SIMON MARGINSON

1. GLOBAL PERSPECTIVES AND STRATEGIES OF ASIA-PACIFIC RESEARCH UNIVERSITIES

INTRODUCTION

Globalization is the tendency towards convergence and integration on the world scale (Held, et al., 1999). All research universities are now immersed in processes of globalization. This is directly apparent in the power of the global research system in local affairs. The drive to publish in journals with international standing is now universal to the science disciplines in research universities. Another global system is apparent in the impact of university comparisons and rankings on the local and national status of universities. A comparative survey by Ellen Hazelkorn (2008) for the OECD showed that comparative rankings and research output metrics have been quickly adopted in the visions, performance measurement systems and policy goals of both national governments and institutions. Furthermore, they enter the funding decisions of corporations and donors, and affect student choices. Globalization is also apparent in the growing mobility of students and faculty (Enders and De Weert, 2009). In this regard, between 2000 and 2007 the number of cross-border students increased by 59%, an annual rate of 7%, reaching a total three million a year (OECD, 2009, p. 312). Doctoral student mobility and the short-term movement of faculty are also growing although the trend in long-term academic migration is less clear (Marginson, 2009). Policy borrowing and the partial convergence in policy frameworks and organizational templates, albeit with national and local rhythms and variations (King, 2009), are other forms of globalization in higher education.

Individual universities, and individual national systems of higher education, do more than respond to globalization, as they are also primary drivers of global flows in knowledge, communications and people movement. Leading research universities are among the most internationalized and cosmopolitan of all human organizations and they constitute a world-wide network in which the Internet presence of each is visible to all the others. Rankings create the sense of a single common environment in education and research, such that all can be compared with each other. Meeting each other in conferences and on the web, in working together and through personnel exchange, research universities are continually reminded that they share essential attributes. Everywhere, university leaders instinctively understand - and tend to sympathize with - their counterparts across the world.

Universities and national systems of higher education are together creating a remarkable new dimension of activity, the global dimension of action, which is

positioned across and beyond the nation-state systems. In the last twenty years, especially the last ten, many cross-border initiatives and global strategies have emerged and Table 1 below provides a summary of these.

Table 1. Developmental strategies that are creating the global dimension of higher education and knowledge

	Strategy	*Description/examples*	*Global spatial meanings*
Strategies largely driven by national governments	Capacity building in research	Investment in research universities and institutes designed to lift the volume and quantity of research activity, with a view to strengthening national R&D-led innovation and/or the position of national universities in global rankings. There is now a global "arms race" in innovation spending in many countries. May be joined to policies of greater concentration of research in selected institutions, merger programmes, etc. *e.g. China, Korea, Germany, France*	A long-standing policy option for "national competition states" that has taken on a new urgency and greater importance in the more global era.
	Recreation of nation/city as a "global hub" for education and research activities	Building of the global role of local education and research institutions; together with investment in precinct, infrastructure and changes to policy and regulation, designed to attract: foreign education and research providers, students and investment capital. *e.g. Singapore, Qatar*	Designed to pull global flows of knowledge, people and capital towards a particular locality. May be joined to national capacity building in research, and educational exports.
	Negotiation of a global system of free trade in educational services, through WTO-GATS	Nations deregulate their education systems sufficiently to permit entry of foreign providers on the same terms as local providers, including subsidies etc.	The recreation of worldwide higher education as a single space for business and trade. (This has had little support among either national governments or universities and has not happened).

Table 1. (Continued)

Largely university-driven strategies	Partnerships between universities	Universities sign agreements with similar institutions in other countries; and carry out cooperative joint activities in: personnel and student exchange, curriculum, research, university organization, benchmarking, etc. *e.g. All research universities*	A longstanding strategy used much more in the last two decades. The effect is to create a lattice-like network around each university as the node. Some of these nodes are much thicker than others, indicating broader and more intensive global connectedness.
	University consortia	Formal networks consisting of a large number of university partners, typically 10-30. Sometimes more intensive micro-consortia are developed, with 3–5 partners. Activities are for university partnerships. *e.g. Universitas 21, Association of Pacific Rim Universities*	Consortia are also positioning devices with universities drawing status benefits from the strongest of their partners. The level of activity conducted through these large networks varies, but some universities drive a significant proportion of global work this way. Others maintain a broad set of connections and options.
	Transnational campuses	Universities establish branch campuses in another country, either in their own right (providing the premises themselves) or in alliance with a local partner that manages the site. Branch campuses are specifically permitted to operate by the local authorities. *e.g. University of Nottingham (UK) in Malaysia and China, RMIT University (Australia) in Vietnam*	Such foreign campuses can influence local educational developments over time, and also encourage more multiple or hybrid approaches and reciprocal flows of influence, with potential to leak back to the "mother" institution.
	Global "e-Universities"	Virtual delivery of programmes on the Internet, by either established universities or commercial providers specifically created for the purpose. Curriculum, student assessment, credentialing and administration are provided from one central location. Teaching intensity varies. *e.g. Cardean University, U21 Global, the University of Phoenix online*	Between the mid 1990s and the early 2000s there were significant investments in stand-alone e-U's, but they were unsuccessful in recruiting enough students. E-learning provided alongside or joined to face-to-face programmes, e.g. at the University of Phoenix, has been more successful.

Table 1. (Continued)

Strategies driven by both government and universities	Export of education on a fully commercial basis	Higher education in a national system deregulated as necessary to enable the provision of full fee places to international students, with provider institutions free to determine price and volume. *e.g. the UK, Australia*	Now a large scale trading industry; and the one established form of global educational capitalism. It has accelerated cross-border student mobility and positioned universities and students as entrepreneurs/consumers, though both also engage in non commercial global activities, for example, in relation to research.
	Knowledge city developments	Investment by universities, city authorities and governments in precinct and infrastructure, designed to attract foreign education and research providers, students and investment capital. A more modest version of the "hub" strategy that is often centred on promoting a small number of universities. *e.g. numerous cities*	Versions of this strategy are widely practiced among nations with advanced education and research systems. Some cities place much emphasis on this kind of mission in their develop-ment profiles. The balance between commercial international education and R&D varies.
	Regional developments in higher education and research	Agreed regional (pan-national) cooperation between national higher education systems, including: common research grant programmes; measures to align degree structures, curriculum contents and professional requirements; common systems for the recognition of institutions and qualifications, and quality assurance systems; comparison, ranking and evaluation of institutions on a regional basis. *e.g. the formation of the European Higher Education and European Research Areas, via the Bologna reforms*	Regional system building and partial convergence in higher education and research in Europe is creating a meso-level of activity between the national and global dimensions, and in the longer run is aimed at positioning Europe so as to be able to act as a unit on the global stage. It also encourages enhanced investments in higher education and research in Europe. There are also embryonic regional developments in South America and Southeast Asia.
Strategies pursued by multi-actors (universities, governments, publishing companies, etc.)	Data-based global comparisons of universities, and of research and publication/ citation	Comparisons of the number of leading researchers, publications and/or citations used to generate a vertical "league table" of university performance. *e.g. Shanghai Jiao Tong University rankings, Leiden CWTS, Taiwan HEEACT*	Outside the USA, global comparisons have been decisive in imposing on all universities overarching measures of performance and status, relativizing national performance measures,

Table 1. (Continued)

	outputs on a university-wide or field specific basis.	Comparisons of universities based on a range of elements combined into a single index and league table. *e.g. Times Higher Education Supplement*	which are now constantly referenced in debates about higher education and in investment decisions by: students, researchers, business and industry, and governments. More than any other method global rankings create an imagining of the global dimension of higher education.

The global dimension of higher education is being formed by three kinds of action. First, *acts of imagination*. As will be described below, leaders imagine the global dimension as a field of practical activity, and they imagine their institution's global activity prior to the attempt to create it. Second, the global dimension involves *acts of production* - global outputs such as research knowledge, messages, open courseware and other web postings, and global teaching programmes, like commercial degrees and e-U's. Third, the global dimension involves *acts of regulation*. Governments set many of the conditions of global activity, through the regulation of national systems, and via bilateral and multilateral negotiations.

Many universities in the Asia-Pacific region are involved in the formation of the global dimension of higher education (Marginson et al., forthcoming). However, some are more intensively involved than others owing to both their conditions and their choices. Moreover, the pattern of global inequalities means that the different national systems, individual institutions and individual university leaders are located differentially within the global dimension of action, whereby some have more global options. In this regard, some can work the global dimension as an extension of their local/national space, whereas for others it is a much more difficult terrain to navigate. Nevertheless, for all national research universities the global dimension is proving to be inevitable in its demands and transformational in its effects.

The chapter draws on a set of case studies of research universities in the Asia-Pacific region to review their global visions and strategies. Case studies were conducted in one leading national research university in each of 12 countries. The material drawn on in the paper is primarily taken from the interviews with the university head - the president, rector or vice-chancellor.

A Note on the Research

In this study, the Asia-Pacific region is broadly defined so as to include the Americas. The universities included are: Universitas Indonesia, the National University of Singapore, the University of Malaya in Malaysia, Chulalongkorn University in Thailand, the Vietnam National University in Hanoi, the University of Tokyo in Japan, the Australian National University, the University of Auckland in New Zealand,

the University of Toronto in Canada, the University of Illinois (Urbana-Champaign) in the USA, the Universidad Nacional Autonoma de Mexico, and two contrasting Netherlands universities, Leiden University, and the University of Twente, which allows for a comparison with Asia-Pacific institutions. Leiden is a leading research-intensive university, whereas Twente is a newer technological university of less storied status.[1]

In each institution, between 12 and 20 interviews were conducted, however, this paper draws almost solely on the interviews with the respective university president/rector/vice-chancellor. The interviews focused on the university leaders' imaginings of the global space, how they understand globalization; the tools they use to observe and interpret it; their perceptions of commonalities and differences between countries and universities; how globalization affects the imperatives confronting nation and university; the scope for initiative and response; the global/national/local interfaces, and whether and to what extent national policy helps or hinders the presidents; and their priorities for development of their own global operations.

The case study programme was conducted in institutions broadly similar within their nations: all are leading research universities, and nearly all are generally understood to be the number one or number two universities in the country. All are national and public sector institutions, and have been historically shaped by government. When compared with each other, from a global perspective, the individual universities are very different from each other in their levels of: resources, research performance and their rankings. Differing levels of funding and historically accumulated resources, and different languages of use, all affect the relative position. Because a common template of institutional type is used, these global variations are not so much due to differences in the missions or statuses of these universities within their respective national systems, but rather the global variations shown here are shaped by differences between the nations in terms of resources and also by local factors in each institution that can be identified by studying its history and organization. In this manner, the study helps to map the global dimension of action in higher education, by clarifying the place each national system has within the global setting and the same time eliciting local specific factors.

Local factors like history, organizational cultures, systems, policies and leadership closely affect institutions. For example the Universities of Tokyo and Indonesia, Vietnam National University and Chulalongkorn all train capital city elites, but only Tokyo was built by the nation into a global research powerhouse. UNAM plays the overwhelming role in Mexico; it conducts 30 per cent of all research and is closely affected by national politics. It is also less global in orientation than some other universities. Leiden in the Netherlands is very international in mission. Likewise the Australian National University has specialized in research and international networking since its foundation in 1946.

GLOBAL STRATEGIES OF UNIVERSITIES

In the emerging global dimension of higher education and research, some global strategies are led by governments, some by universities or their units, and others by

publishing companies and other corporations. Often, a key initiating role is played by individual university executive leaders. Table 1 summarizes the strategies.

These global strategies have changed the possibilities, and the necessities, affecting all national systems and research universities. They are a mixture of old and new. There was always some international activity in higher education, but the global work has been greatly facilitated by synchronous electronic communication and one-world visualization enabled by the Internet. The global strategies employed today include: research concentrations; education hub strategies designed to pull global flows into the city or nation; cross-border collaborations, alliances and consortia; region-building in higher education, especially but not only in Europe; the commercial marketing of international education at home; the creation of transnational (offshore) campuses on a partner or stand-alone basis; and the creation of global "e-universities", designed to reach students everywhere. Some universities pursue a number of these strategies simultaneously.

At the same time, two other kinds of initiative have contributed to shaping and defining the global dimension of higher education and research. One is the process of multilateral trade liberalization through WTO-GATS, though the momentum for that development now seems to have slowed. The other is global comparisons, rankings and moves towards a world classification of the higher education sector.

The global strategies of universities and systems have been partly recession proof, thus indicating the universal creative momentum of globalization. In this regard, during the global financial crisis, with its downward pressure on budgets in most countries, much cross-border activity kept growing, for example, commercial exports and research collaborations. However, the fact that the financial capacity of some universities and national systems has been reduced must have inhibited some cross-border activity - after all the recession has inhibited activity in higher education as a whole, and cross-border work has to be subsidized from local and national resources. Nevertheless, cross-border activity has not been the first item jettisoned, which might have been expected a generation ago. This suggests that global activity is not longer considered ephemeral or at the margins of more substantial national and local functions, and that global activity has now become central and essential to the "Idea of a University".

WORLD-CLASS GLOBAL RESEARCH UNIVERSITIES (WCGRU)

At the institutional level the creation of global activity would appear to proceed through three phases, which are sometimes pushed together. First, the institution or nation concerned builds the *capacity* to operate globally, for example in research. Second, it focuses on improving global *connectivity*, not just electronically, but through partnerships, networks and the ongoing exchange of: personnel, staff and students. The third phase is global *activity*. University executives sometimes see building capacity and connectivity as ends in themselves, but capacity and connectivity are also conditions for global activity, in that once global capacity and global connectivity are established, the institution (or national system) has the freedom to act globally.

The global capacity of the individual university depends on its infrastructure: financial resources, physical resources such as communications and transport, facilities and specialist equipment, cultural/linguistic and intellectual resources, and organizational and regulatory mechanisms, including internal cultures and the rhetoric, systems and policies of the institutional and academic leaders. However, mission statements can be reinvented quicker than university resources, which are history-bound and practice dependant. Global capacity is also created and sustained in processes of institutionalization, the regularization of global relationships and interactions to embed them in the life of the institution (Held et al., 1999, p. 19). In this process, the university becomes not just self-referenced and nationally-referenced, but globally-referenced and this perspective is crucial, in that it needs to be able see its position in the global context if it is going to develop optimizing strategies. Moreover, global referencing is powerful in its effects on university thinking and in the present era of communicative globalization there has been the emergence of a new "Idea of a University", that of the "World-class Global Research University" or WCGRU.

The term "world-class university" (SJTUGSE, 2009) has been criticized, for being normative, thereby lacking an objective definition and thus immediately leads to the posing of the question: "What is world-class?" It has been lampooned by some scholars, particularly those in the United States, where all research institutions are secure in their global status, but the term is entirely meaningful for those nations and those universities who aspire to it. "World-class university" is an aspirational notion, one which reflects the desire to be globally effective and to be seen as such by the entire world.

In this context the term "Global Research University" (GRU) (Ma, 2008; Marginson, 2008) provides an objective descriptor that gives content to the notion of a "world-class university". A GRU must be globally networked, globally recognized and effective in local, national and global action. Moreover, it must house a global research capability and output in several fields, and maintain staff capable of interpreting and applying findings in most fields of knowledge. Furthermore, it needs to have a viable local doctoral programme in some fields. Nowadays, owing to widening of aspirations, the research university functions of knowledge creation, dissemination, storage and transmission, and also research training, are now spreading from a limited group of nations to the majority of nations. In addition, a GRU must also pay academic faculty enough to attract and hold those staff with the potential to be globally mobile; or alternatively, inspire an affective commitment to university or nation that is strong enough to compensate for salaries below globally competitive levels, so as to be able to maintain stability in policy, funding and organization and to make the local setting acceptably habitable for staff and students.

Research capacity is central to the WCGRU for four reasons. First, knowledge is the common currency, the medium of exchange in which research universities deal and collaborate and in fact is often even more important to them than money, for it is already a global public good of economic value (Stiglitz, 1999). Further, in its natural state it flows freely across borders and is used everywhere without losing its value. Arguably, globalization has enhanced the universal character and intrinsic

importance of knowledge. Second, the creation, interpretation and codification of knowledge, in the form of research, distinguishes such universities from other educational institutions, and almost all social organizations. Third, research capacity is closely associated with dominant notions of the "Idea of a University". Fourth, it is taken into nation-building strategies. This embedding of the university in research is grounded in the historical military and economic role of science and technology, which predates communicative globalization. Above all it was installed by the creation of the nuclear weapons that closed the Second World War. Thus research performance has long been the marker of university status, even in relation to first degree education where, strictly speaking, research is not in play.

In the interviews with Asia-Pacific presidents the aspiration to be a WCGRU was especially strongly felt in the universities most marginal to the global metropolis: Universitas Indonesia, Vietnam National University and the University of Malaya. It also concerned the University of Auckland, whose leaders nursed a sense of inadequacy in relation to the university's global position, even though Auckland was in the top 300 on research performance.

> Our ambition is to meet international standards. To be in the top 200 universities in the world. Of course, this is the long-term vision. Not in one day… Our mission is to become a research university that meets international standards. We focus all our efforts to achieve that. (Mai Trong Nhuan, President, the Vietnam National University Hanoi)

The dividing line between being a WCGRU as opposed to not is a crucial distinction of each national system, for it demarcates the global sector from the rest. It is also expressed within institutions, in the distinction between on the one hand, research and graduate research or doctoral education, which are global activities, and on the other, first degree teaching and medium level graduate professional programmes (Horta, 2009). Several of the presidents emphasized that building global research activity in their institutions was central to their aspirations for WCGRU status. Moreover, they also expressed the view that English language publications have become more important than before:

> Q. What impact has globalization had on a public research university like the University of Malaya?

> A. We are now putting a lot of effort, money and resources and manpower into the research field… promotion to professor and associate professor now depends largely on publication. (Hashim Yaacob, Vice-Chancellor, University of Malaya)

Research development was touched upon in one way or another by all presidents. In this regard, the leaders of the Universities of Toronto, Illinois, Tokyo, Leiden and the Australian National University, all located in the Shanghai Jiao Tong University top 100, all expressed the view that they were secure about their standing as research universities, but took for granted the need to continually improve research outcomes.

ACTS OF IMAGINATION

Sources of the Imagination

In the study, interviewees were asked how they gathered information about global trends and developments on a continuing basis. For the most part, they emphasized networking with other presidents, consortia and other international meetings, and data gathered by their own personnel working on international matters. Moreover, person-to-person contact was seen as more effective than videoconferencing and the Tokyo executive vice-president, a member of the OECD committee for Science, Technology and Policy emphasized the importance of the regular OECD meetings: "That is a very big source". Only a small number were extensive readers, but all were regular and active users of email, and most used the Internet directly and frequently, for media and other sources.

> Now it is the era of information. We get lots of information from personal networking, and university organizations overseas, which always conduct workshops about the development of universities in the era of globalization. We also get information from the Internet, and journals of higher education, which can give us perspective. Next week I go to England for a meeting of Indonesian rectors on university management. We have been invited by the British Council. (Usman Chatib Warsa, Rector, Universitas Indonesia)

> The trick, of course, is to filter out what's good and useful. You have to be careful not to be too driven by your own prejudices. To some extent you talk to people with whom you're comfortable. So it's a matter of trying to step away from that and think about different ways of doing things. (Stuart McCutcheon, Vice-Chancellor, University of Auckland)

> It's absolutely astonishing how much one now draws information from all over the world in making any decision about any aspect of the university … I'm old enough to remember when travel was quite exotic, when colleagues would come back with slides from some remote place. In the small town where I grew up, you would have the high school auditorium filled with travelogue presentations, where some individual would present a speech and show slides. This was remarkable and highly entertaining, and would keep an audience spellbound. And now of course airplane travel is not a romantic or glamorous luxury, it's a nuisance, a necessary nuisance. Electronic communication occurs instantly, and you have information and embedded slideshows on every imaginable structure and institution. You can do a virtual tour of half the universities of the US. (David Naylor, President, University of Toronto)

The leaders saw it as being crucial to maintain an open outlook, imagining what was a potentially very heterogeneous set of strategic options, which created issues of monitoring and selection: "Our fundamental problem is that we try to do too much" (Stuart McCutcheon, Vice-Chancellor, University of Auckland). Several presidents emphasized strategic focus, but only the National University of Singapore (NUS), with its fully crafted global strategy, replete with active portfolios in each selected

part of the world, seemed fully on top of this problem. Another problem mentioned by some presidents was the lack of discretionary time in which to imagine, speculate and explore the different strategic options.
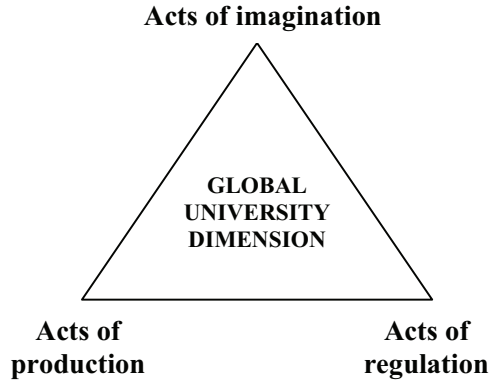
Acts of imagination

**GLOBAL
UNIVERSITY
DIMENSION**

**Acts of
production**

**Acts of
regulation**

Figure 1. Shaping of the global dimension by nations and institutions.

Understandings of Globalization

The most common definition of globalization used by the presidents referred to convergence and integration on a world-scale. In particular, the communicative aspect was emphasized:

> Globalization, to me in general terms, is the increasing convergence and inter-dependence of economies. In higher education globalization is the increasing convergence and interdependence of higher education systems. (Frans van Vught, Rector, University of Twente, Netherlands)

> The term "globalization" connotes an array of outcomes going far beyond the conventional view of closely linked world markets. In tandem, leaps of technology and the Internet have shrunk time and space as well as levelled the global playing field. We live in a shrinking, flattening world. (Shih Choon Fong, President, National University of Singapore)

The president of the Vietnam National University noted that globalization could not be measured. "It is not scientific, not exact". It is a "feeling".

> Globalization makes the world more connected, more collaborative, more flat. That's my feeling about globalization. Reducing geographical boundaries. No geographical boundaries. Making the distance less. And you cannot live and work alone. Before you could. Now you cannot. You cannot do everything your own way. (Mai Trong Nhuan, President, Vietnam National University Hanoi)

A sense of "one-worldism" came through in several interviews. In both Mexico and at the University of Tokyo, globalization was discussed in terms of global ecology. The President of Chulalongkorn University in Thailand stated that:

> The world will become one. It's not that countries disappear or that the barriers between them will go away, no. But the system of the world will be more of a unified system. People can reach each other. (Khunying Suchada, President, Chulalongkorn University)

"Chula" graduates could be expected to work in many countries and should be prepared for that, she said. Graduate labour mobility was a key aspect of globalization for several presidents. Most stated that globalization created a more competitive, a more open and a more opportunistic environment for graduates and for universities. Half of the presidents noted that global competition in higher education had a downside. Some referred to the 1990s definition of globalization as world economic markets. One president said that while he was strongly in favour of "internationalization", which was central to the mission:

> I don't actually see globalization as a universal good. It has created more problems than it has given value in many instances. For us it means potentially hugely increased competition and a level of uncertainty that adds an unnecessarily difficult dimension to managing complex institutions…. I do see benefits from freeing markets from unnecessary constraints, but you can't make them totally free. For a university like this, I'm confident that we could survive in a much freer more competitive environment. But if it's totally deregulated no Australian university would survive. (Ian Chubb, Vice-Chancellor, Australian National University)

Similarly the Provost at the University of Illinois, Linda Katehi, advocated "internationalization" as learning from other countries and cultures, changing one's own outlook, and acquiring a sense of living in "a much larger world"; whereas globalization was defined in imperial terms as "assimilating others to what we do rather than changing ourselves". Other nations saw the global expression of their own national cultures in positive terms and they wanted to be more globally influential. The Rector at the University of Indonesia and the President of Chulalongkorn in Thailand, both felt that the positive potential of globalization lay in the possibility of bringing distinctive attributes associated with their nations to the larger world setting.

> I think the Thai people are special in the way they behave... we are considerate of other people's feelings. I think that is a unique Thai way. We smile a lot, we are courteous, and we work very hard. Those that work offshore, they are mostly smart and they work hard, and at the same time they have these interpersonal skills that can work with other people. I would love to think that my students also have morals and good governance in their heads and the integrity of being a good citizen of the world. (Khunying Suchada, President, Chulalongkorn University)

At the University of Toronto there was a typical Canadian enthusiasm for cultural openness, mixing and cosmopolitanism. Within the case study group this attitude was shared, in more muted fashion, by the representatives from the ANU, Illinois and Leiden. "I think there is optimism about globalization in Canada that is probably greater than in any other nation" (David Naylor, President, University of Toronto). However, global openness was often seen as threatening for non English speaking cultures (see below).

The Global Higher Education Sector

The global dimension was imagined, above all, as a sphere of comparison. Perhaps the most important single influence in shaping the global sector was university rankings, except in the USA and Mexico. A bad global ranking hurt the university in the halls of national government, although a good ranking did not necessarily strengthen the university's position with government. At Chulalongkorn in Thailand a high ranking in the *Times Higher* table one year (121) might even have contributed to the university's continued funding problems.

> Yeah, that's what they said. Even though we don't give Chula lots of money they can still do well, they can survive. Don't worry about them. (Khunying Suchada, President, Chulalongkorn University)

In Malaysia, a declining ranking in the same *Times* collection generated public disquiet and may have contributed to the decision of the government not to reappoint the vice-chancellor, which the vice-chancellor himself felt was the case. Some presidents focused on the biases inherent in the rankings process, but regardless, they fed a strategic approach to rankings into their internal priorities and their incentive and reporting systems. Notwithstanding the methodological and political problems with rankings, it was generally accepted that they could not be ignored.

A few presidents emphasized the need for a greater steering capacity in relation to academic units and behaviour, so as to promote global activity. This was a particular concern for President Takeshi Sasaki at the University of Tokyo. However, most respondents seemed to be generally comfortable about their capacity to influence the international activities of the university.

When considering the global dimension of higher education as a whole, all the leaders emphasized the standing and influence of the American sector. When asked to name the institutions that most impressed them as models, they listed such institutions as Harvard, Stanford, MIT, Caltech, Berkeley and/or the University of California system as a whole, and sometimes large public research universities, such as Wisconsin. Cambridge in the UK was also mentioned several times. The major European universities were rarely acknowledged by name, except by the Rector at Leiden. In the non-English speaking countries in Asia there was a strong desire, albeit expressed in general terms, to source models of universities from Europe (especially Germany) as well as the USA/UK.

It was generally agreed across the whole study that the Chinese research universities would succeed in their ambition to develop as world-leading institutions. There was also general agreement that the NUS was particularly impressive, not just in its international work, but in all other aspects and nearly every other university had an active partnership with this institution. One university in the group that appeared to be highly internationalized, in terms of the volume and intensity of its global networking, was Illinois in the USA. Illinois had just negotiated a major agreement with the NUS and its leaders sang the praises of the Singapore institution.

The National University of Singapore was unique in the extent to which it had devised a detailed global strategy and was implementing it, and in the degree of emphasis placed on the global factors in university development. This advanced global orientation was a function of Singapore's own position as a nation:

> Singapore is a tiny island with some big neighbours, e.g. Australia, China, India, Indonesia and Japan. With no retreat or hinterland, globalization is not an option but a necessity for Singapore. We have no choice but to think "global", breathe "global" and to be "global". We constantly have to ask ourselves: "How can we build mutual respect?" "How can we be useful and relevant to the world?" … Singapore was global before the term "globalization" became fashionable…. In a global economy characterized by intense competition for talent, ideas and capital, Singapore's universities have also had to re-make themselves to stay relevant and thrive… the NUS has undergone a dramatic transformation, from a predominantly teaching institution training competent manpower for Singapore, to a research-intensive university respected in the global arena, and from a governance and management system closely aligned to the civil service to one based on performance and global best practice. (Shih Choon Fong, President, National University of Singapore)

The universities generally preferred to network actively with like-missioned institutions in other countries of roughly equivalent status to themselves, that is, with other universities of the type researched in the study - leading universities in the state/national/public sector. At the same time all the non-American universities were conscious on global inequalities, which had two vectors. One was linguistic and cultural, the other was understood in terms of political economy.

In relation to cultural aspects of globalization, the presidents from non English-speaking countries were concerned about the dominance of the Anglo-American world in higher education. Most stated that rankings criteria favoured the USA.

Q. What do you understand by the term globalization?

A. The unification of culture by the United States. It's a very bad aspect of the present phenomenon of globalization. The idea of globalization should mean that all people can access the Internet equally. Japan is an advanced, developed country. We have a completely different culture from the Western world. I think this is quite special. (Hiroshi Komiyama, Executive Vice-President, University of Tokyo)

> Globalization has brought Indonesia into a big arena where the countries become borderless… globalization comes into all countries. The problems are different from country to country. Other countries may be more prepared than Indonesia in facing globalization. If Indonesia is not prepared, the country will become the consumer of developed countries… Western culture can now easily come into Indonesia. (Usman Chatib Warsa, Rector, Universitas Indonesia)

The President of the Vietnam National University made a similar point about the openness of Vietnam to American media and the potential for regressive cultural transformation, especially in the rural areas and among the uneducated. However, he was less worried about the potential dangers for the university, with its longer history of cross-border flows.

The economic form of inequality was stressed by the interviewees from each of Malaysia, Thailand, Indonesia, Vietnam and Mexico. In this regard, in Indonesia and Vietnam the universities could not afford subscriptions to basic journals. In Malaysia, which saw itself as an emerging economy, the financial firepower of Singapore was a constant reminder that the university was not yet a WCGRU:

> Globalization [ideally] would be a world without borders. But we must always be aware that in the globalized world the field has not developed this way. The players are not the same size. What will be good for the bigger power may not be good for the smaller power…. What we are looking forward to in the globalized world is that things become freer and things become shared, but they must be shared… if it is rules of the jungle, best man wins, we are all dead. (Hashim Yaacob, Vice-Chancellor, University of Malaya)

> Globalization affects differently each country and each group of countries. It has a completely different impact in the strongest economies, such as the United States and many of the European countries, and the newly developed Asian economies, than it has in countries such as Mexico, and the effect it may have in the least developed countries. It has an impact that really increases inequities. That has made it very difficult the dialogue at global and internal institutions, because the effects are perceived by government and society in one country as different from the effects that are perceived in another. (Juan Ramon de la Fuente, Rector, Universidad Nacional Autonoma de Mexico)

Relational Geographies

Nearly all presidents discussed the strategic significance of proximate neighbour countries. With respect to this, for the Dutch universities European developments were crucial. Leiden itself had initiated the League of European universities, a consortium of most of the strongest research-intensive institutions on that continent. At both Toronto and Universidad Nacional Autonoma de Mexico (UNAM) in Mexico, higher education in the USA exerted the main outside influence on faculty work. In the former, where there was always a choice in regionalization strategy between looking north and looking south, the rector felt that Latin America had been neglected, as very few UNAM students went to Spanish speaking countries,

apart from Spain. He was hopeful that a small scale regional scholarship scheme might start to shift the field of vision. All of the Southeast Asian institutions networked within the ASEAN group. At Tokyo and at the Vietnam National University, the presidents noted regular meetings of East Asian presidents. At the ANU one of the four founding research and graduate schools had been the Research School of Pacific and Asian Studies.

> Internationalization is important for us because we're a small country stuck at the bottom of the world with many more populous neighbours around us and if we don't have good relationships with our region life it is problematic. (Ian Chubb, Vice-Chancellor, Australian National University)

Beyond proximity, globalization was associated with a broadening of international ties to include most world regions. Thus for example the University of Auckland in New Zealand had traditionally related primarily to the UK. In the 1980s it broadened to North America; in the 1990s it belatedly discovered Asia. However, all four English-speaking countries in the study acknowledged that their personnel and students were not sufficiently effective in working in studying in non English-speaking contexts because of language factors. The mono-lingualism of those countries prevented a more reciprocal pattern of people flows and retarded university collaboration. The spread of facility in Chinese national language, especially, was seen as a priority for development. However, no large-scale schemes to achieve this were underway.

ACTS OF PRODUCTION

All of the presidents discussed research collaboration, staff exchange, foreign student enrolment, local student exchange abroad, partnerships and networking. But the other universities' productive global activities were dwarfed by those of the NUS. This university had more than thirty joint degrees, with 19 partner universities around the world and 220 student exchange agreements in 38 countries, with over 1600 student places per annum. Moreover, the goal had been set to send 20% of undergraduates abroad for one semester each. There were also summer programmes or field trips in China, Indonesia, Belgium, USA and Australia. Furthermore, there were five joint research laboratories as well as numerous research collaborations.

People Mobility Issues

Most interviewees mentioned a recent growth in cross-border people traffic, which applied to both official visits, and ongoing faculty activity at discipline level.

> Individual level exchange has become much more intense and extensive. (Hiroshi Komiyama, Executive Vice-President, University of Tokyo)

A diverse student body was universally seen as positive and nearly all the presidents could name the number of countries from which their students had come. At Leiden, the rector, Douwe Breimer, talked of creating "a mini global environment" inside

the university, which would expose the student to "different views and different opinions", thereby becoming "more of a global citizen". A similar concept was mentioned by Richard Herman, chancellor of the Urbana-Champaign campus of the University of Illinois. Sending local students abroad for part of their studies was considered to be much more difficult, except in the cases of Leiden and Twente in Europe and the NUS in Singapore, with NUS aiming to ensure that at least one fifth of all first degree students spent a semester abroad as part of their studies. Moreover, NUS had established a worldwide network of study centres and partners with WCGRU status. Elsewhere, the barriers to outward mobility were cost and in the English speaking nations, lack of student motivation and foreign language capacity.

Issues related to the global mobility of talent - how to stop researchers from leaving after graduation, how to draw high quality people from abroad, and how to keep them happy once inside the university - preoccupied all the presidents:

> In today's knowledge-driven global economy, talent, ideas and intellectual capital have taken centre stage.... The NUS has to compete in the global arena against universities with access to broader and deeper talent and resource pools. We believe that the quality of faculty is the single most important determinant of the quality of education and research. (Shih Choon Fong, President, National University of Singapore)

There were many unresolved issues in relation to people movement that affected global capacity. These issues absorbed a significant portion of the interviews. Lack of sufficient money for scholarships for international doctoral students was an issue cited by most presidents. Lack of student accommodation was mentioned at Tokyo and Leiden in the Netherlands. At Illinois there was concern about a recent slow-down in the supply of international graduate students from China - in engineering and the technologies foreign graduate students had become an indispensable component of the University's staffing. At a number of universities brain drain and unequal inward/outward flows were burning issues. In Mexico a large proportion of the best doctoral and post-doctoral personnel were lost to the USA every year. The rector at UNAM wanted the government to introduce a "brain gain" program that would bring in high quality academic labour to compensate for the outward movement. In New Zealand, Auckland was losing staff to better paid and more globally metropolitan locations. There was no apparent solution to brain drain at Vietnam National University and Universitas Indonesia given the rates of pay; though some world-class researchers and professors stayed in the country, or returned from working abroad, because of their commitment to the nation and its educational development.

A principal problem was the difficulty of attracting and/or employing foreign researchers. Inward mobility was often retarded by national regulation and in some countries this was joined to traditional academic protectionism. When pay rates were fixed centrally presidents had little discretion. In most countries it was difficult for foreigners to obtain permanent employment. The other issue was relative salaries. For example at Malaya faculty were locked into public service salary levels and it was impossible to offer foreigners a permanent position. The best they could obtain

was a three-year contract. The salary level meant that Malaysian employment was attractive to staff from poorer nations such as Indonesia, and to some extent to staff from India, but has limited pulling power in the Middle East and none in Europe or the English-speaking world. Meanwhile neighbouring Singapore was paying US-level salaries, four times the level of Malaysia, and recruiting vigorously from everywhere including the University of Malaya. In Thailand pay rates were again too low to be globally competitive. In the Netherlands, there was political ambivalence about immigration. Visa delays were a key issue. In Japan the language factor inhibited potential recruits. This was an open concern at the University of Tokyo which wanted to grow foreign professors. Universities in the settler societies of Canada, the USA, Australia and New Zealand were more readily accessed by foreigners than were universities in low immigration countries, but the pulling power of the USA overshadowed the others.

Borrowing

However, global openness had an upside for Vietnam, and to some extent Thailand and Malaysia. It was seen to facilitate improvements in higher education quality. The National University of Vietnam sourced approaches to teaching, research and governance from across the world, particularly the USA.

> The College of Science has requested the University of Illinois to assist with the teaching of chemistry. We submit the curriculum and subject requirements [for consideration for the Illinois science faulty]. Physics uses the Brown University teaching program. Mathematics has gone to Wisconsin. The College of Economics draws on the Haas business school. We adapt the curricula of the best universities for implementation here. Of course we adapt it to suit our conditions. We also use their teaching technology, with modifications - that's very important. Also our staff go to the American universities to be trained and learn new ideas… every university has unique conditions and values/ it is not so easy to follow a whole university. But it is possible to learn from part of their activities. For example, in relation to the links between universities and industry, we have learned a lot from the Taiwan universities. For information technology I visit Carnegie Mellon. For social sciences and law, Harvard. For applied technology, MIT. So each university has very specific value. By adapting all of these examples we can make our own pathway. (Mai Trong Nhuan, President, Vietnam National University Hanoi)

Global linkages thus utilized could enhance the university, if it worked out as planned, provided local strategic and organizational coherence were maintained.

ACTS OF REGULATION

From the viewpoint of national authorities, the global dimension of higher education creates a dilemma. All national governments want "their" universities to be outstanding on the world scale. Most governments believe that strong research

universities are essential to economic growth, because research powers innovation, and strong universities attract talent, build gravitational power of cities, and synchronize the nation with the global knowledge economy. But these economic payoffs are long-term and indirect. Further, good graduates and new research may leak offshore without being captured by local business. Most research becomes open global knowledge. It is impossible to target investment in universities for optimal national returns. Governments may feel that they can better achieve direct objectives by investing in schools or industry training. There is an ongoing tension between the national and global roles of universities.

In the interviews, relations between nation-state and university varied from case to case. The extreme case of close fit between government policy and institutional strategy was Singapore. NUS had been engineered as an instrument of national policy, with a principal role in shifting Singapore to a focus on knowledge-intensive products and services, which included the attraction of high skill global labour to the island. The national strategy was focused on global agendas, so that both parties shared an unusually strong focus on the global dimension.

> I don't see a contradiction between the global mission and our national mission…. We call ourselves a global knowledge enterprise… We have to be global and national. I see that as the destiny. (Shih Choon Fong, President, National University of Singapore)

Elsewhere there was a weaker fit between government policy orientation and university global strategy orientation. A typical concern across all universities in the study, except the NUS, was that government was insufficiently focused on the global dimension of university activity, and its regulation of higher education was some way from the optimal form for global work. The view was commonly expressed that national governments expected universities to perform but provide insufficient support or interfere and cut across the institution's judgement about global priorities and strategies; or nation-centred regulatory requirements created barriers to global work, particularly in relation to foreign recruitment.

All of the presidents indicated a close knowledge of issues related to government politics, policy, funding and regulation. The national dimension was a natural home for them, one more closely defined and understood than was the global dimension because of their longer experience with it. But the problem was to reconcile and synergize the national and local dimensions of actions with action in the global dimension. This illustrates the point that universities are active at the same time in three dimensions, the local, national and global dimensions. We are in a glonacal era in higher education, in which imagining and production are global, national and local at the same time (Marginson and Rhoades, 2002; Marginson, 2007a) - even though regulation remains primarily national and local in form.

In the glonacal setting activity in one of the global, national or local dimensions creates conditions of activity in the others. Universities that effectively *coordinate* action in the three dimensions, so that each tends to produce the other, will benefit.
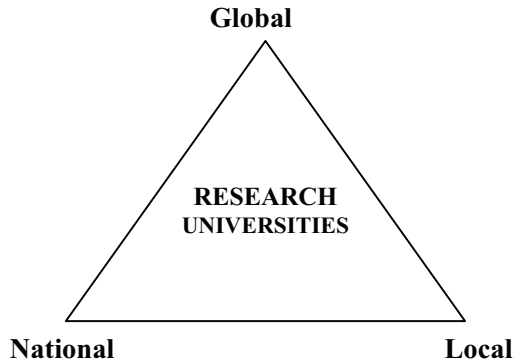
Figure 2. Dimensions of higher education.

Thus WCGRUs have to be strong enough in the global dimension to participate in its circuits or flows of activity. They must be embedded in a local setting that enables stable activity and adequate levels of support. And they must sustain investment from national government in a regulatory and policy setting that both enable global activity and maintain and develop reputation and custom at home.

There was variation across the study in the degree to which the university and its executive leaders were free to act globally on their own behalf.

> If the university has freedom it can develop knowledge without limit. (Usman Chatib Warsa, Rector Universitas Indonesia)

The capacity of the president (or rector or vice-chancellor) to act separately from the government was enhanced if the leader was not appointed directly by them, but was chosen by the university's governing body or community. This was true for the NUS in Singapore and the interviewees from Japan, the Netherlands the USA, Canada and Australia. In Thailand, government appointment was a formality after the main recommendation is made at university level, whereas in Malaysia government exercised direct control over the appointment and this affected leader behaviour. The term of office in Malaysia was three years and although there was provision for reappointment, vice-chancellors regarded by the government as being too independent were not appointed for a second term. In Vietnam President Mai Trong did not question the process of government appointment, but focused on the need for executive autonomy:

> When I met the president of Vietnam I said: "I do not ask you for more money. Give me more autonomy". More freedom. More responsibility. More transparency. More flexibility to meet the requirements of our society and globalization. More autonomy. We have full autonomy in teaching and research. But not in staffing and finance. (Mai Trong Nhuan, President, Vietnam National University Hanoi)

All of the universities had been touched to some degree or other by New Public Management (NPM) reforms instigated by government. In Indonesia, Malaysia and Japan the university had been newly modelled as entrepreneurial and encouraged to seek private funds. At the time of interview in Indonesia and Japan the process of change was incomplete and still seen as in doubt. At Chulalongkorn in Thailand a reform to enhance university autonomy had stalled. New Public Management systems were well established at NUS in Singapore and at Auckland and the ANU.

The global freedom of the university was greater if it could generate its own resources at scale and was not wholly dependent financially on government. In all universities in the group, there had been an increase in private income in recent years. But in most cases this trend had been accompanied by constraints or reductions in government spending, and continued controls over government funded activity. In Singapore government funding continued to increase but that case was unique in the group. Cuts to the state budget were hurting in Illinois though this was less of an issue in Toronto. ANU and Auckland were sharply constrained financially. On the whole, private income raising was more strongly established in Australia, New Zealand and the United States than elsewhere in the case study group; though ANU in Australia was not a major player in the commercial international market in which most Australian universities were very active. ANU received special research funding from government.

All of the case study universities were partly or wholly constrained in their capacity to vary tuition charges to domestic students, which set a limit on their capacity to be a quasi-private university as imagined in corporatization reforms.

Overall New Public Management reform had left all but Singapore worse off in financial terms, especially given the expansion of subsidized global activities. It is ironic that the National University of Singapore, the one institution with especially strong public financing, was also the institution where imaginings of higher education as a capitalist economic market were more pronounced than elsewhere.

Global Public Goods

One manifestation of the national/global tension was that the university presidents often had a different notion of the contribution of higher education to public goods, to that held by national government. Public goods produced in higher education are goods that (1) have a significant element of non-rivalry and/or non-excludability, and (2) are made broadly available across populations; and are inter-generational in that they meet needs in the present generation without jeopardising future generations. Goods without attributes (1) and (2) are private goods (Samuelson, 1954; Kaul et al., 1999; Marginson, 2007b). Some public goods take the form of "externalities" or "spill-overs", whereby an individualized good received by one person creates benefits for others who did not purchase the good in question. For example, the training of a technician can enhance the productivity and wages of other workers; the training is partly non-excludable. Other public goods include collective benefits, for example the joint value created by enhanced communication or knowledge systems, where the outcomes are non-rivalrous.[2]

Generally governments, influenced by the economic policy constructs of the role of higher education, tend to emphasize the competitive aspect of university work more than the cooperative aspect. This includes activity in the global dimension, where universities are mostly seen as an extension of the nation-state as a competition state. Where public good outcomes are noted by governments, the public goods are mostly understood in nation-bound terms, circumscribed by citizen identity and geography, for example, the role of higher education in providing equitable social opportunities, or contributing to employment creation in local areas. However, the presidents interviewed for this study were aware that universities contribute to more than the mix of public and private goods within the nation, and to more than the competitive position of the nation offshore. For active as they were in research and cross-border people flows, they thus had the potential to contribute to global public goods. Global public goods are goods that have a significant element of non-rivalry and/or non-excludability and are broadly available across populations on a global scale (Kaul et al., 1999, p. 2–3). Examples of such global public goods are disinterested research focused on worldwide problems in relation to the: environment, water and disease control.

Several universities in the study - Tokyo, Leiden, Toronto, Illinois and the ANU among others - were extensively involved in producing collective global public goods, with the central element being mostly knowledge, its production and dissemination. Illinois's contribution to capacity building in the National University of Vietnam, which was granted as being very helpful in Hanoi but generated few pay-offs for the American university, was another example of a global public good. More generally, research universities contribute to global relations and understanding by building bridges between nations and enhancing intercultural mixing, and several presidents referred to this.

Most presidents evidenced a strong normative commitment to their work in creating global public goods. For example, there was across-the-board support for research focused on monitoring and managing climate change, regardless of the level of resources of the university concerned. The presidents were personally attracted to the larger purpose embodied in the global role, and some were conscious that it helped to position their universities as players in the evolution of global civil society, thus moving beyond the limitations not only of their own nation-state and its priorities, but of the nation-state in general. But the question that arose was "how can global public goods be funded?", for national governments are generally reluctant to support extensive work on activities that primarily benefit people in other countries. This means that unless the research university can fund global public good activity from its own resources much of its potential contribution will be unrealized.

CONCLUSIONS

Worldwide higher education and research is a relational environment in which all research universities both contribute to the environment itself, and work within the positioning options possible in that environment. They can also develop new options. Global perspectives in higher education and research, which are shaped in the

imaginations of university and system leaders, are continually evolving and further radical changes in global connectivity, capacity and activity are to be expected.

Global strategies have differing space-making effects and they create relationships of varying shape. Some open a new global zone of activity that anyone can enter, like open source publication (such as MIT's open courseware initiative). Others build more bounded spaces within the global dimension, but spaces that multiply, as in the commercial market in degrees. Some global activities involve the same institution moving across or between different country sites, as in transnational education. Some create world-spanning networks with no intrinsic centre; others are grounded, working outwards from a single national location, such as the hubs. Some work with a small slice or corner of the global dimension, such as student exchange with proximate neighbours. A few global moves have been set out to reconstitute the whole of global higher education as a single space, such as e-universities, the process of WTO-GATS negotiations, and global university rankings.

The global dimension of higher education is a collective work in progress and there is much freedom for action and innovation, especially where universities act by themselves without direct regulation by governments. If universities are to fulfil their potential in the creation of global public goods, such freedom is essential. However, across the world there is a notable inequality in each of the three elements of university capacity, freedom to act, and national capacity in higher education. Universities need a minimum threshold capacity in resources and ability to act in order to be significant global players. Those with advanced capacity, many in North America, have more strategic options than do others. A primary issue of global public good is the need to develop WCGRUs in developing countries.

This is a "glonacal" era (Marginson and Rhoades, 2002) in which universities are simultaneously active in the local, national and global dimensions. That is, action in one dimension can affect the potential for action in the others. For instance, doing well in global rankings may strengthen the position at home with government and local students or a local restructuring of the curriculum might make the university more attractive to global partners. National governments can build global capacity, or strangle it in red tape. Government funding enables local modernization and augments global research capacity. Universities that effectively coordinate action in all three dimensions tend to benefit. In this study those universities include NUS in Singapore, the University of Toronto in Canada, and Leiden in the Netherlands.

Some global strategies have been more successful, and will have longer lasting and deeper effects, than others. Much global activity is superficial. Of the global strategies in the table, national capacity building in research can only lifts the *relative* global position of when it is on a large scale, as has happened in China, Taiwan China, Korea and Singapore. Networks only have lasting effects when collaboration is embedded in longer-term arrangements such as combined degree structures. Of the three attempts to remake the whole global dimension, the WTO-GATS initiative to turn higher education into a world trading system has had only modest impact. Most nations retain policy control of their regulated and protected national systems, for these are expected to generate not just market (private) goods, but national public goods such as contributions to national economic capacity and

social equity. The second attempt, the global e-universities, failed spectacularly. Most students find virtual degrees unattractive. But the third attempt to remake the global space, global ranking and research comparisons, has changed everything.

Some global strategies in higher education are brilliantly imaginative. When they first emerge they can be as creative as works in the arts and sciences; though their originality is soon hidden by all the imitators. Examples are Singapore's hub strategy, transnational education by Australia and the UK, the Shanghai Jiao Tong University ranking system which first appeared in 2003, the CHE web-based design-your-own university comparisons, and the Webometrics ranking. Leaders and organizations need certain skills for this kind of creativity, such as having imagination to see the "big picture" and reconcile the different trends, contexts and changes. They need to adopt a long-term view amid the short-term policy world and to hold onto their strategy without being distracted too much by knee-jerk markets. They need to be outstanding macro communicators and interpersonal networkers. They need a grasp of science, culture and business. They need to be cosmopolitan, whilst maintaining a strong sense of their own identity, agenda and goals. They need to be politically astute, because it is likely that national/global tensions will worsen. Good presidents need to be both dreamers and realists.

NOTES

[1] Further studies are planned in the Philippines, Laos, Cambodia, Korea and one or two universities in China. A study in India is under consideration.
[2] Goods are non-rivalrous when they can be consumed by any number of people without being depleted, for example knowledge of a mathematical theorem. Goods are non-excludable when the benefits cannot be confined to individual buyers, such as social tolerance, or law and order. Few goods are both fully non-rivalrous and fully non-excludable, but many have one or the other quality in part.

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Simon Marginson
Centre for the Study of Higher Education
University of Melbourne, Australia