Medical Imaging Workstation: CAF Views

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Abstract

The Customer objectives, Application and Functional views are described. The radiology department and the radiologist are the main customer. The clinical and the financial context of the radiology department is shown. The medical imaging workstation is positioned in the field of IT products and in the clinical workflow. The market segmentation is shown. The typical URF examination is explained. Key drivers are linked to application drivers and to product requirements. The functionality development over time is shown and the role of the information model for interoperability is discussed.

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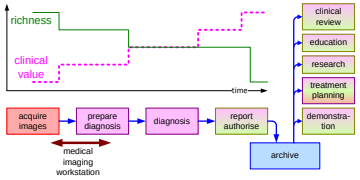
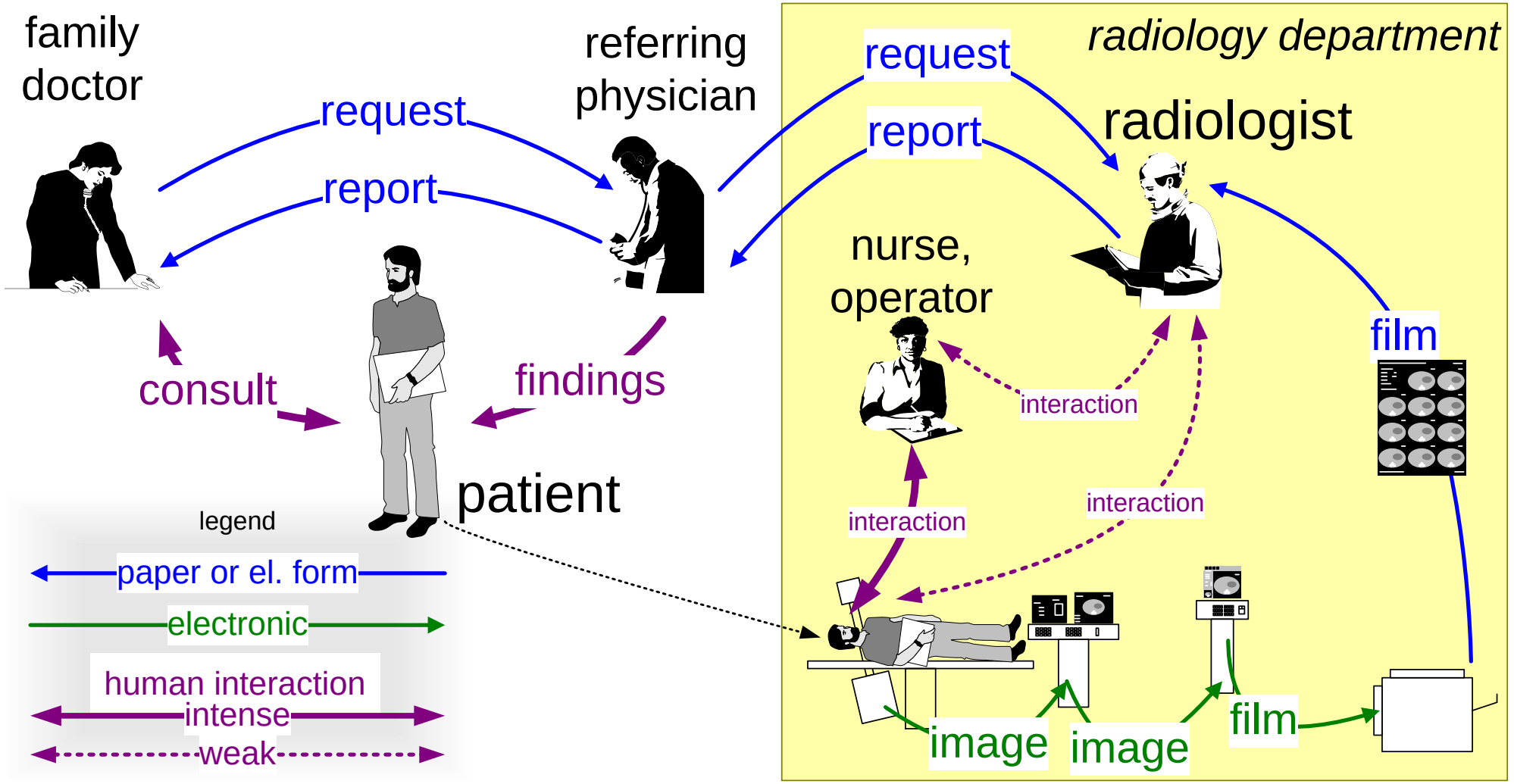
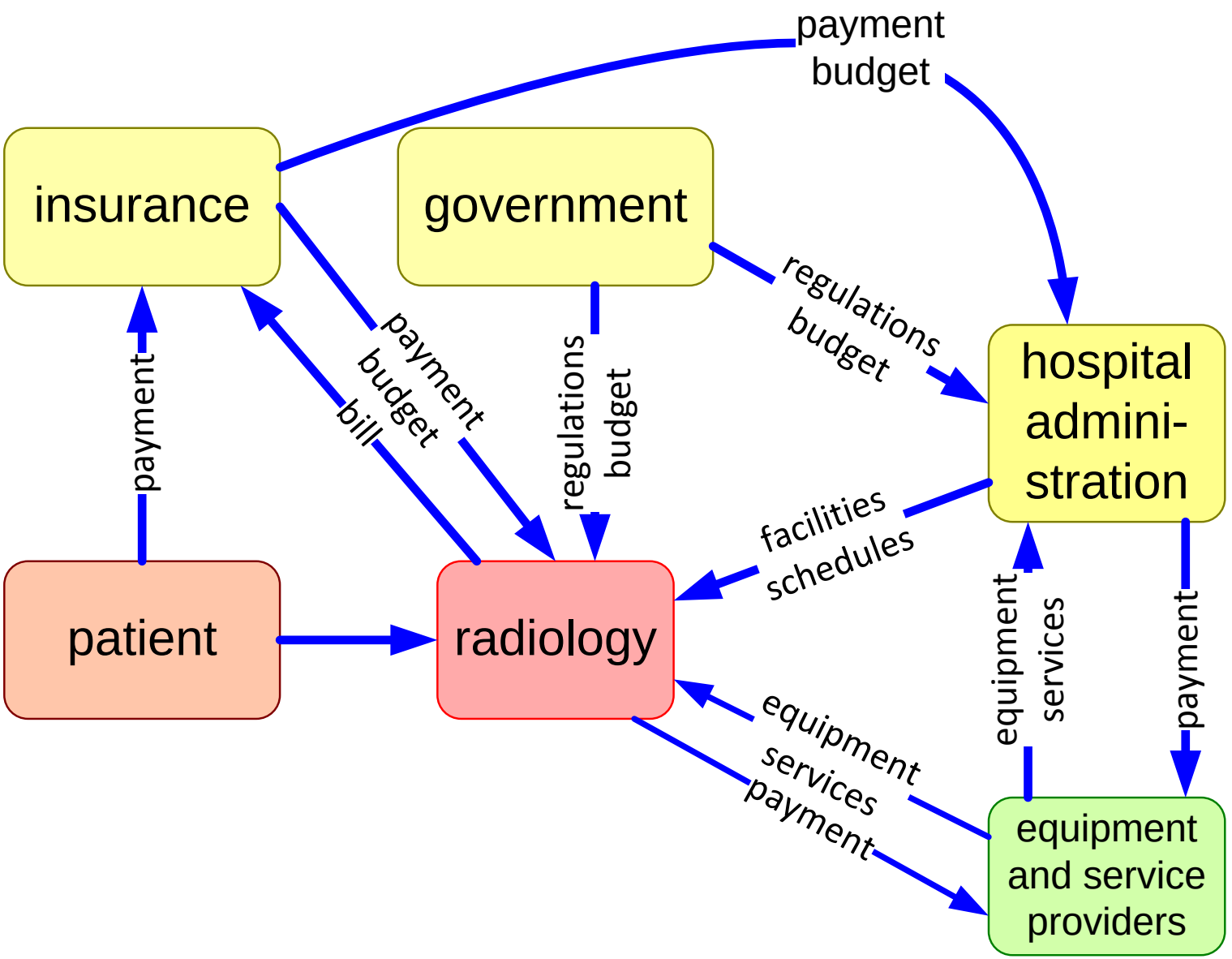


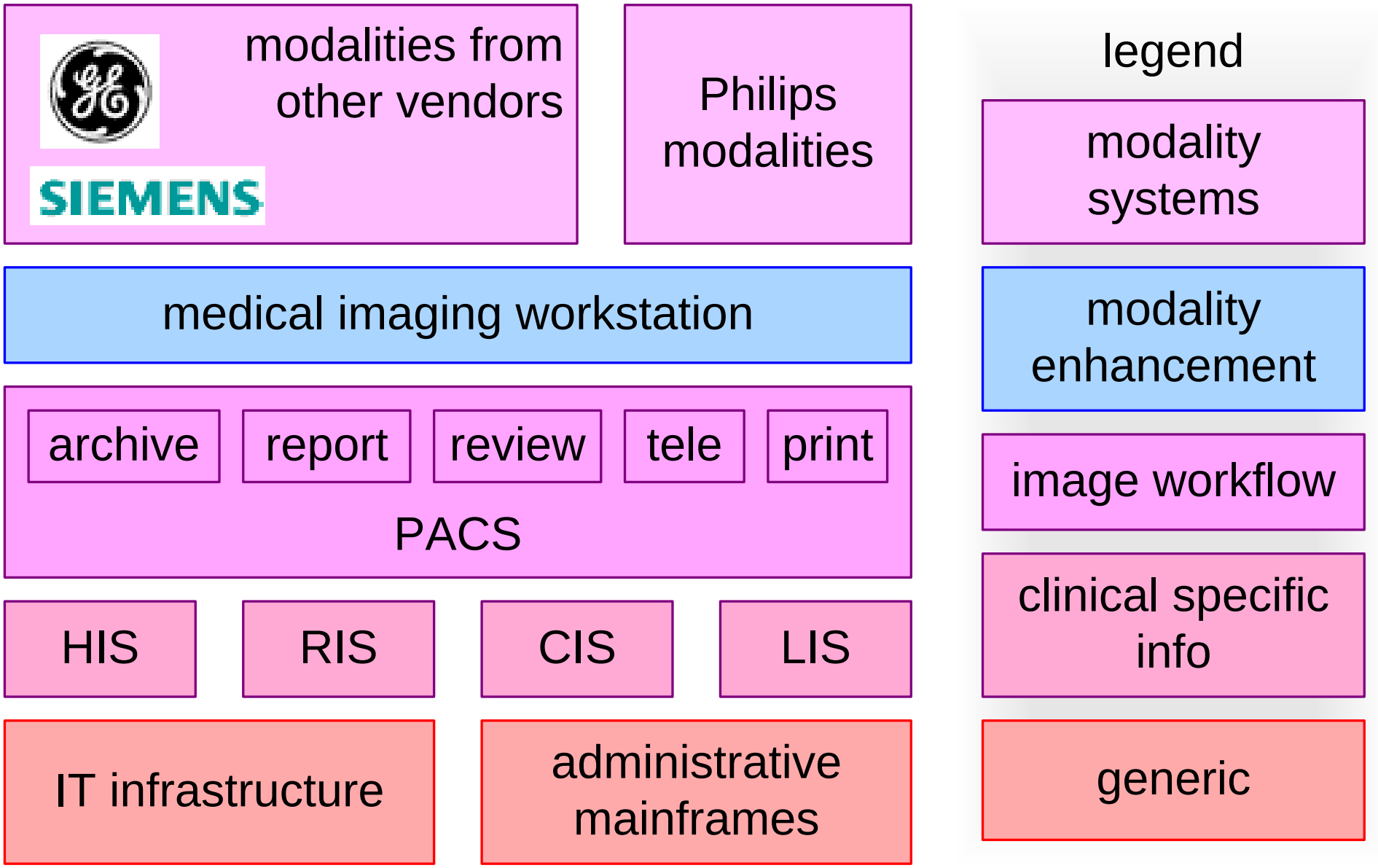
The clinical context of the radiology department



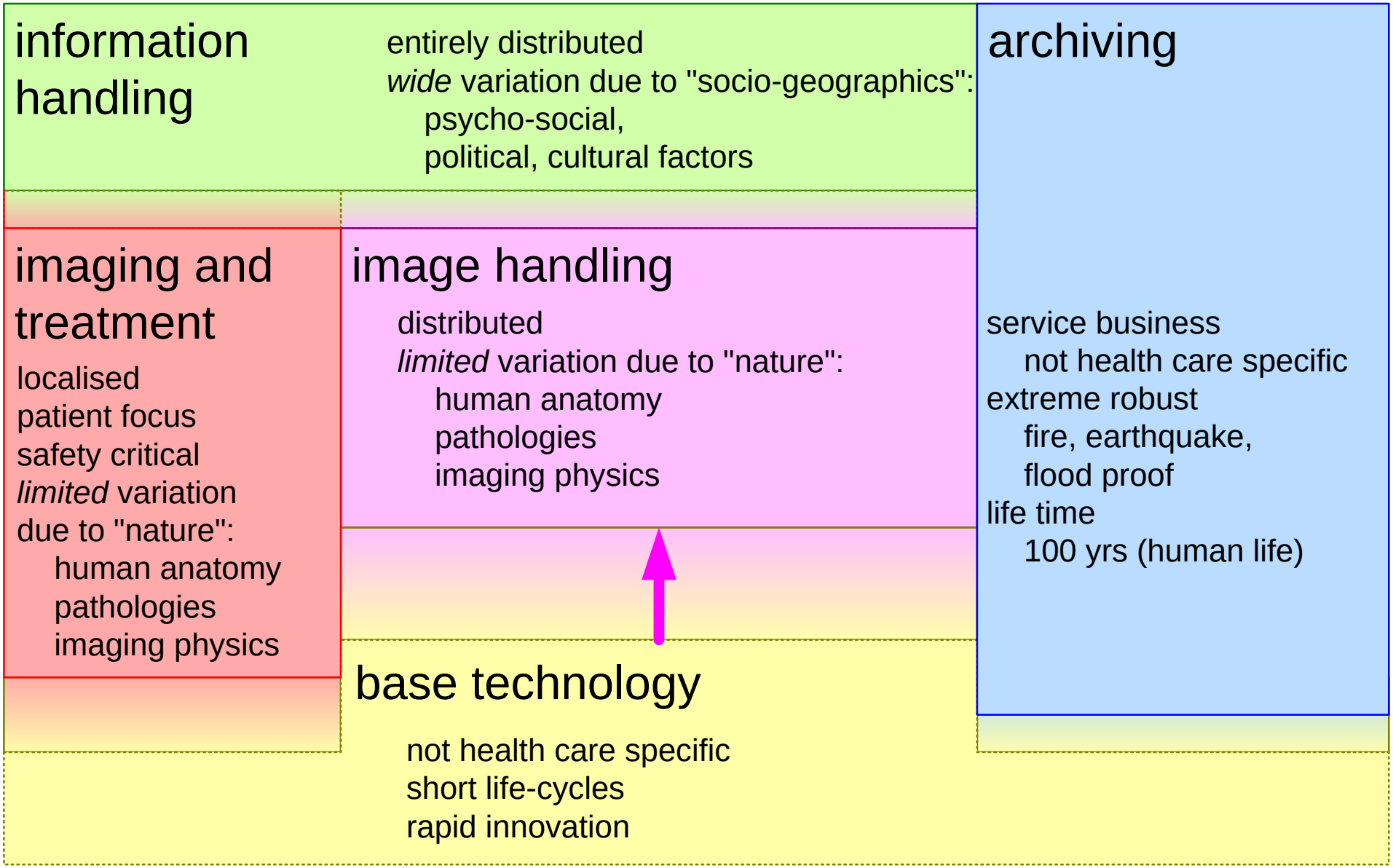
The financial context of the radiology department



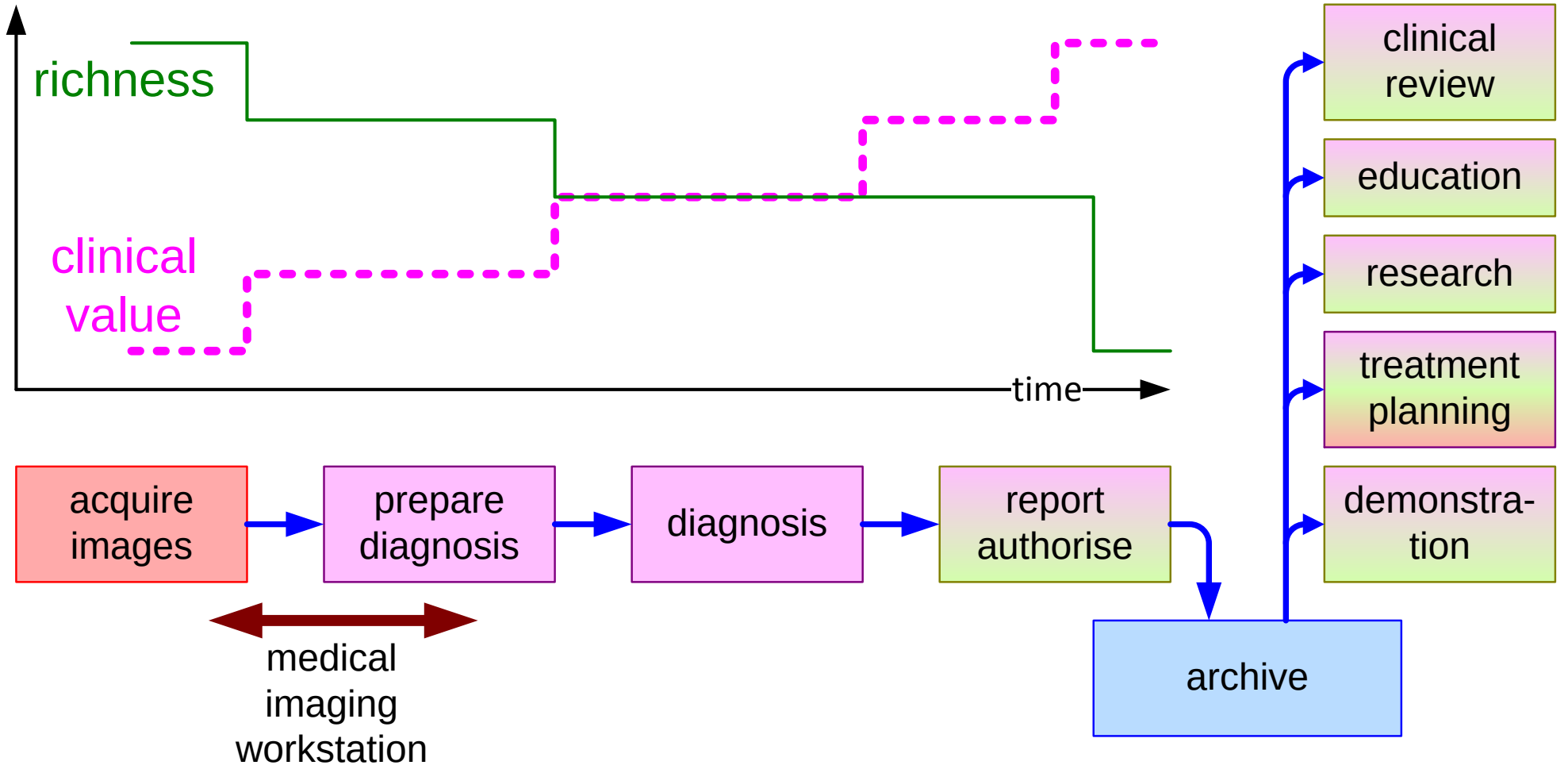
Application layering of IT systems



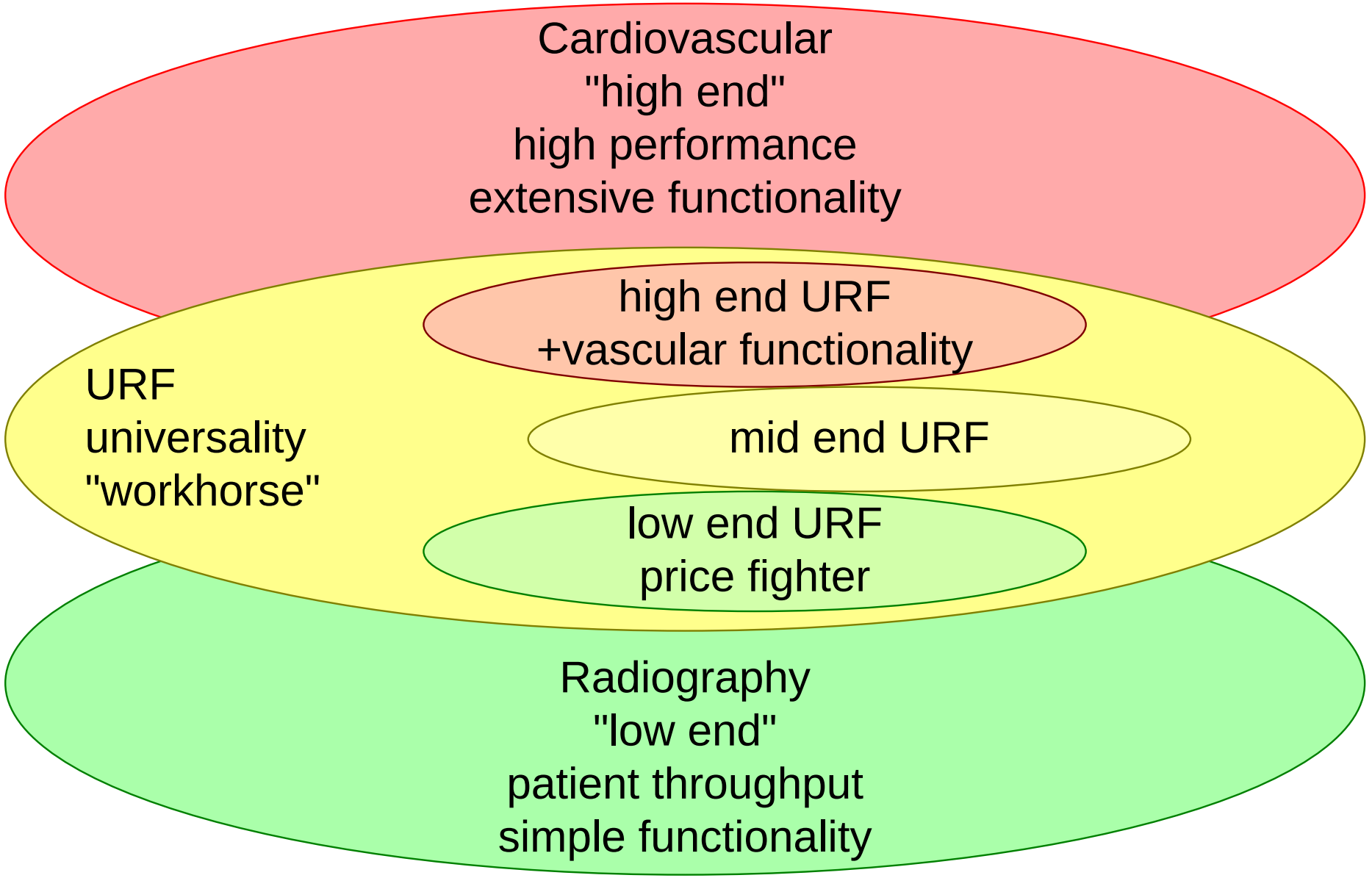
Reference model for healthcare automation



Clinical information flow

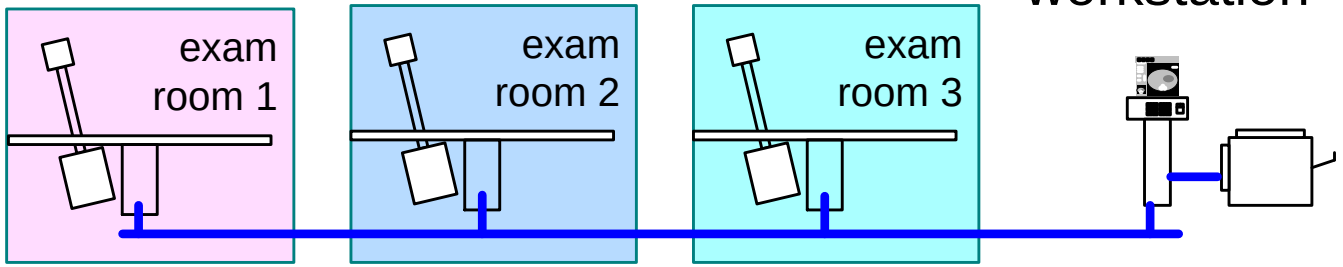


URF market segmentation



Typical case URF examination

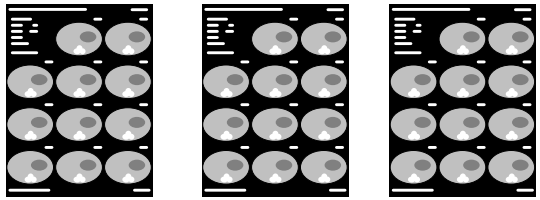
3 examination rooms connected to 1 medical imaging workstation + printer



examination room: average 4 interleaved examinations / hour

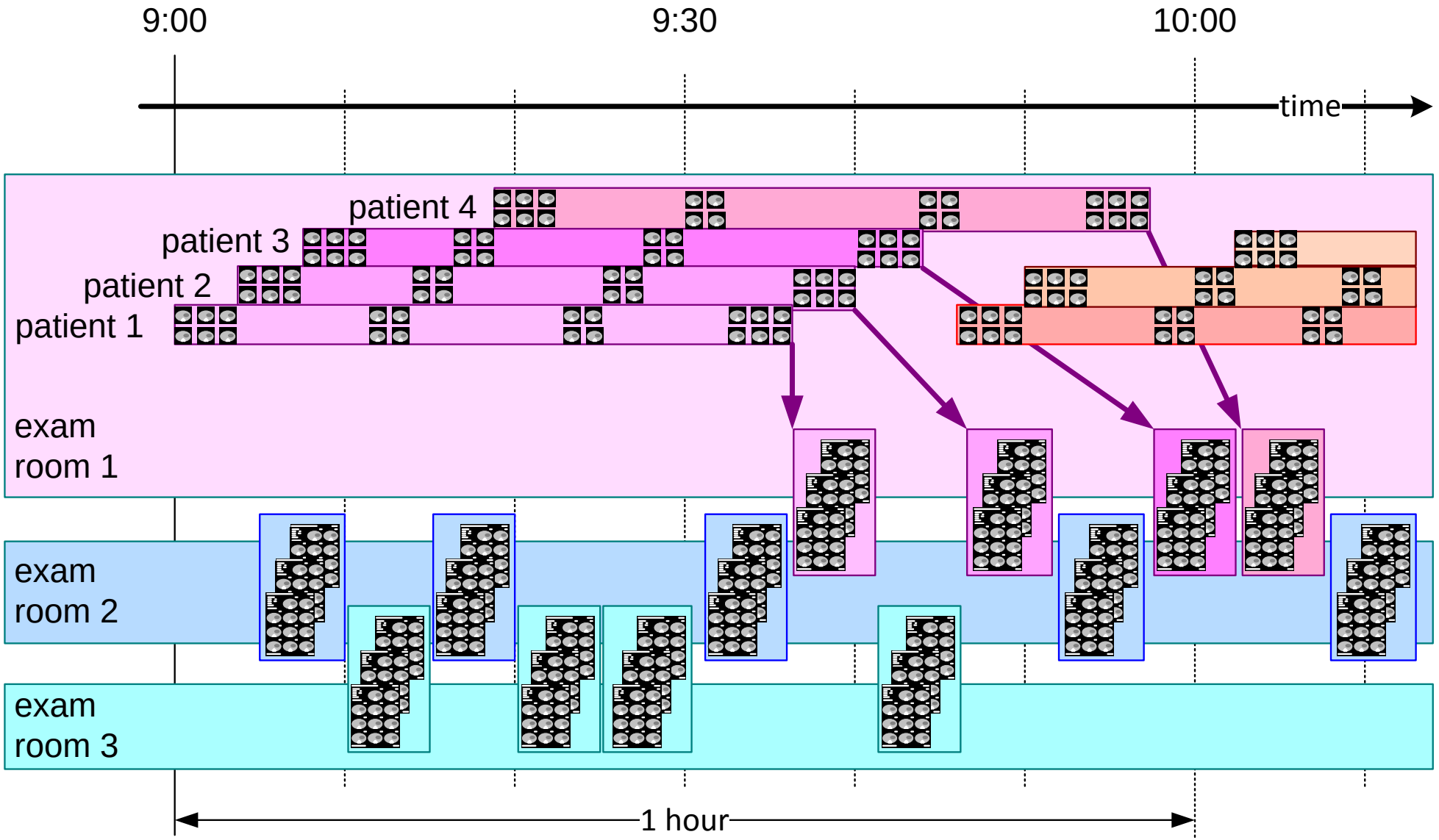
image production: 20 1024^2 8 bit images per examination

film production: 3 films of 4k*5k pixels each



high quality output
(bi-cubic interpolation)

Timing of typical URF examination rooms



Key drivers, application drivers and requirements

Customer key drivers	derived Application drivers
report quality	selection of relevant material use of standards
diagnostic quality	acquisition and viewing settings contrast, brightness and resolution of light-box
safety and liability	clear patient identification left right indicators follow procedures freeze diagnostic information
cost per diagnose	interoperability over systems and vendors multiple images per film minimise operator handling multiple applications per system
time per diagnose	diagnose at light-box with films all preparation in exam room

Requirements

- import
- auto-print
  - parameterized layout
  - spooling
- storage
  - navigation / selection
  - auto-delete
- viewing
  - contrast / brightness
  - zoom
  - annotate
- export

functionality

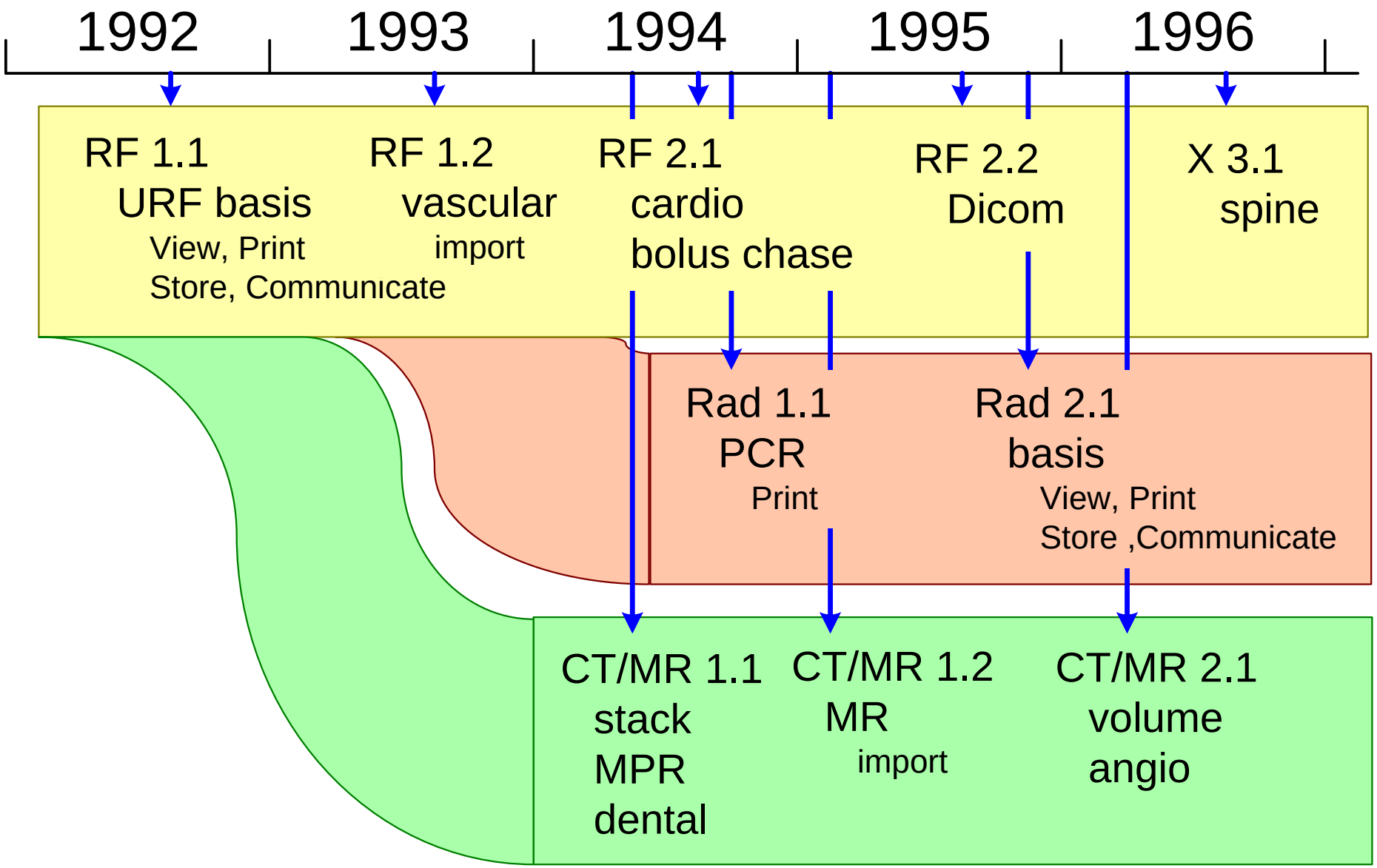
- system response
- system throughput
- image quality
  - annotation
- material cost
- operational cost

qualities

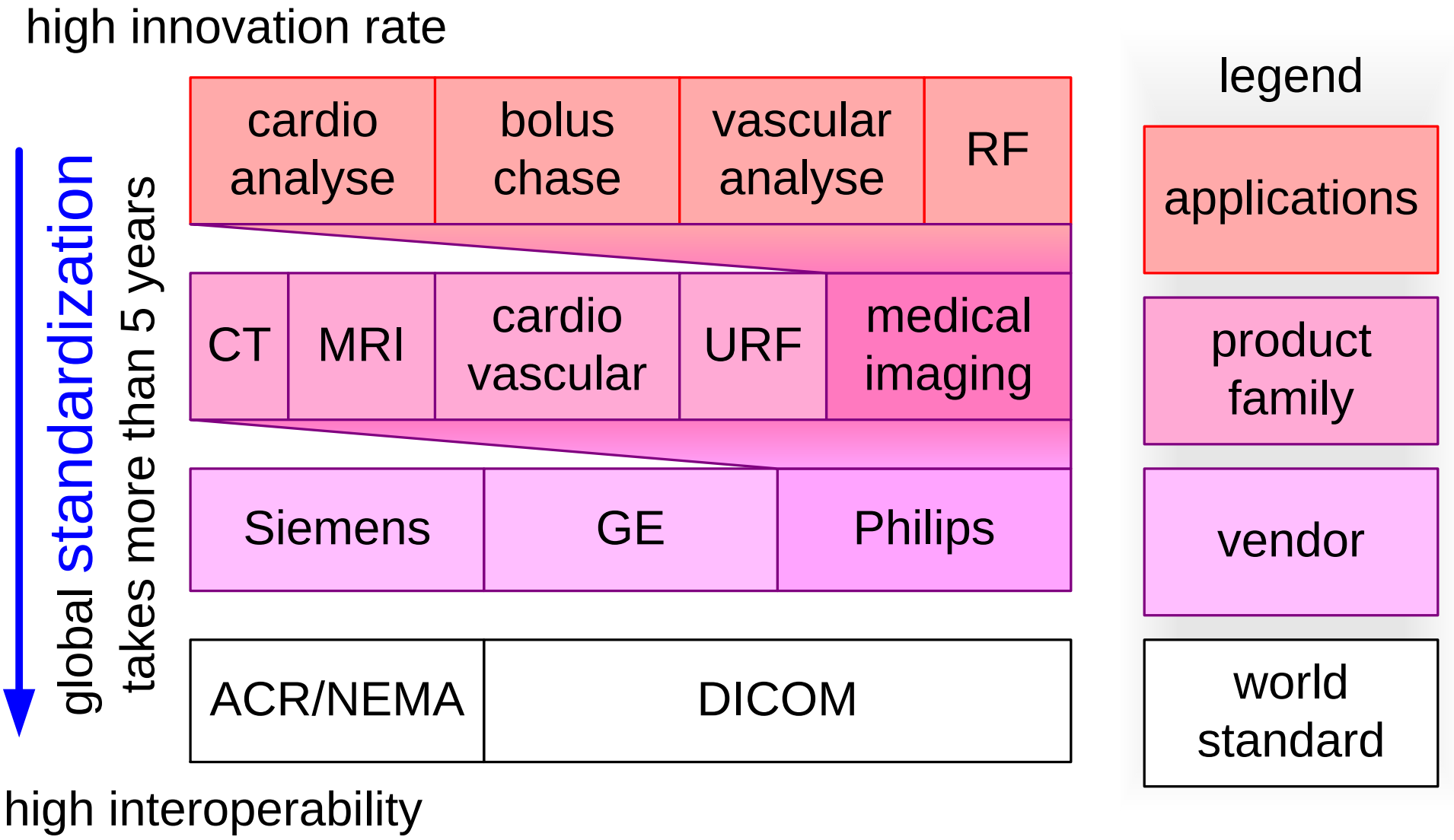
- shared information model
  - viewing settings
  - patient, exam info

interfaces

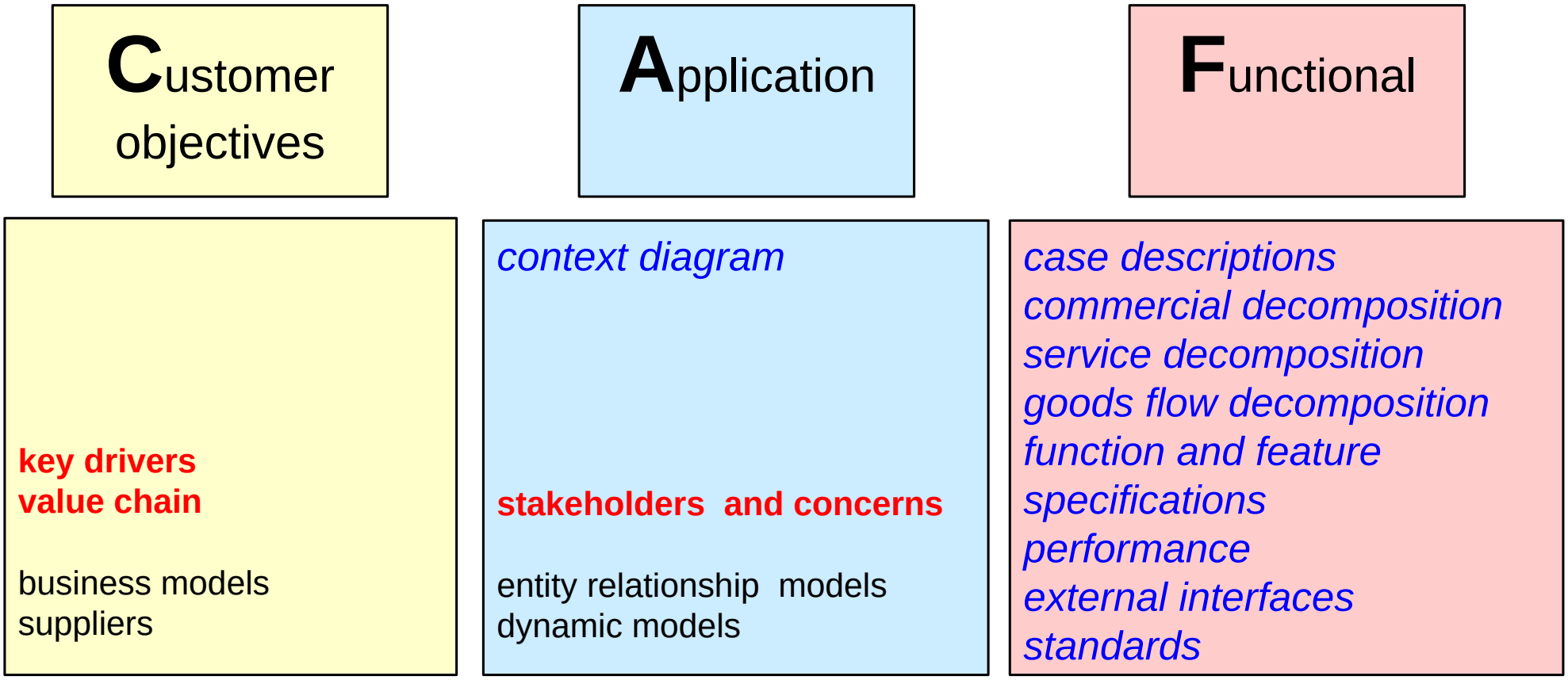
Retrospective functionality roadmap



Information model, standardization for interoperability



Coverage of submethods of the CAF views



legend *explicitly addressed* **addressed only implicitly** not addressed

coverage based on documentation status of first product release