

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



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, Galapagos, 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 m²
- ✓ > 30 tenants
- ✓ Flexible turnkey lab & office space; > 17 m²
- ✓ Shared facilities
- ✓ Services & management support
- ✓ Additional building by 2010:
 - ✓ Accelerator



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)



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

LURIS

Leiden University Research and Innovation Services





LEIDEN BIO SCIENCE PARK
Key to discovery

Value Chain



Biorefinery & resources	Product & process data transfer	Clinical trials	Manufacturing	Distribution	Services, sales, other
Add2X Biosciences	Add2X	Astellas	Biocult	BIOKE	BaseClear
Astellas	Astellas	Biomedica Technologies	Centocor	Danisco/Genencor	BioTop Medical
BioFocus DPI	CAM Implants	Biometric Support	Crucell	Mentor Medical Systems	Coshe
BIOKE	Chiral Vision	Centocor	Danisco/Genencor	OctoPlus	Hogeschool Leiden
Biometric Support	Crucell	CHDR	FlexGen	Pharming Group	Holland Biotechnology
CAM Implants	Danisco/Genencor	LACDR	Kahvijs Farma	Promega Benelux	Kahvijs Farma
CIDRUX	Derpharox	TNO Quality of life	Mentor Medical Systems	Sanguin blood bank	LAP&P
Crucell	DNage	Top Institute Pharma	OctoPlus	SerVecXS	Mediant
Danisco/Genencor	FlexGen	Xendo	Promega Benelux	Verilabs Nederland	Medis
DeltaCell	Holland Biotechnology		Sanguin blood bank		MicroSafe
DNage	Kahvijs Farma		Xendo		Promega Benelux
EnzyScreen	LACDR				PROXY Laboratories
FlexGen	Mentor Medical Systems				Rainbow Oxidations
Fytogoras	MucOx				Schinkel & BSC
Galapagos Genomics	Myxobol				Soriver
Ladrys	OctoPlus				STI management
LACDR	OndooNalco				Syntro PSI
Leiden University	Pharming Group				Verilabs
LUMC	Prisma				Xendo
LION	Promega Benelux				
Lorentz Center	Protein Labelling Inn.				
Membrane Protein Lab.	Proteolite				
Mentor Medical Systems	Sanguin blood bank				
Naturalis	SerVecXS				
OctoPlus	SU Biomedicine				
Parasus	TNO Quality of life				
Pharming Group	ToBBB				
PhotobioChem	Top Institute Pharma				
PRISMA	Virosome Biologicals				
Proteolite	Xendo				
Promega Benelux					
Proscend					
Protein Labelling Inn.					
Sanguin blood bank					
SerVecXS					
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

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STI
MANAGEMENT

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"

An open and innovative ecosystem ... today



Life Tech



High Tech Systems and materials



Design



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



Brainport 2.0: moving crossborder: “ELAt”

Eindhoven – Leuven - Aachen triangle



- 14,269 km²
- 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

Delem

Bata Industrials

Leica

maas INTERNATIONAL

GEMCO

bkl

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

AME

OTB GROUP

zylom
Have fun.

KeyTec

NTS GROUP
NEBATO - TE STRAKE

HANDSHAKE SOLUTIONS

SINGULUS

simac

WPS

Genexis

GOUDSMIT MAGNETICS GROEP

VDE

BARCO
Vidley group

NXP
PowerByNXP

ASML

halin bv

KM WE

FG

Draka

LG PHILIPS

Amersham Health

SIoux

Atos Origin

Bavaria

campina

Masterfoods

océ

ARM

OPTION

TARGET

Medtronic
When Life Depends on Medical Technology

Assembleon

DALSA

RIXTRON

Continental
Tyres Engineered in Germany

Ford

FEV

ERICSSON

DSM

AnSem

ONEACCESS NETWORKS

TELINDUS

umicore

PROMETEC

Microsoft

CEROBEAR

emoteq

VYCON

GRUNENTHAL

Agilent Technologies

PAION

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”

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