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Building a Business Collaboration Infrastructure for Health Care

Experiences from Switzerland

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Agenda

- **Healthcare in Switzerland**

- Competence Center Health Network Engineering (CC HNE)

- Problems

- Networkability

- eHealth Collaboration Infrastructure (eHCI)

- Investment Dilemma

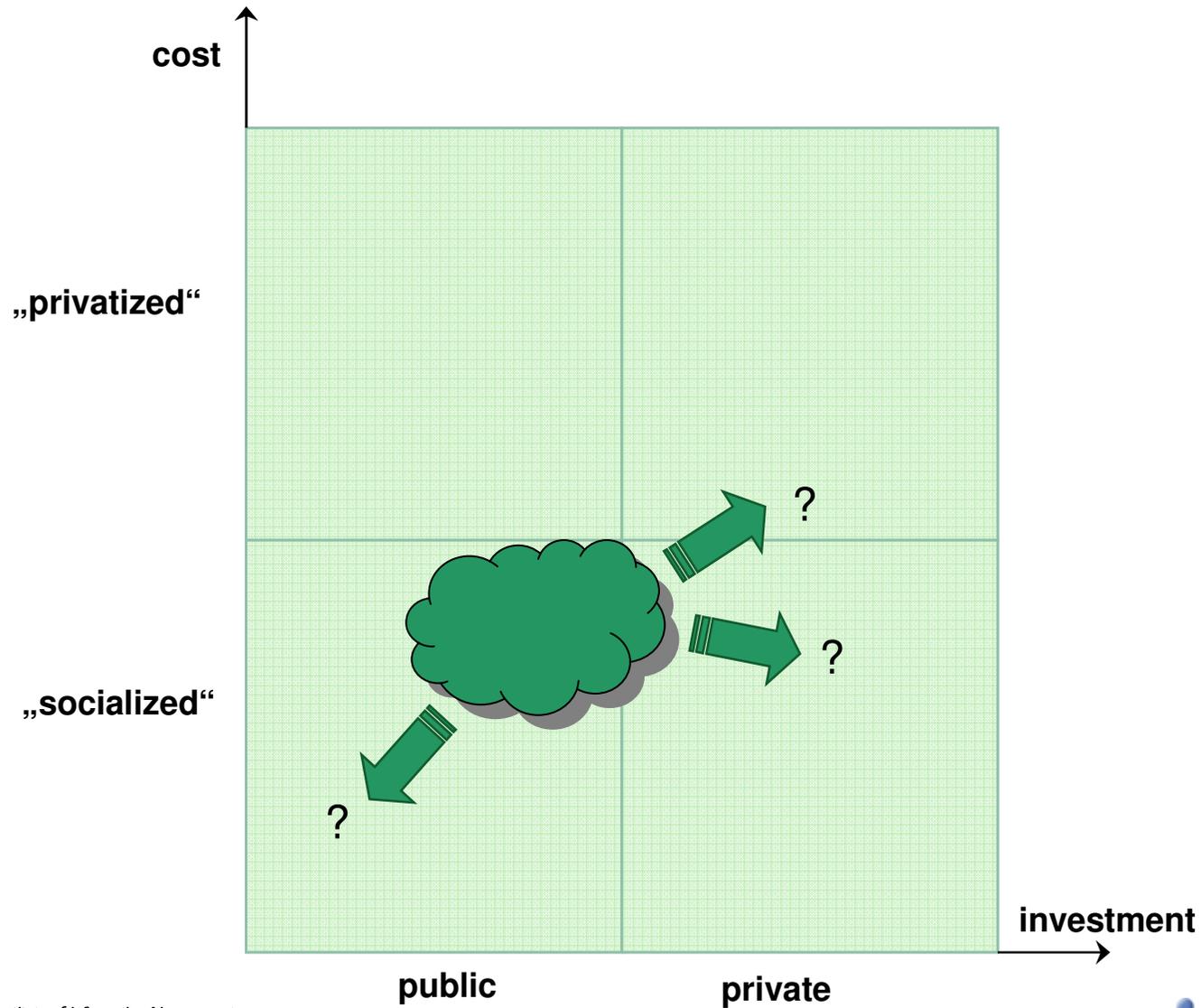- National/Regional eHCI

- Summary and Outlook

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Healthcare in Switzerland
Structure

- 7.5 mio. inhabitants

- Federal / decentral structure:

    - Federal government (definition, regulation and controlling of health issues)

    - 26 provinces (execution with particular regulation, disctinct organisations and infrastructures)

- Combination of public, subsidised private and fully private systems:

    - Public (state-owned): university hospitals, provincial hospitals

    - Subsidised private: (home) care services

    - Fully private: hospitals, specialized clinics, health centers, general practitioners, insurance companies (health insurance is mandatory), service providers

- Distinct structures and payment systems for inpatient and outpatient services („SwissDRG" coming soon, „TARMED")

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Healthcare in Switzerland
Competition in Service Delivery

cost

„privatized"

„socialized"

investment

public   private

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Healthcare in Switzerland
Cost Development

Gesundheitsausgaben nach Leistungserbringern

Anteil 2007
- 18.8%
- 35.0%
- 9.3%
- 1.1%
- 4.2%
- 29.9%
- 1.7%

Anteil 1995
- 16.7%
- 9.4%
- 34.9%
- 1.1%
- 31.2%
- 4.4%
- 2.4%

Legend:
- Krankenhäuser
- Sozialmedizinische Institutionen
- Ambulante Versorgung
- Detailhandel
- Staat
- Versicherer
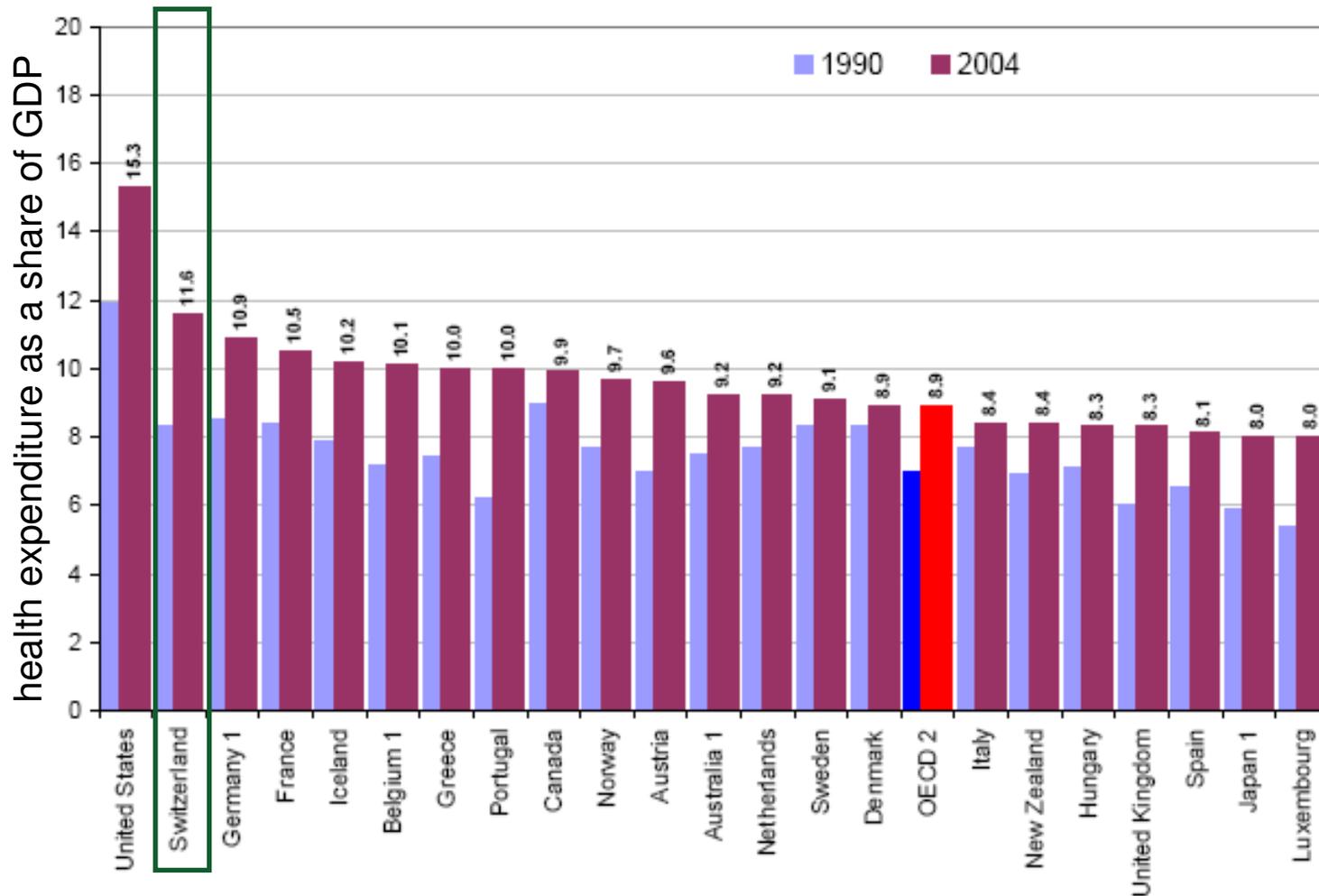- Organisationen ohne Erwerbscharakter
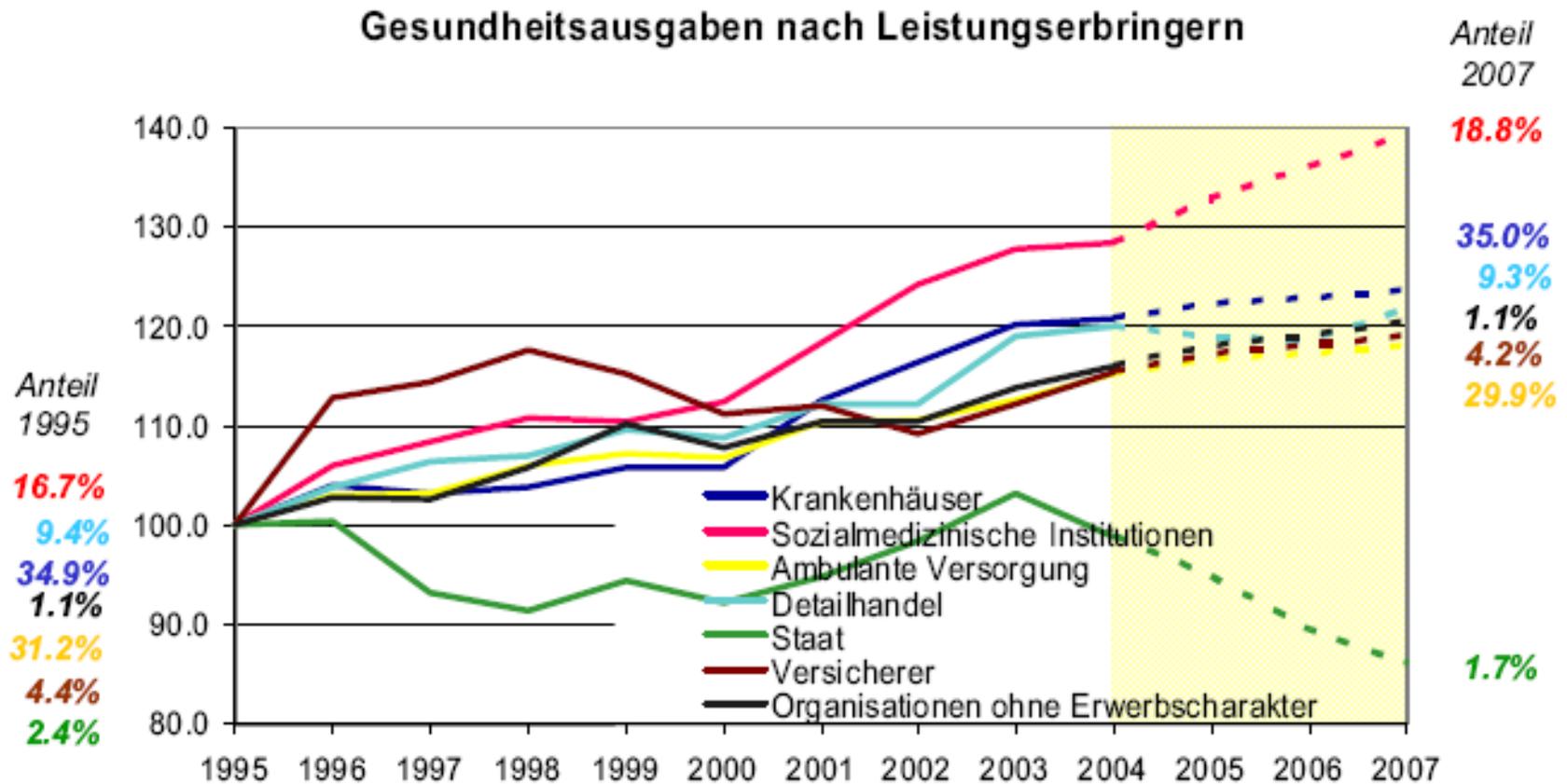
Source: Konjunktur Forschungsstelle ETH Zürich, Frühjahrsprognose der Entwicklung der schweizerischen Gesundheitsausgaben 2005–2007, Juni 2006

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Healthcare in Switzerland
International Comparison (Cost as part of GDP)

Source: OECD Directorate for Employment, Labour and Social Affairs [homepage on the Internet]. Change in health expenditure as a share of GDP, OECD countries, 1990 and 2004 [cited 2007 July 08]. Available from: http://www.oecd.org/dataoecd/5/28/36992150.pdf

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Organization and Purpose

- Part of the Institute of Information Management at the University of St. Gallen

- Small, very specialized team

- Exchange of best practice

- Management education

- Design research (create new and innovative artefacts that address relevant problems; .. together with the relevant partners; … intensive evaluation phases)

- Our intention

  - We do not intend to change the Swiss healthcare system (directly)

  - we support our members in their own transformation (quality of outcome, efficiency of operation, cost control, competitiveness, …)

  - therefore we do change the system (indirectly) ☺

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Serving the Swiss Hospitals

CC HNE
Research areas

- Cooperation and Collaboration:
  - Primary Care (Hospital) - Secondary Care
  - Hospital - Hospital
  - Hospital - Insurance
  - Hospital - Supplier (SRM)

- Process Management (administrative and clinical):
  - PBB: Process Building Blocks (services in the organization layer; an FP6-EU-research-project)
  - Process-oriented patient identification (as a service and a centerpiece between the organization layer and IT layer)

- Business value of IT in healthcare (together with industry partners)

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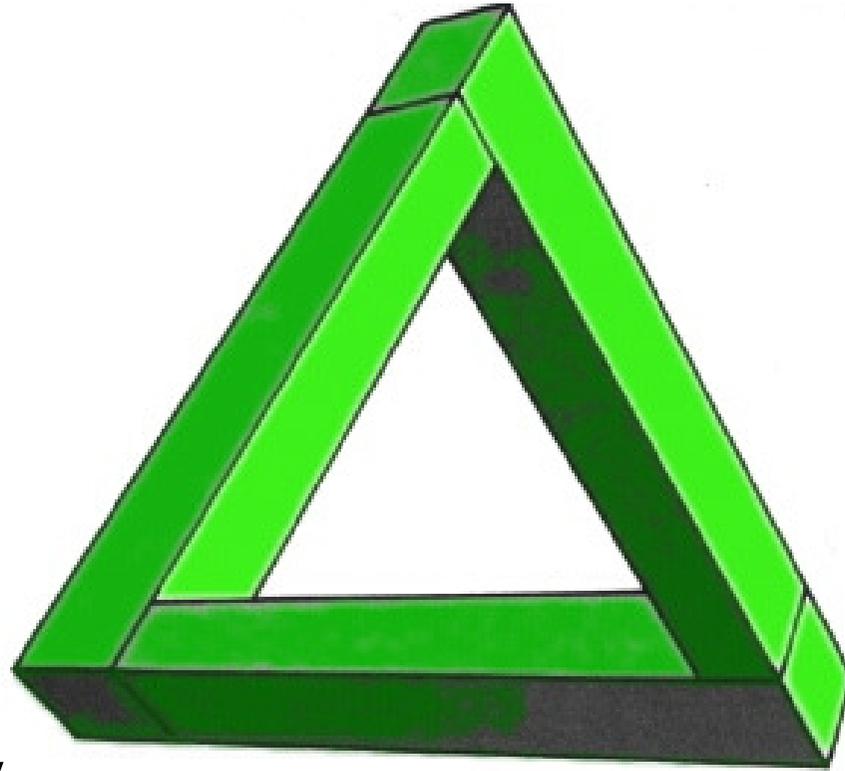Slide 10

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Problems
Goals

Quality
(Producing a steady outcome; safety)

Efficiency
(Doing the things right)

Effectiveness
(Doing the right things)

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Problems
Effectiveness (of a Hospital)

- High degree of regulation:
  - Law
  - Politics
  - Service Agreements
  - …
- No incentives for a patient-centric behaviour (e.g. reduction of waiting times, conjoint treatment planning, swift information) or patient experience
- …

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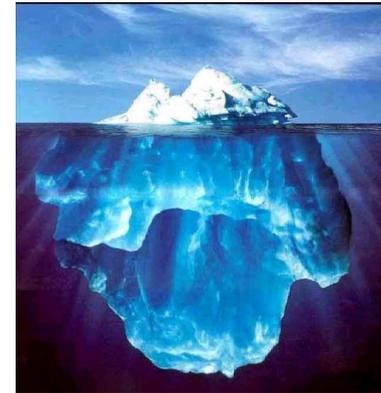
Problems
Efficiency and Cost

- **The Whole System**
  - Ageing of the society; chronic/degenerative diseases
  - Densitiy of supply
  - Growing number of doctors
  - Technological advancements
  - Rising expectations

- **Hospitals**
  - Many incentives for expansion
  - Relationship between cost and price (in spite of DRG)
  - ...

Source: Institut für Sozial- und Präventivmedizin der Universität Zürich

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Problems
Quality of Outcome (incl. Patient Safety)

- Some Examples (...):
  - Blood Transfusion Errors
  - Wrong Side Surgeries
  - Medication Errors
  - ...

- CIRS

- Opposition against transparency [in an industrialized and competitive environment, it's the customer who judges the quality, in healthcare it's the „supplier"...]

- ...

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Problems
Health Care Compared to Competitive Industries

Health Care

- ***Outcome (Patient)***

- Monolithic structures with a low degree of (external) division of labour

- Limited competition
  (in the state-owned sector)

- Hierarchies, administrative agreements

- Costs (plans)

- Better/more outcome leads to higher costs

Machine Works (Ex.)

- ***Output (Customer)***

- Very high degree of division of labour between the actor (industrialization)

- Intensive competition

- "Coopetition" (***networking*** and ***standards***)

- Prices (market)

- More output leads to diminishig costs

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Problems
Transformation Will Take Place

- The Rapidity … of Transformation [Greenwood, Hinnings 1996]:
  - „Highly regulated sectos withstand change …",
  - „If there is a disruption strong enough…, change will be radical and happening fast"

Problems
Transformation Path (Rather Internally)

- The Evolving World of Health Care Organizations [Scott et al 2003]: Reduction of government-owned hospitals,
  - Competitiveness:
    - Running a hospital as a business

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Problems
The Swiss Hospital Agenda: Competitiveness

!

SWOT	Strategie	Marketing	Markenpolitik
Prozess-management	Klinische Pfade	Kosten-management	Fall-management
Patienten-zufriedenheit	Beschwerde-management	Kooperationen (Zuweiser, Spitäler, Krankenkassen, Hersteller, Service Provider)	Qualitäts-management
Outcome-Transparenz	Organisations-struktur	Controlling/BSC	Mitarbeiter-entwicklung
Ziel-vereinbarungen	Benchmarking/Assessment	Risiko-management	Management E-Health

Physicians do typically not have any management education

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Problems
Transformation Path (Also Externally)

- The Evolving World of Health Care Organizations [Scott et al 2003]: Reduction of government-owned hospitals,

  - Competitiveness:
    - Running a hospital as a business [see you consultant]

  - Interconnection of the actors [let's do serious research on this]:
    - Higher level of Specialization
    - Increase of cooperation between healthcare service providers
    - Advance of collaboration between healthcare service providers and other actors
    - Integration of different partners into delivery systems, „*combined with insurance and financial function …*"

  - …

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Networkability

What is ist?

Networkability is the ability ***of every single actor*** to team up with other players (in the health care sector)
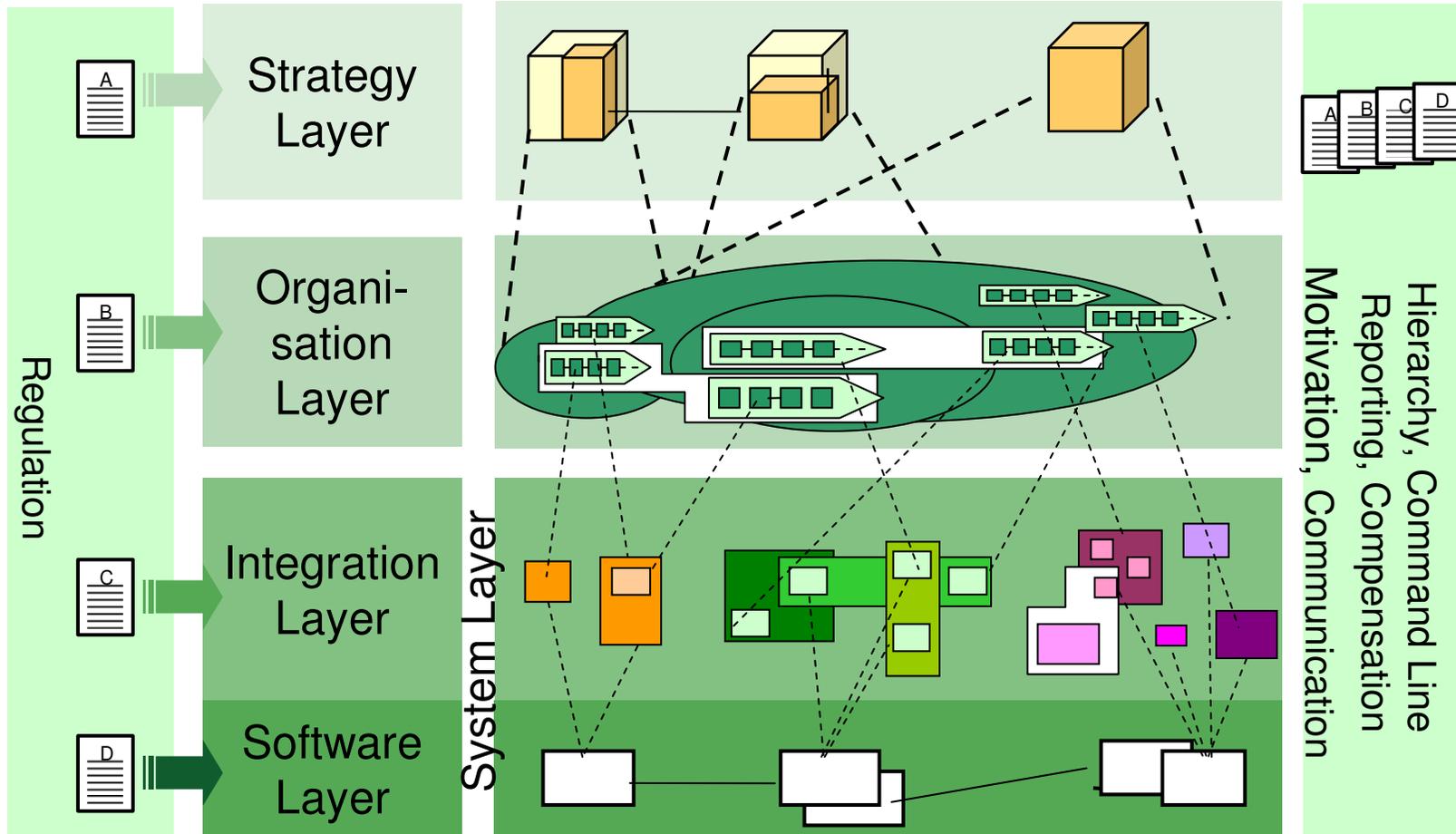
- rapidly
- and with low setup costs

for the joint delivery of services

This aint no „technical" task at all!

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Networkability

A Complex Task: Some *Business* Engineering Needed…
… leading to a higher IT-adoption rate

Strategy Layer

Organi-sation Layer

Integration Layer

Software Layer

Regulation

System Layer

Hierarchy, Command Line
Reporting, Compensation
Motivation, Communication

Source: Based on [Winter2003]

Networkability
Teaming Up…

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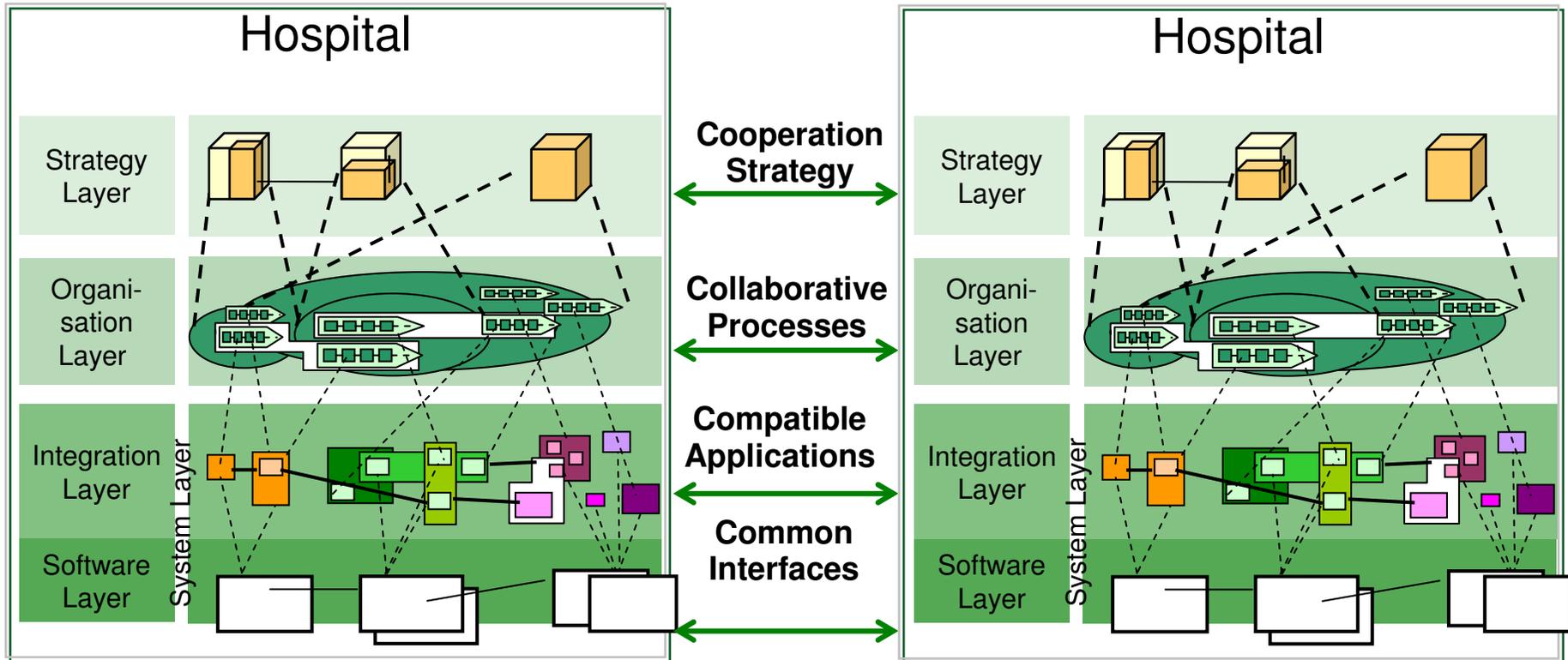
Networkability
Factors (Objects) Influencing Networkability

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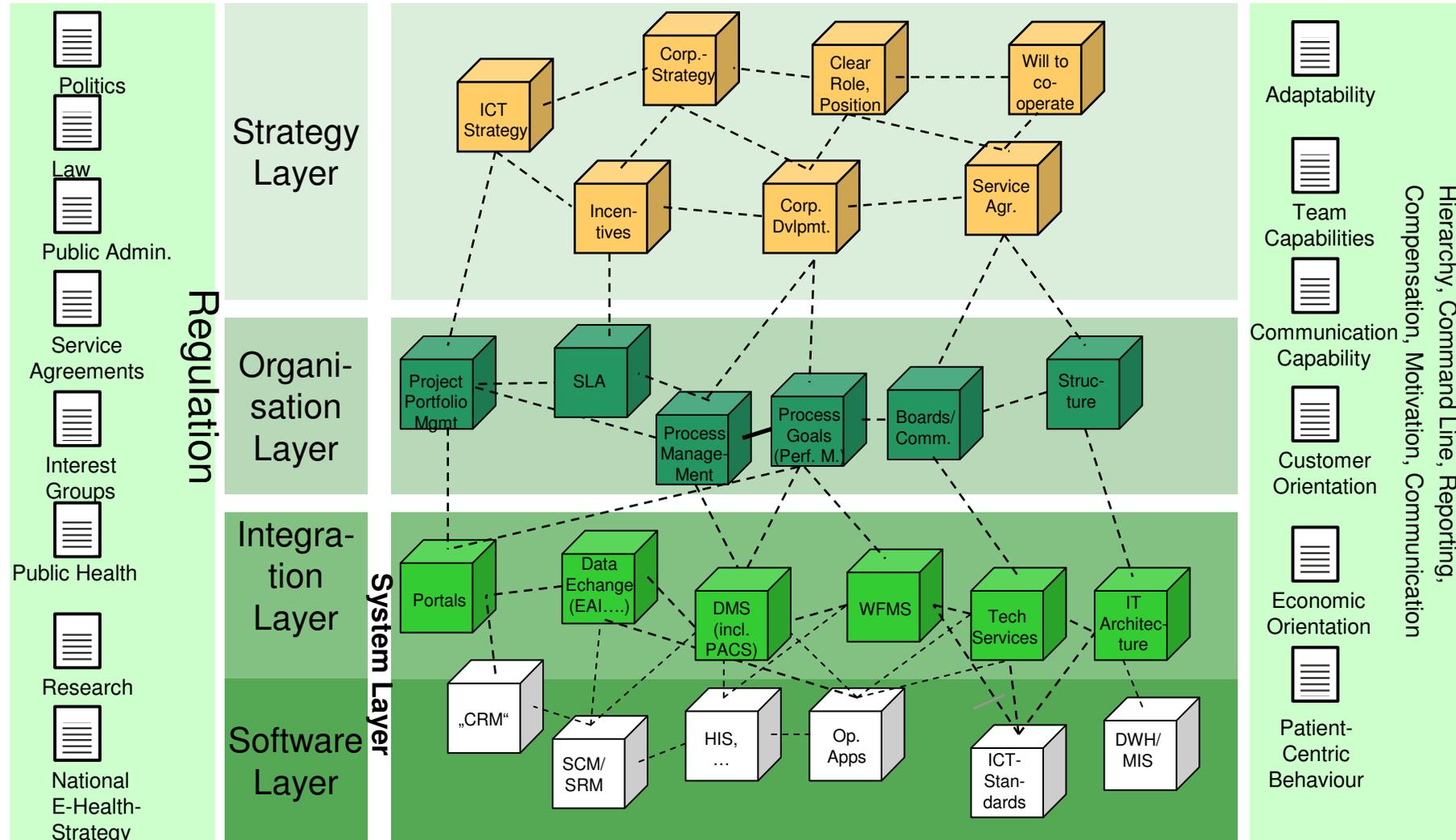
Networkability
Evaluation of the Factors (Objects)
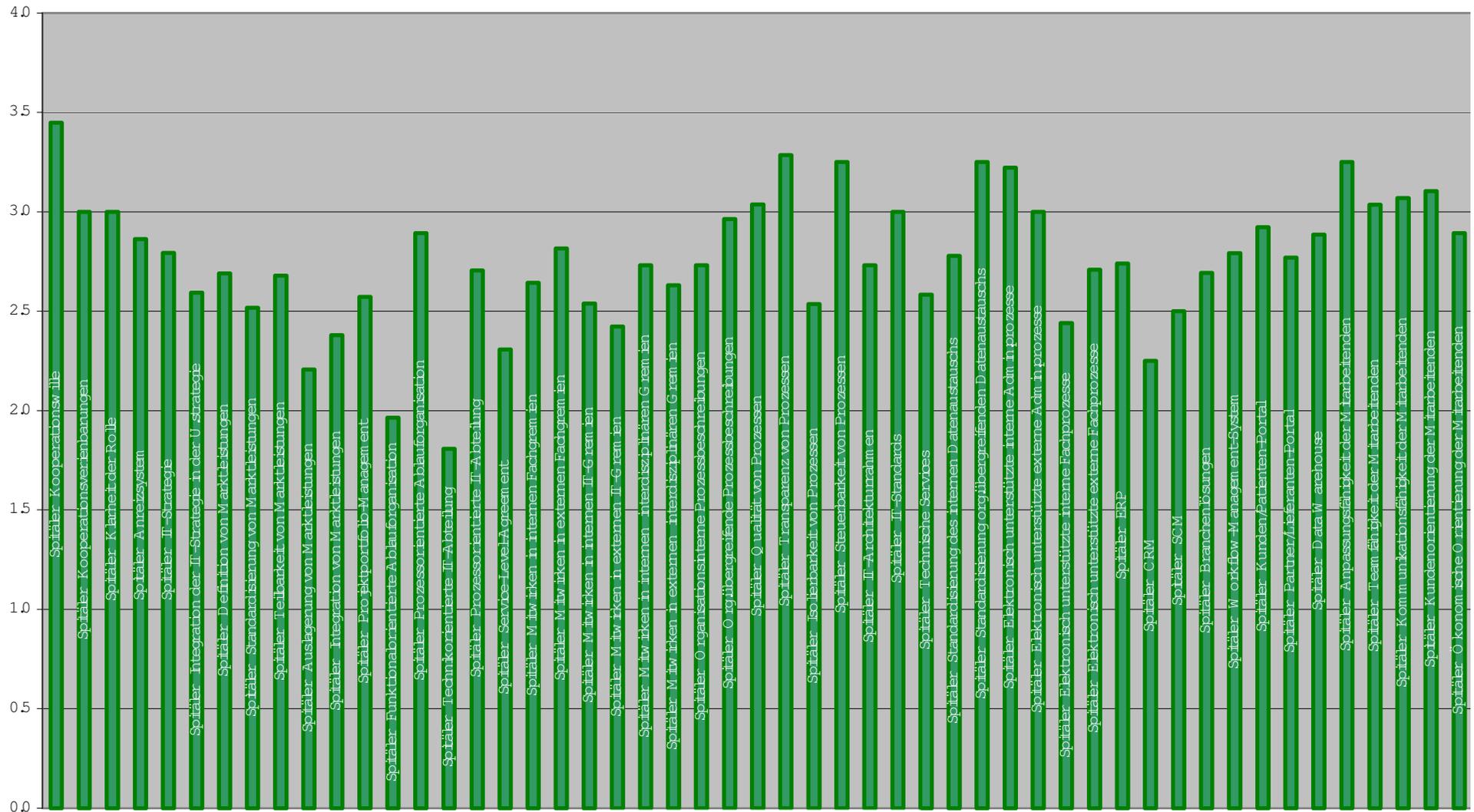
Networkability
Priority of the Factors
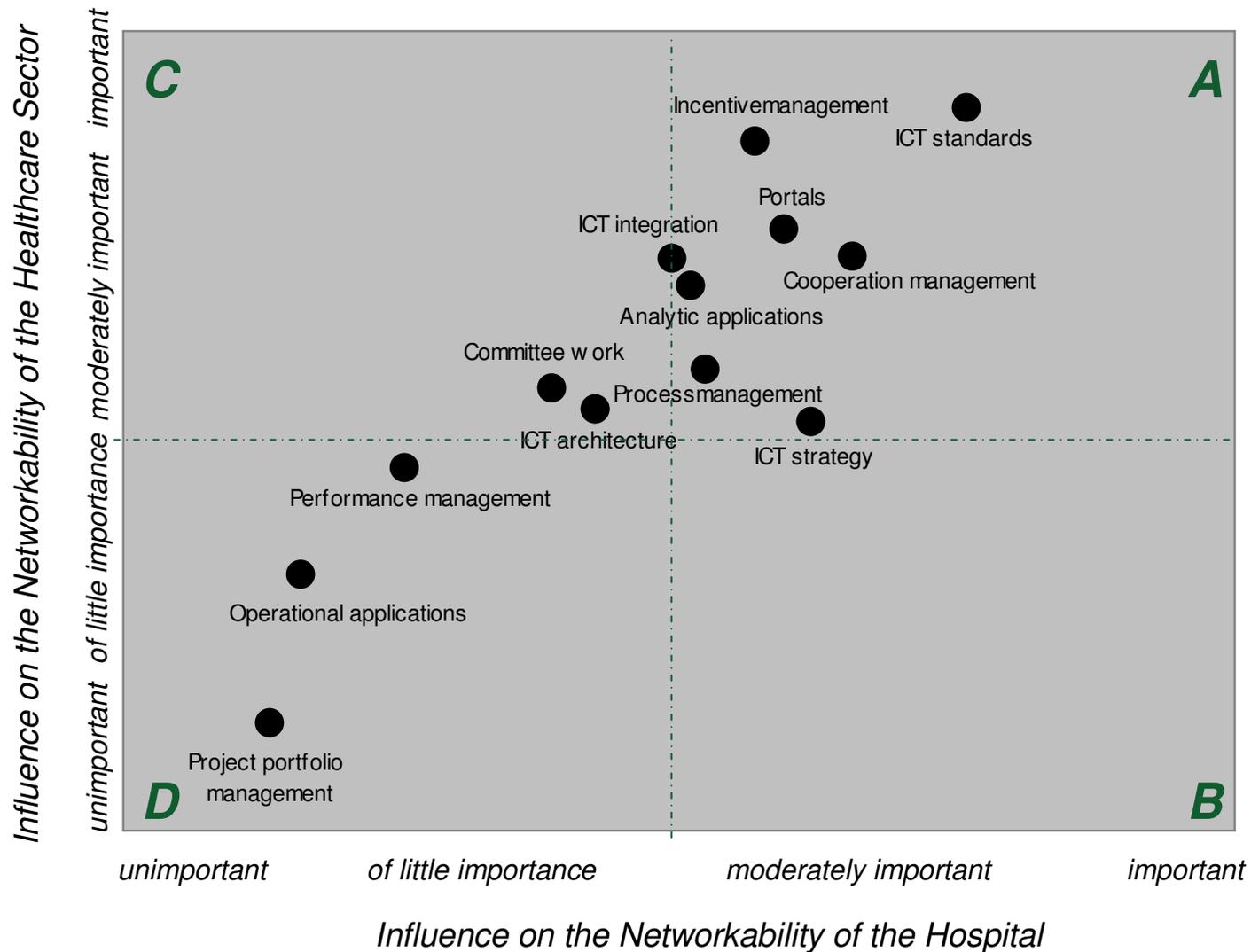
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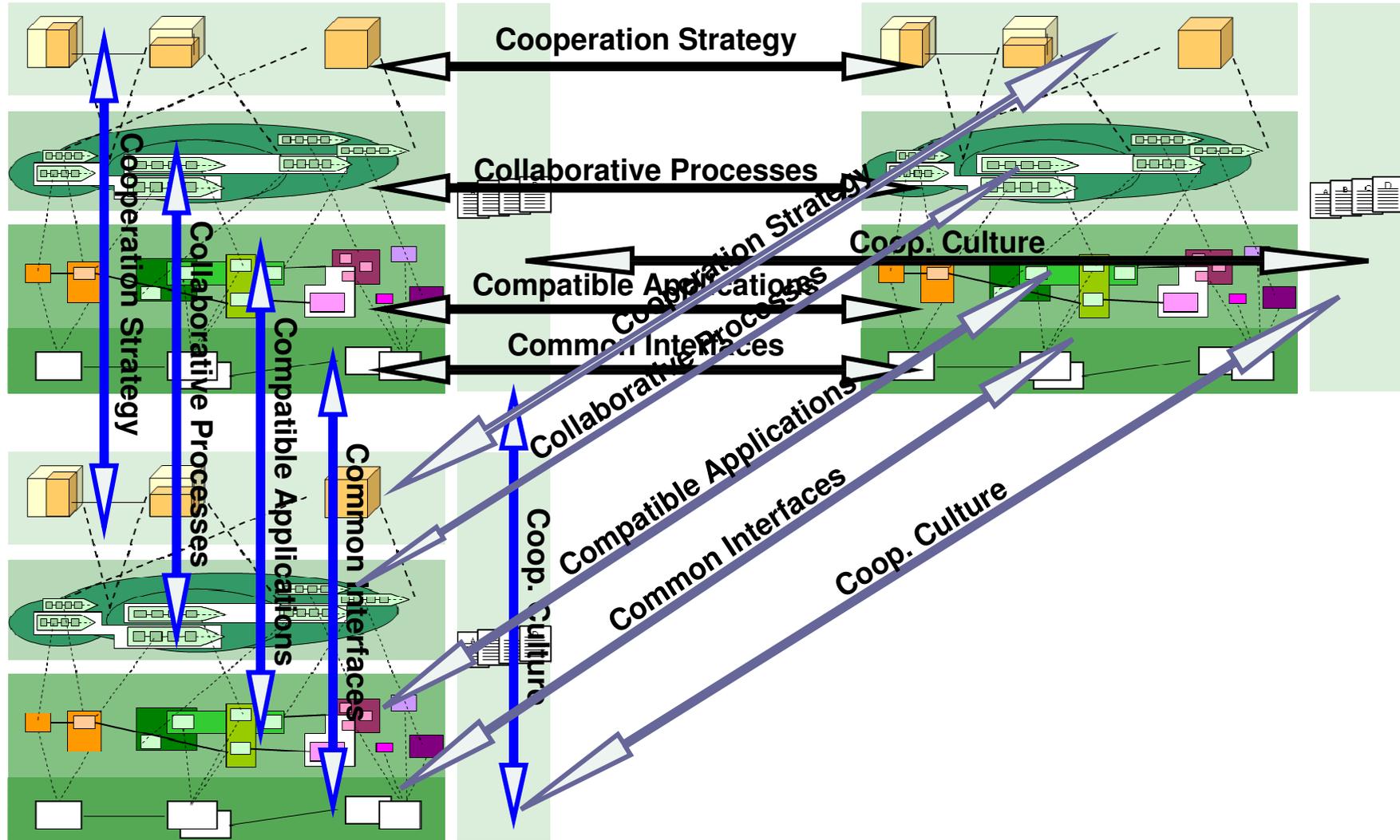Health Network Engineering

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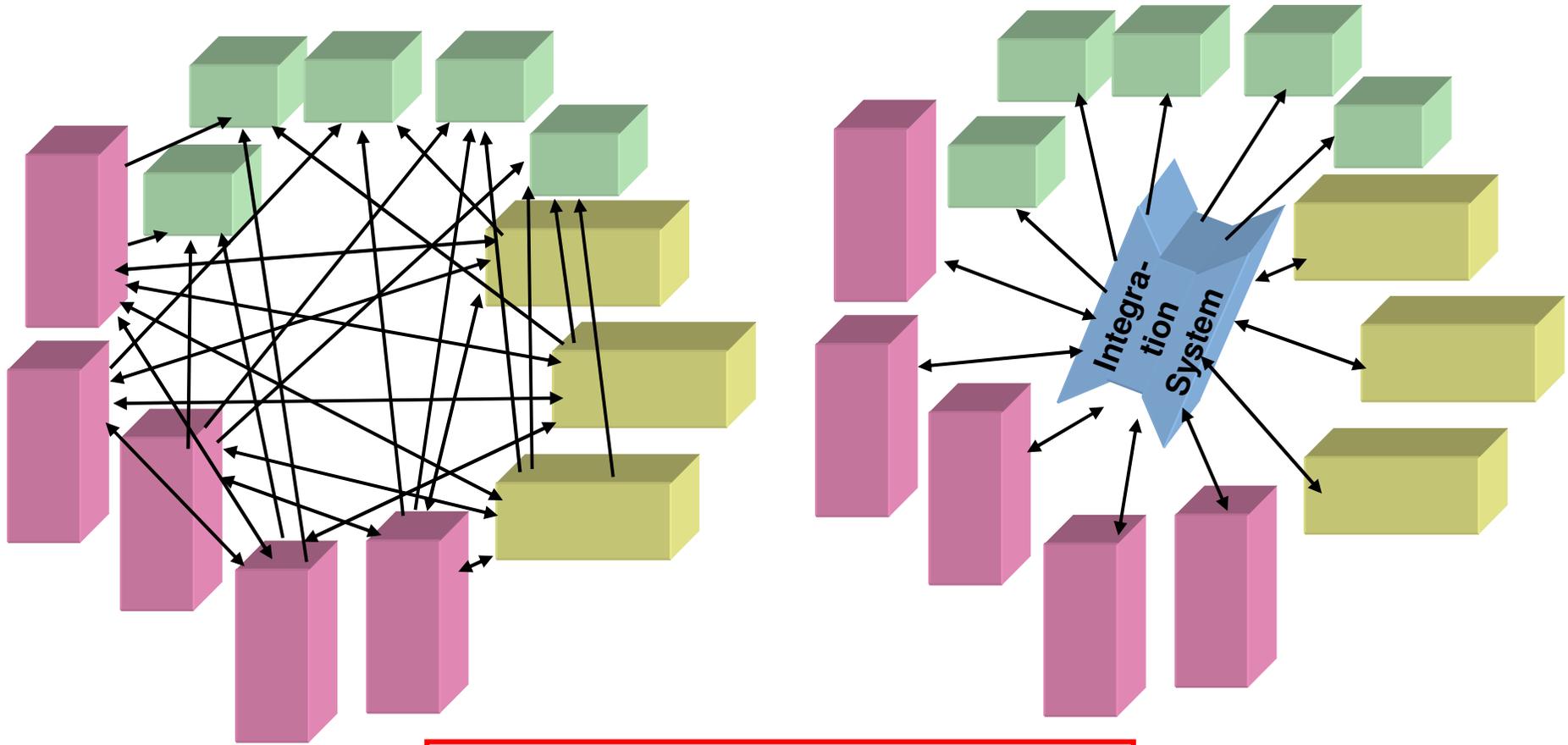- National/Regional eHCI

- Summary and Outlook

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eHealth Collaboration Infrastructure
Teaming Up …

Cooperation Strategy

Collaborative Processes

Coop. Culture

Compatible Applications

Common Interfaces

Cooperation Strategy

Collaborative Processes

Compatible Applications

Common Interfaces

Coop. Culture

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eHealth Collaboration Infrastructure
Teaming Up: Hub and Spoke…

$$n \times (n-1)/2 \quad \text{Integration System} \quad n$$

eHealth Collaboration Infrastructure
Teaming Up: Standards and Services

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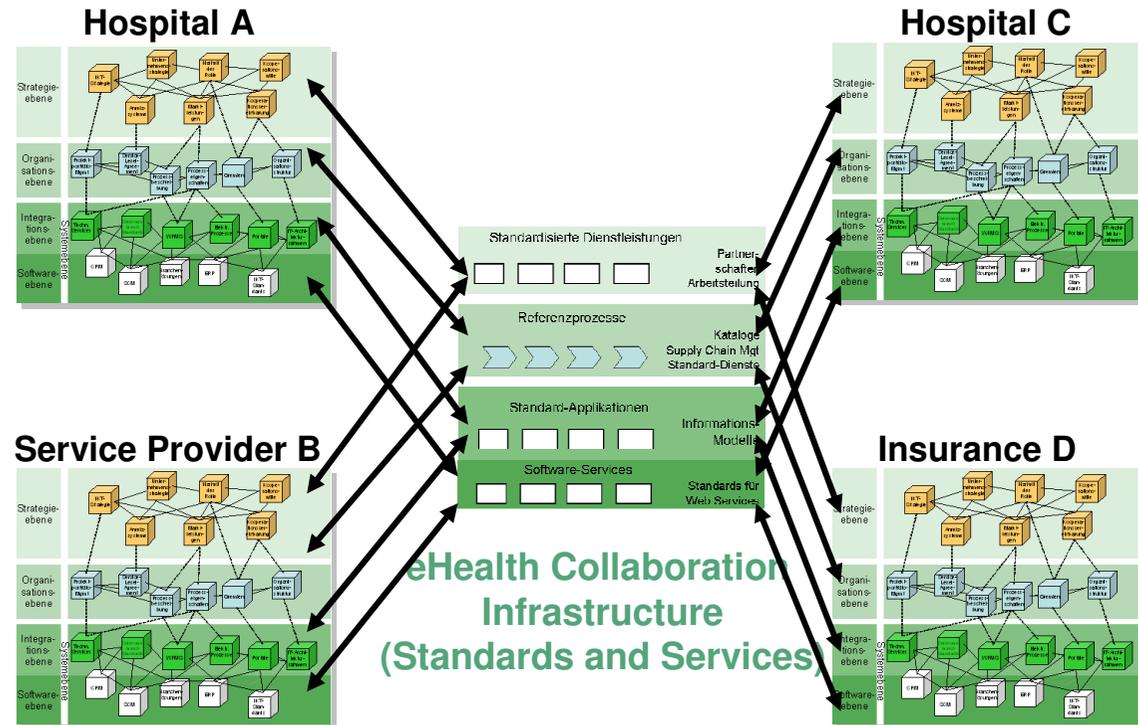
eHealth Collaboration Infrastructure
Types of Cooperation and Collaboration

- Primary Care - Secondary Care (Hospital)

- Hospital - Hospital (e.g. Regionalization, Specialisation, Shared Services)

- Hospital (or Delivery System) - Insurance

- Hospital - Supplier or Service Provider (e.g. Ambulance, Blood Donation, Medical Equipment)

- Hospital - Government Agency

- … also over the border (Austria, France, Germany, Italy)

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eHealth Collaboration Infrastructure
Different Combinations of Partners (Business Models)

- B2E (e.g. use of a HIS, PACS)

- B2B2E (e.g. resource and appointment management; typically with user interaction)

- B2B (e.g.logistics data, payment; typically without user interaction)

- B2C (e.g. HMO portal)

- B2B2C (e.g. EHR portal)

- B2C2B (e.g. EBPP with „Tiers Garant")

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eHealth Collaboration Infrastructure
Services (1/2)

- EHR (…)
- Patient Relationship Management
- „Kostengutsprache" (insurance states that it will pay the cost)
- Billing
- Financial Clearing
- Prescription
- Doctors Letter
- Resource Planning

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eHealth Collaboration Infrastructure
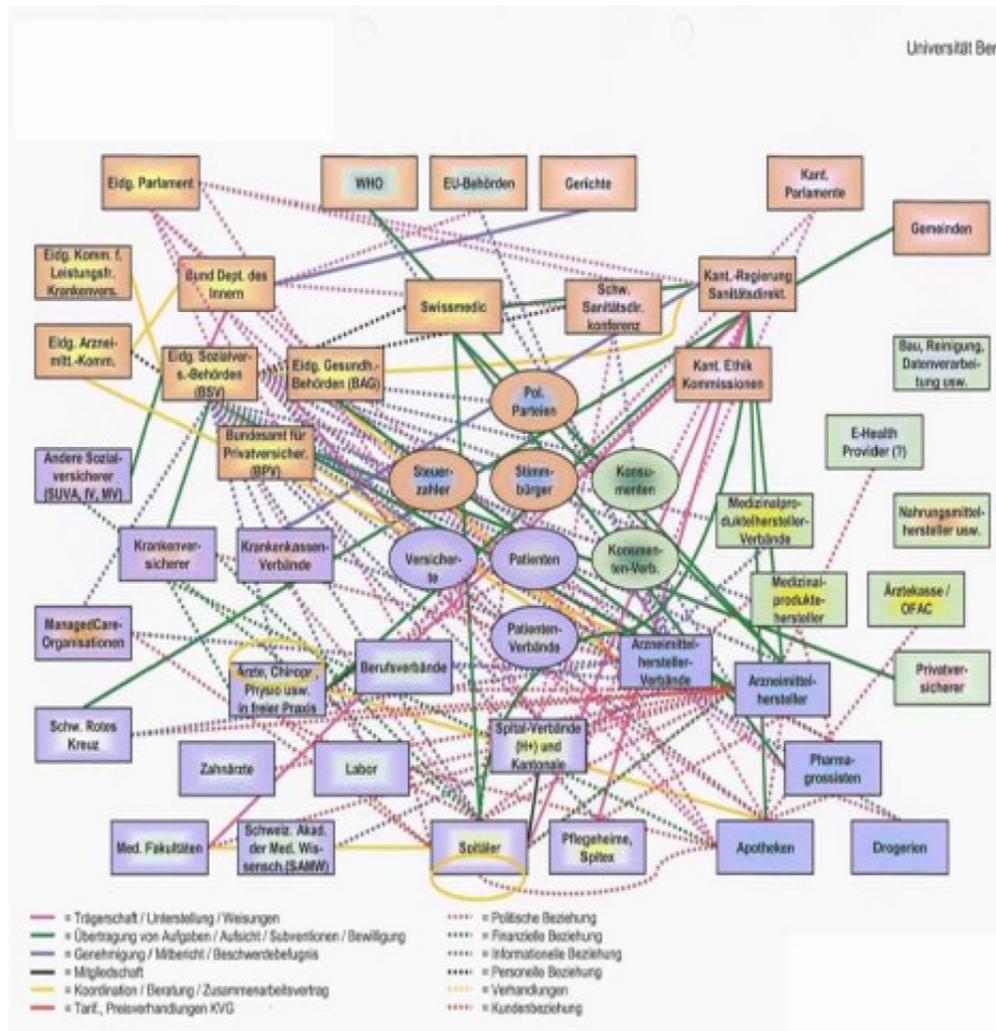## Services (2/2)

- Treatment Planning
- Diagnostic Support
- Telemedicine Support
- Knowledge Sharing
- Shared Commercial Services (e.g. Logistics, SRM/SCM, Finance)
- Catalog Services (e.g. Pharmaceutical Master Data)
- Identity Management (Health Professionals)
- Patient Identification (MPI, …)
- …

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Investment Dilemma
Complexity

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Investment Dilemma
Value of an IT Solution for a Single Player

- ***Differentiation***

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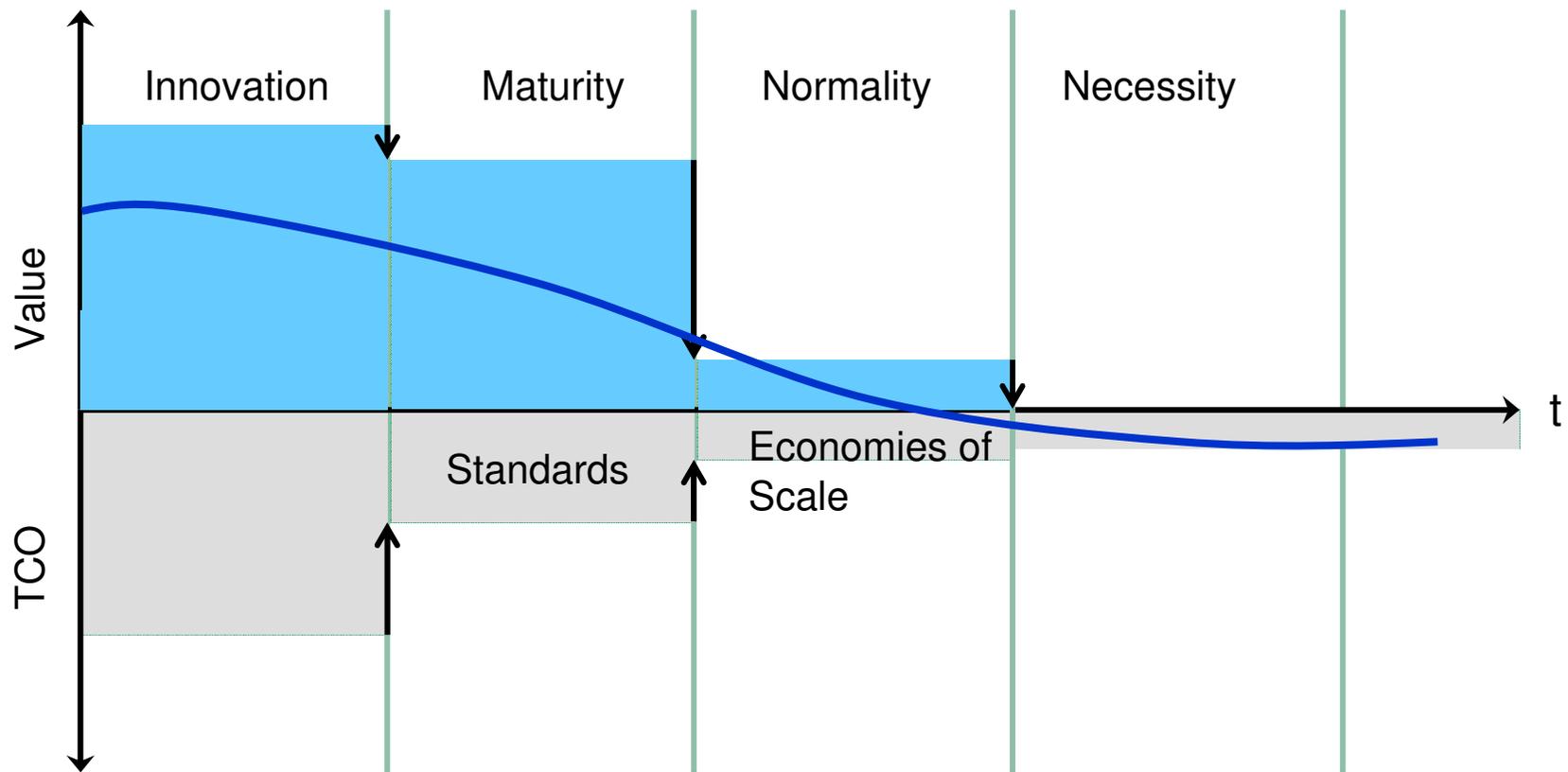
Investment Dilemma
Value of an IT Solution for a Network of Players

- ***Networking***

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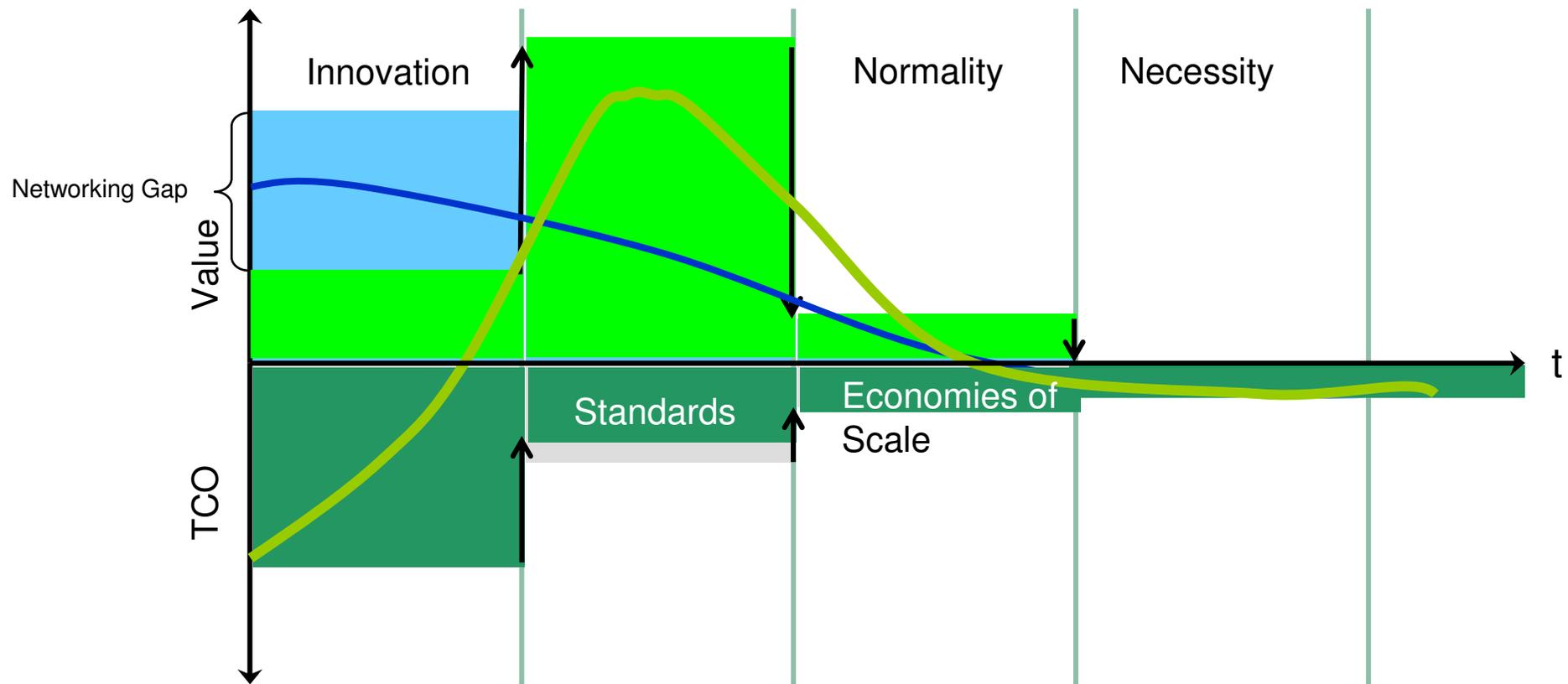
Investment Dilemma
What has to come first?
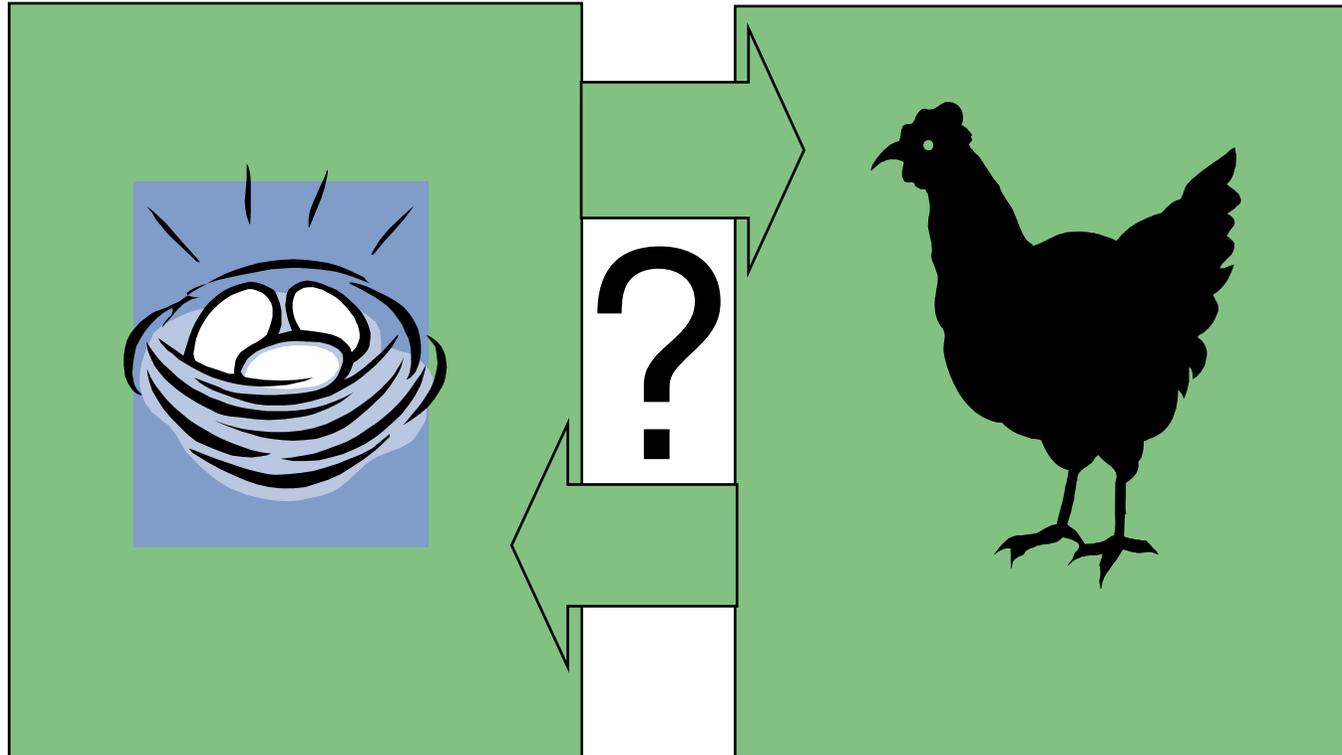
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National/Regional eHCI
Swiss Landscape (of RHIOs): Specialization and …

- Centris (full service provider for insurance companies)
- H-Net (data exchange between insurances and hospitals (mainly administrative data) and between hospitals (mainly radiology pictures))
- HIN (trusted mail between hospitals and general practitioners)
- Medidata (data exchange between insurances and hospitals (mainly administrative data))
- More then a dozen trust centers for general practitioners
- One service center for most independent Swiss pharmacies
- Some provincial pilots („eKOGU", „MediSwiss")
- …

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National/Regional eHCI
Swiss Landscape (of RHIOs): … and Dependency

- Most of the service providers are owned by a large insurance company, an association or a group of specific actors etc. and are therefore **not mutually trustworthy**

- **no service provider supports all** business models or supplies the full spectrum of services

- the **service providers are not linked** (the actors have to be connected to multiple service providers [!])

- the **roles** (exclusive service provider or a shared service provider or a service integrator) are continuously changing

- the services which are provided are concentrated on the **system layer** (for data exchange); the ability to manage processes and to foster certain business models is lacking

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National/Regional eHCI
Looking for a Shared Service Provider ("Intermediate")
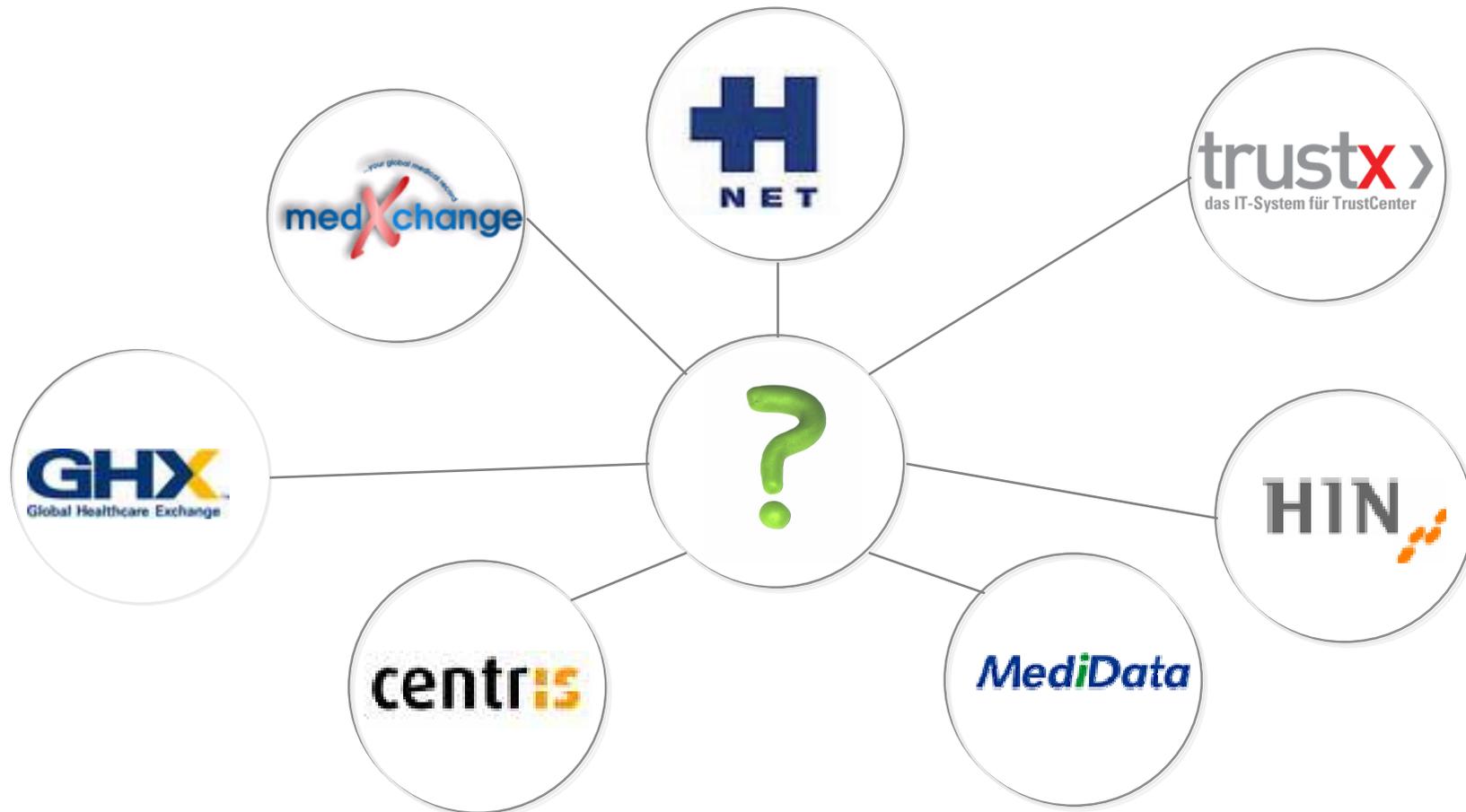
National/Regional eHCI
Questions (1/2)

- **Who defines the role of an intermediate?**
  - The federal government („Bund")?
  - The conference of the regional health secretaries („GDK")?
  - Actors' associations?
  - The „market"?

- **Who should act as the intermediate?**
  - One of the exsiting Swiss RHIOs by extending ist services?
  - Some of the existing Swiss RHIOs by integrating one another?
  - A new Service Provider (from the healthcare industry, from the IT industry, from the „Service Public", from abroad)?

- **How can this intermediate be financed?**
  - Through a „Public Private Partnership"?
  - By transaction fees?
  - By a tertiary use of clinical data?
  - …?

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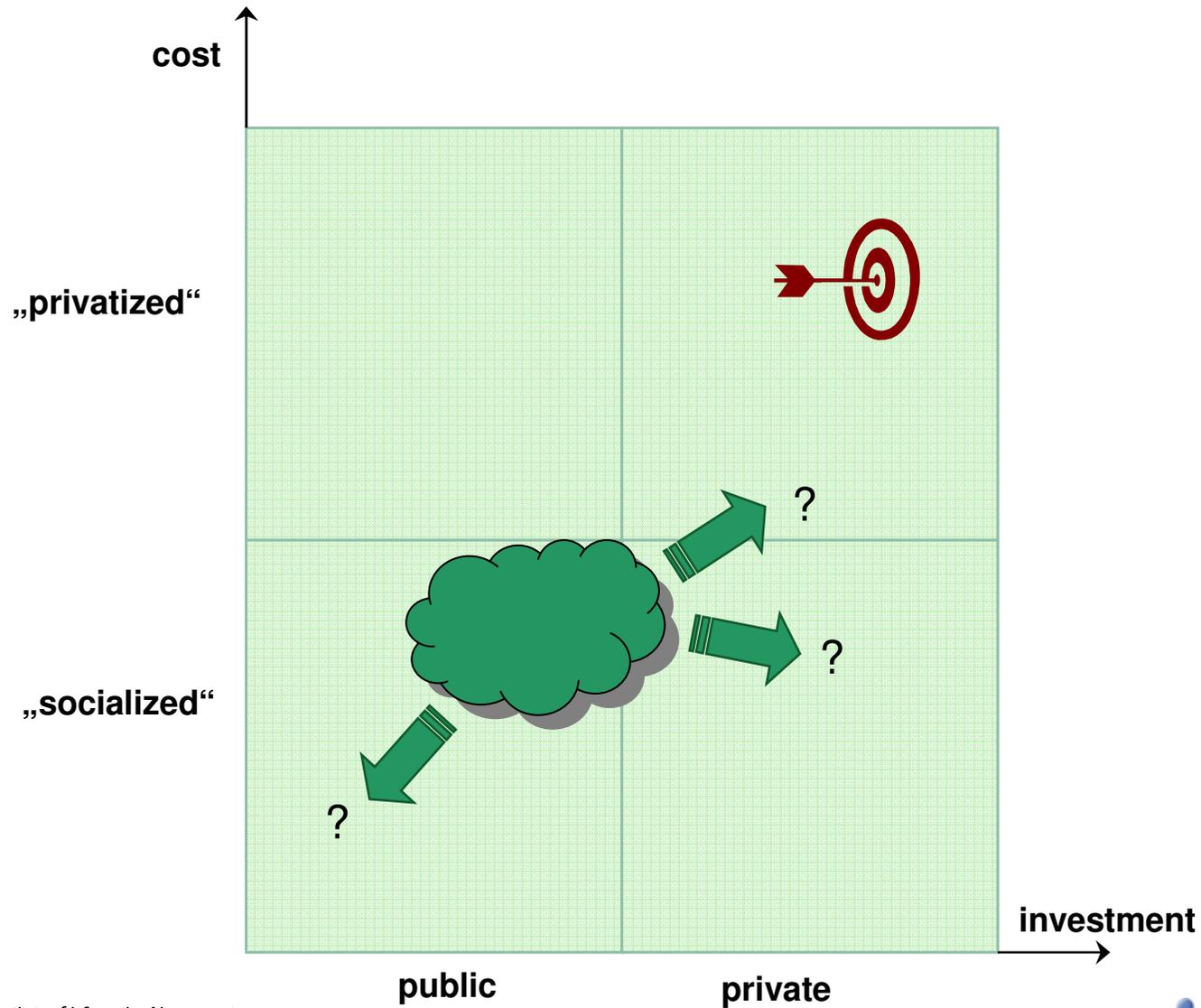Health Network Engineering

National/Regional eHCI
Questions (2/2)

- Who should/can/wants/will be forced to take the lead?
  - The federal government („Bund")?
  - The conference of the regional health secretaries („GDK")?
  - Actors' associations?
  - The „market"?

National/Regional eHCI
„Good Governance and Regulation"

cost

„privatized"

„socialized"

investment

public   private

National/Regional eHCI
„Good Governance and Regulation"

Strategy Layer		**Cooperation Strategy**	Strategy Layer		**Federal Definition**
Organi-sation Layer		**Collaborative Processes**	Organi-sation Layer		**NO Government Interference**
Integration Layer		**Compatible Applications**	Integration Layer		
Software Layer		**Common Interfaces**	Software Layer		**Standards Body**

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National/Regional eHCI
„Good Governance and Regulation"

Federal Definition

NO Government Interference

Standards Body

Strategy Layer

Cooperation Strategy

Organisation Layer

Collaborative Processes

Integration Layer

Applications

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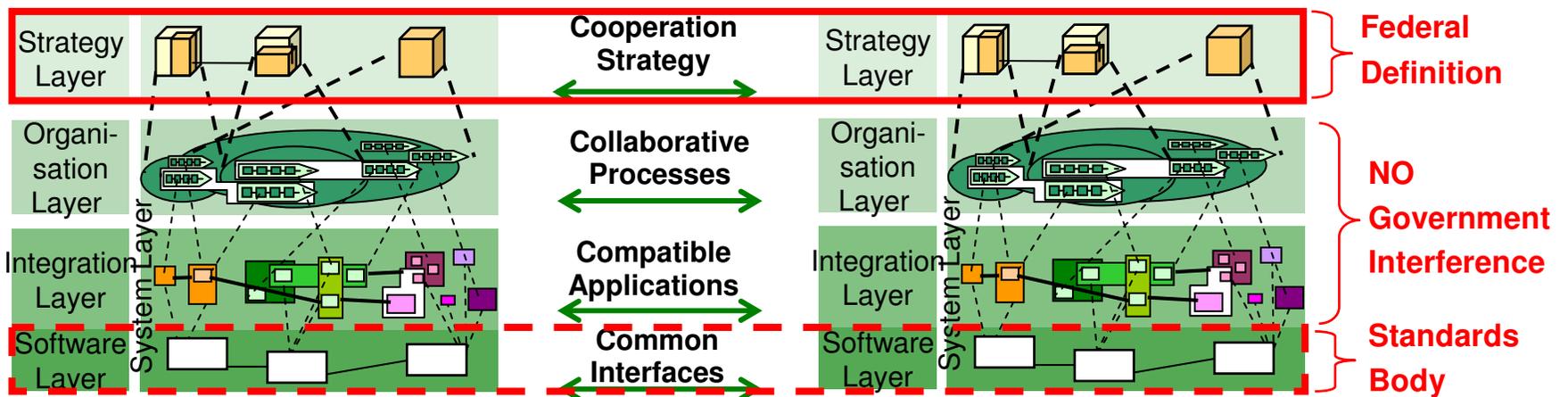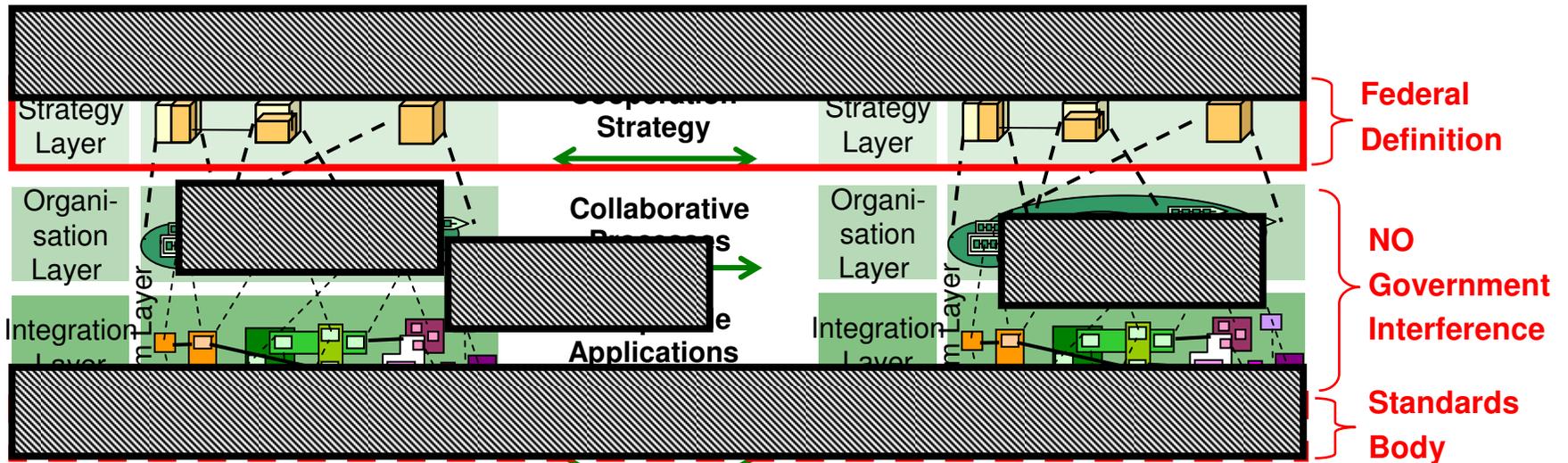
Summary

- To overcome the problems (mainly quality and cost) a shift towards "privatization" and consumer-driven healthcare is needed

- Hospitals have to become competitive (DGRs are only a forerunner)

- Networkability is the key to the "industrialization" of healthcare

- The development of competitiveness (internally) and networkability (externally) go hand in hand

- An eHealth Collaboration Infrastrure (eHCI) is needed

- Government regulation and private initiatives should be combined to solve the investment dilemma

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Outlook

- CC HNE Trip to the U.S. & Canada in early 2009

- Let's get in touch!

- Please e-mail or call

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Thank you for your attention
See you in the U.S. or Canada in early 2009

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