

# Genomics as a new innovation regime: implications for governance

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**Society**&GENOMICS  
Centre for Society and Genomics



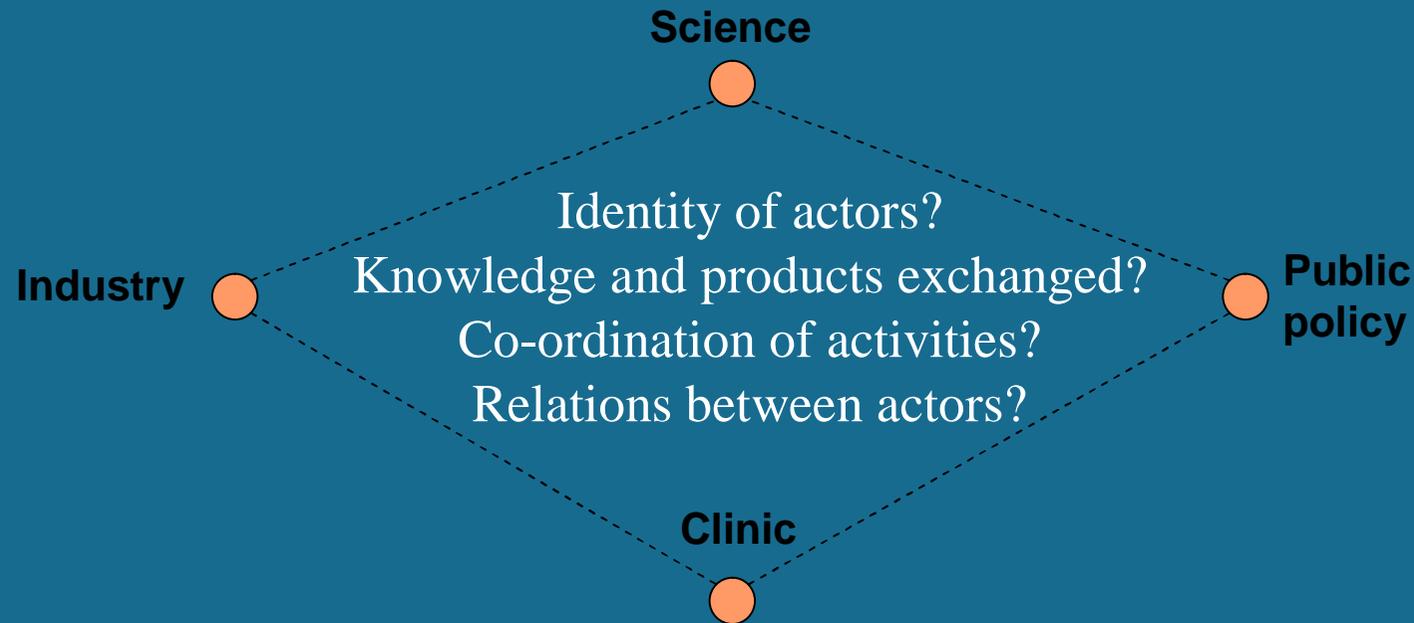
# Valorisation as a new mode of governance in medical genomics?

*Genomics as a new innovation regime*

Two-year project, Centre for Society and Genomics

- Emergence of genomics involves a transformation of knowledge production in human genetics
- This transformation also has implications for the process of knowledge application in genomics, changing the relationship between the bench and the clinic
- 'Valorisation' as a new challenge in genomics

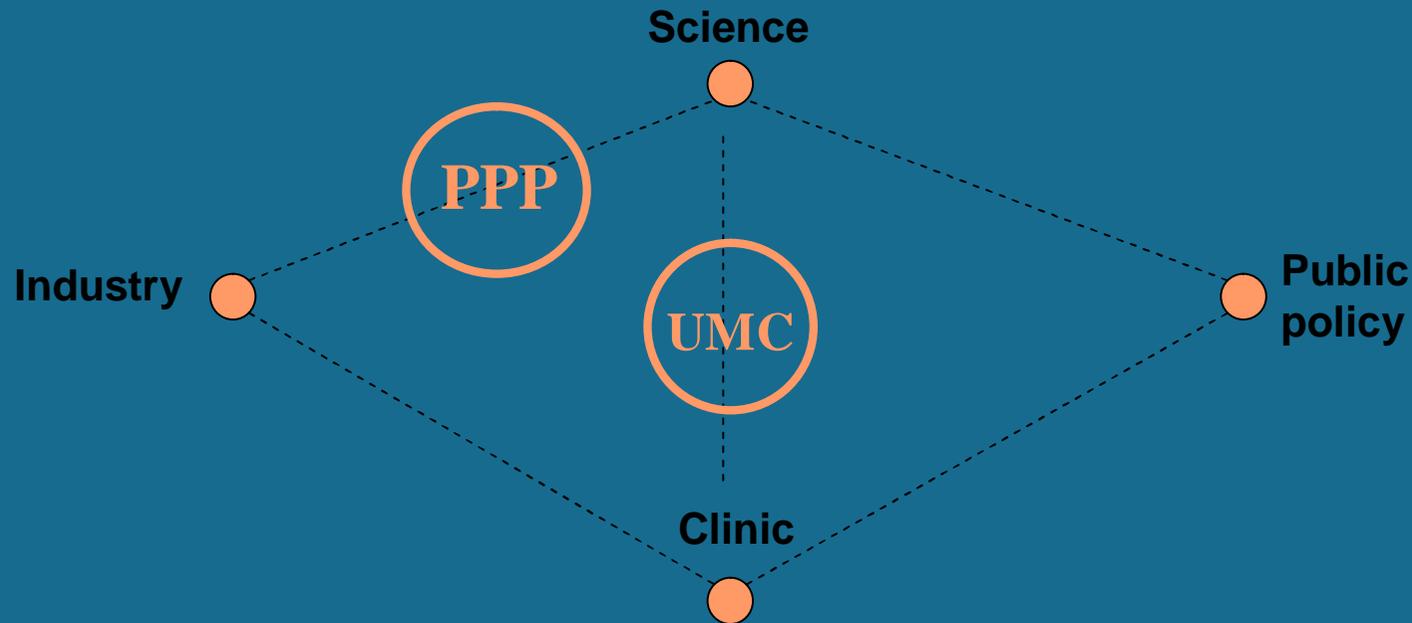
# Multi-actor world of (health) innovation



World of innovation can be described on different levels:

- Macro or landscape level of (national) *innovation system*
- Meso or field level of *innovation regimes*

# A changing (health) innovation system



A new political economy of knowledge production, changing contract between science and society ...

*Valorisation* as a response to ‘innovation paradox’

# A short history of valorisation

Concept of *valorisation* introduced in Dutch innovation policy discourse at the end of the 1990s

- Defined as *economic* valorisation of academic research
- Acquires special significance in the context of European Lisbon strategy (2000), aiming at a knowledge economy



# A national strategy for genomics

Dutch advisory committee *Knowledge Infrastructure Genomics* (Wijffels, 2001)

- Integral approach, looking at *innovation chain* as a whole
- Public private partnerships (PPP) and valorisation as key factors, fostering the *protection, transfer and commercial exploitation* of knowledge
- Genomics as foundation for the future of Dutch industry: establishment of Netherlands Genome Initiative, fostering *public private partnerships* (NGI, 2002)

# NGI Strategic Plan 2002 - 2006

Develop a world class knowledge infrastructure ... firmly embedded in society and ... yielding a continuous influx of new commercial applications (Strategic Plan 2002-2006)

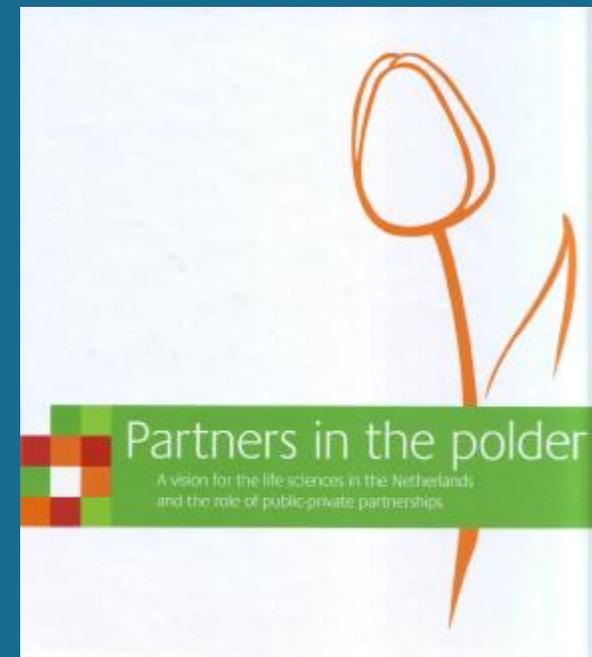
- *Valorisation plan*: licensing intellectual property and supporting business start-ups
- *Translational research*: does not entail commercialisation, but inclusion of medical innovations in (insured) health care

# Evaluation of NGI valorisation activities (Technopolis 2007)

- Successive valorisation plans had tendency to meander: from *top-down* approach emphasising industrial partnerships to *bottom-up* approach supporting research organisations
- In terms of *valorisation output* – patent applications, licenses, spin-offs – NGI performs well
- *Translational research* did not get sufficient attention
- NGI (2008–2012) will place more emphasis on the utilisation of knowledge by its core activities ... valorisation will get extra attention and will be linked to *quantitative targets*  
(Making the most of genomics, 2008)

# Partners in the Polder (2009): a vision for the life sciences in the Netherlands

- Valorisation as “process of value creation from knowledge by making it available for economic and/or social use by translating it into competitive products, services, processes or new commercial activities” (Dutch Innovation Platform)
- Not only dissemination activities, but also – demand driven, user-inspired – research programming and interaction with stakeholders



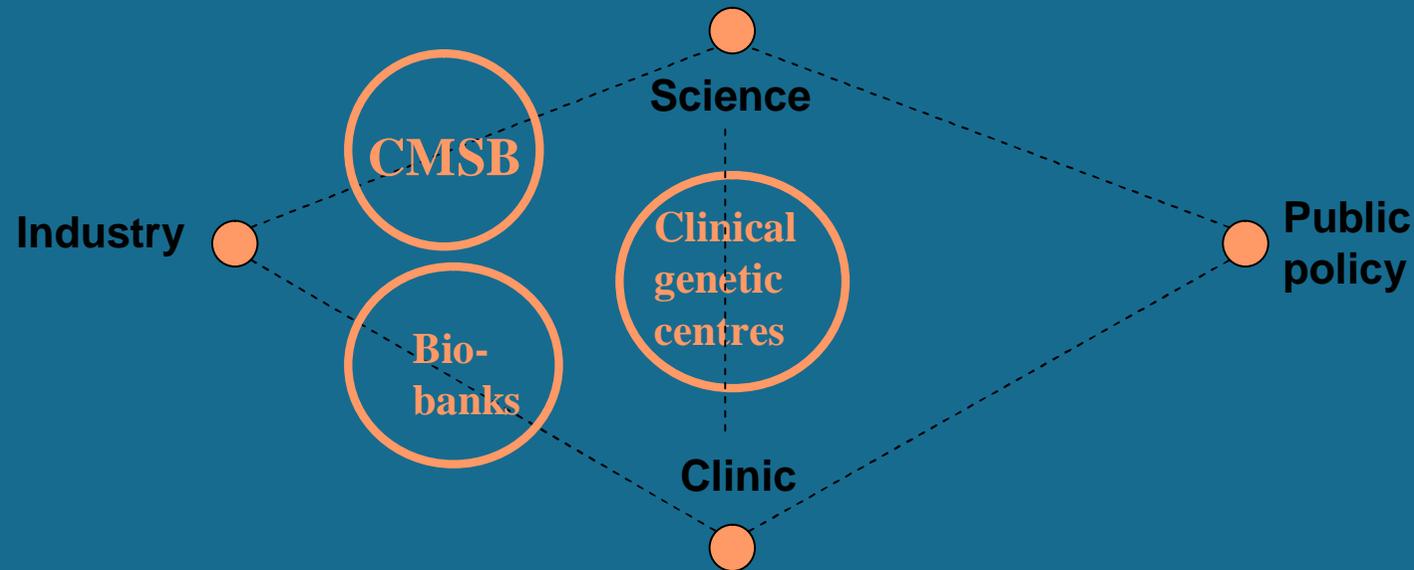
## Valorisation as mode of governance: value that can be measured

- Quantified valorisation targets for genomics consortia: dissertations, patents, start-up companies, industrial collaboration
- Valorisation events and meetings between researchers and entrepreneurs: Genomics Momentum, valorisation managers best practices exchanges, business development meetings
- Roles for private parties and Technology Transfer Offices (TTOs) are described in valorisation plans of consortia
- Valorisation is promoted with additional financial instruments: Venture Challenge, NGI Pre-SeedGrant, BioGenerations Ventures, and NGI Valorisation Award

“Developments (in Europe and the USA) show that a country has to act aggressively, and needs to have the ambition to become and remain one of the top bioregions in the world”

(Partners in the Polder 2009)

# Medical genomics: a new innovation *regime*



## From clinical genetics to medical genomics:

- Large-scale studies of genetic risk factors for common diseases
- Data collections as platforms linking public and private interests
- Valorisation a new challenge?

# Value creation in medical genomics

- How are processes of value creation in medical genomics as a new *innovation regime* shaped by valorisation as a dominant mode of governance on the *innovation system* level of NGI policy-making?
- Importance of other modes of value creation in regime of medical genomics through *translational research*, based on reciprocal interactions between the bench and the bedside?

Martin et al. From bedside to bench: communities of promise, translational research and the making of blood stem cells (2008)

Wainwright et al. Stem cells, translational research and the sociology of science (2009)

Stengel et al. Plant sciences and the public good (2009)

Kaye et al. Patents and translational research in genomics (2007)

# Our research project: next steps

- In what ways is – economic and social – value being created in various and changing processes of knowledge production in the field of medical genomics (as a new innovation regime)?
- What is the significance and impact in this context of valorisation as dominant mode of governance?
- *Duchenne muscular dystrophy* and *Alzheimer's disease* as case studies