HEA HIGHER EDUCATION AUTHORITY
AN tÚDARÁS um ARD-OIDEACHAS

HEA Forward-Look Forum

Higher education futures: which issues and trends are most significant for Ireland and the HEA?

8.30am–2pm, Wednesday 31st May 2017
Gandon Suite North, Davenport Hotel, Merrion Street Lower, Dublin 2

Discussion paper

1. 7th HEA Forward-Look Forum

It is hard to predict the future, but almost everyone identifies similar trends likely to have a significant impact on society and higher education into the future. The OECD[1] (2016) identifies five mega-trends: the dynamics of globalisation, future role and responsibilities of the nation-state, urbanisation and cities, changes in family structures and needs, and the transformative effect of technology. Looking towards 2050, the EU identifies six dimensions: global demographic and societal challenges; energy and natural resource security and efficiency/environment and climate change; economy and technology prospects; geopolitics and governance; territorial and mobility dynamics; and research, education and innovation.[2] The European University Association (EUA), drawing on a survey of 451 higher education institutions (HEI), identified "the new economic reality—the economic crisis, youth unemployment, the requirements of the knowledge society, [and] globalization"[3] as critical drivers of change. While these trends are each individually significant, they do not exist in isolation – nor will they be homogeneous around the world. People will inhabit what Watson calls "multiple futures"[4] depending upon personal and societal circumstances.

The 7th HEA Forward-Look Forum is focused on looking at some of these future trends – in the context of helping to shape immediate and future policy challenges and choices for Ireland. The aim is to set the context for, and to inform and input into the *HEA Strategic Plan 2017–2021*.

Irish higher education has shown remarkable resilience in meeting recent challenges, but the challenges of the future will be of a different magnitude. The "value-added" in the foreseeable future will result from delivering high-quality education to students from a broader array of social and economic circumstances, at all stages of life; undertaking new discoveries, solving societal challenges and innovating more ideas; and playing an effective and responsive role in a more complex and competitive global economy.

> The multidimensional nature of many of the social, economic and civic challenges means that they require multidisciplinary approaches, and higher education institutions are uniquely well placed to lead, develop and apply these, in partnership with others.[5]

The *HEA Strategic Plan 2017–2021* appropriately focuses on implementation of specific government objectives over the next five years. But these objectives should be placed in context – looking ahead at the challenges and changes in the world around us as well as within Ireland. Good forward planning requires us to critically test assumptions and think outside-of-the-box. The *National Strategy for Higher Education* set its horizons at 2030; the recently launched *National Planning Framework* is looking towards 2040. This Forward Look Forum asks us to envisage the future, and consider what the HEA's strategic objectives should be in order to address these challenges.

2. What mega-trends are shaping society into the future?

One thing is for certain, the increasing "widening, deepening and speeding up of connections across national borders" will continue to transform the way people live and work, and what, where, when and how they learn. Whether we recognise it or not, we are all global citizens – moving across countries and borders, and connected to each other through trade and technology. By 2050 around 70% of the world's population is expected to be living in cities, but this trend will be greatest in OECD countries. No longer simply part of national systems, these global cities will play an increasingly more strategic role internationally.[6] In the future we will be competing with cities—and higher education institutions (HEIs)—which most of us never heard of a few decades previously.

Urbanization will be shaped by demographic and cultural change. The United Nations estimates that the world's population will rise to 9.7bn by 2050 and 11.2bn by 2100.[7] More than half of global population growth between now and 2050 is expected to occur in Africa. In contrast, across Europe, net migration is estimated to offset population decline until around 2020, after which the population will decline due to lower birth rates. Some of this is due to changes to marriage and household formation; there are new patterns of working, and families are becoming smaller due to having children later in life. Because of significant gains in life expectancy, "our children can expect to live on average to celebrate 97 years, and from 2030 onwards it will be not surprising if life expectancy reaches 106. The concept of 'old age' will have to be redefined."[8] Those aged 65 years and over will increase from 18% of the European population to 28%, and those aged 80 and over will rise from 5% to 12%, by 2060.[9] This will influence both the shape and size of the labour-force, and the dependency ratio. Thus the inflow of highly skilled migrants into OECD countries will be necessary and likely to continue.

These developments are being reflected in changes in the overall balance of economic activity and influence. Multi-polarity will dominate and the international system will become more heterogeneous and competitive. Over the next fifty years, changes in the world order are likely to intensify as the "economic balance [shifts] towards emerging economies, particularly those in Asia, with the share in world-GDP of non-OECD countries rising well beyond that of

the current OECD area by 2060".[10] There is much talk of an Asian 21st century replacing the American 20th century and the British 19th century.[11]

Previous decades saw the EU, Japan and US dominate science and technology.[12] Recent years has seen the rapid expansion of R&D performance in the regions of East/Southeast and South Asia. While representing only 25% of total global R&D in 2001, these two regions have increased their share to 34% in 2011, with China exhibiting the most dramatic R&D growth pattern.[13] For decades, the US had the world's highest tertiary graduation rate, enabling it to supply almost a third of today's 55–64-year-old graduates across the world's major economies countries.[14] Today that rate is shrinking due to relative growth in other countries. By 2030, 2/3rds of the new middle class will reside in Asia.[15] By then also, China and India are likely to account for more than 60% of STEM gradates in the G20 area, with Europe and the United States providing a mere 8% and 4%, respectively.[16]

Technology brings opportunities as well as risks; it contributes hugely to greater connectivity which is fundamentally changing and challenging how we live, work and interact with people and things now and forever.[17] Mobile smart devices are omnipresent. Two billion people are currently connected to the internet, rising to almost 4bn—or over half the world's population—by 2018. By the end of 2017, smartphone users will outnumber phone users.[18] According to the OECD, "since 2007, the percentage of individuals who have ordered goods or services on line has increased substantially across OECD countries, from an average of just over 30% in 2007 to 50% in 2014."[19] Big discoveries and innovations will span categories such as artificial intelligence, the internet, interfaces, robotics, biotech, energy, and space—and enhance human capabilities.[20]

Without question, technology is a significant driver of innovation, competitiveness and growth, but its disruptive influence is also having a transformative effect on people's patterns of life and work. This will change the kinds of jobs and the nature of work as we know it, and will consequently require employers and people in general to be far more flexible and adaptable, and engage in continual up-skilling. In its most positive scenario, entitled the *European Renaissance*, the EU estimates that as economies continue to grow and invest, there are like to be "far more jobs than people" in the future.[21] This is due to a combination of factors, including demographic decline in developed countries despite people ageing healthily, and the fact that technology creates more jobs than it destroys.[22] In addition to the adage that people will work in jobs which we don't even know about now, the workforce itself will become more diverse—with a greater range of ages, more women and more ethnic diversity. Multi-culturalism and cultural diversity will become the norm, contributing to the on-going "shift away from the white middle-aged alpha male culture that has dominated."[23] This will alter the historic link between culture, ethnicity and territorially-defined nations, thus changing the population mix of our societies forever.

Education has played a significant role in this process, and will continue to do so in the future—providing the skills and competencies needed to operate in this new world but also producing the new knowledge to fuel social and economic change alongside provoking deeper inquiry, understanding and analysis. It has the potential to be a powerful tool helping to raise opportunity and aspiration. Higher education participation and enrolment has expanded considerably over the past century, and particularly since 1970. Nearly one-third of the

world's population (29.3%) is under 15 years. The number of students enrolled in higher education is forecast to rise from 99.4m in 2000 to 414.2m in 2030—an increase of 314%. If an extra ten years is added to these projections, the total number of students pursuing higher education worldwide by 2040 is likely to exceed 600m. This would represent 10% of the world's population aged 15–79 by 2040, compared to 4% in 2012.[24] Accommodating all these students will require many more and different types of educational providers—and this is before we factor in people living and working longer, and needing and wanting to re-train and refresh their skills and knowledge.

Education is a global enterprise, especially tertiary education. Over the next decade, there will be more than 8m internationally mobile tertiary students compared with 4.5m today, and 0.8m in 1975.[25] The fastest growing (absolute) outbound mobile student flows (next decade) will come from: India (71k), Nigeria (30k), Malaysia (22k), Nepal (17k), Pakistan (17k), Saudi Arabia (16k), Turkey (13k).[26] More importantly, other competitive markets are growing. Other governments, especially in Asia, are investing to improve the quality and overall educational standard of their universities. China is becoming a big force in Asia. While education is nationally-rooted, trans-national providers will become bigger players, catering for a more diverse and technologically-connected cohort of students. Calderon suggests that "by 2040, higher education will be more greatly integrated with related industries (such as media, telecommunications and professional services)." Scientific-scholarly endeavour (including "big science" projects) will be led by large trans-national networks and collaborations, which will lead inevitably to greater consolidation of expertise.[27] These developments will transform global higher education, which is likely to become increasingly stratified into three broad groups: a small group of "world-class" universities, several thousand research-intensive national universities, and thousands of teaching-intensive institutions.

For people in developed/OECD countries, the underlying belief has been that each generation will be better off than the previous one; progress is a birth-right.[28] But this is changing. Globalization has been accompanied by an unequal distribution of societal goods. Thus despite the near universalisation of higher education participation—with better outcomes for individuals and society—social inequality has continued to grow everywhere.[29] This is because as systems expand, there is a tendency to become more differentiated and hierarchically organized while stratifying opportunity.[30] In the past, OECD countries competed primarily with countries that offered low-skilled work at low wages. It is no longer simply jobs that are moving but know-how and high-value work.[31] Homelessness and poverty are visible on our streets almost everywhere we travel.

Higher education has historically had a close relation with the city and country of its founding but, today, it is often considered part of the elite, with campuses viewed as islands of affluence amidst "seas of squalor, violence, and despair".[32] True, higher education graduates have more and better opportunities than those with only secondary qualifications, but some of our assumptions about the exponential benefits of human capital theory are being exposed.[33] Rather than higher education determining the position of graduates, social background remains an enduring factor—shaping educational and career choices, and life chances even after acquiring a tertiary qualification.[34] Being and/or feeling left behind, along with a deepening cultural cleavage, helps explain the rise of populist social-political reaction

which is likely to continue to disrupt many Western societies despite economic recovery and growth.[35]

The world is in a state of flux. While Ireland is changing, the world in which we are situated is also changing and in very significant ways. How relevant are these mega-trends for Ireland? Are there other trends we should also take account of? Are some trends more likely or predictable than others? And, what are the implications of these trends for Irish higher education, and specifically for the work of the HEA? These questions will form the basis for the 7th HEA Forward-Look Forum. The aim of the Forum is to look ahead—at some key trends likely to shape immediate and future policy challenges and choices for Ireland, as well as set the overall context for the HEA as it considers its strategic plan for 2017–2021.

3. What will Ireland be like by 2040?

Over the last decades, Ireland has been utterly transformed. Notwithstanding the Great Recession which followed the financial crisis of 2008, Ireland today is an advanced, developed country, an active member of the European Union, the United Nations and the OECD.[36] Projections for Ireland note the growing significance of technological change, changing consumption patterns, new ways of working, global value networks (value chains), urbanisation, and pressure on resources and shifting power structures.[37]

The scale of population growth over recent decades has been particularly noteworthy. Our population has increased by more than 1.1m people since the 1990s, reaching 4.75m today. Total population in the Republic is estimated to reach 6.7m by 2060, and 10m across the island of Ireland.[38] Despite a return to net outward migration in the years leading up to Census 2011, the population has continued to grow strongly due mainly to the high number of births in recent years.[39] From being in 4th place in 2006 (behind Iceland, France and Norway), Ireland now has the second highest fertility rate in Europe (after France)—1.94 children born per women compared with the EU average of 1.58. This growth rate is bringing Ireland's population density from 65.3 per square kilometre to 142 per square kilometre, making it about the 130th most dense country in the world (out of over 200 countries), according to the UN and World Bank.[40] It may appear otherwise, but people in Ireland "don't spread out evenly".[41]

Several factors are influencing the current and future shape of the Irish population and labour force.

1. High birth rates in Ireland over the last 15 years have led to a substantial increase in the numbers going through the school system, with numbers expected to be almost 30% higher by 2030;[42]
2. Due to the size of Ireland's young population, 60% of people in the labour force today will still be eligible workers in 2035;[43]
3. The over 65-year-old population will rise from 532,000 in 2011 to approximately 1.4m by 2046; those aged 80 years and over will rise even more dramatically. The former group's proportion of the labour force is likely to rise, at a minimum, from 23.4% today to 30.3% by 2026 "through a combination of increased participation and demographic shifts;"[44]

4. 30% of the population is currently categorized as economically inactive. Of this cohort, almost 300,000 are occupied with home duties and 350,000 are students; over 100,000 are not working due to ill-health or disability.

While Ireland has a significant young and older population, the number of people of working-age between 20 and 64 will fall over time. As such, the dependency ratio will more than double under all combinations of assumptions, presenting challenges for resourcing public services, including higher education, at same the time that society requires more educational opportunities.[45]

How will these demographic changes affect where people live and work? Spatially, the greater Dublin region will continue to be the prime magnet for growth. In 2011, Dublin accounted for 27.6% of total population while the Mid-East represented 11.7%; this compares with just over 25% and 6.7%, respectively, fifty years earlier. Based on current patterns of internal migration, the Greater Dublin region (Dublin and Mid-East) is projected to account for 42.4% of the total population by 2031. The population of all other regions will increase more slowly, and as a result will lose population share.[46] Because,

> employers are increasingly likely to locate where there are larger pools of labour…the spatial pattern of employment is [likely to be] mainly focused on the urban hierarchy of cities and large towns.[47]

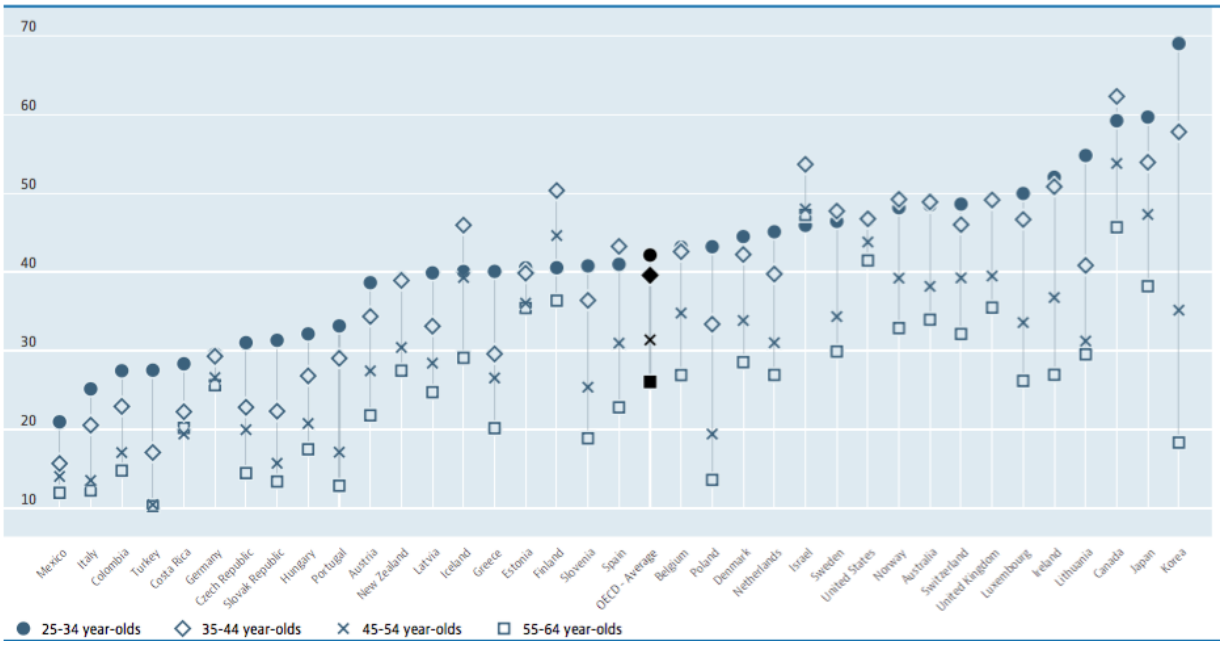
While the future will be shaped by different types of working arrangements, most of this will be around cities and larger towns. Approximately 63% of our population currently lives in urbanized areas; this is similar to other developed countries, albeit Ireland remains "below the average in the EU (75%) and the OECD (80%). Irish rurality makes us closer to Eastern Europe and Mediterranean countries than our Northern European neighbours."[48]

At a sectoral level, *Enterprise 2025* has focused on areas where Ireland has a competitive advantage: ICT (hardware and software), Health Lifesciences (including pharma, biopharma and medical technologies), International Financial Services, Internationally Traded Services, Engineering/Industrial Products and Agri-Food. Combined with new opportunities, the government's enterprise policy framework and strategy aims to have 2.18m people at work by the end of 2020 and to achieve an unemployment rate of 6%; this equates to an additional 266,000 people at work from a 2014 baseline.[49] Focusing on this time-frame may not, however, do sufficient justice to the fact the concept of work will itself be fundamentally transformed over the coming decades.

These projections pose challenges for higher education, and the education and training system generally, in balancing the needs of society and students, and those in and out of employment, who all need to upskill or reskill over their lifetime "regardless of their occupation or existing education level".[50] At the start of the 20th century, 3,200 students were enrolled at six universities on the island of Ireland. This stands in stark contrast to the almost 200,000 full- and part-time students enrolled today across DES-Aided institutions – principally in seven universities and fourteen institutes of technology (IoT). Furthermore, this figure does not include students enrolled in the private higher education (PHE) sector, estimates of which suggest PHE providers enrol about 10% of HE students in Ireland.[51]

Due to a combination of planned investment and targeted policies, national participation rates have increased from 20% in 1980 to 69% today. Under its highest growth scenario, the Department of Education and Skills (DES) estimates a 25% increase in the level of mature and international students on current levels. Combined with an increase in the transfer rate from secondary to tertiary of 70%, full-time student demand is likely to reach ~227,244 by 2029, compared with ~170,000 today.[52] Ireland's performance compares well against other OECD countries. Only Korea, Japan, Canada and Lithuania have a higher tertiary education rate for the 25–34 age group, while the performance of 35–44 year olds also places Ireland among the best performing. However, it is noticeable that the attainment level of the older age group (55–64) is more modest—reflecting "relative recency of the expansion of the system"[53] (See Table 1 below).

Table 1 Population with tertiary education. *25–34-year-olds/55-64-year-olds, % in same age group, 2015*



OECD (2016). *Education at a Glance*, https://data.oecd.org/eduatt/population-with-tertiary-education.htm

Democracies require active well-informed "global" citizens who can fully partake in and contribute to society at all levels. Thus, due to the speed of change and its impact on life and work, the quality, capacity, diversity and flexibility of our (higher) education system matters. As the economy grows and evolves, society and individuals across Ireland will have emergent and different education and training needs. "A growing productive labour force is a key issue in staving off a demographic ageing crisis, which has been a main concern in other European societies".[54] In the short-to-medium term, demand will be driven by demographic growth in the school population, but in the future demand will come from currently under-served sections of society, e.g. first-in-family, as well as from mature and life-long learners, people requiring new/additional skills and knowledge over their lifetime, and increasing internationalisation.[55] This suggests the demand for higher education will continue to rise, contrary to an assumption in the 2040 National Planning Framework consultation document

which suggests "demand for places in third level education will peak in the mid-late 2020s".[56] At the same time, global competitive pressures will require that educational provision continues to evolve so that Ireland can remain a dynamic producer of new knowledge, with graduates who are innovation savvy and capable of living successfully into the next century. These assumptions foresee a growing and multi-faceted role for higher education in Ireland, and requires us to think much more imaginatively about the role of higher education in the future. Ironically, the fact that Ireland is currently privileged by demographics may be forestalling closer scrutiny of these future trends.

So—what will higher education be like in 2040? What role should the HEA play? What strategic objectives should the HEA prioritise?

4. Issues arising from previous HEA Forward-Look fora

Over the last several years, the Forward-Look Forum series has discussed a range of cross-cutting themes with the aim of cultivating longer-term and fresh perspectives. Throughout, we have drawn on the experiences of other countries, systems of higher education and institutions, and policy options to help bridge the gap between research and practice, and create a richer policy and publicly-informed environment for Irish higher education and research. This section provides a brief summary of some of the issues discussed. A full set of background papers, presentations and reports from each Forward Look Forum are available at: http://www.hea.ie/en/policy/policy-development/hea-forward-look-forum.

4.1 From Regional Clusters to Knowledge Hubs

Higher education has multi-dimensional roles. It provides educational programmes thereby enhancing the social capital and skills of Irish citizens, and undertakes research and discovery thereby contributing to new ideas and innovation. As a critical component of the social, cultural and economic eco-system in which it is located, higher education engages with society, and contributes to regional development. The benefits of this relationship flow in both directions—to society and the economy, and to higher education—underpinning teaching and learning, and research. There are a variety of ways that an HEI might engage with its community or region and mobilise the resources of the institution to promote innovation and growth, from service-learning and internship programmes for students, employment-based graduate and Ph.D. programmes, and business-higher education partnerships to deep holistic engagement at the institutional level.[57] However, while engagement has become an increasingly important component of national policy and institutional strategy, it is often envisaged as a "third" or parallel mission next to teaching and research, and it rarely forms a component of regional planning.

The key messages from case studies in Ireland, Spain and the Netherlands were that transition towards sustainable knowledge regions depends upon:

- Leadership capacity across all partners with the ability to create a shared vision for the future;
- Capacity for collaboration, through networks and associations, through neutral regional brokers as well as through joint projects and sharing facilities;

- Maximizing the use of available resources through cluster-formation, the generation of critical mass, and the nurturing of social ties; and
- Generative capacity of research institutions, laboratories, and higher education institutions.

As Ireland develops and expands socially, economically and demographically, what role can higher education play in building a sustainable knowledge base across the country? To what extent can HEIs be the *anchor institution,*[58] working with other educational providers (primary, secondary and post-secondary), enterprise and civil society for mutual benefit? What is required to make a region successful? How can HEIs be supported, and their contribution acknowledged and measured? What role should the HEA play? What strategic objectives should the HEA prioritise?

4.2 International Trends in Research: What Does Ireland Need to Succeed?

Research is central to the mission of higher education. Research-based higher education is the foundation for social, cultural and economic development, underpinning knowledge-production and human capital formation. The evolution of individual disciplines—and the renewal of the academic profession—is dependent upon research, and fostering a synergistic relationship between teaching and research (at undergraduate and postgraduate levels). But, in the 21st century, it is important to acknowledge that higher education is just one among several players in the creation of knowledge. With the emergence of Open Innovation 2.0,[59] HEIs are situated within a broader innovation ecosystem in which externally focused, collaborative innovation is replacing closed, inward-looking research.

Today, higher education systems are under growing stress as the costs of mass higher education, and of competing in world-class scientific research escalate. Some governments are investing heavily in higher education and research while others are more restrained. This gap is widening.[60] There is considerable policy discussion about the best balance between requirements for human-capital development through provision of mass/universal post-secondary education and the ability of a nation to compete in world-class science (in its broadest sense). At the same time, higher education is being asked to respond more directly to societal needs. As part of the overall push for greater accountability, there is increasing emphasis on assessing and measuring research performance and productivity, and impact, relevance and benefit.

As Ireland moves into the next phase of developing a global knowledge economy, what role should research-based higher education play—in terms of underpinning teaching and learning, strengthening human capital and talent, generating new knowledge and innovation, and addressing societal challenges? Given the different outcomes, and differing time-spans within which impact is produced, how best can these outcomes be achieved and evaluated? What are the implications and unintended consequences of different choices for human capital development and the research pipeline, and for the sustainability and global competitiveness of the Irish economy? What role should the HEA play? What strategic objectives should the HEA prioritise?

4.3 Skills, Employability and the Post-Secondary Sector: What is the Role for Higher Education?

The question of how higher education can best meet the needs of nations' economies is a question of international concern, and countries share common challenges. Globally the pace of technological change is rapid and driving skills needs, a consequence of which is that graduates' skills are increasingly under the microscope. Some employers focus on specialist skills while others emphasize generic core competences. On the other hand, academics often say tailoring higher education provision to meet employers' needs is vulgar and instrumentalist. Because most students enter higher education with a view to enhancing their employability and earnings, how should this problem be addressed?

Research suggests that the employability of graduates can best be fostered within higher education through activities that enable students to develop team-working, communication, and problem-solving skills on the one hand, and through high-quality work-experience on the other. Because knowledge and skills have different life-spans, more weight may need to be given to understanding distinctions between them. This applies to both the supply and demand side: higher education and further education will have to move towards certification of transversal knowledge skills gained through programmes while employers will need to move to better specification of competencies required by them.

Longer-term challenges lie elsewhere. Developing competencies for problem-solving and innovation, as well as analytical and critical thinking, does not start in higher education. Children entering school now will live beyond the end of this century, and are likely to change careers several times over their lifetimes.[61] Higher education plays a vital role in pre-employment education, but should it play a bigger role in intra-employment education, e.g. life-long learning (LLL), in the future? To what extent will the mix between pre-employment and LLL change over time and differ between institutions? How well-prepared is higher education to meet societal and labour-market demands, and what needs to change? Do we require much greater cohesion across the post-secondary system, between further and higher education, and across the educational system as-a-whole, to ensure better co-ordination and transitions between education and the labour-market? What role should the HEA play? What strategic objectives should the HEA prioritise?

4.4 "Unbundling" of Higher Education: What are the implications and opportunities for Ireland

The continued expansion of higher education on a sustainable basis represents a challenge for countries around the world, especially when we factor in growing demand and changes to the dependency ratio. Against this background, there is a growing imperative for higher education to engage with new opportunities to innovate. In the traditional model, higher education serves effectively as a gatekeeper, assessing prospective students for eligibility to enable them to commence a linear course of study which is "spiced up" with study abroad, internships, career counselling and participation in sporting activities. In the new and emerging model, the institution is a curator, providing students with the learning experiences which they need and mapping the competencies which they acquire, obviating the need for students to enrol on courses of pre-specified duration.

The unbundling of higher education has six dimensions: i) severing the link between the credit-hour, course-duration and attainment of qualifications, thereby widening access and lowering costs for students; 2) providing educational programmes on and off campus, in the physical and virtual worlds; 3) transforming education via technology, not simply using it as a parallel strand; 4) embracing new forms of credentialing, with increasing availability of just-in-time, bite-sized courses; 5) embracing open educational resources (OER) and "open textbooks"; and 6) developing online student-support services, increasingly offered by alternative providers.

These developments will inevitably challenge the professoriate and change the role of faculty-members and campuses over the next 10–20 years. It has been suggested that the role of the professor could be unbundled into nine different parts, including instructional design, course-delivery, and advising.[62] The role of the campus is also changing, emerging as a "third place" of higher education, competing with other forms of learning such as coding boot-camps.

Because educational change takes time to implement, how should Ireland, and Irish higher education, prepare itself for these growing challenges? To what extent should the sector encourage or facilitate "unbundling" to meet the growing and changing needs of a more diverse student cohort? How can the resource allocation model for Irish higher education institutions better support the unbundling of provision? What role should the HEA play? What strategic objectives should the HEA prioritise?

4.5 Private Providers: What Role Should They Play in the Irish Higher Education Landscape?

Around the world private higher education (PHE) is growing. Some providers have existed for a century or more while new entrants are emerging and existing providers are changing focus and ownership.[63] National context matters. Where traditional/public HEIs fail to respond to opportunities, private providers are offering an alternative "product" that meets the growing demand for flexible and affordable access, or in specific fields or occupations. Internationalisation, digitalisation and on-line learning, and cross-border and transnational education have provided further opportunities for PHE. The distinction between the public and private sectors is increasingly blurred, as private providers contribute to meeting rising student-demand, and public institutions increasingly seeking alternative revenue-streams in challenging fiscal environments. In the future, there will be a more diverse range of providers, "public and private, national and international, global and corporate, campus-based and virtual."[64]

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sciences/pdf/policy_reviews/global-europe-2050-report_en.pdf , p8; see also EY (2015). *Megatrends 2015. Making sense of a world in motion*. London: Ernst & Young. Retrieved 19 March from http://www.ey.com/Publication/vwLUAssets/ey-megatrends-report-2015/$FILE/ey-megatrends-report-2015.pdf

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