# Financing University Research Waking a Sleeping Giant



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University of Oxford

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# Recommendations

### Assure adequate Incentive Structures at Universities

Vest IP ownership within the university
Develop Social responsible research transfer
Recognize engagement with business as part of academic achievement

## • Promote Boundary Spanning

Leverage online platforms & social networks Expand existing Memoranda of Understanding (MOUs) & assure knowledge transfers Focus on involving students in the commercialization process

## Offer IP Entrepreneurship Awareness Raising Programs

Develop training material on IP Entrepreneurship Undertake Awareness Raising Seminars Supply Outreach material to multipliers

## • Maintain Institutional Support

Promote Incubators
Create Research Commercialization Scouts
Foster Pan University wide research transfer institution(s)
Increase patent quality through peer to patent reviews

## Create Funding Opportunities

Make IP filing affordable & Assure royalties are not subject to taxation Revise Financial Reporting Standards for intangibles & Standardize IP valuation procedures

# A Few Words on the 'Third Way'...

The 'Third Way' of university research commercialization focuses on systemic change, rather than on single stakeholder intervention. It reflects a third generation of innovation policies that focuses on training, awareness raising and the leverage of cluster effects, rather than the development of physical infrastructure (i.e. science parks).

This is a unique approach that outperforms existing best practice in many ways; i.e. it focuses on the leverage of network effects among the various academic institutions, rather than repeating the traditional 'one university – one commercialization' approach.

The 'Third Way' also outperforms existing best practices by adopting latest trends in IP management, such as online trading, perceiving IP as financial asset, leveraging open innovation for improving patent quality.

Organizational values, structures & procedures of various actors (business, academia, government) are recognized and different institutional cultures are sought to be overcome through boundary spanning.

The competing demands and interests of business & academia are reflected through the introduction of 'social responsible university research commercialization', as currently undertaken by U.C. Berkeley.

# **AGENDA**

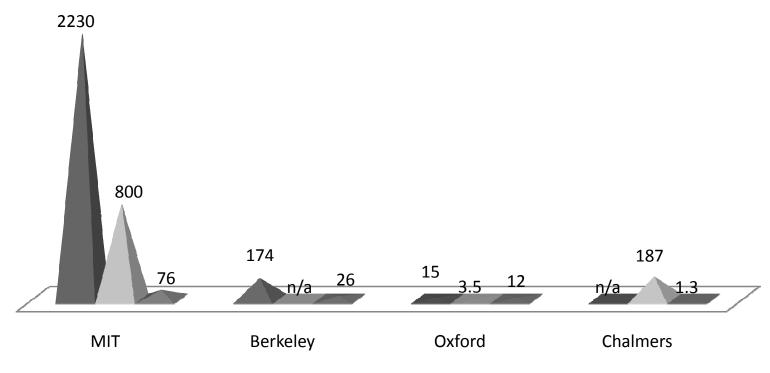
What is Current Best Practice?

Choosing the Third Way

**Impact Assessment** 

# Top Performers Focus on Research Funding from Business & NGOs, Funding for Spin Offs & Revenues from Consulting, Royalties & Licenses

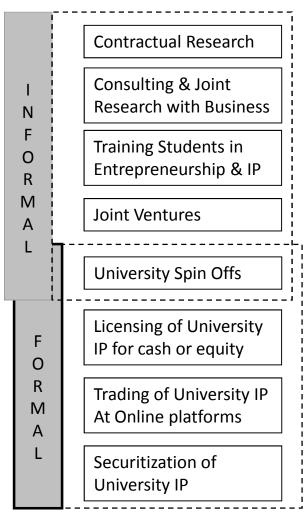
- Research Funding from Business/NGOs
- Seed Capital for Spin Offs
- Turnover from Consulting, Royalties, Licenses 2010 Data, in Mio USD, rounded



Source: Roya Ghafele, Websites,

Oxford: Revenues from consulting not fully monitored, Chalmers: Reseearch Funding from Business/NGOs not monitored, Berkeley: Seed Capital for Spin Offs not monitored

# Top Performers Leverage Many Channels to Finance University Research



- Key is academic's network & social capital & university policies; i.e. in U.S. academics get only paid 9 months a year.
- Key is to convince business of the mutual benefits of collaboration; reputation matters.
- Key is academic's ability to motivate students across all disciplines to start new businesses.
- Key is mutual interest of business & university in commercializing research; closed ties with business are crucial.
- Key is adequate institutional support; i.e. incubators, science parks, seed capital, venture capital, business angels
- Key is filing for IP that can be transferred to business. Attention! IP that is not licensed out is costly.
- Key is to create an adequate online profile at relevant websites, (i.e. IPXI or TAEUS GPS)
- Key is to convince an investment bank to underwrite the licensing deal; i.e. Yale securitized its licensing deal with Bristol Myers Squibb and built new campus facilities with these funds

University Research Financing Initiatives Among Top Performers

	1	1		
Initiative	MIT	Berkeley	Oxford	Chalmers
University owns IP	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$
IP Awareness Training on Campus				$\sqrt{}$
Government grants/public support for IP protection	V	V	V	V
Social Responsible IP transfer & Open Source		$\sqrt{}$		
Entrepreneurship Education		$\sqrt{}$	$\sqrt{}$	$\sqrt{}$
Business Plan Development Programs	$\sqrt{}$	$\checkmark$		$\sqrt{}$
Advisory Services, External Consulting Firms Student Entrepreneurship Organizations	√ √	√ √	√ √	√ √
Commercialization Services on Campus	$\sqrt{}$	$\sqrt{}$	<b>V</b>	$\sqrt{}$
External Service Provider for Commercialization University on Campus Incubator Outside Incubators Situated in Town	√ √ √	√ √ √	V	√ √ √
Seed Capital	1	V		V
University Shares in Spin Offs & Licenses	, √	√ √	V	√ √
Official Incentives for Commercialization				[V

Source:

Roya Ghafele, Rasmussen et al. Technovation 26 (2006) 518-533, University Websites

# **AGENDA**

What is Current Best Practice?

Choosing the Third Way

**Impact Assessment** 

# Developing a Financing System for University Research:

Creating Leverage for Cooperation in the Financing Cycle

# Assure adequate Incentive Structures at Universities

Assure University owns IP

Reward faculty & student involvement in the Commercialization Process

**Create Funding Opportunities** 

Convey the message to the UAE investment

Community that university research Constitutes an attractive investment

Opportunity

Assure IP protection is affordable through grant schemes

Focus on the Promotion of Entrepreneurship Promote Boundary Spanning

Overcome cultural &
Informational barriers among
Business & Academia
Through sufficient
Networking opportunities

Maintain institutional support

Decentralized Brokerage for university research rather than Technology Transfer Offices behaving like Monopolies Leverage cluster effects & achieve economies of scale Offer IP Entrepreneurship Awareness Raising Programs

Create awareness of the Economic Use of IP & Other forms of university research output

Source: Roya Ghafele

# Successful Research Financing is Multifaceted

# Description of Policy Framework

#### **Incentive Structures**

Vest IP ownership within the university
Develop Social responsible research transfer
Recognize engagement with business as part
of academic achievement

#### **Boundary Spanning**

Leverage online platforms & social networks
Expand existing MOUs & assure knowledge
transfers
Focus on involving students in the
commercialization process

#### **IP Entrepreneurship Awareness**

Develop training material on IP Entrepreneurship Undertake Awareness Raising Seminars Supply Outreach material to multipliers

#### **Institutional Support**

Promote Incubators
Create Research Commercialization Scouts
Foster Pan University wide research transfer
institution(s)
Increase patent quality through peer to patent
reviews

## **Adequate Funding**

Make IP filing affordable
Revise Financial Reporting Standards for
intangibles
Standardize IP valuation procedures
Assure royalties are not subject to taxation

Designed to Achieve

Research Funding from Business/NGOs

Funding for Spin Offs & Spin Off Creation

Revenues from Royalties, Licenses & Consulting

Entrepreneurship

Source: Roya Ghafele

# **AGENDA**

What is Current Best Practice?

Choosing the Third Way

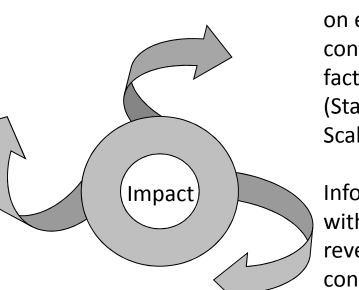
**Impact Assessment** 

# Impact Assessment - Methodology

Cost/Benefit Analysis strongly based on electronic survey data generated through a checklist with Department Heads at Universities

Data collected at Kick Off (Time 0), after 2 & 5 years offers insights on the status prior to policy intervention, during & within 5 years from kick off.

(ex ante & ex post control data)



Methodologically based on exploratory & confirmatory factor analysis. (Statistical Assessment of Scales)

Information supplemented with 'hard data'; i.e. revenues from royalties & consulting

Focus on one single control group (University Mid-Management) rather than all stakeholders in a country

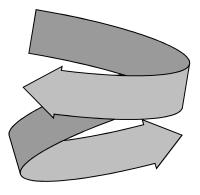
Source: Roya Ghafele, Todorovic et al. 2010

# Impact represents change, whether positive or negative, that policy brings to a situation

## Costs

Direct Costs:
Overhead costs,
Administrative expenditures,
Depreciation of capital assets
Costs of complementary services
Related to policy

Indirect Costs:
Proxy indicators based on survey
Data using a Checklist,
i.e. time & resources
allocated



## **Benefits**

Direct Benefits:
Number of spin offs created
Revenues created through
academic consulting, joint
ventures, licensing revenues

Indirect Benefits:
Proxy indicators based on survey data using a Checklist,
i.e. students going into business
Upon graduation

# Checklist for the Impact Assessment

## **Incentive Structures**

Country wide policies contribute towards the economic use of IP & intellectual capital (IC) by universities

The Performance review of faculty members includes off-campus activities in addition to research & teaching

We reward our faculty members for conducting research in partnership with non academic-professionals

We give our faculty members the freedom to chose if they want to engage in applied research & business projects

## **Boundary Spanning**

Cooperation with organizations outside the university significantly improves our research activities

Our department has built relationships with private or public sector institutions, as well as seed capital

Our department has a reputation for collaborating with business & is highly regarded by business/investors

We are recognized by business & society for our flexibility & innovativeness

## **IP Awareness Raising Programs**

Teaching Entrepreneurial skill sets & business aspects of IP is an important element of our curriculum Faculty members in our department are aware of IP & recognize the potential commercial applicability of research Our University is very responsive to new ideas & innovative practices

Our Students often secure high quality industry positions

## **Institutional Support**

There are university wide departments/groups/individuals dedicated to business/university liaison activities We benefit from the proximity of Science Parks and Incubators

Our University uses feedback from all levels of to improve institutional support for commercial activity

## **Funding Opportunities**

We seek significant funding from sources other than the Government

We try to generate off campus benefits from research projects

Our university generates income from university spin offs, licensing out IP, consulting & contractual research Students have used their education to scope new business opportunities and start new firms

Source: Roya Ghafele, Todorovic et al, Entre-U. Technovation (2010)