Interoperability in a national context: elements needed

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Me...

- Michiel Sprenger, PhD
- Clinical Physicist
- MRI, X-ray, radiotherapy
- → Clinical informatics
- Free University MC, Amsterdam
- Joined Nictiz 2008
- Joined Eindhoven Technical University (part-time), 2010

Nictiz

- Founded in 2002
- The national competence center for health IT
- ~40 fte (fall 2012)
- Tasks:
  - Define and maintain standards
  - Offer knowledge & advice
  - Coordinate on consensus processes for interoperability
- **Better care through better information**

Presentation Outline

- Introduction
- Architectural & interoperability concepts
- Consequences and examples

Areas for IT in healthcare

- EHR, for professionals within institutions

- HIE, for professionals, between institutions

- Patient enabling: for patients and their relation with professionals

Today's main focus

- EHR, for professionals within institutions

- HIE, for professionals, between institutions

- Patient enabling: for patients and their relation with professionals

The Netherlands in EU
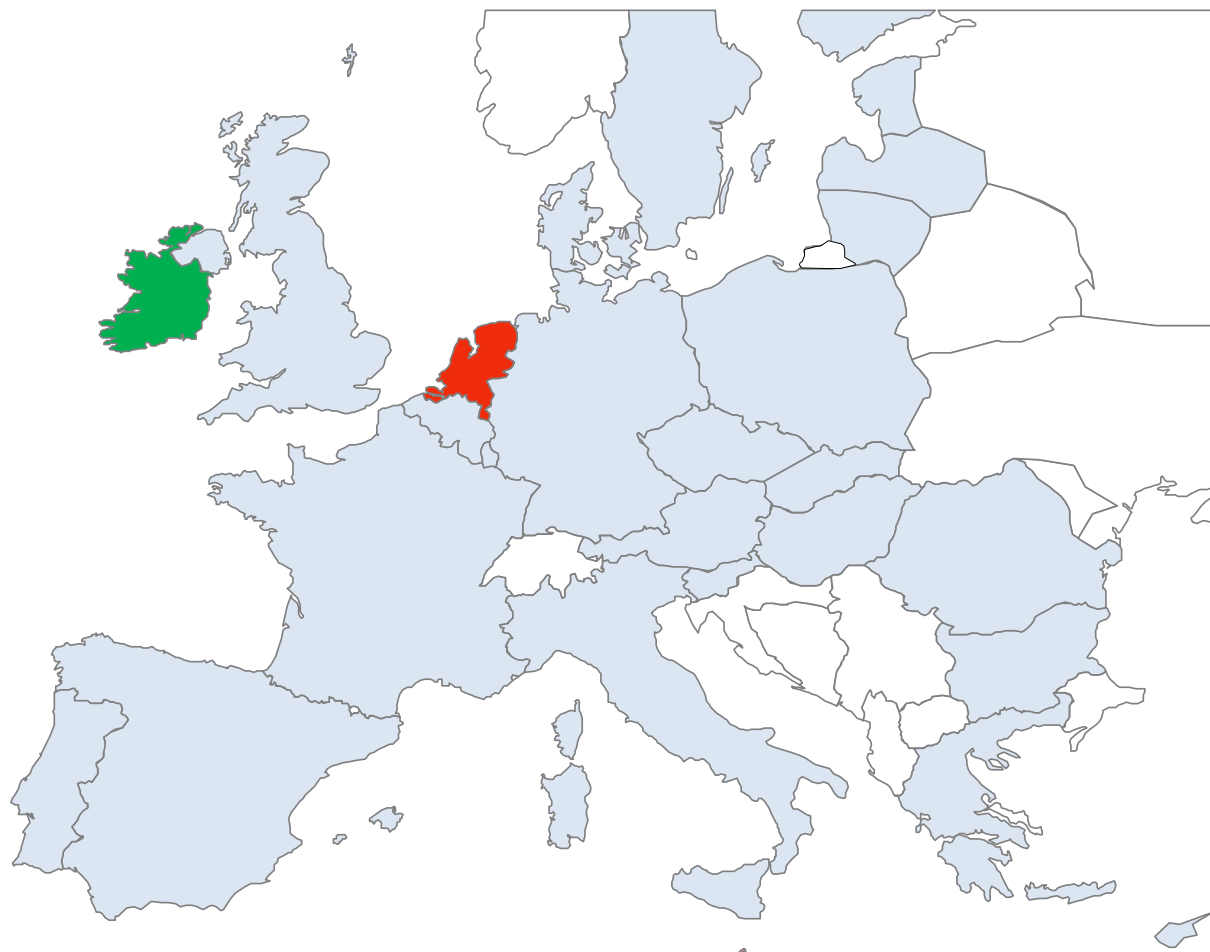
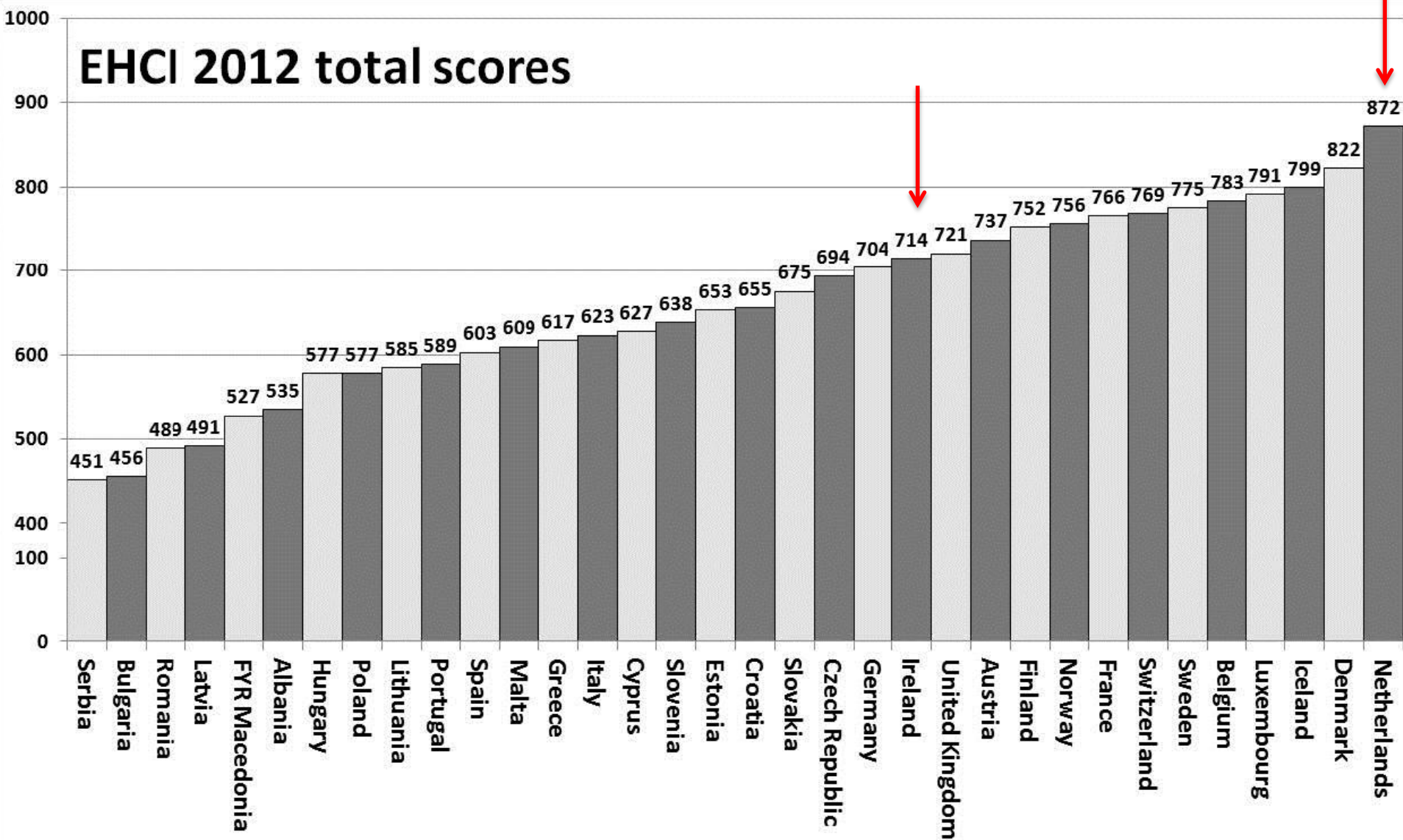**Area: #22/27**

**Pop: #8/27
(16,7M)**

Healthcare in NL

- Organisations private
- Finance: partly regulated:
  - Insurance: basis for everyone, + extra packages
  - Increasing market model
  - Disabled, elderly, etc: National Insurance (AWBZ)
- Total ~80 billion €

Healthcare in NL

- Well established primary care
- Management of chronic diseases
- Locum tenency services for GP's (1:40)
- 8 academic medical centres
- NL #1 in European Health Consumer Index
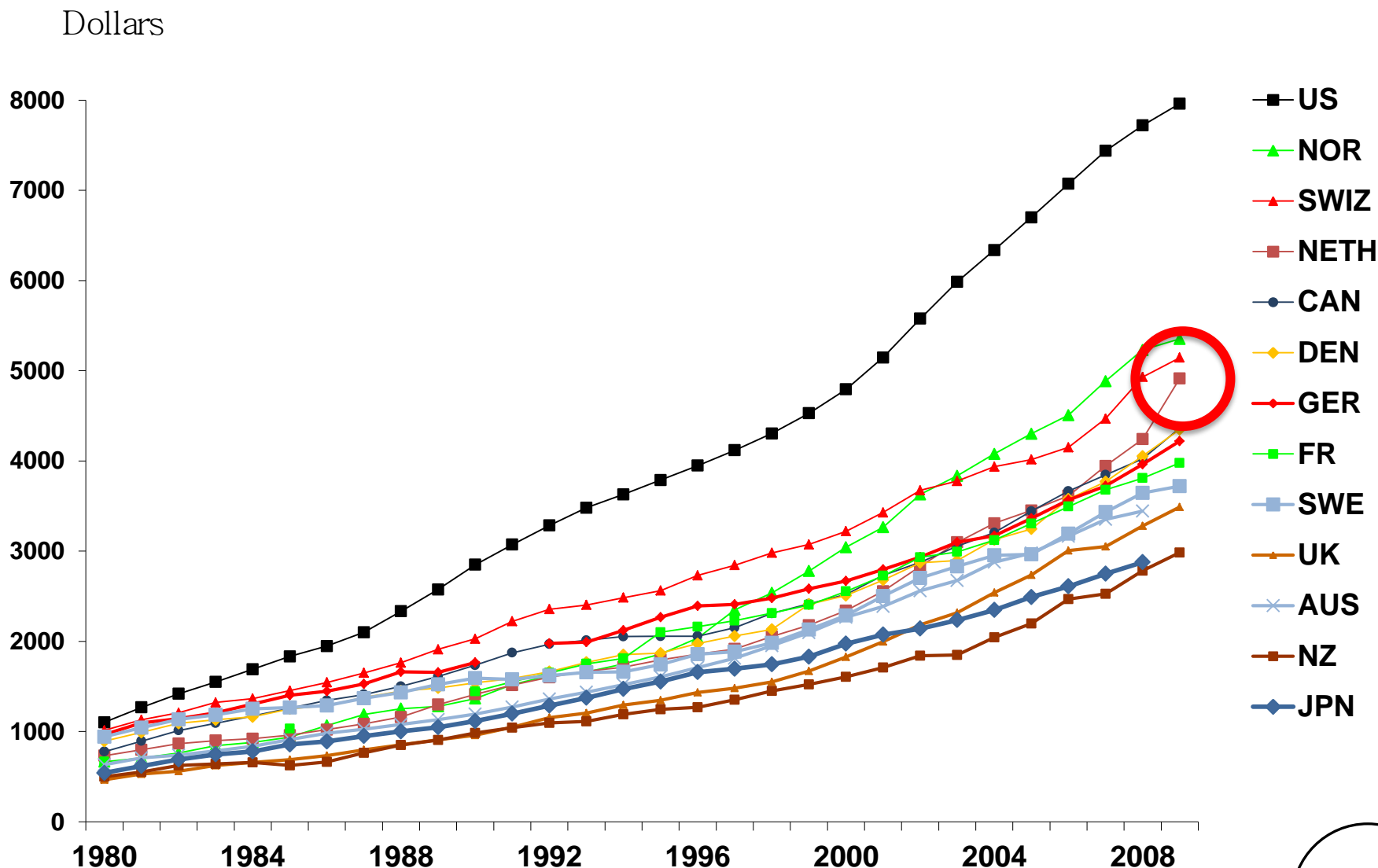- NL high in capital spending in Healthcare

EHCI 2012 total scores

Country	Score
Serbia	451
Bulgaria	456
Romania	489
Latvia	491
FYR Macedonia	527
Albania	535
Hungary	577
Poland	577
Lithuania	585
Portugal	589
Spain	603
Malta	609
Greece	617
Italy	623
Cyprus	627
Slovenia	638
Estonia	653
Croatia	655
Slovakia	675
Czech Republic	694
Germany	704
Ireland	714
United Kingdom	721
Austria	737
Finland	752
Norway	756
France	766
Switzerland	769
Sweden	775
Belgium	783
Luxembourg	791
Iceland	799
Denmark	822
Netherlands	872

Average Health Care Spending per Capita, 1980–2009
Adjusted for differences in cost of living

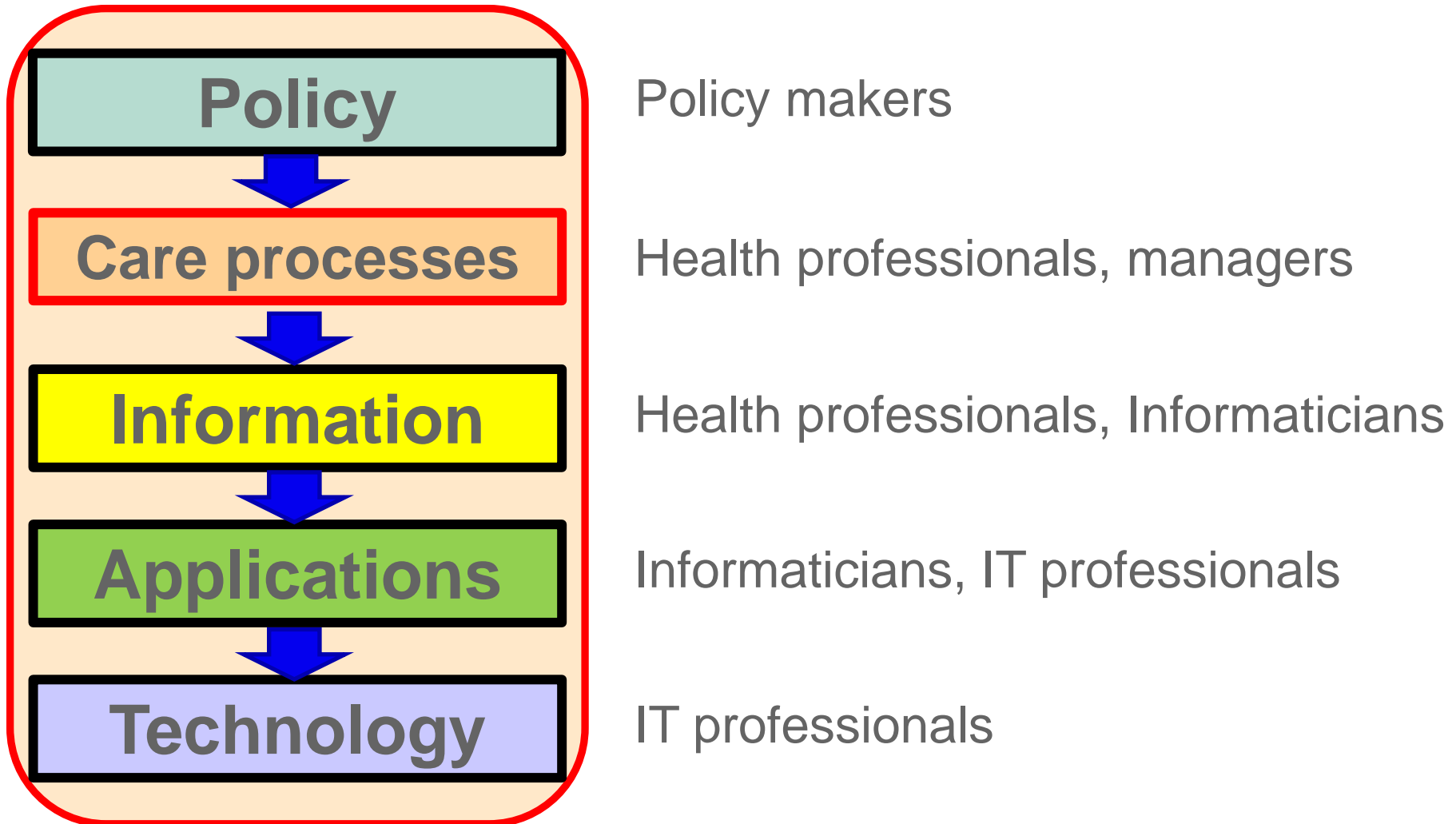Source: OECD Health Data 2011 (June 2011).

THE COMMONWEALTH FUND

Healthcare in the Netherlands

- Multi-enterprise business model:
- 100 hospitals, 4500 GP practices, 1800 pharmacies, 100 locum tenency services for GP's, each responsable for own finance, medical policies, investments, and IT
- Thus: interoperability problems are large on all levels
- → Urge for standards
- → Much debate ("polder"-model)

5 layers for architecture

Policy	Policy makers
Care processes	Health professionals, managers
Information	Health professionals, Informaticians
Applications	Informaticians, IT professionals
Technology	IT professionals

Architecture

- Coordinated design on all levels
- With all stakeholders involved

- Yields operable solutions
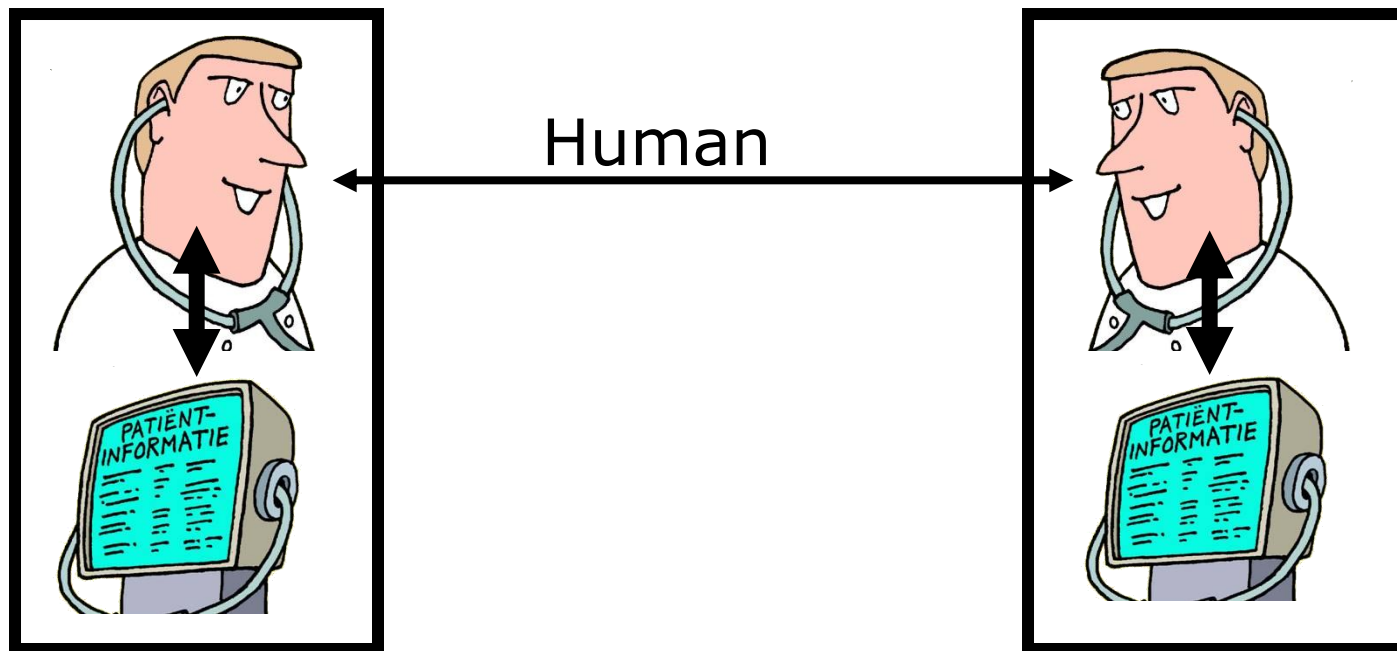
- For use within operable organisational units

*Inter*operability

- To bring about cooperation between operable units of different nature
- Selective information exchange
- "B2B interactions"
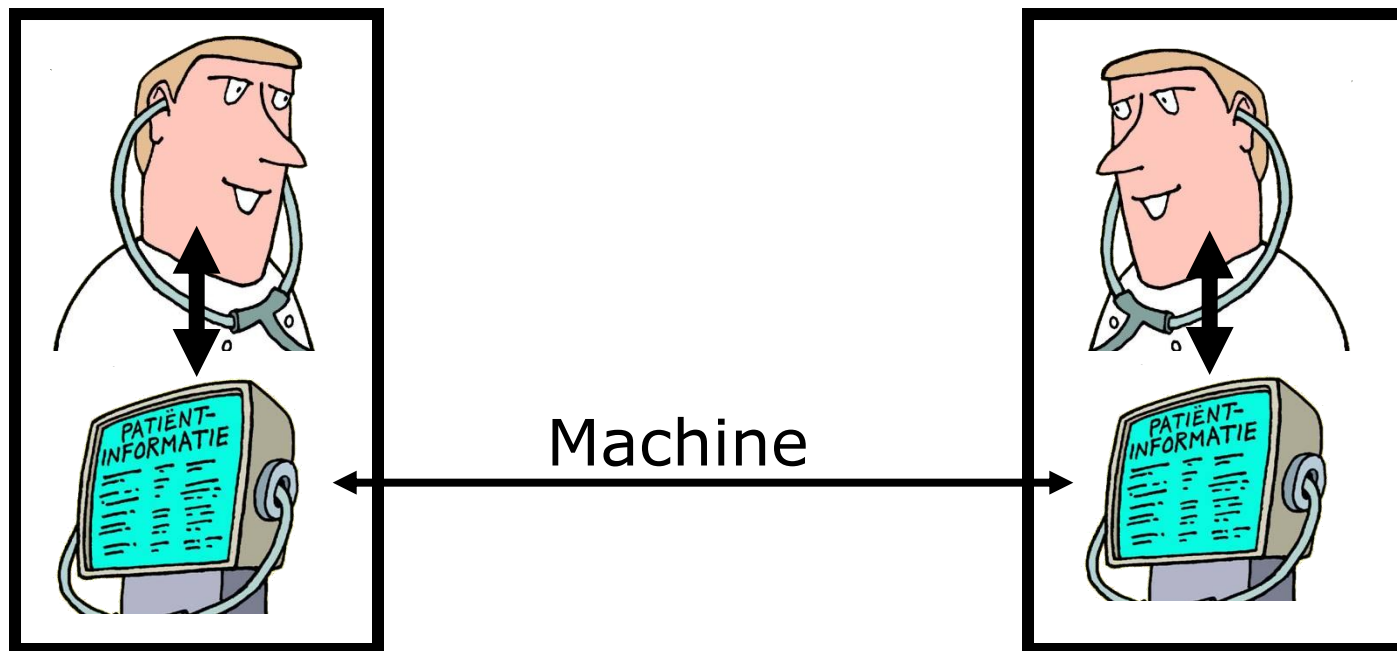
- Traditionally: humans
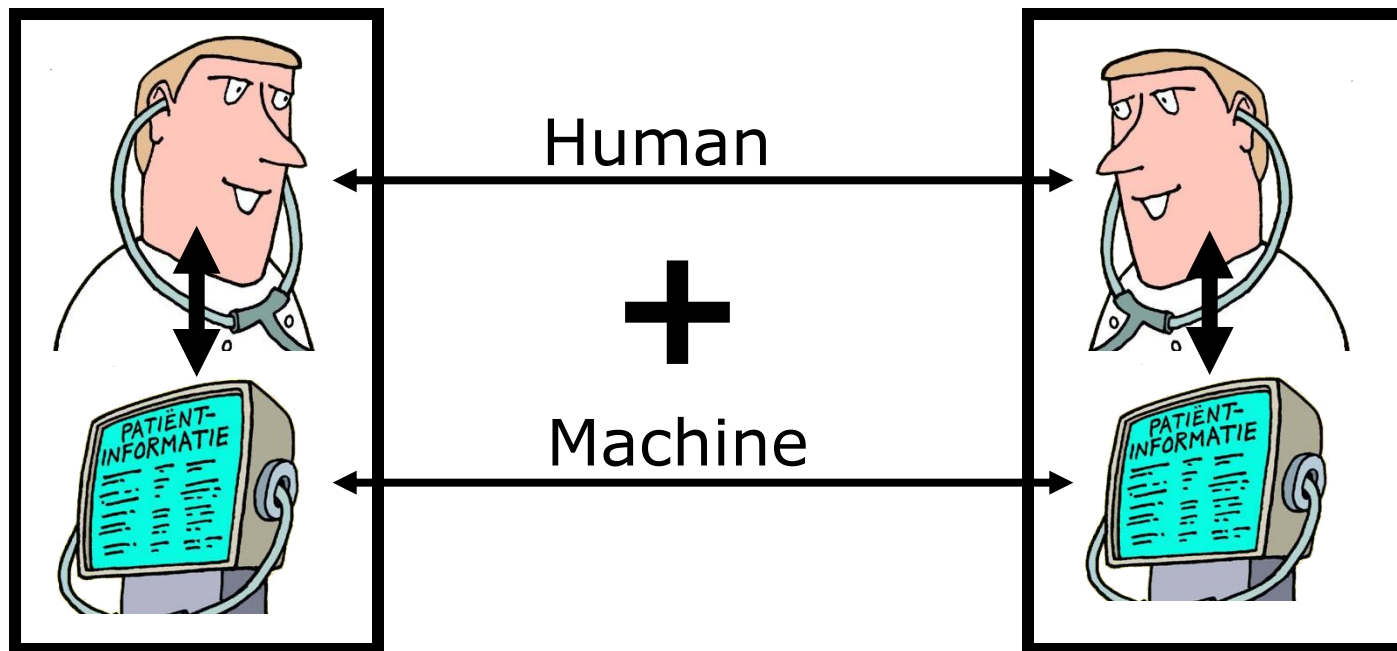- Nowadays: humans *and* systems

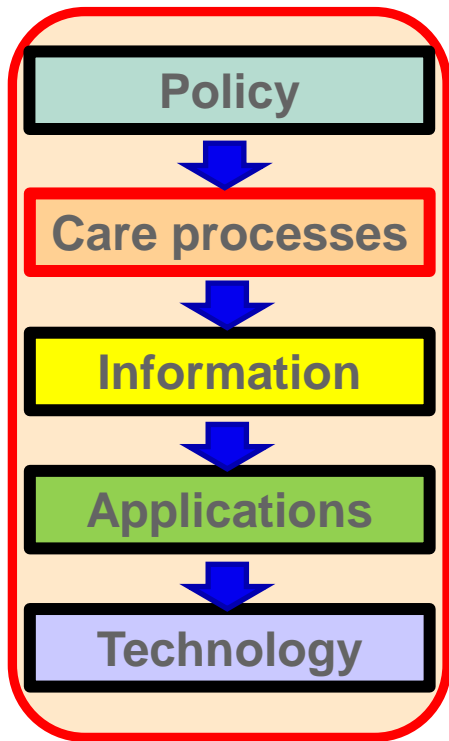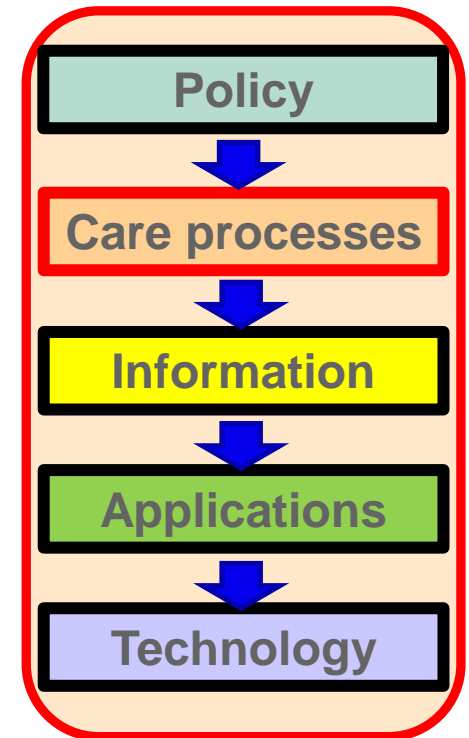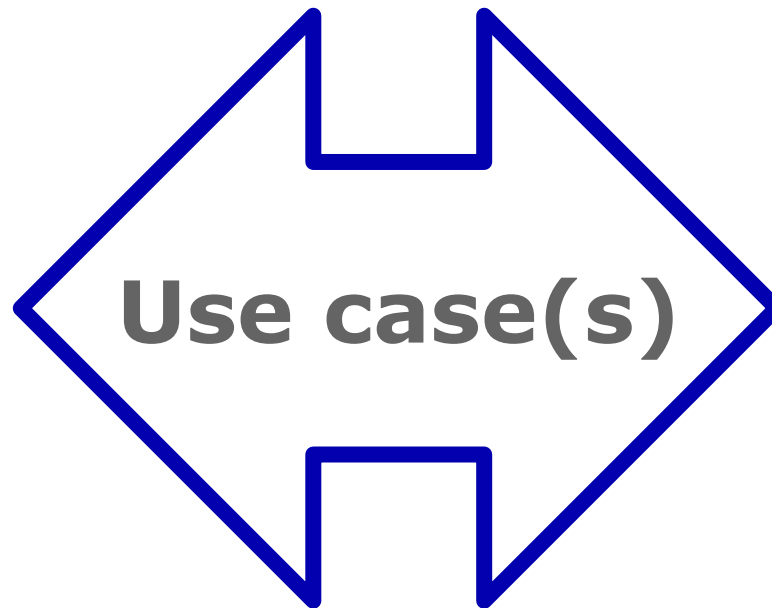# Within institutions
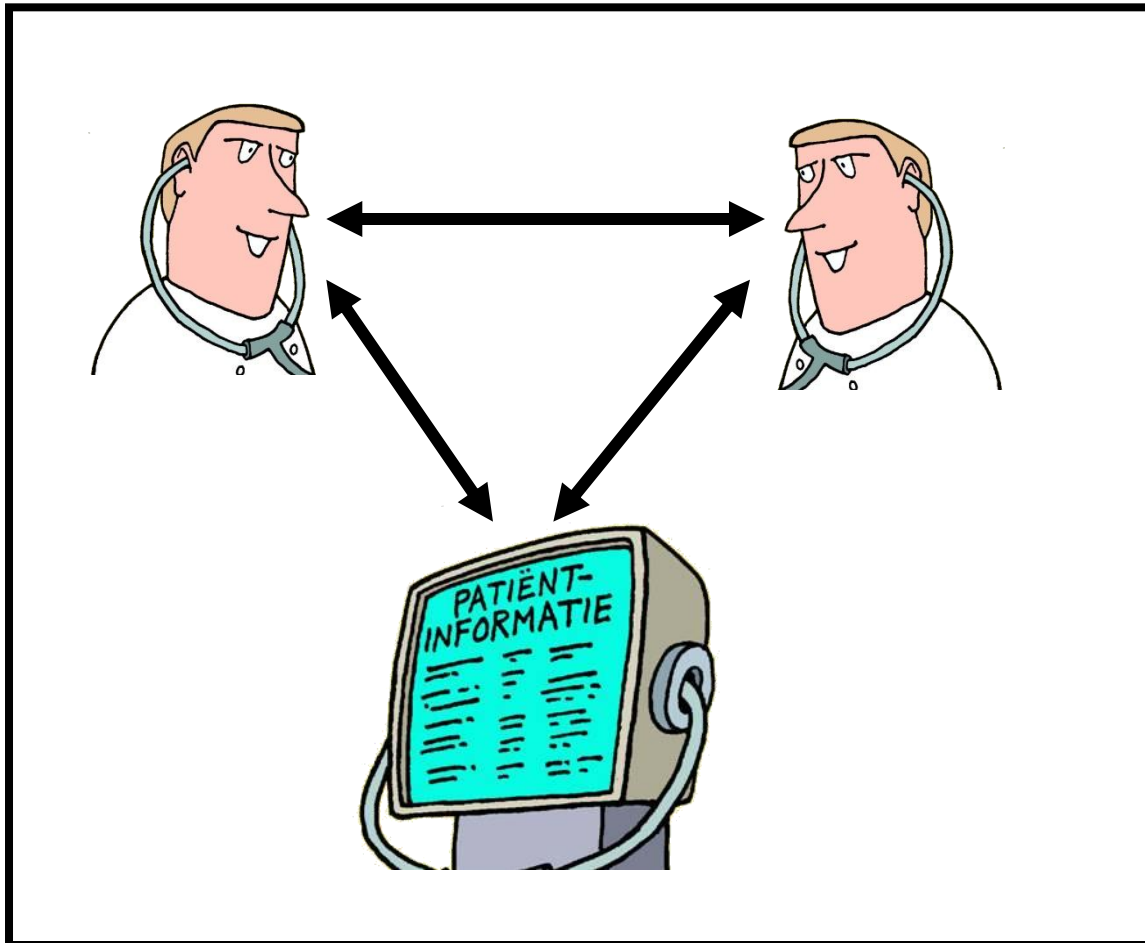
Between institutions

Between institutions

Machine

Between institutions

Human

+

Machine

Interoperability

Interoperability: example
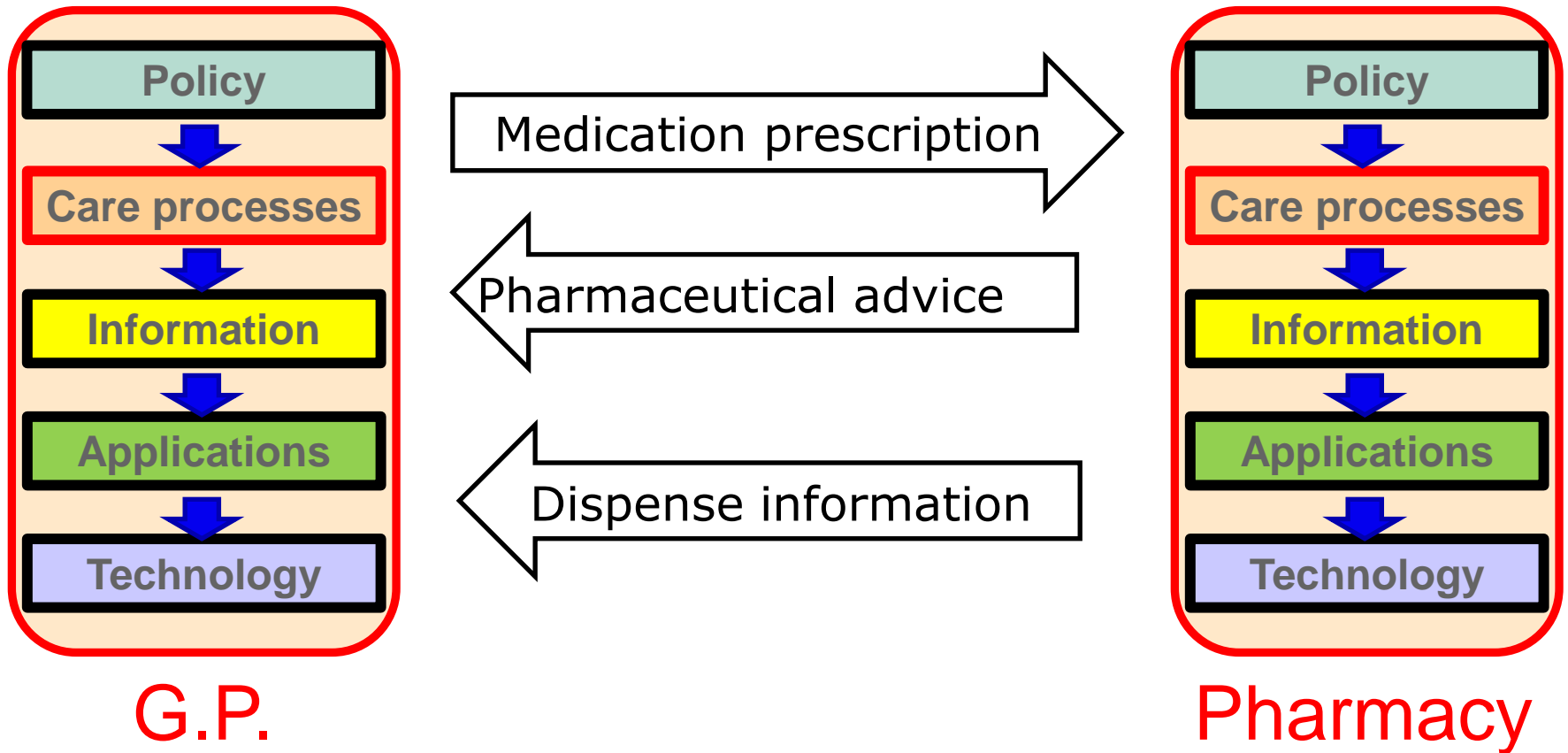
Semantic interoperability

Policy

| Care processes |

| Information |

| Applications |

| Technology |

What: structure

HOW: Coding

Policy

| Care processes |

| Information |

| Applications |

| Technology |

Transition between Health Professionals and IT

5 layers for architecture

Policy — Policy makers

Care processes — Health professionals, managers

Information — Health professionals, Informaticians

Applications — Informaticians, IT professionals

Technology — IT professionals

Interoperability

But…

- It only works when it works (on the clinical work floor!!)
- Standardisation, or, at least, agreement, is needed on all levels

- →national coordination and standardisation
- Local (regional) implementation

Agenda thus is 10-fold

Theme	Nationally / globally	Regionally / locally
Policy alignment	Agreements	Local agreements
Cooperation in health care	Guidelines	Regional coordination
Information content	Standards	Implementation
Applications	National agreements with vendors	Implementation in local systems
Infrastructure	Guidelines for safe communication	Creation and operation of infrastructures

With many actors

Theme	Nationally / globally	Regionally / locally
Policy alignment	Autorities, professional societies	Local cooperations
Cooperation in health care	Professional societies Profiling organisations (IHE)	Groups of HP's and/or HCP's
Information content	Professional societies Knowledge institutions SDO's, vendors	Health providers and professionals
Applications	Vendors associations, profiling organisations	HCP's and vendors
Infrastructure	National authorities, vendors	Vendors, HCP's

Build an infrastructure (AORTA)

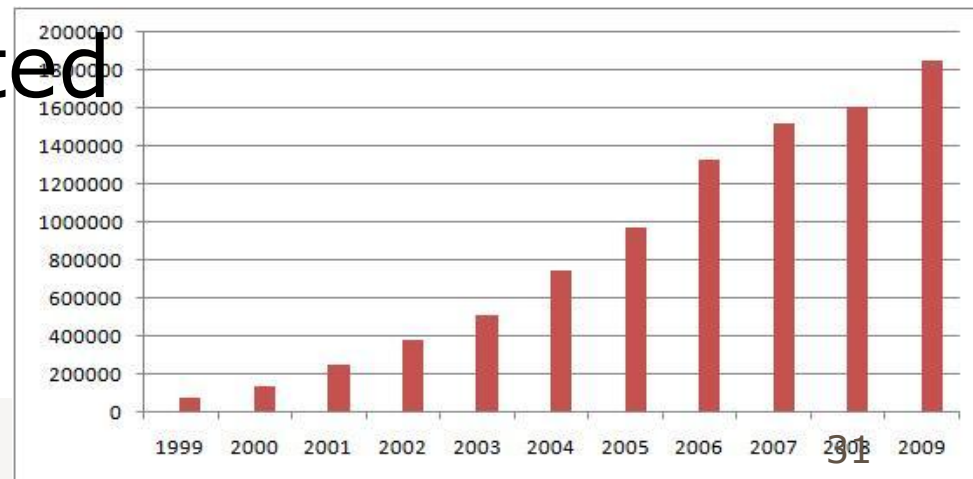| Theme	Nationally / globally	Regionally / locally
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AORTA

- Safe, national infrastructure
- Developed, partly implemented
- 20k messages/yr
- 8,5 M patients in database
- Political debate
- Use cases:
  - Patient summary
  - Overview of recently dispensed medication

Assist regional organisations

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Regional developments

- 100M messages /yr, 6/inhabitant
- Medication, lab, discharge
- Growing, 18%/yr
- Old standards (Edifact)
- Safety is doubtful
- Not inter-connected
- But: initiative is important !

Semantics unification program

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Semantics unification

- Led by Nictiz
- Knowledge, advice
- SNOMED has been chosen
- But also others (LOINC, etc)
- Tooling developed ART-DECOR (decor.nictiz.nl)

Cooperation of SDO's in NL

Theme	Nationally / globally	Regionally / locally
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Agreement between SDO's and PDO's

- Standards development: HL7-NL, IHTSDO (SNOMED)

- Profile development: IHE-NL

- NEN: national standards institute

- Nictiz: coordination, chairing

- Per december 1st: formal agreement, press release

Conclusions in the Netherlands (2012)

- Build one competence center that
  - Offers knowledge & advice
  - Coordinates
  - Stimulates
  - Fosters consensus processes
  - Publishes and maitains consensus outcomes
- But does NOT build one particular solution

Interoperability: directions forward

- Profiling: predefined and pre-solved use cases, internationally agreed: IHE, Continua, etc

- European harmonisation of approaches, e.g. EIF (eHealth Interoperability Framework)

- Participation in epSOS

- Semantic unification in NL: large program

- Role of the patient will become crucial

Over-all conclusions in NL

- Technology is NOT the solution
- Decouple standardisation from infrastructure (development, implementation and operation)
  - Scales are different
  - Kills the independence, and thus hampers interoperability
  - There is always more needed (than in one infrastructure available)
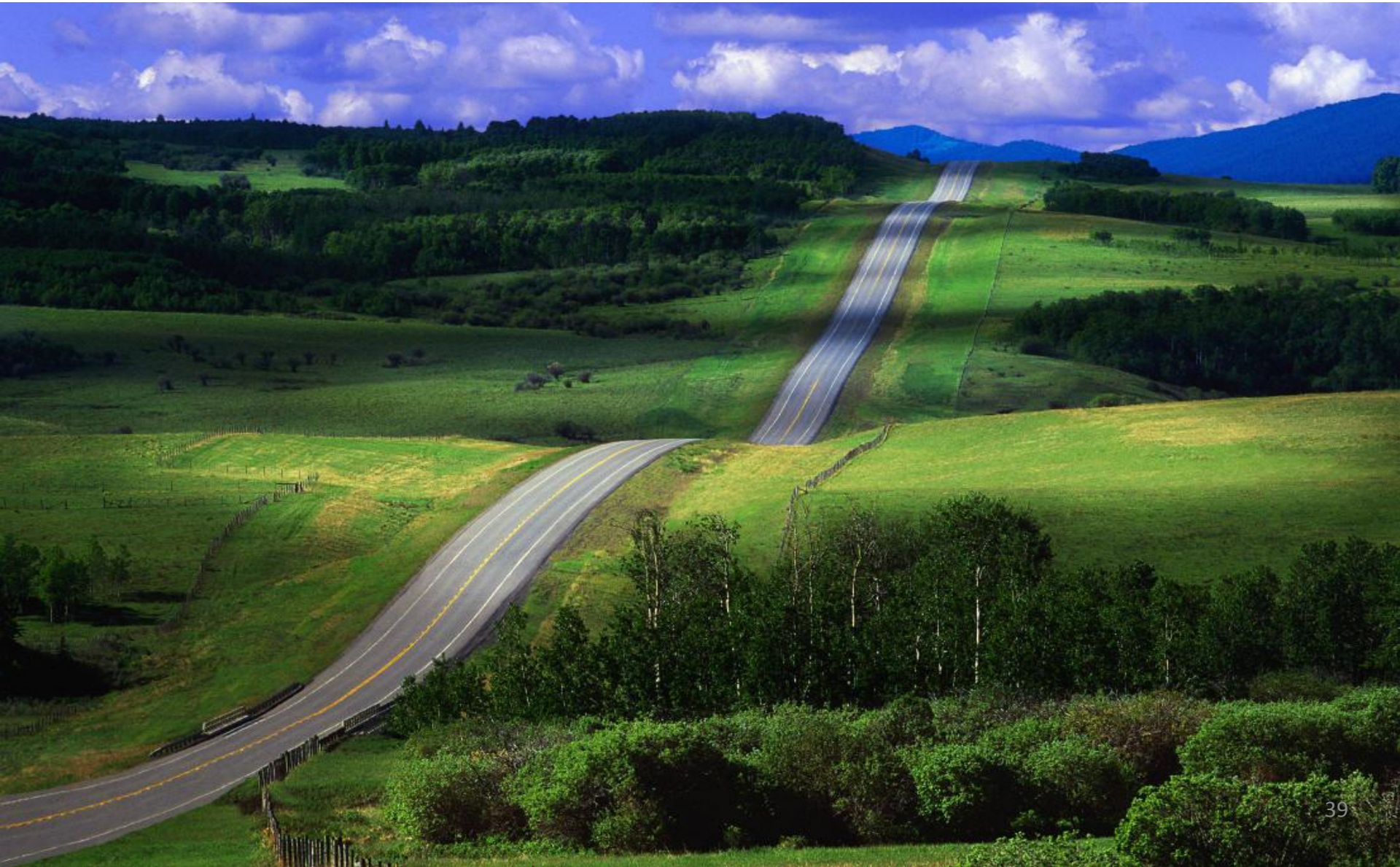
further information…

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