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The New University and its role in the Economy – A Canadian Perspective

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University Scene in Canada

- Only Public Universities (analogous of State Universities)
- More than 1/3 of Canadian research conducted in Universities
- In 2006, US Public Universities received 29,000 CAD\$ per student compared to 21,000 CAD\$ for Canadian Universities (Includes Tuition)
- Enrolment in Canada has grown at triple the rate of faculty growth, in US the two growths have been matched

University Scene in Canada (Cont'd)

- Research funding has grown in past decade but indirect costs are funded at a level lower than in the US
- Large accumulated deferred maintenance
- According to international standards overall a high quality system



Université de Montréal

- 2nd Largest in Canada
 - Enrolment (57,000)
 - Research Funds
- Very comprehensive and International
- 3rd Largest Faculty of Medicine in North America (MD Program)

For 7 out of the last 8 years, Med Students ranked first at the Canadian Royal College exams



Université de Montréal

- Highest Graduate/Undergraduate Student ratio in Canada
- Highest Graduation of PhDs in Canada - Last year (~380)
- Top-tier contributor to Canada's and to Montreal's Human Capital and Innovation



Montreal

- Cosmopolitan city at crossroads between America and Europe
- College Town : rivals with Boston for largest number of students per capita
- Enjoys a large creative class
- Boast an industrial strategy articulated around clusters
 - Montreal in Vivo (Life Sciences)
 - Montreal Aero (Aerospace Industry)
 - Montreal Techno (IT)

Incubated by Montreal International – A lobbying organization
With significant involvement from universities

Ressources

- «Political» agreement on goals should imply a consequential resource allocation.
- Public funding :
 - Since 1980 Canada lagging US wrt per capita funding of public universities
 - Late 90s progressive innovation funding strategy :
 - Canadian Foundation for Innovation (infrastructure)
 - Canada research chairs
 - Etc.
 - This year as part of economy stimulus :
 - Knowledge infrastructure program (deferred maintenance)

Ressources (Cont'd)

- An impossible tension between the competition of regions and countries and the public support of innovation generating universities :
 - The first phenomenon brings regions and states to reduce their taxation to become more competitive
 - As a result there is less public funding to support education, health, etc.
 - This has to lead unavoidably in the medium run to an increasing privatization of public services.



Tuition fees policy

- Very low in Canada especially in Quebec
- Principle : higher ed. is both a private and a public good
Issue : find the right balance between the private/public cost sharing
- Adjustment required based on program cost and student marketability ; an increase in student support understood



Tuition fees policy (Cont'd)

- One interesting formula : reimbursement proportional to revenues
 - Implemented successfully in Australia for example
 - An incentive for universities to align training with job market
- A case of political leadership and civil society support



An important distinction in social debates

- Goals
 - Societal
 - Determined through political process
- Means
 - Technical
 - Determined by efficient economic process

Useful to sort out our questions accordingly



Four Factors of Growth

- Human Capital
- Inventions + Innovations
- Incentives
- Efficient resource & allocation

Universities are central to first two and tributary of last two

Hence

Economy-related goals for Universities

- Stimulate + drive the economy
 - Through research + innovation
 - Optimal development of human capital
- Advance knowledge and solutions w.r.t. critical world issues
- Contribute to the development of regions
- Foster equity (quality + accessibility) and diversity

Note : there are obviously goals related to social and cultural development too



Agreeing on those goals amounts to answering yes to many of the questions presented to the panel

There then remain those questions associated to the means to reach the goals

The chief words are : efficiency and good governance

In what follows, a Canadian perspective mostly



Examples of sub goals (Cont'd)

- Links to private sectors:
 - Respectful of respective missions
 - For professional relevance
 - To transcend immediate issues
 - For stages and jobs
- Adapt training to new reality of PhD employment through fundamental and applied research as well as commercialization activities
- Align appropriately classes and workforce needs

Notes : workforce mobility a factor, capacity not a big issue in Canada (demographics stable)

Conclusion/ summary

- Critical for universities to develop (academic) goals in resonance with the times and share them
- Two categories of means to achieve those goals :
 - Capacity to change (establishing the incentives is key)
 - Securing the resources (make the case and generate support for right public/private balance)
- Keep working on globalized public umbrella structures



In pursuing the optimization of the well-being of citizens, it is relevant

- To ask questions about Universities
- To reflect on the new University
 - To determine its goals
 - To identify the means (to reach those goals)

Context for those questions

- World economic crisis
- Tremendous global challenges
- Acceleration + globalization of the knowledge economy
- Competition between regions
- Demographics

Back to the Goals

- Advances in all fields of Human Endeavour are intricately connected in the development of the Economy
- For brevity, focus on science and technology areas, certainly critical to our future
- To achieve the goals in this sector we need the four factors of growth :

We need in particular a pyramid of scientists working in good conditions



HR Challenge in S&T

- Only 5 % of Quebec University Students (excluding Junior Year) are enrolled into natural science programs
- Access to science unduly made hard and unattractive through high school
- Male-Female balance
 - E.G. 30-70% in med school
- Male drop-out problem in high school
- Relatively small number of PhDs in Canada – Half of US on a per capita basis₂₀

Directions forward wrt the S&T challenges

- More bridging possibilities
- Inspired research transfer in teachers' training
- Instill a change of culture favoring the value of work
- Sustain popularization efforts
- Move toward competitive system between service providers in the delivery of programs



University Goals Keep Amounting to

- High research impact on issues of relevance
- Optimal training

In a fast evolving environment

Examples of sub goals

- Interdisciplinarity – a no brainer but not a panacea, relevant teaching and research are now often (because of advances) at interface of traditional disciplines
- Developing entrepreneurial skills, a must to ensure the translation of knowledge into commercial activities
- Increase participation rate to 30 % (+ 5-10%)

Means to achieve goals are basically tantamount to

- Efficiency (agility) ← Capacity to change
- Ressources ← Political leadership and public support

In this light, the means correspond to two factors of growth:

- Incentives
- Ressource allocations

Efficiency

- In fast changing times, Universities best able to adapt, innovate and compete will best succeed at attaining goals
- Universities not notoriously agile
 - Sufficiently rich to sink slowly/big challenge
- Key is to install incentives :
 - e.g. : merit based compensation, etc.
 - But more profoundly, over some time to operationalize economic competition between service providers within the university + framework contract with state only on objectives relating to quantity and quality.

Efficiency (Cont'd)

- Note that efficiency is also dependent on enterprise and society culture
 - Recall the weakening of soviet science after perestroika
- Key : develop a culture that values and appreciates work

Towards new higher ed public institutions : going global

- To compensate for the privatization trend
- Elevate above the competition between regions
- Work towards the development of organizations that will get their edge and raison d'être from being altruistically driven for the global betterment



One example in the works : the International Forum of Public Universities (IFPU)

- International network of Universities
- 23 from 22 countries (all continents)
- Launched in 2006 by Université de Montréal
- University of California is US member
- Promotes the values of Public Universities and innovative multilateral collaborations between self-chosen members
- Is concerned about north-south issues
- Tables on diversity

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