natives in comparison to those of their predecessors?" "Which levels of interactivity and digitalization in various educational activities should be offered to digital natives?" "To what extent should Web 2.0 and social*

media enter the classroom and replace more traditional forms of student-professor interactions?"

2.7. Growth in HE demand and diversity in student populations

In de Boer et al.'s (2002) study, the main issue highlighted in the discussion of demographic trends is the aging of both the population and the workforce, which couldlead to a reduction in demand for HE in the medium- to long-term. Yet a review of more recent developments suggests that the HE sector is being influenced by demographic trends of a different nature.

In particular, the growth of world populationsis serving as a driving force that is reshaping HE. An increasingnumber of candidates, from diverse social, religious, ethnic and geographical backgrounds,are seeking out HE, changing the classroom composition. Thistrend is driving reforms in the educational system (Friga et al., 2003; Altbach et al., 2009) and has led to corresponding drastic shiftsin students' expectations regarding the classroom experience, in terms of exposure to diversity (Budde-Sung, 2011). In light of this increase in diversity, universities need to address severalquestions, including ethical questionsregarding access andthe revision of teaching styles. These questions include the following: *"How can an HE institution ensure university access and equitable treatment to a variety of diverse student populations?" "To which extent universities are able to provide students with a first-hand cross-cultural and diversity-inclusive experience?"*

2.8. Network opportunities and their leverage for HE

The advancement of ICT has given rise to an expansion and reconfiguration of collaboration inside institutions and among organizations, overcoming the traditional limitations of traditional forms of cooperation.

Network society is "the social structure that results from the interaction between social organization, social change, and a technological paradigm constituted around digital ICT" (Castells, 2011). Network society encourages HE institutions to strengthen their relationships with core stakeholders, and to engage in interactions with partners, including other universities as well as industry partners, e.g., technology firms (Friga et al., 2003).

The strengthening of network relationships may increase universities' access to resources, and foster the linkage between universities and industry entities and their ability to co-create knowledge or to offer joint programs and opportunities for interdisciplinary research (European Commission, 2013a), but it can also weaken intra-organizational coherence (Altbach et al., 2009). Jongbloed and colleagues (2008) foresee that the continued advancement of network society will not only yield further collaboration among institutions but will also eventually be manifested in networked governance and arrangements to ensure accountability along the lines of corporate social responsibility.

HE institutions should thus ask themselves: *"What is the desired position of the institution within the network of potential partners, and how should research be carried out within this network?" "To what extent should the institution embrace less formal, less centralized structures and collaborative approaches?"*

3.9. Corporate influence on HE and the rise of corporate universities

An addition, final trend characterizing the HE sector relates to the evolving requirements of the job market.The changing marketplace serves as a mirror for society's development. In today's market, an increasing number of workplaces require an HE degree, and the skill sets and competencies that students must acquire in order to enter the job market differ from those required in the past (European Commission, 2012).These changes have led

to growth in HE demand, stemming both from future job market candidates and fromcompanies aiming to further develop their current workforces.

To attract these specific consumers, universities must review their current program offerings and adapt them to better match job market requirements. Curricula should thus be re-designed through dialogue among HE academics and managers, students, and labormarket actors, drawing on new methods of teaching and learning, sothat students acquire relevant skills that enhance their employability (European Commission, 2013a).By adopting a focus on candidates' employability, HE institutions will ultimately contribute to the greater social good, by supporting economic recovery. Universities that do not respond to corporate demand by adapting their curricula to the needs of the job market will find it difficult to compete with rapidly-emerging corporate universities, i.e., educational entities that are sponsored by corporations or even made in-house and whose educational goals are entirely aligned with the corporations' objectives.

The practical aspects of updating and expanding their competence basesare expected to pose a challenge to HE institutions. Broadly, universities should support their academic staffand encourage them to develop skills for the new pedagogical approaches opened up by digitaltechnologies and relevant to companies, which provide opportunities toimprove the quality of teaching and learning(Altbach et al., 2009; Council of the EU, 2014).

To revise and adapt traditional HE to developskill sets amongst students that are appropriate for today's job market, universities should address the following: *"What is the desired set of competences and profilescorporations are asking for?""Howlarge is the gap between current curricula and the requirements for job market entry?""How can we close this gap, both in terms of programs designedand—even more crucial—in terms of being ready to deliver these programs?"*

3. Strategicrecommendations and guidelines for contemporaryhigher education

A detailed analysisof the trends and sub-trends overviewed above suggests that the HE sector must respond to the following three core challenges, our three Es for Education:

Core challenge 1:Enhance HE institutions' prestige and market share in a consolidating global educational market.

Core challenge 2: Embrace a deeper entrepreneurial mindset, with corresponding modus operandi and decision-making approaches.

Core challenge 3:Expand connections, interactions, and value co-creationwith key stakeholders.

In Table 2, we propose a set of strategic guidelines that HE institutions might follow in order to address these challenges.

Insert Table 2 approximately here

Addressing the first core challenge implies focusing on enhancing the prestige of HE institutions not only in terms of the quality of education and research produced but also in terms of positioning in external accreditations and rankings (including league tables) and in stakeholders'minds. In addition, in our current era of social media and viral marketing, word-of-mouth communications by alumni will play an ever more important role in promoting HE institutions. Thus, HE institutions' primary focus of sustaining institutional reputation and serving society will be enriched by a sharp look at how markets assess these institutions, and at how market standing can be leveraged to gain resources for future growth. In particular, a university's market standing is likely to become the definitive indicator of the institution's

quality, and thus will be crucial in determining access to resources, in the form of students who seek to enroll, private and public fund-raising capability, and desirability asa partner in research collaborations, applied projects and executive education.

To address the second core challenge,i.e., to foster managerialism in HE institutions such that institutional managers act as entrepreneurial leaders, HE institutions must undergoa major shift in terms of their managerial approach.Specifically, academics must become academic-managers, meaning that they will continue to contribute to the quality and reputation of their respective HE institutions through teaching and research—which will remain the key components of their roles—but will also be asked to show deeper commitment to the management of their institutions.

The latter entailsparticipating in the decision making process and actively marketing themselves and their projects in order to attract resources and strengthen links with other academic institutions and industry partners. The need to engage in entrepreneurial management is even more salient in light of HE institutions' increasing autonomy regarding their usage of public funds, which is reflected in greatercontrol over resources and freedom to choose theirinvestment strategies. On the other hand, this autonomy increases the accountability of HE institutional management, which must make larger numbers of decisions of increasing complexity, including decisions regarding the ICT infrastructure and level of digitization.

Finally,addressing the third challenge—i.e., increasing connections, interactions, and value co-creation with key stakeholders with a specific focus on alumni—implies complete renewal and reshaping of relationships with variouspartners, and expansion of the number of touch points in these relationships.To facilitate this major shift,HE institutions should first

invest in supporting academics as they learn to navigatetoday's digital environment. Some institutions are already leveraging ICT in their knowledge production(e.g., online databases and virtual video conferences), but much remains to be done in this regard, including deepening the integration of Web 2.0 and usage of social media (e.g., forums, groups in dedicated platforms) and social networks.

Similar changes must be made to teaching methodologies: Many top universities are just beginning to offer e-learning platforms, and professors have begun to timidly incorporate video and other media in their lectures; however, these steps are insufficient, and completely new, interactive learning processes and infrastructures have to be put in place.Ultimately, the shift to increase interactions and value co-creation with multiple stakeholders will lead to a revolution at the marketing level, in line with the worldwide shift away from one-way communication between organizations and consumers (in our case, universities and students), towards dialogue and participative communication.

As in the business world, there is no clear answer as to how HE institutions should react to increasing complexity and uncertainty; there are only different and improved processes to be put in place. Therefore, it is necessary to highlight that the observations emerging from this article are preliminary insights, based mostly in academic literature.HE decision makers and key stakeholders attempting to formulate strategies should discuss, examine and validatethese guidelines in order to obtain a relevant roadmap that will enable their specific institutions to achieve desired goals that will enable them to maneuver through the challenges of 21st-century higher education.

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Table 1: Taxonomy of trends and developments impacting higher education

Previously identified trends	Current trends and developments
Marketization of HE − Increased rivalry and sector consolidation − HE massification − Adoption of business and marketing logics in order to compete	**Turning of HE into a crowded and competitive marketplace** − Advanced stage of massification: students as consumers, a focus on recruitment volume, lower academic standards, concern about quality − Advancement in HE business and marketing practices and further strategicemphasis: universities as competitive enterprises − Pivotal role and professionalization of academic-managers asentrepreneurial leaders
Changing role of governments − Future governments' role: facilitator, regulator and/or investors? − Financing HE and the public good-private good debate: diversification of funding base, shift from public to private	**Privatization and deregulation of the HE sector** − Diversification of funding base to cope with decreased public funds to HE − Deregulation, privatization, and HE institutions' autonomy and accountability − Performance metrics and university rankings to ensure HE quality
Globalization, internationalization and regionalization − National roots and international scope, global fight for resources − Board-less education: geographical and virtual expansion − International mobility	**Rivalry at international, national and institutional HE levels** − National role in serving society: HE crucial provider of knowledge and talent − Search for private funds, new segments to serve, stronger relationships with stakeholders − Geographical expansion (e.g. satellite campuses) and international scope − Increased mobility of students, professors, staff

Table 1: Taxonomy of trends and developments impacting higher education (continued)

Previously identified trends	Current trendsand developments
Development of ICT − Entrance of private and digital education providers − Call for strategic choices on degree of digitization − Dual mode organizations: e-solutions added to traditional ones	**Digitization of key processes and activities in HE** − Private and e-providers push traditional universities vs e-campuses and distance education as areas of enormous potential for HE − Modernization of HE through digitization is a must − Blended methodologies embedding Web 2.0, social media and emerging platforms (MOOCs, SPOCs, APP, etc.) in new learning approaches and interactions
Advancing the knowledge society − Strategic value of applicable knowledge − Mode of knowledge production − Knowledge accessibility, applicability and reliability	**Impact of the knowledge society on HE** − Pressure and need to commercialize knowledge − Proliferation of knowledge sources: ease and immediacy of access − Open question on mode ofknowledge production and impact on research quality
Socio-cultural trends − Individualism − Consumerism − Scientification of society − New professionalism: need of multi-skills professionals, academics included	**Digital natives and their desire for augmented HE experience** − Technology-savvy students − Web, social media and other digitalsolutions as preferred source of interaction and value co-creation − Students as informed and rational candidates − Need to enable professors to become tech-savvy

Table 1: Taxonomy of trends and developments impacting higher education (continued)

Previously identified trends	Current trends and developments
Demographic trends − Aging population	**Growth in HE demand and diversity in student populations** − Population growth: demographics as a driving force for HE development and reform − Expansion of student numbers and diversity of social backgrounds challenge HE access and equitability − New sub-groups accessing HE, increasing diversity in student mix
Advancing the networksociety − Strategic alliances within HE sector and cross-sectors − Inter and intra organizational forms of collaboration	**Network opportunities and their leverage for HE** − New strategic partnerships, including other universities, as well as corporations and industry entities such as technological firms − Organizational form of co-operation − Interdisciplinary approaches
Programsdriven by a university's internal strategic objectives − Workplaces able to absorb the increasing number of HE graduates − Strategic emphasis on curriculum, as leveragefor reinforcing the positioning of a HE institution, both via diversification and/or specialization	**Corporate influence on HE and the rise of corporate universities** − Workplaces increasingly require an HE degree − HE needs to offer new skills and knowledge that enable students to enter the job market − Re-thinking of curricula and program offerings − Support for academics and staff in updating their competencies

Table 2: Strategic recommendations for contemporary higher education

Moving from …	… going toward

• **HE institution prestige and value for society**
  − Focus on public good, education and research excellence
  − Decrease in direct and indirect public funds encourages HE institutions to search for private streams of resources and funding
	• **Guarantee resources for sustaining growth**
	  − Additional performance metrics to measure universities' excellence, and ultimately enable them to access resources for future development. Market will assess which universities deserve to be part of the top leagues
	  − More advanced stage of private fundraising, leveraging university reputation to become preferred partner of choice of key stakeholders (students, alumni, professors, corporations, etc.) and new forms of collaboration between the university and the rest of the world

• **New managerialism in public sector**
  − Pivotal role of academics in contributing to HE institutions' quality and reputation
  − Substantial investment of resources for research activities and limited autonomy in investment strategies (reliance on public funds and investment guidelines)
	• **Entrepreneurial leadership at all levels of HE institutions**
	  − Pivotal role of academic-managers in contributing to HE institutions' quality and reputation and participating actively in management and decision making
	  − Increased autonomy and accountability permit more control over resources and freedom to choose investment strategies. Management of HE has to encompass more complex and urgent business decisions (e.g., the ICT infrastructure)

• **Traditional relationships with key stakeholders using traditional media**
  − Tech-savvy students and industry interlocutors vs heterogeneous ICT competencies among academics
  − Knowledge productionusing a limited set of websolutions
  − Traditional learning process and heterogeneous adoptionof participant-centered pedagogies, mostly in class
  − Service marketing strongly relying on traditional media and one-way communication (from HE to rest of the world)
	• **Increased connections, interactions, and value co-creation with a larger set of key stakeholders**
	  − Learn to navigate the new technology-oriented and multimedia environment, with HE institutions supporting academics as they acquire necessary skills
	  − Deeper integration of Web 2.0 and networking in research
	  − New design of learning processes and infrastructures, aiming at co-learning through highly interactive and responsive pedagogies
	  − Dialogue and participative communication, leveraging new media (and in particular Web 2.0 and social media) to address HE's different audiences with customized messages