The Higher Education Sector and its Role in Research: Status and impact of Future-Oriented Technology Analysis

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1. Introduction

In recent years, the higher education sector has increasingly been perceived as a key part of innovation systems at all levels of analysis, including national and regional, and through the eco-system which links large and small firms together and with their collaborators (Coombs and Georghiou, 2002). The core functions of Universities, training and basic research, have been subject to external forces, some of which have already made their effects felt, while others are keenly debated as societal expectations of the sector change. These activities have been supplemented by a drive towards the Third Mission, relating Higher Education Institutions (HEIs) to their socio-economic and cultural context. As with, what are in many cases long-standing institutions which are either in the public sector or rely heavily upon its funding, the sector has also felt the pressures of public sector reform in its managerial and accountability structures. Despite an experience of major changes such as massification of student access, technological change, funding models, specialisation of mission, growth of research activity and internationalisation in all respects, there is a continuing expectation that further changes are coming and hence an apparent need for Future-Oriented Technology Analysis (FTA) activity to help institutions and their stakeholders to go forward.

There is a growing politicisation of the HE sector manifested in ongoing reform processes at different levels, for example in the EU Member States, where Lambert and Butler (2006) have summarised the challenges faced. In Japan the transformation of National Universities to "independent administrative institutions" (agency status) has been accompanied by a wide range of further restructuring and reform. As an example of a comprehensive national review the work of the United Kingdom's National Committee of Inquiry into Higher Education (Dearing Report, 1997) could be cited. Commissioned to advise on the development of Higher Education on a 20-year time horizon this implicitly involved development of a future vision but also resolved a particular political problem, that of how to introduce student fees into a system that had previously been paid for entirely by government. Change has also proceeded at regional and university levels. The range of stakeholders engaged in the debate over the future of Higher Education is reflected in the variety of FTA activity described in Section 2 of this paper.

To be clear on the scope of this paper, it is important to emphasise that the focus here is not the role of higher education as a vehicle for the development and execution of FTA studies. This is of course important and has itself been the subject of study (Slaughter, 1998). However, here we examine higher education as an *object* of FTA. This extends to the institutional and sectoral use of FTA in HE and the impacts generated on policy and decision-making. While our interest, as stated above, is founded in the future role of

universities in the research and innovation system, the integrated nature of universities makes it unwise to divorce completely this aspect from their educational role. Hence, we are concerned with FTA as applied to the composition of the higher education sector, the role and nature of institutions, and methods and practices in research and training. The research dimension provides a particular link to the broader concerns of FTA. For most developed countries without a communist history, universities constitute the major performers of basic research; in some, such as France, Germany and Spain, their relation with national research organisations is also an important part of the future picture.

In this "anchor paper" for the Workshop we have been restricted by the limited instances of FTA activity in HE or more accurately by the available documentation of it. We are often limited to selecting from the much larger literature on higher education in some studies which at least engage with the future explicitly though they may not use what are commonly recognised as FTA approaches. See for example Etzkowitz et al (2000) who analyse trends to chart the emergence of the entrepreneurial university, but also note that:

*"Firms, universities and governments who, individually and collectively, engage in 'bottom up' planning, 'roadmapping' and foresight exercises are more likely to reap future rewards than their peers focused on the short-term."(*p.327)

Despite these constraints, we aim to capture some of the commonalities in content of the FTA work that does exist and where possible to analyse approaches, particularly in studies which emphasise the role of HEIs in knowledge production. Key contrasting elements of international FTA in HE and national and university-based FTA-type exercises, in terms of stakeholder involvement, approaches and content, are analysed together with the results generated. Finally we briefly discuss the realised and potential impact of FTA for this sector and highlight some of the key challenges ahead.

2. The Landscape of FTA on Higher Education and its Role in Research

The future of higher education and in particular of universities has been the subject of extensive discussion and study but little of this has been in the context of explicit FTA methods. Extant work is distinguished more by content than by process. Reviewing the literature, Skolnik (1998) noted the difficulties of identifying what higher education would look like in the 21st Century and concluded that future scenarios are presented without much evidential or analytical basis, making it "difficult to distinguish forecast from prescription or wish". This effect may have been exaggerated by the pre-millennial environment from which the reviewed materials emerged. Nonetheless, some significant works and activities in the 1990s may be noted, for example in the first UK Foresight Programme where the Leisure and Learning Panel addressed this issue (followed up in the second programme by a collected edition of commissioned and extant essays on universities in the future (Thorne, 1999). Much of this work originated in academic work in the higher education studies community. Also in this category, more recently, the Centre for Higher Education Policy Studies (CHEPS) at Twente University carried out a Delphi study "European Higher Education and Research in 2020) subsequently used to support scenarios (CHEPS, 2004).

International organisations have been particularly active in producing such studies, the significance of which we will return to in the concluding discussion. The EU DG Research Foresight Unit set up two expert groups on HE and Research in 2001 and 2002. The first identified possible scenarios for 2015, highlight major trends and challenges, including demographics, student consumerism, diversification and differentiation of agents and functions, as well as pressure for accountability and impact on governance (Strata-ETAN, 2002). The second group was in effect an effort to link the first to policy impact and focused on two objectives, strengthening the Higher Education/Research system itself and enhancing the system's relations with its environment, by awareness activities, regulation and open coordination, new research areas and new actions on HE. A third group is currently looking at the future of "key actors" in the European Research Area, including universities, along with industry and others.

The OECD has also been an active contributor through its University Futures project which is designed to inform and facilitate strategic change to be made by government decision-makers and other key stakeholders in higher education. Scenarios are more driven by educational changes, but with some research visions have been produced by the OECD Centre for Educational Research and Innovation (OECD/CERI, 2005). Six scenarios are mapped across two key dimensions, the range of recognised educational supply and the range of educational participation (Vincent-Lancrin, 2004). More recently, a set of four scenarios from the same origin have focused on academic research, locating it in a possibility space with two dimensions: administrative versus market forces; and international focus versus national focus (Vincent-Lancrin, 2006). These are discussed further in Section 4. There is evidence of growing partnerships between the World Bank, UN agencies and OECD on key policy concerns related to human development with a view to promoting joint approaches and efforts. In the area of higher education, OECD and the World Bank are exploring "whether and under which conditions cross-border higher education could benefit the developing countries' capacity building agenda". [1]

The UNU Millennium Project did not directly address Higher Education per se, but in its scenarios on Future Science and Technology Management Policy Issues it raised several issues in the domain of the moral and political status of science that could be seen as relevant to this area (Glenn and Gordon, 2004). However, an important output from the Millennium Project stressed the importance of HE in development and called for a reshaping of universities involving "adjustments in curricula, changes in schemes of service, modifications in pedagogy, shifts in the location of universities, and the creation of a wider institutional ecology that includes other parts of the development process." (Juma and Yee-Cheeong, 2005).

Similarly UNESCO's prospective work has focused on key emerging development and equity concerns in the HE sector within the broader context of the rise of knowledge societies. In its 2005 World Report on Knowledge Societies it warns of the risks linked to the move towards a global market in higher education. "The risks of "commoditization" in the field of higher educational are very real even if all countries do not find themselves

[1] http://www.oecd.org/document/28/0,2340,en_2649_35845581_37188956_1_1_1_1,00.html

in the same situation in relation to such challenges. Those with a long university tradition are generally less threatened by this diversification of higher educational provision.1The most worrying case is that of countries lacking a university tradition: the advent of knowledge societies is often linked to the emergence of full-scale *markets* in higher education. This has prompted some commentators to speak of the "Macdonaldization" of knowledge. There is a need to ensure that these trends do not lead to a distortion of the original missions of higher education".[2] The Report highlights the fact that whilst the more advanced countries lead by the US have invested in proactive policies aimed at commodifying and internationalising the HE sector, developing countries are relegated to the role of consumers in the global market for HE services. Other key concerns relate to the strategic interest of high performance HE institutions as players in their own right in international competition and the growing concentration of resources in world class centres of excellence. The more future-oriented part of the report focuses on why the future university does not exist and reflects on the challenges to major reforms to university curricula to reflect more holistic approaches and content. The Report concludes by highlighting on the one hand the potential for HE to provide a springboard for developing countries but also identifies the barriers related to access to knowledge (digital and other divides) and resources in general.

The activities described above clearly indicate the entry of international institutions into the higher education policy domain. Nonetheless, in many countries the national level remains the key focus for policymaking with national governments controlling both funding and the legislative environment. In others, particularly in Federal States, regional government has been the most important level and in some cases has increased its role and responsibility. One might say the normal situation is a fluid multi-actor and multi-level of governance. From an FTA perspective, this means that the location of its stakeholders is likely to affect the nature of work carried out.

An example of a national exercise which has sought to engage a wider range of stakeholders is the current work of IVA (the Royal Swedish Academy of Engineering) which is running a project on "The University of the Future" Heinegard C (2005). Reflecting the Academy's mission this has a bias towards scientific and technical subjects but does address the full range of HE with a 10-20 year time horizon. Participants include the Swedish National Agency for Higher Education, SUHF (the Association of Swedish Higher Education), research institutes and the Federation of Swedish Industries, plus project financiers and students. The purpose of this project is to support Swedish universities so they can develop into central institutions in the growing, global knowledge economy. The approach is through three expert panels: Funding instruments and sources, Organization and specialization, and Mobility, qualifications and recruitment. These have consulted through roadshows and their works forms the basis of a synthesis report.

Stakeholding in FTA can also be located within the internal governance of Higher Education. In a few cases this is collective, as for example with the response of the Australian Vice-Chancellors Committee (the council of University Presidents) to a

[2] http://unesdoc.unesco.org/images/0014/001418/141843e.pdf Chapter 5 p.87

government review of the HE sector (AVCC, 2002). A series of plenary sessions of that organization developed a vision for universities in 2020, an overview of the direction in which they considered that university funding and regulation needed to move to achieve that vision, and set out their view of the working principles against which all proposals for change should be assessed. The vision was encapsulated mainly in terms of a rise in global rankings and the role of the sector in the economy, and reflecting the political role of such visions the main emphasis of the report was upon the present need for investment and reform.

Collective visions, either from the sector or in the government context are typically constructed in an interactive way with the visions of individual HE institutions. Reviewing the presence of these on websites most typically one can see rather generic mission statements. Much less common are visions which are genuinely being used to drive change and are the product of collegial processes within the institution, hence meeting the basic criteria for what could constitute FTA activity. In this latter category we could note that the University of Melbourne operates a process to produce its strategy, calling both process and outcome *Growing Esteem.* Led by the governing body, staff and students have opportunities to participate through task forces and consultative processes. The driver is the need to develop a new funding model by 2015 based on the Triple Helix metaphor[3]. The University of Manchester's 2015 Vision characterises that institution's post-merger drive to raise itself into the world elite and is made concrete by a set of targets expressed as key performance indicators (University of Manchester, 2006). The University of Manchester was also involved in a regional foresight exercise focussed upon business-industry links in the Manchester City-Region, with a particular emphasis upon the role of Manchester Science Park (Cassingena Harper and Georghiou, 2005). In Ireland DCU is currently undertaking a foresight exercise using expert groups with internal and external membership to identify strategic priorities for research. This is embedded in a 3-year cycle of strategic planning and linked to external assessment.

3. Methods, Approaches and Participation

In all of the studies mentioned above only three broad approaches to looking at the future can be seen:

- Extrapolation of perceived current trends;
- Expert opinion, almost always in the context of an individual or panel view rather than wider consultation; and
- Assembly of the above into scenarios.

Time horizons range from 10-20 years with little or no activity outside these boundaries. One might ask why the range of FTA tools used has been limited to this narrow range of activity, with for example a low to limited presence of consultative or participative approaches compared with other foresight exercises, even in the research domain. Our observation from reviewing the stakeholder composition of these exercises is that at one end international exercises tend to involve solely academics, however some university-

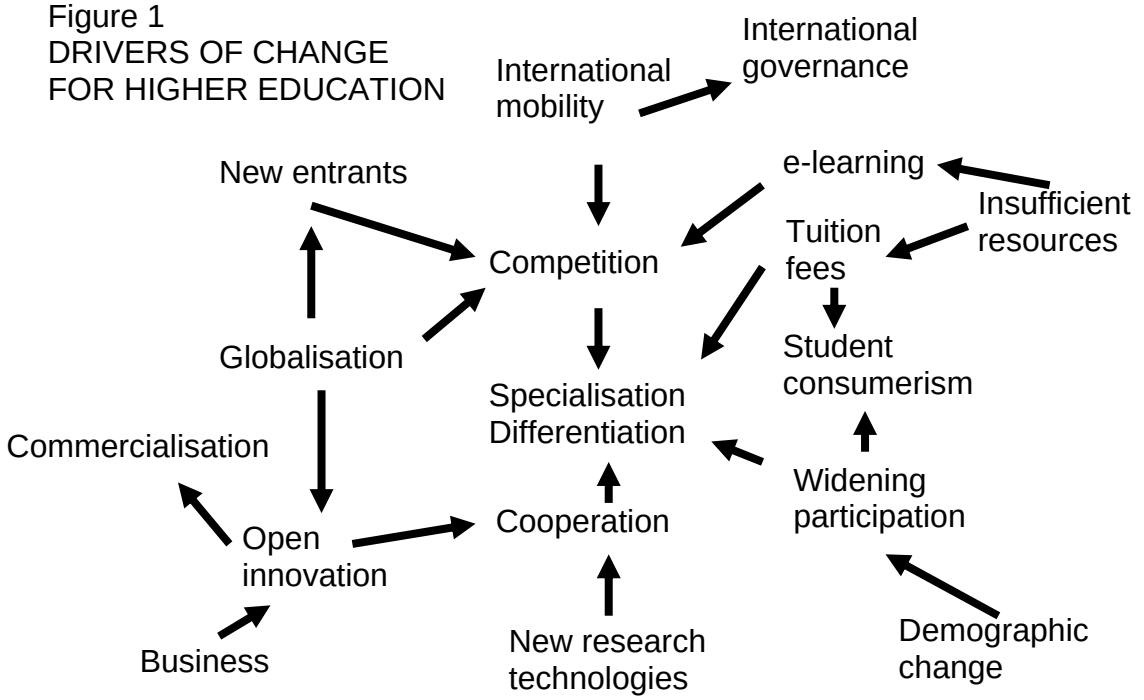
[3] http://growingesteem.unimelb.edu.au/strategicplan/vision.html

driven strategy processes have sought to engage more tangibly with the broader socio-economic context by bringing local players including regional and city authorities, local developers and policy-makers together with the business community. Students and the public at large are normally distinguished by their absence. In almost all FTA activities, and especially in technology foresight, the majority of participants come from the academic community. This applies in part to the operators of such exercises and much more so to the experts who contribute. It is perhaps not surprising then that when FTA turns to the very domain in which such experts live their daily lives, they are not inclined to look outside. The result is a prevailing view or mindset that foresight on HE is best left to the experts. In turn, this limited concern with the broad range of stakeholders could influence the range of methods which are considered and eventually used in these exercises. HE FTA activities are this somewhat out of touch with "Third Generation Foresight" and its involvement of social and industrial stakeholders. It could also be posited that the role played by an academic in a specialist context is different (perhaps more disinterested and objective) from that played when acting as a member of the academic profession.

4. Content of FTA on HE - Common Drivers of Change

At the sectoral level a number of commonalities may be observed. If we examine the drivers of change identified several occur in all studies. These are summarised in Figure 1:

Figure 1
DRIVERS OF CHANGE
FOR HIGHER EDUCATION



Globalisation is seen as bringing competition for the right to provide training, award degrees and differentiation within the sector (Thorne, 1999). The European Forum on University-based Research presents this as a strategic challenge for European institutes to balance cooperation against competition in a landscape where India and China represent

new sources and destinations for the best researchers. Also reporting to the Commission, the Strata-Etan Expert Group (2002) saw globalisation as eroding the function of national education systems as central agents for national integration, again leading to greater competition and problems of social cohesion. A reduced role for the State is also a driver of marketisation of knowledge and the rise of neo-liberal ideology and associated management practices in universities. Beyond the Eurocentric view, a transatlantic dialogue on the future of higher education also identified globalisation as part of an "unholy trinity" driving change (Green, Eckel and Barblan, 2002). Some aspects created opportunities – the prevalence of the English language rather than threatening "small language" countries actually opens up international markets as they increasingly offer courses in that language. An imperative for institutions to internationalise raises the issues mentioned in the other studies and also presents a challenge to prepare students for the global competence they will require in the knowledge society.

Competition and student consumerism represent a related driver of change. The Transatlantic study saw student demand driving competition on both sides of the Atlantic with students seeking more flexible programmes, better teaching and more flexible institutions, while institutions compete for the most able students. The Bologna process and the increasing incidence of fees create the comparability necessary for a market to operate and also the entry of new players including the corporate sector itself. Research is inherently competitive but its rising costs mean more concentration in leading institutions, initially nationally and perhaps internationally.

Rise of new agents and functions, extending to a variety of intellectual entrepreneurs, including virtual Mega-universities, corporate universities and academic brokers are entering the markets traditionally occupied by universities (Abeles, 1998; Kirp, 2003)
How did they emerge? How are they affecting the dynamics of HE/R systems?
Are they a passing phase or will they become stronger features in the system? What are the negative and positive impacts? What can governments do to regulate their operation?

Demography provides its own pressures. The Strata- Etan study noting Europe's ageing populations concludes that adaptation to cater for the needs of older students is a necessity exacerbated by potential effects of retirements among Faculty. In the meantime increasing participation, often referred to as the massification of education, though now well-established as a phenomenon, has raised major challenges in terms of the "learning environment and teaching methods".

Technology, particularly in the form of distributed or distance learning has dramatic implications for competition and for the role of the teacher. Abeles (1998) sees a split in the traditional roles of academics separating a few stellar researchers and lecturers, while the majority of faculty become mentors and guides to students. New partnerships are emerging to help cope with the enormous up-front investments needed and infrastructures such as those for quality assurance and intellectual property are being challenged. The changing technologies of research also have implications as yet not well-understood. On the one hand the cost of major facilities drives concentration as already noted (with an increasing tendency to locate these in universities rather than in dedicated service

institutions in the public laboratory sector). On the other hand grid computing reduces the need for research to be co-located with such equipment. Likely changes in academic publishing may mean that the expense of subscriptions to gain access to large quantities of published information may vanish as public domain institutional repositories are demanded by research funders.

Collaboration with industry is taken as a central theme by the Forum which puts the problem as one of finding ways to link the world of "open science" with that of "open innovation" in a sustainable way that does not damage the long-term purpose of universities. The Swedish foresight study questions the ability of universities to engage with the Third Mission which is said to lack both legitimacy and funding (Heinegard, 2005).

Transdisciplinarity in research is a recurring theme (Novotny et al, 2001; Forum 2005 etc). Nowotny et al explore the future in the context of the role of universities in knowledge production Mode 2. Among the trends they discern is one of deinstitutionalisation as the boundaries between universities and the world of commerce are eroded.

New Funding Patterns are also picked up as a driver of change. Some new funds derive from collaboration with industry and from commercialisation of research outputs, The extent of concentration of public research funding in the future and from which source it will come (national versus transnational for example) is another area of expected change. Tuition fees have been increasingly applied. The extent to which the individual rather than the state will pay for higher education remains a crucial policy question in many countries, including those which do not at present have them. Underpinning this driver is a pervading sense that the sector as a whole is under-funded.

These drivers in some cases are used to support scenarios for the future of universities. Table 1 summarises three examples, taken from the exercises discussed above. It should first be noted that they are produced by different means and in different contexts. Hence, the Strata Etan group uses the exercise to work towards its third highly normative scenario which is in effect the conclusion of its report and is presented as a political priority. The CHEPS scenarios were produced by a specialist research centre in the HE policy and management domain on the occasion of its 20th Anniversary and emerged from a two round Delphi survey returned by 164 respondents across Europe. The OECD scenarios were built on an analysis of trends and aim to expose decision makers to strategic choices: they were in fact used as the basis for a discussion at a Ministerial conference (OECD, 2006). In all cases the initial dimensions of design conceal a much greater complexity in what is envisaged.

Table 1 Comparison of Scenarios

Strata-Etan	OECD University Futures	CHEPS
Convergent Scenarios		
Melting Pot Low socio-cultural & economic diversity combined with high social cohesion. Higher education system a hybrid similar to present producing undergraduate education and basic research as public goods and continuing professional education, applied R&D/ innovation in response to company and administrative demand. Scenario very difficult to manage but likely to occur if policy is laissez-faire in response to trends.	**New Public Management** Primarily publicly funded but greater use of NPM tools including market forces and financial incentives. Diversified funding including student fees. Students comparing teaching quality & employability. Marked division of labour but most still do some research. Research funding very competitive but mostly national expect for ERC. Accountability high.	**Centralia, the City of the Sun** sees Europe in 2020 as the Jolly Old World with greying but rich leisured population. Universities are largely unchanged in function though many have combined as large merged or even national institutions. Blended mode learning combines campus with a network to make the most of ever smaller age cohorts. Fees are deregulated. Development & innovation that have not gone to Asia or Latin America have shifted to the South and East of Europe but remain linked to an elite D-University sector mainly in the North and West. Research is clearly separated between private & public goods.
Market Triumph Neo-liberal economy and welfare crisis reduce social cohesion and diminish diversity, resulting in predominance of privatisation & marketisation with public goods and agents gradually losing importance. Results from system actively adapting to trends	**Higher Education Inc**. Global competition to provide research and education services. Research universities hardly teach and vocational ones hardly research. Demand driven except for most prestigious institutions where peer assessment remains. International division of labour in teaching and research with outsourcing of research to emerging countries. Highly concentrated research sector with fierce competition for stars.	**Octavia, the Spider-web City** is a vision of multiple missions and visions while networks have become the main modes of coordination within and beyond universities. Successful universities capitalise on small units, thick information and multiple webs. Some have merged with private R&D facilities while others specialise around disciplinary or professional clusters. Research is organised in inter-faculty or inter-university units funded by national bodies, the ERC and international industry research consortia.
Divergent Scenarios		
Creative Society results from proactive attitude within the HE system to adjust and support some trends but to resist others so as to become pillar of knowledge society. Focus is on public educational goods, with private goods supplied by companies. Research is focussed on basic research in interdisciplinary perspective, generic technologies and innovation in public utilities.	**1) Open Networking** HE very internationalised and involves intensive networking among institutions, scholars, students and with other actors such as industry. Model based more on collaboration than on competition. International modularisation. English as lingua franca and most standard courses online. Research collaboration with peer institutions. **2) Serving Local Communities** HE focussed on local missions and embedded in communities. Mainly publicly funded but a small elite retain international networking. Science mainly done in government sector and research seen as by-product in universities.	**Vitis Vinifera, the City of Traders and Micro-climates** has Europe more focused on quality of life than innovation and the knowledge economy and the economy largely service based. HE is offered more flexibly by a wider set of institutions to a broader range of learners. The definition of universities is treated flexibly to encompass this diversity. ERC has partly displaced national funding of research, with funding highly selective and concentrated. Innovation is highly valued with much applied research now in universities.

Although they are constructed on different principles, there is an interesting convergence in the content of scenarios from all these sources and also some important distinctive elements. Thus on the first row of Table 1, a common element is the distinction between the public and private goods dimension of University activity, being maintained through a hybrid or quasi-market approach. On the second row the market dimension is emphasized, especially by the Strata-Etan group and OECD. This effectively presents a corporatisation of the university sector driven by full market forces. CHEPS do not go so far but nonetheless see the possibility of merger with private research institutions. In the second half of the Table divergent scenarios are shown, all highlighting interesting aspects of possible futures.

5. Tracing Policy Focus, Trends and Impacts

In assessing the impact of FTA in the HE sector we need first to identify the potential uses of FTA by different stakeholders in the system. For policymakers concerned with their innovation systems and/or the broader cultural economy there is a need to understand better the diversity and inner complexity of universities and HEIs as they strive to position themselves in the globalising knowledge society, characterised by increasing competition, new agents, student consumerism and demographic and technological impacts. Questions and issues include what types of support HEIs will expect from governments in terms of regulations, measures, new funding mechanisms? Even the legitimacy of government in setting the agenda could be called into question under some of the more laissez faire scenarios. On the other hand a stronger regulatory hand could be needed if new agents enter the system without the same levels of self-regulation observed by existing institutions. The long term spread of costs between taxpayer and consumer is also a core issue. In the specific case of innovation, the role of university research and training in supporting economic and social goals is a key issue. In part this is addressed by mainstream technology foresight activity but the institutional role of HEs may need to be addressed by more targeted exercises.

If we consider FTA as a policy instrument in itself, then the focus moves to its ability to act as an instrument of change. There is some evidence that governments, and some other stakeholders such as industry, are not satisfied with the current performance of their HE sectors. International league tables have served to highlight the deficiencies of some systems. FTA offers the possibility to explore alternative scenarios and to identify visions of where the system should be going as a first step to embarking upon a path of change and development.

The more advanced HEIs which are emerging as world class centres in specialised areas are oriented more to the needs and competitive pressures of the global economy. Their operation transcends national boundaries and is the concern of multilevel governance from an equity and human and social development perspective. Similarly the delivery of distance courses to large numbers of students worldwide raises the need for multilevel governance scrutiny, regulation and support measures. What form could this take? As outlined above, international organisations like OECD, World Bank, UNU and UNESCO are positioning themselves increasingly in partnerships, to take up these challenges.

Depending upon the scope of the question all of the above-mentioned issues could be raised at local/regional, national or transnational level.

If we move to the needs of HEIs themselves, they could be said to be seeking space to self-organise and identify the appropriate positioning based on their core competencies and current strengths whilst also responding to emerging local needs and priorities. If we consider the examples discussed in this paper the impression is that FTA here is strongly embedded in the strategy-making process of the organisation. It is no coincidence that the examples come from countries where HEs have enough freedom of manoeuvre to develop effective strategies. This situation is both a strength and a weakness. On the one hand it ensures an impact, but on the other it may also create constraints. One such constraint is path dependency – a strategy must always start with the current position but may also import the assumptions which led to that position. The other constraint is the risk of being inward looking and unwilling to engage sufficiently with external stakeholders. The institutions discussed, Melbourne, Manchester and DCU all have exercises led from the top, which increases the chance of impact but then creates the challenge of getting buy-in to the process from staff and students. All three are making substantial efforts to do this.

At a sectoral level FTA is problematic both because of the existing diversity of institutions and even more so because most of the futures we have considered imply an increasing diversity in the future, and an emergence of elites, which will propel a significant number into a level which does not flatter their self-image or ambitions.

At the national and international level we encounter the broader problems of ensuring impact of FTA. Earlier work has suggested that a key factor here is the extent to which the FTA activity is embedded in the implementation environment (Georghiou and Keenan, 2006). In other words, when FTA activity is planned are those who are in a position to use the results engaged with the exercise? What other influences are likely to affect their behaviour and how important are these relative to FTA findings?

These challenges emerge quite clearly when we consider the international FTA activities. They have an increasing legitimacy as policy for HE becomes internationalised through public initiatives such as the Bologna process and the European Research Council and putative European Institute for Technology (European Commission,2006). Internationalisation is also driven by the competitive and collaborative trends we have discussed at length. However, at least the European studies only seek to inform debate – they have no committed audience. Of the international organisations, OECD has a more formalised route to policymakers though less so to the sector itself. The latter, together with the World Bank and the UN agencies, can collectively through FTA mobilise major changes in HE in developing countries with obvious impacts on the developed world. Nonetheless, transnational FTA activity is likely to have an important role in policy transfer between countries. As is often the case with FTA, effects may be delayed as reports enter a “reservoir” of knowledge which is drawn upon in response to an emerging strategic or policy challenge.

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