

A vertical splash of water on the left side of the slide, with a white rectangular box at the top left.

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“e-Health is simple”

Walter M. Bugnar

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Siemens IT Solutions and Services

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The Big Picture

The Austrian e-card system

By 2015 all necessary health data as well as current medical knowledge will be available electronically for authorized persons

- *independent of time and location*
- *in an optimized form*
- *fast and secure*

the Austrian e-Health Strategy, e-Health-Initiative 2005/2007

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e-Health definition

What Is e-Health?



“The "e" is for electronic. Placed before the word health, it implies all things transmitted and technological in health care, which help improve the flow of information and the process of health care delivery. "E" networks integrate isolated towers of information and create new knowledge through the creation of relational databases. The spectrum of "E" is broad and goes beyond the use of a computer as a box on the desktop. It includes wireless communication using hand-held devices and the storage and function by the microchip which is revolutionizing health care, as it is inserted into everything we use to diagnose, treat, record, sort, analyze, and conclude. It also incorporates electronic forms of care delivery, such as telemedicine, providing health care over a distance, communicating by sound and image transmission.

e-health is connectivity

it is transactional; it is clinical. It is informational, interactive and interventional. The biggest challenge of e-health is to codify health information about disease and patient care into databases that can be manipulated for the benefit of the patient individually and society collectively. The information must be delivered "just in time" to benefit the patient and support the physician in the delivery of the care. How to utilize this new knowledgebase to improve care for everyone and weave its cost into the economy is as important as the next bigger (or smaller), faster widget. Rules and laws that are flexible to accommodate this new technology and protect the public must evolve.”

Eugenia Marcus, MD and Ray Fabius, MD, 2003

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Definition

Interoperability in health IT

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“In healthcare, interoperability is the ability of different information technology systems and software applications to communicate, to exchange data accurately, effectively, and consistently, and to use the information that has been exchanged.”

e-health is Interoperability

Wikipedia, Web encyclopedia, Interoperability in health IT

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Healthcare drivers leads to dramatically rising costs

Medical Errors

Demographic changes

Worldwide increase of chronic disease

Dynamic increase of medical data

**Medical errors are the sixth leading cause of death
in USA**

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**“In USA up to 98.000 people died
in hospitals by medical errors
every year.
Much more than by motor vehicle
accidents (43,458), breast cancer
(42,297), or AIDS (16,516).**

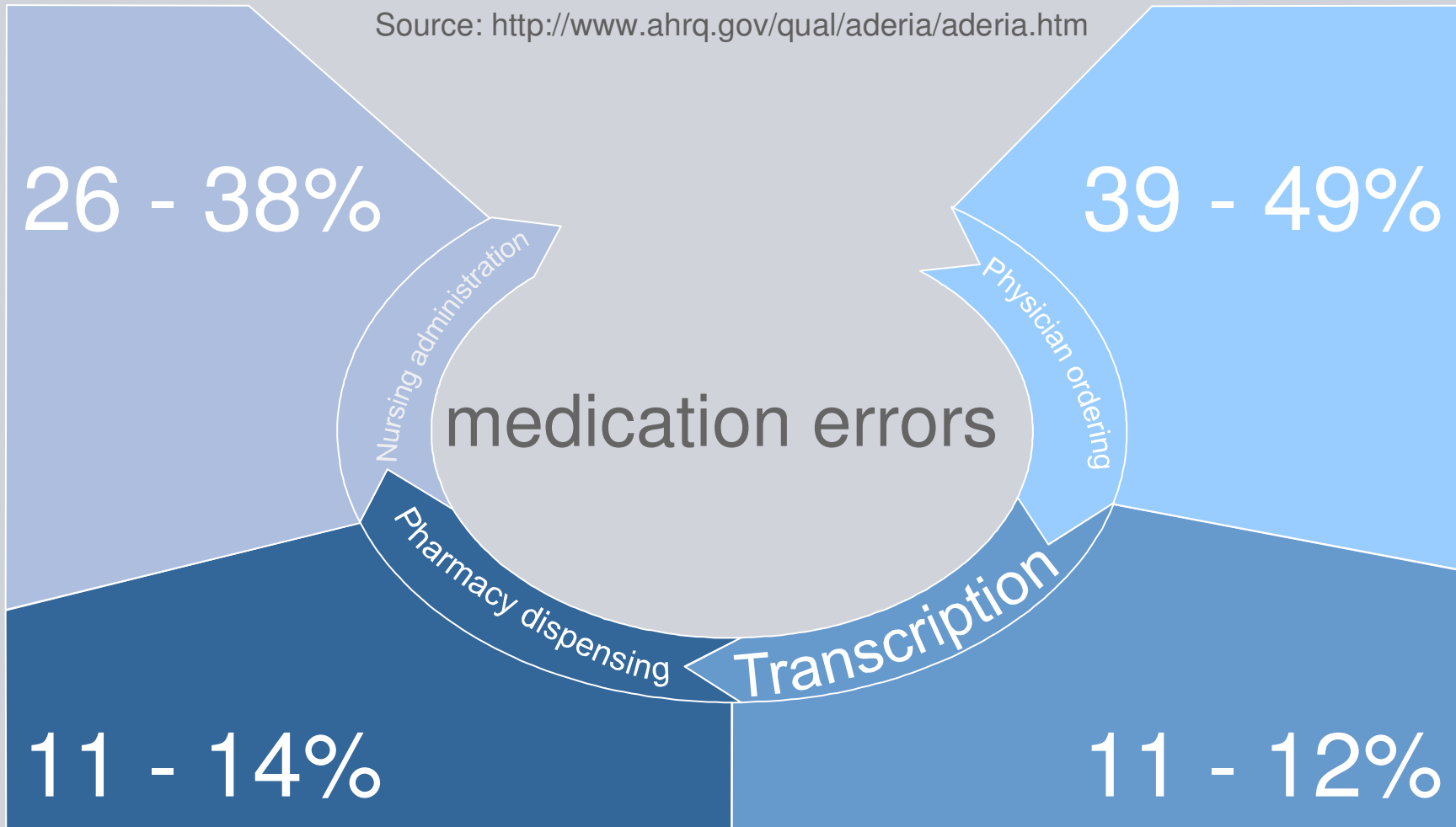
Source: To Err is Human: Building a Safer Health System, Washington
DC, Institute of Medicine, 2000

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Percent of medication errors occurring within the four stages of the medication process



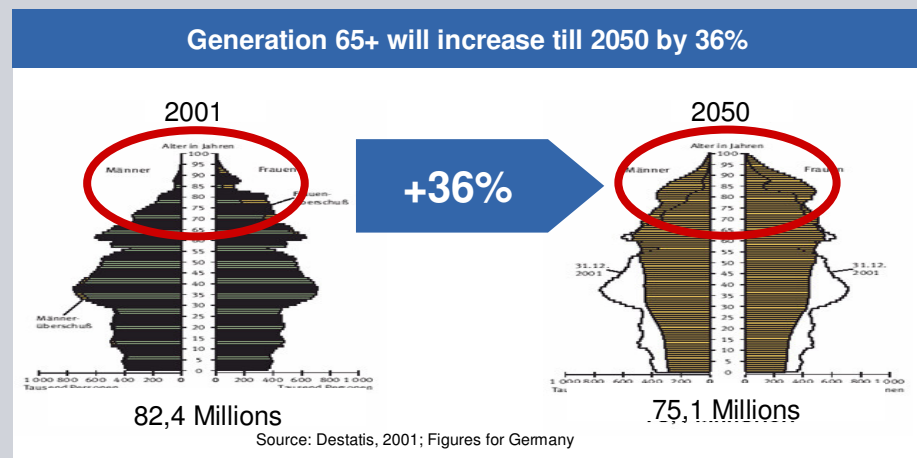
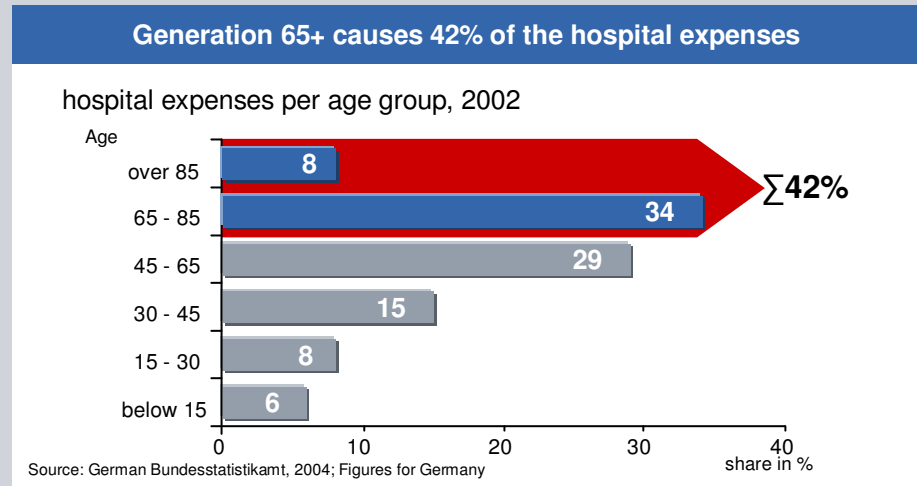
Source: <http://www.ahrq.gov/qual/aderia/aderia.htm>



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Demographic Changes: Dramatic Impact on Healthcare

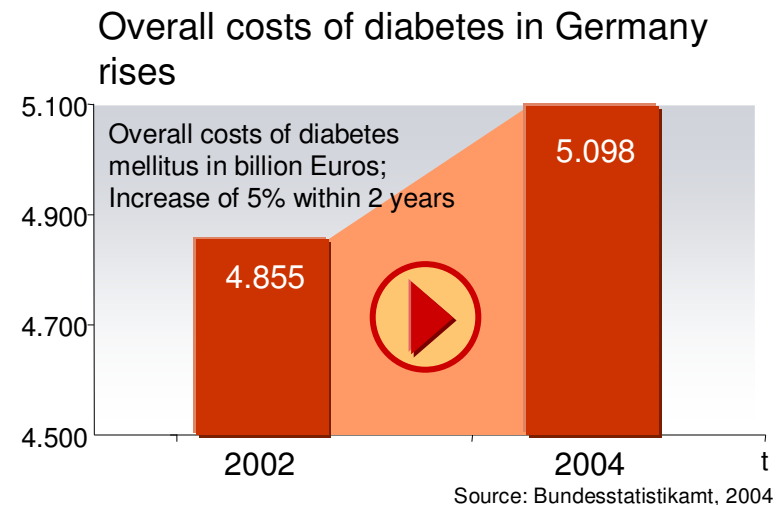
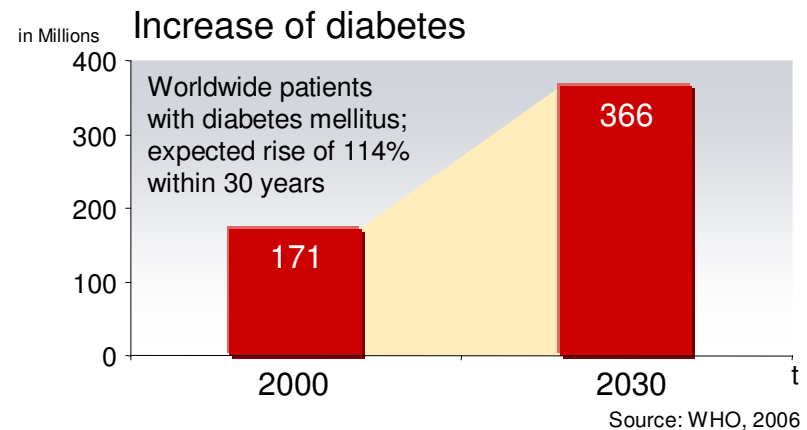
- Demographic evolution
- Cost explosion in healthcare
- Increasing specialization and focusing because of cost pressure
- Distributed medical data of the patients
- High administrative and documentation efforts
- High expenditure of time for information and data retrieval



Driver: Worldwide increase of chronic disease

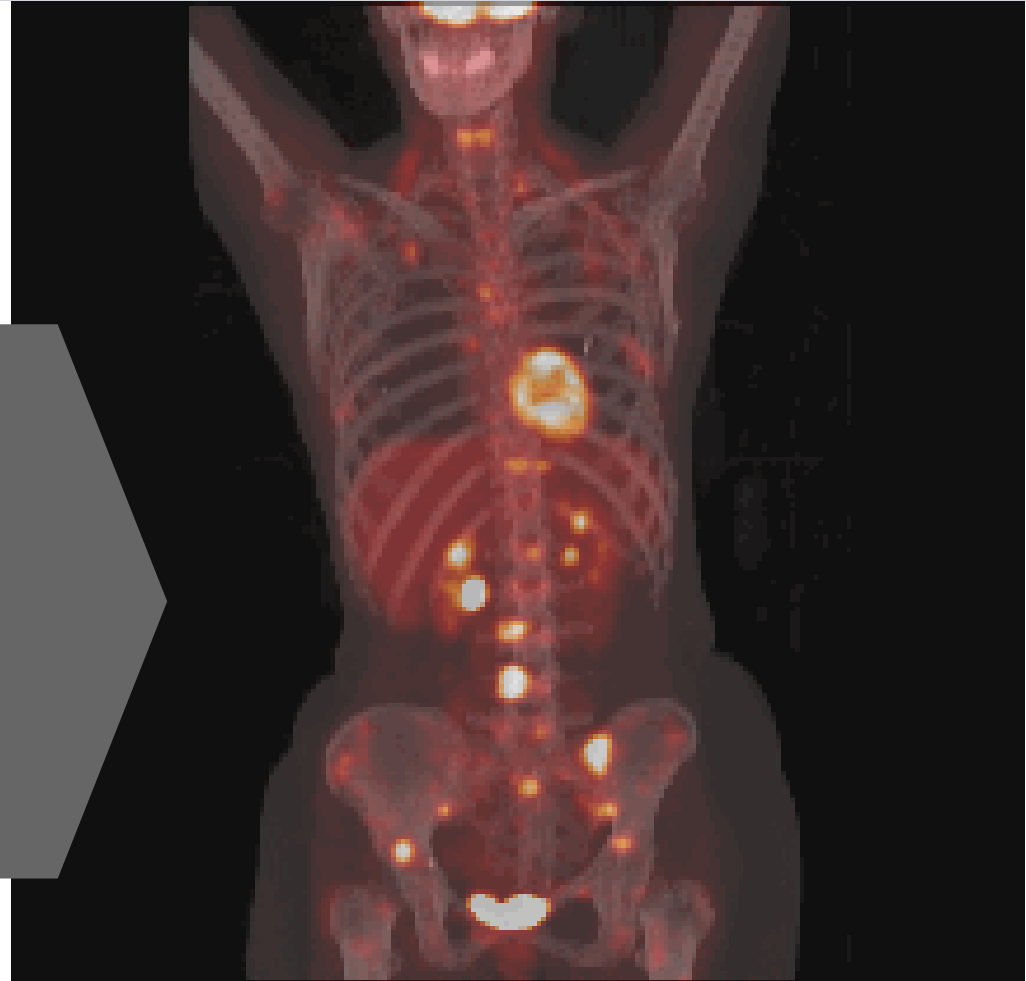
- **Diabetes** is the most expensive and most common chronic disease
- **Every 10 seconds** a man dies because of diabetes
- **More than 189 millions people** are living with diabetes
- By estimation up to **15% of the yearly healthcare budget** is spent on diabetic diseases

(Source: WHO)



Driver: Generation of huge amount of data

Knowledge
management drives
innovation.



*...the most remarkable feature of
this twenty-first century medicine is
that we hold it together with
nineteenth-century paperwork*

US Secretary Tommy G. Thompson, remarks offered at the Health
Information Technology Summit, Washington DC. May 6, 2004.



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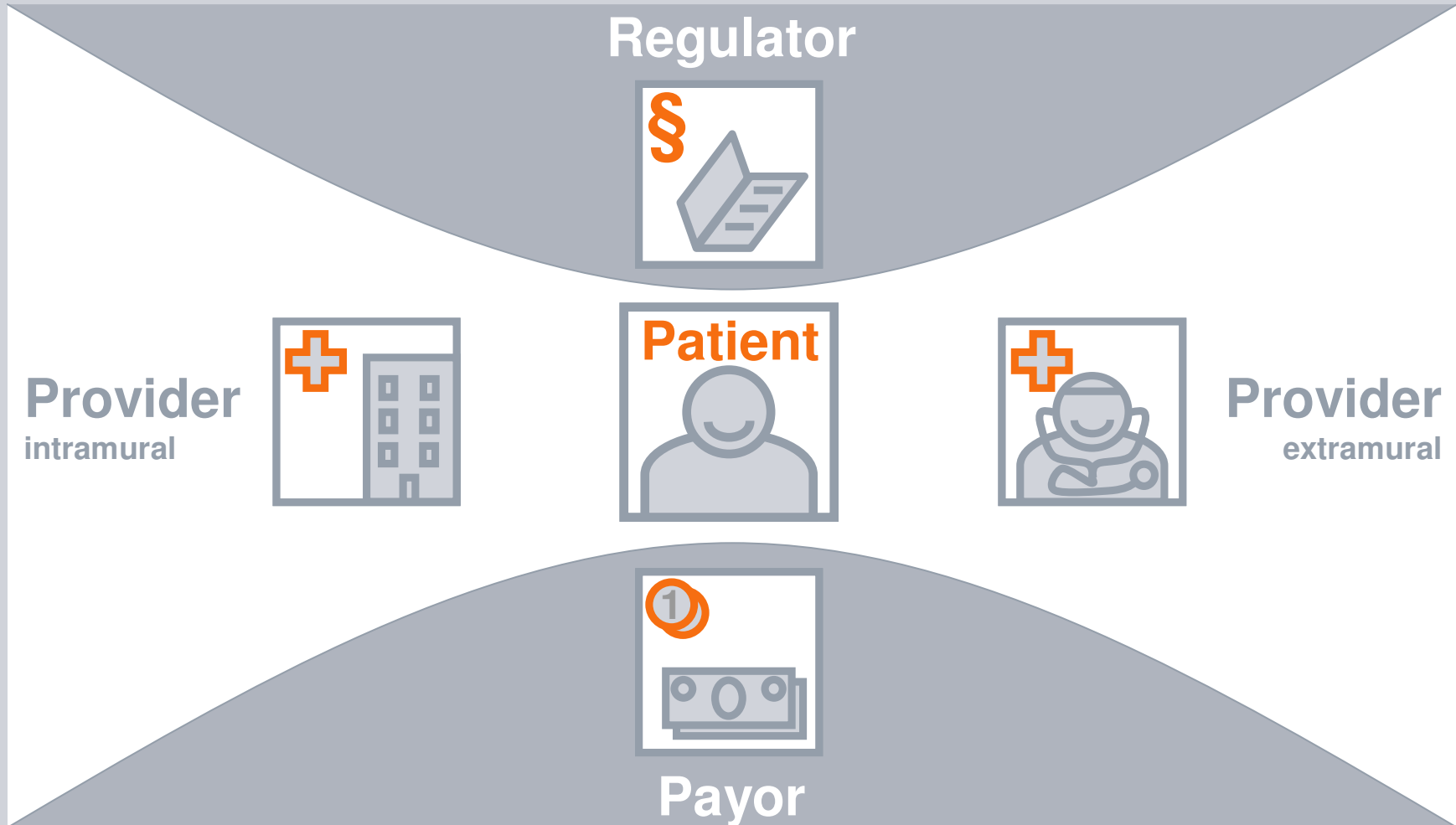
The Austrian e-card system

Healthcare players

Modern healthcare solutions addresses
all healthcare players.

Our e-Health Systems addresses all healthcare players

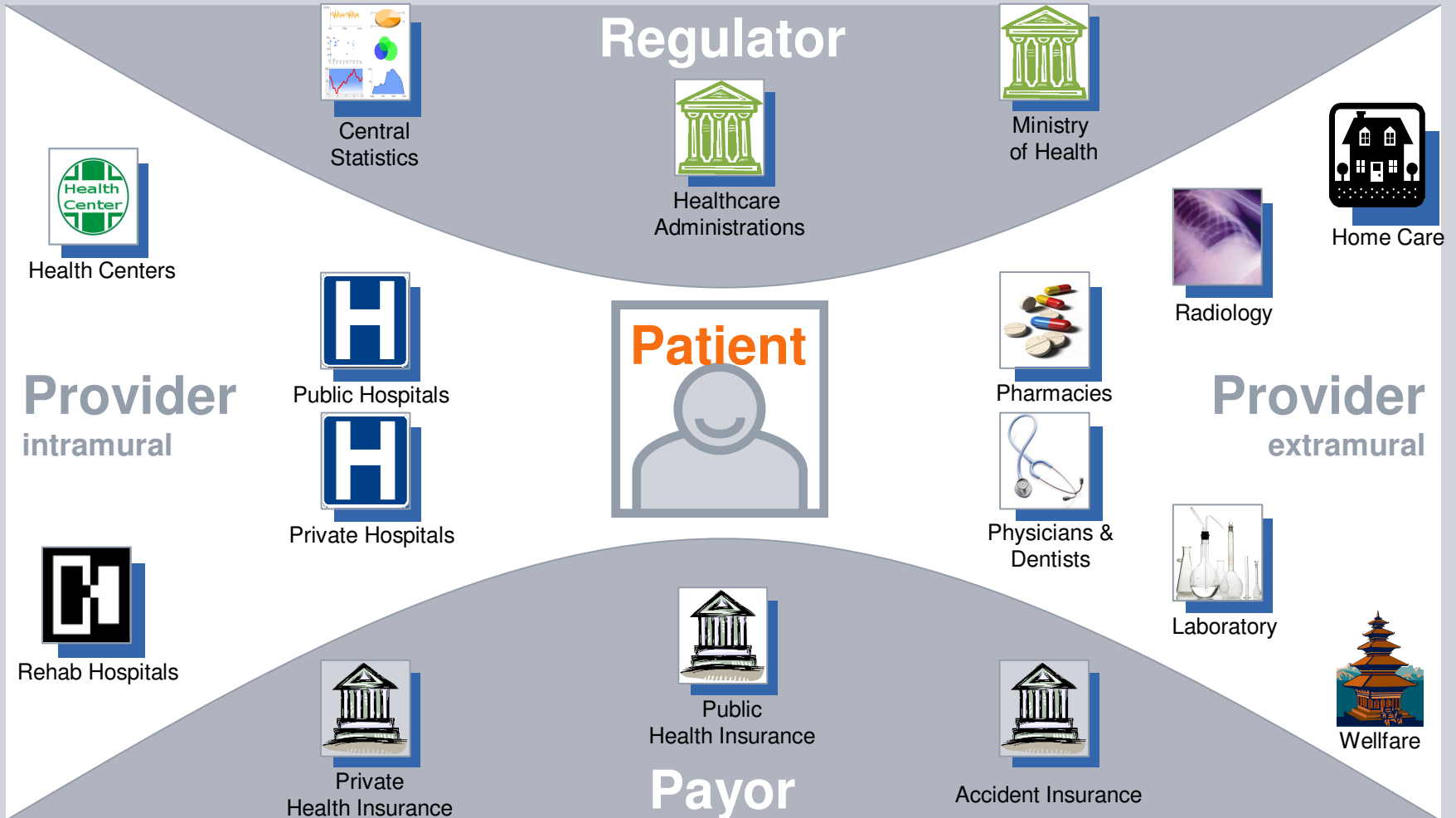
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e-Health: Healthcare Players Details

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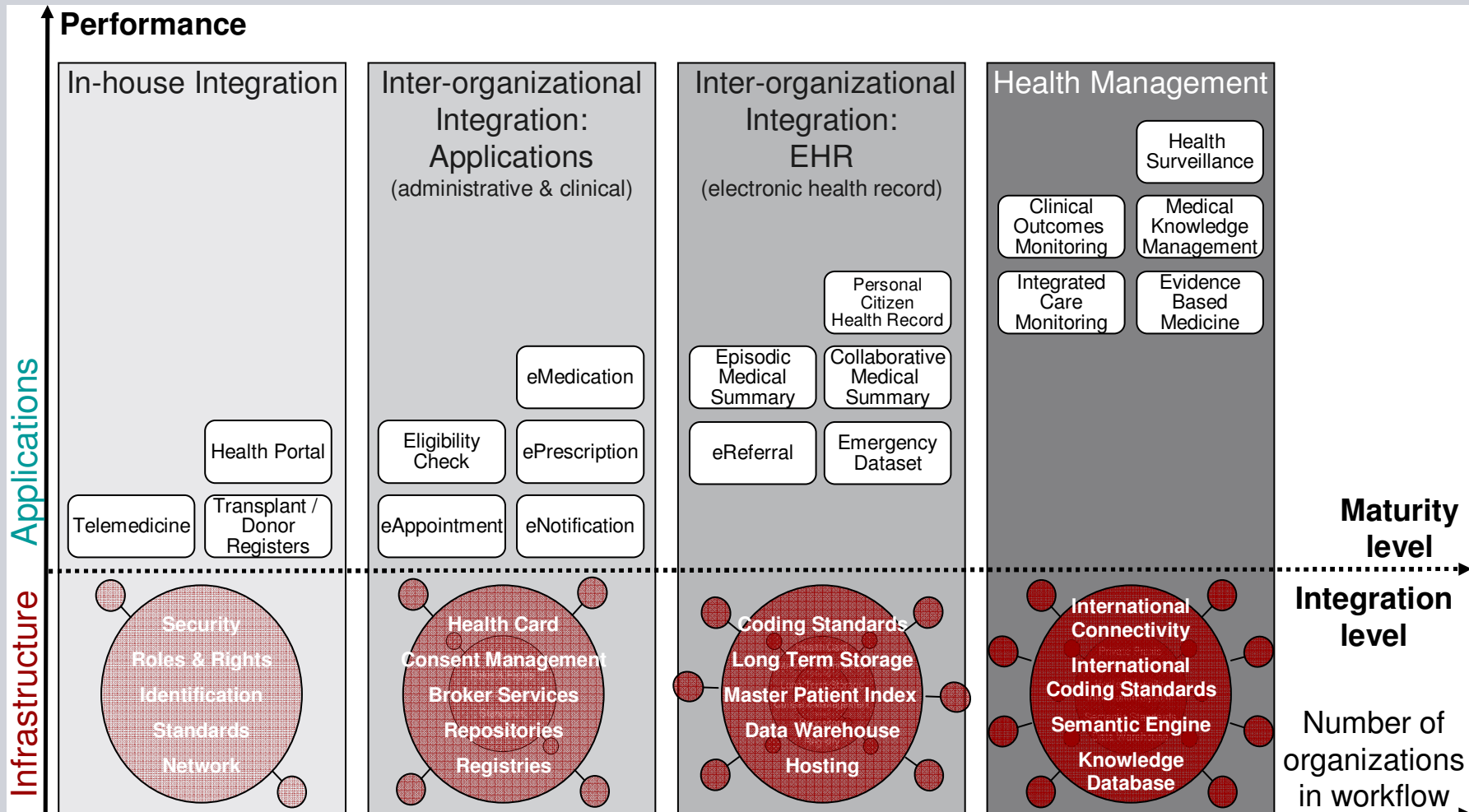
Drivers

The Players

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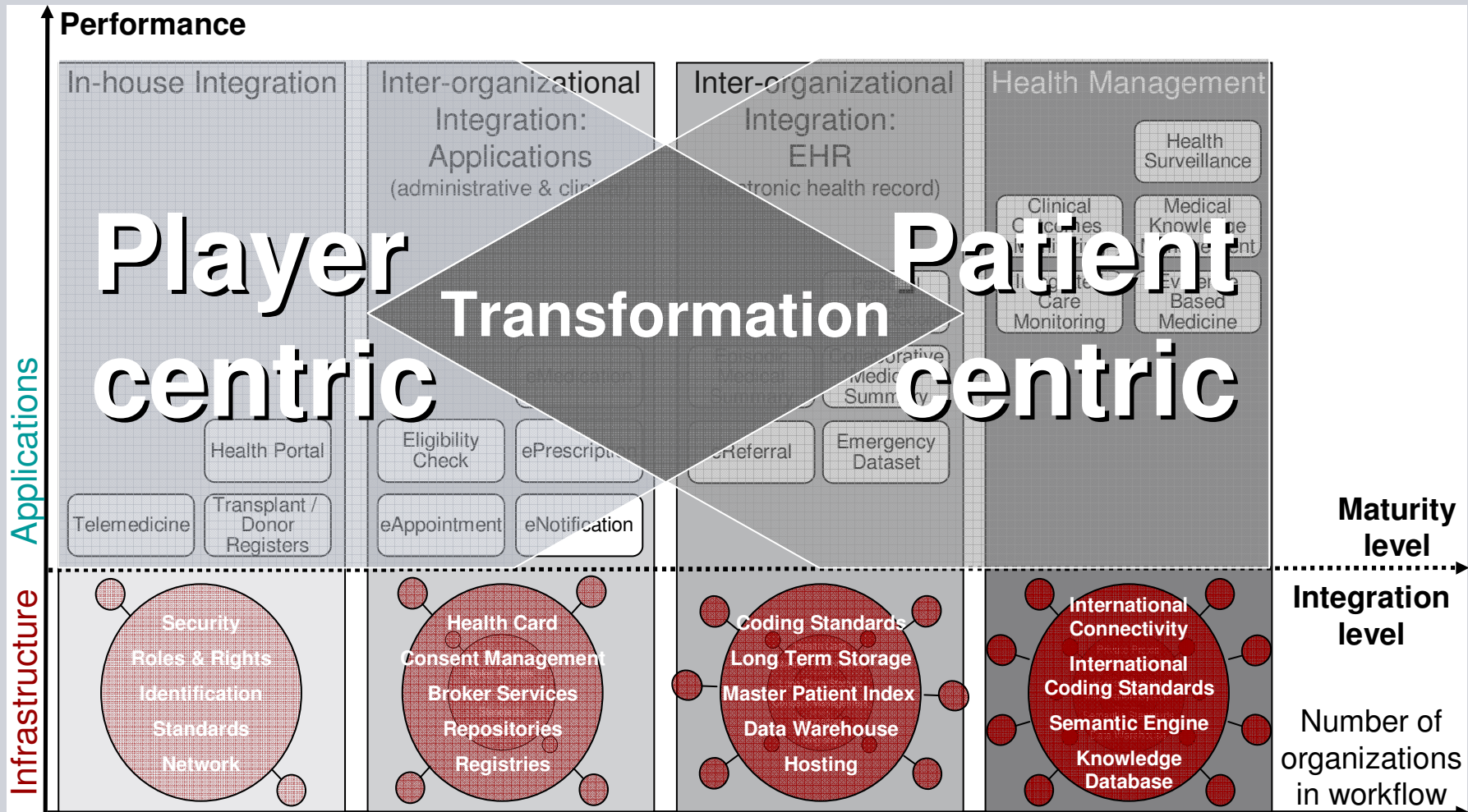
The Austrian e-card system

e-Health: Providing Solutions for Healthcare Integration



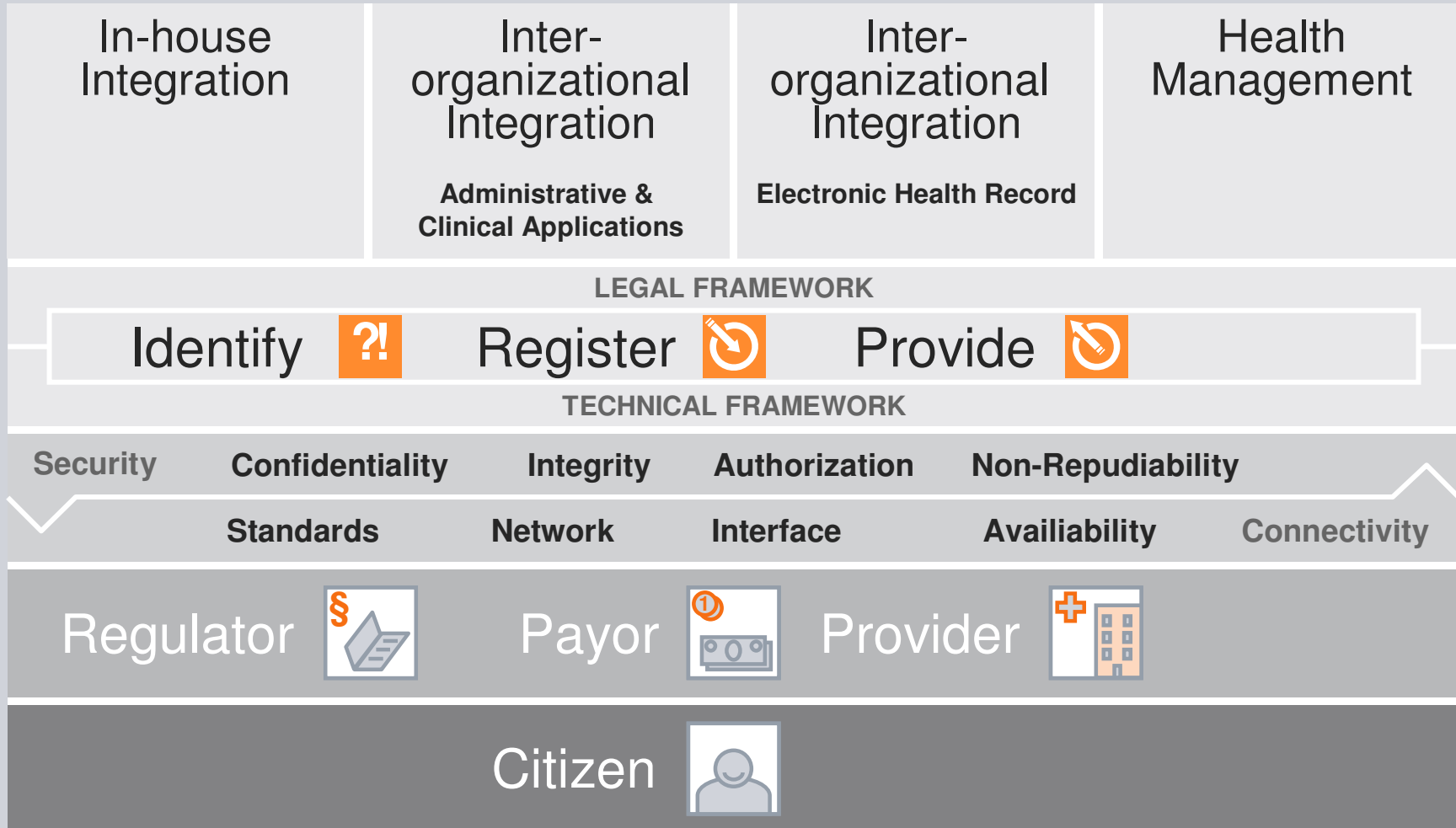
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e-Health: Providing Solutions for Healthcare Integration



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e-Health: Our big Picture



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The Austrian e-card system

The Austrian e-card project - An Overview

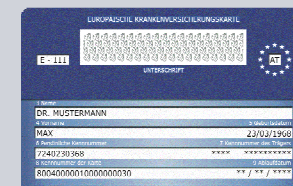
Requirements to the Compound System - Openness of the System

- Design of the e-card as a „Key card“
- Access to personal data after approval of the cardholder (§31a (2) ASVG)
- The e-card system shall support the transparency of medical services and costs
- Acceptance of other cards with „Citizen Card Functionality“ (i.e. prepared for e-government).
- Load ability of new applications:
Post Issuance Personalization and downloading of data, data structures and cryptographic key-files to the e-card
- Innovation and migration:
Simultaneous operation of several „generations“ of smart cards with different scope of applications

The Austrian e-card project - An Overview

Features of the e-card

- The e-card is a **smart key card** and **signature card** enabling reliable verification of health care entitlements
- The e-card incorporates **2 signature applications** which support
 - Secure Electronic Signatures (for e-gov applications according to SigG and SigV)
 - Social Insurance Signatures
- The e-card stores holder's name, date of birth, sex, social insurance number, card serial number and user group identification
- The e-card is the **European Health Insurance Card**
 - replaces form E-111 for stays abroad
 - valid in the EU, EEA and Switzerland



The Austrian e-card project - today

The e-card today

The savings to the administrative area are given annually to approximately € 50 million.

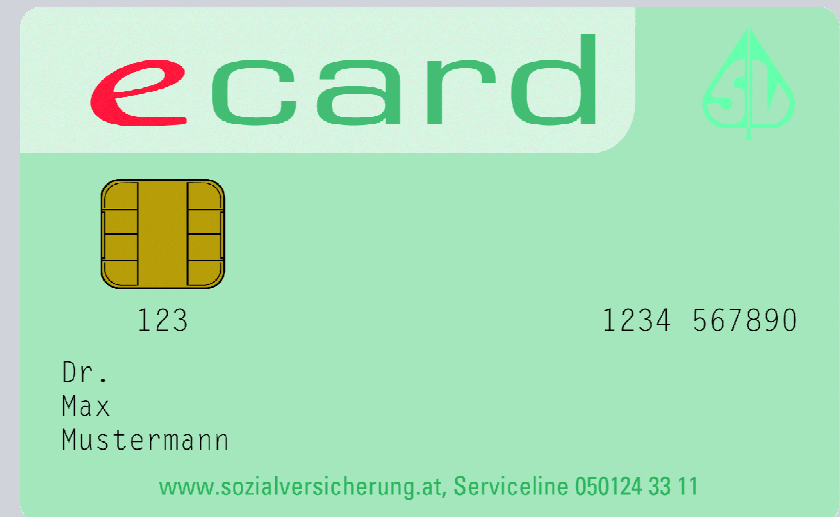
(source: wikipedia)

The Austrian population is excited by the e-card. Almost 90% said in 2009 that the e-card with "very good" or "good".

(source: wikipedia)

Also the Health professionals are glad with the e-card.

(source: wikipedia)



The Austrian e-card project – Lessons learned

Lessons learned

- **Modelling of established processes through IT**
 - 1:1 - Modelling deteriorates processes
 - IT functions modifies the processes
 - Reconstruction of current processes is expected
 - Legal framework must be adapted
 - IT-based processes changes the organization

- **Feedback from practice**
 - Applications step by step – at least 6 month between new applications
 - Process optimization by IT potentials
 - Adaptation of the social insurance regulations
 - Performance in the online operation
 - Availability of the system
 - Training concept
 - Escalation strategy
 - Call Centre Processes
 - Telecommunication Provider

The Austrian e-card project – Extended e-card usage

Extended e-card Usage

- e-Social Security
Replacement of all paper based health care certificates
- e-Health
Key card for secure handling of medical transactions
(basic token for eHealth Telematics)
 - Austrian electronic health record (ELGA)
 - e-medication
 - A project in medical quality assurance
 - Pharmacists, doctors and hospitals are informed about the dispensed pharmaceuticals and the drug interactions, treatment compliance and multiple consumption
 - Estimated: Saves more than € 100Mio and more 1.000 lives annually
- e-government
Signature and Encryption Card for all fields of application
with corresponding requirements



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**Thank you
for your attention!**

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