



Innovationsräume der konnektiven Universität: Von der Kooperation zur Kokreation an den Hochschulen der 4. Generation

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Konferenz *Zukunft Lernwelt Hochschule*
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1. Neues Verständnis von Innovation
2. Triple/ Quadruple Helix: Vom Wandel der Akteure - Die “konnektive” Universität
3. Interaktion in Innovationssystemen: Von der Kooperation zur Ko-kreation
4. Innovationsräume – Herz der Innovationskulturen

Datengrundlage: EUA-Studie zur *Role of Universities in Regional Innovation Ecosystems* (März 2019)

Fokus:

- Interaktion zwischen Universitäten und Partnerinstitutionen in regionalen Innovationssystemen, über institutionelle, sektorielle und disziplinäre Grenzen
- Transformation der Rollen der Triple Helix Akteure: Universitäten, staatliche Akteure, Unternehmen, neue Betonung auf “quadruple helix” inkl. Nutzer, Bürger*innen, Studierende
- Multi-dimensionale Konnektivität: Leadership, kulturelle Identitäten & Narrative, Strategieentwicklung, Organisationsformen und Infrastrukturen – Innovationskulturen

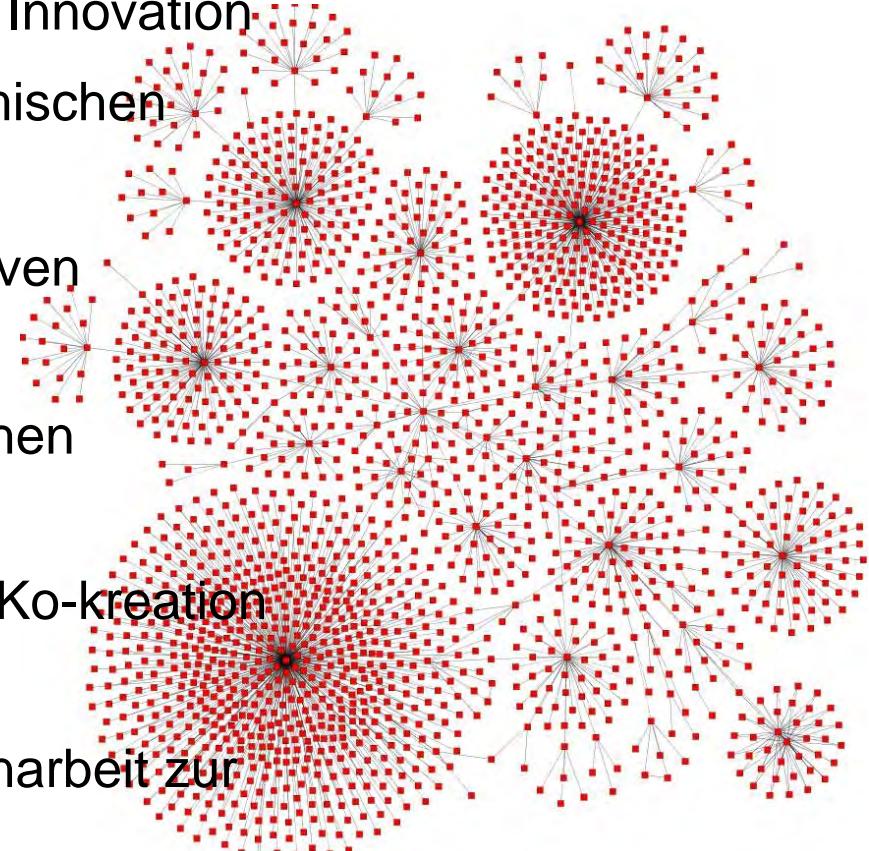
Methodologie:

- Qualitative Studie : 9 Fallstudien in sehr unterschiedlichen EU Regionen mit steigenden Innovationsindikatoren (Eur. Reg. Competitiveness Index)
- 9 x 3-Tages Site visits à 15-17 Interviews (Universitätsleitungen, Professor*innen mit Koordinationsaufgaben in F&L, Studierende, KMUs, große Unternehmen, staatliche Akteure, NGOs, VCs



1. Neues Innovationsverständnis & Praxis

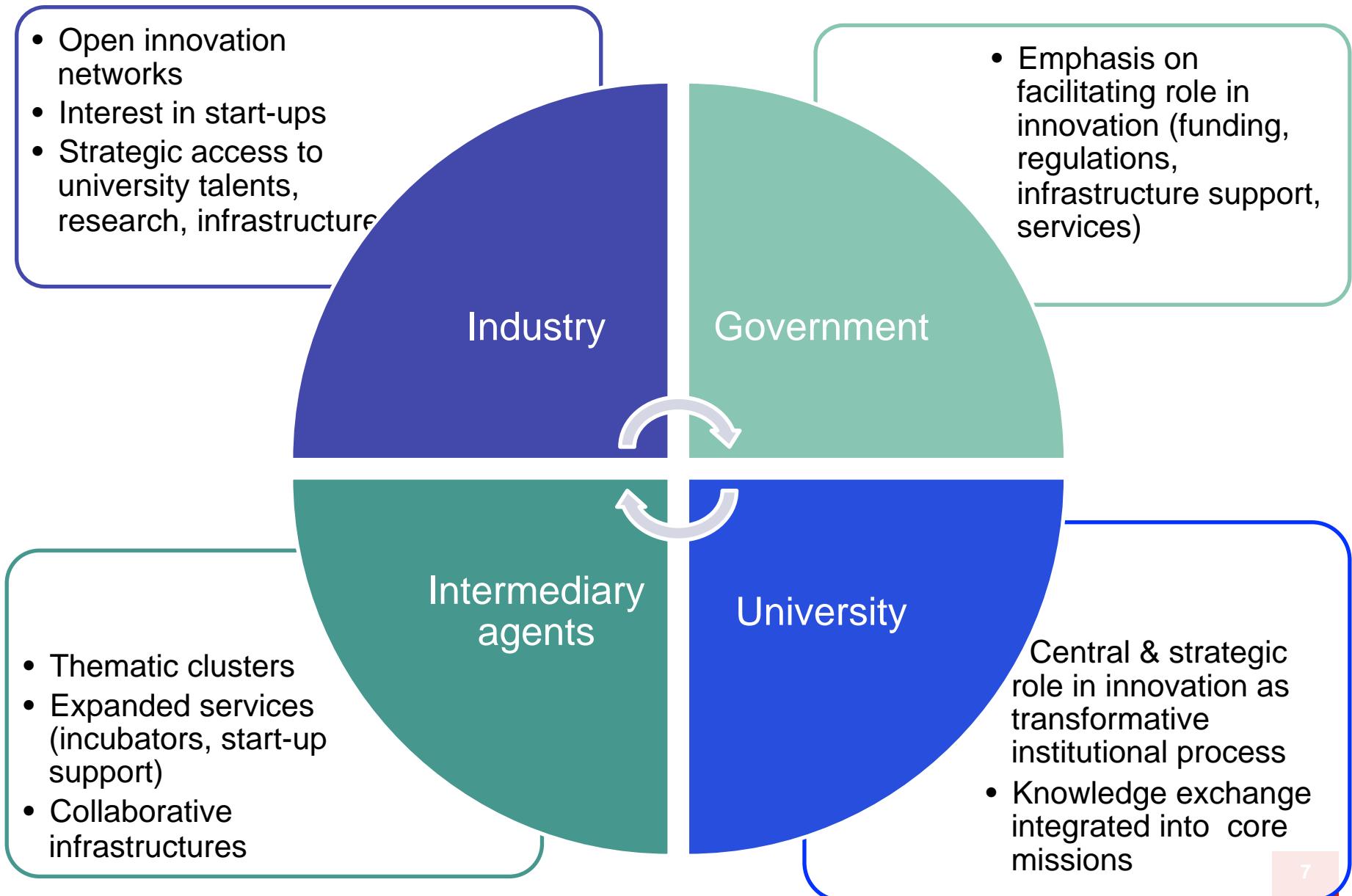
1. Von der linearen zur reiterativen Innovation
2. Von der geschlossenen zur offenen Innovation
3. Von der technologischen zur systemischen
“challenge-driven” Innovation
4. Von der individuellen zur kollaborativen
interdisziplinären Innovation
5. Von der spontanen zur systematischen
Innovation
6. Vom Transfer, über Austausch, zur Ko-kreation
in Innovationsräumen
7. Von der projektbasierten Zusammenarbeit zur
Teilhabe an einer gemeinsamen
Innovationskultur



Treiber der Konnektivität

1. Radikale Transformationen - Digitalisierung, Globalisierung, Klimawandel – globale gesellschaftliche Herausforderungen → Bedarf an systemischen Multi-Akteur-basierte Lösungen
2. Zunehmend “hybride” Forschungs- & Innovationsprozesse: “disruptive” Innovation/ wissenschaftliche Durchbrüche an Schnittstellen zwischen Disziplinen / Akteurperspektiven → Open Innovation Netzwerke
3. Betonung der Wissensökonomie im Europa nach der Krise - Wertschöpfung am höchsten in wissensintensiven Sektoren mit dichter Konnektivität zwischen Universität & Industrie, staatlichen Akteuren
4. Wachsender Anteil anwendungsorientierter Forschungsförderung
5. Beschleunigte Innovationszyklen → Betonung von Unternehmensagilität , Anpassungsfähigkeit der Universität in Netzwerkbildung, Nachwuchsförderung – Quelle der „talent pipeline“
6. Regionales strategisches Bewusstsein und Analyse /Prioritätensetzung / Abstimmung regionaler Akteure (Smart Specialisation)
7. Kulturwandel durch neue Generation: suchen gesellschaftlichen Impact, kollaborative Lösungen, Präsenz im virtuell geprägten Raum

2. Wandel der Triple Helix-Akteure



III. Wandel der Rollen: Innovation als Kernaufgabe der Universitäten



2. Innovation wird zum zentralen Auftrag der Universitäten: Reformen in der Lehre

Hochschulbildung
Lernerzentriert:
Problem-
lösungskompetenz,
Selbstorganisation,
Teamfähigkeit,
unternehmerisches
Denken

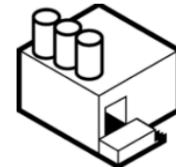
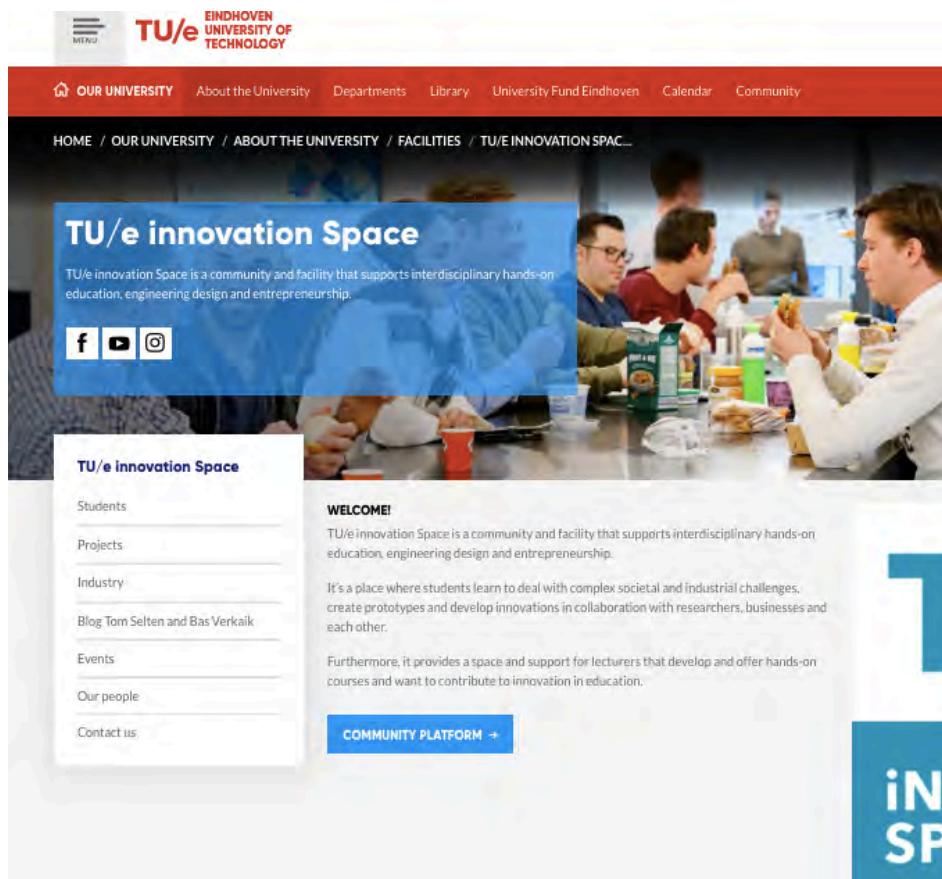
- Fähigkeit in interdisziplinären Teams zu arbeiten
- Projekt-basiertes Lernen
- Lehre als Coaching
- Forschungsprojekte
- “Challenges” als neues Format zur Förderung von Selbst-Organisation und selbstständigem Lernen
- Betonung unternehmerischer Haltungen und Gründerkultur
- “Professors of practice” tragen real-life Fallstudien als Lernerfahrung bei
- Mentoren aus dem Berufsleben
- Integrierte Praktika

2. Wandel der Akteure: Innovationskompetenzen als Motor und Abbild der Lehr- und Lernreformen

Table 2 Learning and teaching: needs, responses and framework conditions

New needs and concerns related to universities' role in innovation	Institutional responses of universities	Necessary framework conditions
<p>Qualitative aims:</p> <ul style="list-style-type: none"> • Prepare for disruptive innovation • Promote systemic understanding and competences • Create game-changers • Extend students research-related competences • Promote digital skills • Foster entrepreneurial mind-set and skills 	<p>Teaching reforms:</p> <ul style="list-style-type: none"> • Extend interdisciplinary, project-based learning • Support student self-organisation • Improve teaching innovation services • Extend mentoring, including by external stakeholders • Provide entrepreneurial modules, as extra offer or integrated into curriculum. • Develop digital skills modules • Encourage and support start-ups 	<p>Regulatory:</p> <ul style="list-style-type: none"> • Sufficient academic autonomy of universities for introducing new study programmes and design their content • Sufficient academic autonomy of universities for the selection of students to study programmes <p>Financial:</p> <ul style="list-style-type: none"> • Sustainable funding for low student/staff-ratios to allow for project-based learning, orientation in diverse learning paths, and mentoring

Neue Lernräume:
Aalto Design Factory
TU/e Challenge Projects
Manchester Univ. Stellify
TUMentrepreneurship
education/ StarTUM



WHAT IS DF

Aalto Design Factory (ADF) is an interdisciplinary product design and learning hub uniting students, teachers, researchers, and industry. We aim to build a new kind of passion-based learning culture for Aalto University. You are welcome to join us!



2. Innovation als zentrale Aufgabe der Universitäten - Forschung



- Neue Formate: strategische Partnerschaften, weniger Auftragsforschung, langfristige Entwicklung neuer Technologien, mit Rahmenvereinbarungen, gemeinsamen Infrastrukturen, Laboren, Instituten
- Spannung oder win-win zwischen erkenntnisorientierter Forschung und Nutzer-orientierter angewandter Forschung?
- Forschungsexzellenz hilft langfristiger Zusammenarbeit mit Großunternehmen – KMU interessiert an kurzfristigeren Lösungen
- Unabhängige, öffentliche erkenntnisgetriebene Haltung = Grundlage für Rolle / Autorität als Orchestrator von Netzwerken

Innovationsräume in der Forschung

New needs and concerns related to universities' role in innovation	Institutional responses of universities	Necessary framework conditions
<p>Produce relevant knowledge:</p> <ul style="list-style-type: none"> • Short-term: concrete solutions to current innovation problems • Long term: scanning horizon of scientific, technological and user developments • Co-creating knowledge by connecting different actors to address common innovation challenge in knowledge-intensive areas 	<ul style="list-style-type: none"> • Support curiosity-driven research with long-term perspectives • Adapt hiring policy to combine research excellence and impact criteria • Strategic partnerships with few companies, organisations, including foresight function • Contracted research for specific solutions • Research support and business facilitation service as contact point for businesses • Promote interdisciplinary networks • Create and moderate thematic clusters bringing together diverse disciplines and institutions 	<p>Regulatory:</p> <ul style="list-style-type: none"> • Sufficient organisational and academic autonomy of universities to allow for flexible, strong interdisciplinary units <p>Financial:</p> <ul style="list-style-type: none"> • Support curiosity-driven research with sufficient core funding • Support schemes for university-business collaboration • Provide medium-term competitive grants for thematic cluster development
<p>Access to research infrastructures:</p> <ul style="list-style-type: none"> • Sharing expensive large state-of-the-art infrastructures • Access to technical facilities and equipment with technical support staff 	<ul style="list-style-type: none"> • Strategic investment in large research infrastructures, also as public-private partnerships • Provide long-term technical staff for infrastructures • Establish co-creation spaces and access to research facilities for externals 	<p>Financial:</p> <ul style="list-style-type: none"> • Provide sufficient institutional core funding for infrastructural investment, maintenance, technical staff • Provide special competitive funds for large-scale research infrastructures

Strategische Zusammenarbeit zwischen Universitäten und Unternehmen als Grundlage gemeinsamer Forschungsräume

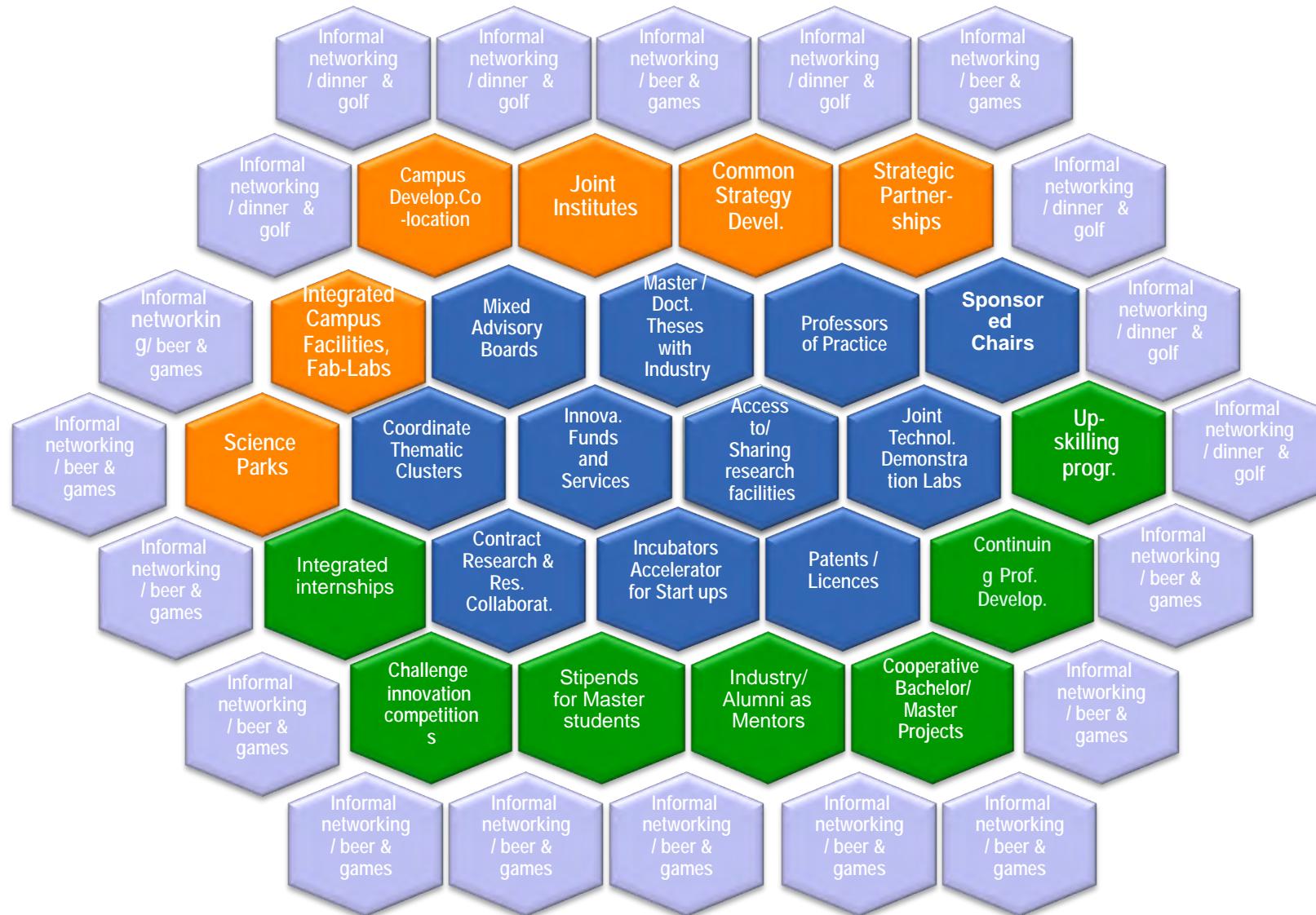
Cooperation instrument/ Interaction format	Function for businesses, universities, students
Joint Institutes or Labs	<ul style="list-style-type: none">• helps address long-term challenges which are of mutual interest to academia and industry• helps support state-of-the-art infrastructure and thereby enhances international competitiveness• co-funding (companies/public funds) alleviates public budget pressures
Long-term framework agreements for university-company collaboration	<ul style="list-style-type: none">• lowers transaction costs for individual cooperation projects• creates transparency and reliability with respect to IP arrangements, preventing mistrust• helps justify long-term research infrastructure investments for companies and universities
Strategic partnerships	<ul style="list-style-type: none">• helps companies address long-term ambitions by giving them access to scientific and technological frontiers• scan future technologies, problems and opportunities which may require early positioning• helps universities develop long-term research directions with high demand from external stakeholders

3. Innovation als zentrale Aufgabe: Vom Wissenstransfer zur Ko-kreation



- Knowledge Exchange not add-on but integrated into teaching and research programmes
- TTOs expanded, but not as central to strategic agenda
- Increased emphasis on start-up support and entrepreneurial culture
- Business facilitation and research networks more central
- Joint thematic clusters = bridges between curiosity-driven research & application
- Infrastructures (start-up hubs, fablabs, maker spaces) as collaborative spaces for multi-actor innovation

Gesamt-Portfolio der Wissensaustausch-Formate für Gemeinsame Regionale Entwicklung



3. Triple Helix Strukturen der Kokreation

Connective Structures & Infrastructures	University role / contribution	Business role/contribution	Government contribution
University Research Centers with Impact Mission / Inter-face Research Centers	<p>University research with international visibility attracts national and international funds and talent to the region.</p> <p>Provide researchers and facilities for applied research and prototype development</p>	<p>Companies and public external stakeholders adopt research in their development and cooperate to meet challenges together</p> <p>Funding and expertise for IP and commercialisation</p>	<p>Competitive funding to meet societal/ economic challenges</p> <p>Adapting regulations to meet challenges</p> <p>Co-Funding for Centers</p>
Joint Labs or Industry Labs on Campus	<p>Research expertise</p> <p>Global research partners</p> <p>Researchers (master students, PhD, postdocs)</p> <p>Tech transfer services</p>	<p>Funding for PhDs</p> <p>Funding for research infrastructures</p> <p>IP and prototyping services</p> <p>Venture capital for start-ups/ inventions</p>	<p>Infrastructure</p> <p>Building permit</p> <p>PPP regulations</p> <p>Special framework contract for PPP accounting</p>
Joint Campuses, Science Parks	Openness to external partners, PPP, in research and education to create dynamic campus environments	<p>Infrastructural Investments</p> <p>PPPs with long term perspective</p>	<p>Urban planning and zoning laws allowing mixed use</p> <p>Infrastructural investments</p> <p>Coordinating ESI Funds</p> <p>Lobbying for European and national funds</p>

Quadruple Helix Kokreationsnetzwerk: Challenge-getriebene Innovation



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City as Living Lab, Service Facilitator, Funding Agency and Lobbyist

NEW IDEAS FOR A
**DYNAMIC
CITY >**



**University as Research Hub, Technology Foresight, Network Facilitator,
Talent Provider, State-of-the-Art Research Infrastructure, TechTransfer**

WELCOME TO
CARNET

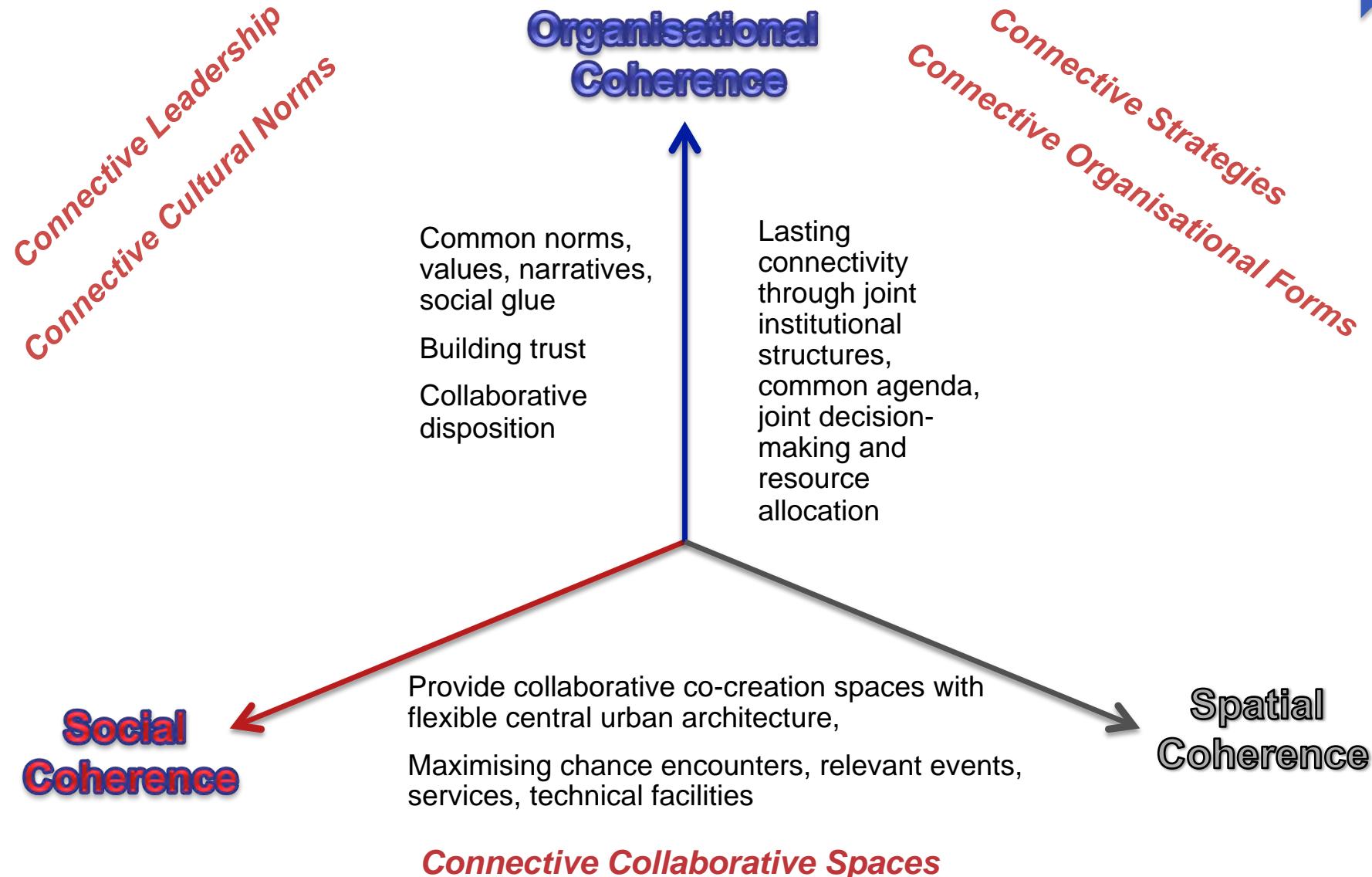


The **Cooperative Automotive Research Network**, initiated by SEAT, Volkswagen Group Research and the Universitat Politècnica de Catalunya (UPC), is an open hub for industrial and academic partners from the areas of automotive and mobility research & innovation. CARNET is located in Barcelona, and works through project-based collaboration. It focuses on innovation and solutions that close the gap between academic research and industrial innovation in urban mobility.

VW Re
VW Electronic Research
USA



Quadruple Helix Cooperation in Regional Innovation Systems creates three-dimensional coherence and builds a common innovation culture



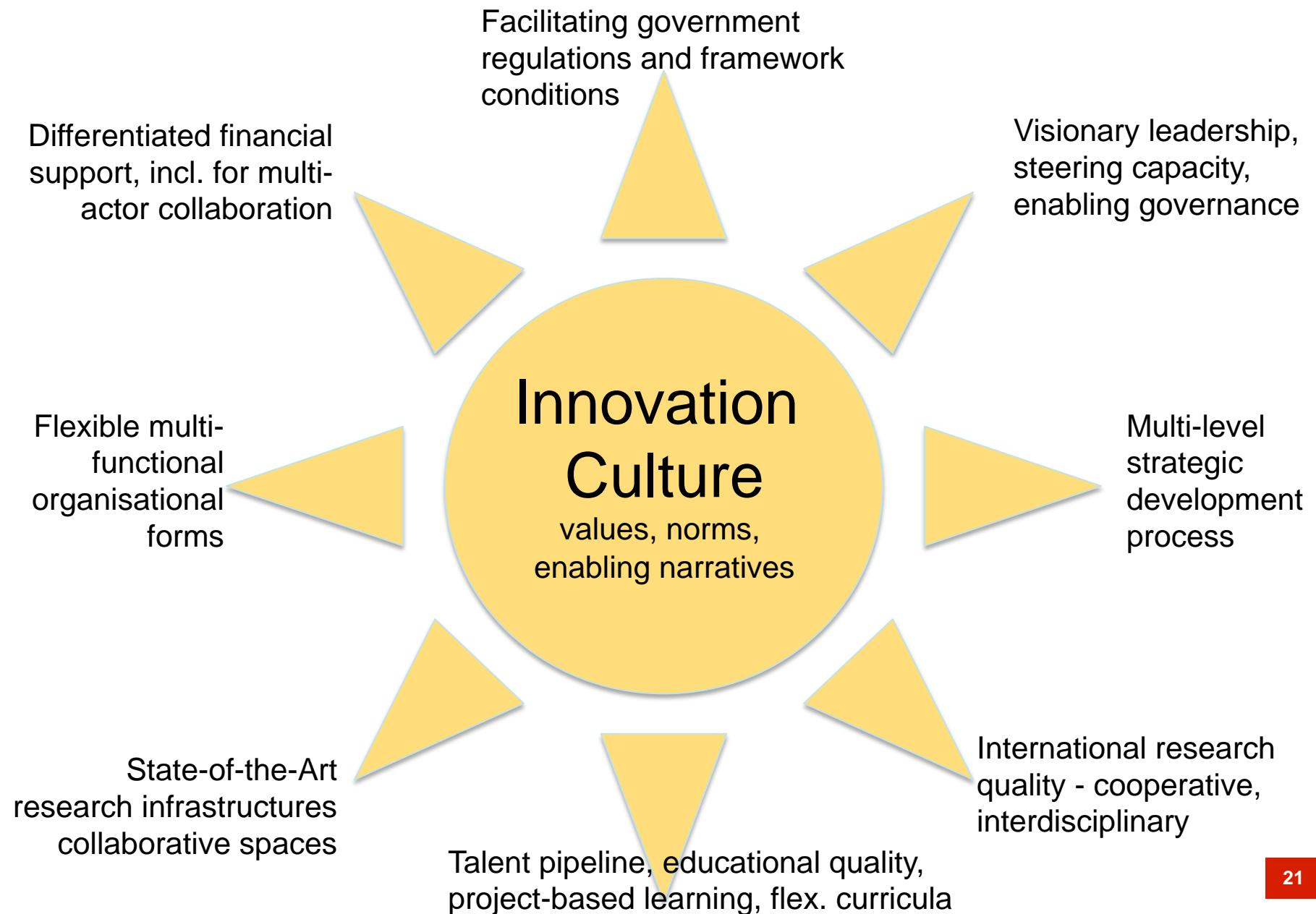
university's new centrality = orchestrating multi-actor innovation networks

4. Innovationsräume als Herz der Innovationskultur



Example: Slush.org in Helsinki, Aalto University

Erfolgsfaktoren von Innovationssystemen/ -räumen



EUA STUDY

The Role of Universities in Regional Innovation Ecosystems

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