

Challenges of Change in Higher Education

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Challenges of Change in Higher Education

Importance of higher education

- Creation of knowledge
- Maintenance and development of complex socio-technical systems
- Addressing issues of interest to humans

Importance of change in higher education

Fundamental Challenges for Higher Education

- Knowledge growth
 - Information potential growth
 - Innovation
-
- Global economic and environmental change
 - Issues of human concern

Fundamental Challenges for Higher Education

KNOWLEDE GROWTH

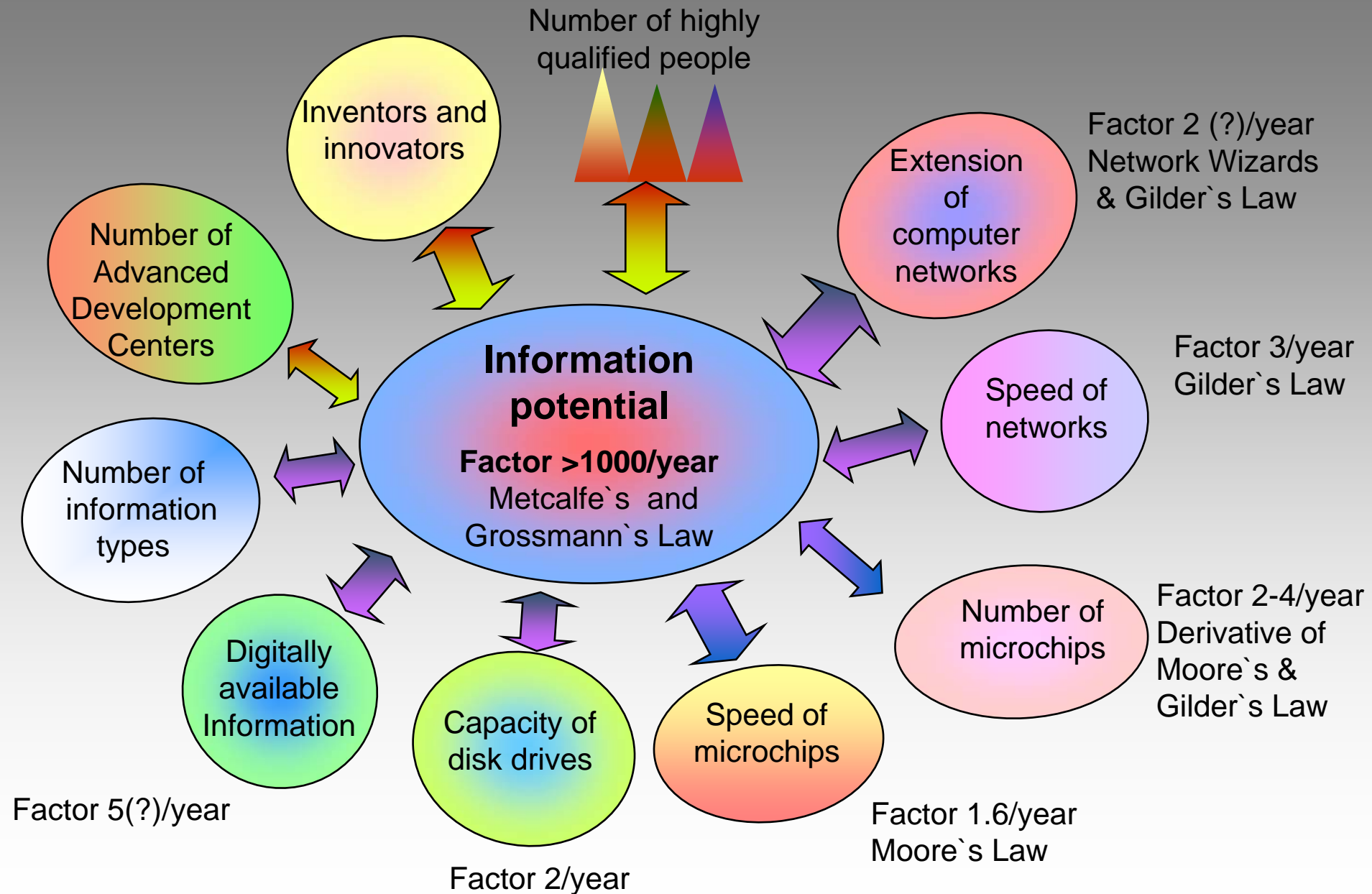
- Human knowledge is doubling fast and at ever shorter rates.
- The longest doubling time seems to be 14 years in astrophysics, the shortest less than 5 years e.g. in computing.
- Doubling times are shortening, as some of the new knowledge facilitates the acquisition of even more knowledge.

Fundamental Challenges for Higher Education

INFORMATION POTENTIAL GROWTH

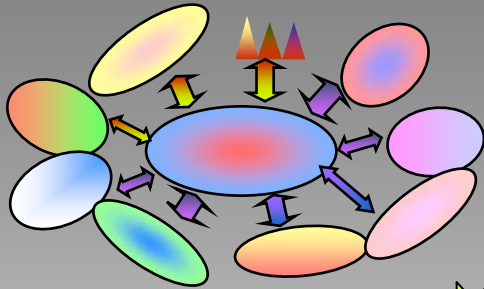
- Growth of global digital information potential is very fast.
- Speed or capacity of information and communication technology building blocks (storage, network, and computing power) have doubling times are around 12, 9, and 18 months, respectively .

Major Driving Force: Information Potential

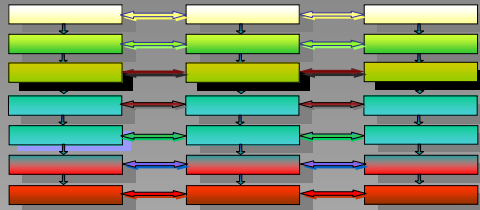


Transformation of the Traditional Economic Sectors by the Information-Products Sector

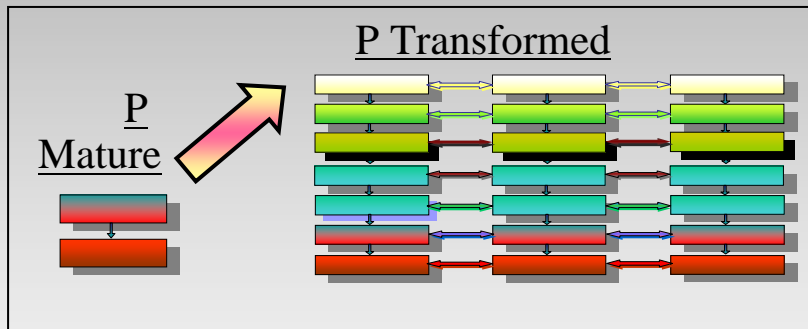
Information
Potential



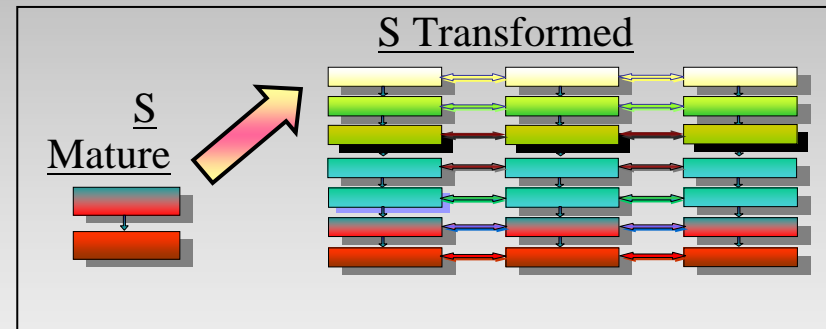
Information Sector



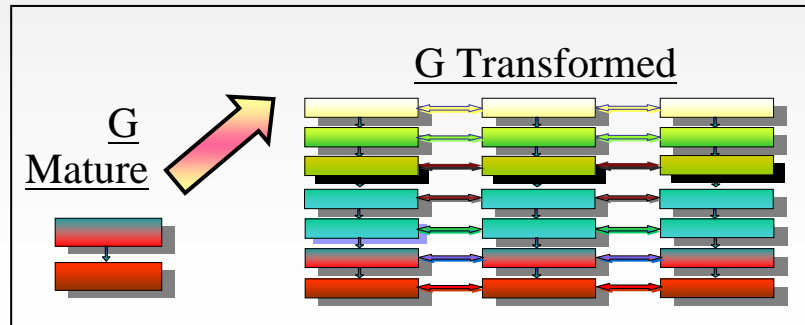
Sector 1: Primary (P) Agriculture



Sector 3: Services (S)



Sector 2:
Goods (G) Production



Fundamental Challenges for Higher Education

“Innovation fosters the new ideas, technologies, and processes that lead to better jobs, higher wages and a higher standard of living. For advanced industrial nations no longer able to compete on cost, the capacity to innovate is the most critical element in sustaining competitiveness”

(US National Innovation Initiative, Council on Competitiveness, 2004)

“The [European] Union is, like every other region, facing a paradigm shift driven by globalisation and the new knowledge based economy. This has an impact on every facet of life and requires a radical transformation of Europe's economy and society.”

(Agenda of Economic and Social Renewal for Europe; Commission of the European Union, 2000).

Components of Innovation systems

The human factor:

“Key people”, are essential for the success of innovation; they are behind new inventions and innovations and provide leadership during implementation towards economic success in knowledge-intensive enterprise.

The knowledge factor:

Social institutions for knowledge creation and transfer, e.g. very good higher education systems/universities in regions that want to develop and availability of highly educated people who provide all strains of knowledge that are needed.

(Grossmann, et al. 2007)

Simon (2004, 141) found: “The local abundance of college graduates had a positive effect on employment growth, especially in skill intensive and newer industries.”

Components of Innovation systems

The capital and investment factor:

Availability of venture capital for new business, and availability of capital for successive growth phases of new/innovative enterprises.

The environmental factor:

Location factors such as high regional quality of life (due to good and ecologically healthy environment and good leisure facilities), good medical and educational systems, good legal system, educated (and fast) governance systems. (Grossmann, et al. 2007)

Three of the four factors necessary for innovation explicitly or implicitly reflect on education and higher education as an essential contributor and actor

Challenge: Growth of demand for Higher Education

As more knowledge workers are required in private and public enterprises, polities encourage and develop policies and investments supporting the education of larger fractions of their populations to higher levels of academic achievement.

The demand for higher education is growing worldwide

The demand for higher level degrees is growing

Challenge: Growth of demand for Higher Education

- Growth in participation in higher education in almost all polities of the globe, developed and developing countries.
- From 1991 to 2004, global participation in higher education grew from 68 Million to 132 Million, or almost by a factor of 2.

Challenge: Growth of demand for Higher Education

Participation in selected OECD countries
(2005)

New Zealand	81%
United States	63%
Republic of Korea	50%
Germany	36%

Comment: Demand saturation at for
undergraduate education

Challenge: Growth of demand for Higher Education

India	World average	Developing countries	Countries in transition	Developed countries
13%	23%	11%	36.5%	54.6%

Challenge: Growth of demand for Higher Education

- Masters Degrees awarded in the USA grew from 300,000 per year in 1982-83 to 496,000 per year in 2003-04.
- Projected to exceed 560,000 per year in 2012.

MS degree growth in 'Bologna'-Europe

- More than 85% of Masters Degrees are awarded in Business Administration and Medical Professional fields.

**IMPORTANCE OF PROFESSIONAL
POSTGRADUATE DEGREES**

Challenge: Growth of demand for Higher Education

- Of all higher education degrees awarded in the USA in 2004 almost 20% are postgraduate degrees.
- Ratio of US Masters to PhD Degrees awarded in 2004 it was 11 (496,000; 44,000).
- Of all higher education degrees awarded in China and India, about 4% and 8% are postgraduate degrees, respectively.
- The ratio of Masters to PhD Degrees awarded in 2005 was 4 and 12, respectively.

Challenge: Growth of demand for Higher Education

- Structural changes rather than expansion of higher education is a major issue in developed countries.
- Design opportunities in response to expanding demand exist in developing countries and countries in transition.
- Some innovation in content, structure and delivery mode of higher education may come from developing and transition countries.

Question

Which part of higher education systems should address growing enrolment demands (where it exists)?

Should universities that concentrate on basic research and research education also be the ones that concentrate on research in professional fields and in professional postgraduate education?

Challenge: Mission Differentiation

As more areas of knowledge and disciplines develop or become available individual institutions or even systems of higher education cannot be universal any more.

Mission differentiation and/or effort distribution between higher education institutions is a consequence.

Some completeness can be achieved through regional, national, and international cooperation of higher education institutions and systems.

Challenge: Alignment with needs of society

Higher education systems as social institutions need to be aligned with the major purposes of the investing societies. These can include economic or general social advancement.

In economically competitive societies/polities higher education systems should align their activities with that of the economy.

Individual institutions of higher education do not have to be aligned in all aspects.

Differentiation

- Mission differentiation between types/classes of institutions
 - Example: California (for USA) – research universities, comprehensive master's universities (4-year colleges), community colleges
- Mission differentiation within institutions
 - Example: India's large state universities; graduate education; undergraduate education in affiliated colleges
- Hybrid models (culture)
 - Examples: University of Hawaii, New Zealand, etc.

Effort

- Effort distribution between institutions of same type/class
 - Subject area examples: professional schools, engineering, research disciplines; centers of excellence;
 - Models: California, New Zealand
- Almost universal, based on regional needs

Alignment

- Alignment differentiation between types/classes of institutions
 - Example: California – innovation; workforce development; access
- Alignment expectations to all institutions
 - Example: New Zealand, (China)

Questions

- Is mission differentiation into/between classes of higher education institutions advantageous for the future development of the highest levels of academic achievement?
- Does mission differentiation between classes of higher education institutions lead to undesirable hierarchies, or does importance of mission negate such a possibility?

Questions

- Does differentiation in alignment between types of higher education institutions, e.g. with economic development, suit economic needs of innovation and workforce development?
- Does differentiation in alignment, e.g. general demands of society, suit the character of institutions as social organizations?

Challenge: Beyond Disciplines

Rethinking the framework of scholarship and the mode of engagement of higher education systems and institutions.

High quality discipline based research and teaching is a fundamental part of higher education practice, but it is not the only way to create knowledge.

Disciplinary domain outcomes create opportunities and boundary conditions for the advancement of socio-technical systems, but they do not create solutions by themselves

Challenge: Beyond Disciplines

THEORETICAL FRAMEWORKS

- Conceptual Foundations of Multi-Disciplinary Thinking (Kline)
- Scholarship Reconsidered (Boyer)
 - Discovery
 - Integration
 - Application
 - Teaching

Challenge: Beyond Disciplines

INTER-DISCIPLINARY: , several related disciplines, identical (or very similar) research paradigms, very common approach in late 20th century

MULTI-DISCIPLINARY: many disciplines, similar research paradigms, very common approach in late 20th century;
(NOTE: term used for some time to describe pluri- or trans-disciplinary approaches)

PLURI-DISCIPLINARY: multiple disciplines, different research paradigms

TRANS-DISCIPLINARY: beyond, yet including disciplinary research, different paradigms

Challenge: Beyond Disciplines

INTER-DISCIPLINARY AND MULTI-DISCIPLINARY ACTIVITIES CREATE NEW KNOWLEDGE AND NEW DISCIPLINES , I.E. NEW DOMAINS OF DISCOVERY WITH LIMITED YET COMPLETE SETS OF VARIABLES AND PARAMETERS.

PLURI-DISCIPLINARY AND TRANS-DISCIPLINARY ACTIVITIES CREATE NEW METHODS, PROCESSES AND KNOWLEDGE LEADING TO VALID OUTCOMES , MOSTLY THROUGH DESIGN. THESE CAN BE BASED ON MULTIPLE VARIABLES AND PARAMETERS SETS THAT DO NOT HAVE TO BE COMPATIBLE OR COMPLETE.

BEYOND DISCIPLINES

- (MULTI-) TRANS-DISCIPLINARY DISCOURSE IS IMPORTANT
 - AS AN **ADDITION** TO DISCOURSE WITHIN THE DISCIPLINES
 - TO PROVIDE A COMPLETE INTELLECTUAL SYSTEM TO ADDRESS ISSUES OF HUMAN INTEREST
 - ASSURANCE OF SAFETY FOR MORE GLOBAL IDEAS OF THE ACADEMY

BEYOND DISCIPLINES

INTEGRATION (RESOLUTION) OF TOP-DOWN (SYNOPTIC) AND BOTTOM-UP (REDUCTIONIST) APPROACHES IN UNDERSTANDING/SOLVING ISSUES

NEW APPROACH TO INCLUDE/STUDY VALUES AND STRUCTURES

ELIMINATION OF DISCIPLINE'S OVERCLAIM OF DOMAIN OF VALIDITY

BEYOND DISCIPLINES

INTEGRATION OF ALL TYPES OF
KNOWLEDGES IN PROVISION OF
MORE COMPLETE RESEARCH
AGENDAS AND MORE COMPLETE
OUTCOMES/SOLUTIONS

Questions

- Is the academy the most suitable environment to provide room for the development of trans disciplinary activity/research paradigms and discourse?
- Is the academy ready and able to accept knowledges into the framework of trans disciplinary discourse that it has not considered before?

Challenge: Local, Regional, and Global Responsibility

Local and regional

- cultural and intercultural issues
- social and social justice issues
- economic and workforce development
- regional research and technology needs

Global

- International/intercultural issues
- social and social justice issues
- research and technology issues

Enabling students to be competent participants in regional and global social, economic, research and technology developments

Challenge: Local, Regional, and Global Responsibility

- Higher education systems and individual higher education providers have opportunities and obligations to be locally/regionally rooted and globally connected
- Through distinct (local/regional) characteristics higher education institutions can become valuable global players
- One of those characteristics is respect for local or regional culture and 'the people of the land'

Challenge: Local, Regional, and Global Responsibility

- Focus on indigenous peoples and post-colonial issues
- Indigenous peoples represent more than 10% of the world's population; they are socially disadvantaged everywhere
- United Nations Declaration of Indigenous Peoples Rights
- Indigenous peoples have the right to shape their education
- Narrative of a difficult change

Victoria University of Wellington

*Te Whare Wanaga o te
Upoko o te Ika a Maui*



Global Challenge – Local Responsibility

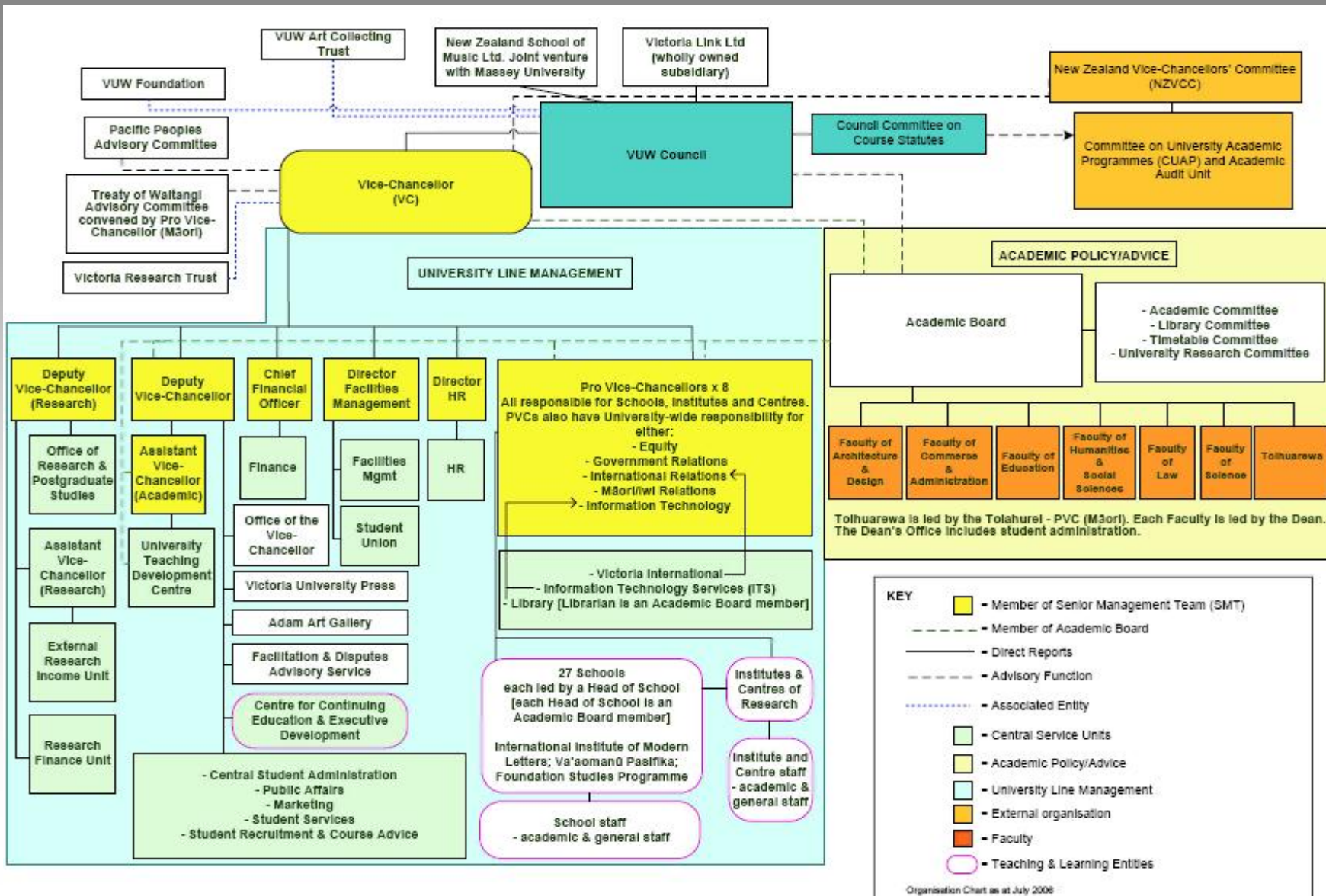
Victoria University of Wellington

2001 Decision:

- Respecting the principles of the Treaty of Waitangi, a Senior Management position, the Pro-Vice Chancellor Maori, was established.
- Responsible for issues of interest and concern to Maori at the highest level of management at the university.
- This action reflects a policy requirement as well as the 1998 UNESCO declaration.

J.B. Ringer, "An Introduction to New Zealand Government", Hazard Press Limited, NZ, 1991, p.48-51

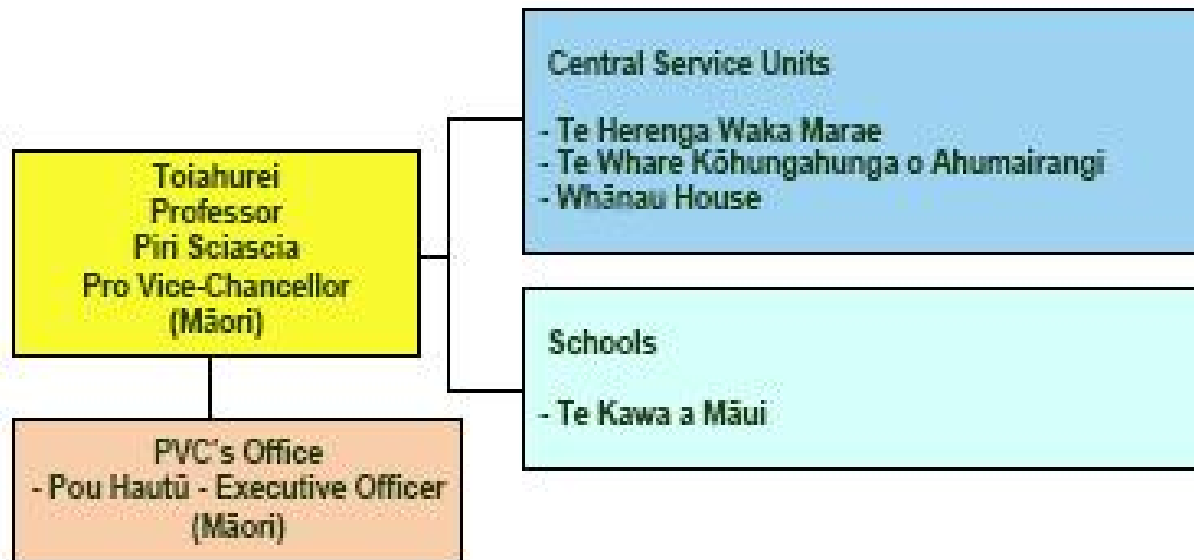
VUW Organization Chart



Pro Vice-Chancellor Maori

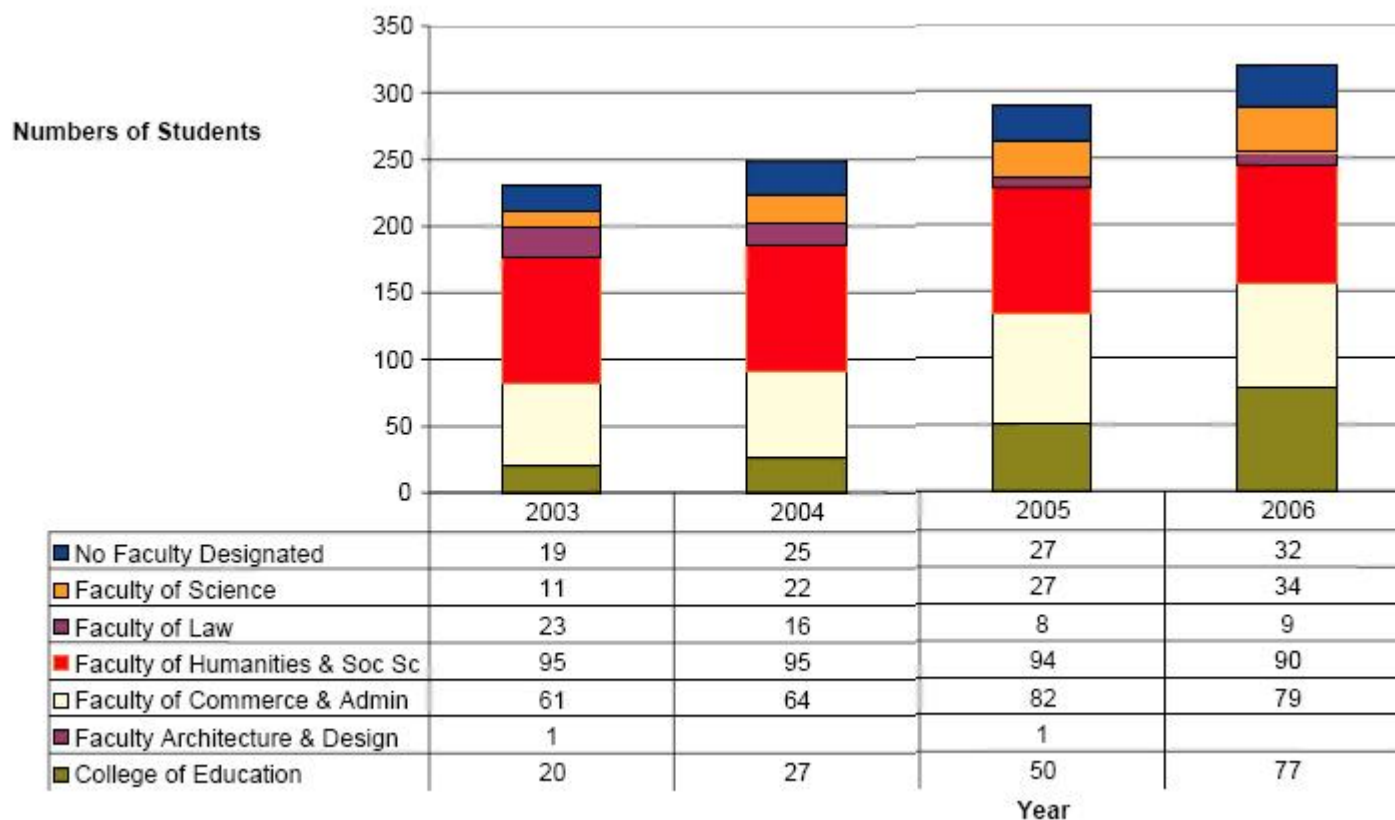
Pro Vice-Chancellor Areas of
Responsibility
(Schools, Institutes and Centres)
as at December 2006

VICTORIA UNIVERSITY OF WELLINGTON
Te Whare Wānanga o te Ōpoko o te Ika a Māui



Maori Postgraduates

TREND ANALYSIS 2003, 2004, 2005, AND 2006



Questions and Summary

- In light of the many demands placed on higher education institutions and the many tensions they are exposed to, is mission differentiation and custom design of higher education systems inevitable?
- Who would be the 'designer'?

Questions and Summary

- There is need for classical universities in achieving highest levels of academic accomplishment.
- Different academic cultures are needed to address all demands of society.
- The processes of developing these new cultures, the processes of change leading to their establishment are very difficult.

THANK YOU

