



A Look at the Future of HL7

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What factors influence the future of HL7?

- Organizational structure and governance
- How and what work gets done
- Relationship to stakeholders
- Governments
- Relationship to other SDOs and related organizations
 - Partnerships and collaborations
- Funding model



Strengths of HL7

- International organization – creating global standards
- Number, depth and width of experts
- Open, functional and cooperative working environment; best of all
- Resources available to organization
- Most widely used standard in health care; true global use
- Growing, very competent staff



The Beginning

- Formed in 1987 to create required standards to enable “best of breed” approach to hospital information systems
- Small, overlapping working group with few committees: focused on admission, discharge and transfer (ADT); orders and results; patient administration; control and query
- Independence of governance and working group activities
 - Chair, secretary and treasurer elected; rest of board appointed
 - Primary Stakeholders – vendors and providers; formed IAB and PAB
 - Hired management group (AMG) in 1991



The first product

- Version 2.x driven by simplicity; implicit model: see it, do it
 - Basic building block were data items combined into logical segments
 - Messages driven by trigger events and consisted of segments in defined sequence. Segments could repeat and some were optional.
 - New required elements were sequentially added to existing segments
 - New functionality created new segments.
 - Z segments permitted independence and expansion.
 - Implementation was at the interpretation and needs of the implementer.
 - Backwards compatibility demanded.



Evolution of governance

- Formed Technical Steering Committee with chair, vice chair
- Evolved to international organization
- Evolved to largely elected board (8 at large, including international) (TC Chair and vice chair non-elected members)
- Convergence of governance and technical work; mainly bottom up and volunteer driven
- ANSI accreditation influenced governance and balloting
- Grew rapidly in numbers: membership, technical committees, special interest groups; scope expands
- Addition of SGML/XML activity; vocabulary; clinical interests; moved toward model driven approach resulting in RIM, v3, CDA
- Loss of communication among groups; increased time to create standards



Evolution of technology

- Migration to model-based v3 standards competed with existing base of v2 standards; co-existence demanded
- Increasingly unsolved issues impacted efficiency of organization
- Increasing competition among groups both national and international
- Interests from government and regulatory bodies
- EHR standards activity – expanded participation
- Increased importance of ambulatory care standards
- Wider audience, expanded set of stakeholders



The Present Governance

- Board is strategic; Technical Steering Committee controls technical standard development
- Hiring of a Chief Executive Officer, Chief Technical Officer; Executive Director of Management Group became Chief Operating Officer
- New structure organized around common themes
 - Foundation and Technologies
 - Structure and Semantic Design
 - Domain Expertise
 - Technical and Support Services
- Increase in top down governance but still balanced by bottom up influence; still a volunteer organization
- Importance of global approach recognized
- Increased efforts of joint activities among SDOs in creating standards



Internationalization of HL7

- Now HL7 International
- Now International Council
- Proposed HL7 Country vice Affiliate
- Moving toward physical regional presence
 - Establishing HL7 presence in Brussels
- U.S. electing HL7 U.S. Representative
- Considering a one membership organization with national chapters



Operational evolution

- Pressures on HL7 from multiple groups, increasing with US stimulus package
- Movement towards testing of standards through Draft Standards for Trial Purposes
- Perceived increased complexity in implementing model-based standards
- Increased requirements for family of implementation manuals
- Pressure to create standards more quickly
- Increased interest in standards throughout healthcare community
- New focus on interoperability standards
- New attention from clinical community
- Demand for tools at all levels – making, implementing, using standards



Expansion of Services

- Tool sets to multiple audiences
 - Standards developers
 - Application standards
 - Implementation standards
 - User standards
- Support for resource repositories
- Education
 - About standards and the use of standards
 - Increase awareness of the role of standards
- Marketing



No single focus

- Geographical
 - International
 - National
 - Regional
 - Local
- Stakeholder
 - Providers, vendors, payers, governments, consultants, payers, researchers, knowledge brokers, regulators, consumer, employers, suppliers, imaging (PACS), others
 - Interoperable solutions must satisfy all
- Sites of care
 - Inpatient, ambulatory care, emergency care, nursing and long term stay facilities, home care
- Multiple diseases; increasing focus on chronic diseases



Questions HL7 Must Answer

- Should our vision be broad or narrow?
- What is the proper balance between academic and “real world” approaches?
- What is balance between national and global?
- In making a standard
 - How many people are required?
 - How long should it take?
 - Is creating different than approving?
- What else is required beyond creating a standard?



Producers, profilers and enforcers

- In the United Kingdom, the NHS's Connecting for Health serves as profiler and enforcer
- In Canada, INFOWAY serves as profiler and enforcer
- In Australia, the National eHealth Transition Authority serves as profiler and enforcer
- In US, IHE serves as profiler; HITSP serves as profiler; ONC serves as enforcer
- In an increasing number of countries, the Ministry of Health serves as profiler and enforcer



Current Collaborations

- HL7 submits its standards to ISO for approval as ISO standards
- HL7 partnered the creation of the Joint Initiative Council with ISO and CEN. HL7 has played an active role in all of the JIC projects. HL7 provided the 1st chair of this group.
- HL7 is a charter member of the US-based SDO Charter Organization (SCO); J. Quinn is first vice chair.
- Active and working agreements with CDISC, IHE, NQF, EHRA, OMG, others
- Actions prove commitment of future HL7 to collaboration



Impact of US stimulus package

- Change funding model from membership dues based revenues to government funded activities and standards production
- Increased funds required to
 - Develop tools
 - Staff support for volunteer standards production
 - Paid experts to accelerate standards production
- Standards freely available to all



How does HL7 become a front-line organization?

- Standards require both a policy (political) and a technical framework to be effective.
- How does HL7 influence policy? The future HL7 must influence policy related to HIT in all countries.
- Role of CEO includes influencing policy
- Increase awareness of standards in all health related groups.



Future Standards Requirements

- We need to understand and predict the future trends in health care and in HIT to have required standards available as needed.
- HL7 needs to determine what standards are required to meet national visions for use of IT in patient care, research, reimbursement/cost containment, performance evaluation, consumer involvement
- HL7 must develop and share a policy of how we will work with others to meet these new needs. Together we stand; divided we fall.
- In an ideal world, all HIT standards would be produced by a collaborative process.



Immediate needs

- Increased use of decision support including guidelines and alerts
- Increased use of geocoding standards
- Increased medical device standards, specifically personal health devices. Examples include body sensors, calorie counters, mood and pain reporting, etc.
- Engagement of broader community in the use of standards



New requirements

- Addition of genomic and proteomic data to health record
- Movement toward predictive and preventive health model with personalization of care and treatment
- Modifications in workflow
- New vision and purposing of EHR
- Increased demands for quality, patient safety, access, efficiency, effectiveness, integrity, privacy
- Integration of data from disparate sources; life and death decisions based on integrated model



Other services

- Rule-based data exchange
- Filters for data presentation
- Mapping services in transition
- Consent management
- Identifying candidates for clinical trials
- Record linkages
- Digital identifiers
- Notification services
- Business processes
- Natural language processes



Awaiting standards

- Evidenced based medicine
 - Standards for knowledge representation, knowledge extraction for data, knowledge transfer and knowledge use
 - Standards for clinical guidelines, care plans, decision support
- Translational research
 - Reusable data: clinical trials fed by patient care data
 - Decrease time from bench top research to routine bedside use
- Query standards that make it easy to access information; push and pull standards
- Data capture standards



Future requirements?

- Understanding content, similarities and differences in different views of health care data
 - EHR, EMR, population or summary records, personal health record
 - Variation in sites and purpose; linkages and relationships
- Views, content and functionalities of
 - Regional health information systems (RHIO or HIE)
 - States or provinces
 - National (NHIN)
- Meeting national requirements; establishing trust for national commitment
- Accommodating changes in technology and health care delivery models in standards.



The Future HL7

- Highest level of collaboration with global community. Goal is one standard for one business purpose. Our successes are dependent on the success of all.
- Provide technical framework for HIT standards; others provide expert content
- Expanded scope to identify and address gaps and new requirements in HIT standards
- Direct funding from governments
 - Expanded staff support
 - Volunteers define requirements; paid experts create standards; volunteers validate work
 - Management challenges



The Future HL7

- Become the bridge to clinical community in delivering required standards around defined contents, application functionalities, work flows
 - Decision support and knowledge management
 - Medical devices and personalized health devices
 - Disease management
- Accepting standards as only the first step in overlying responsibilities of HL7
 - Influence policy decisions
 - Become major player in global community

