Tech Trans Mini Conference
Aarhus University

"State-of-the-art Innovative Clusters"

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Aarhus, 30 June 2009

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Presentation

- Covers: 2 Dutch examples of physical "***Clusters***" (cf M.Porter)

- Remarks based on:
  - own work experience in b2b & academia/TT
  - work in IAB's, professional associations a.o.
  - exposure to these Clusters in recent years

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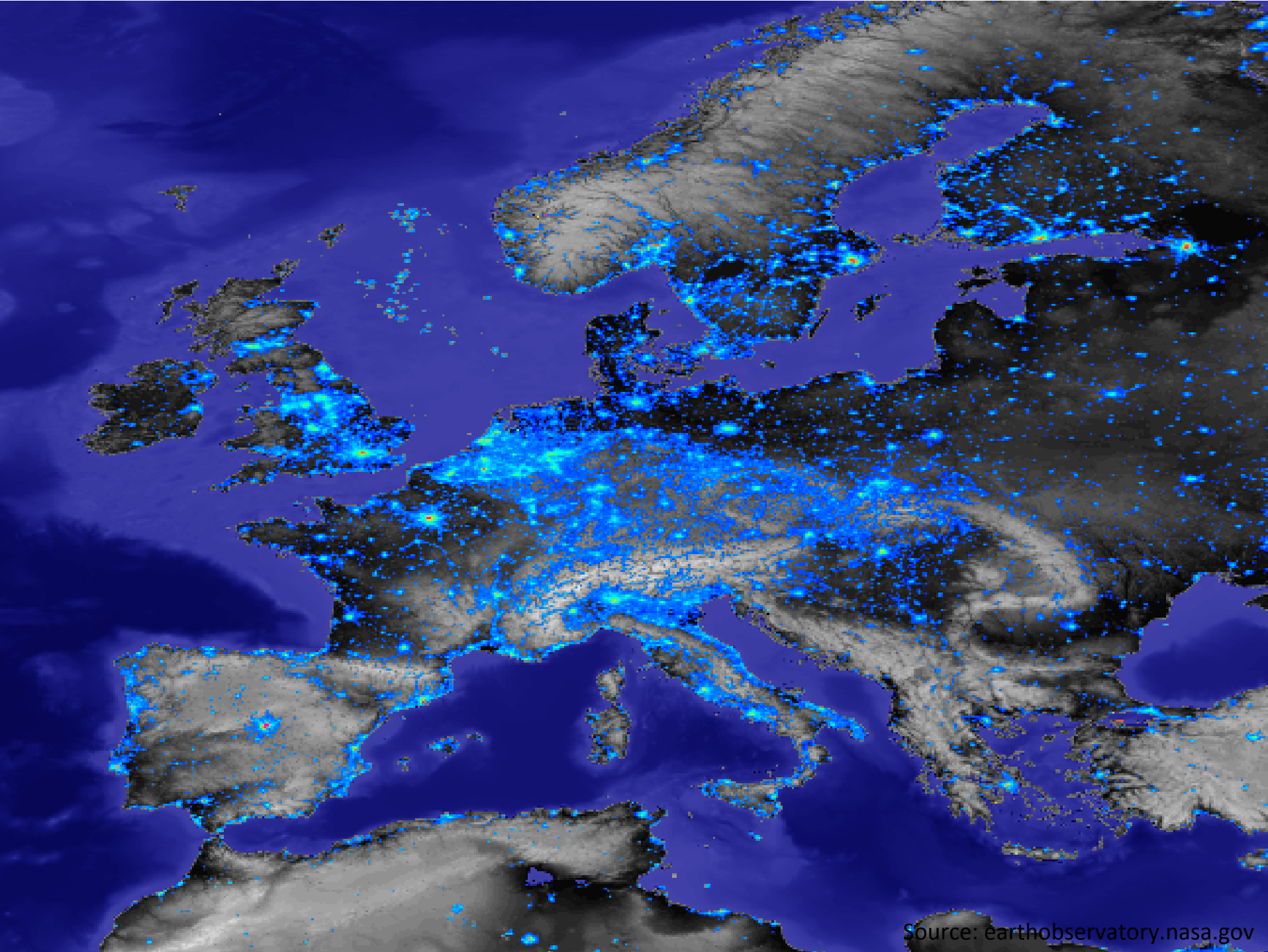
Source: earthobservatory.nasa.gov

Netherlands – Innovation Policy/1

- Ambition: transform “Dutch Delta” into even more dynamic innovative economy
- ***Innovation Platforms I & II***. Chair: Prime Minister, members from triple helix. Generate strategic innovation plans.
  2009: TT = core task PRO’s. Target public spend: 2.5% of R&D
- ***Extra funding*** for R&D/innovation. 2009: 20 MM€ for TT.
- National ***Science*** & ***Technology & Innovation*** policies advocate:
  - “***focus and mass***” in ***key*** strategic ***sectors*** in which NL has high potential to attain position of excellence: high tech systems & materials (incl nano), life sciences & health, logistics, water management, food & flowers, sustainable use & supply of energy and creative industry
  - ***public-private*** interaction and knowledge use (cf. “EU paradox”)

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Netherlands – Innovation Policy/2

- ***Instruments*** used:
  - R&D taxbreaks (e.g. WBSO)
  - macro investment schemes (ex proceeds “gas bubble”)
  - ***leading Technology Institutes*** - innovation consortia re polymers, metals, telematics, food & nutrition, separation technology, pharma, sustainable water technology and green genetics

- Policy addition 2006: ***territorially oriented funding*** - stimulate specific regional economic hot spots: “***Peaks in the Delta***”

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Example 1: ***Leiden*** BioScience Cluster

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"Leiden - thè life sciences Capital of Holland" (BP)

Attributes:

- ✓ High class academic heartland with diversified funding:
  - ✓ University Ao1575 – "influential learning beacon" (Yale)
  - ✓ LUMC: "prominent" and "elite" research (PR's)

- ✓ 1st NL dedicated Science Park (1984) + Poortgebouw: ***FOCUS***: *biomedical/bio molecular SC + biopharma prod*
- ✓ High Q incubator and real estate for R&D
- ✓ Leading companies: J&J Centocor, Genencor/Danisco, Unilever spin-offs, Crucell, Octoplus, Galagapos, HAL
- ✓ Strengthened TechTransfer infrastructure
- ✓ Support infrastructure - value chain

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Leiden Bio Science Park

- Clustered area of 120 hectares (= top 7% EU – IASP)
- 60 companies - > 3,100 employees
- 8 knowledge institutes with - 2,900 employees in life science, R&D and education/training
- LUMC – 6,500 employees
- Expansion plans Oegstgeest: 130 MM€

Leiden incubator facilities

BioPartner Center:

- ✓ Focus: young biotech/pharma related firms
- ✓ 2 buildings; > 6,000 m2
- ✓ > 30 tenants
- ✓ Flexible turnkey lab & office space; > 17 m2
- ✓ Shared facilities
- ✓ Services & management support
- ✓ Additional building by 2010:
  - ✓ Accelerator

biopartner 3
center leiden

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Private multi tenant buildings

- BEAGLE Darwin/SL Plaza: 7,500 m2

  * high tech lab's

  * tenants e.g. Galagapos Genomics, Pharming Group & Microsafe

- BEAGLE Zernike (ready 2010)

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Techtransfer Leiden University & LUMC

- "Valorisation Project" 2006 – 2010. Total investment: 5.9 MM€ (2.5 MM€ SKE from gov't)

- Activities:
  - scouting & screening
  - IP protection
  - facility sharing
  - business coaching
  - funding: pre-seed (2.3 MM€) and seed (13 MM€)

- Annual output objectives ~ € science input & benchmarks

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LEIDEN BIO SCIENCE PARK
Key to discovery

Value Chain

Discovery & research	Product & process development	Clinical trials	Manufacturing	Distribution	Services, sales, other
Add2X Biosciences	Add2X	Astellas	Biocult	BIOKÉ	BaseClear
Astellas	Astellas	BioImaging Technologies	Centocor	Danisco/Genencor	BioTop Medical
BioFocus DPI	CAM Implants	Biometric Support	Crucell	Mentor Medical Systems	Cosine
BIOKÉ	ChiralVision	Centocor	Danisco/Genencor	OctoPlus	Hogeschool Leiden
Biometric Support	Crucell	CHDR	FlexGen	Pharming Group	Holland Biotechnology
CAM Implants	Danisco/Genencor	LACDR	Katwijk Farma	Promega Benelux	Katwijk Farma
CIDRUX	Darphartox	TNO Quality of life	Mentor Medical Systems	Sanquin blood bank	LNP&P
Crucell	DNage	Top Institute Pharma	OctoPlus	ServiceXS	Medirent
Danisco/Genencor	FlexGen	Xendo	Promega Benelux	Veritabs Nederland	Medis
DeltaCell	Holland Biotechnology		Sanquin blood bank		MicroSafe
DNage	Katwijk Farma		Xendo		Promega Benelux
Enzyscreen	LACDR				PROXY Laboratories
FlexGen	Mentor Medical Systems				Rainbow Oxidations
Fytagoras	MucoVax				Schenkelaars BC
Galapagos Genomics	Mycobics				Servier
Ladrys	OctoPlus				STI management
LACDR	Ondeo-Nalco				Syntiro PSI
Leiden University	Pharming Group				Veritabs
LUMC	Prisma				Xendo
LION	Promega Benelux				
Lorentz Center	Protein Labelling Inn.				
Membrane Protein Lab.	Proteonic				
Mentor Medical Systems	Sanquin blood bank				
Naturalis	ServiceXS				
OctoPlus	SU BioMedicine				
Peroxos	TNO Quality of life				
Pharming Group	ToBBB				
PhotoBioChem	Top Institute Pharma				
PRISNA	Virosome Biologicals				
Profibrix	Xendo				
Promega Benelux					
Prosensa					
Protein Labelling Inn.					
Sanquin blood bank					
ServiceXS					
Stem Cell Innovations					
TNO Quality of life					
ToBBB					
Top Institute Pharma					
Virosome Biologicals					
Viruvation					
ZoBio					

Discovery & research | Product & process development | Clinical trials | Manufacturing | Distribution | Services, sales, other

T + 31 (0)71 524 75 55, www.leidenbiosciencepark.nl
Leiden Bio Science Park, Poortbuilding (north), Rijnsburgerweg 10, 2333 AA Leiden, The Netherlands

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Support Infrastructure

- drug development - TNO
- drug delivery – OctoPlus
- DNA sequencing, forensic support – Baseclear
- microbiology testing – Millipore/Microsafe
- QA, QC, stability testing, assay dev, validation – Proxy
- process dev., RA, GMP, pharma engineering – Xendo
- clinical trials – CHDR
- manufacturing & distribution – Katwijk Farma
- regulatory affairs – BioTop
- technology transfer – STI Management

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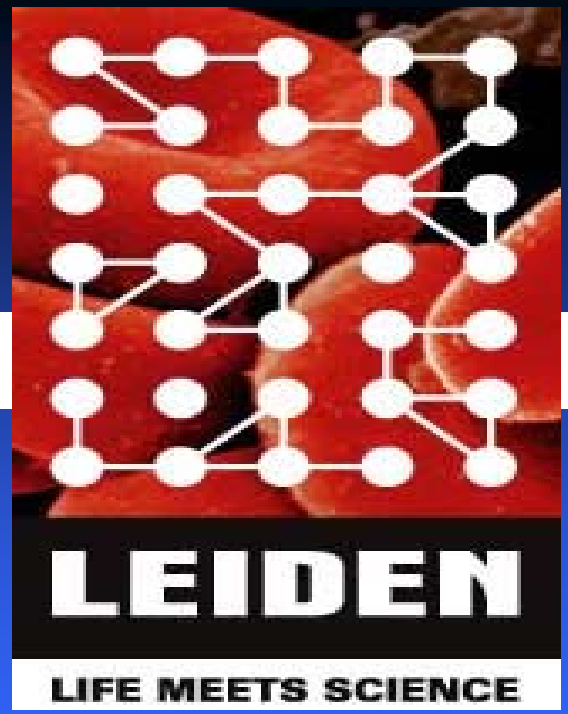
Further cluster development: LLMS

- 10 year plan with 6 major action lines
- Key players: local PRO's, biomed cy's. Chamber of Commerce, City, Naturalis
- Joint marketing/promotion, comm's & acq
- Education and labour market
- Facilities, infrastructure and urban planning



www.lifemeetsscience.nl

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Further cluster development: PROJECTS

- Expat Center
- HRM network, labour pool & internships
- Bio-factory simulator - education, training & demonstration
- Junior Science Lab: training of high school teachers on state-of the-art lab equipment
- X Lab: bridging high school-university: multidisciplinary science education for pupils of 21 regional high schools

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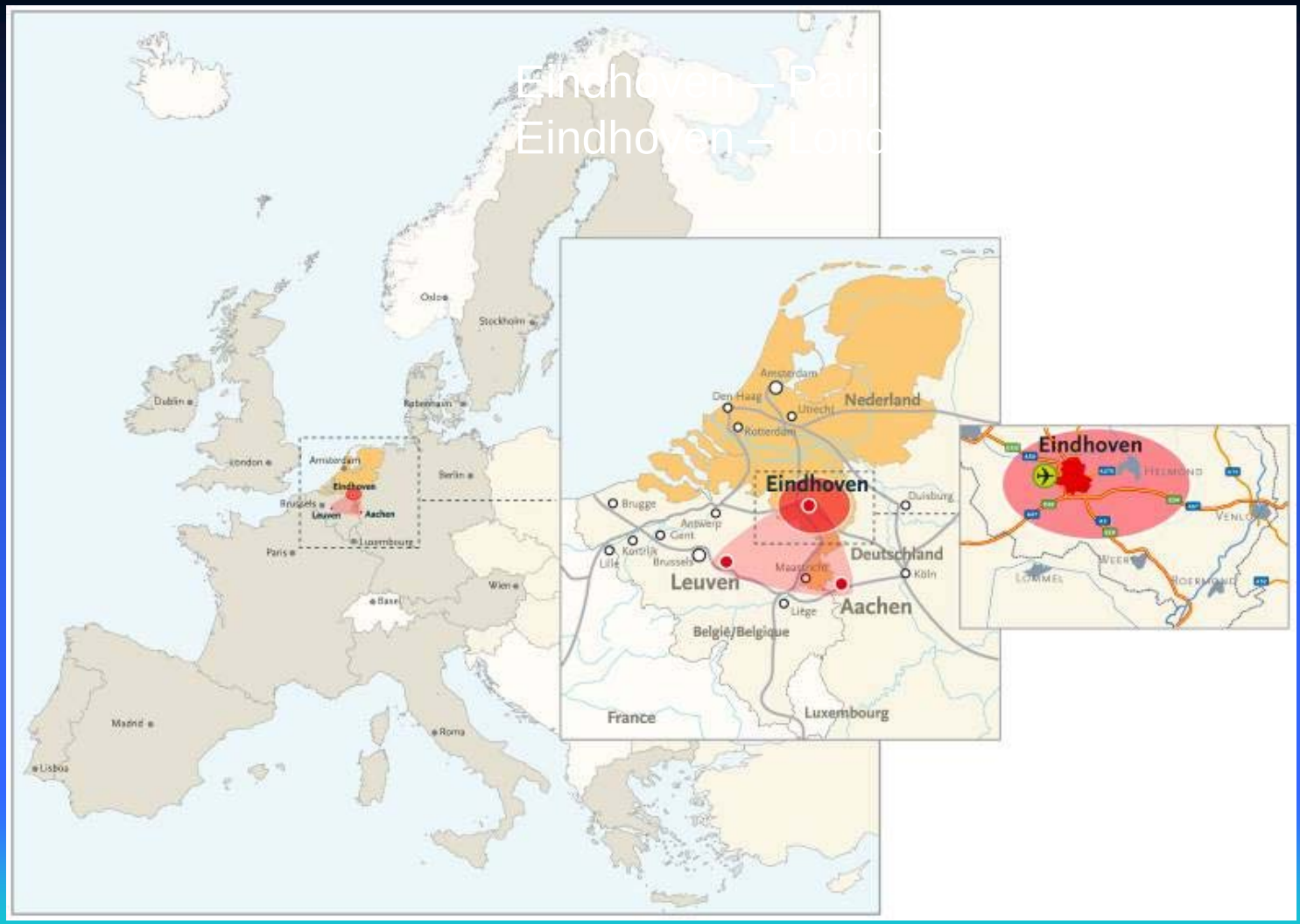
Example 2: Eindhoven *Region*



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Eindhoven Region

- From industrial mainport to "***Brainport***"
- ***Attributes:***
  - high density of top-technology companies and research/knowledge institutes
  - critical mass: full triple helix value chains: fundamental research => product development => design => manufacturing => marketing
- Motto "applying tomorrow's technology today"

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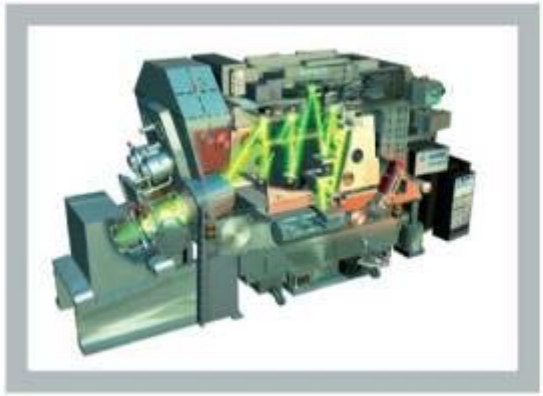
An open and innovative ecosystem

… today

Life Tech



High Tech Systems and materials

Design

Automotive

Food

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An open and innovative ecosystem
Nucleus: Philips Hightech Campus

‘Open Innovation campus’

- 40 non-Philips cy’s
- TTO TU/e
- High Tech Accelerator: bèta techno-starters

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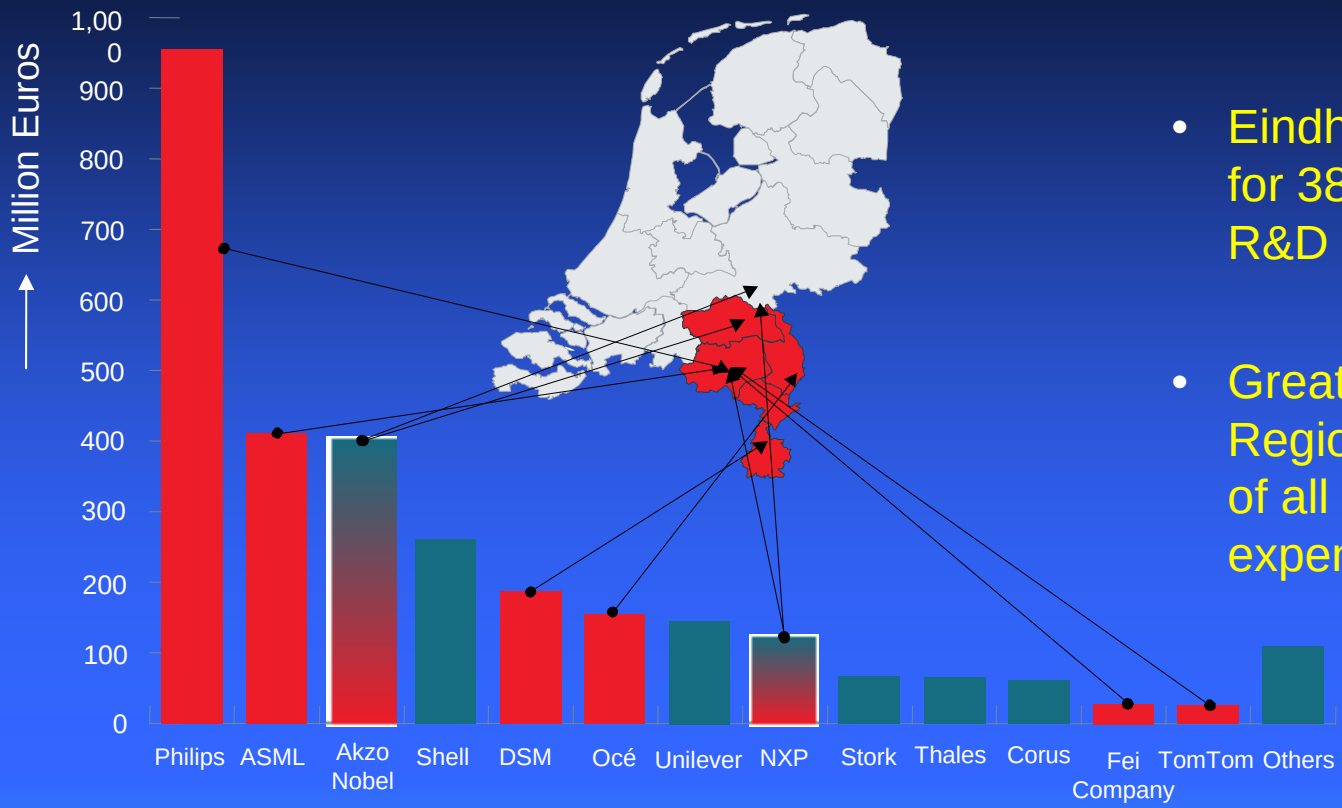
Brainport Eindhoven
Private R&D expenditure



- Eindhoven area accounts for 38% of all Dutch private R&D expenditure
- Greater S-E Brabant Region accounts for 55% of all Dutch private R&D expenditure

Source: Technisch Weekblad, Brainport Research

Expenditures of Akzo Nobel and Shell are esti

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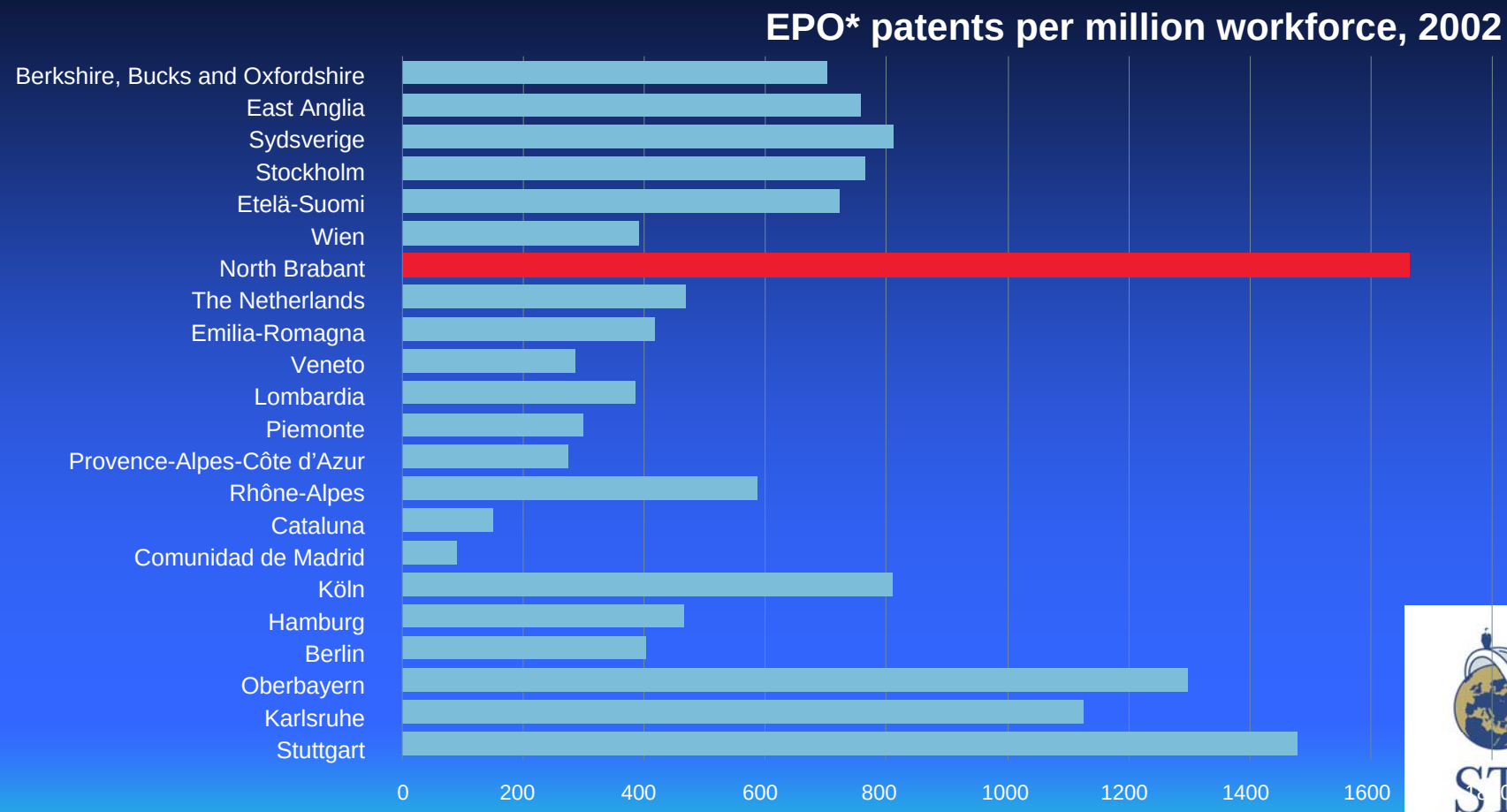
Brainport Eindhoven

Patent density



Source: Eurostat

*) EPO = European Pa

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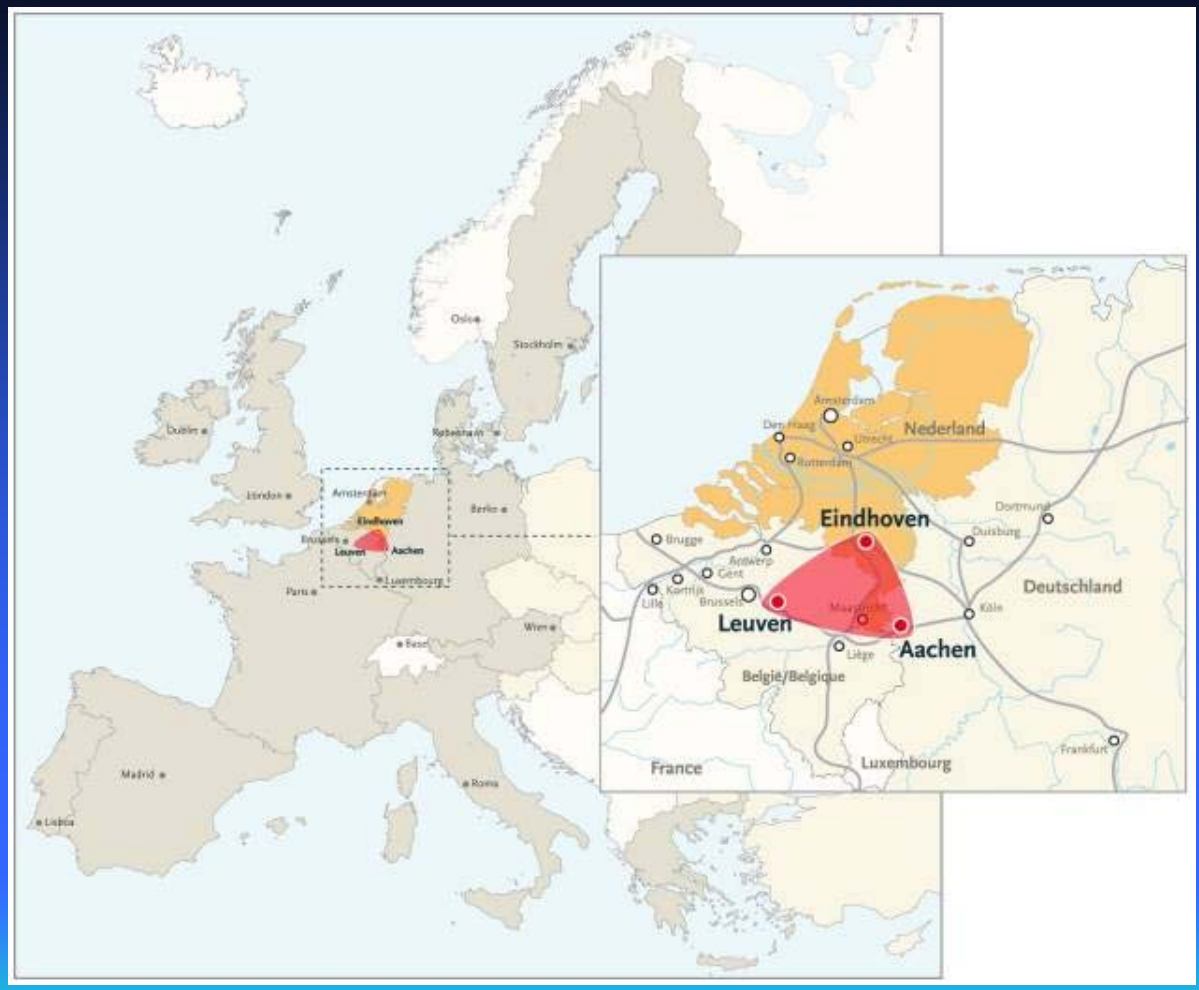
Brainport 2.0: moving crossborder: “ELAt”

Eindhoven – Leuven - Aachen triangle



- 14,269 km^2
- 5.9 million inhabitants
- 2.8 million active labor force

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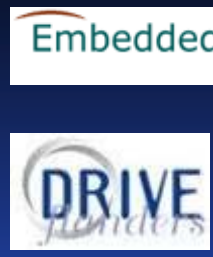
ELAt: research institutes/PRO's



ELAt: companies

ATTRIBUTES “CLUSTERS”

- ✓ Dedicated area x Science Park
- ✓ Location: easy access to/from “mainports”
- ✓ Clear thematic focus
- ✓ High Q real estate & support infrastructure
- ✓ Proximity of high Q PRO’s & higher education talent
- ✓ Good mix of actors – value chains
- ✓ Anchor tenants + “go far’s” vs “mom & pap’s” => image
- ✓ Critical mass
- ✓ Availability of risk capital – angel, POC, seed & VC
- ✓ Regional embedding + international outlook
- ✓ Professional area/Science Park management
- ✓ Commitment stakeholders + continuity => “ideopolis”

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