SESSION FIVE: EXPLORING NEW CT IMAGING & ARTIFICIAL INTELLIGENCE TECHNICAL OPPORTUNITIES

New CT Technologies: Opportunities and Challenges

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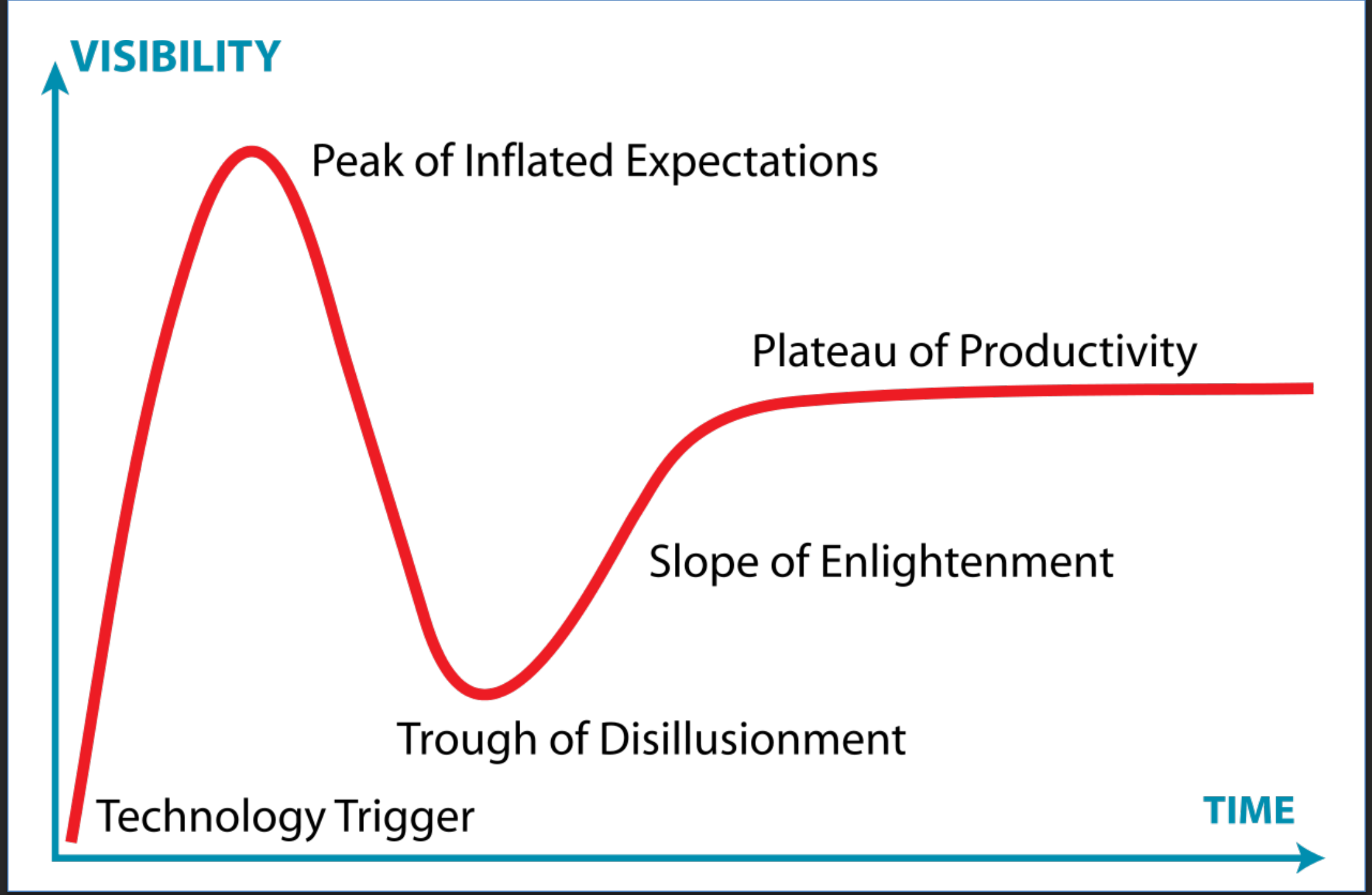
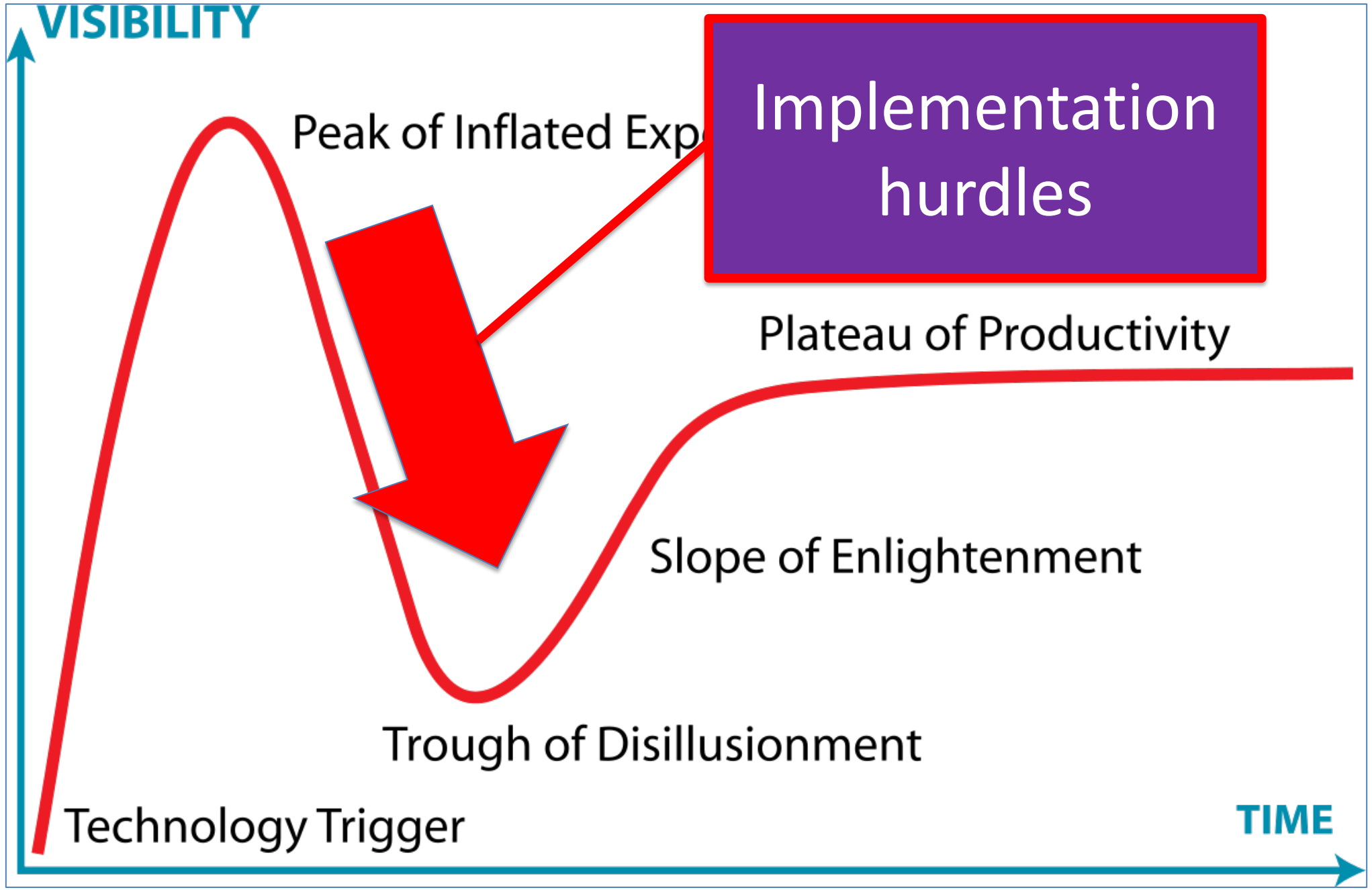
CONFLICT OF INTEREST

- TPS (1) supplies CT protocols (2) is on an advisory board and (3) receives research support from GE Healthcare (all through UW Madison)
- TPS research contract with Canon Medical USA

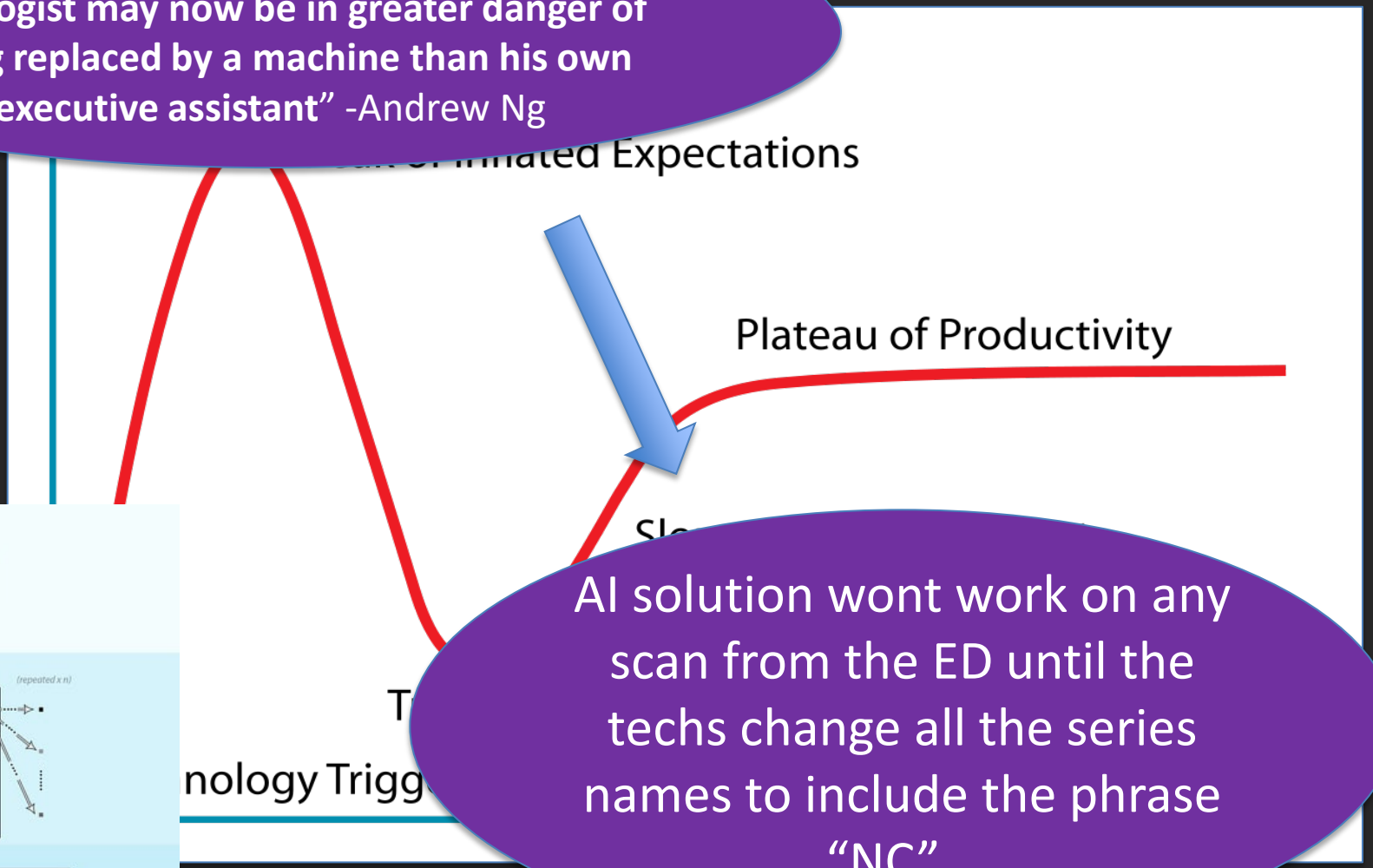
- TPS is on the MAB of iMALOGIX LLC
- TPS is a consultant to AstoCT LLC
- TPS is a consultant to AiDoc
- TPS is a consultant to FlowHow.io LLC

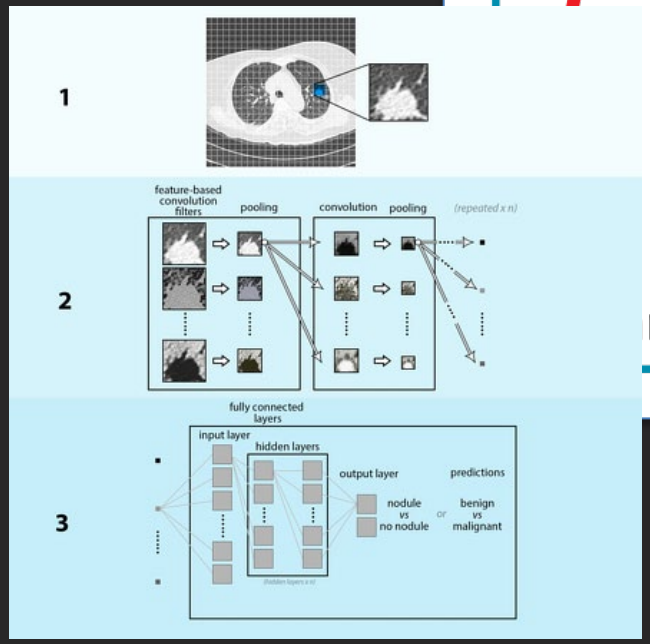
- Multiple Patent Applications with USPTO related to Radiology workflow, detectors, acquisitions
  - Currently licensing repeat rate IP to Qaulum and FlowHow.io LLC


VISIBILITY
Peak of Inflated Expectations
Plateau of Productivity
Slope of Enlightenment
Trough of Disillusionment
Technology Trigger
TIME


VISIBILITY
Peak of Inflated Exp
Implementation hurdles
Plateau of Productivity
Slope of Enlightenment
Trough of Disillusionment
Technology Trigger
TIME

… “a highly-trained and specialised radiologist may now be in greater danger of being replaced by a machine than his own executive assistant” -Andrew Ng

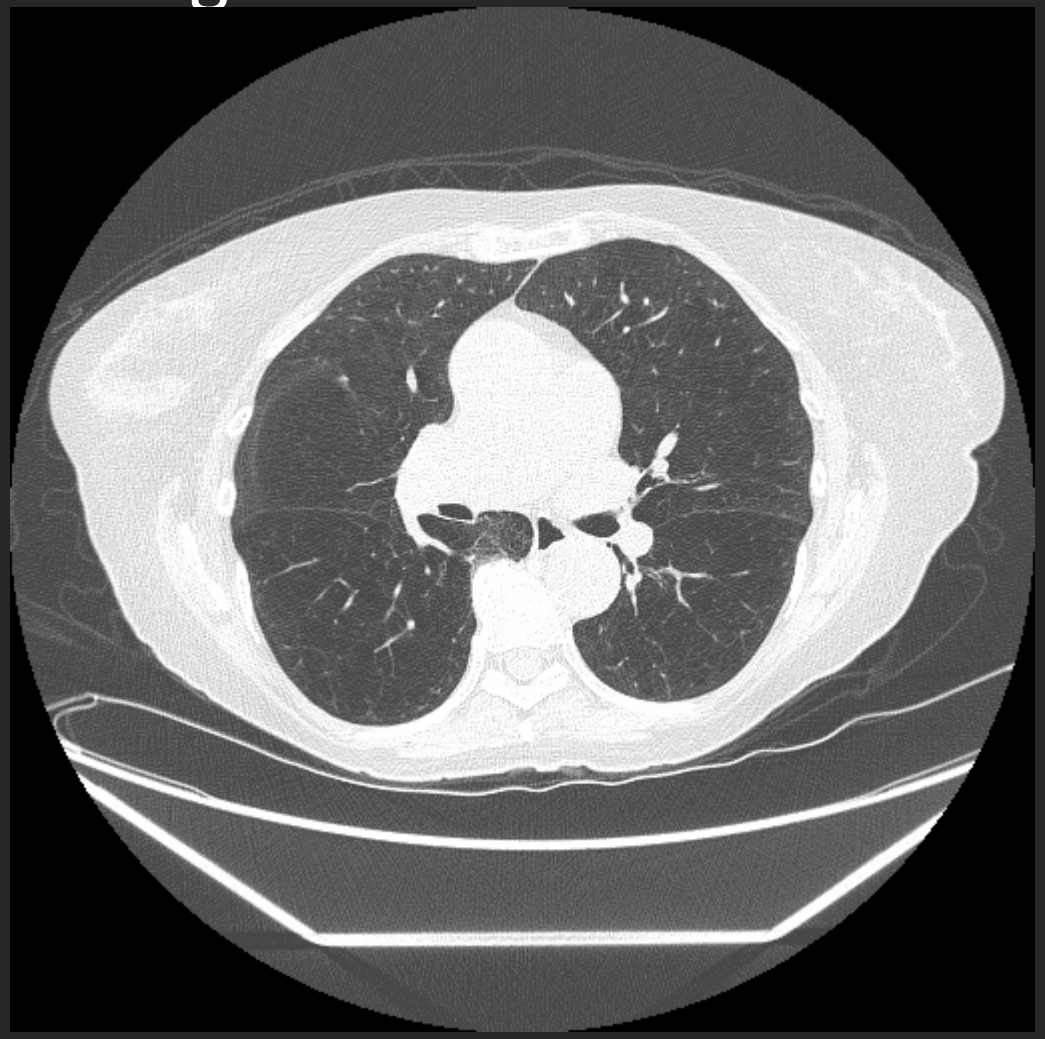


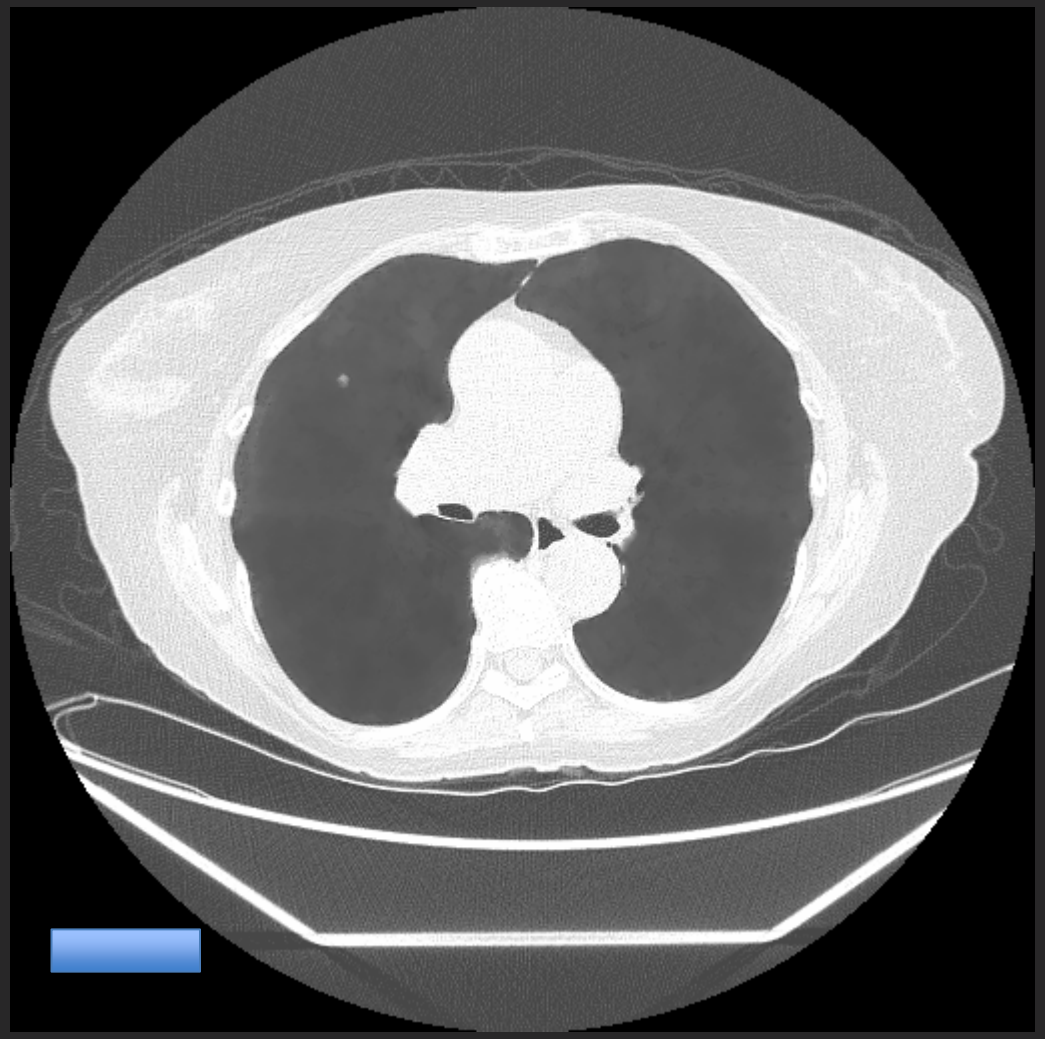


AI solution wont work on any scan from the ED until the techs change all the series names to include the phrase “NC”…

https://radiopaedia.org/articles/convolutional-neural-network

- Lung Nodule Detection





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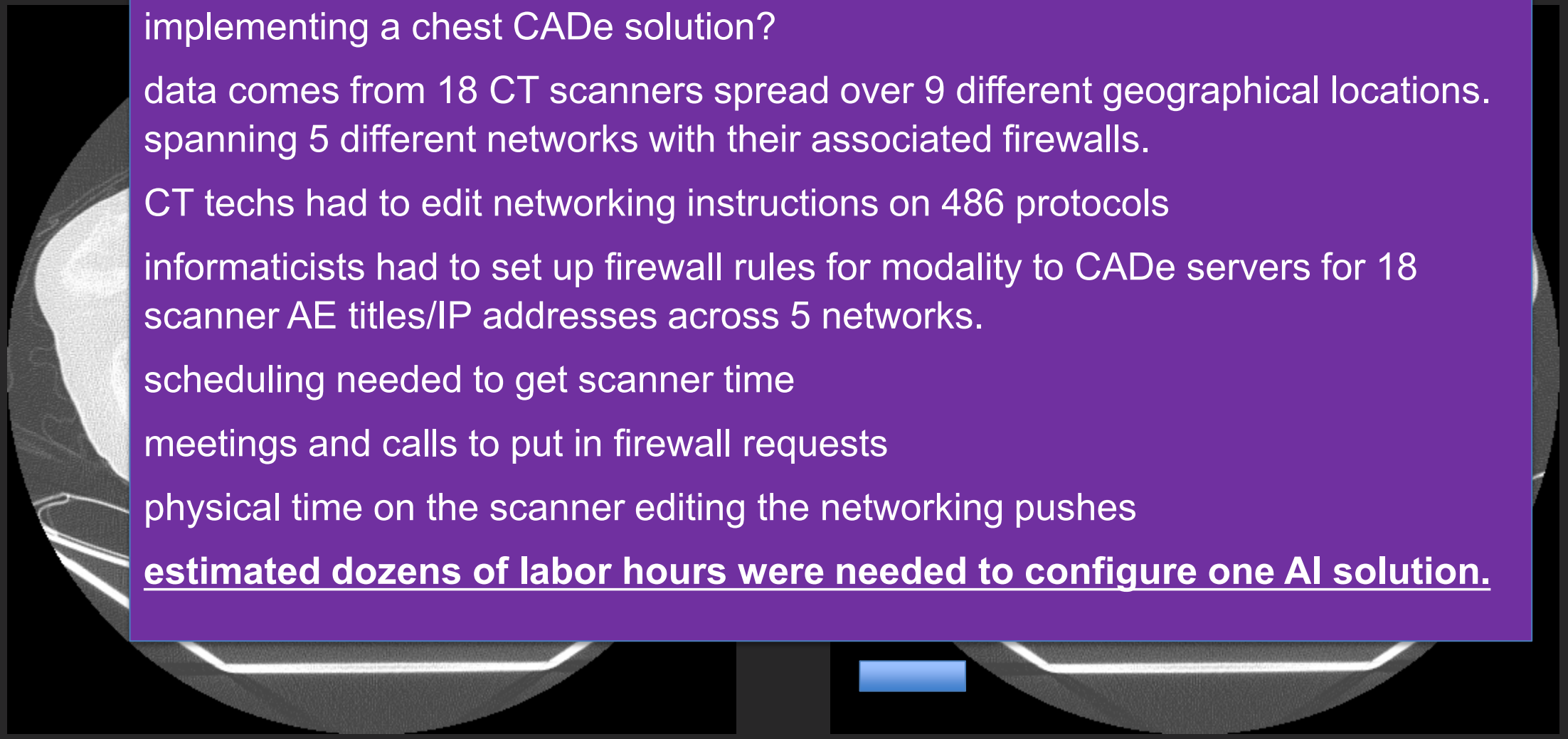

implementing a chest CADe solution?

data comes from 18 CT scanners spread over 9 different geographical locations. spanning 5 different networks with their associated firewalls.

CT techs had to edit networking instructions on 486 protocols

informaticists had to set up firewall rules for modality to CADe servers for 18 scanner AE titles/IP addresses across 5 networks.

scheduling needed to get scanner time

meetings and calls to put in firewall requests

physical time on the scanner editing the networking pushes

estimated dozens of labor hours were needed to configure one AI solution.

- Cervical Spine Fracture Detection
  - Software identifies cases of c-spine fracture, and prioritizes them on list
  - Input needed is a thin bone axial slice and a thin sagittal reformat slice
    - Great, except before this vendor, **we never provided our radiologist with a SA reformat for this protocol**

Its not plug and play, its create new recon and then set up auto-routing rules for each recon…

- Even just adding a simple network send is not “turn key” without hours of effort!

https://kennyslock.com/safety-first-the-5-best-door-locks-for-home-security