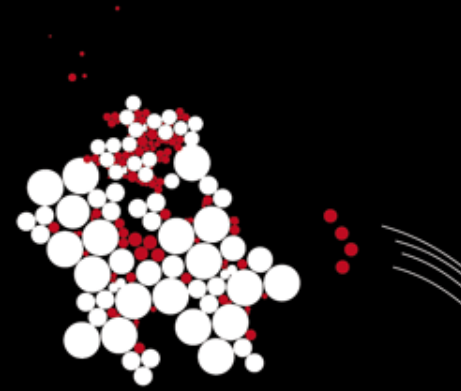


UNIVERSITY OF TWENTE.



## Social System approach of Innovation & Entrepreneurship: Case University of Twente

prof.dr. Aard J. Groen

School of Management & Governance

IGS Institute for Innovation and Governance Studies



*High Tech, Human Touch @*

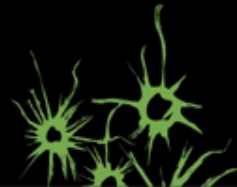
The *ENTREPRENEURIAL* UNIVERSITY

**NIKOS**

NETHERLANDS  
INSTITUTE FOR  
KNOWLEDGE  
INTENSIVE  
ENTREPRENEURSHIP

**IGS**

Institute for Innovation and Governance Studies



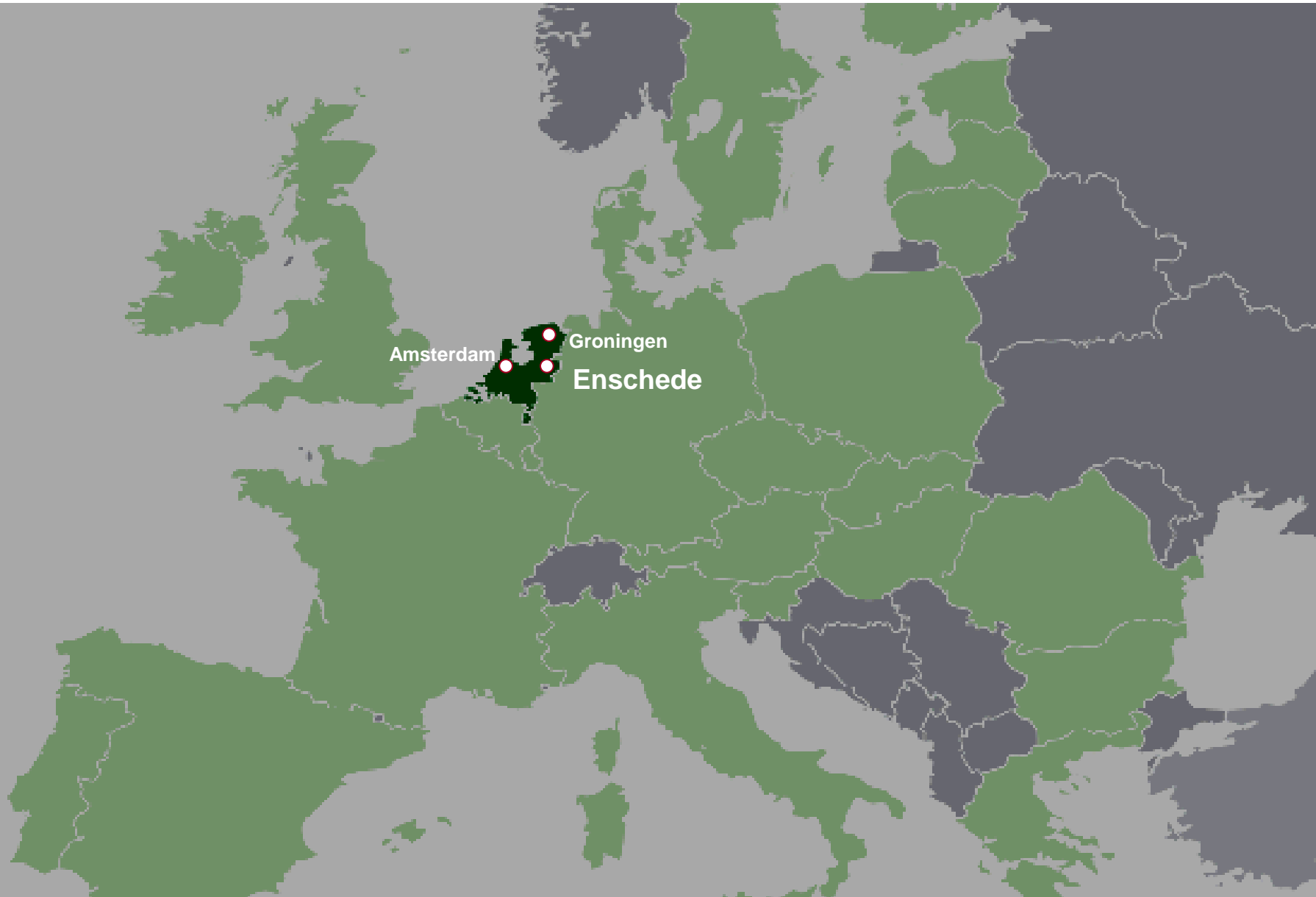


## Prof. Dr. Aard J. Groen Professor of Innovative Entrepreneurship

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- Full professor of Innovative Entrepreneurship, major interest are market oriented entrepreneurship in networks with technological core element of competitive advantage, support systems of entrepreneurship, innovation and business development in existing companies (including corporate entrepreneurship/venturing)
- Department chair business administration (2012>) /director NIKOS (2001>) @ School of Management & Governance
- Leader research group Innovation & Entrepreneurship @ IGS Institute for Innovation and Governance Studies
- Associate editor Technovation Journal for technology entrepreneurship and innovation management. (Impact factor 2.995, 2010)
- Project leader Venture Lab Twente
- Activity lead Entrepreneurship support system EIT-ICT-Labs
- Contact: [a.j.groen@utwente.nl](mailto:a.j.groen@utwente.nl)

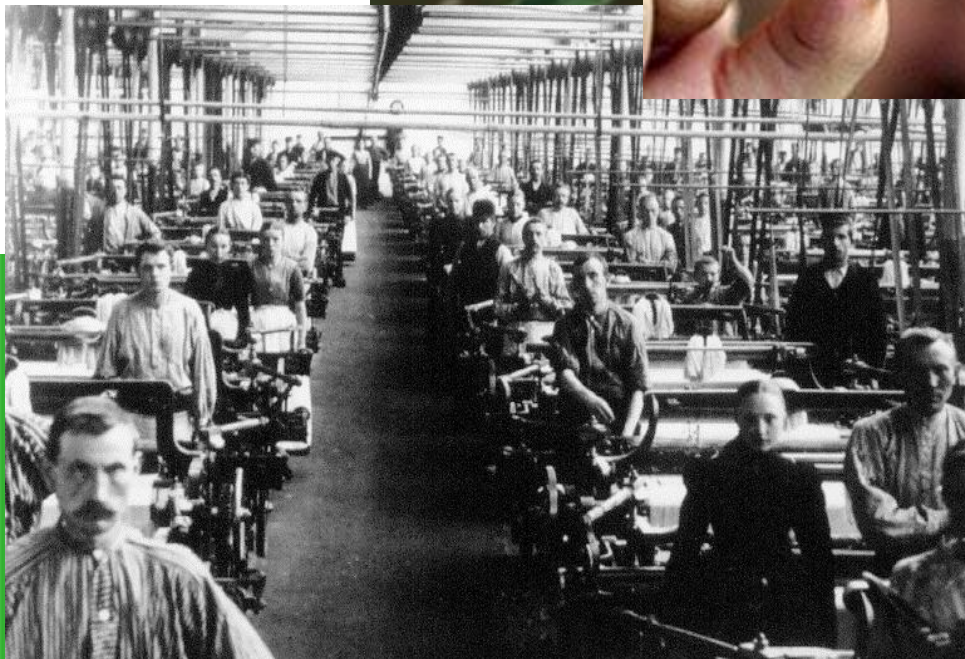
# GEOGRAFICAL LOCATION OF UNIVERSITY OF TWENTE REGION TWENTE, CITY ENSCHEDE



# Twente shifts from Textile industry to high tech industry



**BOOKING.COM**



## UNIVERSITY OF TWENTE

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- Founded in 1961 as the **youngest** of 3 Dutch Technical Universities
- **Both** technical and social sciences
- Compensation for loss of textile industry in the **Twente region**
- **Entrepreneurial** university:
  - 700+ spin-off companies
  - >7000 jobs created



# Kennispark Twente creating value of new academic knowledge in a network by supporting talent & technology in a regional perspective

NIKOS



## Vision on entrepreneurial universities

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- Engaged scholarship
- Combining research, teaching & societal orientation
- Building on entrepreneurial values:
  - Innovative
  - Creative
  - Risk taking propensity
  - Network orientation
- Creating Value on basis of excellent research and using or attracting entrepreneurial talent in a supportive eco-system

## Research approach combined with practice orientation

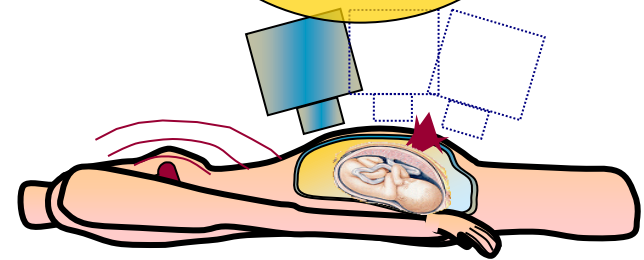
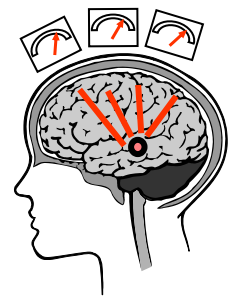
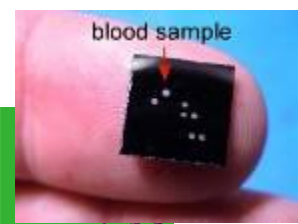
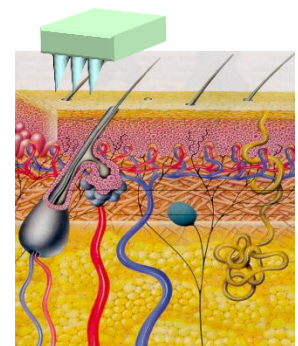
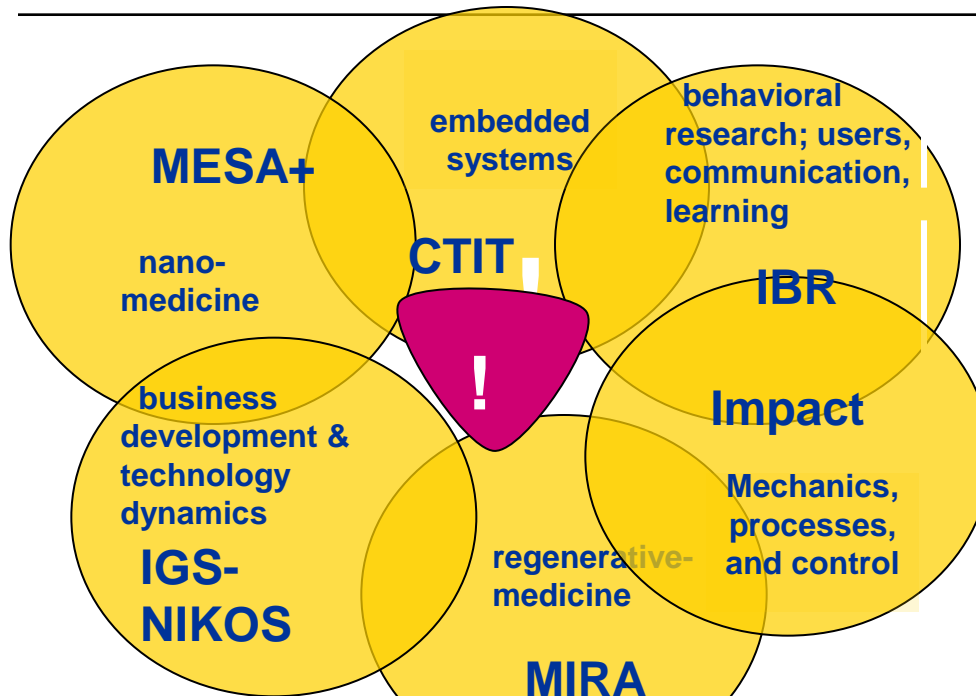
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- Engaged Scholarship (Andrew Van de Ven, 2008)
- Combining excellent fundamental research with applied orientation
- Quasi-experimental research: theory guided design of support instruments
- Practice oriented implementation: entrepreneurs will join a business development facility
- Longitudinal measurement of processes
- Measurement instruments which are practical usefull  
e.g. diary for preparing coach meetings

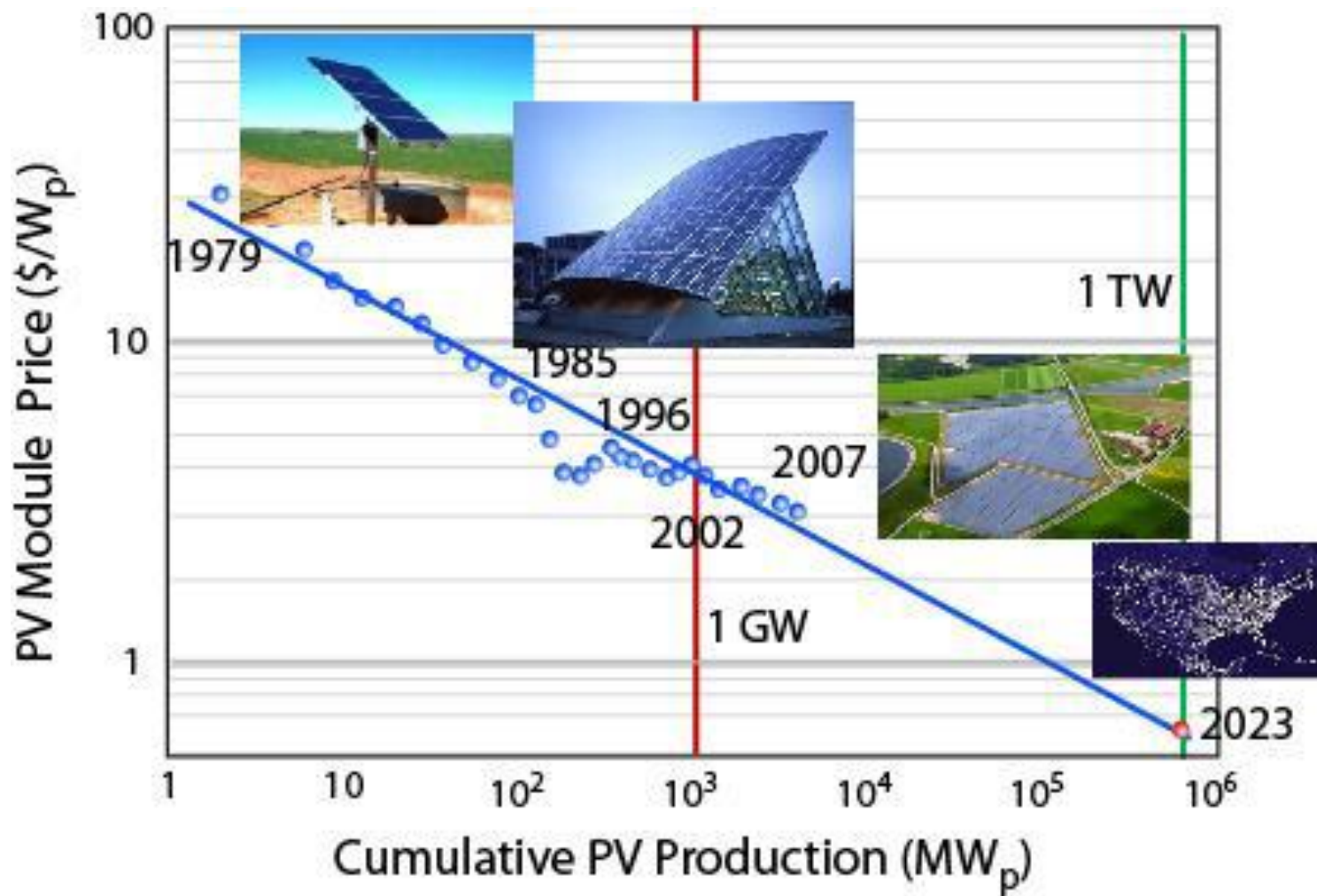


## Multiple options due to technological developments

Healthcare@UT



# Law of Moore also in solar energy:



## Energy efficiency

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- Sustainable energy forms
- Trend from large scale to point of use
- Smart grid
- 0 energy house
- From carbon fuel to hydrogen and/or electricity

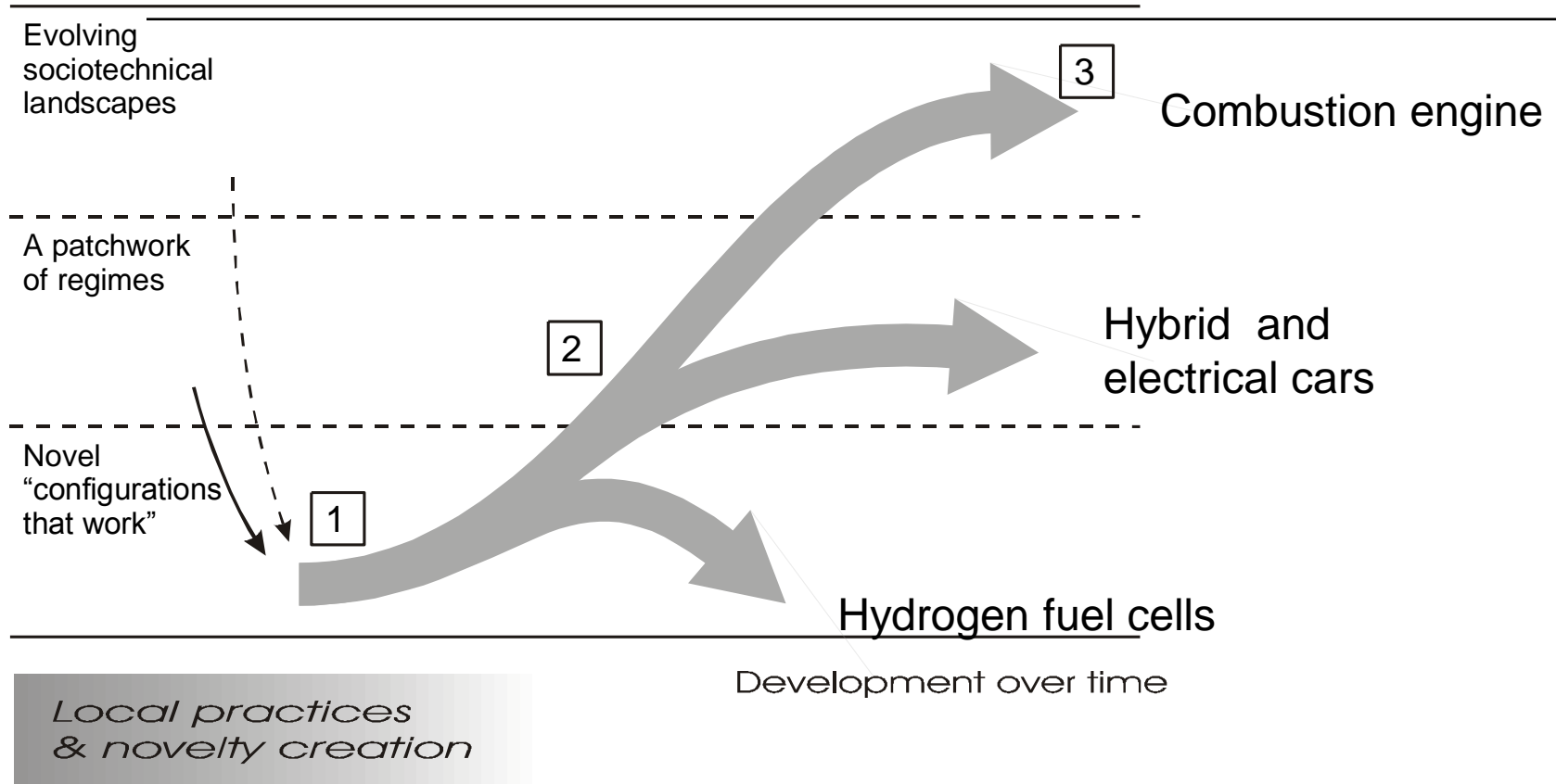
## Water

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- Purification by membranes
- Hydrophobic filters
- Large purification to place of use purification

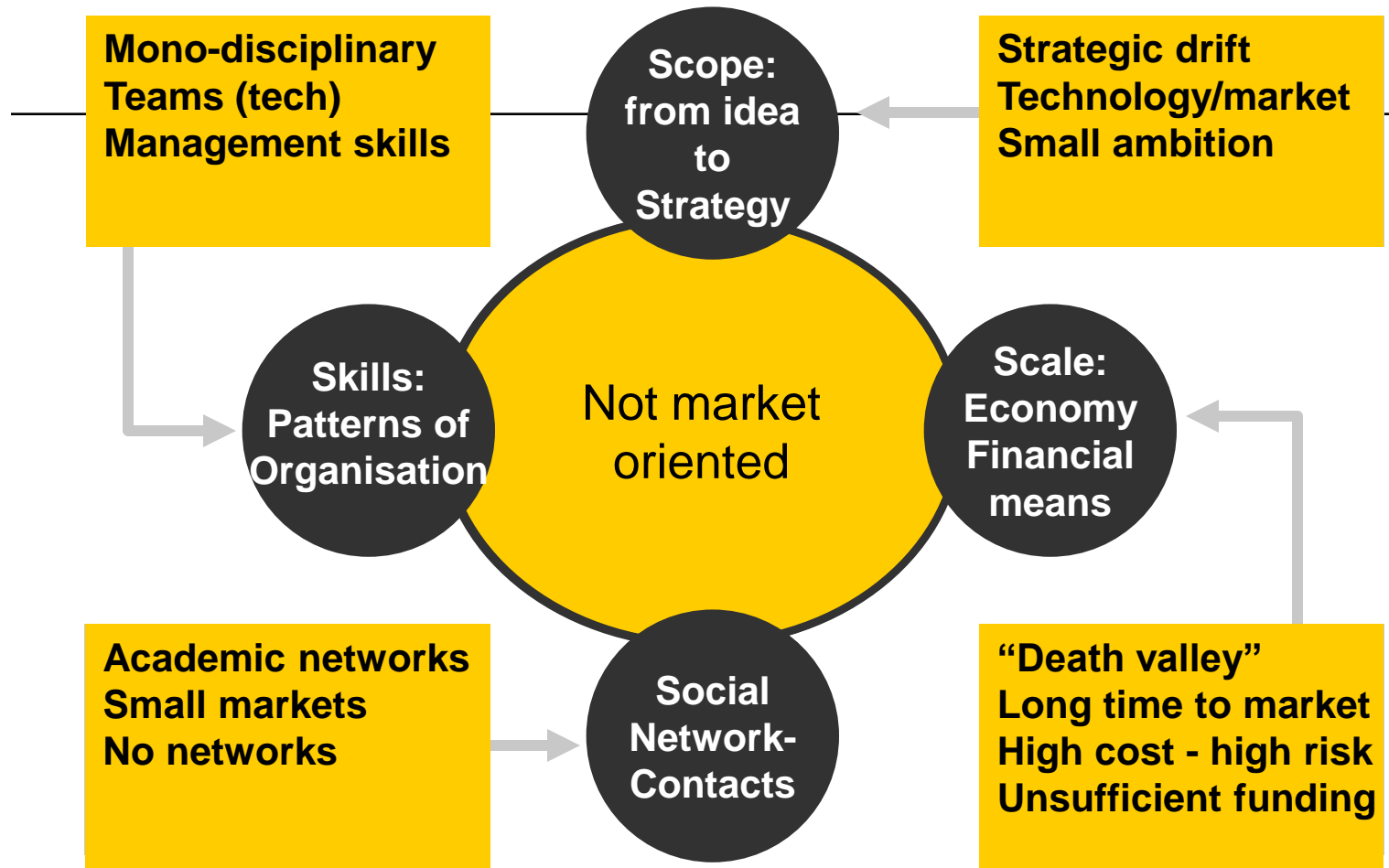


# Technology dynamics: Incremental changes to Schumpeterian creative destruction



- [1] Novelty, shaped by existing regime
- [2] Evolves, is taken up, may modify regime
- [3] Landscape is transformed

# Why tech companies often underperform



Theory based on social system theory and entrepreneurship lit. (a.o. Groen c.s., 2005, 2008, 2009)



**VentureLab Twente**  
main hypothesis: supporting four crucial  
functions of entrepreneurial system will  
improve growth rate

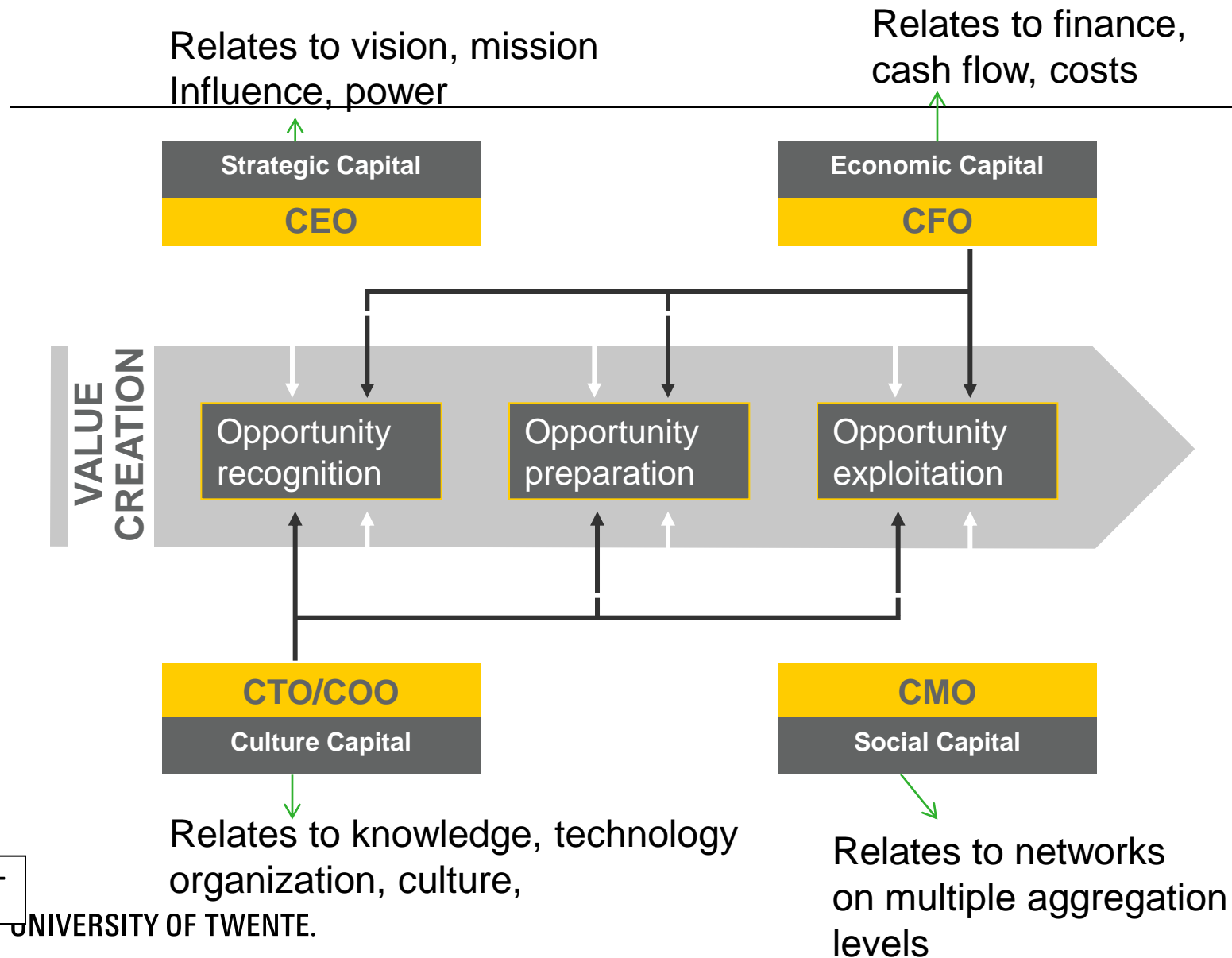
VENTURELAB  
TWENTE



This project is made possible by contributions of the European Union and the Province of Overijssel

# Social system approach of Entrepreneurship: Key success factors for value creation on firm level

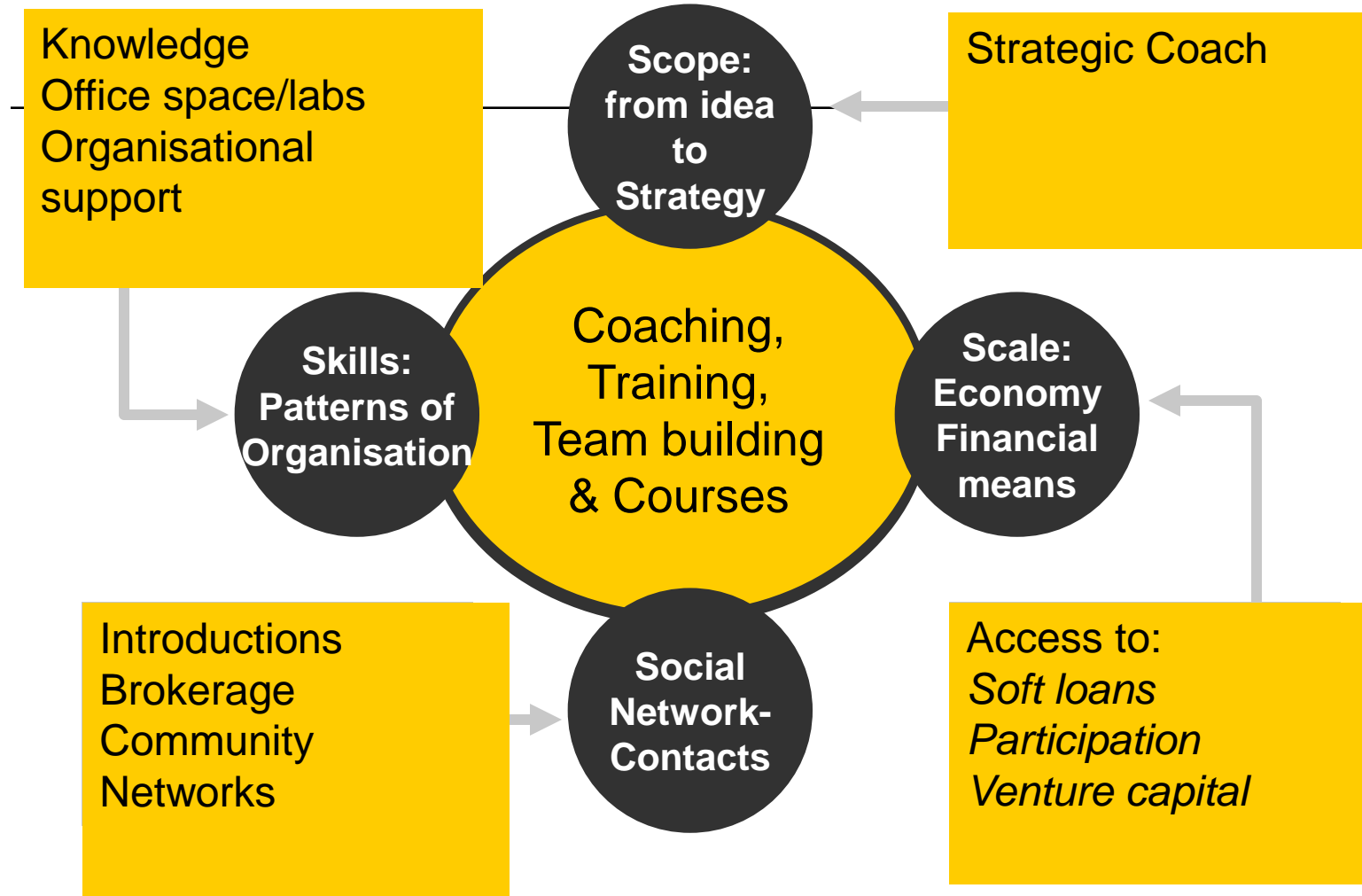
NIKOS



VLT CONCEPT

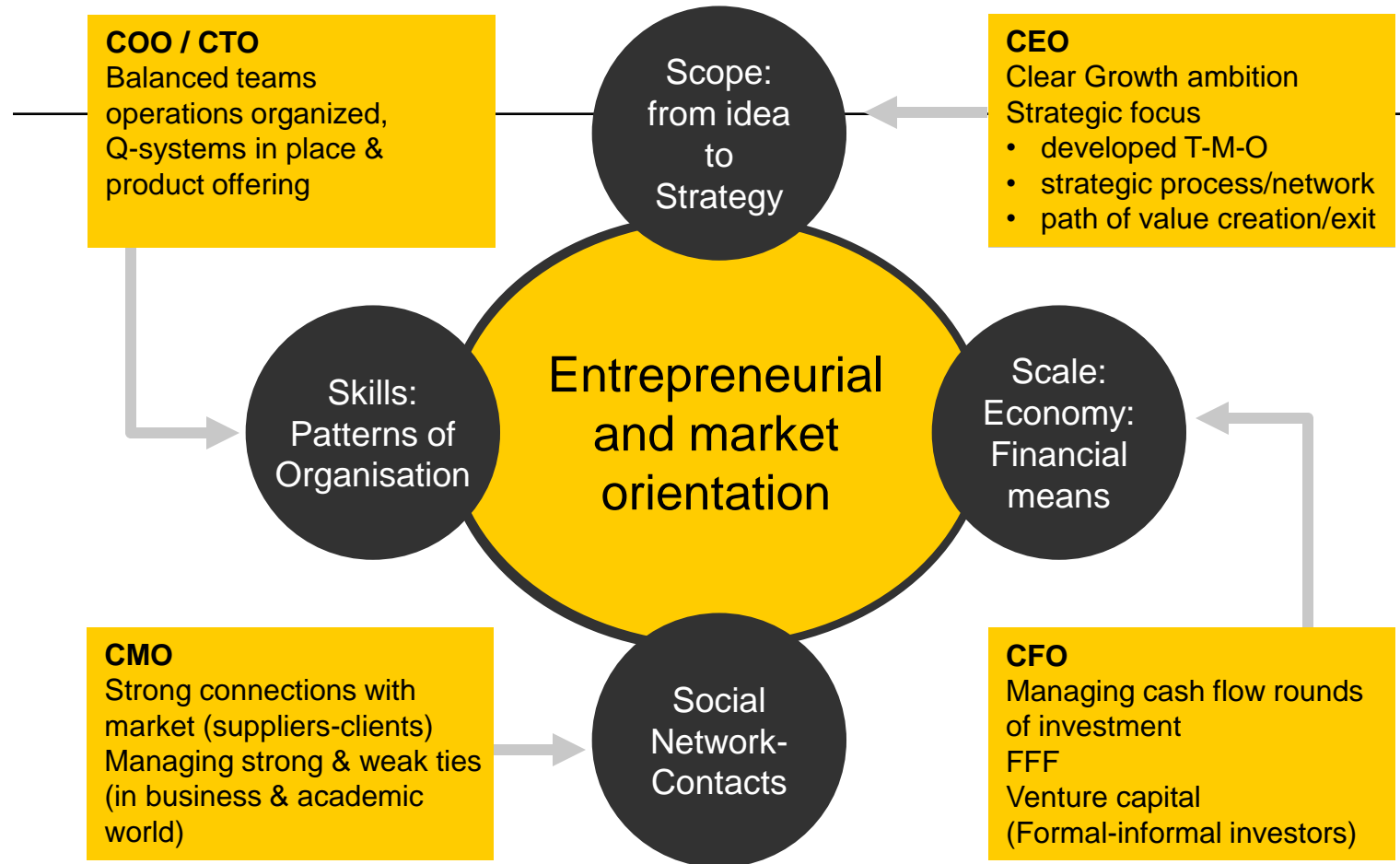
UNIVERSITY OF TWENTE.

## VLT instruments for success





# Characteristics of VentureLab Twente Ventures



# Proof of concept

Group 1: May 2009

Group 2: October 2009

Group 3: January 2010 -

Group 4: April 2010

Group 5: September 2010

Group 6: November 2010

Group 7: February 2011

Group 8: May 2011

Group 9: October 2011

Group 10: January 2012

210 entrepreneurs from new and existing firms

Top trainer Jim Anderson  
Kellogs business school

Proof of  
concept





## Different technologies

- Synthetic seeds
- Solar energy
- Insulation/Cooling
- Simultaneous multi-language translations
- Aviation and Bio fuel
- 3-D printing
- E-commerce (internet platforms)
- Remote sensing/measurement
- Energy information systems
- Identity management
- Smart materials
- Laser technology
- Rontgen diffraction
- Water treatment
- Battery technology
- Meat recovery
- Tracking & Tracing
- Climate systems
- Drug delivery system
- Social media
- Machine maintenance
- High Tech detectors
- Video mapping





## UT-Entrepreneurship Support Structure: Innovation Lab Twente now known as “Kennispark”

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- Decentralised into research institutes, accelerators
- Specialised business development support from NIKOS and Kennispark staff
- IP- program
- Market-academy connection via accelerators (business developers) in the research institutes
- Utility sharing
- Venture capital network
- UT-strategy, focus on spearheads of research (converging technologies: Nano-IT-biomed)
- At least 10-15% of academic staff involved in leading the entrepreneurial activities

## Support throughout enterprise genesis process

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**Idea generation**

**Concept  
development**

**Organisation development**

**Entrepreneurship  
Network**

**Accelerator  
Incubator**

**Venture capital &  
financing**

**ENT-Training**

**Technopark**

**Housing/facilities  
(technopark)  
organisational support  
(CI)**

---

**Coaching training, courses, networks**

**“Train the trainer”**

**Monitoring entrepreneurship development  
UNIVERSITY OF TWENTE.**





# EIT-KIC ICT Labs

## Vision: University-Industry Networks basis for Innovation

Complete and complementary world-class innovation nodes

**Berlin**

Deutsche Telekom Laboratories  
 SIEMENS  
 SAP  
 FhG

**Eindhoven**

NIR ICT  
 PHILIPS  
 novay  
 NETWORKED INNOVATION

**Helsinki**

A? Aalto University  
 NOKIA  
 VTT

**Paris**

INRIA INSTITUT TELECOM  
 orange Alcatel-Lucent  
 TECHNICOLOR  
 UPMC UNIVERSITÉ PARIS-SUD 11  
 + Academic and industrial clusters

**Stockholm**

ERICSSON  
 TeliaSonera  
 SICS  
 KTH  
 VETENSKAP OCH KUNSKAP

+  
 Associate clusters in Budapest, London, Trento  
 Systematic build-up of ICT Labs beyond the initial nodes

- Each node features at least:
- One strong research institute
  - One major university
  - One European-based multinational company
  - Active regional network of SME
  - Full national and regional support

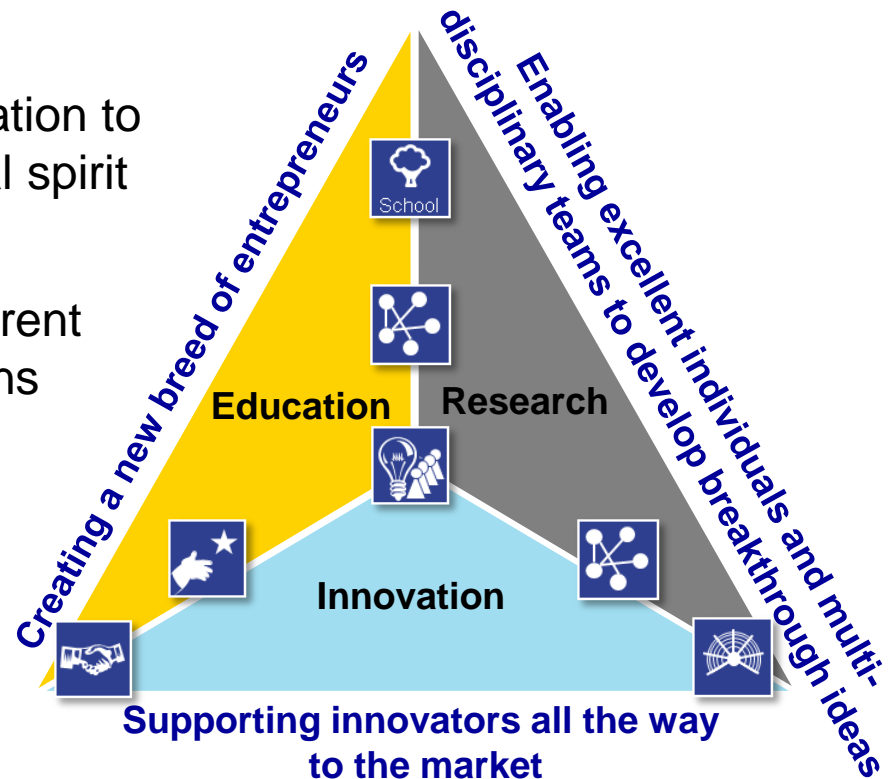
## Profile - our elevator speech:

ICT Labs is the catalyst for significant ICT innovation, enhancing the quality of life for everyone.

By integrating Education, Research and Business ICT Labs empowers top talents to lead Europe into a new ICT Age.

## Our Key Message: We ...

- breed entrepreneurial ICT top talent  
via the transformation of higher education to promote creativity and entrepreneurial spirit
- speed up ICT innovation  
by bringing people together from different countries, disciplines and organizations via mobility programs and co-location centres
- generate world-class ICT business  
via broader and faster valorisation of research results





# Our funnel based approach for business creation and technology transfer

Business Ideation

Univ.: Idea  
Researcher

ICT Labs: Action  
Lines

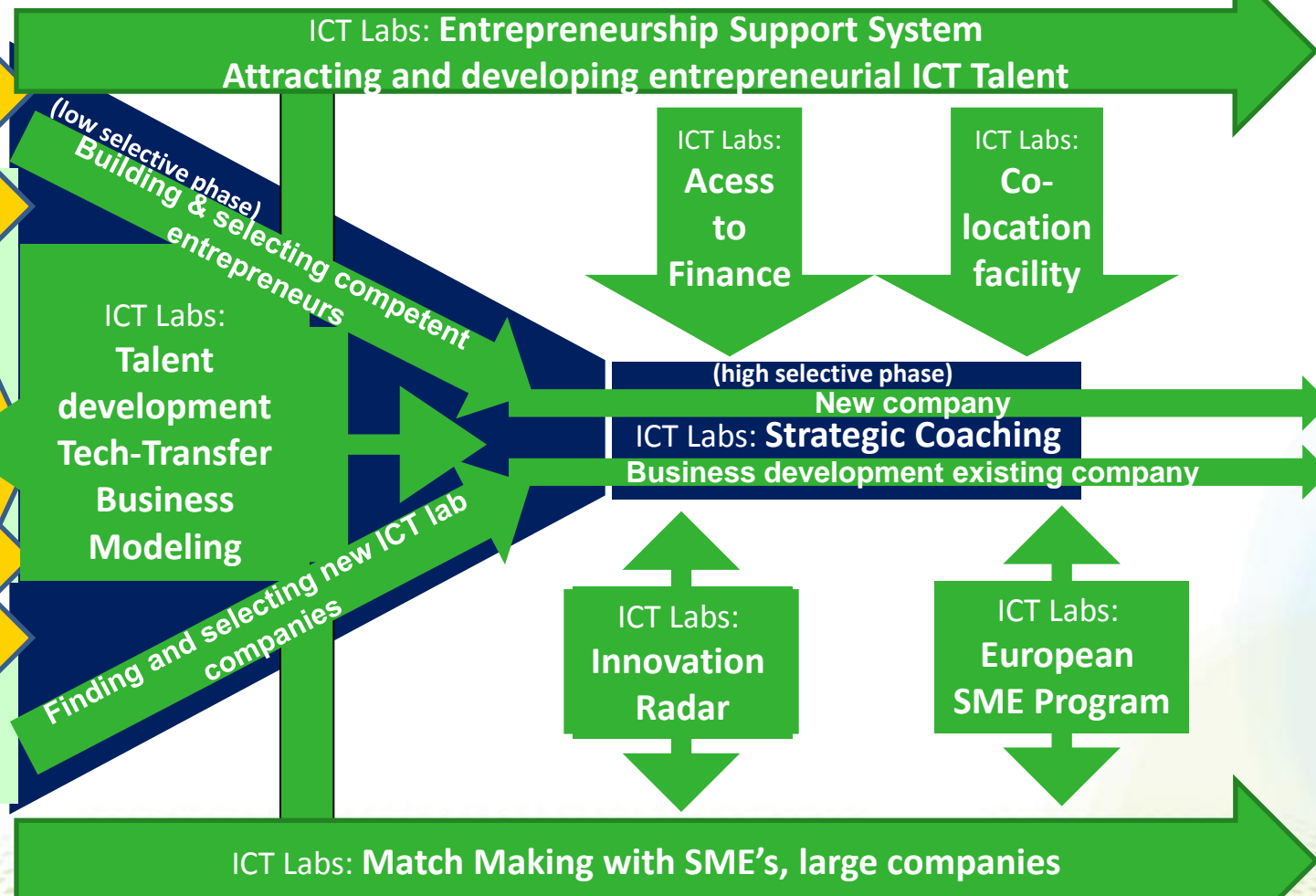
ICT Labs:  
Screening  
& Scouting

EU: FP7/8, e.g. Contrail  
ITEA, ...

National: COMMIT, etc

Univ.: Ideas Students

Master School  
Boot camps,  
Start-up weekends



ICT Labs: Match Making with SME's, large companies

# Characteristics of successful support of knowledge intensive innovative entrepreneurial processes

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- Multi-dimensional (strategy, organisation, networking, economics)
- Multi-level networking: firm level, regional level, global networks enhancing University Industry Interaction across technological fields
- Multi-actor: combining heterogeneous competencies e.g. creativity, technology, and marketing competencies
- And if coming out of university excellent research and teaching
- In short attract Talent, Technology and Testing facilities in Networks of Universities, Industry-new startup to large existing firms- and government for helping to prevent market failures

# Some additional information on Venturelab Twente

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## Full set of incubation and acceleration services in VLT

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- **Business Coaching:** *intensive weekly coaching by experienced business coaches to drive the entrepreneurial process.*
- **Expert coaching:** *additional coaching by expert coaches on knowledge intensive topics such as patents, contracts, research, etc. These expert coaches are drawn from regional service companies as well as university specialists and they provide their services free of charge to our participants.*
- **Knowledge:** *intensive training and educational program (1 day per week) on topics such as Strategy, Finance, Marketing, Operations and Technology Venturing (70 half day modules) with the possibility to acquire modular certificates.*
- **Skills:** *training in personal skills and team skills.*

## Full set of incubation and acceleration services in VLT

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- **Networks:** *entrepreneurial environment with access to relevant academic, business and financial networks (i.e. banks, business angel networks and Venture Capitalists) and intervision sessions with other participating entrepreneurs, who are a thinktank for each other.*
- **Facilities:** *free office space at the VentureLab and access to university research facilities*
- **Action programs:** *a limited number of high potential participants can follow action programs such as ‘business modeling’ and ‘Investor readiness’. These series of workshop are done in small teams or individually and are intended to prepare the participants for presenting their plans to investors.*
- **Student support:** *if needed, students can be assigned to various projects which are relevant to the entrepreneur.*

## Full set of incubation and acceleration services in VLT

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- **Market Research:** VLT provides free access to market research reports of international knowledge brokers.
- **Network meetings:** VLT regularly organizes network meeting, so called VentureClasses, with renowned keynote speakers from industry, research and government.
- **Entrepreneurial environment:** participants, coaches, expert coaches, trainers, service companies, launching customers and many others create a low-threshold entrepreneurial environment where it is easy to establish relevant contacts.
- **Softlanding Incubator:** Companies from all over the world are supported through VentureLab who is addressing all shortcomings.
- **Tailor made support:** Special activities are provided upon participants' needs like management team training sessions and launching customer meetings.