Privacy Issues in the Austrian EHR Project „ELGA"

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Outline

- eHealth study of the EU (Gartner)

- Privacy concerns (EC, Forrester)

- ELGA - Austrian eHealth Strategy (ARGE ELGA)

- Conclusion

Challenges

- Since the 1960s spending on healthcare has grown faster than the GDP in most EU member states.

- Spending rose from an average of 3.1% in 1960 to 8.8% in 2006.

- Forecasts indicate that spending on healthcare as a percentage of GDP will rise to around 15% by 2020.

Gartner, 2009

Political goals in healthcare

- Patient safety
- Quality
- Availability
- Empowerment
- Continuity of Care

Technology adoption
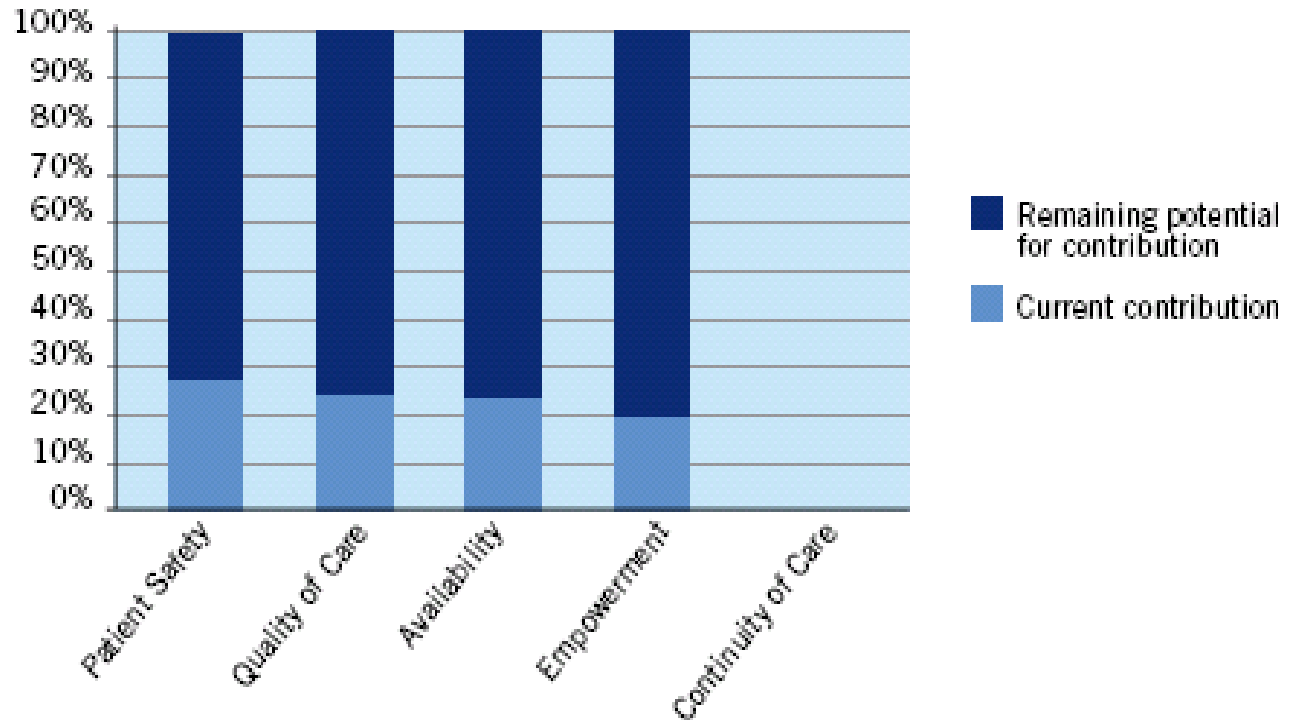
Gartner, 2009

Examples of quantified potentials

- Avoidance of **5 million yearly outpatient prescription errors** through the use of *Electronic Transfer of Prescriptions*.

- Avoidance of **100,000 yearly inpatient adverse drug events** through *Computerised Physician Order Entry* and *Clinical Decision Support*. In turn, free up **700,000 bed-days** yearly and **decreasing waiting times** (value of almost **€300 million**)

- Free up **9 million bed-days** yearly through use of *Computer-Based Patient Records* (value of nearly **€3,7 billion**)
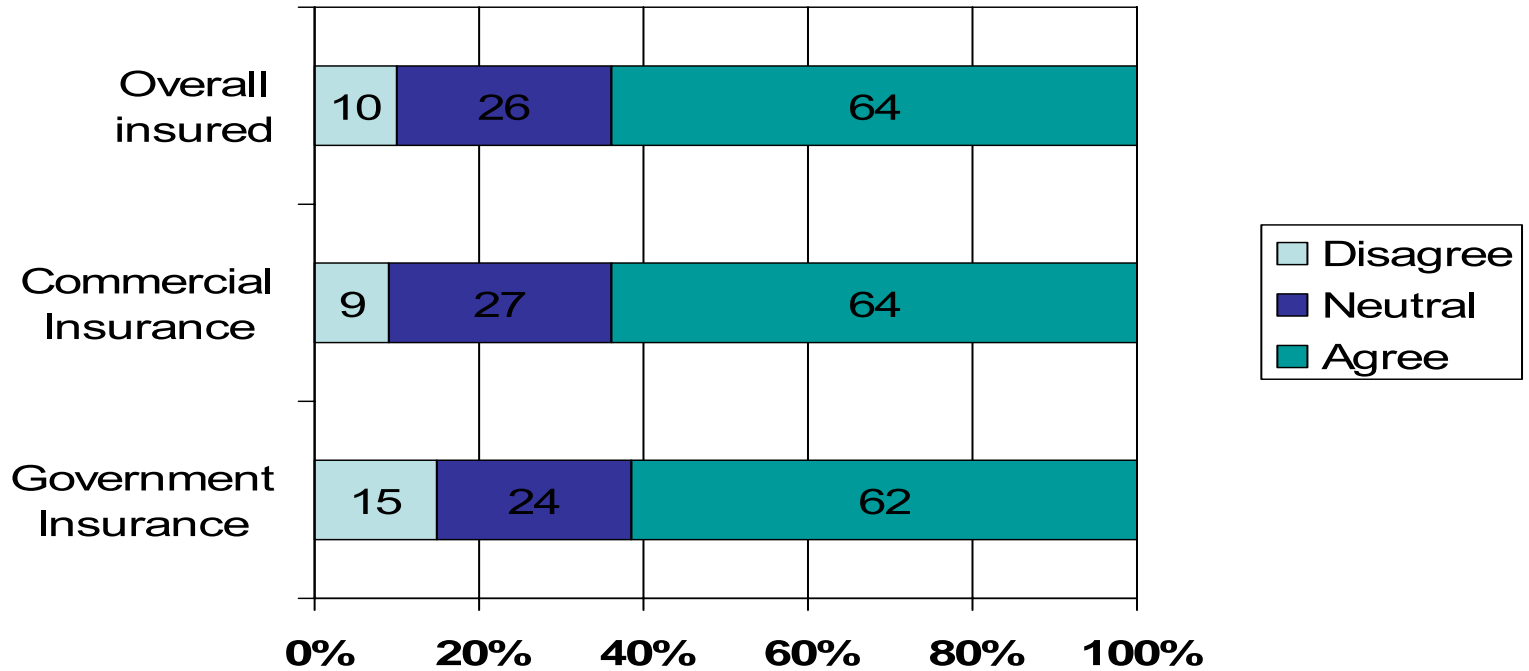
Gartner, 2009

Privacy Concerns

- Right of self-determination
- Identification and authentication of patients and health care professionals
- Data security
- Authorization for accessing EHR in order to read and write in EHR
- Use of EHR for other purposes
- International transfer of medical records
- Transparency
- Liability issues

Privacy Concerns - Health Insurance Portals

"My primary health plan fully protects the privacy
of my personal information."

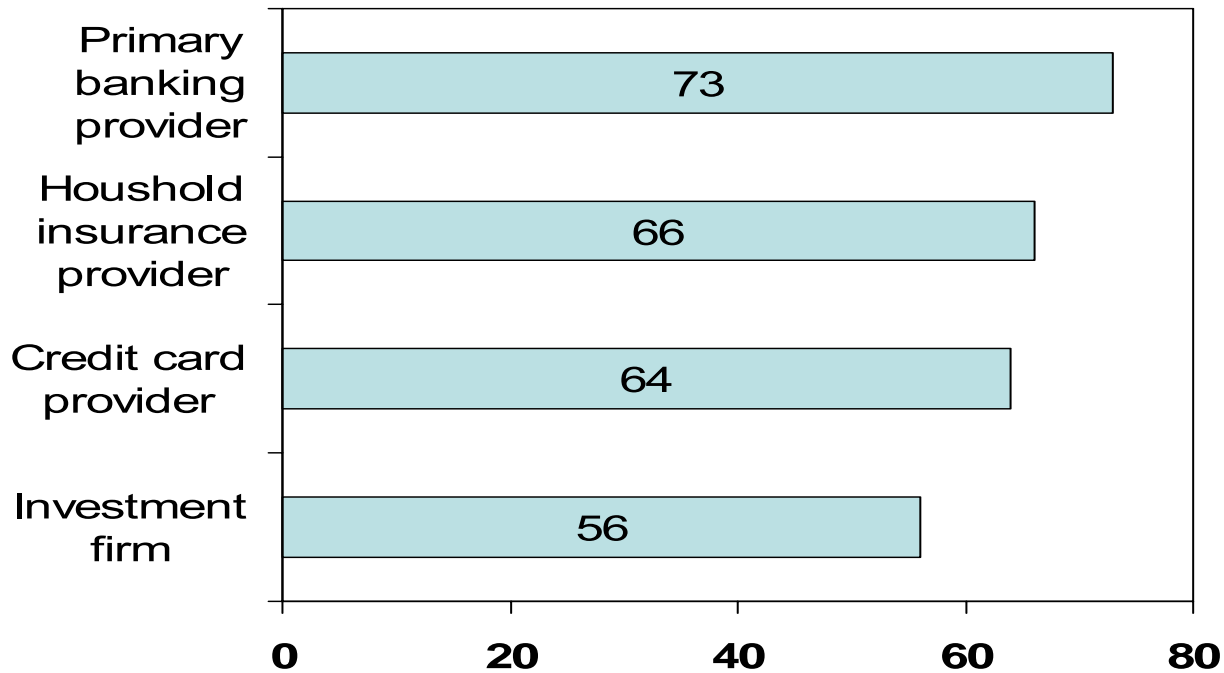|	Disagree	Neutral	Agree
Overall insured	10	26	64
Commercial Insurance	9	27	64
Government Insurance	15	24	62

Forrester, 2008

Privacy Concerns - Health Insurance Portals

Percent who agree or agree completely that each entity fully protects the privacy of their personal information

Entity	Value
Primary banking provider	73
Houshold insurance provider	66
Credit card provider	64
Investment firm	56

Forrester, 2008

ELGA Austrian eHealth Strategy

- ELGA stands for "<u>El</u>ektronische <u>G</u>esundheits<u>a</u>kte" (electronic health record)

- Includes
  - prescriptions
  - referrals
  - medication history

- Decentralised electronic health record system

- Key to patient data will be the E-Card (smartcard)

Considerations

- Already many stand-alone health care systems are put into operation at various health service providers

- Specialisation in health care → many health care service providers are consulted during one treatment

- Mobility of patients → new HSP needs information about earlier treatments

- Cross-functional consolidation of data to get consistent view on patient's health data nationwide

Requirements

- Decentral storage of data

- Considering data protection

- Patient's consent for processing his/her health records

- Only selected documents are available to HSPs

- Cost-efficiency

- Compliant to EU guidelines (Interoperability,…)

- High-quality provisioning of health data by every single HSP (7/24 h availability)

System Architecture
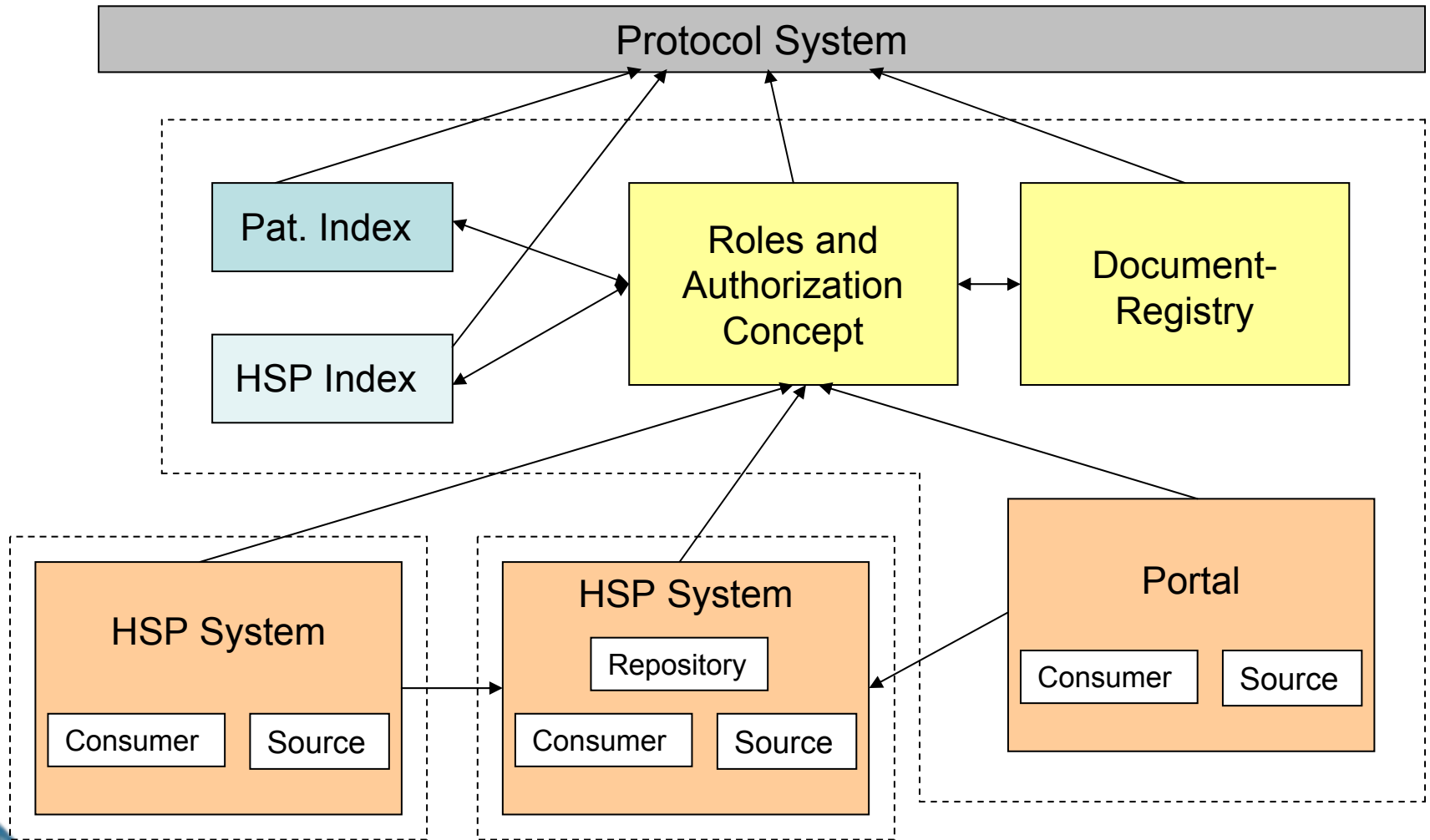
IHE IT Infrastructure Profiles

- **All systems:**
  - „ATNA Secure Node" using SSL/TLS

- **Patient Index:**
  - „Patient Identifier Cross-Reference Manager" (PIX)
  - „Patient Demographic Query" (PDQ) and uses
  - „ATNA Audit Trail Node"

- **HSP Index:** „ATNA Audit Trail Node"

- **Protocol System**: „ATNA Audit Trail Node"

IHE IT Infrastructure Profiles II

- **Authorization System:**
  - PIX, PDQ and XDR as proxy
  - uses the functions of Patient Index and Registry
  - checks and filters incoming parameters and outgoing results

- **Document Registry:**
  - „Cross Enterprise Document Sharing"

- **Portal:**
  - uses ELGA-functions through proxy interfaces
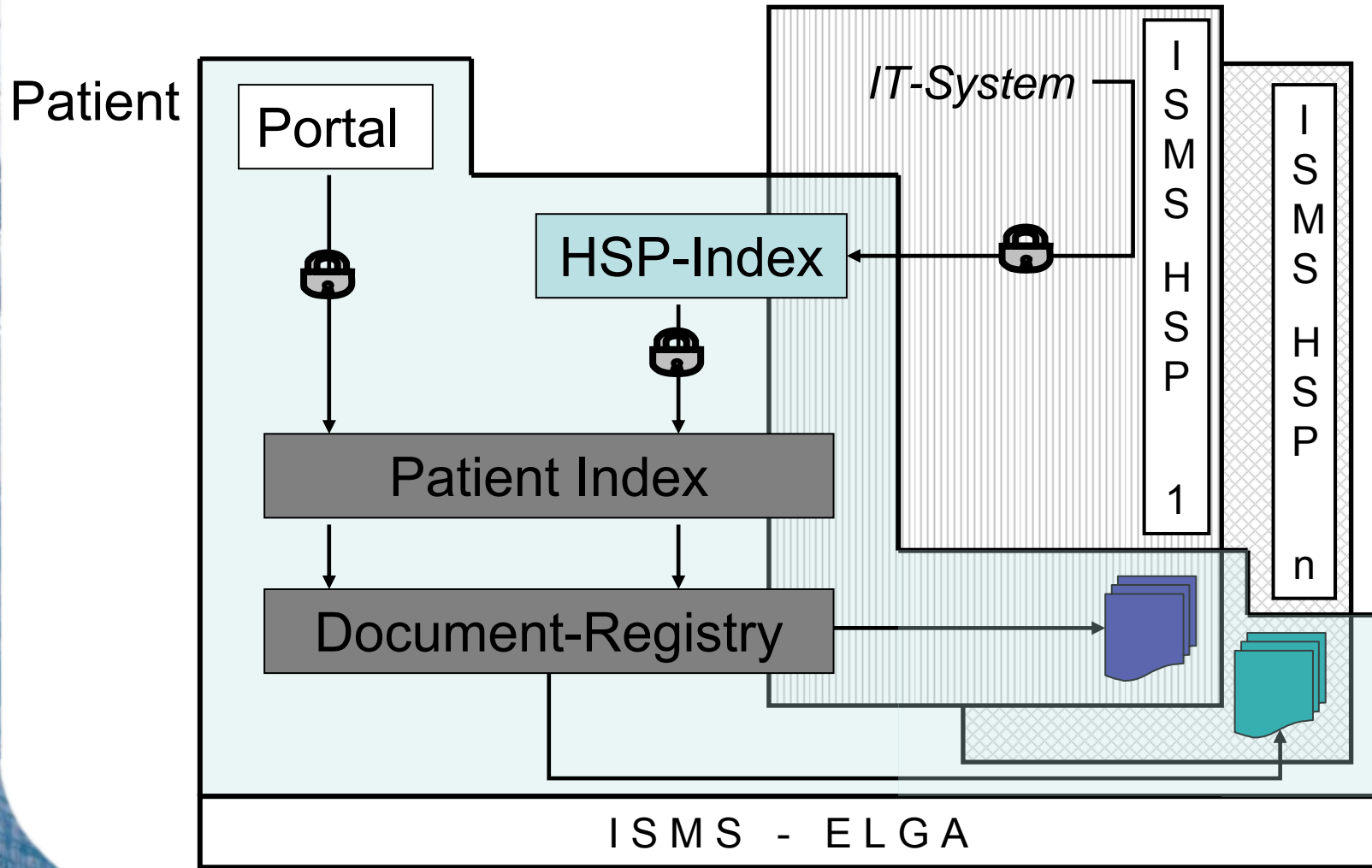
ISMS-ELGA

- ## Security Concept
  - Maintenance and improvement of security targets and security guidelines
  - Documentation of security requirements, that have to be considered while implementing the system
  - Ensure that

    - *data integrity*
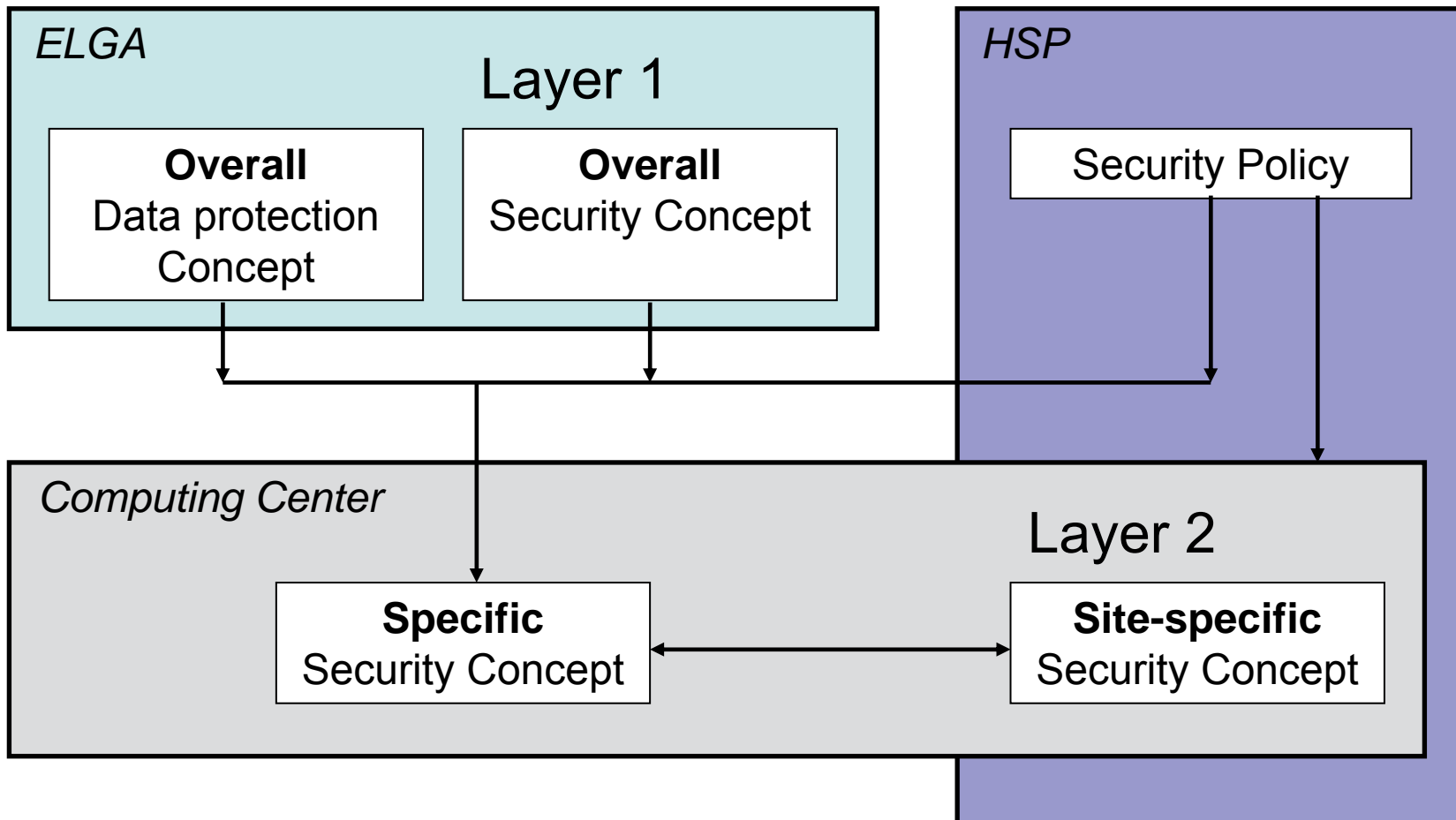   - *data availability*
    - *data security*

    of transferred/processed data comply with planned standards

Integration of ISMS-ELGA/ ISMS-HSP

Layers of ISMS Concept

Conclusion

Benefits from eHealth:

- Reduce medical errors and wastage of resources
- Serves increased patient and clinician demand

Privacy Concerns:

- Take concerns serious
  - *The problem is trust, not technology*.
  - Build trust in eHealth solutions

Conclusion II

ELGA System:

- Quality added value:
  - Integrated supply of data
  - Increased communication/cooperation of HSPs
  - Tool for modernizing and optimizing processes of Austrian health care system

- Privacy concerns:
  - ISMS according to ISO/IEC 2700x
  - IHE Integration Profiles