Breaking The Rules

Who do you turn to for help in developing solutions?

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Help!

SIIM 2013

*May '13 SIIM Survey, Selected Results

30% - Don't use hanging protocols (HP)
25% - Don't have good access to priors
72% - Don't have good support for large studies
72% - Have restricted access to 3D/Adv Viz

74% - Of those that use HPs, say they are poor
67% - Don't have good access to priors (in the IDN)
92% - Don't offer mobile access to images
77% - Don't offer access via imaging exchange

Operational

- PACS is slow!
- Clinical viewer is slow!
- Referring physician can't load viewer
- Modalities can't send
- Workstations are crashing
- DMWL isn't responding
- Hanging protocols are not reliable
- New modalities need configuration
- Can't view outside CD/DVD
- Fire drill du jour

Strategic

- PACS is slow!
- Our referring access is unacceptable
- Too many viewers
- Not competitive - feature/functionality gaps
- Rads can't effectively read from home
- We can't dynamically read in network
- We're moving radiologists to the images
- We have poor access to priors
- Limited access to 3D/advanced viz tools
- Our system has isolated silos of data

Perspective is Relative

- Direct correlation between
  - Strategic limitations and
  - PACS architecture (client/server, web-based)
- Sets the context of:
  - What's 'possible'
- Not possible…
  - Spawns necessary workarounds
  - Inefficient, resource intensive, costly workflows
  - Restricts capability and innovation
  - Potentially develops bad behaviors that are hard to break
  - *"…we've always done it this way, why change?"*

Historical Possibilities

May '13 CNNMoney - "U.S. hospitals are wasting billions of dollars each year by having their staff use archaic communication technology like pagers." [EST $8B in lost productivity]

Speed Matters

- Time is a precious commodity, particularly to Radiologists
- Have you ever heard a Radiologist or referring physician say, "*Our viewer is too fast*"?

Universal Radiologist Time Tradeoff Equation

If [Get (Images) Time] + [Task] + [Processing Time] + [Send (Images) Time] > *A 'trivial' amount of time and disruption* THEN fuhgeddaboudit:

- – Have someone else do it (e.g., techs, 3D lab, other)
- – Don't consider it for routine practice
- – Place it on the 'impossible' list

The Penalty Box

- Your hands likely have been tied in **15+ ways**
    - ❑ Number of slices (thick/thins)
    - ❑ Size and number of studies/priors
    - ❑ The type of modality(ies)
    - ❑ The clinical requirement(s)
    - ❑ Concurrent users
    - ❑ Local or remote access
    - ❑ VPN
    - ❑ Citrix
    - ❑ Available bandwidth
    - ❑ Network latency
    - ❑ Workstation 'beefiness'
      (RAM, Disk Speed, Disk Capacity, Video Card, Multi-cores, Processor Speed)
    - ❑ Loaded/running applications
    - ❑ Number of displays
    - ❑ Operating system (PC, Mac)
    - ❑ Browser, browser version, plugins

> *What if the rules changed?*

- **The Solution**
  Thin-client enterprise viewer, multi-dimensional, single desktop
  - Server-side processing
  - Ultrafast, adaptable streaming
- **Redefine Possible**
  - One application – one viewer for all workflows (DX, Referring, EMR)
  - Multi-modality, including DBT
  - Eliminate pushing DICOM and pre-caching locally
  - Multi-dimensional upon presentation, all available, on-the-fly
    - Read 100% from axials (thin slices), store only axials
    - Eliminate tech workflow at the console/workstation
  - Read from home, over consumer bandwidth with PC or Mac
  - Access to immediate priors, from anywhere
  - Mobile iOS access
    - No separate mobile server required
    - App to App integration

Conclusions

Strategic Solutions

- Viewer simplification
- Technology consolidation
- Dynamic local/regional/national interpretation infrastructure
- Priors immediately accessible, IDN-wide
- Take-back-the-night (in group telerad)
- Improve productivity
- Improve quality
  - Enhanced interpretation, single desktop
- Stress-free planning and adoption for the newest modality: DBT
- Reprioritize tech tasks to increase throughput/patient face time
- Improve referring physician support
- Optimize competitiveness

Strategic Challenges

- ✓ PACS is slow!
- ✓ Our referring access is unacceptable
- ✓ Too many viewers
- ✓ Not competitive - feature/functionality gaps
- ✓ Rads can't effectively read from home
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- ✓ We're moving radiologists to the images
- ✓ We have poor access to priors
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- ✓ Our system has isolated silos of data

Time is Precious
When the penalties go away,
And speed rules,
You can have it both ways
(Quality, Quantity)!

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