



Employability: Asia and Europe Prepare the new generation
Working Group 4: Strategies for the New Economy

Strategies for the New Economy

Dr Paul BENNEWORTH
University of Twente, the Netherlands

“We are currently preparing students for jobs that don’t yet exist . . . using technologies that haven’t been invented . . . in order to solve problems we don’t even know are problems yet.” (Fisch & McLeod, 2007).

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Introduction

With increased numbers of unemployed and underemployed youth in Asia and Europe, employability is a core topic for policy makers, educators, researchers, businesses and young people. Due to growing demands from the labour market, a degree alone does not guarantee employment anymore. To better prepare and adapt the new generation for the labour market, the cooperation between universities, businesses and governments has to provide students with the necessary skills and competences.

ASEM 5th Rectors’ Conference & Students’ Forum Declaration

In this conceptual paper, we are concerned with the question of how can universities better prepare and adapt the new generation for the labour market? Central to our paper’s approach is to consider the models and strategies by which universities, businesses and governments provide students with the necessary skills and competences for the new economy. Providing students with the necessary skills to help

societies globally adapt with the rapidly changing contemporary world is vital to higher education fulfilling its commitments to society in the 21st century. We argue that such strategies for the new economy need to focus on a re-individualisation of higher education, allowing each student to participate in a range of communities where they can acquire, challenge, use, and transfer different kinds of knowledge. We make five steps in the argument:

1. The grand challenges of the 21st century demand a new kind of graduate, who can deal with the 'multidisciplinary messes' raised by the Grand Challenges.
2. Current co-operation models are based around the transfer of ideas, technology and artefacts rather than the movement of people who can solve these multidisciplinary messes.
3. Emerging 'strategies for the new economy' are tending to 'picking winners' on the basis of current high employment and remuneration rates rather than these challenge-based skill sets.
4. Higher education needs to give students the opportunity to gain experiences moving knowledge between different knowledge communities: teaching, res, civil society, and business.
5. 'Strategies for the new economy' need equip students with the skills to be far more mobile as graduates between different communities in collective solving these grand challenges.

What do we mean by the 'new economy'?

There is a widespread recognition that there has been a qualitative shift in the way that societies are organised in the 21st century. People started to talk of the knowledge economy in the early 1990s, in recognition of the fact that productivity growth and welfare gains were no longer purely explicable in terms of investments in land, labour and machinery (Romer, 1986; 1994; Solow, 1994). This is commonly understood as meaning that what is driving improvements in living standards is increasingly investments in knowledge capital, much the skills, capacities and competencies within workers, rather than purely their labour efforts (Temple, 1998). Growth is increasingly dependent on the capacity to innovate and drive change in productive ways, and that fact is in turn being increasingly recognised within public policy (McCann & Ortega-Argiles, 2013a, 2013b).

It is possible to talk of a more recent shift to a new form of the knowledge economy, whether as knowledge economy 2.0 or the social knowledge economy (Rutten

& Boekema, 2014; Benneworth et al, 2015). This refers to a change in the nature by which knowledge capital is created, circulated and exchanged, and the relative importance of geography to those processes. Because knowledge is a human characteristic, knowledge processes – creating, circulating, transferring, challenging and destroying knowledge – are fundamentally social (Roberts, 2000). In the ‘old’ knowledge economy, this meant that people had to physically come together to exchange knowledge: proximity matters in knowledge exchange for innovation (Boschma, 2005). What distinguishes the social knowledge economy are the increasing opportunities that social media offers to allow people to build knowledge in virtual communities, and to circulate it within communities that physically meet up (Roberts, 2014).

Indeed we see virtual knowledge communities being touted as one possible future direction for higher education in the form of online learning although in ways that led some to question whether this haste is driven more by financial than pedagogical concerns (Waldrop, 2013). Universities as institutions are always dependent on the delivery of particular societal missions in return for their, what Barnett calls the societal compact (2000). Thus, perhaps a more urgent driver for change coming from society – and not just technologies and universities - is the need to adapt to the Grand Challenges of the 21st century.

We use this term here to refer to those imminent and urgent problems arising across industrial societies that require solving in the 21st century if humanity is to survive and flourish into the 22nd century. These challenges are highly complex socio-technical problems facing humankind, demanding large scale solutions mixing scientific ingenuity with political will and social mobilisation. These “grand challenges”, such as energy security, urban inclusion, better healthcare and access to water for all, require long term solutions built up from multiple actors contributing in diverse ways. Ackoff (1999) refers to this class of problems as ‘multi-disciplinary messes’:

“These are complex, dynamic, multi-disciplinary problems that have scientific, technical, social scientific and humanistic dimensions ... these are precisely the kinds of problems that graduates of universities will face in their work lives, and that local, regional and national governments consider to be urgent” (cited in Greenwood, 2007, p. 109).

We have reached the limit to ‘technological fixes’ to these problems, and alongside technical innovation, we urgently need new forms of social organisation, political mobilisation, community connectivity, knowledge exchange and co-creation. Solving

these problems requires integrated approaches and co-ordination from the full spectrum of those with the knowledge, resources, legitimacy and power to address them. This is perfectly illustrated by the 'energy transition' where the challenge is not developing new technologies, but rather changing social habits, norms, organisational forms and developing new business models and approaches to make societies function more sustainably (Schreuer, 2011). There is a real risk that in the rush to ensure higher education remains useful and relevant in the 21st century, strategies forget precisely what it was about higher education that gave students the capacity to make a difference to society.

What are the strategies for the 'old' knowledge economy?

There is a widespread recognition that there has been a change in the way that knowledge is produced, circulated and exploited within society, within the context of the emerging knowledge economy. This is often explained in terms of a shift from 'Mode 1' to 'Mode 2' knowledge production (Gibbons et al, 1994; Nowotny, 2001). According to this perspective, in Mode 1 knowledge was produced in universities and research centres and then taken up by industry to generate social benefits. Conversely, in Mode 2, knowledge is produced interactively by both those who are concerned with generating it (universities) as well as those who seek to exploit it (businesses), and that knowledge achieves value by bringing societal improvements. The Triple and Quadruple Helix models bring in the additional dimensions of government (in the triple helix) and civic society (in the quadruple helix) in shaping these knowledge processes towards socially productive ends (Leydesdorff & Etzkowitz, 1996; Leydesdorff, 2012).

The issue of co-operation between universities, business and governmental agents certainly appears at the forefront of policy agendas, and the benefits that this brings back to education appears to be one element justifying university-business co-operation (UBC). Perhaps the first report to explicitly place this on the agenda was the OECD Centre for Educational Research in Innovation (CERI), whose 1982 report *Universities and communities* explored the different kinds of special mechanisms universities might use to stimulate greater business co-operation in both research and teaching. More recently, this has been expanded to recognise the fact that universities and businesses are important stakeholders for each other (Jongbloed et al, 2007). From this perspective, the most effective co-operation is delivered by identifying and building

common platforms together where these areas of potential mutual benefit can be achieved (OECD, 2007; Goddard, 2012).

A range of new university models have been proposed to achieve this, as Benneworth et al, 2010 note, covering the **entrepreneurial university** (Clark, 1998), the **virtual university** (Cornford & Pollock, 2002), the **engaged university** (Watson, 2007), the **ethical university** (Garlick & Palmer 2008) and the **civic university** (Goddard & Vallance, 2013). Healey et al (2014) published a comprehensive report where they envisaged that co-operation might involve business involvement in (a) curriculum development, (b) tailored CPD programmes, (c) exchange and mobility programmes, (d) continuing education & lifelong learning, and (e) entrepreneurship education programmes. However, although students are mentioned as being important to UBC, the reality is a tendency to emphasise research co-operation rather than education (Davey et al, 2011), and structures for co-operation rather than the dynamics of processes, practices and behaviours underpinning effective co-operation (Perkman et al, 2013).

What's going wrong with current university-business co-operation

The critical question is how such university-business co-operation can provide students with the skills and competencies in the context of the grand challenges, to act as agents of social change and integration in their future career. On one level UBC is going extremely well, as demonstrated by the various European Union initiatives to stimulate dialogue between universities and firms. There is the high-level University Business Forum that meets every two years to promote high-level exchanges and increase the entrepreneurial character of education. There are specific sectorial organisations, the Knowledge Alliances, which aim to share best practice and promote creativity and innovation across a range of disciplinary fields. The Commission has developed a tool, [HEI Innovate](#) to help universities assess their innovative potential and improve their performance in developing transferrable innovative education.

But there is a problem with the current approaches, which certainly represent a great improvement on models where universities pay no attention to societal demand, in that they are rather instrumental in the way that they regard business. This is particularly problematic given the opening citation, with universities trying to educate students today for positions that do not yet exist, to tackle societal challenges that are not widely understood or even acknowledged. There is a risk that firms and universities work together on the most obvious activities that seem to yield the greatest short-run benefits

for them and their students (Benneworth et al, 2011). There is a risk that we miss the future solutions to solve these grand challenges, and end up educating students to develop ‘apps’ and ‘widgets’ rather than delivering societal change.

The limits to creating today suitable student skills for tomorrow

The limitations to the current approach can be seen in the problems faced in a region often cited as an example of innovative practice and close co-operation between government, universities and industry, that of Oulu in the north of Finland (Pinheiro, 2012). As a result of this close co-operation, the university developed highly specialised engineering masters’ degree programmes to supply suitably skilled engineers into the once world-leading Nokia mobile telephony firm. However, in the late 2000s, Nokia’s fortunes waned, eventually leading to the closure of the Oulu site, and leaving those students then undergoing training perhaps overspecialised in training towards jobs that would no longer exist by their graduation (Oinas, 2016).

How can we then develop a long-term perspective on UBC, and what kind of strategies do we need for this? The standard answer is that university education need equip its graduates with **transferrable skills** that maximise their applicability in other knowledge economy sectors. These often take as their starting point the need to be able to work with technology sectors and therefore seek to introduce curricular elements that make students more entrepreneurial, creative or innovative. But we are struck by another vision of Higher Education in which students bring a range of different perspectives from a range of academic approaches in the humanities, social sciences, engineering, natural sciences and life sciences to address these grand challenges and wicked issue. The University of Oslo’s Rector in the 2000s was theology professor Inge Lønning, who according to Gulbrandsen’s official university history (2011) stated that the university’s goal should be “to make sure that every top management group in Norway’s firms includes at least one philosopher” (translation in Benneworth et al, 2016).

What needs to be done better in UBC?

Higher education’s efforts to work more closely with businesses appear to trap them in an increasingly technologically focused view of the world. And at the same time, we see from the business and non-profit sectors new models for innovation emerging which stress much more than just developing technology in a profitable way. They recognise

that solving grand challenges require bringing together different knowledge elements, with trends for:

- **social innovation:** find creative ways to deliver public services to hard to reach groups (Cunha & Benneworth, 2015),
- **open/ democratic innovation:** allow crowd-based or user-led innovation on open-source platforms (Chesbrough, 2003; Von Hippel, 2006),
- **ecological/ green innovation** seeking to produce environmental benefits not economic profits, and
- **public sector innovation** providing the vision and often lacking in the private sector to develop key enabling technologies (Mazzucato, 2015).

We are struck here by universities' roles in various kinds of knowledge communities in their localities in regions, not just commercial but also social, cultural, political, sporting and the voluntary and charitable sector (Vaessen & Van der Velde, 2003). There is an increasing recognition that 'knowledge travels on legs' with students taking their knowledge from the classroom and exploiting it in various ways in society (Wilson, 2011; Kotschatzky, 2014).

There is a mismatch therefore between pressures to virtualise the learning experience, bringing the real-world into the classroom, and the real 'knowledge journeys' they experience in their careers in which graduates can contribute to societal challenges, and for which higher education need be preparing them. These knowledge journeys involve learning the necessary skills to participate in a range of social learning communities, which may be in businesses, in public sector organisations, the voluntary and charitable sector, in civil society. And the key unique skill which higher education needs to be preparing its students for, like the University of Oslo preparing the philosopher for the Norwegian boardroom, can be defined as to:

- (a) be able to productively mobile across a range of social learning communities,
- (b) bring their own education- and experiential knowledge into those communities, and
- (c) collectively create unexpected new solutions to the multidisciplinary messes society faces.

What should “strategies for the new economy” involve?

Any future strategy for higher education that is fit for the new economy need therefore find ways to provide a number of key elements within higher education systems.

Firstly, there is a need for a greater emphasis of the visions of a **liberal arts education** as the basis to give students the depth to understand the human and societal as well as the technological dimensions of the grand challenges (Van der Wende, 2015).

A second element involves changing the way that **entrepreneurship education** is used within higher education, from an emphasis on setting up micro-businesses, to finding **innovative ways to change society** via social entrepreneurship, intrapreneurship & public-sector entrepreneurship (Benneworth & Osborne, 2016).

Thirdly, various elements associated with higher education excellence programmes and university college approaches are necessary to give students the freedom to develop, including **small-scale learning environments, peer-centred learning, & the freedom to explore** disciplines of potential interest (Kolster et al, 2016).

Fourthly is the need to encourage **student mobility within degree course structures**, moving between universities (exchanges), between sectors (placements), between disciplines (via minors), between cultures & countries, to acquire skills in social learning within different contexts.

Finally, there is a need for **strong partnerships with the full spectrum of societal partners** (firms, government, and civil society) to find constructive ways for students to develop and perfect these skills as they are progressing through their educational pathways.

Recommendations for policy-makers in Asia and Europe

There is a range of ways that HE policy makers in Asia and Europe can help to promote the kinds of higher education that will equip students for the kinds of jobs demanded by 21st century society:

1. Preserve the intellectual building blocks for liberal arts education by **supporting teaching, research and students in the humanities and arts** focusing on better understanding what it is to be human and not just immediately employability challenges or technology problems.
2. Fund pilot projects in universities as **experiments in making universities sources of social entrepreneurship** and hence wider societal change; expand successful

experiments into structural funding instruments, and find ways to accredit and recognise successful student social entrepreneurs.

3. Provide universities with the freedom to develop excellence-type programmes for all suitable students, **offering students the freedom to explore different disciplines**; a critical issue here is ensuring sufficient resources to guarantee that students can achieve a depth in different disciplines as well as a breadth across them.

4. Develop effective definitions of useful learning outside academic settings involving the national context and ensuring its recognition via accreditation systems. Such learning typically involves **the application of university theory/ learning in practical activities** outside the university that lead to real societal changes that societal partners signal as being useful.

5. **Broaden out your definitions of societal engagement** to include creating public value in general and away from commercialisation; create specific instruments and funding streams encouraging universities to work more closely with all societal partners as a first step in involving them more closely in their education activities.

There are also a number of key areas where Asian and European governments may co-operate more closely to stimulate appropriate kinds of higher education for the new economy.

1. Encourage **greater cultural exchange between students across the regions** to build up a better shared understanding in the academy and society of how cultures function, as well as to build up the building blocks of greater societal and economic interaction.

2. Explore opportunities for developing **cross-regional funds for societal collective action to address the Grand Challenges**, identifying countries and regions with shortages of necessary human capital to develop solutions to these grand challenges and to help educate and train the social entrepreneurs with the skills to help build better solutions in these places.

3. Develop ways to acknowledge and **recognise contributions to solving societal grand challenges in universities' international profiles**: in particular ranking systems are poor at measuring any kind of socio-economic impact, and the notion of a world-class university could clearly benefit from incorporating this social entrepreneurship profile.

4. Consider a declaration in which regional governments make a full commitment towards the **all areas of academic scholarship and learning (particularly arts, humanities**

and social sciences) as critical components in solving the grand challenges of the 21st century and equipping students to make the best contributions possible to society.

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