

# Tech Trans Mini Conference Aarhus University

*“State-of-the-art Innovative Clusters”*

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Past VPI & Chair IAB - AUTM, US

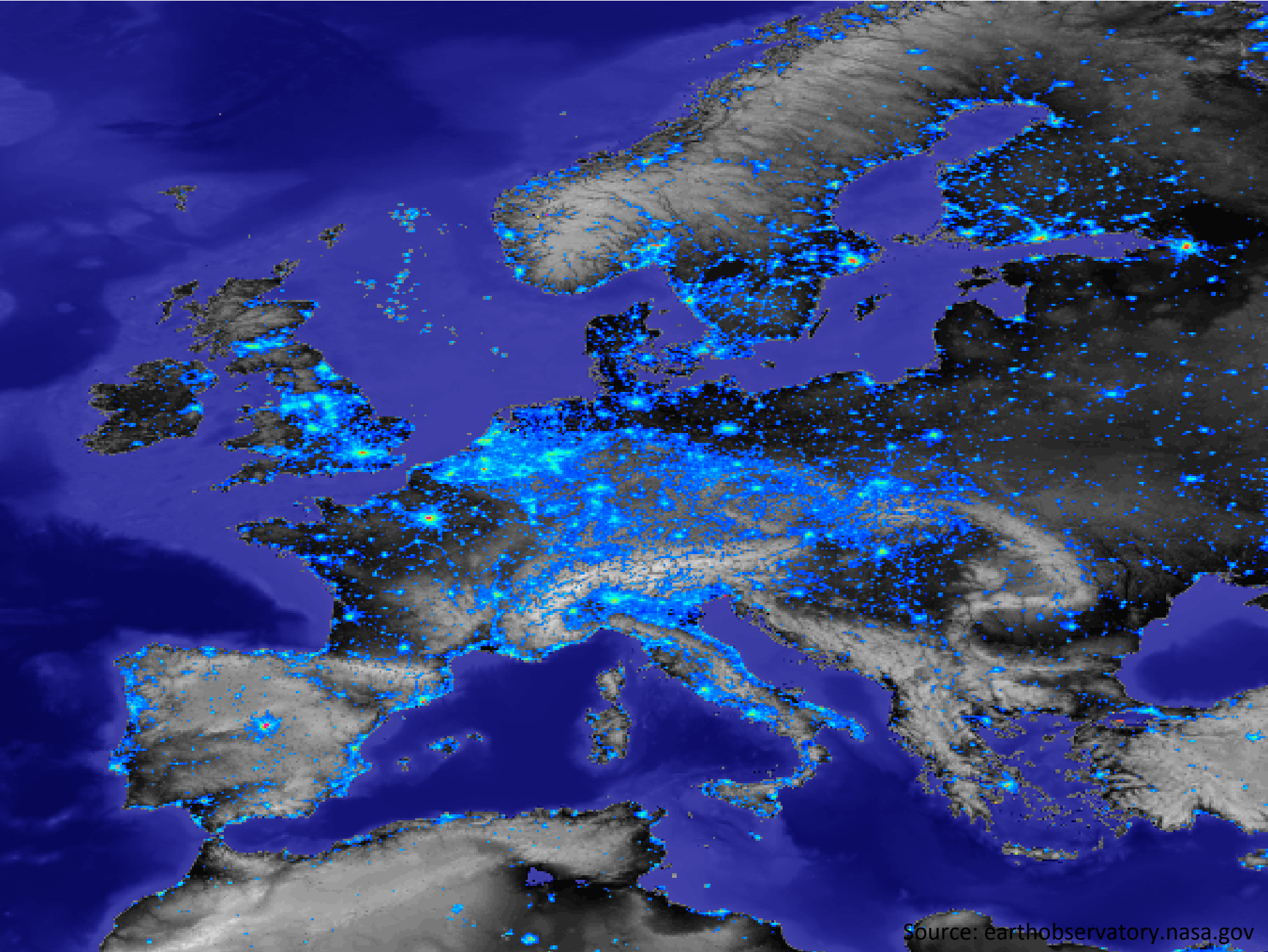
*Aarhus, 30 June 2009*



# 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





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”)



# 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**”



# Example 1: *Leiden* BioScience Cluster



## “Leiden - the 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, Octopus, Galagapos, HAL
- ✓ Strengthened TechTransfer infrastructure
- ✓ Support infrastructure - value chain



# 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 m<sup>2</sup>
- ✓ > 30 tenants
- ✓ Flexible turnkey lab & office space; > 17 m<sup>2</sup>
- ✓ Shared facilities
- ✓ Services & management support
- ✓ Additional building by 2010:
  - ✓ Accelerator



# Private multi tenant buildings

- BEAGLE Darwin/SL Plaza: 7,500 m<sup>2</sup>

\* high tech lab's

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



Darwin

- BEAGLE Zernike (ready 2010)



Zernike

# 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 (1.3 MM€)
- Annual output objectives ~ € science input & benchmarks

**LURIS**

Leiden University Research and Innovation Services



**STI**  
MANAGEMENT



LEIDEN BIO SCIENCE PARK  
Key to discovery



# Value Chain

Biorefinery & research	Product & process development	Clinical trials	Manufacturing	Distribution	Services, sales, after
Addix Biosciences	Addix	Astellas	BioCult	BIOE	BaseClear
Astellas	Astellas	Biometric Technologies	Cartocor	Danisco/Genencor	BioTop Medical
BioFocus DPI	CAM Implants	Biometric Support	Crucell	Mentor Medical Systems	Coshe
BIOE	Chiral Vision	Cartocor	Danisco/Genencor	OctoPlus	Hogeschool Leiden
BioMetric Support	Crucell	CHDR	FlowGen	Pharming Group	Holland Biotechnology
CAM Implants	Danisco/Genencor	LACDR	Katwijk Farms	Promega Benelux	Katwijk Farms
CIDRUX	Derpharox	TNO Quality of life	Mentor Medical Systems	Sanquin blood bank	LIP&P
Crucell	DNage	Top Institute Pharma	OctoPlus	SenVaxIS	Mediant
Danisco/Genencor	FlowGen	Xendo	Promega Benelux	Verilabs Nederland	Medis
DeltaCell	Holland Biotechnology		Sanquin blood bank		MicroSala
DNage	Katwijk Farms		Xendo		Promega Benelux
EnzyScreen	LACDR				PROXY Laboratories
FlowGen	Mentor Medical Systems				Rainbow Oxidations
Fytogenes	MucOx				Schenkelbaas EO
Galapagos Genomics	Myxobol				Seriver
Ladrys	OctoPlus				STI management
LACDR	Ondoo-Naloo				Syntro PSI
Leiden University	Pharming Group				Verilabs
LUMC	Prisma				Xendo
LIION	Promega Benelux				
Lorentz Center	Protein Labelling Inn.				
Membrane Protein Lab.	Proteonic				
Mentor Medical Systems	Sanquin blood bank				
Naturalis	ServiceXS				
OctoPlus	SU Biomedicine				
Paracos	TNO Quality of life				
Pharming Group	ToBBB				
PhotoBioChem	Top Institute Pharma				
PRISNA	Virosome Biologicals				
Proflibix	Xendo				
Promega Benelux					
Proscend					
Protein Labelling Inn.					
Sanquin blood bank					
ServiceXS					
Stem Cell Innovations					
TNO Quality of life					
ToBBB					
Top Institute Pharma					
Virosome Biologicals					
Vivation					
ZoBio					

T + 31 (0)71 524 75 55, [www.leidenbiosciencepark.nl](http://www.leidenbiosciencepark.nl)

Leiden Bio Science Park, Poortgebuiding (north), Rijnburgerweg 10, 2333 AA Leiden, The Netherlands



# 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



# 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

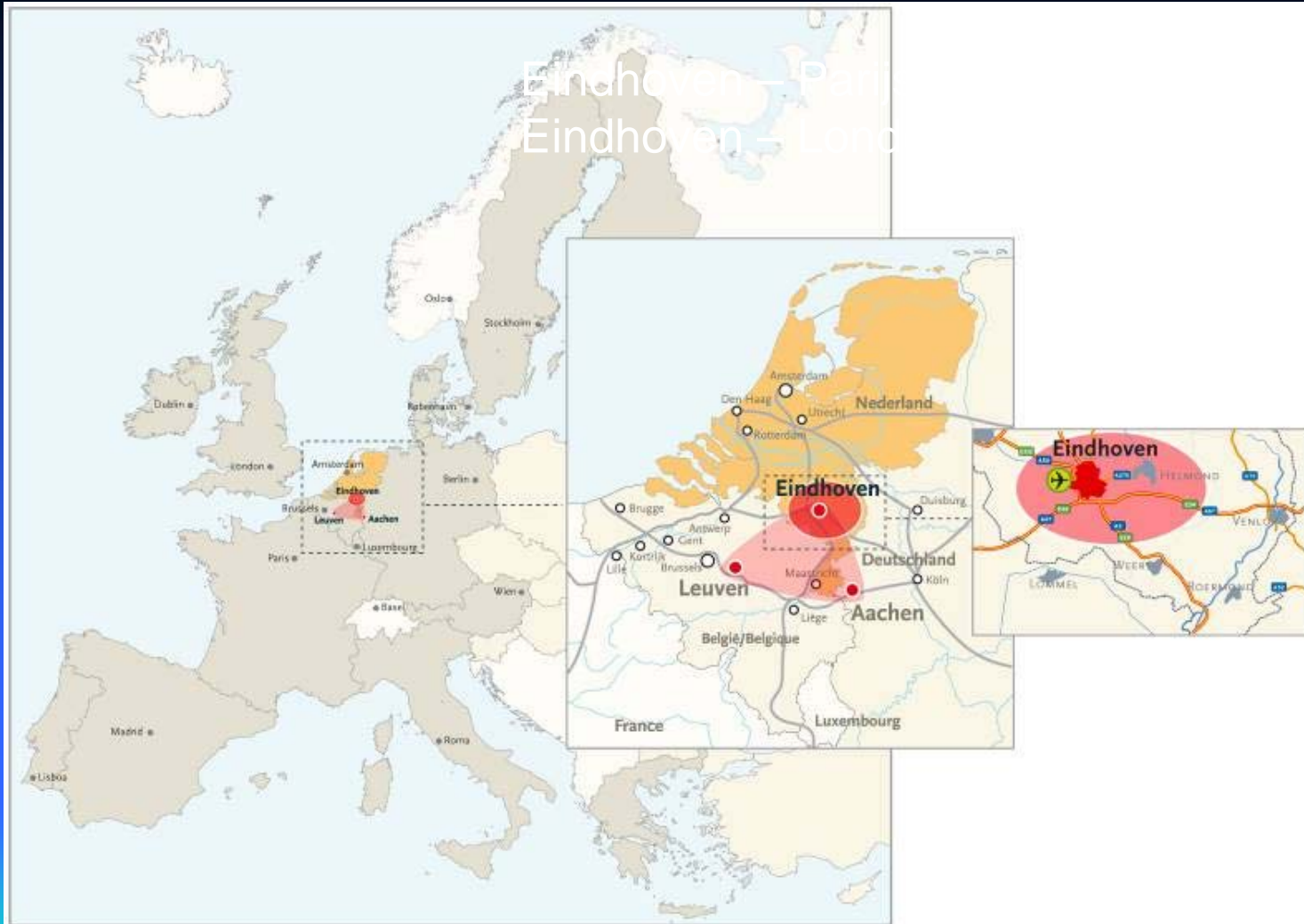


# Further cluster development: PROJECTS

- 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



# Example 2: Eindhoven *Region*



# 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"



## High Tech Systems and materials

Automotive

Food



# 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

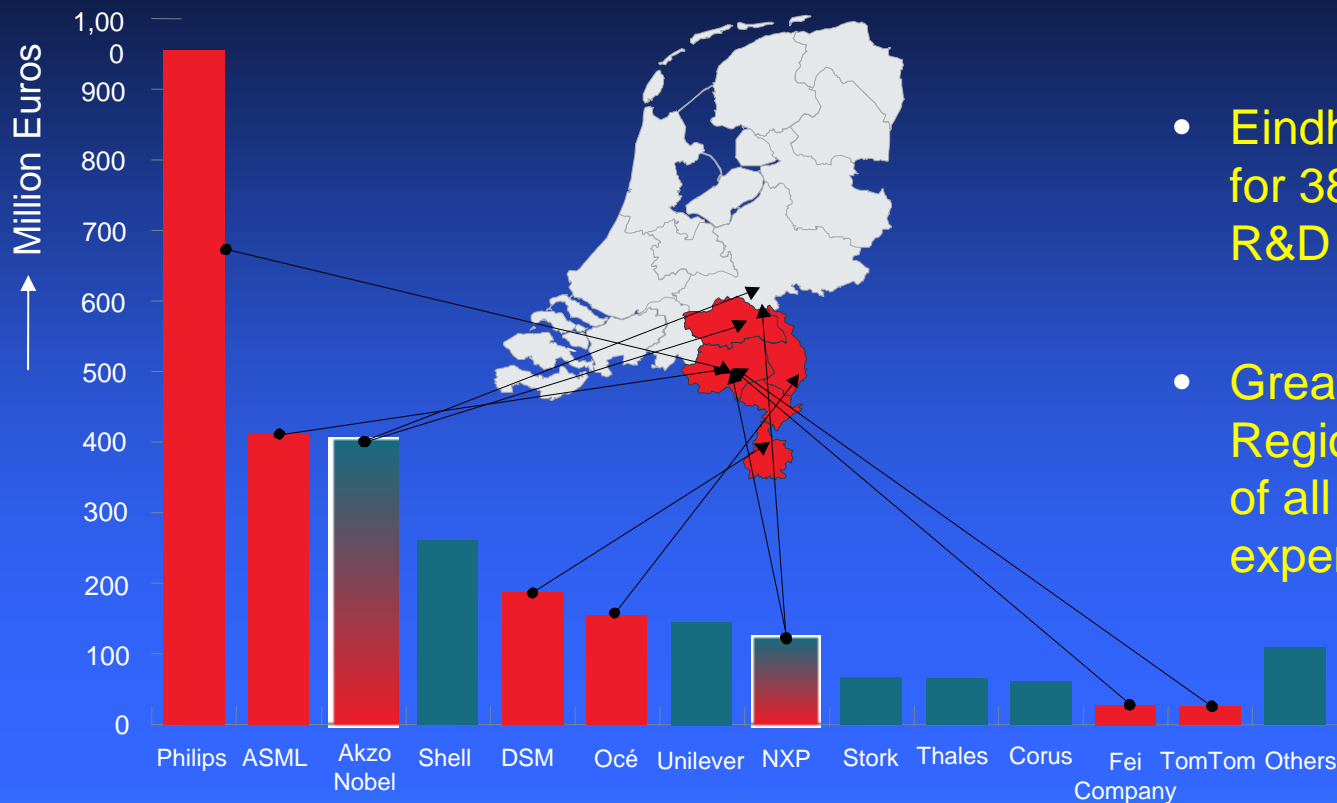
# Brainport Eindhoven

- 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.



# Brainport Eindhoven

## Private R&D expenditure

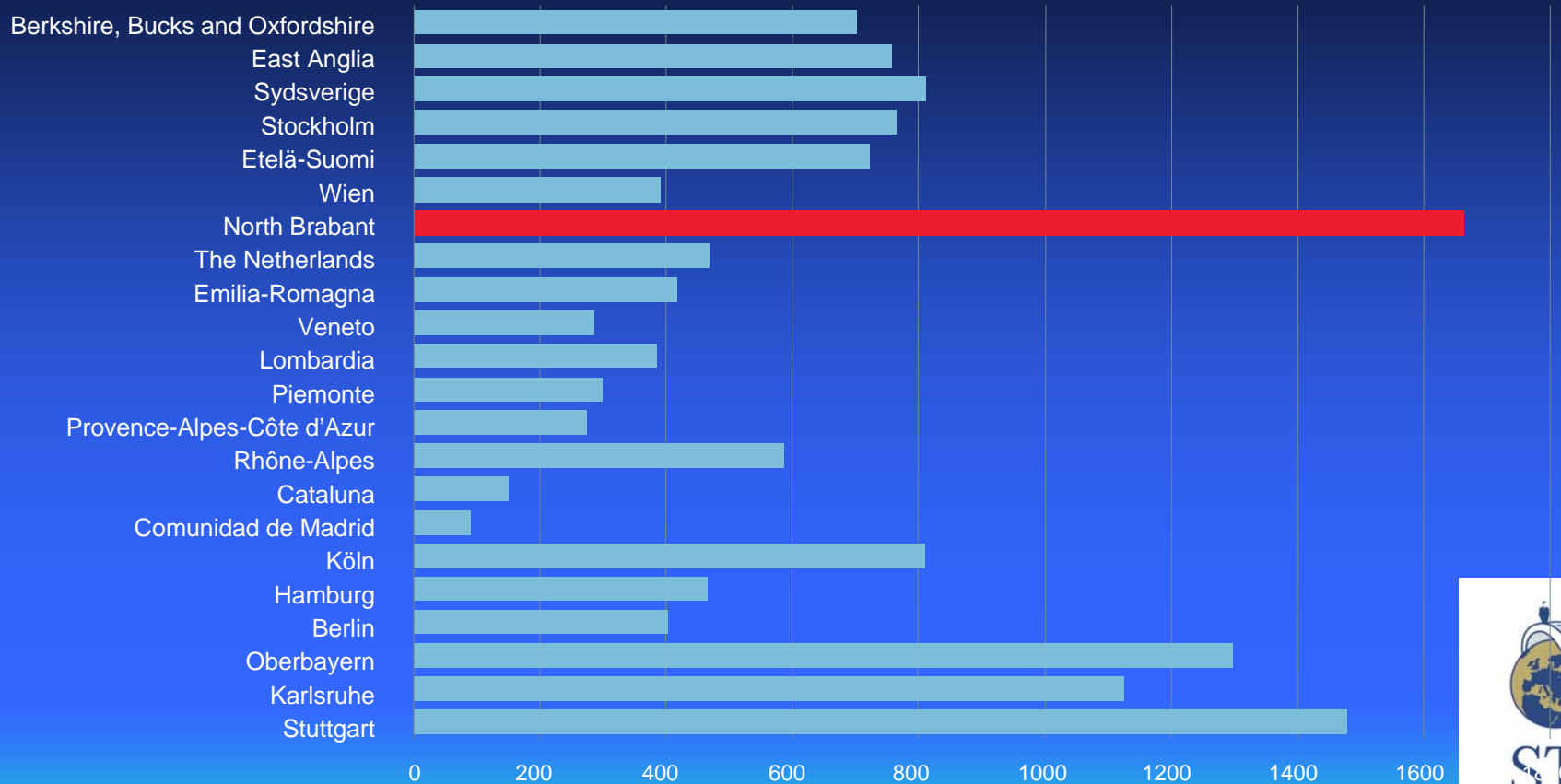


- Eindhoven area accounts for 38% of all Dutch private R&D expenditure
- Greater S-E Brabant Region accounts for 55% of all Dutch private R&D expenditure

# Brainport Eindhoven

## Patent density

EPO\* patents per million workforce, 2002



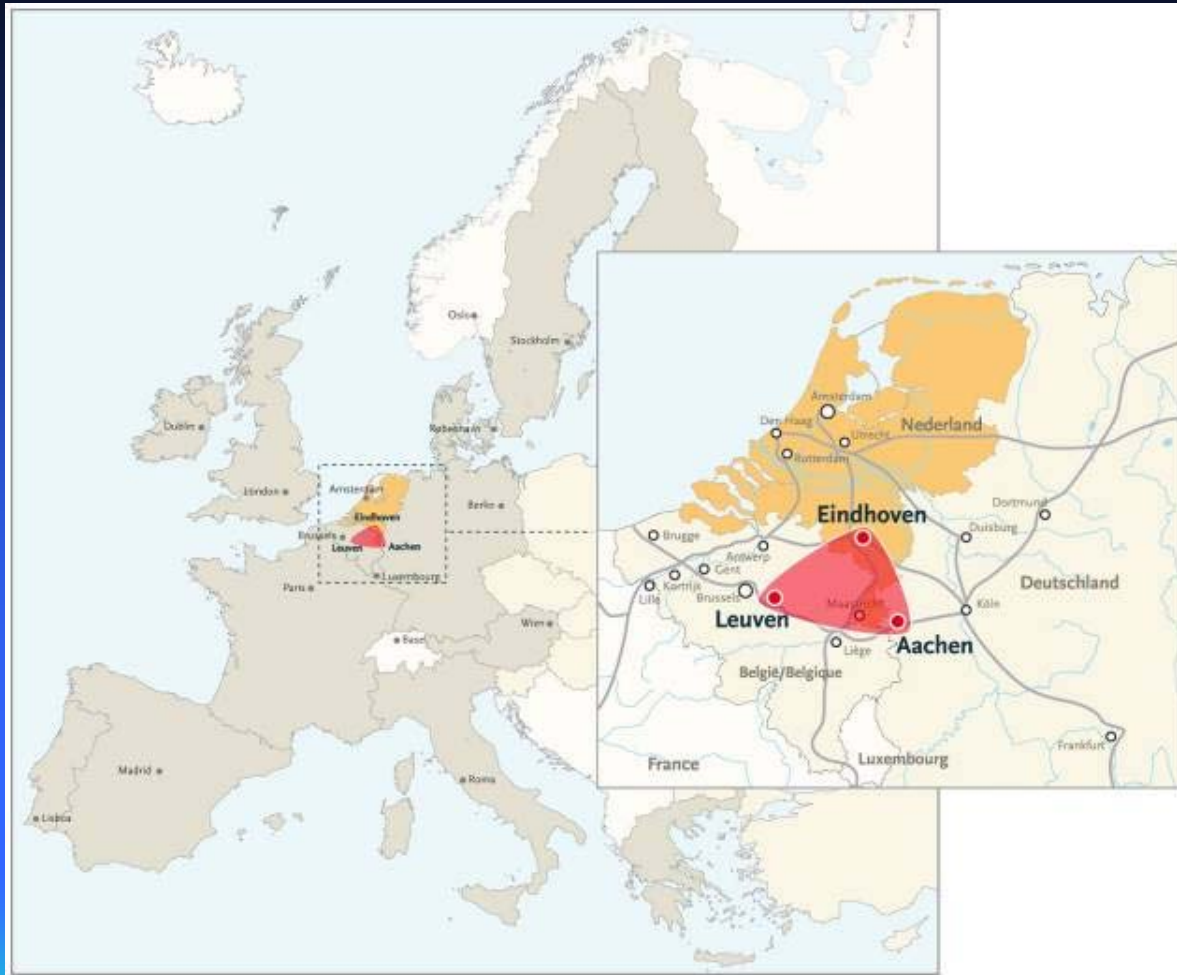
Source: Eurostat

\*) EPO = European Patent Office



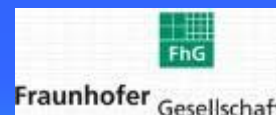
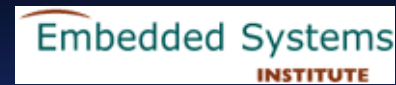
# Brainport 2.0: moving crossborder: “ELAt”

## Eindhoven – Leuven - Aachen triangle



- 14,269 km<sup>2</sup>
- 5.9 million inhabitants
- 2.8 million active labor force

# ELAt: research institutes/PRO's



# ELAt: companies

Adimec

BOSCH

Drägermedical  
A Dräger and Siemens Company

PRODRIVE

NEWAYS

BETONSON

Septentrio  
European navigation

Delem

Bata Industrials

Leica

maas INTERNATIONAL

GEMCO

EBKL

Rexroth  
Bosch Group

PHILIPS

TOMTOM

ccm

PDE Automotive

Kverneland

easics

STORK

THALES

Smurfit Kappa Group

AXXICON

FEI COMPANY  
BEAM TECHNOLOGY DIVISION

DAF  
A PACCAR COMPANY

ICT

SIEMENS VDO  
Automotive

AME

OTB GROUP

zylom  
Have fun.

KeyTec  
PRECISION COMPONENTS

NTS GROUP  
HEBATO - TE STRAKE

HANDSHAKE SOLUTIONS

SINGULUS

simac

ALFA ROMEO

Genexis

GOUDSMIT MAGNETICS GROEP

BARCO  
Videly goes

NXP  
PowerByPhilips

ASML

halin bv

KM WE

FG

Draka

LG.PHILIPS

océ

Amersham Health

STOUX

Atos Origin

Bavaria

campina

Masterfoods

RIXTRON

ARM

OPTION

TARGET

Medtronic  
When Life Depends on Medical Technology

Assembleon

DALSA

Continental  
Tyres Engineered in Germany

Ford

FEV

ERICSSON

DSM

AnSem

ONEACCESS NETWORKS

TELINDUS

umicore

PROMETEC

CEROBEAR

hemoteq

VY\_\u00c7ON

GRUNENTHAL

Agilent Technologies

PA\_\u00c7ON

parsytec  
Surface Quality Yield Management

!nBev

Materialise

STI MANAGEMENT

# 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”

TAK FOR YOUR ATTENTION

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