CONNECTING the PIECES: eHealth Standards and the Innovator’s Dilemma

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eHealth Standards and the Innovator’s Dilemma

- **HL7 Foundation**
  - European standardization policy projects

- **Disruptive vs incremental innovation:**
  - Making healthcare simpler, accessible, affordable
  - Improving performance

- **Innovator’s dilemma for eHealth standards**
  - As analytics, health apps, and mobile health set out to disrupt the health care Information landscape, where do eHealth standards stand?
  - Does the innovator’s dilemma apply to eHealth standards?

- **Where is HL7 heading?**
HL7 Foundation: Activities in Europe

**European Funded Research Projects**
- eHGI (2012-2014)
- Trillium Bridge (2013-2015)
- ASSESS CT [PHC-34] (2015-2016)
- OpenMedicine [PHC-34] (2015-2016)

**HL7 in Europe Newsletter: since 2010**

**Other activities**
- DG Connect, eHealth stakeholders group (2011-15)
- EFMI council (2012-)
- Workshops / tutorials at European Events
- SDO Joint Initiative Council

HL7 Mission: empower global health data interoperability by developing standards and enabling their adoption and implementation

HL7 Vision: A world in which everyone can securely access and use the right health data when and where they need it.
Achievements of Trillium Bridge

**Gap analysis**
- Compared patient summary specifications in EU/US
- Shared clinical elements: problems, medications, allergies

**Interoperability Assets**
- Established a terminology prototype CTS-2 service: [http://extension.phast.fr/STS_UI](http://extension.phast.fr/STS_UI)
- Developed Transformer of Patient summaries: [http://informatics.mayo.edu/trillium-bridge](http://informatics.mayo.edu/trillium-bridge)
- Mediated Differences in EU/US IHE XCPD/XCA profiles for Patient Identity and Document Query/Retrieve

**Validation activities: 4 EU countries/ Kaiser Permanente**
- EU/US Marketplace; HIMSS 2015; IHE Europe Connectathon 2015, eHealthWeek 2014,15

**Feasibility study:**
- Reflected upon standards, cross-vendor integration, incentives, clinical research, security and privacy, innovative business models, education

**Recommendation:**
“Advance an International Patient Summary (IPS) standard to enable people to access and share their health information for emergency or unplanned care anywhere and as needed. At minimum the IPS should include immunizations, allergies, medications, clinical problems, past operations and implants.”
The Joint Initiative Executive Council voted unanimously the following endorsement to the Trillium Bridge key recommendation.

The Joint Initiative Council unanimously endorses this key recommendation and, through strategic leadership in health informatics standardization, we are committed to:

- enabling practical standards-based health information sharing, contributing to better patient health and more effective health outcomes, and undertaking specific initiatives that address these global needs.

In particular, we are currently focused on bringing together core sets of compatible standards needed to support:

- use of patient care summaries within and across communities
- implementation of the Trillium Bridge recommendation

and we are committed to work with others who share these goals.
Think of a global eHealth ecosystem where:

- people (digital natives and immigrants) enjoy timely safe and informed health, anywhere around the globe
- interoperability assets fuel creativity, entrepreneurship, and innovation

where eStandards

- nurture large-scale eHealth deployments to strengthen Europe’s voice and impact locally on its citizens and globally on the world
- enable co-creation in interoperability where trusted dialogs on health, costs, and plans meet great expectations.
eStandards and its siblings nurturing large scale eHealth Deployment

- Assess CT: the challenge of reference clinical terminology
  - e.g. Problems and diagnoses

- OpenMedicine: the challenge of medication identification and substitution
  - e.g. equivocal identification of medicinal products

- eStandards: co-existence, change narrative, focus on tools
  - e.g. baseline structure/codes for Allergy/intolerance

- ValueHealth: sustainable business models
  - e.g. maintaining interoperability assets, rolling out services
The innovator’s dilemma

Innovator’s dilemma [Christensen1997]

- the logical, competent decisions of management that are critical to the success of their companies are also the reasons why they lose their positions of leadership.
- Healthcare systems need to transform unsustainably expensive services to ones that are of high quality, low cost and conveniently accessible.

Lesson from other industries on disruptive innovation:

- needs to develop autonomously
- should address simple problems of the least demanding customers.

Because in contrast to incremental innovation it:

- rarely initiated by leading companies in an industry
- cannot meet the needs of industry leaders or their customers
- profits unattractive from the dominant business model perspective

Elements of disruptive innovation

Every disruption is comprised of three components:

- a **technology** that transforms the fundamental technical problem in an industry from a complicated one into a simple one
- a **business model** that can take that simplified solution to the market at low cost
- a supporting cast of suppliers and distributors whose business models are consistent with one another, which we call a **value network**.

Model of disruptive innovation

Sustaining innovations, whether incremental or radical, make good products better.

Pace of performance improvement that companies provide

Performance improvement that customers can utilize

Disruptive innovations make products simpler and more affordable

From intuitive to precision medicine

Making the transition with eStandards:

- Basis of competition is efficiency, functionality and reliability
- Basis of competition is speed, responsiveness, and convenience
Patients are people who wish to lead a normal life. They don’t wish to be constantly reminded they are at risk!
Focus and disruption in the business models of medical practice

Business models:
- **Solution shops** → fee-for-service basis.
- **Value-adding process businesses** → fee-for-outcome basis.
- **Facilitated networks** → fee-for-membership basis (keep people well)

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PHRs: The connecting Matter

Disruptive innovation in eHealth Standards

- Complex → simple
- Costly → free
- Specialized → generic
- Comprehensive → simple and tools-driven
The case for formal standards in large scale eHealth deployment

Health System - government and regulators
- Rules to abide by for sustaining and innovating the health system
- Public health reporting and analysis
- Communication and coordination across health systems

Workforce
- Communication and coordination of care
- Dissemination and availability of knowledge (CDSS)

Citizens
- Active involvement in health maintenance and decisions
- Navigating the health system (or systems) they are involved in

eHealth Market
- Creating opportunities for new health and IT services

www.estandards-project.eu
Questions for reflection

Co-creation, standards and open innovation

- Is it convergence of cultures OR creation of new cultures?
- Is eHealth innovation able to bridge specialized and general practices?
- What strategies do we need to curate eStandards for aggregation of data and delivery of knowledge where needed?