



The Benefits of Greater Differentiation of Ontario's University Sector

Final Report

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For learners, greater differentiation of Ontario's university sector offers clearer choices from a larger number of higher quality programs, clarifies the institutions that best serve their career and personal aspirations, and facilitates mobility and transitions between institutions in Ontario's postsecondary system.

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For **government,** greater differentiation of Ontario's university sector is one of the most powerful levers available, especially in times of resource constraints, to achieve public goals of greater quality, competitiveness, accountability and sustainability.

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Now, more than ever, Ontario should strive to Own the Podium of higher education.

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EXECUTIVE SUMMARY

The Ontario university sector is already somewhat differentiated. A policy decision to increase the differentiation of the postsecondary system brings the following benefits:

- Higher quality teaching and research programs
- More student choice with easier inter-institution transfer and mobility
- Greater institutional accountability
- A more globally competitive system
- A more financially sustainable system

Ontario's postsecondary system can transition seamlessly and incrementally to greater differentiation with the judicious and strategic use of funding strategies already familiar to government. This transition to a more differentiated university sector is guided by principles including:

- Equal value on the teaching and research functions of universities
- Forging a contemporary relationship between Ontario's colleges and universities
- Linking the differentiation policy to funding decisions
- More effective use of multi-year accountability agreements and performance indicators to evaluate whether universities are meeting expected goals and targets

A roadmap is provided indicating how the government can advance the current university system to a more differentiated one. The cornerstone of this transition is a comprehensive agreement between each university and MTCU identifying the expectations and accountabilities of each institution including its expected enrolment and student mix, its priority teaching and research programs and areas for future growth and development. In contrast to the practice with the current multi-year accountability process, incremental funding to the institution would be aligned with its mission agreement, annual progress would be evaluated using an agreed-upon set of performance indicators, and institutional funding would be continued or removed based on progress towards agreed-upon goals and targets. The document addresses several operational issues relating to the linkage of these accountability agreements and

funding including ways that government can modulate the pace of the move towards more differentiation.

Finally, an Appendix is provided demonstrating how other Canadian provinces and other countries have organized their postsecondary systems and are using a policy of differentiation to increase the quality, competitiveness and sustainability of their higher education sector for the benefit of students and public.

PREAMBLE:

In July 2010, the Deputy Minister of Training Colleges and Universities, Deborah Newman, asked the Higher Education Quality Council of Ontario (HEQCO) to explore "...whether a more strongly differentiated set of universities would help improve the overall performance and sustainability of the system, and help Ontario compete internationally... [and] ... how to operationalize a differentiation policy, should government be interested in pursuing this as a strategic objective."

To help frame and inform this analysis, HEQCO convened a Working Group consisting of: Max Bluow (President, Wilfrid Laurier University); Linda Franklin (President, Colleges Ontario); Dominic Giroux (President, Laurentian University); Ali Ghiassi (Chief of Staff, MTCU); David Johnston (President, University of Waterloo); Sheldon Levy (President, Ryerson University); David Naylor (President, University of Toronto); and Deborah Newman (Deputy Minister, MTCU). In addition, HEQCO solicited comments from a broad range of relevant stakeholders including college and university presidents, and student, staff and faculty groups.

We recognize that a commitment to increase the differentiation of Ontario's university sector is not current government policy. This report presents our analysis, findings and recommendations in response to the Deputy Minister's request. The views expressed in this paper are those of the authors and are based on the analysis conducted and the advice received.

Overall, we believe that a more differentiated postsecondary sector offers considerable advantages to both students and the public.

A more differentiated university system offers students a wider variety of unique and quality programs at both graduate and undergraduate levels. A more differentiated system is purposeful and cohesive, enhances the quality of the entire system and clarifies student choices. It offers a system that builds on institutional strengths and niche areas of expertise; recognizes the value of teaching and learning activities; and rewards competitive innovation and entrepreneurship activities.

A more differentiated system is part of a government vision of a progressive, modern, accessible, higher quality postsecondary system. It strengthens a commitment to

student mobility through system wide credit transfer. It supports access by recognizing a heterogeneous student population with varying needs and demands. It supports labour market ‘readiness’ of students and enhances the competitiveness of some institutions to compete in the global arena of top research universities. A differentiated system is supported by a strong commitment by government and institutions to accountability and transparency through multi-year accountability agreements that optimize outcomes desired by students, public, labour and government.

WHAT DOES DIFFERENTIATION MEAN?

The following are some “axes” of differentiation that capture the various ways the term “differentiation” has been used. These axes are not mutually exclusive. However, they reveal how different people use the term “differentiation” and help understand the degree to which the Ontario university system is already differentiated.

1. **Differentiation on the basis of structure** such as size (large or small) or funding (private or public) or legislated mandate (undergraduate only or mixed undergraduate and graduate student bodies).
2. **Differentiation on the basis of the type of program offered** such as research intensive or teaching intensive, technical/design school or comprehensive university.
3. **Differentiation on the basis of how research, teaching or services are provided by the institution** (on-line university or a residential university; co-op or traditional)
4. **Differentiation on the basis of institutional status, prestige or rankings.**
5. **Differentiation on the basis of differences in the composition of the student populations served** (Bilingual or Francophone or Anglophone; First Nations and other indigenous students; denominational colleges; mature students or direct from high school).

Differentiation can be vertical or horizontal. Vertical differentiation refers to the ranking of institutions by a dimension – such as research intensity or reputation – that alludes to a stratified hierarchical system where institutions differ in their value and prestige, perceived or real. Almost all media-driven higher education ranking systems

have this approach (even if they differ in the particular dimension along which institutions are ranked). Horizontal differentiation suggests a coordinated system composed of institutions with a diversity of missions and mandates that are equally valued but that may serve different students in different ways. The postsecondary framework in Alberta has this underlying philosophy (in fact, in that province all were discouraged from saying that the system had different “levels”; it had different “categories”).

HOW DIFFERENTIATED IS THE ONTARIO POSTSECONDARY SYSTEM?

The Ontario university system is already quite diverse. In fact, it would be surprising to find a uniform or homogeneous system in place given the regional, population, geographic, economic and cultural variations in the province, as well as the range of founding histories of each institution.

The first broad level of differentiation in Ontario’s postsecondary system is between the historical mandates of its colleges and universities. The distinctions between these two streams – as two forks of a postsecondary stream -- were established in the 1960’s. Today, the college and university sectors continue to be presented as having different mandates, even though the migration of students between these two systems, curriculum developments and the liberalization of credentials offered have blurred this distinction.

Postsecondary education in Ontario is delivered through 20 publicly assisted universities and their affiliates; 24 publicly assisted colleges of applied arts and technology; three agricultural colleges affiliated with the University of Guelph and a school of horticulture; one applied health science institute; 17 privately funded institutions with restricted degree-granting authority; the federally funded Royal Military College; about 570 registered private career colleges; and many more non-degree-granting private institutions offering postsecondary education or training that do not have regulatory oversight in the province.

Within the university sector itself, the history of Ontario’s universities captures some of their diversity. The oldest universities grew up independently – and often with religious affiliations - and date back to the early to mid 19th century; while a group of newer institutions were established in the mid 20th century in response to a growth in student demand, first following the second world war and then again in the 1960s and 70s.

Most publicly-assisted universities offer both undergraduate and graduate degree programs, although some, such as Brock, Nipissing, and Trent, tend to focus on

undergraduate education. A handful of larger universities offer second entry professional programs, such as medicine, law, dentistry and engineering. Two universities: Laurentian and Ottawa, offer programs in both English and French. York University's Glendon College also offers liberal-arts programs in French.

In addition, the *Collège dominicain de philosophie et de théologie*, is provincially funded and operates at the university level.

The University of Toronto, with a total enrolment of more than 60,000 students, 129 academic departments, and 75 doctoral programs, is the largest English-language university in Canada, ranked as one of the country's best, and a major centre for research and graduate studies. Algoma University in Northern Ontario is the smallest university in Ontario, with a student population of just over 1200.

The University of Ottawa is North America's oldest and largest bilingual university, offering a wide range of programs in both English and French. A number of universities, such as Lakehead University in Thunder Bay and Laurentian University in Sudbury, serve regions with large Aboriginal populations and have developed academic programs that support those communities.

There is a wide range of examples of innovative practices and specialized programs in Ontario universities. For example, the University of Waterloo is a world leader in the field of cooperative education, combining academic studies with on-the-job training. Ryerson University specializes in applied professional programs and has a large school of continuing education. McMaster has been a leader in problem based education in its medical programs. The Ontario College of Art and Design University focuses on degrees in design and fine arts. Laurentian University is the first university outside the United States receiving accreditation for its forensic science programs. In addition, a number of universities deliver collaborative programs with local colleges.

In short, history, geography, regional development, innovation and response to student demand and the labour market have created an organic diversity in the Ontario university system and a good base to build on for further differentiation.

BENEFITS OF MORE DIFFERENTIATION

- **Greater differentiation of the postsecondary sector is one of the most powerful levers available to government, especially in resource constrained times, to achieve its goals of greater quality, competitiveness, accountability and sustainability.**

Differentiation promotes institutional quality and system competitiveness by enabling each postsecondary institution to grow preferentially in those areas where it already excels, or aspires to excel. Higher quality programs means that the credentials students receive upon graduation are more highly valued; this makes the students more competitive relative to those from other jurisdictions and makes Ontario universities more attractive to international students.

Differentiation promotes accountability because, through accountability agreements negotiated by the government with each postsecondary institution, it clarifies the expectations of each postsecondary institution and, with a suite of institution-specific performance indicators, allows for a clear assessment of whether the postsecondary institution is meeting expectations and targets at an acceptable quality level.

Differentiation promotes sustainability because it allows institutions to focus their funds, especially incremental ones, on areas of priority consistent with their mission. This permits them to best synergize incremental funds with their current resources and prevents squandering of precious institutional resources on programs not appropriate for them or not expected of them.

Greater differentiation does not necessarily lead to more access over and above whatever student growth the government is already contemplating and prepared to fund. However, differentiation helps redress one of the undesired consequences of rapid growth, which is a reduction in the quality of programs and the student experience. Ironically, then, because differentiation permits the maintenance or enhancement of quality even in the face of greater enrolment, the need for greater differentiation is now more acute precisely because the Ontario university system has been so successful in accommodating growth of student numbers.

- **Greater differentiation of the postsecondary system provides clarity to students as to the postsecondary institutions that best serve their career and personal aspirations.**

A contemporary postsecondary system should allow students, based on ability, to choose the institution that offers the highest quality programs matched to their personal and career aspirations. The quality of the academic program determines the value of the credential the student obtains upon graduation and, therefore, the student's competitiveness relative to peers. Differentiation drives quality and student choice. If the aspirations of the student change during their studies or lifetime, a differentiated

system offers the opportunity to switch to another postsecondary institution more aligned with their amended intentions and circumstances. The opportunity for students to move among postsecondary institutions is why an efficient and robust credit transfer system is more necessary in a differentiated system. Therefore, improving Ontario's credit transfer system should precede or accompany more system differentiation.

- **Greater differentiation of the postsecondary system prevents mandate creep.**

Clarity around institutional mandate and mission allows for greater focusing of human and financial resources on programs and projects that are desired by society, not just by individual institutions. One of the great demonstrated benefits of differentiated postsecondary systems, such as California's, was cost effectiveness because of clarity around the mandates of institutions and the prevention of unregulated mandate creep.

- **Greater differentiation of the postsecondary system, because it provides clarity to institutions as to their mandates and expectations of them, allows institutions to spend their resources most effectively.**

Right now, the lack of clarity about what is expected of a postsecondary institution, and the ways in which their performance will be evaluated (and, therefore, how they can receive the most incremental funding), leads universities to compete for resources for popular, established programs—like a new professional school—only some of which is the government likely ever to approve. This, coupled with uncertainty over what “mandate creep” is acceptable, leads universities to spend scarce resources on projects that may never see the light of day. *An a priori* understanding between institutions and government about what is on and more importantly, what is not on, allows universities to focus their resources on doing things well that are within their mission, not aspirations that are never to be realized. This focusing of institutional resources on things they do best and that are consistent with public goals is one element of creating a more sustainable system.

CONCERNS WITH MORE DIFFERENTIATION

- **Greater differentiation should not undermine current successes in the postsecondary sector.**

The promotion of further differentiation should not create incentives or practices that undermine the overall status, efficiency and productivity of the postsecondary sector. In particular, over the last several years, the Ministry and the postsecondary sector have worked together well to accommodate significant enrollment growth. Efforts to make Ontario's postsecondary system more differentiated cannot undermine the capacity of the system to accommodate expected enrolment demand.

- **Greater differentiation may elicit claims that the government is constraining or squashing institutional aspirations.**

Such claims can come from the institutions themselves or from political and/or community leaders from the regions they are in. However, the mechanism proposed for differentiation (see below) starts by asking the postsecondary institutions to articulate their priority or growth areas. Since the institutions will identify these, it is hardly reasonable for someone to then claim that the government is forcing or constraining the institution. Undoubtedly, greater differentiation will require all institutions to make some hard choices and to explain the rationale for them. But, this is exactly the kind of thinking and planning that should be promoted now and is not happening often enough.

PRINCIPLES OF DIFFERENTIATION

The following principles will increase the success and acceptance of a move to further differentiate Ontario's postsecondary system.

- **All functions of the postsecondary system have to be seen as equally valued.**

Previous discussions of differentiation have been hampered by the perception, real or imagined, that some roles of the system, especially research, are more highly valued than others, such as teaching. A movement towards greater differentiation will succeed only if it is clear that the government is placing equal value on at least the following functions –teaching and research, and in some cases, community development. The commitment to equal value must be more than rhetorical; it must be reflected in funding as well. Others will argue that other features of postsecondary contributions should be included in this list, such as the promotion of innovation/entrepreneurship or citizenship.

At a very pragmatic level, this principle is critical – greater differentiation will be acceptable as long as it is seen that there is a level playing field that offers opportunities (i.e. funding) where all universities have a chance at winning something.

- **The path and nature of greater university differentiation will be affected by any future changes in the college sector.**

The mandate of this paper is to examine differentiation of the university sector. But, universities do not exist in isolation. The directions and impact of greater university differentiation, or even the urgency for it, will, and should, be influenced by future changes that may be made in the college sector. Current discussions exploring whether colleges should have a greater role in degree delivery and the creation of a more effective transfer credit system are particularly relevant to the issue of university differentiation.

We also believe that the analysis of differentiation provided here, including the identification of benefits to students and the public, may be equally applicable to the college sector as it is to the university sector.

- **The differentiation discussion must be linked to funding models.**

Ultimately, universities will accept a move towards more differentiation to the extent that they believe they have a reasonable chance to receive incremental funding as a result of this policy direction. Since the intention is to have institutions bias their further growth preferentially towards teaching, research or some other desired public objective, this means creating a funding formula that rewards these various functions. The perception now is that, aside from peanut butter-like spread of enrolment growth funds, research is not only the higher prestige function but also the one that receives the most incremental dollars. While this perception defies the reality of research funding at universities (as now funded, research is actually a losing financial proposition), it has motivated more institutions to pursue the research buck, even those whose inclination is to emphasize further development of teaching. Discussion of differentiation divorced from linkage to funding formula is an empty exercise that will engage no one with sincerity.

- **A move towards greater differentiation requires tough choices by institutions and government.**

This can be painful, but it is unavoidable and required. Institutions will need to realistically appraise their futures and identify those areas or roles that are a priority to them and where they would preferentially grow. For institutions this cannot be just a rhetorical exercise. The government should insist on some tangible signs of this commitment, i.e. that the university has preferentially deflected resources to those areas they identify as a priority and for which they are seeking incremental government funds. For example, if a university suggests that their future development lies more in the creation of a world-class undergraduate liberal arts education than in a wide set of PhD programs, then one should expect to see resource allocations within the institution consistent with this intention. Similarly, a move to greater differentiation will require governments to realistically evaluate the elements of a mission proposed by universities and inevitably it will be called upon to say no to some elements forwarded by some institutions.

- **Differentiation requires performance indicators to evaluate whether universities are meeting the expectations and outcomes expected of them.**

A move to greater differentiation means a move to more accountability and performance management of the postsecondary system. When an institution indicates that it will develop preferentially in an area, and receives public funding to do so, there must be a way of evaluating whether the university is being successful in meeting qualitative or quantitative targets. This requires a set of performance indicators for the different domains of university activity. No single performance indicator by itself is perfect. However, as part of an accountability agreement between a university and government, there needs to be agreement on a set of performance indicators tailored, either in kind or level expected, to the specific negotiated mission of the institution. The good news is this. Institutions do what is measured and, for the most part, institutions succeed in achieving goals when those goals are clearly identified. So, performance management facilitates and accelerates differentiation, progress and achievement.

- **The mandates of institutions in a differentiated system should be transparent.**

A central element of a more differentiated system is an agreement between university and government identifying the university's plans for growth, student mix, priority areas, etc. including the performance measures that will be used to monitor progress. It

is best if these agreements are advertised and transparent to key stakeholders such as students, the public and other postsecondary institutions.

- **A more differentiated system benefits from third-party advice at key decision points.**

It is the responsibility of government to establish public goals, to make funding and system decisions and to hold public institutions accountable for their performance. In the context of moving to a more differentiated postsecondary system, though, there are at least two key points at which a government would benefit from third-party independent advice. The first is when government is evaluating the credibility of strategic plans, intentions and missions by universities for which they will seek government funding. Third-party advice is particularly helpful here when a government may have to say no to some element of a proposal from a university. The second is when the government evaluates whether a university has in fact met the goals and targets expected of it, especially if these are qualitative goals such as the quality of a program or project. Governments can use an independent agency such as HEQCO for this advice or they could convene a panel of experts.

- **A move to more differentiation must attend to the consequences, intended or otherwise, on students.**

Most of the discussion about differentiation talks about the impact on institutions. However, one of the most significant reasons for pursuing a more differentiated system is that it elevates the quality of the programs and experiences enjoyed by students. This, in turn, leads to graduates who are more highly valued and competitive. Donald Kennedy, the former president of Stanford University, reminds us that the university's "improvement must entail putting students and their needs first. Once that is done the rest falls into place..." (Academic Duty, 1997, p.287). Rightfully and legitimately, one can expect student and other groups to be attentive to consideration of student issues in any policy move to greater differentiation. For example, if there is a decision to limit the number of engineering programs in the province, students may ask for greater consideration of relocation costs in the student financial aid system.

- **Greater differentiation takes time, multi-year planning and discipline of execution.**

In theory, one could blow up the current postsecondary system and design a more differentiated system from scratch. This is not going to happen. Realistically, the system will become more differentiated incrementally over years. That said, while it may take some years to get the system shifted, it is essential that the process get started, that the government seek every opportunity to move the system in that direction, and that the government stay committed to this policy.

THE ROADMAP TO A MORE DIFFERENTIATED SYSTEM

Several logical steps move to a more differentiated system.

Step 1: The MTCU asks each postsecondary institution to submit a mission statement that articulates the aspirations of the postsecondary institution including its:

- Desired enrolment target and mix;
- Priority areas of teaching and research;
- New programs the university wishes to develop or preferentially expand;
- Particular strategic strengths because of the university's location, tie to specific industries, history, current mandate, international standing or any other dimension deemed relevant by the university.

The mission statement submission should also ask the institution whether (i) its strategic plan has been endorsed by its Senate and Board and (ii) is supported by evidence that the university has preferentially allocated internal resources, or has preferentially pursued specific sources of external funding, consistent with these intentions.

The most important, informative and revealing element of the mission statement, particularly for government, is the university's identification of its desired student enrolment and enrolment mix. Attention to this element ensures that government and the university sector attend as the first order of business to a primary public goal -- an adequate number of spots for qualified students. Further, the student mix is a tangible and measureable marker of a university's aspirations. For example, if a university's mission is biased towards internationally-recognized research intensity one would expect to see preferential growth in graduate, compared to undergraduate, students. Because this measure is so easily quantified, it may be considered an early marker of what one really wishes to evaluate, i.e. research quality. Similarly, if a university

indicates a preferred development of undergraduate programs that promote entrepreneurship, certainly one marker of progress would be an increase in the number of students enrolling in such programs.

Step 2: MTCU reviews the individual university mission statements to determine whether:

- The aspirations and claims are credible and reasonable;
 - MTCU may seek third-party advice
- The sum of the individual mission statements add up to the required contribution of the university sector to public goals.

Step 3: MTCU signs a multi-year accountability agreement with each university. This means that the government signs-off on the mission statement and the two parties agree on the performance measures that will be used to assess the university's progress towards agreed-upon goals.

- Prior to this, the government would have assembled a set of performance indicators related to different aspects of a university's mission (e.g., teaching quality, research intensity, innovation/entrepreneurship programming, regional economic development). HEQCO can advise on a slate of relevant and useful performance measures. From this slate, The MTCU and university construct an appropriate performance matrix individualized for each university capturing the mission and expectations of that university.¹

Step 4: Annual incremental funding by MTCU to the university sector is organized in ways to enable differentiation (see section below) and to tie funding to desired outcome, e.g. a Teaching Innovation Fund to promote innovative, modern teaching practices or a Research Excellence Fund to enhance R&D in areas of strategic importance to the province. Individual universities compete for those pools consistent with their mission statements.²

¹ Some performance indicators may be common to all universities (e.g. achievement of enrolment target); others may be applied to only some universities (achievement of a particular regional economic target); and others may be common to all universities but would differ in the expectation of the level of performance (e.g. time to graduation).

² Depending on the funding model chosen by the government to promote differentiation, the progress of individual universities on their performance measures may also be used to adjust their annual base grant.

THE TIMELINE OF MOVING TO A MORE DIFFERENTIATED SYSTEM

Unless one starts a system *de novo*, and Ontario is not, the move to more differentiation will be progressive. Because the move to more differentiation will be incremental, it is important to begin the move in that direction as soon as possible and to stay committed to it. Realistically, though, it will take some years before the full benefits of differentiation will accrue³. So, in any consideration of timeline, it is sensible to ask what the first steps should be and how the system might look 5-10 years after the initiation of a policy of greater differentiation.

First steps should include:

Step 1: Government consults with the postsecondary sector and public to present the benefits and need for more differentiation.

Step 2: Development of university mission statements by institutions.

Step 3: MTCU reviews and negotiates individual mission statements with institutions.

Step 4: MTCU signs off on multi-year accountability agreements.

Step 5: Announcement of specific funding pools and establishment of the process for annual review of progress towards goals.

What can students and the province expect 5-10 years after the beginning of the move to more university differentiation?

- Clearer student choice from a larger number of higher quality programs
- Easier student navigability of the postsecondary system
- A more coherent and coordinated postsecondary system
- More international students
- More sustainability of the university sector
- More economic impact of university-based research
- Better alignment of graduate's skill set to the labour market
- More robust and diversified Ontario economy
- More Ontario universities doing better in international rankings

³ Governments should be used to this. For example, when it provides funding to increase the number of PhD graduates it takes 4-5 years after funding is initiated to see the result.

The level of investment in the sector determines the speed at which these benefits will be realized.

Government may also wish to start the move towards differentiation sequentially. The Greater Toronto Area (GTA) is a logical first mover. The GTA is where the access challenges are most acute, the majority of college-to-university mobility takes place, the bulk of international students can be accommodated, and the dominant economic impacts might be realized. It is an area where considerable university and college differentiation exists already and where relationships among key participants appear well formed. A transfer credit system adopted by GTA institutions, given how much of the system they represent, would be a significant platform on which to expand such arrangements to the rest of the province.

Another early mover may be Northern Ontario. Universities in this region are grappling with a different access problem than the GTA (too few students) and are exploring a variety of opportunities to deal with this challenge. Northern universities are strongly tied to regional economic and social development. A more differentiated university system should result in strengthened Northern institutions serving as an enabler of the provincial government's Northern Growth Plan.

Typically, the Ontario government has not adopted a regional lens along which to organize and coordinate its postsecondary system. Geography is a key differentiating factor that has influenced the development of some Ontario postsecondary institutions; a greater regional perspective may be useful in considering beneficial redesigns of the Ontario system.

FUNDING A MORE DIFFERENTIATED SYSTEM - PRINCIPLES

The funding model designed to move the system to greater differentiation should itself be guided by some principles. These are:

- **Funding should be tied to desired outcomes.**

Incentive funding is the major mechanism by which governments achieve desired goals. Put simply, universities will do what you fund them to do. If you don't tell them what you want them to do, they do what they want. This may, or may not, be consistent with public goals.

So, if government wants more undergraduate programs that promote entrepreneurship, then it can create a specific funding stream directed specifically to this goal. Similarly, if government wants more international students it can create a funding program that provides incentives to achieve this specific goal.

The Ontario government already does some of this. The dominant emphasis recently has been incremental funding tied to the outcome of enrolment growth, including more students at the graduate level. Similarly, the Ontario government has created targeted funding programs to increase the number of people graduating with a particular credential, such as nursing. The Ministry of Research and Innovation has also created funding programs to support specific research areas of strategic importance to the province.

Right now, though, only a small percentage of university sector funding is tied to specific outcomes and funding is rarely removed if outcomes are not achieved. If the government wishes to move more boldly in the direction of differentiation, and receive the benefits of it sooner, it should consider linking more of its incremental funding to specific end goals. In the extreme, the government can tie all of its annual incremental funding to desired goals and outcomes.

- **Institutions should compete for funds that are consistent with their mandate and multi-year agreement with government.**

The whole logic of asking universities to articulate mission statements and areas of priority is that they should gravitate to the funding programs that are aligned with their aspirations. The flip side is that it makes little sense for a university to compete for funds that are outside of its approved mandate.

Often, proponents of differentiation argue that universities should identify themselves as “teaching-intensive” or “research-intensive” and be permitted to apply for only those funding pools that are teaching or research related respectively. This two-category classification may not be too useful. As noted before, even universities which advance a bias to teaching excellence will likely still wish to develop a limited number of graduate programs. Similarly, universities that develop a mission promoting research intensity will likely pursue more funding for graduate students, which is just another form of an intensive, focused teaching experience. Finally, even the most research-

intensive institutions cannot be relieved of the obligation to improve the quality of undergraduate teaching if, for no other reason, that they teach such a large share of the province's undergraduates.

While a strict “teaching versus research” dichotomy may not be a useful differentiator, the general point is that universities should be expected to align funding requests with mandates. For example, if the government desires more PhD-level computer scientists and establishes a funding pool to that end, then only those universities that established this as a graduate priority should compete for this funding. In short, the emergence of a new source of funding is not the occasion for institutions to suddenly develop an appetite for an area.

- **Government funding has greater impact when institutions have skin in the game.**

It is inevitable that when a funding pool is created the demand from the university sector for these funds will exceed supply. So, how is the government to decide which universities should receive incremental funding and which should not? Undoubtedly, the merits of the proposal will have considerable influence. However, this principle suggests that one criterion for a successful application should be that the institution has already shown its commitment by allocating some of its own resources to the project. This criterion helps differentiate the committed from the opportunistic.

Some will argue that institutions should be allowed to compete for funds only if they have shown this previous tangible commitment. The more liberally-minded will argue that this criterion can be fulfilled if the university agrees to match (does not necessarily have to be 1:1) the government's contribution. Regardless, the view here is that governments will maximize the probability of achieving desired goals if it deals with those who demonstrate real commitment. Pragmatically, government dollars go further if they leverage institutional dollars.

- **Institutions earn their incremental funding; they are not entitled to it.**

A critical element of funding tied to outcome is the principle that universities must earn their funding; they are not entitled to it. Specifically, by accepting some funding from government, the institution has also agreed to meet some targets. A corollary of this principle is that institutions lose their incremental outcome-dependent funding if they

fail to achieve agreed-upon goals. The failure to adhere to this last corollary is where many funding schemes fail. In a better world, of course, institutions that achieve their goal might actually be further rewarded.

It is hard to take money away from an institution. Also, since it often takes several years to determine whether a target has been met, one looks for ways to mitigate negative impact if funding is removed. One way to do this is to allocate one-time funding each year towards a project; the funding is built into a university's base grant only if, after the appropriate number of years, the institution is deemed to have been successful in meeting the agreed-upon targets and goals. This process, already used in some provinces, also allows governments to ramp up the funding for a project over years as funds are needed.

FUNDING A MORE DIFFERENTIATED SYSTEM – OPERATIONAL ISSUES

One government goal, particularly in these economic times, is to reduce the cost of higher education or, more rightfully, to mitigate the increased costs of expanding the postsecondary system. Some refer to this as the imperative to increase the “financial sustainability” of the system; others speak of the need to reduce the “per student cost”. Whatever term one uses, it is clear that universities, to a greater or lesser extent, and not just in Ontario, face financial challenges. There are many reasons for this including inflationary (especially salary) pressures that exceeds revenue increases, rising pension plan liabilities, costs of maintaining or building new capital, falling returns on endowments. Increasing the differentiation of the university system by itself will not solve the financial sustainability problem, but it will help in several ways. First, as noted before, because institutions will have clarity and accountability around the things that are expected of them, they will optimize the use of their internal resources by allocating them to projects and programs consistent with a focused mission and mandate. Right now, this lack of clarity leads universities to spend non-trivial resources on the pursuit of projects – such as new professional schools or satellite campuses – which are unlikely to be approved by government. Second, and perhaps more importantly, as others have noted, all Ontario universities have gravitated to the most costly, volatile and risky model of university education – that of a research-intensive university. There are less expensive models, and in a more differentiated system some universities will move to these models because they are more appropriate to their stated mandates.

Put simply, there are reasons that other Canadian provinces and other jurisdictions have increased the differentiation of their postsecondary systems. One motivation was to preserve quality in the face of increased enrolment. Certainly, though, the search for greater cost control and effectiveness were also primary considerations.

One way to think about the cost of more differentiation is to start with the assumption that governments will always put in the money necessary to accommodate student demand, i.e. to clear the access problem.

What are those numbers now? In the most recent Throne Speech, the government committed \$310 million to create 20,000 additional spots by September 2010. Over the next 5 years (2011/12 – 2016/17), MTCU estimates having to allocate approximately \$2.4 billion for an additional 50,000 spots.⁴

Universities represent about 2/3 of the students in the postsecondary sector. So, roughly speaking, over the next 6 years, using the government's traditional planning scenario, it will allocate approximately \$1.6B ($\$2.4B \times 2/3$), or about \$270M per year, to the university sector if only because of the imperative of creating the spots necessary to meet demand.

If these funds are distributed in the same manner as they are now, there is no reason to expect any change in the system except for enrolment growth – i.e., no more quality, no more innovation, no more accountability, no more competitiveness, no better financial sustainability⁵.

So, how could this \$270M per year be fashioned by government to achieve desired goals?

A possibility suggested by some is to adjust the BIU weighting (a BIU premium) to different institutions based upon their mandates. Specifically, a university that indicates a mandate biased towards teaching excellence might receive, for example, a 10% premium on its BIU for general arts and science students. Similarly, a university

⁴ These numbers were generated using the current assumptions about per student funding. One of the goals of government might be to reduce the incremental per student cost by greater use of on-Line learning or putting out bids to identify the lowest-cost deliverers.

⁵ Remember, one of the definitions of insanity is doing the same thing over and over again and expecting a different result.

biased towards research intensity might receive a 10% premium, for example, on graduate student funding.

There are significant problems with a funding model that promotes differentiation by offering a BIU premium. First, it forces a declaration of an institution into categories of “research-intensive” or “teaching-intensive” and, as discussed before, this is not an easily defensible or useful classification, either conceptually or pragmatically. The greater difficulty with the concept of a BIU premium is this: it is difficult for government to justify putting more dollars behind, for example, a history undergraduate at one university than a history student at another university. Once governments have set a BIU value for a particular undergraduate program, what would be the rationale for giving more dollars to students studying that discipline at one university compared to another? It is unlikely that a BIU premium would be well received by students or student groups, even among those that are generally supportive of the concept of using funding to drive differentiation.

A time-honoured way of linking funding to more differentiation is to create funding pools targeted to specific desired outcomes. As noted, the Ontario government already uses this strategy to promote goals of access, research and graduate students. The trick here is to make sure that the funding actually goes to accomplishing the desired outcome. In general, governments should worry more about whether the outcome is achieved than the process by which the institution meets the goal. This is what outcome-based performance indicators are all about. Right now, one could argue that too much government attention and control is devoted to monitoring and directing how a university will achieve a goal (Did it use on-line methods of delivery? Were class sizes reduced?) rather than whether an outcome was achieved (Did the quality of the student experience increase? Did a university decrease the per student cost of undergraduate education?)

If new targeted funding pools are to be created, right now ones related to teaching quality, teaching innovations and the quality of the student experience seem to be the most important. The sector is waiting for signals from government that it values teaching as much as research. Additionally, funding possibilities related to excellence in teaching are important to create a level playing field for those universities which are prepared to bias towards a future where their reputation, contribution and incremental funding are based more on teaching excellence than research intensity.

Universities, to a greater or lesser extent, are competing in an international arena. Additionally, the government has identified a goal of increasing the international student cohort in Ontario institutions by 50%; some universities will contribute more to the achievement of this goal than others. A policy of greater differentiation has the possibility of driving more Ontario universities to higher world-class status. Whether we like it or not, the criteria of whether a university is considered to be among the best in the world is established internationally, not by Ontario, and the elements in this ranking system are well understood. The relevant parameters are largely based on the exclusivity of admission (quality of the student body), international competitiveness of their faculty, excellence of their research, and quality of their infrastructure. There are both benefits and drawbacks of having Ontario universities among the top 50 best universities in the world. Other public systems have identified flagship campuses⁶ – the question is whether Ontario has the appetite for doing the same. This is a question that should be examined in any comprehensive discussion of system differentiation.

Some will argue that the arguments for greater differentiation are so compelling that the province is well advised to identify that policy goal and move the university system in that direction as quickly as possible. The government can adjust the time frame for reaping the benefits of a more differentiated university system by modulating the level of investment it makes in the sector; the greater the investment the sooner goals are achieved. There are two other strategies government can employ to assist a move towards further differentiation, one better than the other.

First, government could reallocate some of the current university base operating grant to these targeted pools. In 2010, the base grant to Ontario's 20 universities totaled approximately \$3.5 billion. A 1% reallocation pool would provide \$35M per year to facilitate the move to more differentiation. Reallocation also sends a powerful signal about the government's commitment to a more differentiated system. For completeness, though, although these reallocated funds stay in the sector, and although this is only 1% redistribution, this maneuver would certainly elicit considerable protest from the sector. The historical and current funding state of Ontario universities is the

⁶ The most recent Academic Ranking of World Universities ranks the flagship of the California public postsecondary system, UC Berkeley, as #2 in the world. The only Canadian universities in the top 100 are: University of Toronto (27), University of British Columbia (36), McGill University (61) and McMaster University (88). For completeness, other top 100-ranked universities from the California public system alone are: UCLA (13), UCSD (14), UCSF (18), UCSB (32), UC-Davis (46), UC-Irvine (46).

context for any funding re-allocation and it is easy to generate the arguments critics will marshal against reallocation in what is perceived to be an already underfunded system. For this, and other reasons, many will argue that the move to differentiation can only be realistically achieved by using new incremental dollars.

The second possibility is to realize the benefits to the public and learners of greater differentiation and, therefore, to adopt a policy to differentiate the system as rapidly as possible and then to go bold. What does going bold mean? It means accepting the argument that Ontario's university sector must change, that differentiation is an important element of the change needed and that government, through its influence and funding levers will use this policy and consequent strategies to move the system towards greater quality, competitiveness, accountability and sustainability. It means investing preferentially in higher education and explaining to the public, in an unabashed and persuasive way, why this investment is so critical to their futures, the future of their children and the future of the province.

Proponents of the "go bold" strategy will point out that investments in education are some of the most important expenditures of a government that has its eyes fixed on the future with some of the highest rates of public return. And, as shown in the Appendices that follow, many governments have positioned higher education as a key plank of their future economic and social strategies and are using a policy of differentiation to advance their postsecondary sector to greater competitiveness, higher quality and world-class status.

Canadians developed an enormous sense of pride and purpose when the country strove and achieved excellence in global athletic competition. The benefits of a globally competitive higher education system are even more important, tangible and relevant. Notwithstanding the significant advances the Ontario post-secondary system has made in the recent past, advocates of going bold ask: "Why would Ontario not strive to "Own the Podium" in higher education?"

APPENDIX A: MODELS OF DIFFERENTIATION IN OTHER CANADIAN PROVINCES

Canadian provinces have tended to use one of the following three models to organize their postsecondary systems.

Figure 3 — The Progressive-Choice Education System Model (Quebec)

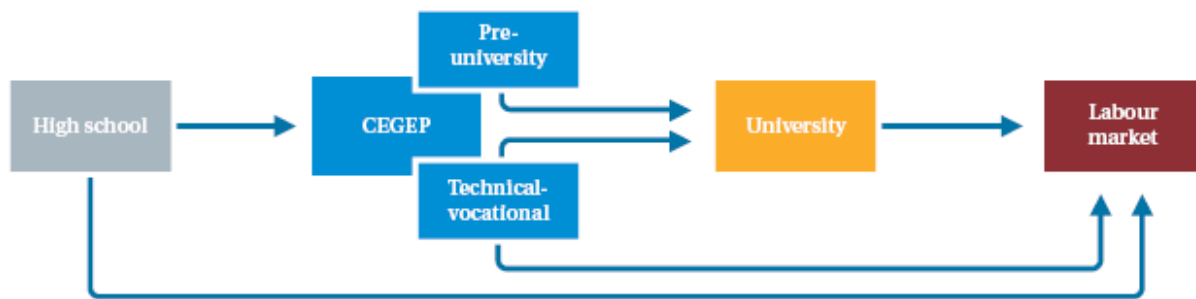


Figure 4 — The Exclusive-Choice Education System Model (Ontario, PEI, Nova Scotia, New Brunswick, Newfoundland)

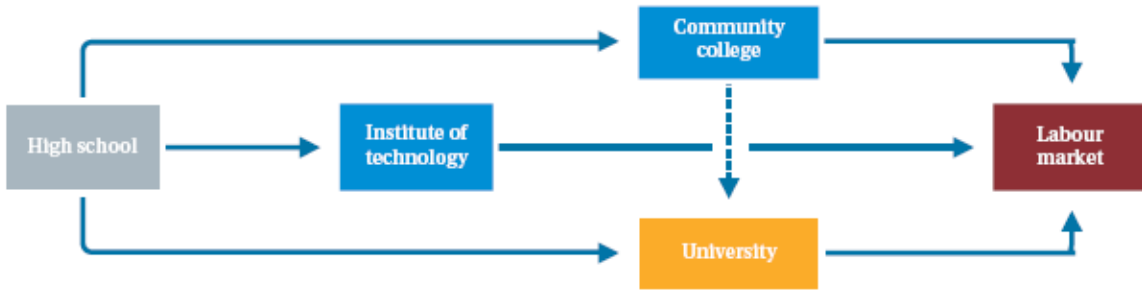
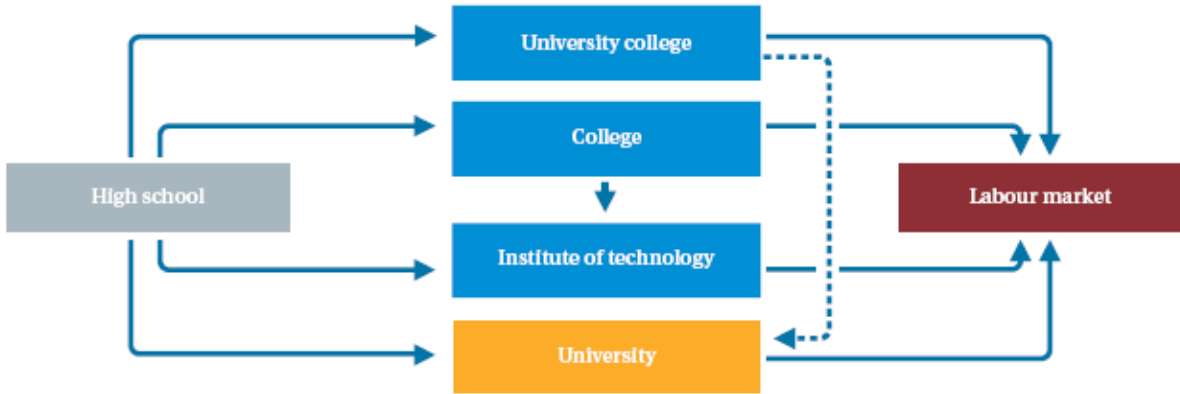


Figure 5 — The Multiple-Choice Education System Model (Manitoba, Saskatchewan, Alberta, British Columbia)



ALBERTA

Postsecondary education in Alberta, referred to as Campus Alberta, is delivered through universities, colleges, apprenticeship training, technical institutes, and private vocational institutions. Both credit and non-credit programs are delivered in rural communities through multiple remote access points and four community-based consortia that are partnerships between public postsecondary institutions. In addition, 83 community adult learning councils provide non-credit part-time courses.

The system is regulated through recent legislation that defines categories of post-secondary institutions and provides clarity of mandates differentiating the different categories.

The program approval process is designed to promote system development and coordination. The Campus Alberta Quality Council (CAQC) makes recommendations to the minister responsible for advanced education on the quality of new degree proposals and monitors the quality of approved degree programs.

The Alberta Council on Admissions and Transfer (ACAT) contributes to Campus Alberta through the development of policies, guidelines, and procedures to promote seamless student mobility throughout the advanced learning system.

Integral to the Campus Alberta model is a commitment to on-line learning and the application of technology to support quality learning outcomes. To this end, eCampusAlberta, a consortium of 15 colleges and technical institutes, facilitates increased access to high-quality collaborative on-line learning opportunities that span the province, and Alberta North provide facilities, learning technologies, and support services to over 80 on-line learning sites across northern Alberta and Northwest Territories.

Alberta until quite recently had four universities: University of Alberta, University of Calgary, University of Lethbridge, and Athabasca University. The Universities of Alberta, Calgary, and Lethbridge are campus-based, while Athabasca University is a distance-learning university. Credentials awarded by the universities include bachelor's, master's and doctoral degrees.

As a result of the recent legislation providing the framework for Alberta's post-secondary sector, two new universities – Mount Royal University and Grant MacEwen University – were created. These universities were formerly degree-granting colleges and their current mandates emphasize undergraduate teaching and the scholarship of teaching.

The University of Alberta and the University of Calgary offer a broad range of graduate and undergraduate degree programs and account for most of the province's university research capabilities. The University of Alberta also includes two distinctive faculties - Campus Saint-Jean, which provides French-language instruction leading to degrees, and the Augustana Campus in the town of Camrose, which provides degree programs in a rural setting.

The University of Calgary is home to scholars in 16 faculties (offering more than 80 academic programs) and 36 research institutes and centres. Research is the core of the University of Calgary's teaching and research mandate.

The University of Lethbridge offers undergraduate degree programs and a select number of graduate degree programs. It also provides the first two years of study in fields such as medicine, dentistry, and engineering for transfer to other institutions. The University of Lethbridge also provides programs aimed at meeting the needs of Aboriginal people. It has two satellite campuses located in Edmonton and Calgary. These locations offer many of the courses available at the main campus in Lethbridge.

Athabasca University, specializing in part-time and distance education, offers undergraduate degree programs in many disciplines and graduate degree programs in

business, integrated studies, distance education, and nursing. Its programs are largely designed for home study, delivered through a method called "paced delivery," and use a variety of print and electronic media.

In March of 2004, the ministry responsible for advanced education combined its Universities Act, Banff Centre Act, Colleges Act, and Technical Institutes Act into one comprehensive Post-secondary Learning Act to support the Campus Alberta framework and further educational opportunities in the province. Prior to the proclamation of the Post-secondary Learning Act, the ministry introduced a new Private Vocational Training Regulation that updated, reorganized, and clarified the requirements of the former regulation.

BRITISH COLUMBIA

British Columbia's public postsecondary education system is comprehensive and diversified. Postsecondary education is delivered by 25 publicly funded institutions; four research-intensive universities, seven teaching-intensive universities, eleven colleges, and three provincial institutes (including one Aboriginal institute).

Currently, the private postsecondary education sector consists of 15 private academic degree-granting institutions, three public institutions from jurisdictions outside British Columbia, 12 theological colleges, and a wide range of career training institutions.

The University Act governs most of the public universities. The research-intensive universities have the mandate to provide undergraduate and graduate instruction in a wide range of disciplines and to establish facilities for the pursuit of original research. The research and scholarly activities undertaken by these universities are global in scope.

Most teaching-intensive universities offer a comprehensive range of programming, including bachelors and masters programs. Thompson Rivers University offers distance and open learning formats through Thompson Rivers University Act, Open Learning. It has also indicated the intention to open Canada's newest law school, in partnership with the University of Calgary. Royal Roads University has a mandate with specific emphasis on applied and professional programs and research activities related to labour market needs, offering undergraduate and graduate programs primarily for mid-career professionals.

In March 2004, government announced that it would dissolve Okanagan University College to establish a new institution in the region - Okanagan College (OC) - as well as a new university campus - University of British Columbia Okanagan (UBCO). In March 2005, government created a new university in Kamloops - Thompson Rivers University (TRU) - to succeed the University College of the Cariboo. TRU assumed responsibility

for the provincial open and distance learning mandate of the British Columbia Open University and the Open College, formerly part of the Open Learning Agency.

In 2008 the remaining university colleges, including Capilano College and Emily Carr Institute of Art and Design were established as teaching-intensive universities.

MANITOBA

Postsecondary education in Manitoba is delivered primarily through four publicly funded universities -- including a French-language university --, one university college, two English-language colleges, and a French-language college. Four privately funded religious postsecondary institutions grant degrees in theology and/or related fields.

The University of Manitoba, the province's largest degree-granting institution and Western Canada's oldest university, has four affiliated colleges -- St. Andrew's College, St. John's College, St. Paul's College, and Collège universitaire de Saint-Boniface (CUSB), the only French-language, university-level institution west of Quebec. The province's French-language college -- École technique et professionnelle -- is run by the same administrative structure as CUSB but is considered to be a separate entity for funding purposes.

In 1999, the province of created a new university, the Canadian Mennonite University [CMU]).

Most of the province's postsecondary institutions are in the provincial capital of Winnipeg: the University of Manitoba and its affiliates, including CUSB; the University of Winnipeg; Red River College; École technique et professionnelle; Canadian Mennonite University and Menno Simons College; and the private degree-granting college, William and Catherine Booth College.

Brandon University and Assiniboine Community College are located in the southern Manitoba community of Brandon. Assiniboine also has a satellite campus in Dauphin and regional centres in Russell and Neepawa. University College of the North [UCN] has campuses in the northern communities of The Pas and Thompson, and regional centres in Swan River, Flin Flon, and Churchill. UCN continues to offer college-level programming, and university-level programming is being added to the program offerings of the new institution over time. Two other degree-granting institutions - Providence College and Seminary and Steinbach Bible College - are located in Otterburne and Steinbach respectively. Both these colleges are private religious colleges.

Postsecondary education in Manitoba is the responsibility the Minister of Advanced Education and Literacy. However, the Council on Post-Secondary Education (COPSE) advises the minister about public universities, the University College and community

colleges and is responsible for approving new programs, facilities, and services and for allocating funds.

The University of Manitoba offers a broad range of undergraduate, graduate, and professional programs leading to bachelors, masters, and doctoral degrees in more than 90 disciplines.

The University of Winnipeg, Brandon University, and Collège universitaire de Saint-Boniface focus on mostly undergraduate education, but each offers limited numbers of master's programs in specialized areas. It also offers a handful of joint master's programs with the University of Manitoba.

The University College of the North offers certificates, diplomas, and undergraduate degrees in northern Manitoba.

With respect to distance education, four degree-granting institutions (University of Brandon, University of Winnipeg, University of Manitoba and the University College of the North) cooperate through Inter-Universities Services, a distance education program that brings university courses to Manitoba communities north of the 53rd parallel. As well, undergraduate university study by distance education in rural and northern centres is provided through Campus Manitoba.

NEW BRUNSWICK

Postsecondary education in New Brunswick is delivered through four publicly funded universities with seven campuses throughout the province; two Community Colleges constituted as Crown Corporations, with eleven campuses between them; the New Brunswick College of Craft and Design; one specialized institute (the Maritime College of Forest Technology/Collège de technologie forestière des Maritimes); a number of small, private not-for-profit denominational universities/colleges and a number of for-profit private degree granting institutions as well as various institutions that offer career-oriented training and are registered under the Private Occupational Training Act.

New Brunswick is officially bilingual, with approximately 32 per cent of the population French-speaking and 64 per cent English-speaking. The province's postsecondary education system reflects this linguistic duality. The Université de Moncton, with campuses in Moncton, Edmundston, and Shippagan, is the largest French-language university in North America outside the province of Quebec, while the other three public universities are primarily English-speaking. Five of the province's eleven community college campuses offer programming in French, the other six in English.

The University of New Brunswick is the largest degree-granting institution in the province and offers a broad range of undergraduate programs, as well as graduate degrees. It also provides pre-medicine and pre-dentistry programs. Dalhousie

University, in Nova Scotia, is the only university in Maritime Canada to offer degrees in these fields, and has partnered with the University of New Brunswick to deliver a delocalized undergraduate medical education program in Saint John.

The Université de Moncton, like the University of New Brunswick, offers a wide variety of undergraduate and graduate programs. In addition, Université de Moncton offers various one-year certificate programs and two-year diploma programs in fields such as management, marketing, public administration, and language studies. It also collaborates with the Université de Sherbrooke (Province of Quebec) which delivers a delocalized undergraduate medical education program in Moncton.

Mount Allison University and St. Thomas University specialize in undergraduate education. These institutions also offer one- and two-year certificate programs in various specialized fields.

All four New Brunswick universities are engaged in distance education programs, using telecommunications technology and on-site instruction to reach communities throughout the province.

NEWFOUNDLAND AND LABRADOR

The public postsecondary education system in Newfoundland and Labrador consists of Memorial University of Newfoundland and College of the North Atlantic. Memorial University includes the main campus and the Marine Institute, both in St. John's; Sir Wilfred Grenfell College in Corner Brook; the Labrador Institute in Happy Valley-Goose Bay; a residential campus in Harlow, England; and the Institut Frecker on the neighbouring French island of St. Pierre.

Memorial University of Newfoundland offers a full range of programs leading to degrees at the bachelor's, master's and doctoral levels. Memorial's campus in Corner Brook, [Sir Wilfred Grenfell College](#), offers bachelor's degree programs in arts, science, fine arts, business administration, education and provides support services to the Western Regional School of Nursing.

Memorial University has also partnered with College of the North Atlantic, the Centre for Distance Learning and Innovation and Desire2Learn and implemented a new learning management system for use in distance education and on-campus courses at both institutions.

The Council on Higher Education, originally established in 1992, promotes collaboration in this public postsecondary education system by providing recommendations to Memorial University, College of the North Atlantic and the Minister of Education on shared program areas. The Council also compiles an annual

transfer guide that includes transfer of credit arrangements for courses and programs within the provincial postsecondary system.

PRINCE EDWARD ISLAND

Postsecondary education in Prince Edward Island is delivered through the province's one publicly funded university, the University of Prince Edward Island; Holland College, a publicly funded community college with eleven training centres throughout the province; the francophone Adult Learning Centre in Wellington, established by the Education Society of Prince Edward Island, and a number of private vocational training schools (sometimes called career colleges).

The University of Prince Edward Island is also home to the Atlantic Veterinary College, which serves all four Atlantic Provinces - Prince Edward Island, New Brunswick, Nova Scotia, and Newfoundland.

QUEBEC

Since 1967, Quebec's postsecondary system has been divided into two types of institutions: cégeps (collèges d'enseignement général et professionnel) and universities. Cegeps and similar colleges provide an intermediate level of study between secondary school and university and offer a range of technical programs leading to employment.

The university network includes 18 institutions, and the college network comprises 48 public cégeps, 25 subsidized private colleges, 27 licensed, non-subsidized private colleges, two of which are governed by an international agreement, and 11 public institutions governed by an agency other than the Ministère de l'Éducation, du Loisir et du Sport.

The Université du Québec, the largest university in Canada, is made up of six constituent universities, two specialized schools and one research centre. It is the only university in the country that truly constitutes a province-wide system, similar to some state universities in the United States.

Quebec university-level teaching and research institutions offer a full range of degree programs at the bachelor's, master's, and doctoral levels, as well as a variety of certificate and diploma programs, which usually require one year of study. Some universities, such as Université Laval, Université de Montréal, McGill University, Concordia University, Université de Sherbrooke, and Université du Québec à Montréal, offer a wide range of both undergraduate and graduate programs. Bishop's University and some institutions within the Université du Québec system (Trois-Rivières, Chicoutimi, Rimouski, Hull, and Abitibi-Témiscamingue) tend to focus on a range of

undergraduate programs, but also offer an increasing number of programs at the master's and doctoral levels.

Educational settings vary from large, research-intensive, urban universities to small specialized or regional teaching institutions. Some of the institutions within the Université du Québec system, as well as the two schools affiliated with the Université de Montréal, are highly specialized, offering programs in areas such as health care, high technology, public administration, engineering, and management.

A number of university-level institutions, including Université de Sherbrooke, Institut de technologie supérieure, École polytechnique, and Concordia University, offer cooperative education programs that combine academic study with on-the-job training.

In the early 1960s, trends in Quebec society, including high population growth, industrialization, and urbanization, made it imperative for the province to create a network of institutions to absorb the new student clientele and provide technical training. A provincial royal commission on education recommended that the government provide greater coordination for the college system. Cégeps were set up as government-financed, public corporations to deliver general and vocational education at the college level. Today, cégeps perform a dual function - providing an intermediate level between secondary school and university (pre-university programs) and offering a wide range of technical and professional programs to students seeking entry to the work force. Public cégeps are tuition-free to Quebec residents.

APPENDIX B: MODELS OF DIFFERENTIATION IN OTHER COUNTRIES

We describe several models of PSE systems outside of Canada. These models were chosen for their innovation in reforming or addressing stagnation in their respective systems (UK, Germany), their historical leadership in differentiated institutional mandates (California system); their relevance to Ontario (New Zealand's attempt to address its geography and the problem of regional diversity) and sometimes for the lessons learned from their failures (Australia). Interestingly, Australia is now rebounding from its low place in international differentiation ranks, and building a model based on bilateral accountability agreements that emphasize institutional differentiation.

AUSTRALIA

General Background

Australia has a population of 21,515,754. It is a homogenous population of predominantly white with approximately 8% Asian, Aboriginal and other. The majority of the population lives in urban areas (89%), primarily along the coast lines. However, there are problems of suitable access in rural and remote areas. They have low participation and attainment rates compared to OECD countries, particularly in low SES and aboriginal groups.

In 2009, the Australian higher education system consisted of 41 universities, of which 37 are public institutions, 2 are private, and 2 are Australian branches of overseas universities. 34% of the GDP earmarked for education goes to PSE. Australia has 3 institutions in the top 100 of the Academic Rankings of World Universities (ARWU), and 8 institutions in the top 100 of the Times Higher Education Supplement institutions. According to the ARWU the top institutions receive 1.7% of the GDP, and educate 0.3% of the population.

Background on PSE

In the early 1900's there were six state run institutions in Australia commonly called the 'Sandstone Institutions' (e.g. University of Sydney, University of Melbourne). The technical colleges were also in operation but only universities conducted research.

Following WWII there was a massive expansion of PSE, and by 1960 there were 19 institutions. Well in to the 1980's the institutions were structured in three sectors:

- Universities
- Institutes of Technology (a university-college hybrid)
- Technical Colleges (or Colleges of Advanced Education)

Over time, there was convergence of the roles of the institutions, where institutes of technology were conducting a great deal of research and conferring PhD's. In 1987 a white paper later dubbed the 'Dawkin's Revolution' made significant changes to the system. It deregulated the system and increased student fees, and created new universities out of the former Institutes of Technology. Thus, the three-tiered system became a two tiered system of universities and technical and further education colleges.

These newly formed institutions were in competition with the established institutions for funding and research dollars, which sparked the development of the Group of 8 (Go8) research intensive institutions in 1994⁷. The unified university sector presented significant challenges for Australian institutions. The newer universities had a difficult time building up critical mass of research in their nominated research areas, and the traditional institutions were being deprived of the funds to maintain high quality research.

In the 1990's, under the Dawkins reforms, funding was a zero-sum game of performance based funding. In order to supplement funding many institutions turned to fee-paying international students to increase liquidity. This model of marketization increased competition between institutions, and effectively decreased the quality of provision, as the institutions were no longer reliant on meeting government targets in order to maintain sufficient funding. To this day Australian institutions are heavily reliant on non-government funding, and have some of the lowest public funding in the OECD. It was expected that creating a more competitive market through deregulation and other private funding sources would increase diversity, but it in fact led to more

⁷ The Go8 is made up of eight research intensive institutions: Australian National University, The University of Sydney, The University of Melbourne, The University of Adelaide, The University of Queensland, The University of Western Australia, The University of New South Wales, Monash University

congruent trends. Cross-national research on systemic diversity ranks Australia last out of 10 OECD countries for a differentiated system.

Given the concerns for the system, in 2005 the government introduced two quality measurement systems: The Australian University Quality Agency and the Research Quality Framework (based on the UK's Research Assessment Exercise). The RQF has since ceased, however it was replaced by the Melbourne Institute Study which examines and ranks disciplines by institution. These ranking are not tied to funding, but have highlighted that many institutions are performing poorly in many disciplines which can be attributed to insufficient funding.

While base funding is provided through Department of Education, Science and Training, research funding is provided through the Ministry of Innovation, Industry, Science and Research, based on the competitive grant programmes offered by the Australian Research Council. Research funding is available in five areas:

- Biological Sciences and Biotechnology
- Engineering Mathematics and Informatics
- Humanities and Creative Arts
- Physics, Chemistry and Earth Sciences
- Social, Behavioural and Economic Sciences

It has been argued that 74% of the competitive grants are given to Go8 institutions (The Australian, February 17, 2009).

Recent reforms

Following the introduction of new federal government leadership in 2007, the 'Bradley Report' of 2008 made a number of recommendations to reform the 'failing' system. Given the recommendations, the government has presented a set of new reforms under the 'Transforming Australia's Higher Education System' document. Major reforms include:

- Provide funding to all domestic students. While not named a 'voucher' system, funding is attached to the student, not the institution, and is intended to make institutions more responsive to student demand.
- Increase base funding for teaching and research infrastructure

- Increase quality assurance mechanisms
- Make structural adjustments to unify the binary system of vocational training institutions and higher education institutions into one PSE sector. Universities will be distinguished as institutions that perform research.

To support differentiation in the newly expanded sector, a new Structural Adjustment Fund will operate from 2009-2013. The funding is for a newly developed accountability agreement 'Mission Based Compacts' which has each institution collaborate with government to develop distinct missions and provide funding for related projects.

Broad assessments of system

The Australian system has had a number of challenges due to underfunding, deregulation, massive international student populations and a reliance on private funding. The new reforms which are beginning to come into place are creating a unitary system of PSE with increased base funding, quality assurance mechanisms, and support mission differentiation.

The Australian PSE system is moving away from a market model and is increasingly being brought back under government control. However, the mechanisms it is using to encourage differentiation are not yet solidly in place, and it is difficult to determine the actual impact of the policy levers.

CALIFORNIA

General Background

California has a population of over 36 million. It is an extremely diverse population with approximately 50% of its citizens having Latino, Asian Pacific American or Black backgrounds. 14% of the budget allotted for education is given to PSE, however it is one of the few legislative areas that does not have committed spending and is therefore more vulnerable to budget cuts.

Background on PSE

Designed in 1960, the Californian PSE system has three distinct sectors: The University of California (UC), The California State University (CSU), and the California

Community Colleges (CCC). UC has 10 institutions (hosting 10% of students), CSU has 23 institutions (with 17% of students), and there are 112 community colleges (hosting 74% of all students). There are also a plethora of private institutions and colleges. There are also approximately 171 independent institutions awarding nearly ½ the masters and over ½ of all doctorates. The system as a whole has a relatively low graduation rate, and has recently had to limit enrolment due to funding cuts.

To serve the geographically large area, each of the 14 regions of California are generally served by at one UC, commonly two CSU's and each have a wide variety of CC's.

The California Master Plan for Education was designed in 1960 to create the three tiered system of provision. The plan laid out that the top 12.5% (1/8th) of graduating high school seniors would be guaranteed a place at one of the University of California campuses (Berkeley, Los Angeles, etc.); the top third would be able to enter the California State University (San Francisco State, Cal State L.A., etc.); and that the community colleges (Bakersfield College, College of the Canyons, etc.) would accept all applications. Arguably this would increase access while maintaining excellence – supporting the values of 'populist egalitarianism' and 'competitive excellence'.

Each of the sectors has different missions (Master Plan for Higher Education, 2010)

- UC is designated the State's primary academic research institution and is to provide undergraduate, graduate and professional education. UC is given exclusive jurisdiction in public higher education for doctoral degrees (with the two exceptions--see CSU below) and for instruction in law, medicine, dentistry, and veterinary medicine (the original plan included architecture). In 2010-11 it has a 'general purposes' budget of approximately 3.0 billion dollars, which can be considered as equaling roughly 301 thousand per institution.
- CSU's primary mission is undergraduate education and graduate education through the master's degree including professional and teacher education. Faculty research is authorized consistent with the primary function of instruction. SB 724 (2006) authorized CSU to award a specific Doctor of Education (Ed.D.) in educational leadership. Other doctorates can be awarded jointly with UC or an independent institution. In 2010-2011 has a 'general purposes' budget of 2.7 billion, equaling 118 thousand per institution.

- The California Community Colleges have as their primary mission providing academic and vocational instruction for older and younger students through the first two years of undergraduate education (lower division). In addition to this primary mission, the Community Colleges are authorized to provide remedial instruction, English as a Second Language courses, adult noncredit instruction, community service courses, and workforce training services. In 2010-2011 it has a 'general purposes' budget of 5.9 million, equaling approximately 52 thousand per institution.

Despite this highly structured system a key feature of the system is the transfer agreements between all sectors so that students may move to a different sector, particularly after completing two years at a CC to then moving to a university.

Funding

Funding for PSE comes directly from the Department of Finance, and is directed by the Governors influence and student enrolment. Agencies such as the California Postsecondary Education Committee and the three sectors lobby the government for more funding, but there is no system wide body that makes strategic decisions for all sectors.

California uses incremental (baseline) budgeting and funding formulas and guarantees. It does not use performance funding (tying funding to institution performance) at the state wide level, performance contracting (funding in exchange for a specified service or level of performance), or vouchers (each student receives a voucher to attend their school of choice). California's education funding comes from the State's general fund, which can be volatile and unstable (tied to property and income taxes).

Given the available funds each sector determines institutional budgets based on internal mechanisms. Funding for research infrastructure seems to be included in budgeting, but there is no clear budget for research. Research grants seem to be awarded from federal, state and private sources. It seems approximately 18% of the UC budget comes from these sources. However, the federal granting system in the USA, that provides significant indirect costs of research to the institutions coupled to direct research grants,

and that pays the summer salaries of researchers, is a significant source of funding for the university system.

Broad Assessments of the System

The three tiers of PSE provision has been an effective way of differentiating the expanding Californian system. For years, the U of C system was understood to be the world leader in broad access coupled to quality. Berkeley, for example, is one of the best public universities in the world and other universities in the U of C system are understood to be internationally competitive.

As it has clear pathways between institutions the majority of students are in the less costly community college sector, with the ability to transfer on to the UC or CSU. The geographic placement of the institutions may support transfers.

CSU is tasked explicitly with undergraduate education (with some MA programmes), and therefore conducts little research. It is not mentioned in documents or on their websites.

GERMANY

General Background

Germany is the second most populated country in Europe, hosting 82 million people. It is a relatively homogenous society of ethnic Germans, primarily living in urban areas. Geographic access is not an issue for the PSE sector nor is accessibility, as the German system, like many EU countries, streams students. Thus, a relatively small number of students are prepared to enter into university education. Being part of the EU, Germany is part of European Higher Education Area (EHEA) and is participating in the Bologna process. The goal of the Bologna Process is to bring all higher education institutions into alignment with the Anglo-Saxon model of two-tiered PSE studies: 1.) undergraduate with bachelor's degrees; 2.) graduate levels — master's degrees and doctorates. This was a significant alteration of the former model of provision in Germany.

Background on PSE

The 102 universities in Germany operate in the Humboldt model focusing on both teaching and research. Most of the universities are 'full universities' which offer the whole spectrum of academic subjects. As a rule, these include law, arts and humanities, cultural studies, natural

sciences and economics/business administration, teacher training and, with some exceptions, medicine. Some universities have a strong technical/engineering focus and are called technical universities or universities of technology, even though arts, humanities and social sciences subjects are increasingly available. Single subject universities represent a special form of institution in German higher education. Institutions that have specialised in a single discipline include the Hannover Medical School (MHH), the University of Lübeck (medicine), the University of Veterinary Medicine Hannover, the German Sport University Cologne, and the University of Administrative Sciences Speyer.

There are also a number of research institutes, such as the Max Plank Institutes, which focus on basic research, but do not perform any teaching duties.

2007 cross-national research comparatively examining 10 jurisdictions on PSE system diversity placed Germany 5th in ranking for differentiation. Prior to 2005/06 all of the German universities were generally treated and funded equally, and broadly considered to provide a very solid teaching and research environment. However, in the traditional ranking schemes such as THES and ARWU they did not perform well. There are 4 institutions in the top 100, and 10 institutions in the top 200 of the THES. 5% of the world's top 500 universities are German. They receive 6.1% of the GDP and educate 1.2% of the population.

The World Bank Knowledge Economy Indicators suggests that Germany has relatively low public spending on education compared to the rest of the world. In 2006 Germany was rated one of the lowest countries in providing % of GDP expenditure on R&D. However, recent policies have altered their traditional model of the university funding in order to be more internationally competitive.

Recent reforms

The 2006/07 Excellence Initiative of the German Federal Ministry of Education and Research and the German Research Foundation aims to promote peaks of excellence and broadly increase the quality of both PSE and research. It aims to promote cutting-edge research and to create outstanding conditions for young scientists at universities, to deepen cooperation between disciplines and institutions, to strengthen international cooperation of research, and to enhance the international appeal of excellent German universities. It is the result of lengthy negotiations between the federal government and the German states.

1.9 billion Euros of additional funds (roughly 2.5 billion CAD) were to be distributed between 2007 and 2012. Most of this (75%) is from the federal government with 25% coming from the

Lander (regional jurisdictions). The German Council of Science and Humanities is responsible for the institutional strategies, and the German Research Foundation is responsible for the graduate schools and clusters.

Through two rounds of competitive proposals all institutions were able to apply for funding in three categories.

- **Graduate schools** play a key role not only in developing internationally competitive centres of top-level research and scientific excellence in Germany but also in increasing their recognition and prestige. They serve as an instrument of quality assurance in promoting young researchers and are based on the principle of training outstanding doctoral students within an excellent research environment. 39 graduate schools in 37 universities were funded (i.e. Spemann Graduate School of Biology and Medicine, and the Bonn Graduate School of Economics).
- **Clusters of excellence** will enable German university locations to establish internationally visible, competitive research and training facilities, thereby enhancing scientific networking and cooperation among the participating institutions. It is a way to encourage partnerships with industry and other institutions, and should support the institution in establishing their priority areas in their strategic planning. 37 clusters were funded (i.e. Nanosystems Initiative Munich (NIM) and Integrated Climate System Analysis and Prediction (CliSAP)).
- **Institutional strategies:** The Excellence Initiative provides funding for institutional strategies that are aimed at developing top-level university research in Germany and increasing its competitiveness at an international level. Where other funding lines are very specific, the institutional strategies are for institutions to become more 'elite' by improving all fields. To be granted an institutional strategy grant, the institutions must have received grants in the other two competitions. Those receiving the 'institutional strategies' are considered the elite institutions. There are 9 institutions funded (i.e. University of Munich and University of Karlsruhe).

One of the short term effects of the excellence strategy is that it has highlighted the differences within the system that was traditionally considered very homogenous. It also created a significant amount of competition between the institutions, and has proven to be an effective way to increase innovative strategies and encourage institutions to become more entrepreneurial.

One concern with this stratification is that the grant recipients tend to be in the wealthier regions of the country, which makes other regions fear that they will end up as 'bigger losers'.

Without funding, they will not have the opportunity to develop their capacities, nor are they geographically part of the research clusters which might otherwise support innovation.

It is suggested that the five-year funding model may not overhaul the system as it is intended to, and that a more stable and long term funding model may have been more appropriate. Funding for the projects ceases in 2012. In their proposals Institutions were required to guarantee the sustainability of their centres of excellence when funding ceases. The proposals had to assure this by agree that funding could be acquired from other areas of the university not part of the initiative. This may create a considerable shift in internal funding arrangements, and take away from other non-lucrative or 'important' areas.

Broad assessments of system

In an effort to become more internationally recognised the German government provided a large amount of what can be considered 'seed' money for specific initiatives in selected institutions. The open grant model allowed institutions to pull on their own strengths and look towards developing their own strategic priorities. The excellence initiative seems exclusively focused on research, particularly in science and technology.

There is no indication of funding or initiatives in the areas of teaching and learning or in issues of labour market preparation. This lack of attention to these areas may be exacerbated when funding ceases in 2012, and institutions will be required to continue supporting the excellence projects. It is very likely that in order to do so these non-priority areas may suffer cutbacks.

The actual impact of the brief, but heavily funded, competitive funding initiative will not be apparent for many years.

NEW ZEALAND

General Background

New Zealand is a small country with a population of 4.2 million people. Over half of the population lives within small region on the North Island, with the rest dispersed throughout the rest of the country. They have a diverse population of Europeans (75%), Maori (15%), Pasifika (9%), and Asian (7%). Issues of geographic access and accessibility for underrepresented groups are considerable issues in PSE provision. Differentiation is not a core value to the education plan, instead access and student success seem to be the driving goals.

Background on PSE

The current model of PSE provision was designed in the 1980's. The PSE sector hosts 900 institutions encompassing Public Tertiary Education Institutions (TEI's), private training institutions (PTIs), other tertiary education providers (OTEPs), industry training education providers (ITOs), and adult and community education (ACE). The TEI's are divided into 8 universities (which confer BA, MA and doctoral degrees), Institutes of technology and polytechnics (ITPs), 2 colleges of education (CoE's) and Wananga (Maori centers of PSE offering up to postgraduate study and research). They are all served by the same tertiary education strategy and funding models (though privates have a different funding formula).

Despite only having 8 universities, the policies towards supporting PSE differentiation is worthy of review. Three of their universities are in the top 200 of the THES. The AWRU notes that they have 1% of the top 500 institutions. The universities are dispersed throughout the nation. Three of the institutions are clustered around the most heavily populated region, while the rest are geographically dispersed throughout the islands. Geographic isolation may be a reason for the general equal treatment of institutions. Similarly, supporting Institutes of Technology and Polytechnics in a similar funding model may allow some institutions to take on research capacity in regions underserved by universities.

Prior to the 1980's the PSE sector was small and elite. Funding for institutions was based on equivalent full time student (EFTS). Universities and ITP's were funded through bulk funding (though the polytechnics were more heavily regulated). Between 1990 and 2000 there were several policy changes. Fee deregulation was brought in, funding differentials between students of different age groups was introduced, and there was a 'moving cap' on the number of EFTS places that could be funded. There was a significant expansion of the system supported by market-like competition for funding and student choice.

Significant changes have occurred since the 2000's with the introduction of the Tertiary Education Advisory Commission (TEAC). For example, the government regained more control over the sector by attempting to align PSE with national priorities. This was done with a system of Charters and Profiles designed to help the commission influence the direction of institutions aligned with the PSE strategy. Also at that time the first Centres for Research Excellence (CoREs) were formed. The CoREs are research networks hosted at a university that work with partner institutions, industry and communities, and are intended to make a contribution to national development and focus on the impact of their specific research.

Further changes were made in 2002 through the Tertiary Education Strategy. They separated the funding of research and teaching into different pockets. Teaching and learning was

supported by base funding mechanisms which is the bulk of research funding. The Performance Based Research Fund PBRF was established to support research (available to all institutions), though provides only 6% of overall funding. The funding is awarded to the entire institution rather than at targeted programs. The model has three elements which it evaluates:

- Quality Evaluation: reward and encourage the quality of researchers (60%)
- Research Degree Completions: to reflect research degree completions (25%)
- External research Income: To reflect external research income (15%)

First conducted in 2006, the PBRF examines these aspects on the evidence of the previous 6 years. The next PBRF will be conducted in 2012 with possible modifications to the criteria. It is apparent that the PBRF is not explicitly for research as completion rates – arguably a result of teaching and learning – are also considered.

The 6 year gap between PBRF's has both benefits and costs. It allows institutions stable and continuous funding for research over 6 years. Yet, it also may unfairly disadvantage those who did not receive funding in the initial contest, as their research production, etc. will likely be lower than that of its competitors 6 years later. Furthermore, there is concern that the Maori scholars and research are unfairly disadvantaged in the PBRF.

The Government put forth new strategies for education in 2007 and 2010. Both strategies operate in similar fashion to the previous models of base funding and PBRF. The base funding for the year 2010 is just over half of what is given to students, continuing the market choice model of competition. Again, the model is that of student choice, which arguably will provide institutions with better incentive to provide high quality teaching and learning. One significant change is the development of multi year agreements with institutions which replace the previous charters and profiles delineating institutional and sector goals.

Broad Assessments of the System

New Zealand is an interesting model of differentiation as it employs a variety of differentiation levers resulting a relatively small, homogenous yet effective, system to achieve its goals of access and opportunity for all citizens and support for research. It encourages the marketization of institutions by supporting student choice, thus promoting internal competition. It supports teaching and learning through base funding, but also encourages it through the output of teaching and learning through degree completion in the PBRF. It encourages institutional entrepreneurialism and industry linkages though the PBRF. Finally it also supports and rewards overall institutions for their research capacity through the PBRF without picking specific programs, where CoREs support targeted research.

UNITED KINGDOM

General Background

The UK has a population of 60,781,346 (2007), which is relatively homogenous, but with significant class differences. They have traditionally had a difficult time encouraging disadvantaged youth to participate. Access due to geography is not an issue.

There are currently over 160 institutions ranging from the Open University to smaller colleges of art and music. The campus based institutions range in size from over 40,000 to 200 students. Generally acknowledged to provide high quality education, the UK also places well on university ranking exercises. The Times Higher Education Supplement (THES) has 18 UK institutions in the top 100. The Academic Ranking of World University (ARWU) of Shanghai Jiao Tong University notes 11 UK institutions in the top 100, and indicates that 8% of the top 500 institutions are from the UK. According to the ARWU these top 40 institutions received 4.4% of the GDP and educate .09% of the population⁸.

The World Bank Knowledge Economy Indicators suggests that the UK has very low public spending on education (8 % of GDP) compared to the rest of the world, though it is not broken down by sector. The UK has a very low % of GDP expenditure on R&D (2.44%). However, they have a moderately large number of students in Science and Engineering at 18.13% of all enrolments.

Background on PSE

There were two different stages of expansion in the UK. In the early 1900's the so called 'Redbrick Institutions' were developed (e.g., Leeds, Liverpool), though considered to have less status than the historic institutions (e.g. Oxbridge). In the 1960's there was further expansion through the development of polytechnics. Following a white paper in 1966, the first 30 polytechnics formed from over 50 existing colleges (four more polytechnics were designated between 1989 and 1992). They were to be "comprehensive academic communities" offering part-time as well as full-time courses, at sub-degree as

⁸ As a point of reference consider the US has 30.3% of the top 500 universities, taking 23.3% of the GDP, and educating 4.5% of the population. Canada has 4.4% of the top 500, spending 2.3% of the GDP for .5% of the population.

well as degree level, but primarily labour-market oriented. This created a binary system of PSE.

By 1992 the polytechnics were found to be extremely successful in their delivery of programmes and in the number of students they recruited. They were also less expensive to operate than the traditional institutions. The 'traditional' institutions were increasingly incorporating some of the successful elements of the polytechnics (e.g., modular courses and recruitment of non-traditional students). Due to the increasing similarities of the two sectors of HE provision the system was reorganized wherein 35 polytechnics were able to become universities with similar standards and expectations for all programmes. The Further and Higher Education Acts 1992 abolished the binary line, created national unitary funding councils, removed colleges of further education from local government control, and created quality assessment arrangements.⁹

In 2003, the Labour government proposed some radical reforms. The purpose of the reforms was to allow universities to increase their funding by levying higher tuition fees on students, and for institutions to differentiate themselves by charging higher or lower fees than other institutions. *The Future of Higher Education* document indicates that diversity of institutions was hindered by the research funding mechanisms, and because it was research activities that allowed institutions to be called 'universities' (DFES, 2003). It was recommended that there be recognition of diverse strengths and missions in order to create collaboration rather than competition, which would support isolated pockets of research and support strong teaching.

Elements of policies to support research excellence include:

- Formation of consortia, provide extra funding for larger, better managed research units.
- Invest more in the very best research institutions

⁹ The UK PSE still distinguishes between further education institutions (more vocationally oriented) and higher education institutions (more theoretically oriented). The further education institutions are funded by the Learning and Skills Council (LSC), and are regionally organised. Further education includes:

- General FE and tertiary colleges
- Sixth form colleges
- Specialist colleges (mainly colleges of agriculture and horticulture and colleges of drama and dance)
- Adult education institutes

- Ensure the best individual departments are not neglected
- Creation of Arts and Humanities Research Council

While the official policies of the government have created a unitary model of PSE, there are two distinct groups of institutions that have formed. In 1994 (following the development of the unitary sector), the Russell Group and the 1994 Group were formed. The Russell Group is made up of the large research intensive institutions (including Oxbridge, Leeds and University College London) intending to represent the interests of their members to government, parliament and similar bodies. The Russell Group institutions receive over 65% of UK research grant and contract income, confer 56% of all doctorates. The 1994 Group is made up of the ‘smaller research intensive institutions’ that focus on ‘excellence in research and teaching, enhance student and staff experience..., and share best methods and practice’ (1994 Group, 2010)

Funding Model

The UK PSE system is funded through a ‘dual support’ system. The bulk of PSE research funding comes from the Departments for Innovation, Universities and Skills (DIUS) through seven research councils¹⁰. Funding Bodies which provide base funding, or Quality Related Funding (QF), allow for selective allocation of funds to institutions based on performance. Higher Education Funding Council for England (HEFCE) is responsible for English institutions. In 2008 HEFCE reported spending £1,460 million on research, £4,632 on teaching and £1,384 on ‘other funding’ (e.g. projects on widening participation, excellence in delivery).

A significant activity of HEFCE is institutional assessment for disseminating funds. The Research Assessment Exercise (RAE) (in operation since 1989) examines research quality and productivity of institutions. The RAE rates the quality of research at institutions in order to selectively allocate funds, providing the best research institutions with the most funding (Roberts Review, 2003). The assessment is conducted by a peer-review process in 68 subject areas. Institutions can submit to as many subject area assessments as they chose. One goal is to help steer non-research-

¹⁰ Councils include: Arts and Humanities Research Council, Biotechnology and Biological Sciences Research Council, Economic and Social Research Council, Engineering and Physical Sciences Research Council, Medical Research Council, Natural Environment Research Council, and the Science and Technology Facilities Council.

intensive institutions towards other parts of their mission, and rewarding them appropriately for it so that the RAE can be focused on the best research. RAE has arguably increased the quality of research outputs, but also created concerns about the selectivity of funding to favour some institutions over others as it operates as a 'one-size fits all' model. Approximately 75% of funding goes to top 25 institutions.

The new Research Excellence Framework (REF) (which will replace the RAE by 2014) is currently being piloted. The REF will be a process of expert review, informed by indicators where appropriate. Expert sub-panels for each of 36 units of assessment (UOAs) will carry out the assessment, working under the guidance of four broad main panels. Institutions will be invited to make submissions to each UOA, to be assessed in terms of:

- **The quality of research outputs**
This will continue to be the primary factor in the assessment. The quality of research outputs will be assessed by the expert panels against international standards of excellence. It is expected that some of the panels will make use of citation information to inform their review of outputs.
- **The wider impact of research**
Currently running a pilot exercise to develop and test the method for assessing this.
- **The vitality of the research environment**

Funding of teaching and learning initiatives come from HEFCE block grants and student tuition. The government does not designate how the funds should be internally distributed. There are, however, specific pots of funding aimed at widening access of underrepresented groups, improving retention and supporting students with disabilities.

Broad assessments of system

The UK operates on the market model of PSE, where institutions are in zero-sum competition for research dollars and funding. There are significant winners (i.e. 25 institutions who receive 75% of research funding).

What is not clear is how they are promoting the strengths of other institutions (e.g. teaching and learning). There is funding for 'teaching and learning', however it is more accurately described as Base unit funding, as there are calculations per student as to the amount the institution will be awarded. Funding is not reflective of incentivised activities teaching or other areas.

A cross-national analysis of institutional diversity of higher education systems found the UK to be a highly differentiated system. Contrasted with 10 other nations¹¹ on elements of institutional size, form of institutional control, range of disciplines offered, degrees awarded and modes of study (e.g. full-time, part-time, sandwich course, coop), the UK is found to have the most diverse system. The research suggested that while binary systems tend to be more diverse, because of the historical hierarchy of UK institutions they are able to maintain a diverse system.

¹¹ Australia, Austria, Denmark, Finland, Flanders, France, Germany, the Netherlands, and Sweden.