Tech Trans Mini Conference
Aarhus University

"State-of-the-art Innovative Clusters"

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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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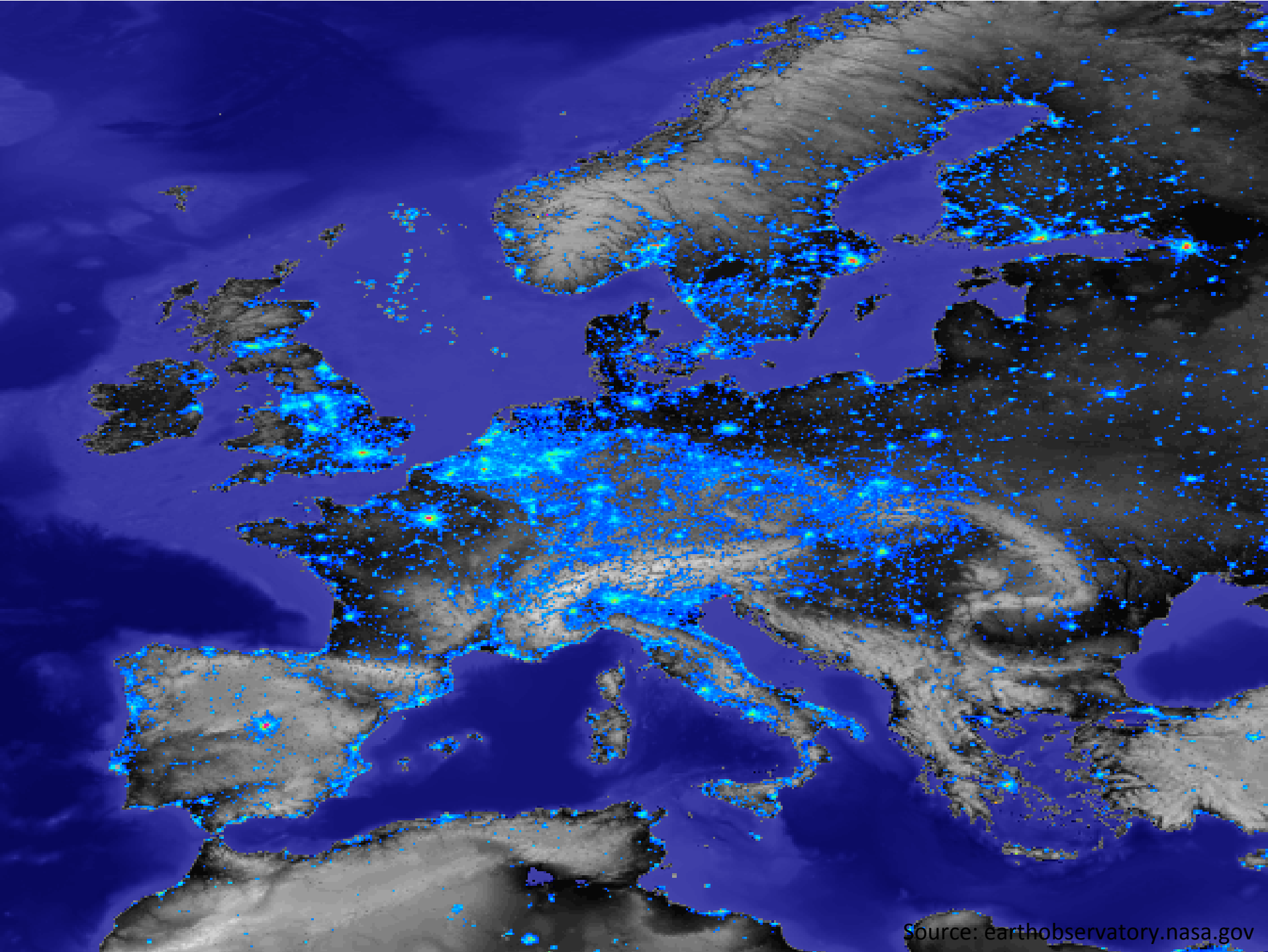
Source: earthobservatory.nasa.gov

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/Genen				

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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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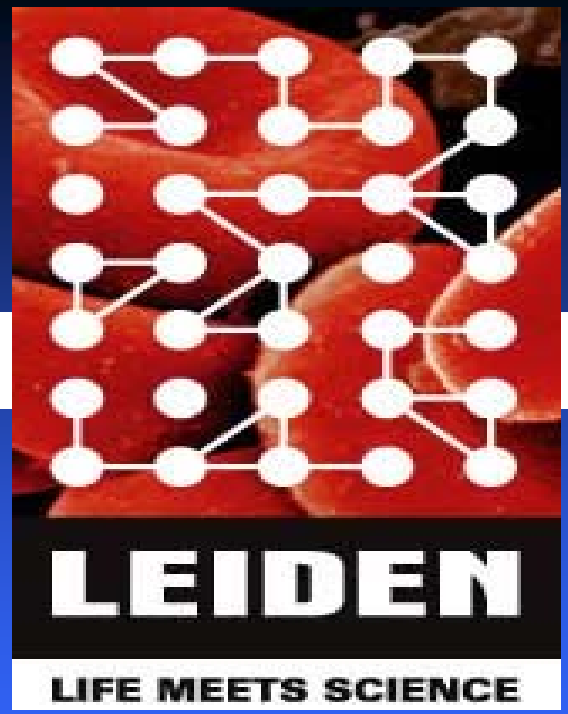
Further cluster development: LLMS

- 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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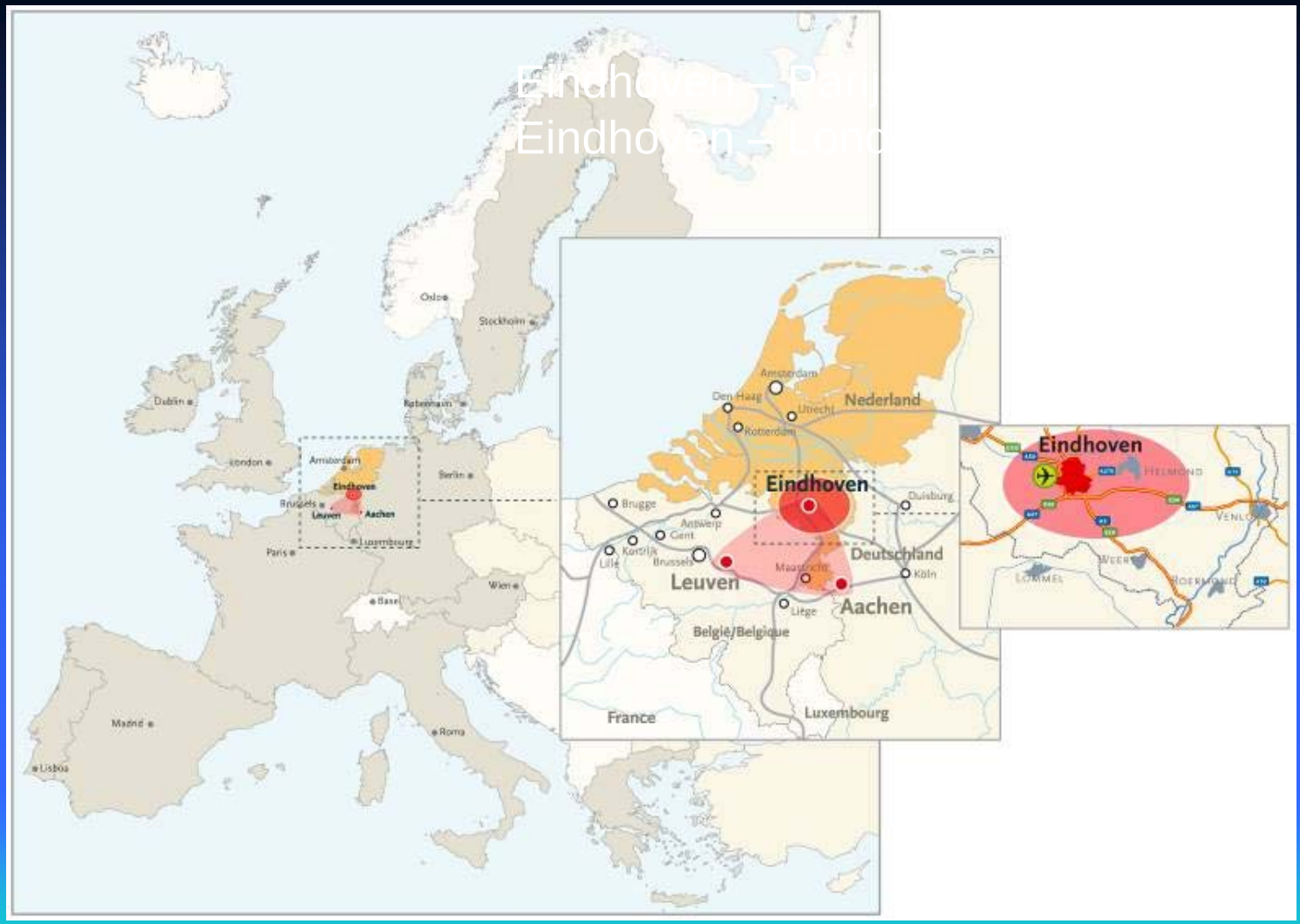
Example 2: Eindhoven *Region*



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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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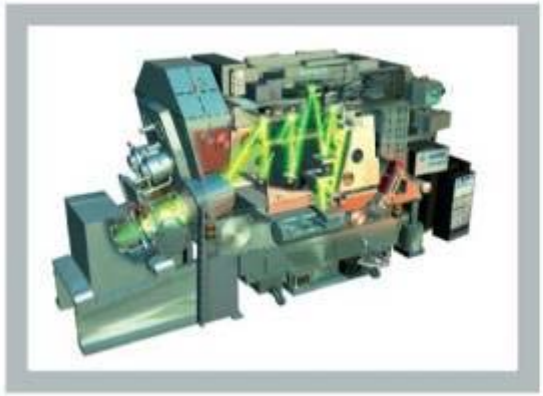
An open and innovative ecosystem

… 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

- High ranking EU “hot spot” re:
  - productivity
  - innovation potential
  - competitiveness
- Strengthening further by means of:
  - open innovation networks
  - joint research centers, facilities and programs
  - international companies and R&D headquarters: TOM TOM a.o.
  - start-ups
- Further ambitious 1.75 billion € plans in “Navigator 2013: beyond Lisbon - moving frontiers”
- However: current rough economic climate – NXP et al.

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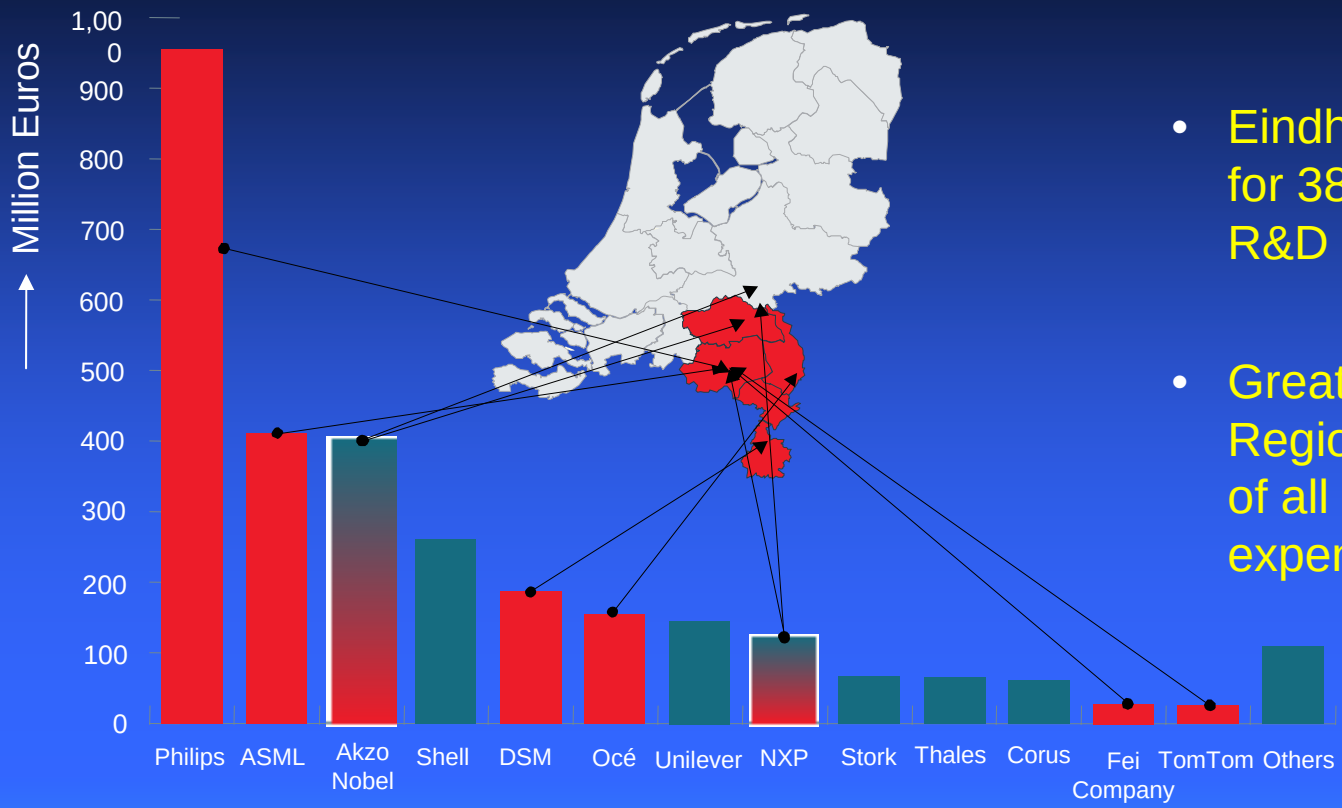
Brainport Eindhoven
Private R&D expenditure



- 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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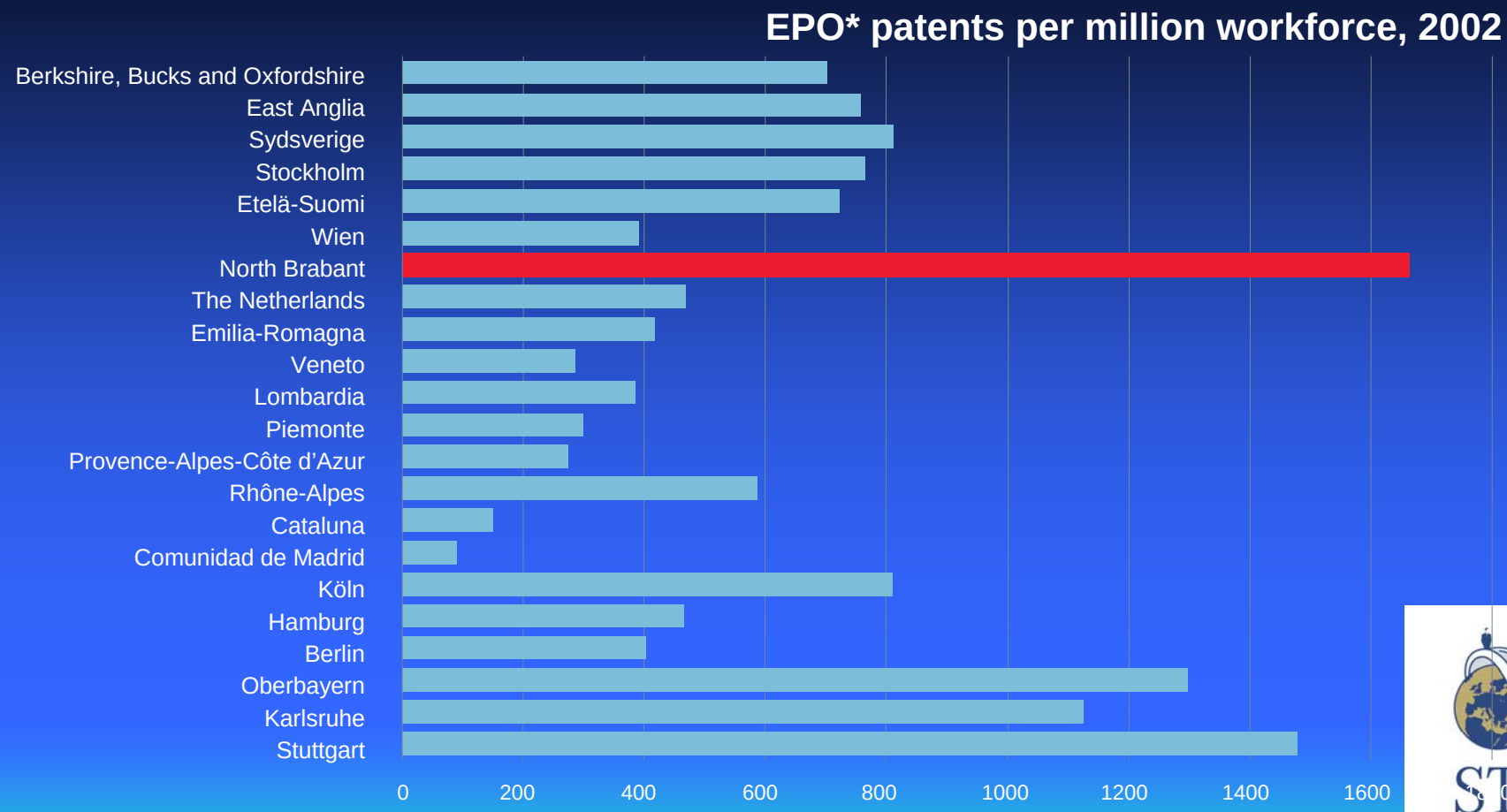
Brainport Eindhoven

Patent density



Source: Eurostat

*) EPO = European Pa

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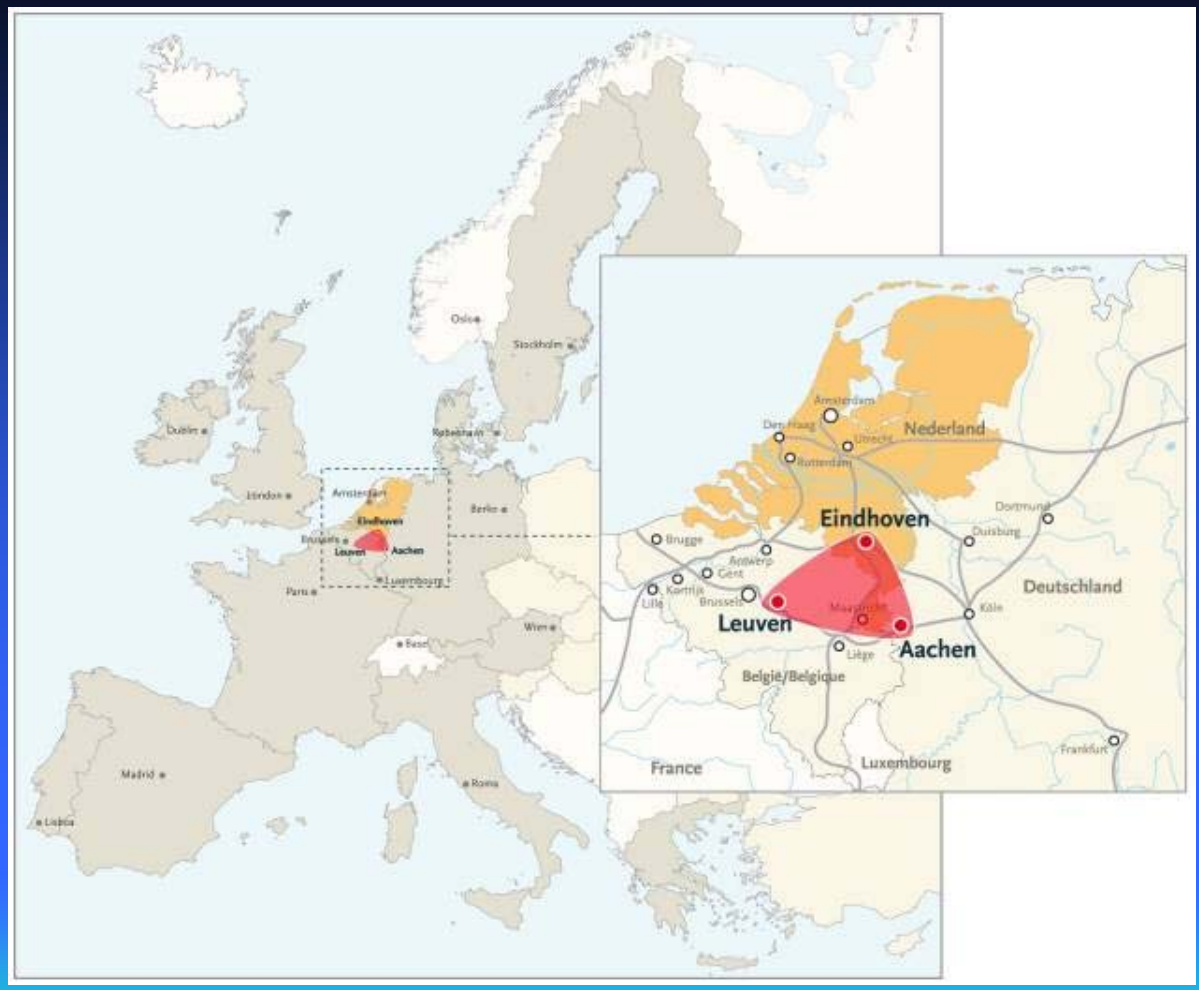
Brainport 2.0: moving crossborder: “ELAt”

Eindhoven – Leuven - Aachen triangle



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

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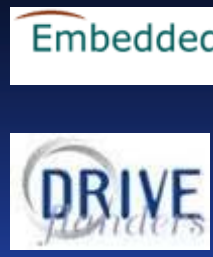
ELAt: research institutes/PRO's



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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