

New Academia

A model for
University-Industry partnership



zaini@utm.my
<http://www.utm.my/vc>

What is **HIGHER** Education?

“We can’t change the world but we
can build a school in Cambodia”

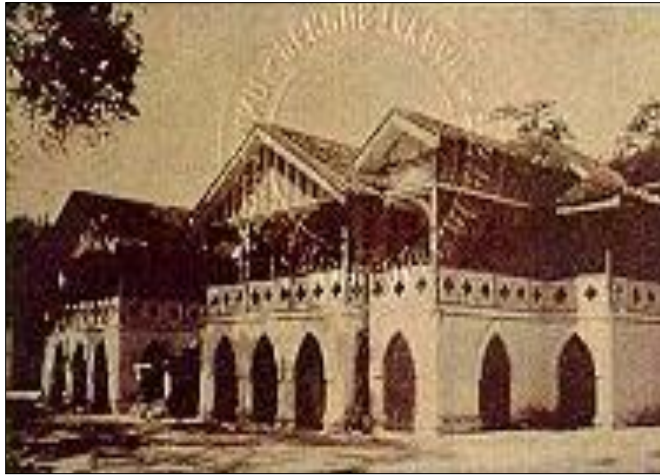
A Japanese film,
available in Malaysian Airlines

Higher education loan is higher than credit card loan in the USA – up to USD1 trillion!

- up to £70 billion in the UK

The Economist (1-14 Nov 2011)

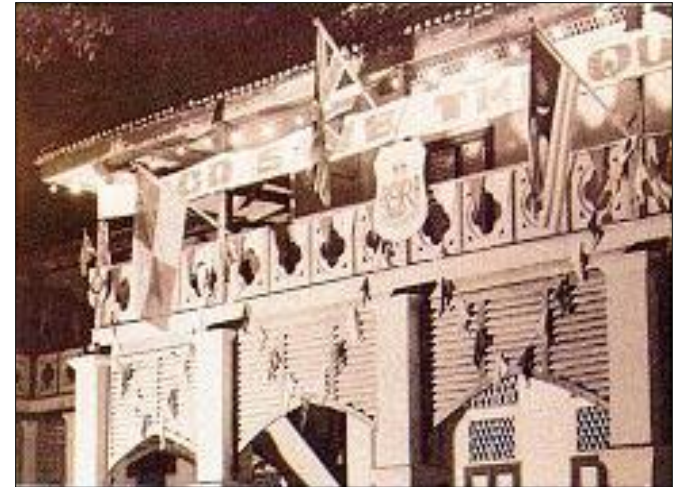
UTM chronology



Treacher Technical School, KL (1904)



Universiti Teknologi Malaysia (1975)



Technical College, KL (1946)



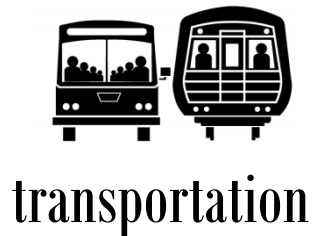
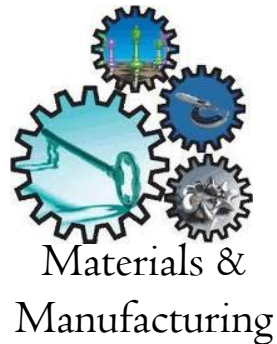
National Institute of Technology, KL (1972)

S&T	Non S&T
Science	Built Environment
Electrical Engineering	Management & Human Resource
Civil Engineering	Education
Chemical Eng. & Natural Resources	International Business School
Mechanical Engineering	Islamic Civilization
Geoinformation Science & Engineering	Perdana School of Science, Tech. & Innovation Policy
Bioscience & Bioengineering	
Biomedical Eng. & Health Sciences	Language Academy
Computer Science & Information Systems	
Malaysia-Japan International Institute of Technology (MJIT)	
Razak School of Engineering and Advanced Tech	
Advanced Informatics	
Petroleum Engineering & Renewal Energy	

4000 "non-UTM sponsored" foreign students 2011/12

UTM research alliances (RA)

Headed by RA Deans (11)



Alliances

K-economy

Infocom

Transportation

Construction

Water

Sustainability

Nanosciences

Biotechnology

Energy

Materials and manufacturing

Cybernetics

UTM BLUE OCEAN STRATEGY?

Postgraduate enrolment in engineering & technology**

Postgraduate enrolment	2003	2004	2005	2006	2007	2008	2009
Local public universities	3,354	4,160	5,926	6,108	5,837	8,261	10,129
UTM	2,362	2,324	2,390	2,333	3,405	3,354	4,391
UTM (%)	70	56	40	38	58	41	43

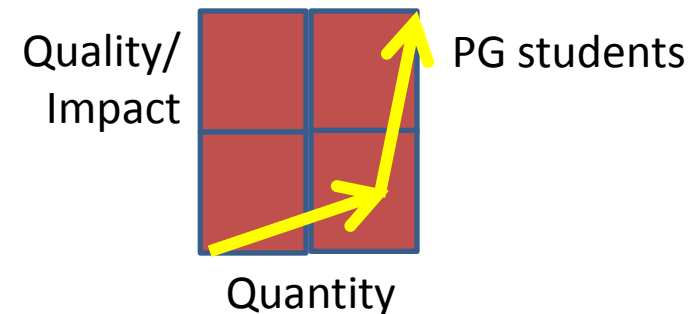
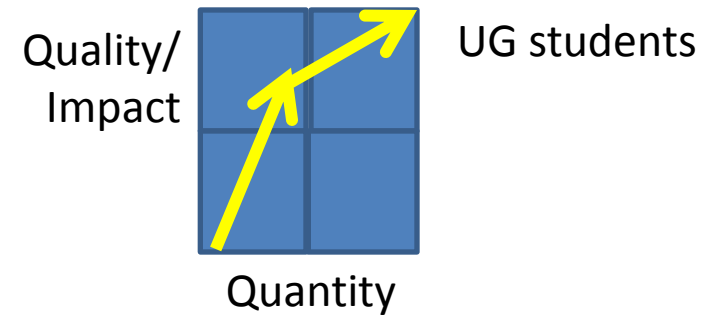
**Technology = ICT, remote sensing, geo-information technology, etc

<http://www.utm.my/vc/speeches>

UTM student profile

Year	Bachelor	Postgraduate
1984	3,886	2
1985	3,857	3
1990	5,348	175
2004	17,897	3,291
2005	15,895	3,004
2006	15,109	2,823
2007	14,792	3,942
2008	14,456	4,850
2009	14,245	6,432
2010	13,000	8,000
2011	11,500	9,000
2012	10,000	10,000

Year	Masters	PhD
2000	1,165	251
2005	2,445	559
2010	6,902	2,048
2011	7,000	3,000
2012	7,000	3,000



9,100
10,040

UTM international students (1990-2010)







Year	International students @ UTM		
	Total	Undergraduate	Postgraduate
1990	0	0	0
1995	36	32	4
2000	124	16	108
2005	364	19	345
2006	540	61	479
2007	1016	125	891
2008	2222	671	1551
2009	2417	700	1717
2010	3076	752	2324
2011	4000	750	3250
2012	5000	750	4250
2015	5000	750	4250

- PhD fellowship
- Research Assistantship
- Teaching Assistantship

Better University-Industry partnership?

- Job creation
- Wealth creation
- Optimization of resources (R&D, human capital development, investment etc.)
- University more relevant
- Industry more engage with local enhancement
- Politics ...

World population

COUNTRIES		POPULATION (MILLION)
World		7,000
China		1,300
India		1,150
facebook		800
USA		300
Indonesia		240
Japan		127
Malaysia		30

Future University?



High-impact



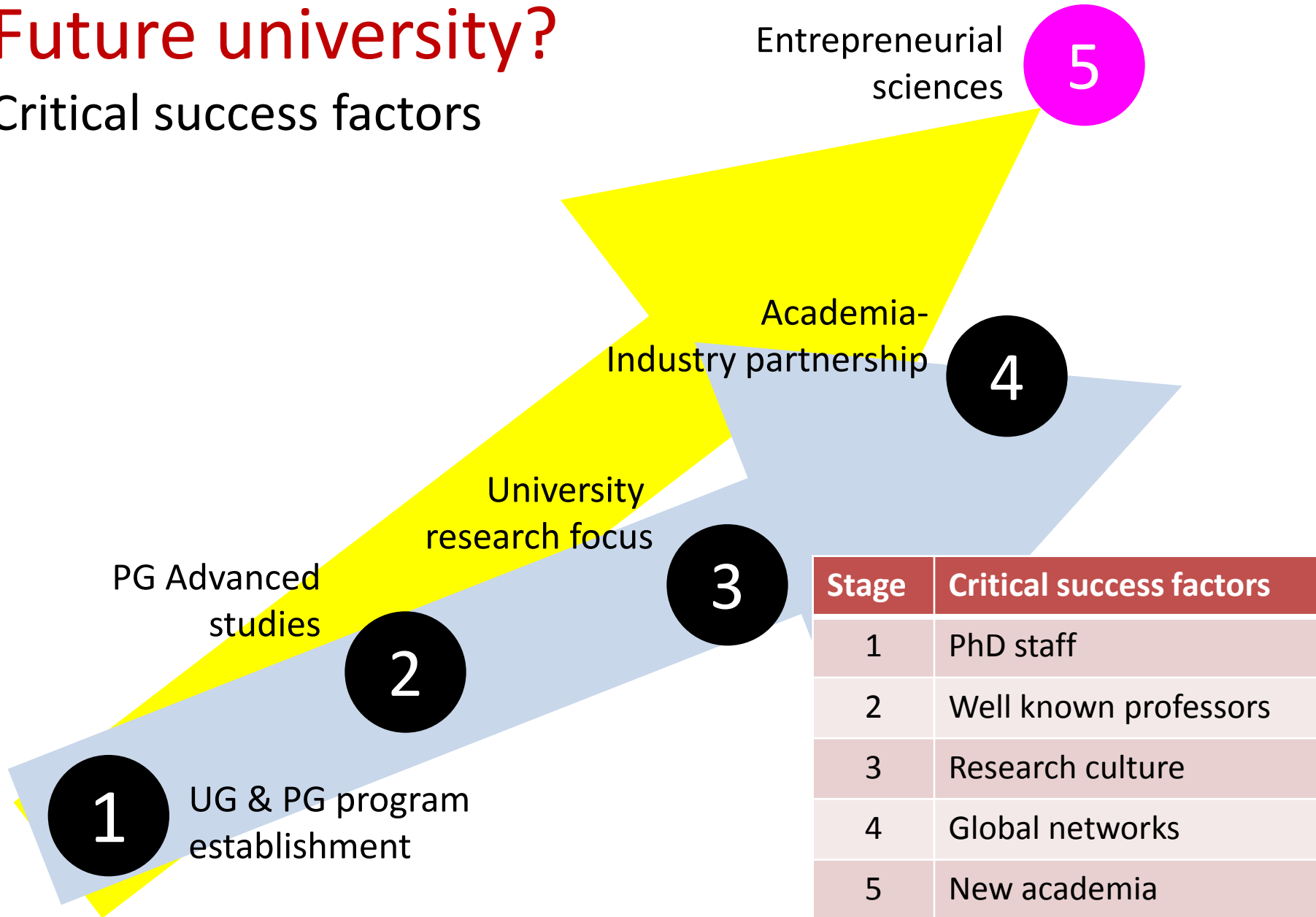
Differentiation



Entrepreneurial spirit

Future university?

Critical success factors



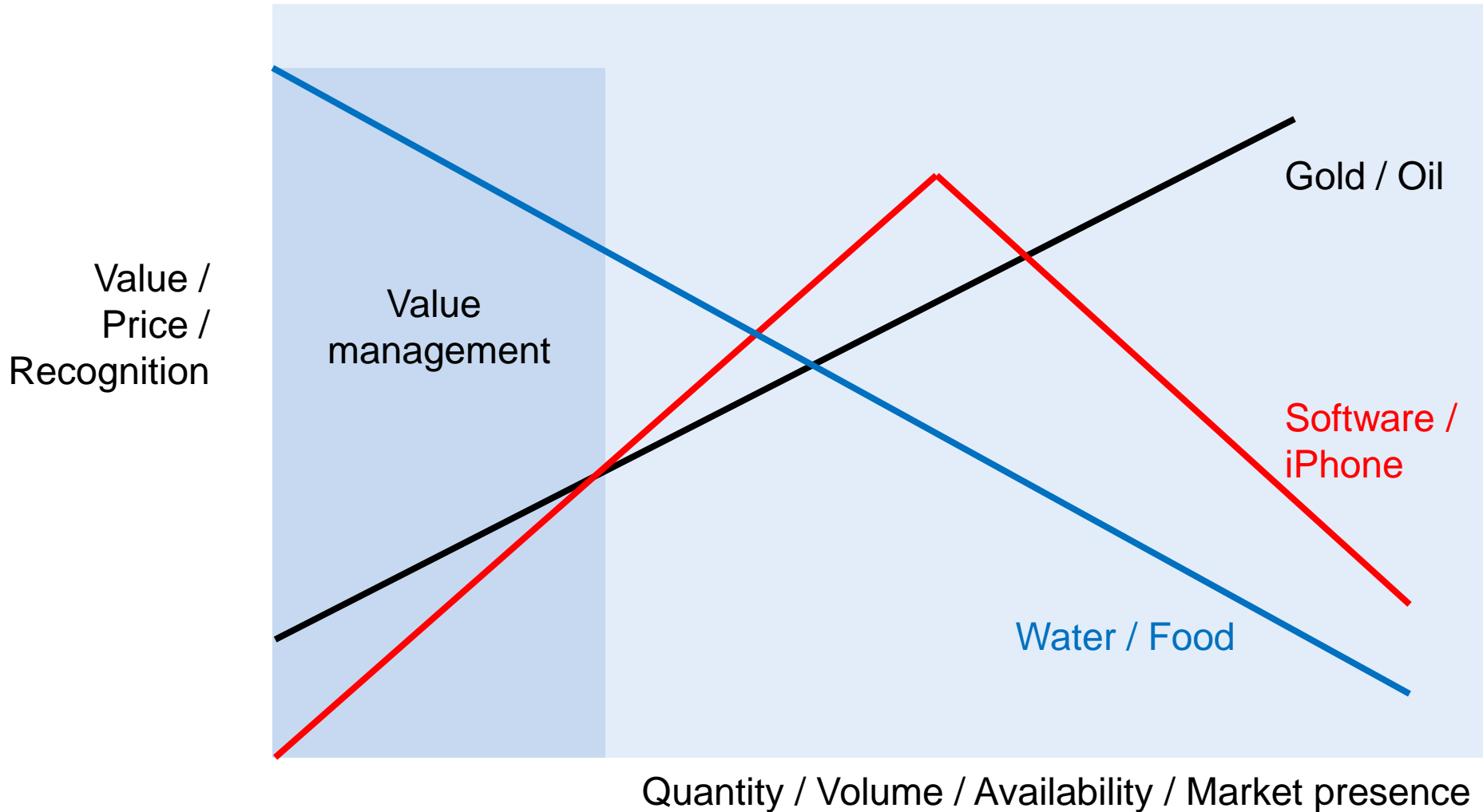
New academia?

	Conventional	New academia
Faculty members	Professors	Professors, inventors, entrepreneurs
Learning materials	Books, journals	Books, journals, experiences, Internet, internship
Philosophy	Specialization	Integration
Funding	Grants, fees	Grants, fees, VC, endowment, REITs
Students	School leavers, mid-career	School leavers, mid-career, businessmen, early-career, life-long
Venue	Campus	Campus, Internet, incubators, brands
Learning modes	Lectures, tutorials, lab, studios	Lectures, tutorials, lab, studios, internship, incubators, experiential learning, 5 minds
Outcomes	Degrees, expertise	Degrees, expertise, business models, capital, networks, culture

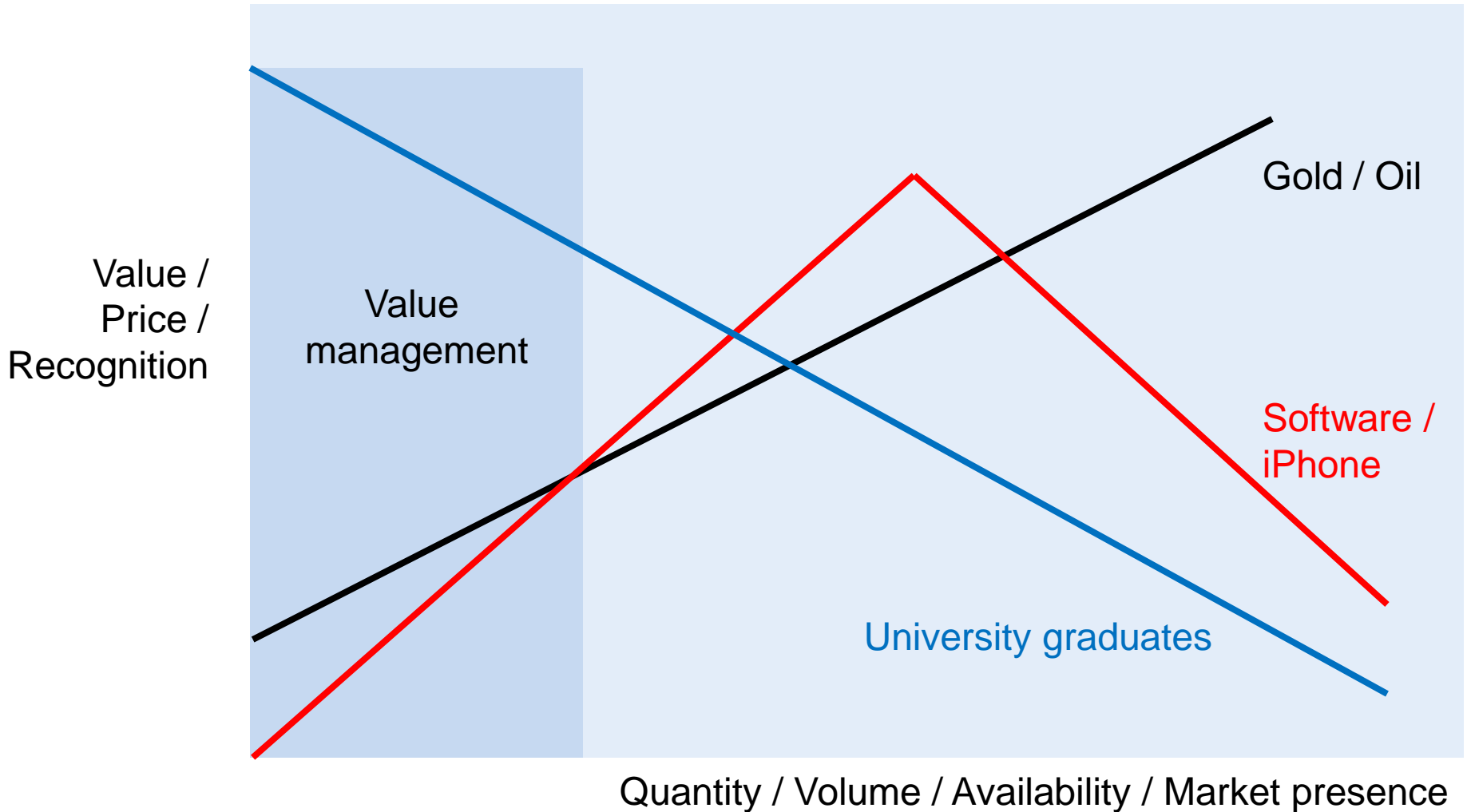
New academia?

	New academia	Action
Faculty members	Professors, inventors, entrepreneurs	Adjunct staff, fellows
Learning materials	Books, journals, experiences, Internet, internship	Internship, students' business venture
Philosophy	Integration	New programs, RA
Funding	Grants, fees, VC, endowment, REITs	Creative fund raising
Students	School leavers, mid-career, businessmen, early-career, life-long	Staff from big corporations, research
Venue	Campus, Internet, incubators, brands	Wifi, 4G, MTDC, Proton
Learning modes	Lectures, tutorials, lab, studios, internship, incubators, experiential learning, 5 minds	Mobility, SRI, Silicon Valley-culture, GOP, "performing lectures"
Outcomes	Degrees, expertise, business models, capital, networks, culture	High quality input, dynamic ecosystem

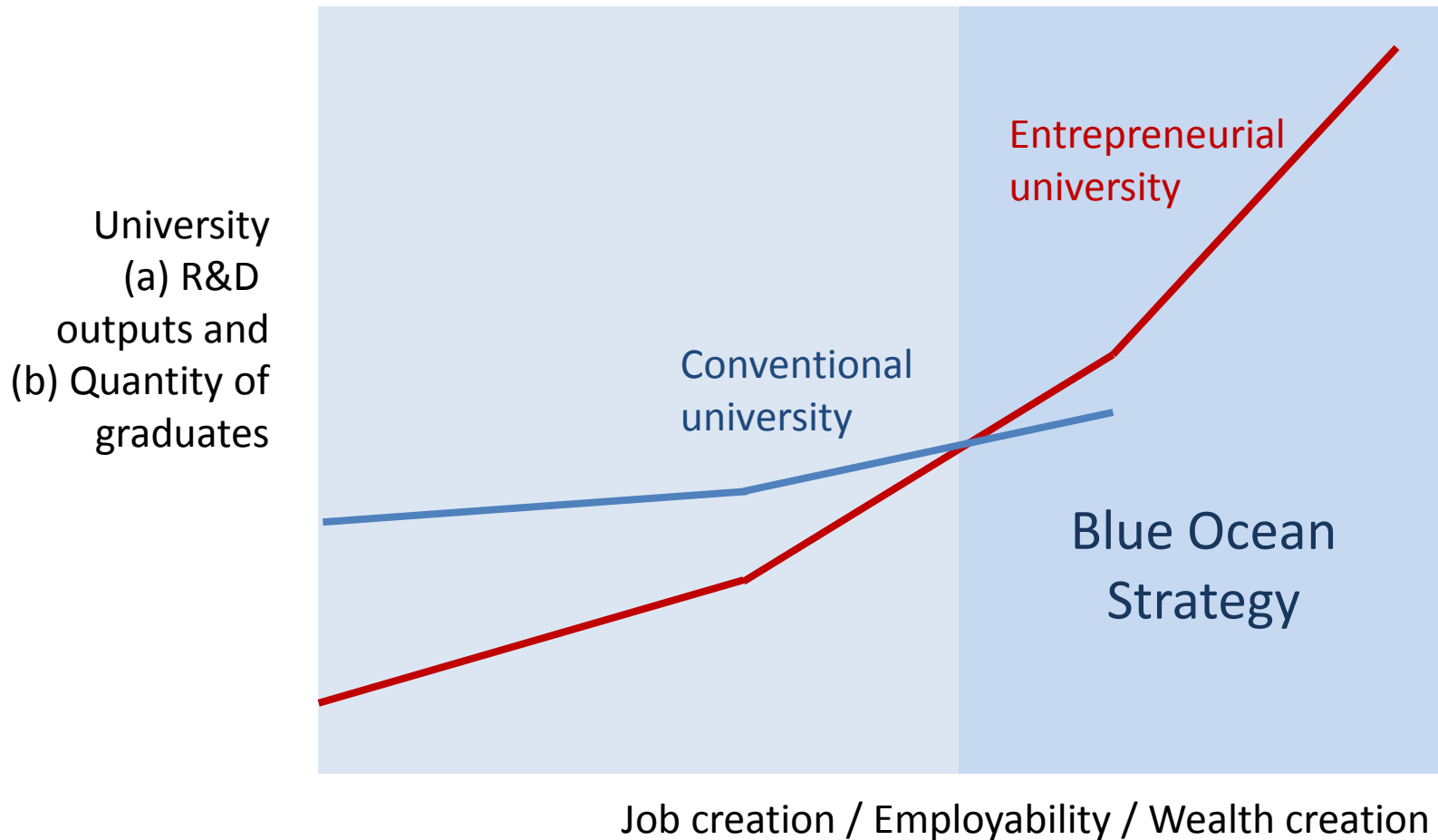
Zaini's law (actually hypothesis) on value creation



Zaini's law (actually hypothesis) on value creation



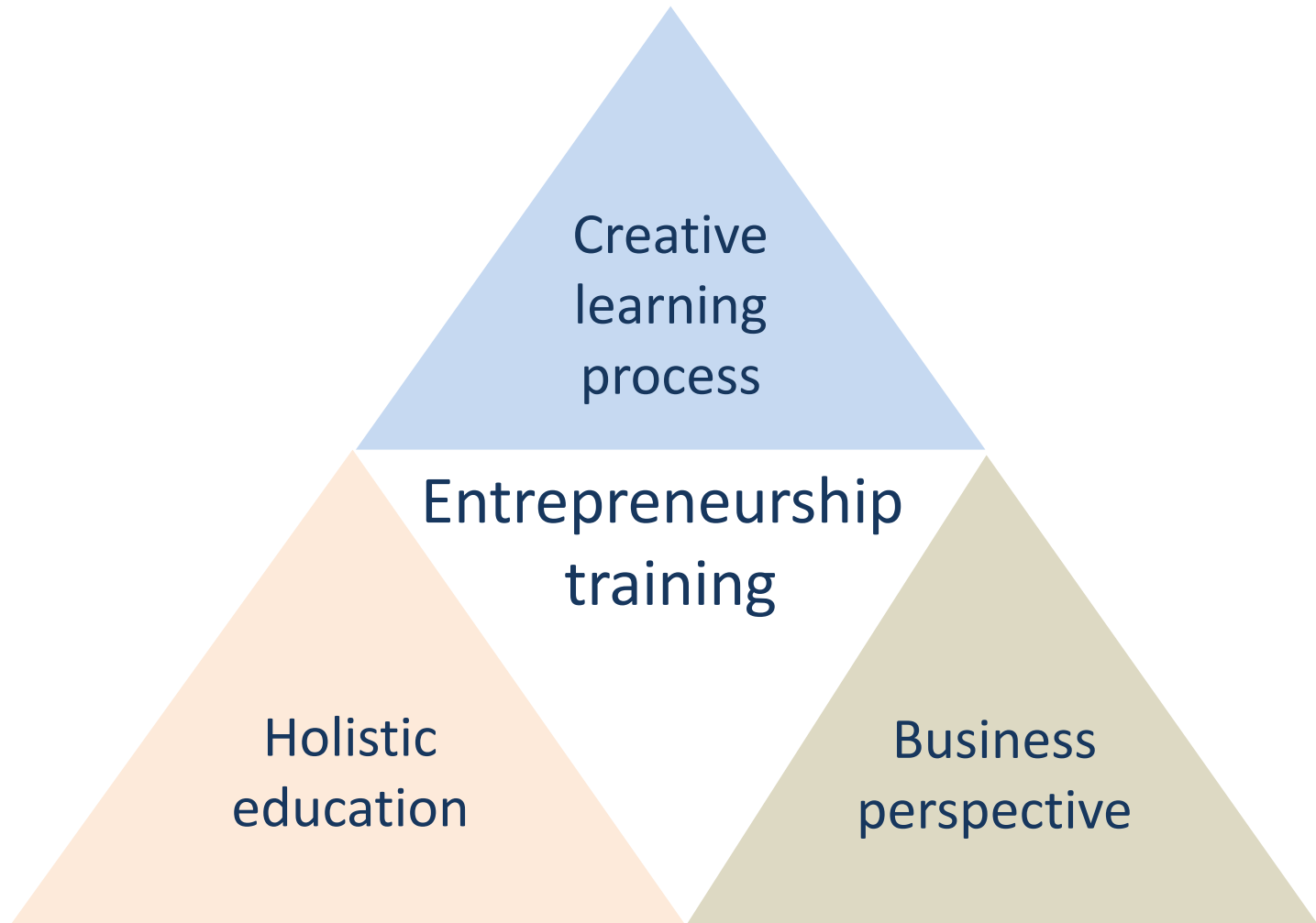
Entrepreneurial research university?



How to establish an entrepreneurial university?

and
— ORIGIN
entrepreneur
a business or busi
financial risks in
Nature Vs Nature

MindSpace® and Radical Thinking are the registered trademarks of the Suran Organisation



Entrepreneurship Mastery

- Strategic thinking
- Global perspective
- Identify opportunities from threats
- Industry awareness

- Personal effectiveness
- Self awareness
- Resourcefulness
- Influencing skills
- Communication
- Creativity
- Courage
- Persistence



- Deep technical entrepreneurship skills
- Breadth of management skills
- Entrepreneurship savvy
- Process expert

- Extreme leadership
- Decision making

Entrepreneurship@UTM

- Mainstream programs
 - Differentiation
 - High value creation
- Learning environment
 - Service learning
 - Spin-off

Special 2010/11 initiatives

- Loan for establishing start up companies (USD1000 per student)
- Upgrade UTM broadband facilities from 167 to 425 Mbps and 4G facilities
- 5000 students in **Global Outreach Program**
- Harvard Business School case studies to all taught course students
- Five Excellent Track Programs (Academic, Entrepreneurship, Sports, Leadership, Tahfiz)
- Student Innovation Centre
- Entrepreneurs and professionals as academic tutors
- Internship schemes (local and abroad)



Reader's Digest
Trusted Brand
Award 2010



Proton-UTM
Professorship



Proton Technology Advisory Council

UTM-Proton Initiative



Industrial PhD
Program @ Proton

The First Proton
Electric Vehicle
Prototype





NICK COLLINGS
Cambridge University



CURTIS CARLSON
Stanford Research Inst

Proton Technology Advisory Council



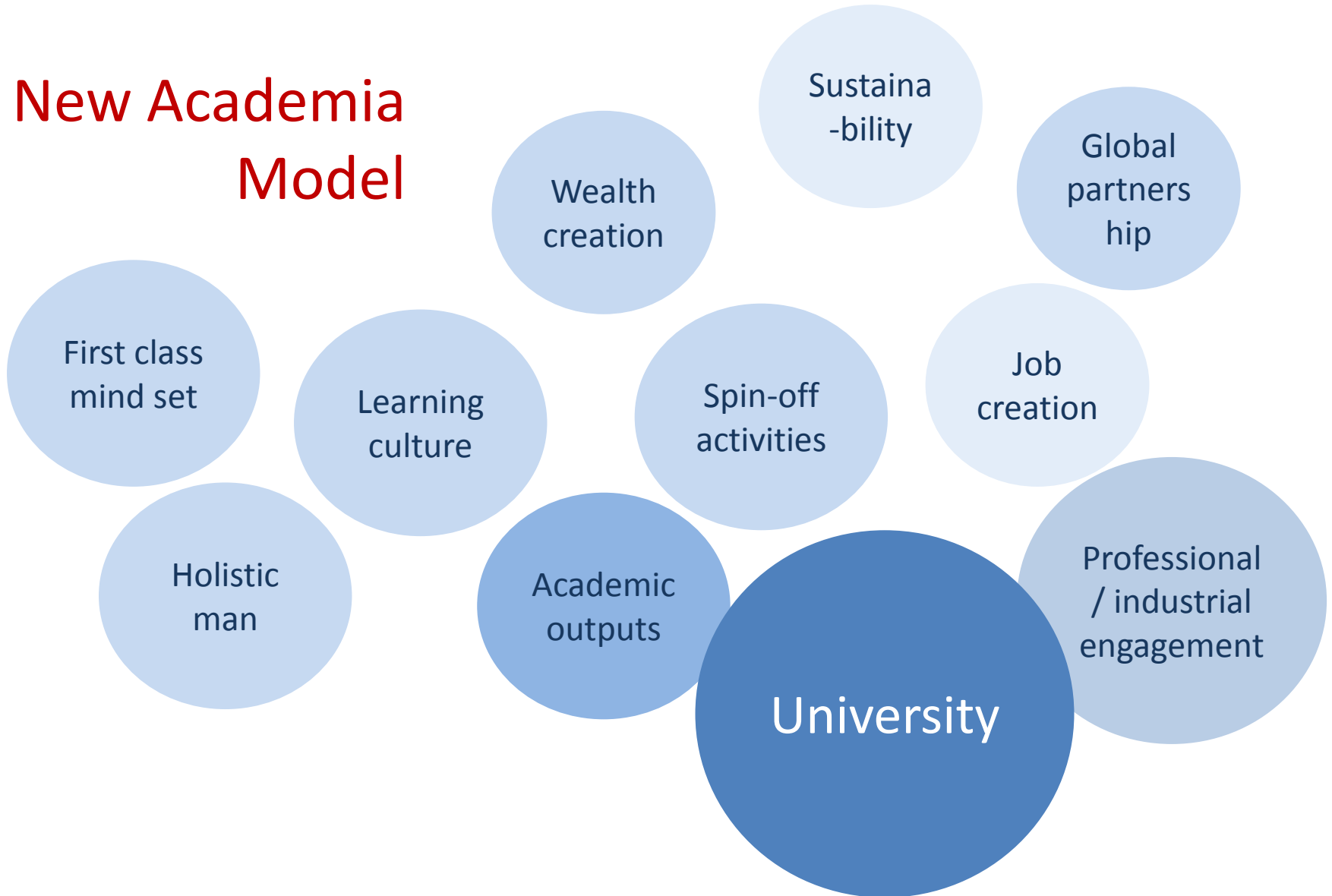
RICARDO M BOTAS
Imperial College London



OSAMU ONO
Meiji University



New Academia Model





“Success is not the key to happiness. Happiness is the key to success!”

Albert Schweitzer (1875-1965)
Nobel Prize Winner