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Knowledge Intensive Entrepreneurship

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**Business value of academic research
outcomes: towards a multi-dimensional
approach**

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Presentation

- Value of academic research: knowledge, publication reputation and
- 1st , 2nd and 3rd mission of the university
- Mode 1, mode 2
- Valuation of research in a relational context
- Multi-dimensional valuation: gross business value
- Method
- Q & A



Value of academic research

- Humboldtian university
- Pure knowledge,
- Publications after peer review
- Reputation



Entrepreneurial University

- 1st : Research
- 2nd: Teaching
- 3rd: Creating societal value
- From mode 1 to mode 2
- Research funds are becoming less attainable without a societal paragraph or partner
- Valuation of research in a relational context, collaborating with firms
- RQ: How to assess and create value out of research?



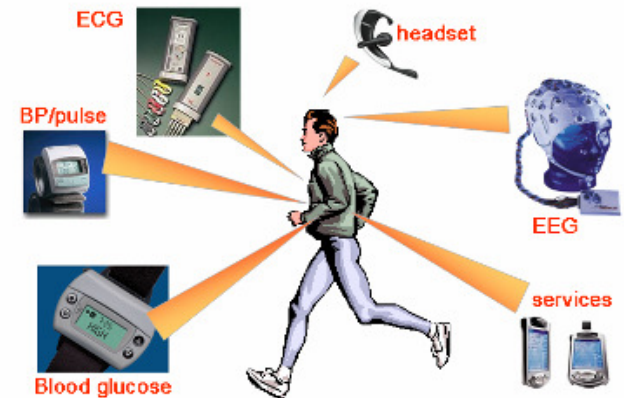
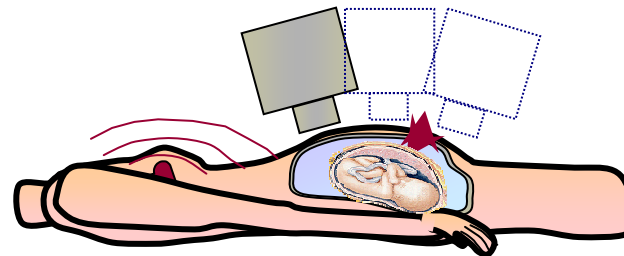
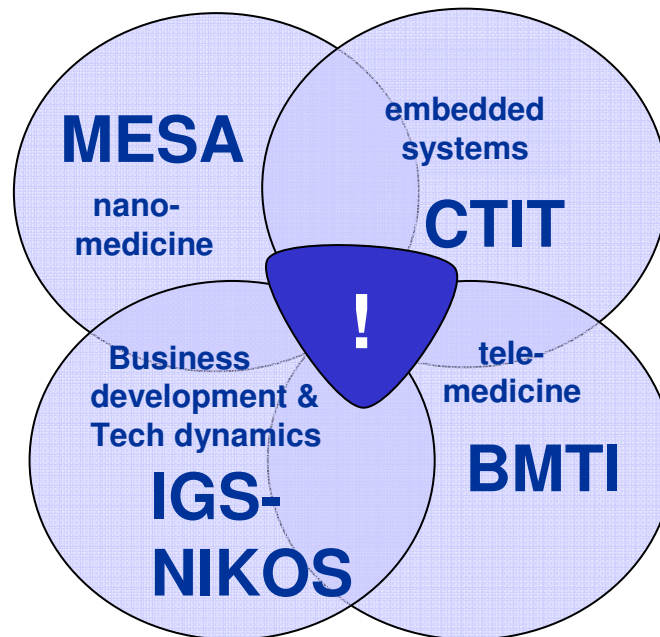
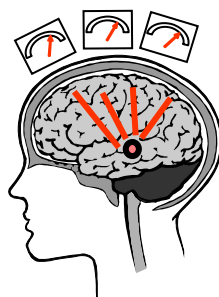
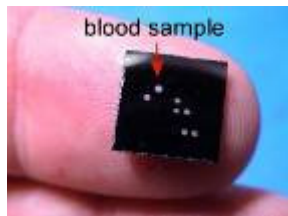
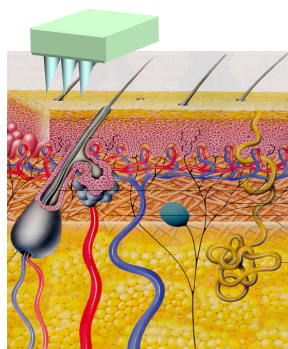
Current views on research value

- Monetary:
 - Cost based versus market based
 - Income based versus option based
 - Transaction based versus relation based
- Knowledge type:
 - Fundamental → proof of principle e.g. nanostructures
 - Demonstrator → prototyping a principle e.g. glass lab on chip
 - Integrator → combining principles e.g. bloodsugar sensor
 - Applied product development → PMC e.g. certified sensor



Nano, IT, Biomedtech and entrepreneurship research: From fundamental to multidisciplinary work

Healthcare@UT



Current views on research value

- Network view:
 - researcher as a lone cowboy
 - Teamwork in and between universities and knowledge institutes
 - Collaborative research between universities and industry (research programs)
- Strategy type:
 - Humboldt
 - Entrepreneurial
 - defending or creating firm
 - short term (project) or long term (program)
 - tech transfer one direction or interaction?



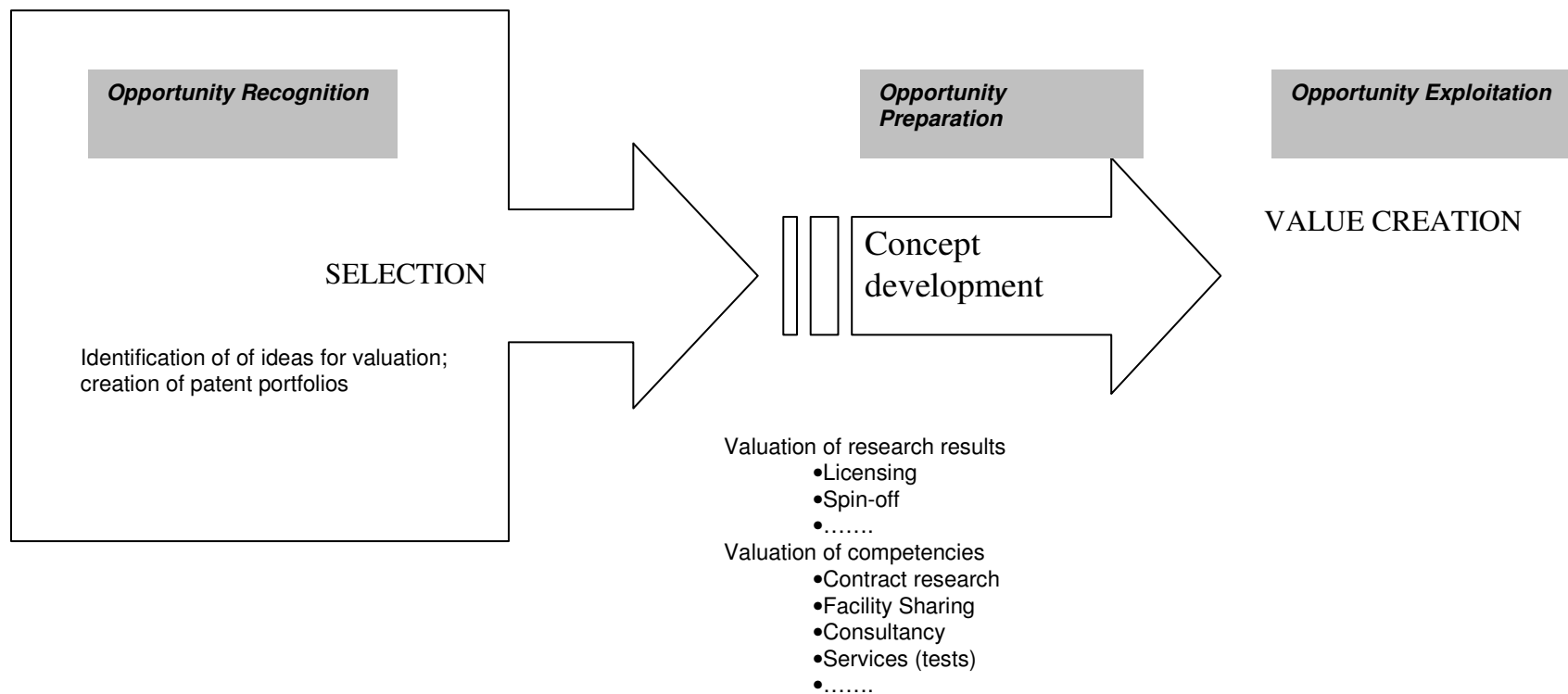
Research Value Creating Process

- The research value chain
- Technology Transfer
- Towards the entrepreneurial process of Value Creation

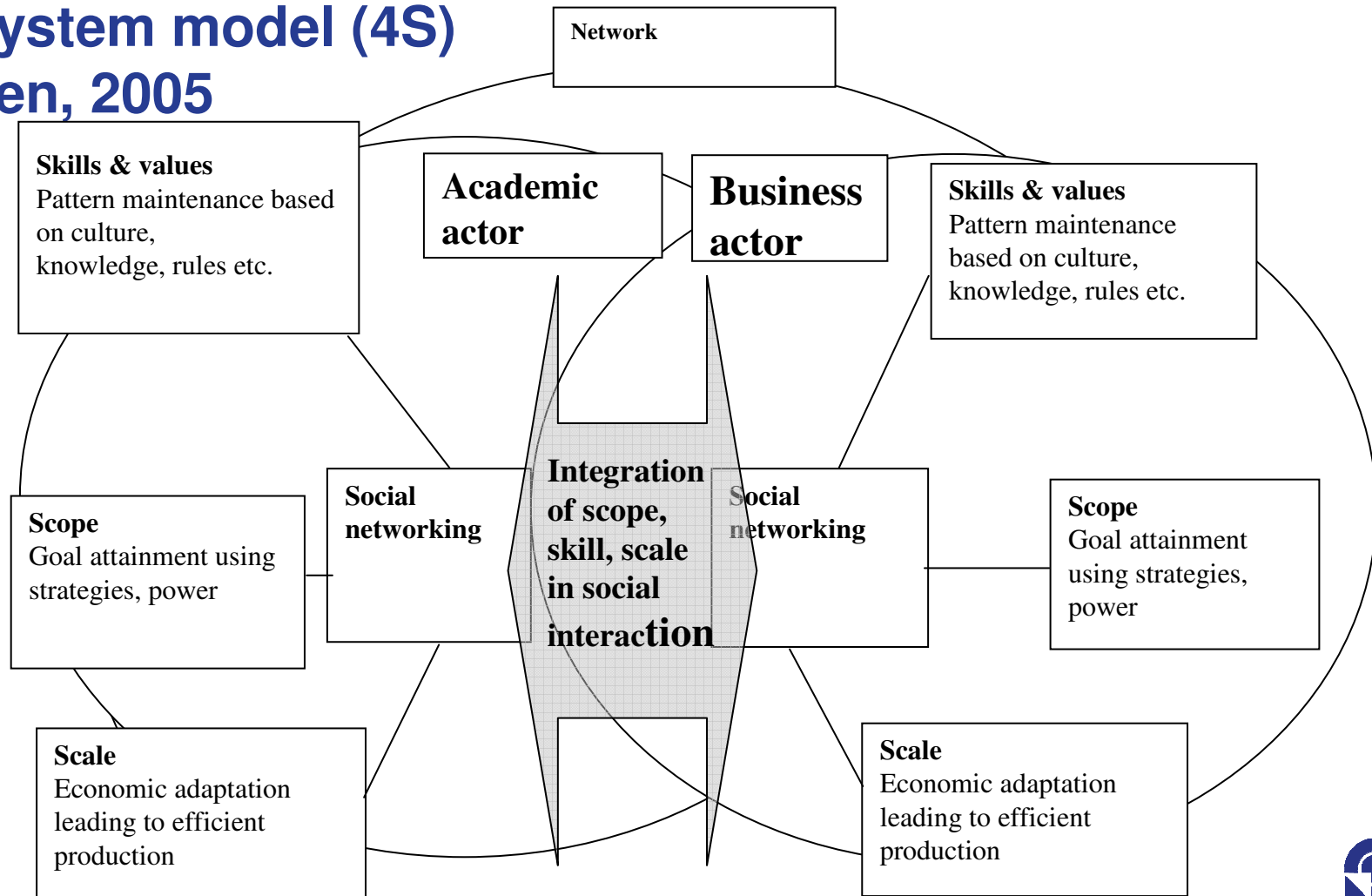
- Academic inventor seeking economic value of his/her research outcome



Figure 1: A stepwise research valuation process



Social system model (4S) a.o. Groen, 2005



4S Dimensions of Entrepreneurial Networking

Dimension	Relates to	Capital	Resources	Some interventions
Scope	Strategic goals	Strategic capital	Power, authority, influence, strategic intent	<ul style="list-style-type: none"> ■ Using power ■ Redefining strategy
Scale	Economic optimisation	Economic capital	Money	<ul style="list-style-type: none"> ■ Using financial incentives ■ Cutting costs
Skill & value	Institutions and pattern maintenance	Cultural/human capital	Values, organisation, knowledge, skills, experience, technology	<ul style="list-style-type: none"> ■ Training & education ■ Team building ■ Organisational systems ■ New technology
Social network	Interaction pattern/process	Social capital	Contacts (multiplex, filling structural holes, cohesive, equivalent)	<ul style="list-style-type: none"> ■ Relation management ■ Changing network structure ■ Using brokers ■ Supply chain management

4 capitals of research for firm

strategic → value added to strategic position of applicant

cultural → value added to knowledge position of applicant

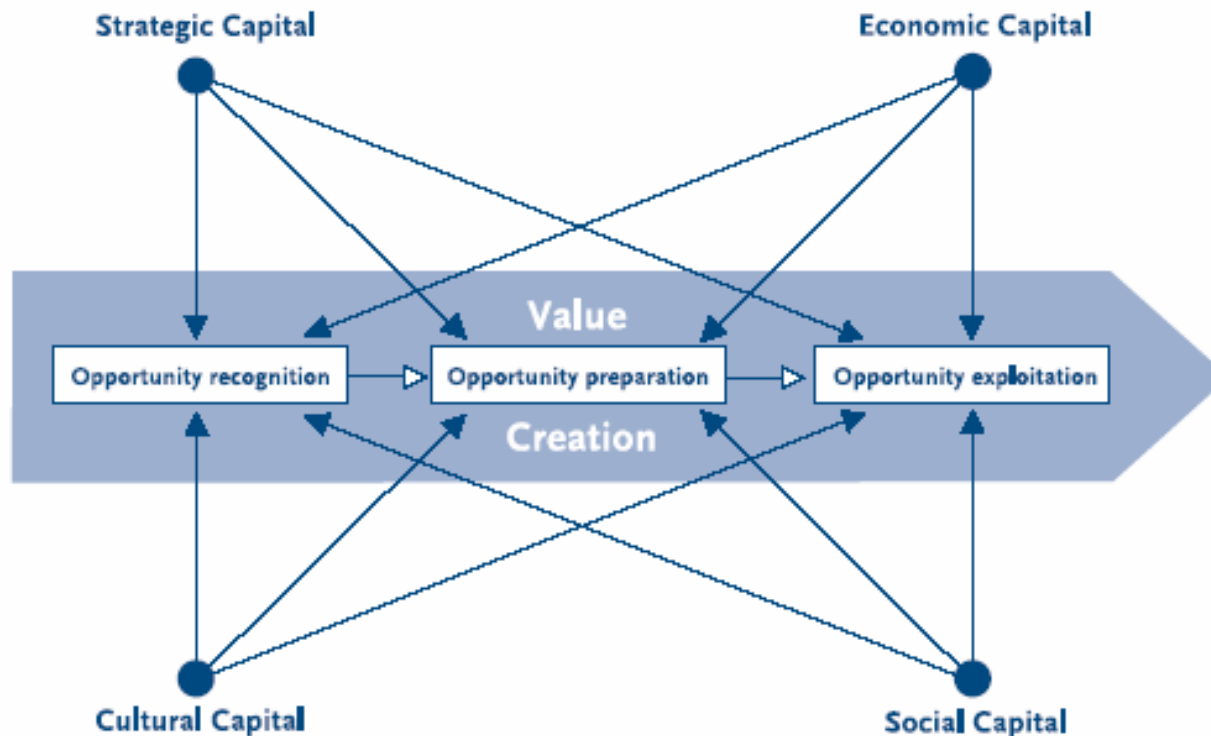
economic → value added to cost reduction or turnover of applicant


Social → value added to network position of applicant

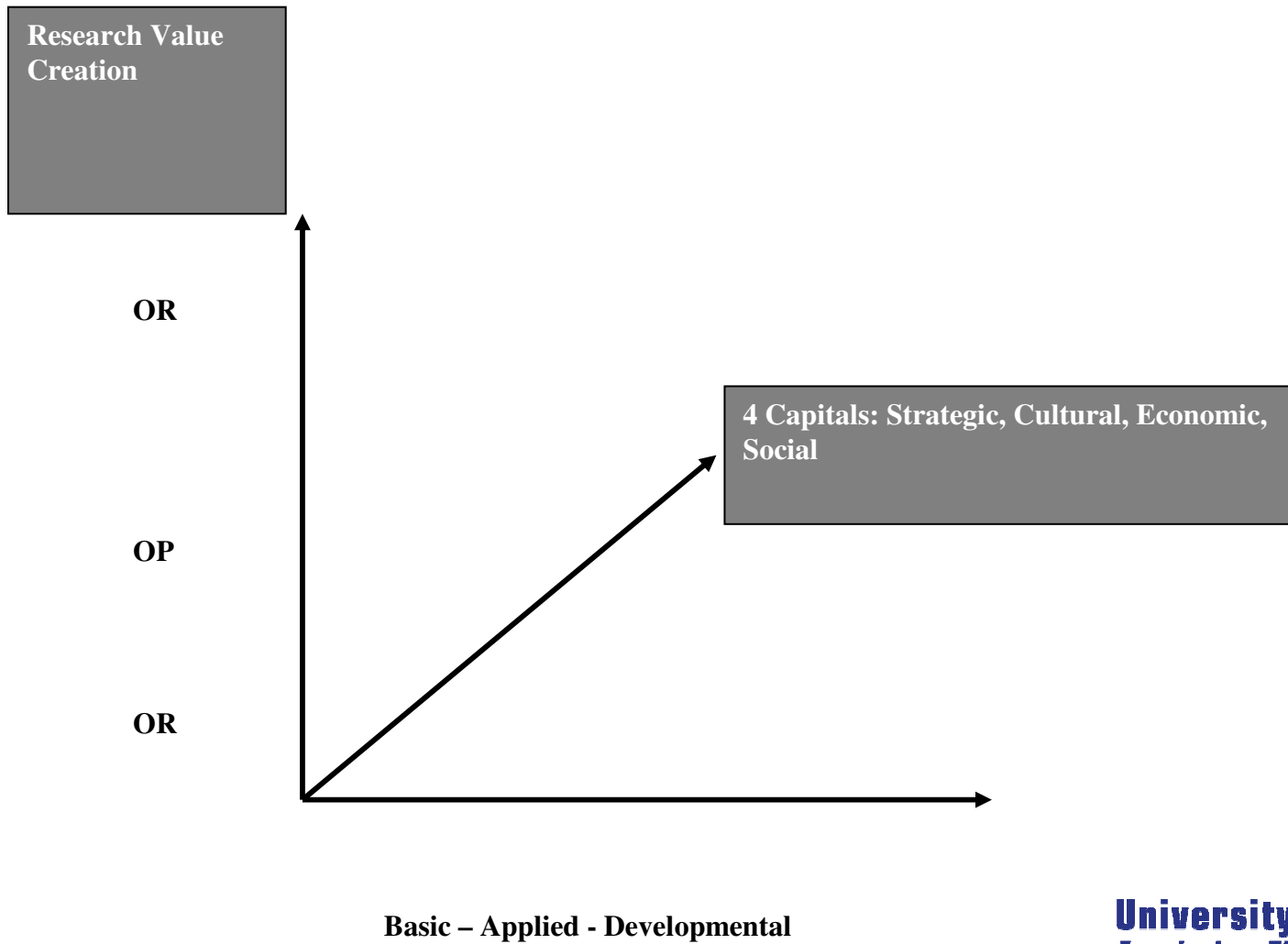


Social system based process model of Entrepreneurship

Research
as input



		Basic	Applied	Development
<p>Research Value Creation Process</p> 	Opportunity Recognition	<i>Publication or Patent? (C)</i> <i>Inventors' reward (C, E)</i> <i>Scientific Peer Review(C, N)</i> <i>Academic culture(C)</i>	<i>Patent Position/Patent Portfolio Creation(C)</i> <i>Inventors Reward (C, E)</i> <i>Business Concept (S)</i>	<i>Active Scouting of technologies with market potential (S, N)</i> <i>Market-based and product-based technological development (S, C)</i>
	Opportunity Preparation	<i>Positioning of invention within the technology-market value chain (S)</i> <i>Identification of co-development partner (S, N)</i> <i>Grant application (E)</i>	<i>Demolab feasibility study(C)</i> <i>Business model(S)</i> <i>Market data (C, N)</i> <i>Product-Market-Combinations (S)</i>	<i>Spin-offs formation (S)</i> <i>Entrepreneurship (C)</i> <i>Investors, Venture Capitalists (E)</i>
	Opportunity Exploitation	<i>Creation of technological concept (C)</i> <i>Scientific and industrial networks (N)</i> <i>External communication (science, society, education) (C, N)</i>	<i>Commercial network (N)</i> <i>Business Development Process (S)</i> <i>Financial valuation of Technology (E)</i> <i>Research collaborations with industry (grant application) (E, N)</i> <i>Licensing scenario's (S)</i>	<i>Incubator (laboratoria, offices, administration, Science Park, Business Park) (C)</i> <i>Production, commercialization and Management (S)</i>



Conclusion

- The traditional Ivory tower university is changing into an interactive society oriented knowledge institute
- Value creation is becoming more important for the universities
- Viewing this as a systemic process adds to existing literature and to management practices in university-industry interaction
- Gross business value of research is a function of economic, strategic, cultural and social capital and can be assessed in the three dimensional model of type of research, types of capital in an entrepreneurial process .
- Cases are under construction so
- Further research is needed to build instruments to design entrepreneurial value creation processes which fit in university-industry networks

