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Identifying different types of standards to achieve interoperability in healthcare



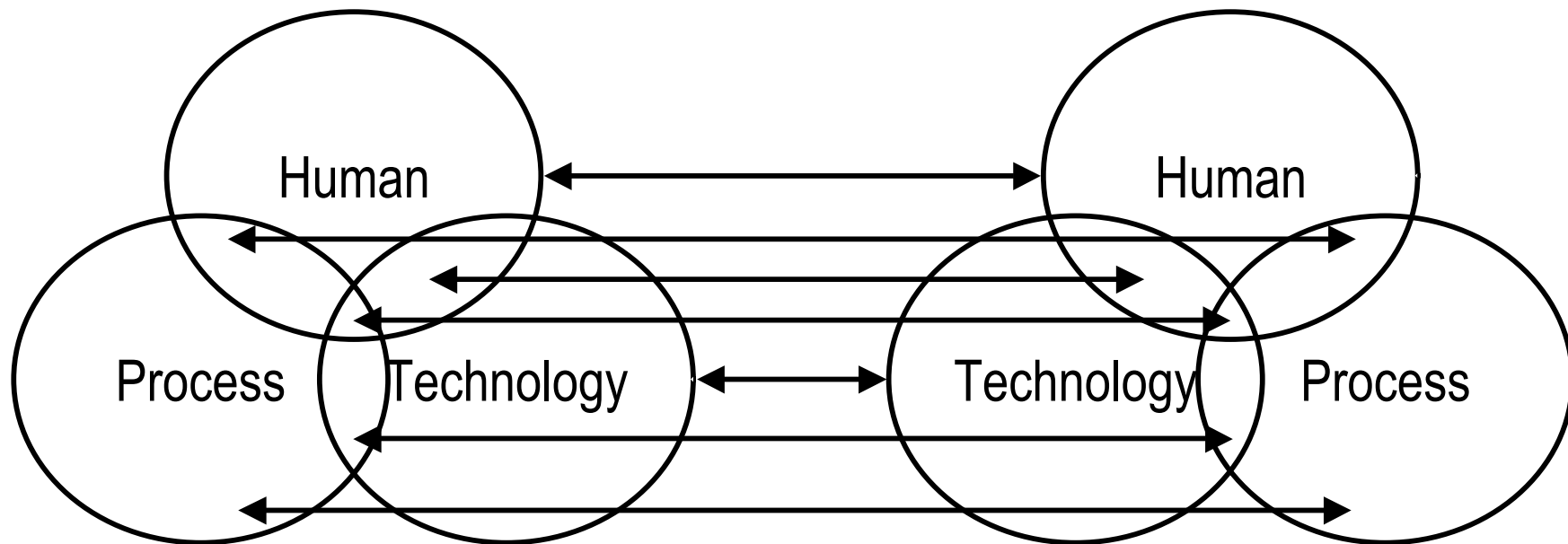


Interoperability

- Interoperability is defined by IEEE as:
 - “The ability of two or more systems or components to exchange information and to use the information that has been exchanged”
- Technical or organizational systems?



Communication between Organizational Systems





Three layers for each aspect

- Interconnectivity
 - ISO-OSI Levels 1-5; syntactic; hand-over
- Interchangeability
 - ISO-OSI Level 6; semantic; black-box
- Interoperability
 - ISO-OSI Level 7; pragmatic; control flow



A well-known example

- Register a new patient
 - ADT^A04 or PRPA_TE101001UV01
- Defined technical interface (ACK/NAK)
- Structured description of data
- Structured references to external data
- No expectation of (human) behavior
- Described (black-box) process behavior



A more complex example

- Report a communicable disease
 - PORR_ST100001UV01
- Right now this covers only reporting ...
- One might imagine more complex flows:
 - Quarantine
 - Automated investigation
 - ...



Required standards

- Technological standards
 - Communication, data representation, technical system behavior
- Human standards
 - Language, vocabulary, intent
- Process standards
 - Sequencing, input/output, intervention
- ... and (partially) integrated standards



We are well underway ...

- Interoperability of technical systems is well within our reach
- Vocabularies and structured documents achieve interoperability on a semantic level from a human perspective; pragmatics are still beyond the horizon
- However, little structured effort is put into process interoperability, resulting (within HL7) in a rather muddled set of events, interactions, and application profiles



A friendly warning

- In the end, only operational standards can provide for interoperability
 - Method standards (~ HDF)
 - Meta-model standards (~ RIM)
 - Conceptual standards (~ D-MIM / RMIM)
 - Operational standards (~ HMD + ITS)