



# Doing more with less –

Project economy approaches  
of higher education institutions revisited

Input to  
Thai Deans Study Visit  
Dr. Ingo Rollwagen  
June 10th, 2013, Berlin

# Agenda

Alfred Herrhausen Society

The International Forum of Deutsche Bank



1

Corporate Foresight in banking

2

Mapping dynamics in Higher Education (HE Institutions – HEI)


3

Discussion: Opportunities for HEI embracing change/project economy




# Strategic Foresight in Banking: a Must

- The major role of a financial institution is to assess, transform, trade, and take on **risk**.
- Structural changes in the socio-economic environment make these tasks even more demanding.



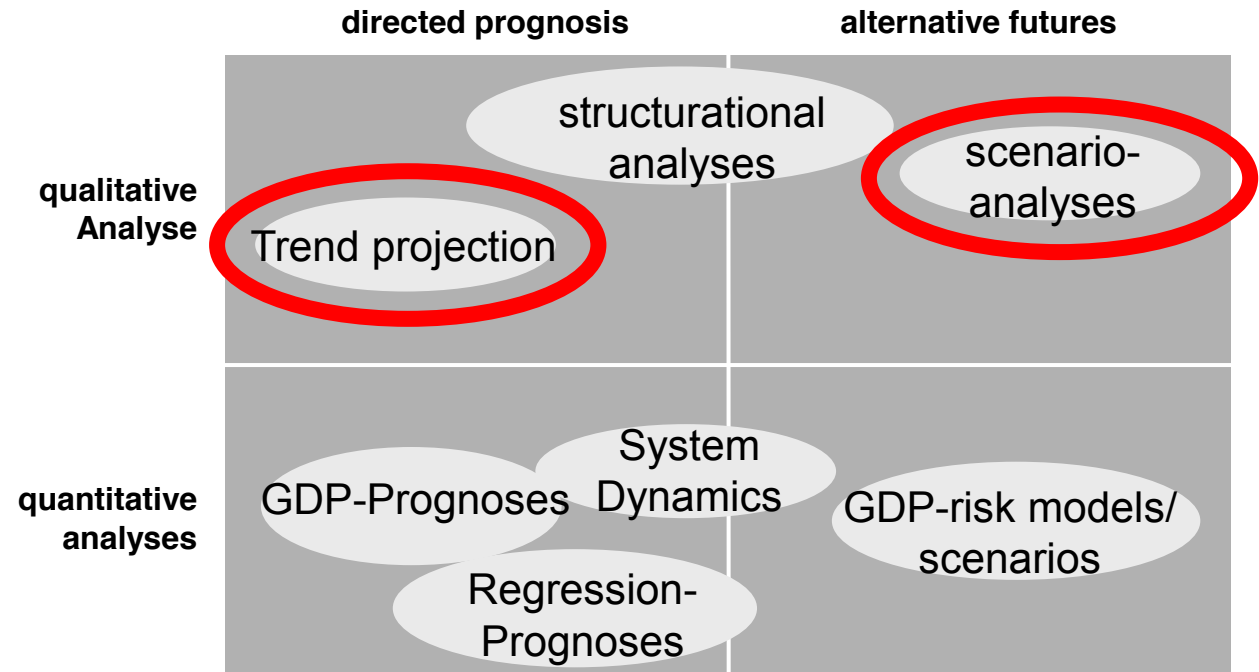
Banks need systematic, global analysis of uncertainties, risks, opportunities on the basis of **possible and likely futures**

for both  successful **day-to-day business**  
and the development of sustainable **long-term strategies**.

# DB Research´s Task – delivering insights



- Analyzing the economic, societal, political and technological environments
- Encouraging the building of knowledge-oriented structures
- Insight-based moderation of strategic processes
- Initiating/supporting projects and pioneering activities/Building networks



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1

Corporate Foresight in banking

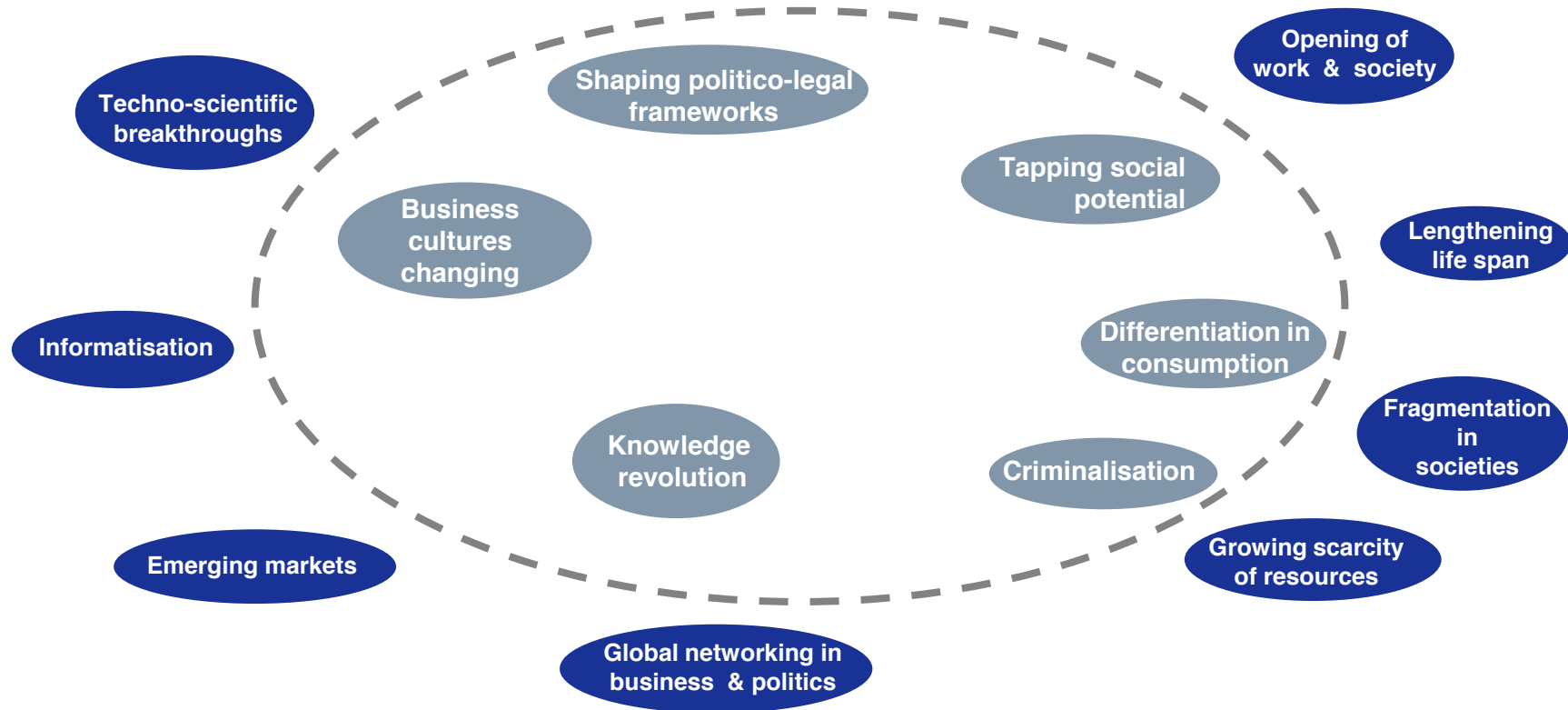
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# Strategic Foresight: Identifying structural changes



DBR's dynamics map to understand structural change (Hofmann, Rollwagen, Schneider 2007)

# On the way to the knowledge economy...



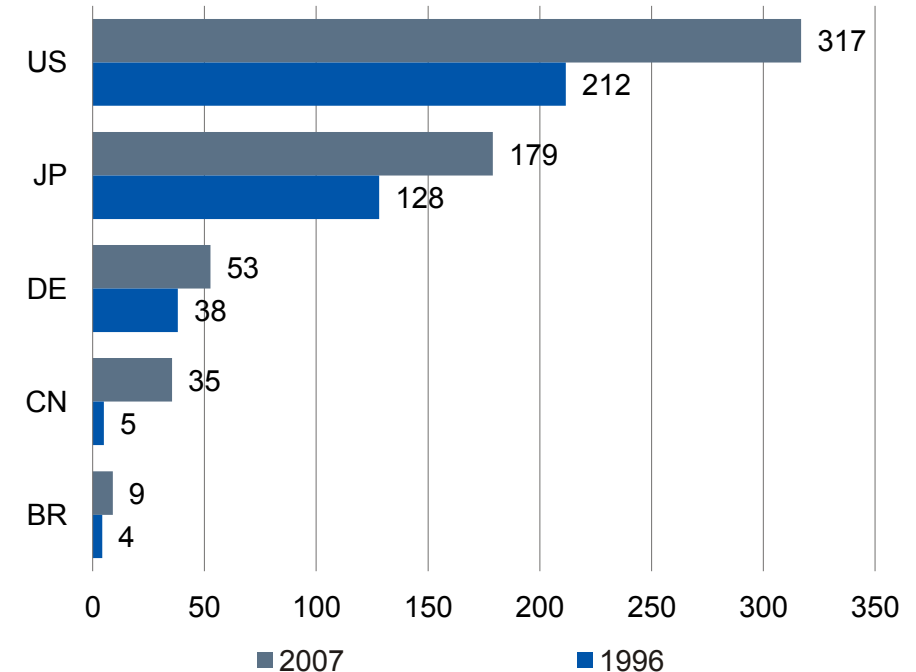
## ...value-creation gets...

- more global
- smarter & more specialized
- more complex & hybrid
- more open
- temporally flexible
- more purposeful tackling 21st century challenges e.g. smart cities
- more project-based

More integrated & knowledge-intensive consumption & production with new products for 'innosumers'

## Investments in R&D

USD bn at constant prices (2007)



Source: World Bank WDI

# On the way to the knowledge economy: Revolution in knowledge

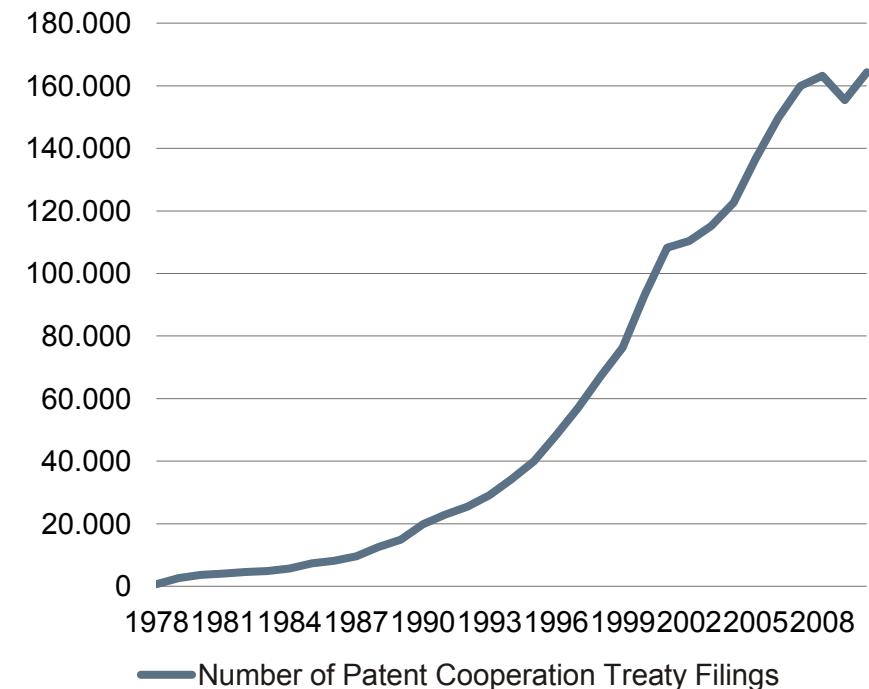


## Knowledge is...

produced, used and disseminated...

- more collaborative & informal...
- smarter, more `managed` & codified...
- More complex; specialized; applied/hybrid...
- more (locally) distributed...

## Knowledge getting more codified and managed also by universities



Source: WIPO 2011



# Knowledge revolution – Implications for the knowledge world-order

Knowledge produced/used...	Knowledge world-order structured by...
...more frequently collaborative & informal	...by more cross-border, national, inter- & intra-regional partnering, defined identities & affinities and science & knowledge diplomacy
...smarter/more codified/`managed`	... by more centered IT science infrastructures and electronic-enabled cross-border science & education provision, patenting & standardization
...more complex; specialized; applied/hybrid...	...more mission-oriented paradigms and explorative research with field testing of solutions integrating lead users also with education & training
...more distributed locally	...more & new centres of gravity – emerging knowledge/value-creation networks with clusters/universities as hubs

Source: Rollwagen 2012

# BRICKS of a knowledge world-order



- US still in the lead but collaboration changes the picture.
- China, South Korea, India, Brazil, Turkey, Iran, South Africa, Qatar Malaysia are on the move to develop science with a clear mission, other developing country take up the challenge.
- Developed countries, single regions & cities are gaining speed in the races for academic excellence and talent.
- New forms of impact investments and new forms of technology- & knowledge transfer and export specialization spur science2business activities and social business models.
- Relevance of global brands, flagship alliances of world-class universities, science organizations and knowledge-intensive companies increasing – more refined cross-border strategies.
- New educational & knowledge technologies are becoming pervasive and help emerging players in science, education and training.

Source: Rollwagen 2012

# Relevant dynamics in structural change for Higher Education Institutions (HEIs)

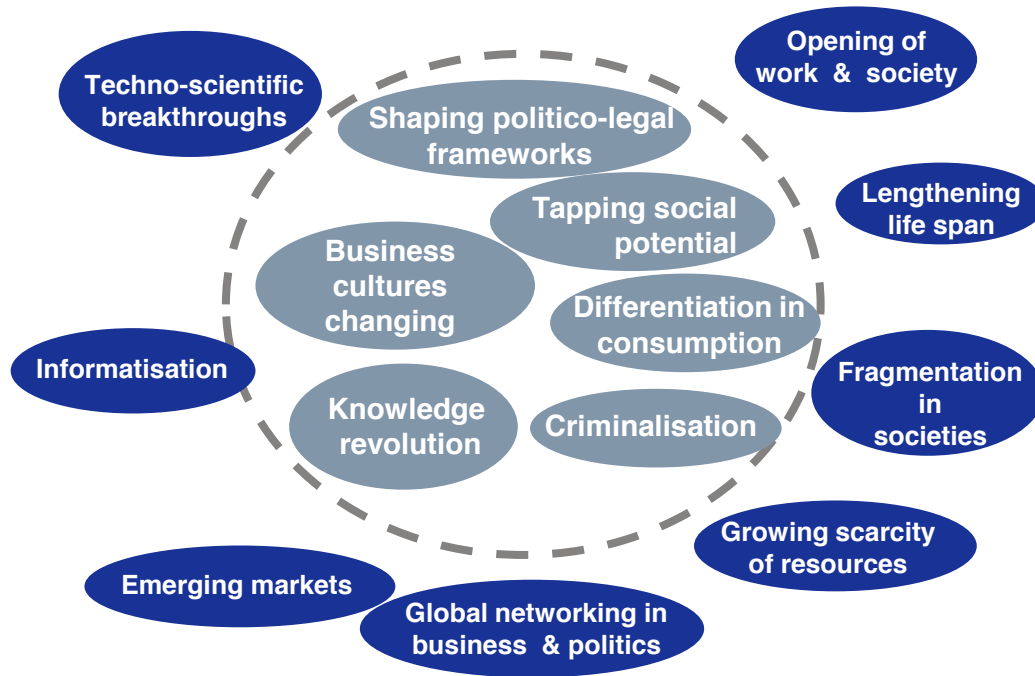


Field	Dynamics
<b>1. Institutional and regulatory settings</b>	<ul style="list-style-type: none"> <li>▪ Global reach and local requirements – Integration of research activities and education of HEIs required</li> <li>▪ More autonomy for higher education institutions</li> <li>▪ More private institutions &amp; universities of applied sciences</li> <li>▪ More structured governance parameters and institutions</li> <li>▪ Races to excellence on a regional, national and international basis – other degree structures emerging</li> <li>▪ More diversified sources of income – third-party funds more important</li> </ul>
<b>2. Faculty</b>	<ul style="list-style-type: none"> <li>▪ More faculty and administrative personnel to cope with the expansion in higher education</li> </ul>
<b>3. Learners/Students</b>	<ul style="list-style-type: none"> <li>▪ More and other (adult) students</li> </ul>
<b>4. “Educational products”</b>	<ul style="list-style-type: none"> <li>▪ Curricular changes – convergence and integration of more specialized bodies of knowledge</li> <li>▪ Other, new forms of learning being developed – education/learning technology &amp; software as a vibrant innovation field</li> </ul>

# On the way to the knowledge economy...



Fuelled by structural change...



DBR's dynamics map to understand structural change  
(Hofmann et al 2007)

...& pioneering activities of  
science & education providers...

- potential-enhancement
- personalization of education
- pervasive, tech-enabled provision of science and education
- perspective-enrichment for scientists & faculty
- more institutional autonomy & professionalization
- more structured partnerships with more diversified revenue models
- profiling activities of flagship universities & regions...

# Profiling activities of HEI, urban centres/hubs in the global race for Excellence in Knowledge & Education



Contest to establish the „NYCTech Campus“/“Genius School“  
(7 consortia bidding)

City of New York:

- Land-grant & eased procedures
- Plus 100 mio. USD funds for Cornell University/Technion-Institute of Technology (Haifa)
- NYC Tech Venture Capital Fund (150 mio. USD)

Goals :

- 2500 Students  
(70 % increase of full-time S&T-students)
- 280 more faculty in "Connective Media, Healthier Life & the Built Environment."



**The campus is "a dream that we have long held,"**

David J. Skorton, Präsident Cornell University

# Pushing financial frontiers & project economy-practices

These dynamics and financial constraints pose challenges for HEIs to do more with less — to improve their access to people, networks, knowledge & money...

Field	Projects and partnering...
1. Institutional and regulatory settings	<ul style="list-style-type: none"> <li>▪ ...for global academic excellence</li> <li>▪ ...for more excellence</li> <li>▪ ...for using synergies (research organizations &amp; HEIs)</li> <li>▪ ...with peers for professionalization, consistent profiling and more adequate performance parameters</li> <li>▪ ... beyond public and private</li> <li>▪ ...on the basis of new financial solutions (patent-based)</li> </ul>
2. Faculty/Teachers	<ul style="list-style-type: none"> <li>▪ ...for more perspectives for faculty &amp; administrative personnel: New forms of employment &amp; pension plans</li> </ul>
3. Learners/Students	<ul style="list-style-type: none"> <li>▪ ...for more personalization – improving access, equity and quality for more and other (adult) prospective students</li> <li>▪ ...to finance student demand and enable collaborative recruitment practices, improving students' perspectives</li> </ul>
4. "Educational products"	<ul style="list-style-type: none"> <li>▪ ...to enhance the potential of educational processes: Integrated library-, database-, facility-, campus &amp; student-life-cycle-management; mobile, pervasive &amp; distance learning solutions</li> </ul>

# Project-economy approaches of HEI & regions for more development

For regions/cities becoming...	HEIs and regions together could think of...
...more prosperous (economically)	<ul style="list-style-type: none"> <li>▪ ...setting up more local interregional/international projects</li> <li>▪ ...partnering for using synergies of research organizations &amp; HEIs</li> <li>▪ ...consistently profiling their regions with peers from industry</li> <li>▪ ...providing more perspectives with new forms of science-industry collaboration, venturing activities and employment (e.g. MaRS discovery centre Toronto)</li> </ul>
...stronger/more financially resilient	<ul style="list-style-type: none"> <li>▪ ...experimenting with new financial solutions for integrating more different actors leveraging investments &amp; sharing financial burden</li> <li>▪ ...experimenting with new forms of taxation, technology transfer and entrepreneurship schemes</li> </ul>
...smarter	<ul style="list-style-type: none"> <li>▪ ...supporting and professionalizing the development of local governance structures and local decision-making by training (learning journeys)</li> </ul>
...more innovative, explorative	<ul style="list-style-type: none"> <li>▪ ...‘problem-based learning (including research)</li> <li>▪ ...co-developing of new technologies and new applications and solutions in sustained science2business-partnerships</li> </ul>

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# Project-economy approaches of HEI & regions for more development

With challenges ahead, collaboration gains ground...

For regions/cities becoming...	HEIs and regions together start to...
...fairer/more equitable	<ul style="list-style-type: none"> <li>...build up more intellectual capital to counter the scarcity of skilled personnel in innovative fields (like e-mobility, health)</li> <li>...provide more personalization – improving access, equity and quality for more and other (adult) prospective students</li> </ul>
...more attractive	<ul style="list-style-type: none"> <li>intensify networking to profile cities as “higher education cities” making them more attractive (e.g. German National Association for Student Affairs, German association of cities and German Rectors conference)</li> </ul>
...smarter ...more sustainable/greener ..more innovative, explorative	<ul style="list-style-type: none"> <li>...form consortia, develop business models and engage in third-party research and application projects for field testing new mobility solutions integrating lead users (innosumers) and facilitating social acceptance by service learning activities</li> <li>enhance the potential of educational processes with integrated educational products based on the development of electric mobility-solutions and more campus-management (e.g. smart wheels project)</li> </ul>

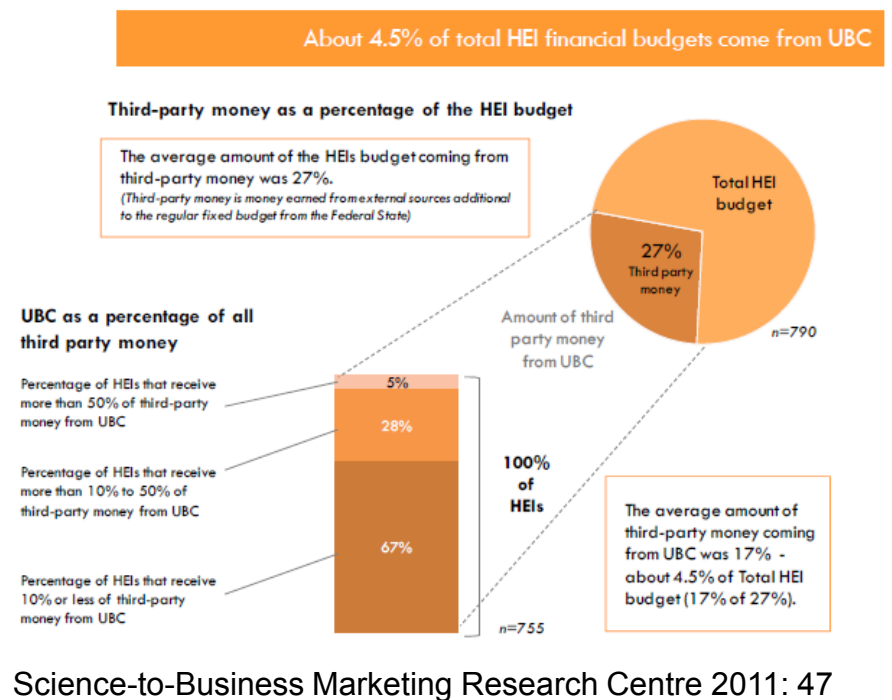
# Science2Business 1.0 – Status Quo



Eight different ways in which HEIs and business cooperate:

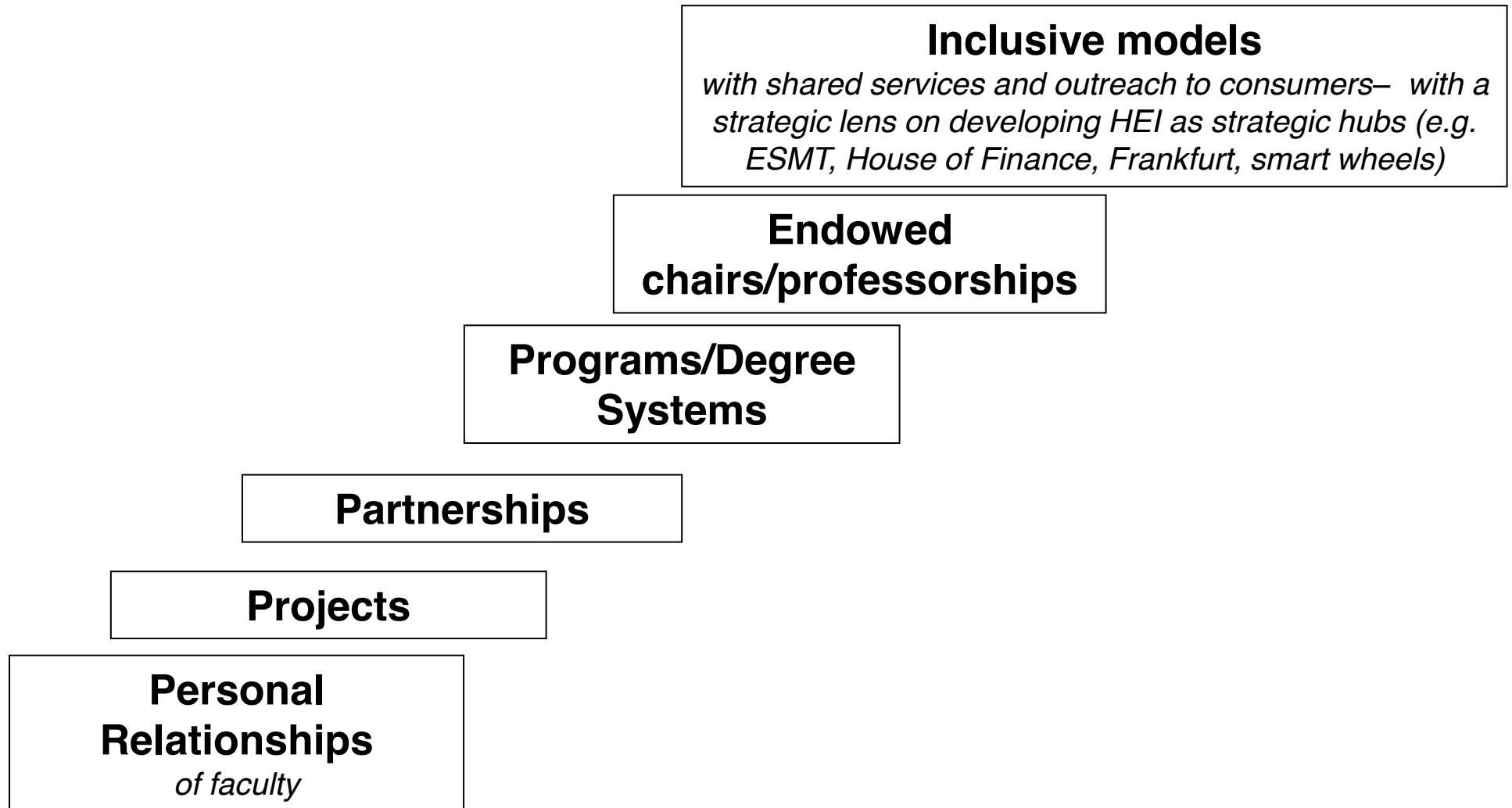
1. Collaboration in research and development (R&D)
2. Mobility of academics
3. Mobility of students
4. Commercialization of R&D results
5. Curriculum development & delivery
6. Lifelong Learning (LLL)
7. Entrepreneurship
8. Governance

(Source: Science-to-Business Marketing Research Centre 2011: 10)



Science-to-Business Marketing Research Centre 2011: 47

# Science2business 2.0 - continuum of project-economy approaches of HEI and industry



# Project-economy approaches of HEI revisited (1)



More structured partnerships & project-economy based endeavors gaining ground

- (Initiated) Mergers (Finland/Ireland,...)
- Public Private Partnerships of research-intensive universities & companies (Deutsche Universität für Weiterbildung – Freie Universität Berlin & Klett)
- Industry-solution oriented Higher Education and research entities for projects and program-oriented research (e.g. Commercial Vehicle Cluster, TU Kaiserslautern)
- „Project Houses“ for facilitating science2business interactions (e.g. KIT – Karlsruhe Institute of Technology)
- „House of...“ System for integrating HEI initiatives in certain knowledge/competency realms (House of Finance, Goethe Universität Frankfurt)
- Public Research Organizations, HEI & industry establishing (industry-specific) academies & new institutional entities (e.g. Fraunhofer Academy for production technologies/manufacturing in the 21st century)

# Project economy - (Technology) platforms with partners- the age of the MOOCs (1)

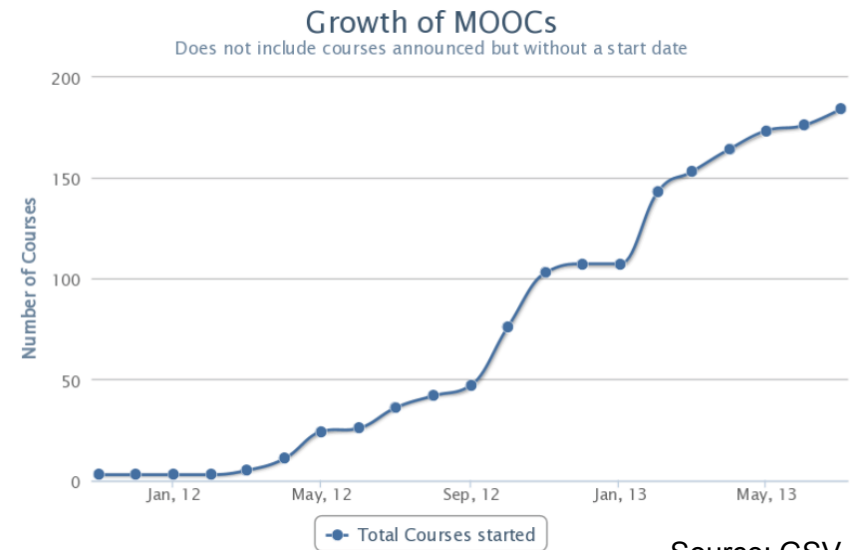


Higher education institutions team up with technology partners (or use their own resources) to build platforms to

...reach out to more people (also laymen) and prospective students

...create more pervasive, 'personalized' educational products (more flexible as regards to location, timing, rhythms of learning)

...with more differentiated pricing



Source: Chronicle of Higher Education

# Project economy - (Technology) platforms with partners- the age of the MOOCs (2)



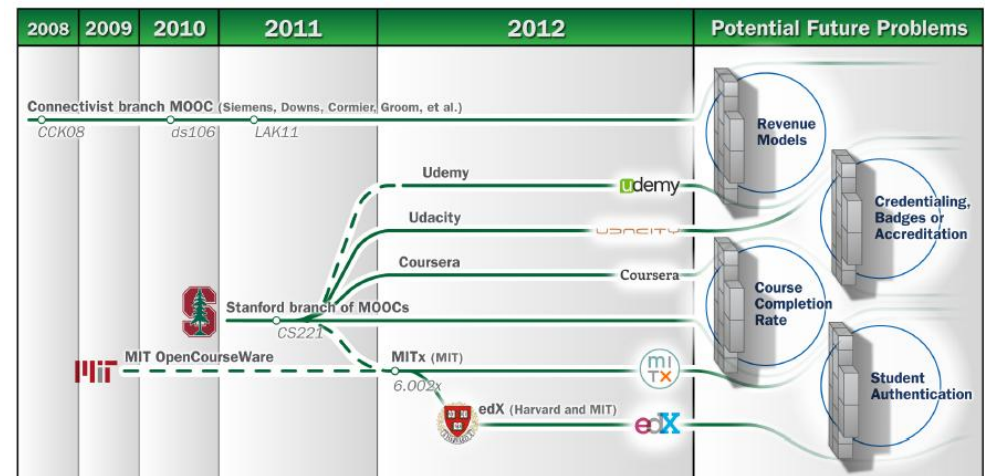
Higher education institutions team up with technology partners (or use their own resources) to build platforms to

...establish new paradigms (more 'open'- education, performance-, learning progress- & plagiarism management)

...to form platform standards for the provision of higher education

...to experiment with & foster new pedagogies to enrich undergraduate, graduate & executive education

...to be able to combine non-profit, not-for-profit and for-profit activities



Source: Chronicle of Higher Education

# Reflections on project-economy approaches for more prosperous regions



- Complementarities of challenges and the definition of goals and time horizons have been important to form `expeditions` of heterogeneous actors: Cities challenged to be more sustainable – economically and ecologically; HEIs challenged to develop new knowledge and curricula; companies anticipating skilled personnel shortages
- Project-economy approaches have been driven by pioneers and peers, companies as promoters and financiers have been important
- The local context, social capital and the embeddedness matters in the project economy are facilitated when peers know each other
- The set-up of consortia for projects, partnerships, platforms and alliances and the ´ definition of legal and operational details as well as the task division within these have been facilitated by peer-effects
- HEIs are mainly in the role of the supplier of knowledge and research-based consulting for other players
- The nature of third-party and project funding for HEIs tends to behold relatively short-term orientations, continuity still lacks in many projects

# Success factors in the upcoming project economy (1)

Partnering and projects can help HEIs to do more with less.

Successful higher education institutions have been...

...providing compelling, tailor-made educational modules and products based on consistent profiling of each HEI.

...establishing standard-breeding forums and communities for continuously improving the quality of modules and certificates.

...granting more access on the basis of models of demand-side education finance combining donations, institutional & knowledge-based project funding.

...managing long-term costs efficiently on the basis of new forms of contracts and partnerships beyond public and private.

...safeguarding efficiency on the basis of modified reporting systems incorporating intellectual property rights.



## Success factors in the upcoming project economy (2)

Partnering and projects can help HEIs to do more with less.

Successful higher education institutions have been also...

...designing and shaping contracting and governance schemes together with regulators and stakeholders

...taking people and individuals as promoters into focus

...managing actively collaborative processes:

Planning and acting with a long-term orientation with a focus on purposes and profitability; starting small and scaling big, while monitoring relevant environments and partners on the basis of adequate parameters.

# Winning strategies for HEI: Knowledge & the 'Power of Projects'



- Setting up more internationally, nationally & regionally integrated explorative development & implementation projects especially for poorer regions, 'megacities' & developing countries.
- More structured partnering, programs and institutional platforms, using synergies of science organizations & higher education institutions.
- Establishing technological platforms for further outreach.
- Building financial platforms and instruments (sustainable social business models).
- Pioneering with new 'knowledge products' for tackling 21<sup>st</sup> century challenges and more international student mobility consistently profiling their peers & regions.
- Supporting & incentivizing pioneers & promoters with new forms of employment & training ('war for academic talent').

# Outlook – Challenges to make regions and HEIs more prosperous

(1)



## Products

- More differentiated “products” – more combinations of tangible goods and intangible products, so-called hybrid products and integrated service solutions of regions and HEIs needed especially when it is about smarter infrastructures

## Paradigms

- More work on paradigms and the standardization of technologies and practices, platforms & applications needed

## Pricing

- More differentiated pricing and gain-sharing arrangements and forms of employment needed

## Persons

- More subtle educational products and courses needed to re- and up-skill more people in coming to grips with innovative solutions; more projects for integrating consumers needed transforming them into “innosumers” who co-create & use services also for conspicuous consumption



Table 9.6. Summary SWOT (strengths, weaknesses, opportunities, threats) analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Strong electronics and automotive sectors based on multinational firms</li> <li>• Some large local firms with international interests have become “active learners”</li> <li>• Large regional export markets, particularly China</li> <li>• Productive agricultural sector</li> <li>• Growing food processing industry</li> <li>• Expanding Thai creative industries</li> <li>• Examples of industrial focus amongst a number of universities</li> </ul>	<ul style="list-style-type: none"> <li>• Inadequate supply of skilled personnel</li> <li>• Low R&amp;D investments</li> <li>• Lack of ICT and Internet services reflecting inadequate digital infrastructure</li> <li>• Weak technological learning</li> <li>• Weak links between foreign and local firms restricts technology transfer and spillovers</li> <li>• Weak university-industry links</li> <li>• Ineffective industrial clusters policy</li> <li>• Disjointed S&amp;T governance and limited success in policy implementation</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• MNEs investing in local R&amp;D including eco-cars</li> <li>• Greater investment by local transnationals in other countries</li> <li>• Opportunity to expand into higher value-added goods and markets, especially in Asia, exploiting proximity of large export markets</li> <li>• Market niches in Thai food and crafts</li> <li>• Growing tourist destination</li> <li>• S&amp;T and industrial parks may allow future clusters and pockets of specialisation to develop</li> </ul>	<ul style="list-style-type: none"> <li>• Competition from Asian countries for FDI</li> <li>• Lack of competition in many sectors</li> <li>• More competition from imports in some markets</li> <li>• Failure to upgrade technological capabilities and move into higher value-added areas</li> <li>• Increasing brain drain</li> <li>• Political instability</li> <li>• Volatility of global financial situation</li> </ul>

Source: OECD 2013

# Outlook – Challenges to make regions and HEIs more prosperous (2)



## Pioneers and promoters

- More support and new forms of employment and institutional schemes needed for pioneers and promoters/entrepreneurs in HEIs and regional settings

## Projects/Partnerships/ Peers/Partners and Platforms

- Many more explorative development & implementation projects needed
- More structured partnerships with more heterogeneous partners and peers from industry needed
- Management of multi-project setting, programs, partnerships and platforms, also in modified forms of sustained collaboration (alliances, joint ventures...) needed
- Platforms and other forms of institutionalization needed — not always centres **IN** the HEI, but structures with an own business model and sound structures for managing projects providing a platform (institutional platform, finance, contacts, centres e.g. MaRS)

## Processes

- More continuous processes with follow-up projects and sustained impetus needed
- More open processes, more integration of other communities needed
- More accountability measures and efficiency considerations needed in processes

## Purposes/Parameters/Performance (Indication/measurement)

- Non-profit, not-for-profit, for-profit activities need to be increasingly mixed to diversify revenue streams in regional project settings
- More structured service learning activities needed

Thank you for your attention!  
Looking forward to your remarks and questions!

Further questions:  
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