



Integrating
the Healthcare
Enterprise



Best practices in digital transformation in healthcare

What is digital transformation in healthcare?
How to successfully implement digital transformation?



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Co-chair, Pharmacy Planning committee

Co-chair, Global Deployment Coordination Committee (GDC)

Member, IHE International Board

Electronic Health Information Exchange

Electronic Health Records

Digital Imaging

ePrescription

eReferral

eImmunization

etc.



Mobile Health

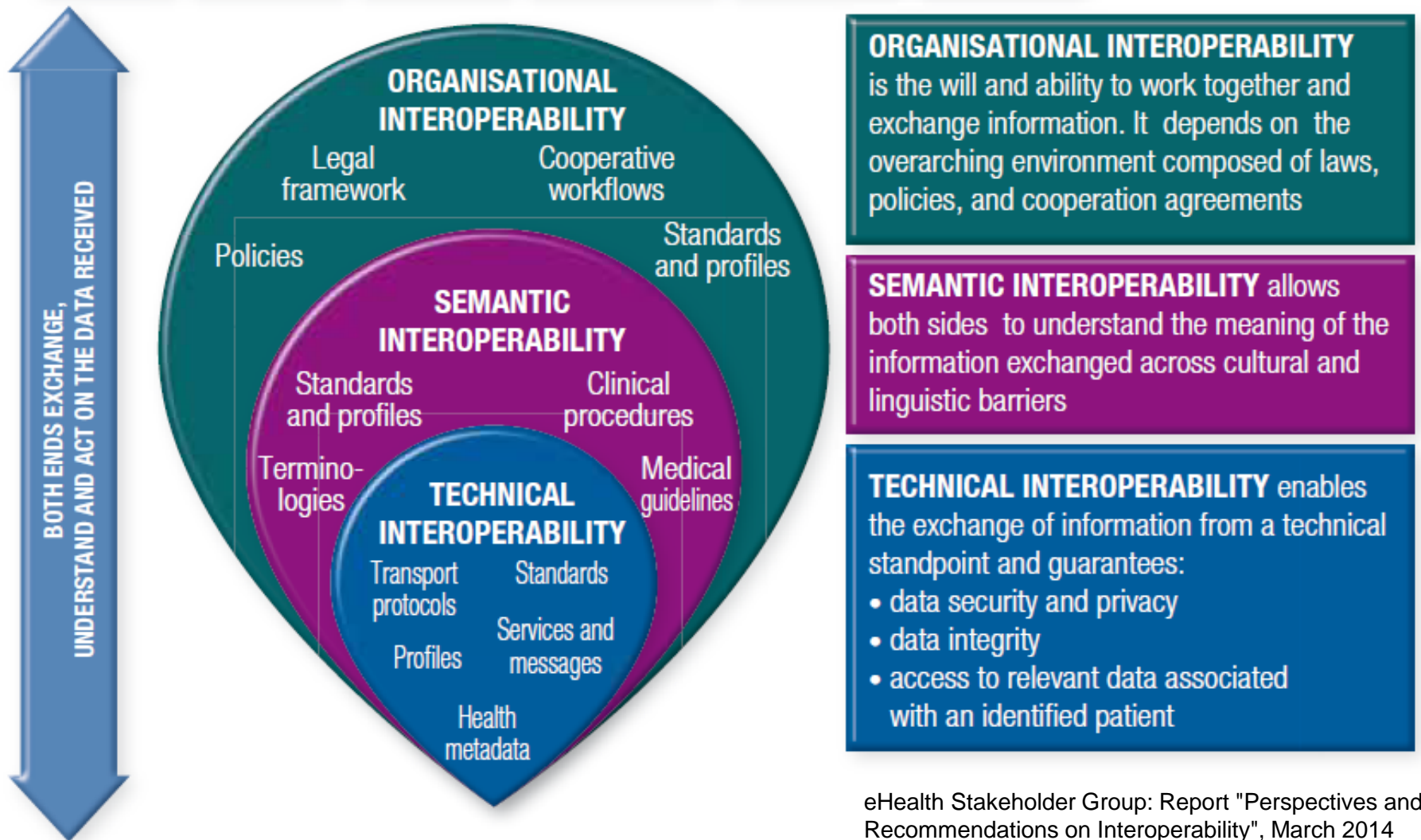
Devices (IoT)

Appointments

Interoperability is essential for digital transformation



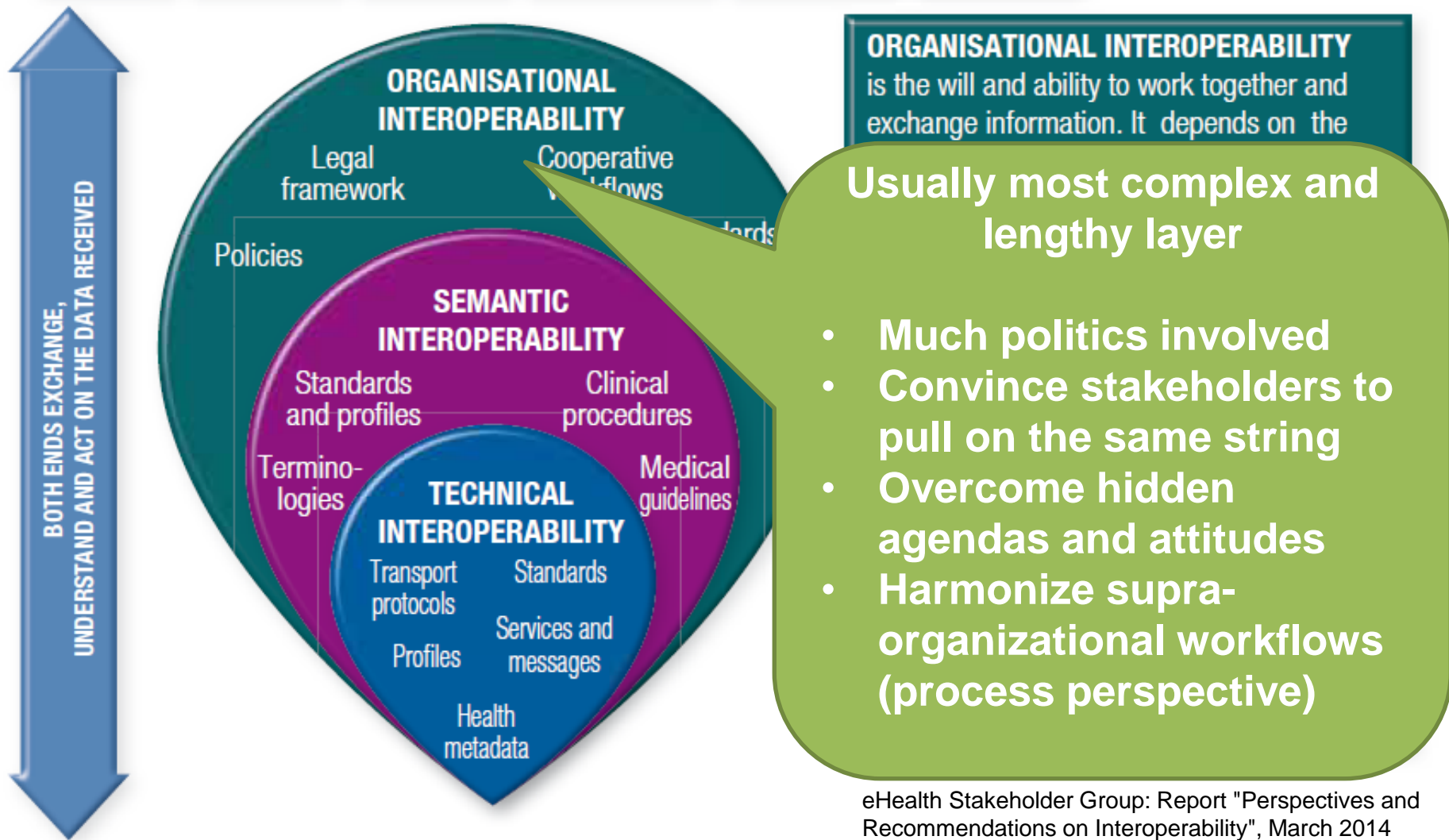
Layers of Interoperability



eHealth Stakeholder Group: Report "Perspectives and Recommendations on Interoperability", March 2014

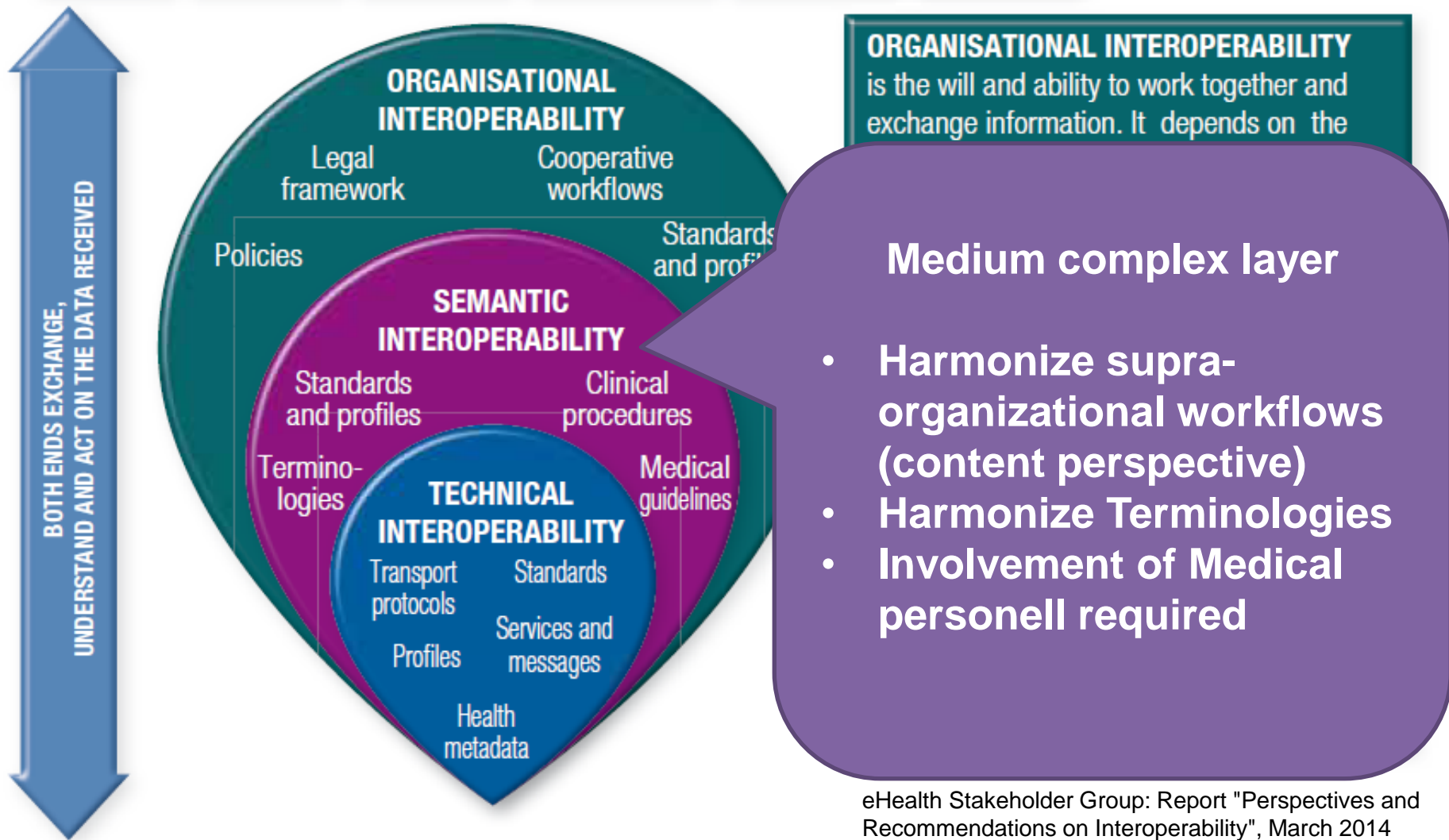
http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=5168&usg=AFQjCNEkGJHkR4TyycRbj5FmDif3T7YPA&sig2=WHoQC4xURmGXaJTYt-Mt1A

Layers of Interoperability



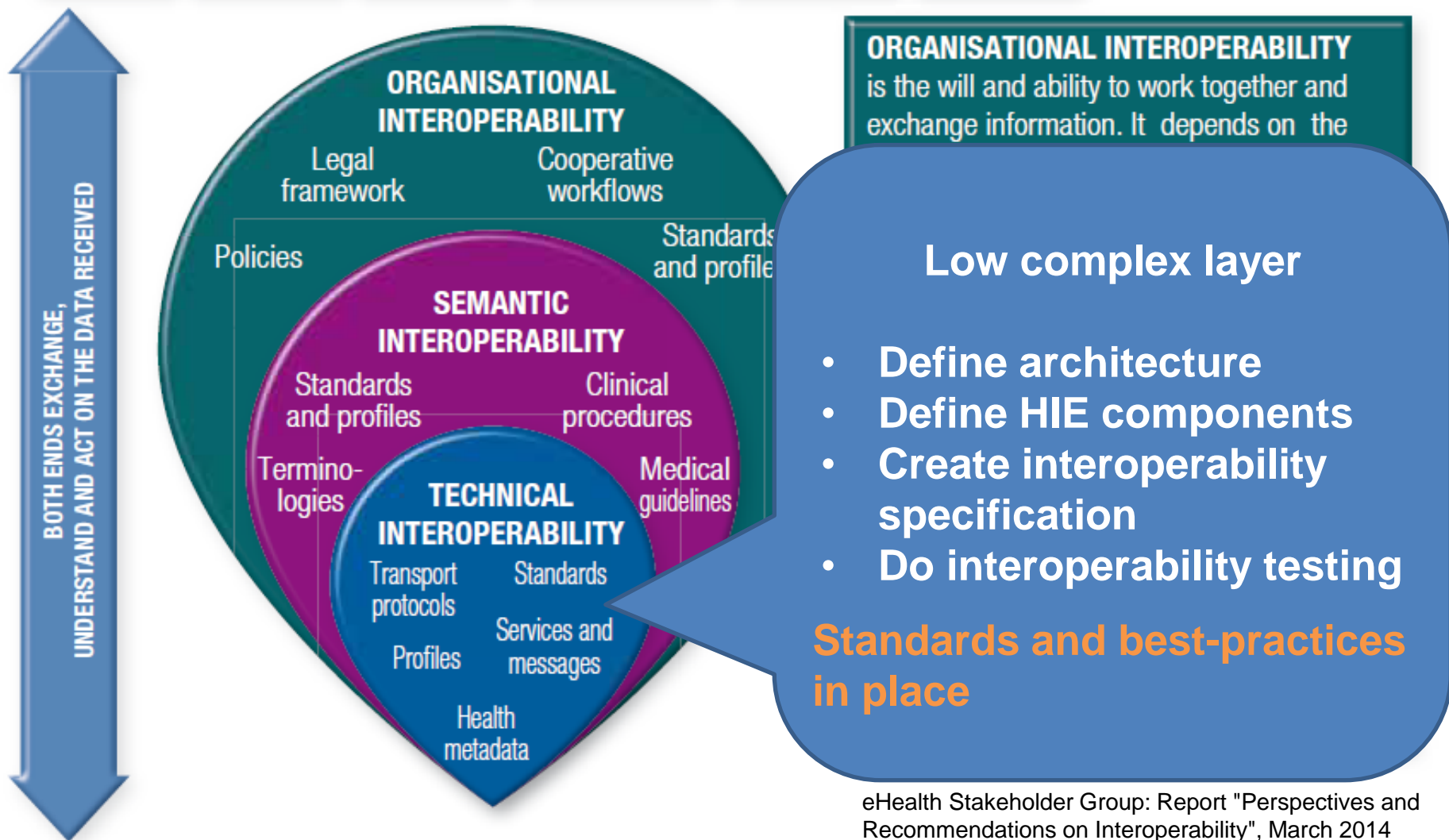
http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=5168&usg=AFQjCNEkGJHkR4TyycRbj5FmDif3T7YPA&sig2=WHoQC4xURmGXaJTYt-Mt1A

Layers of Interoperability



http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=5168&usg=AFQjCNEkGJHkR4TyycRbj5FmDif3T7YPA&sig2=WHoQC4xURmGXaJTYt-Mt1A

Layers of Interoperability



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Creation of an HIE
is not „*the*“
problem anymore



Creation of

is not

Today's challenge:
doing it efficient and sustainable!

HIE

Aspects of the challenge

- **Different stakeholders**
 - Hospitals, GPs, Specialists, Pharmacies, Nursing homes, ...
- **Different vendors**
 - Different vendors of the same kind of software
 - Different vendors because of different kind of software
- **Federated topology**
 - Country, state, province, city, provider, facility-level
- **Public / Private sector**
 - Incentives to connect
 - Different goals
- **Complex use-cases**
 - More than two parties involved, more than one standard involved

See

Health Information Exchange
as part of your
Infrastructure

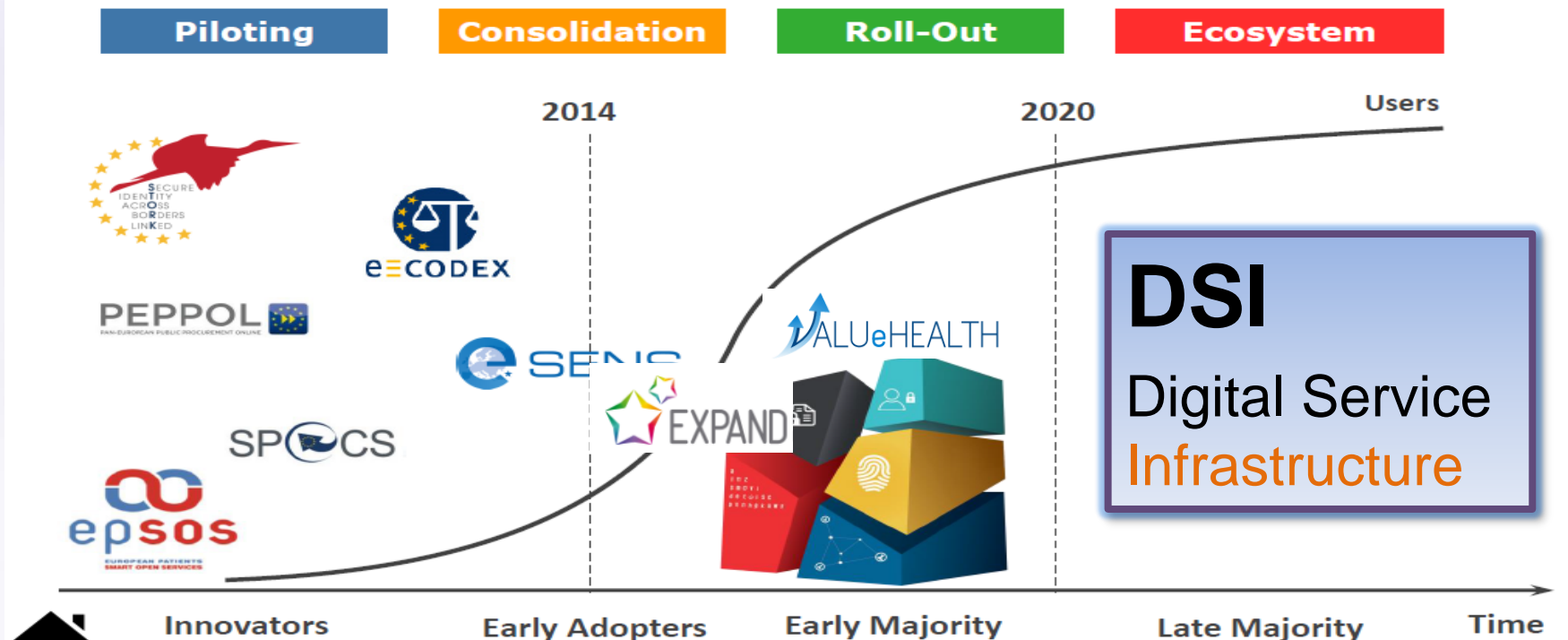




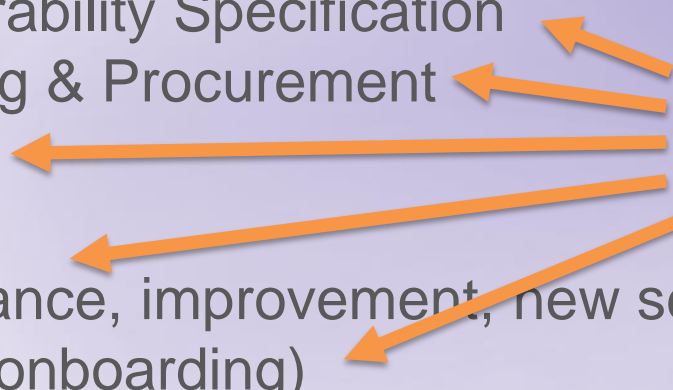
First eHealth large scale deployment: European Patient Smart Open Services
2008 – 2014
36,5 Mio € spent
25 European countries

Creating a #DigitalSingleMarket

The building blocks represent a massive investment since their creation by the Large Scale Pilots. As their user base grows, the Commission is already working on their sustainability beyond CEF.



Source: Gerald Cultot, European Commission, Keynote speech at IHE World Summit 2016

- **Establishing a HIE is a huge financial investment!**
 - To get full coverage all HCPs have to be connected
 - Long-term investment, must be done sustainable
 - **Cost-factors („technical“ ones only)**
 - Initial
 - Interoperability Specification
 - Tendering & Procurement
 - Testing
 - Ongoing
 - Maintenance, improvement, new services
 - Testing (onboarding)
- Each % effort you save here is big €**
- 

Standards and
Blueprints
are **available**



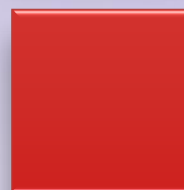
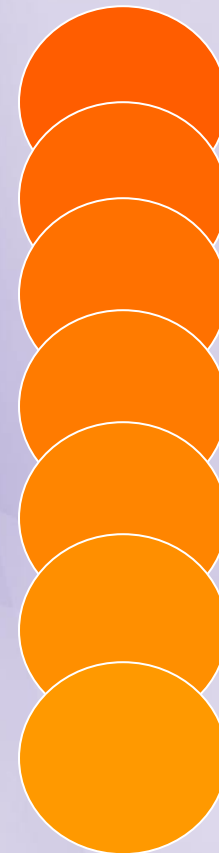
What is IHE?

Standards



Interoperability use cases
typically require
„combinations“ of standards
- but how to compose?

eHealth Projects

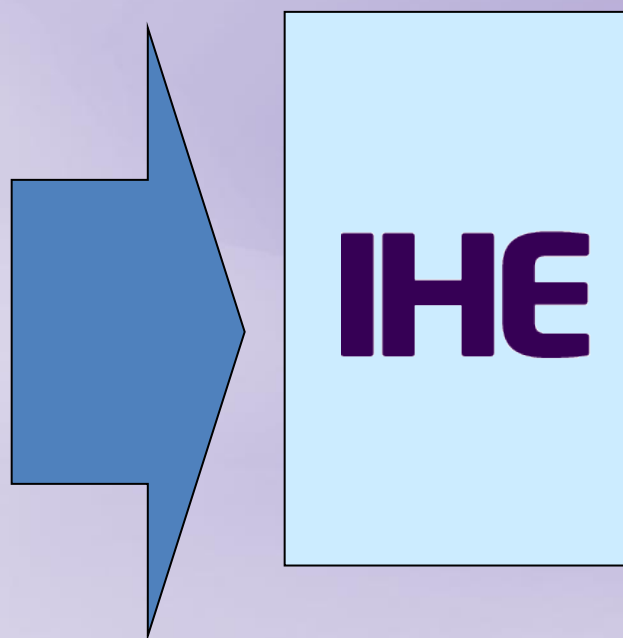


What is IHE?

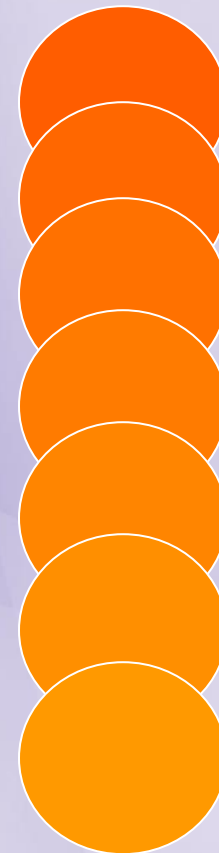
Standards



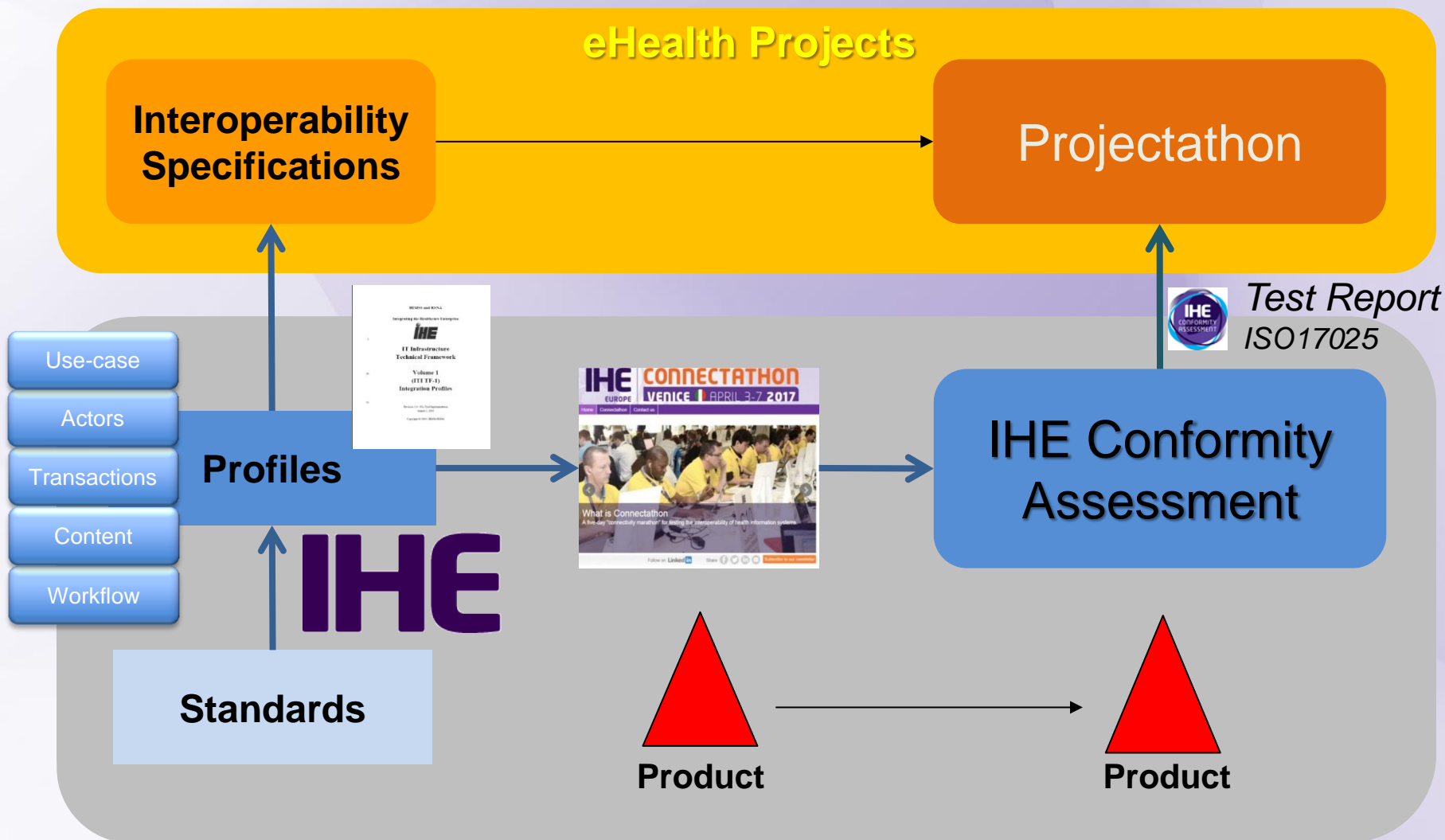
Profiling and Testing



eHealth Projects



IHE is a **non-profit** SDO which uses „**existing**“ standards to profile Interoperability use-cases



Incentivize your Stakeholders



- **What are key components/mechanism of given incentive system**
 - One time investment support
 - Actual use of Digital Applications
 - Health Outcome related
- **What is the impact of given incentive system?**
 - One time investment support -> **limited**
 - Actual use of Digital Applications -> **medium**
 - Health Outcome/Quality related -> **high**
- **What works good?**
 - One time investment support -> **quick boost**
 - Actual use of Digital Applications -> **limited ROI**
 - Health Outcome/Quality related -> **very good and long-term impact**
- **What are key difficulties / weaknesses?**
 - One time investment support -> **easy**
 - Actual use of Digital Applications -> **many hidden complexities**
 - Health Outcome/Quality related -> **measures are expensive and consume efforts**

Stakeholder Incentivize approaches

- **Austria**

- Stakeholders are mandated to connect to ELGA
- Hospitals: no incentive (hospital owners are stakeholder of ELGA!)
- GPs and Pharmacies: **Incentive tied to connection**
- Per ELGA application, e.g. e-Medication:
 - One-time funding for connection (1.350 €)
 - Subsidization for maintenance (20 € / month)
- **Considered as „good deal“**
- <https://www.gesundheit.gv.at/gesundheitssystem/professional/elga-aktiv/inhalt>

- **Australia**

- Participation to MyHR is volunteer
- Incentives only for GPs: „eHealth Practice Incentives Program“ (ePIP)
- **Incentive is bound to accreditation**
 - Quarterly payment for being „accredited“ meeting the MyHR connectivity requirements and being actively using it
- **70% accredited, 55% are claiming ePIP**
- <https://www.myhealthrecord.gov.au/for-healthcare-professionals/practice-incentives-program>

Stakeholder Incentivize approaches

- **US**

- „Meaningful use“ program (Promoting Interoperability): 2011 – 2017, 2 Stages
- **Incentive bound to compliance to criteria set (different scopes per stage)**
- 2015: **78% of GPs** and **96% of hospitals** use certified EHR technology
 - 524.785 Professionals: 16 B\$ (30 k\$ per professional)
 - 5.007 Hospitals: 21,7 B\$ (4,3 M\$ per hospital)
- <https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/index.html>

- **Switzerland**

- **Incentive is bound to certification of the HIE**
- By law
 - Citizen has to have possibility to create EPR until 2020
 - Facilities: for full connectivity until 2024, GPs optional
- Financial
 - Budget of about 30M CHF

- **Ukraine, Philippines**

- **Reimbursement** by Social Insurance **bound to electronic submission** of claim
- Creates „intrinsic“ motivation to connect

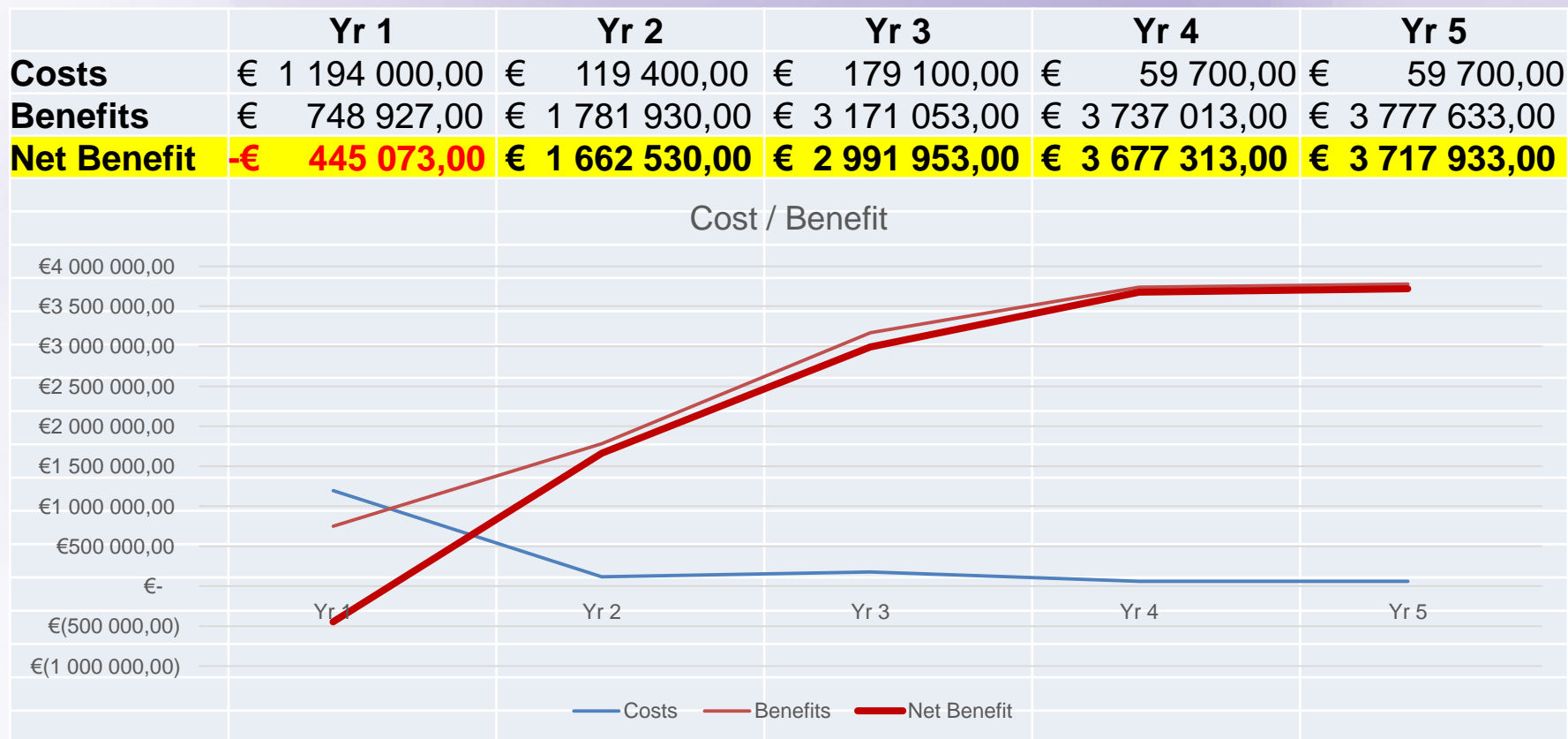
Harvest the benefits



Vincent Van Gogh - Corn Harvest in Provence

- **Example: Italy, Veneto region**
 - 5 Mio people
 - 21 Local Health Authorities
 - Hospitals, GPs, Clinics, Prevention departments
 - 2 Hospital Trusts
 - IHE XDS based HIE
 - Cost/benefit analysis
 - **Electronic Sharing Clinical Documents (3 yr)**
 - Benefits included: human resources, technology tools, spaces and consumables
 - **Total region: 56 M€**
 - For each Local Health Authority: 2,4 M€
 - For each report: 1,08 €

- **Cost/Benefit: ePrescription and eReferral (5 yr)**
 - Benefits included: paper, storing, sorting, analysis, verification
 - **Total benefit for region: 10 M€**



Source: Consorzio Arsenà.IT

- **New global gov-gov initiative**

- Purpose: Share knowledge and experiences
- www.gdhp.org



- **First inaugural meeting: Feb 19/20, Canberra, AUS**

- Participants: Argentina, Australia, Austria, Brazil, Canada, Hong Kong, Japan, India, Indonesia, Italy, New Zealand, Saudi Arabia, Singapore, South Korea, Sweden, UK, Ukraine, USA, WHO
- 1st years secretariat: Australian Digital Health Agency

- **Topics of 1st year's work:**

- connected and interoperable health care
- cyber security
- policies that support digital health outcomes
- clinician and consumer engagement
- evidence and evaluation of digital health

- IHE Homepage
 - <http://www.ihe.net/>
 - <http://www.ihe-europe.net/>
- IHE Wiki
 - <http://wiki.ihe.net/>
- IHE International Social Media
 - YouTube channel: <https://www.youtube.com/user/IHEIntl>
 - IHE Webinars: <http://www.ihe.net/Webinars/>
 - Twitter: <https://twitter.com/IHEIntl>
- Google groups
 - <https://groups.google.com/forum/#!search/ihe>





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Changing the Way Healthcare CONNECTS

<http://www.ihe.net>



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