

ADVENTURER EXPLORER TRAILBLAZER REBEL PIONEER CREATOR DEFENDER ADVENTURER EXPLORER TRAILBLAZER  
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# THE PRIMARY CARE OFFICE OF THE FUTURE UTILIZING THE TECHNOLOGY OF THE LAST DECADE

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<https://www.youtube.com/watch?v=5J67xJKpB6c>



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# The 3 Technologies that Must Change Health Care in the Next 10 years

- **The Computer**
- **Internet/Cloud computing**
- **Mobile Devices**



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# Why don't doctors like computers?



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## But I use an EMR...

- I use an Electronic Paper Record
- EMRs in Canada merely represent paper process in digital form
- We require systems capable of processing and managing vastly greater and more complex amount of information



- “merely automating the form, content and procedures of the current patient records will perpetuate their deficiencies and will be insufficient to meet emerging user needs”

R.S. Dick; E.B. Stein: “The Computer Based Patient Record; An Essential Technology for Health Care”; Institute of Medicine, National Academy of Science 1991



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- “If we accept the limits of discipline and form as we keep data in the medical record, the physician’s task will be better defined...
- and the art of medicine will gain freedom at the level of interpretation and be released from the constraints that disorder and confusion always impose.”

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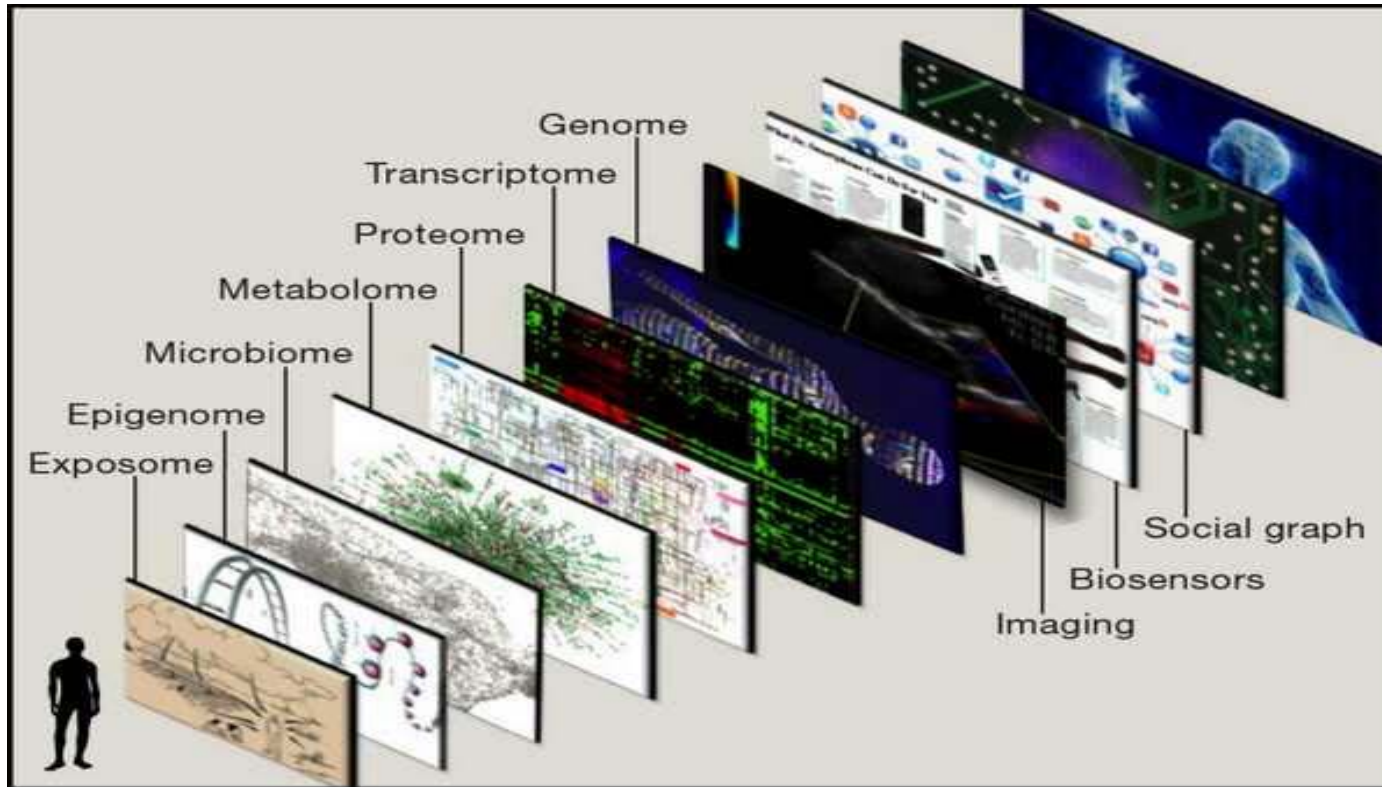
Laurence Weed, 1968



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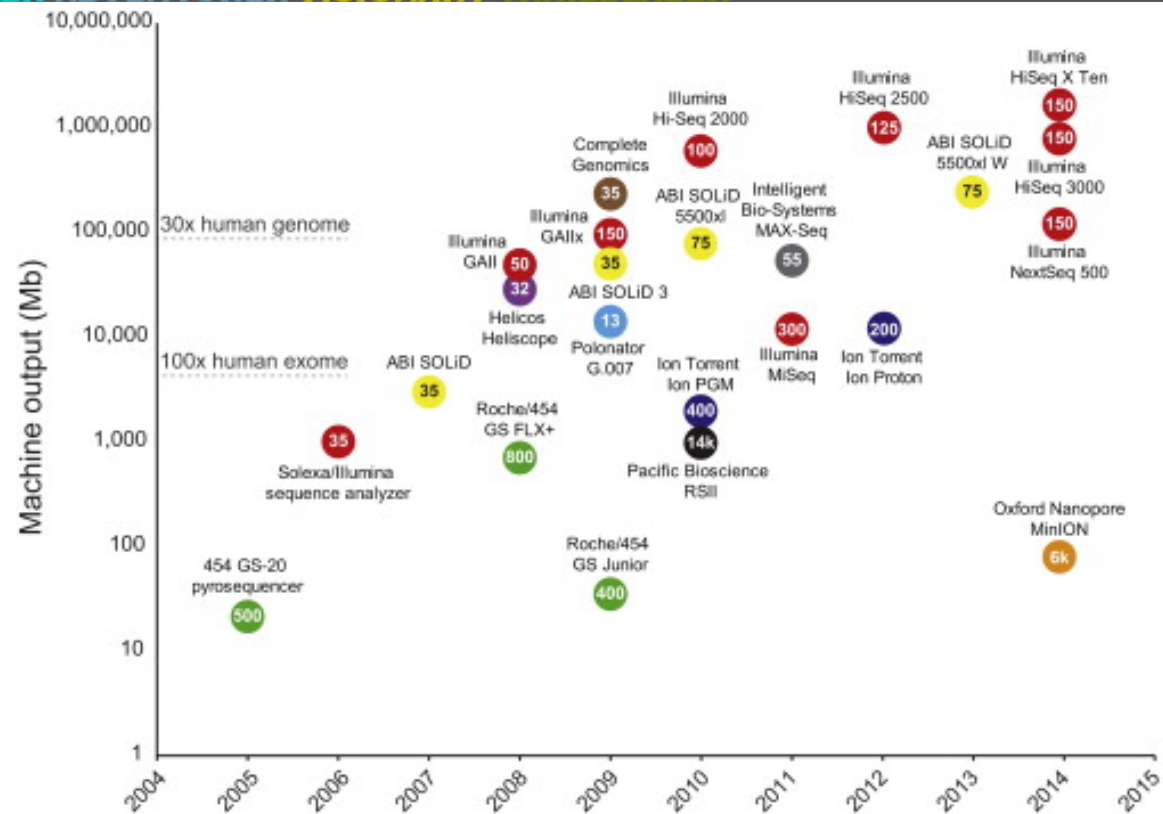
**Instead we have this...**



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Moore's law  
– genome  
edition



## Connectivity/Interoperability in Medicine

- “eChart” - Interoperable record
- “ePrescribing”
- “eRequisitions” – labs, imaging (CPOE)
- “eReferral” and Consultation
- “eVisit” - Patient Access to Medical Information
- Real time analytics – big Data cliché is true



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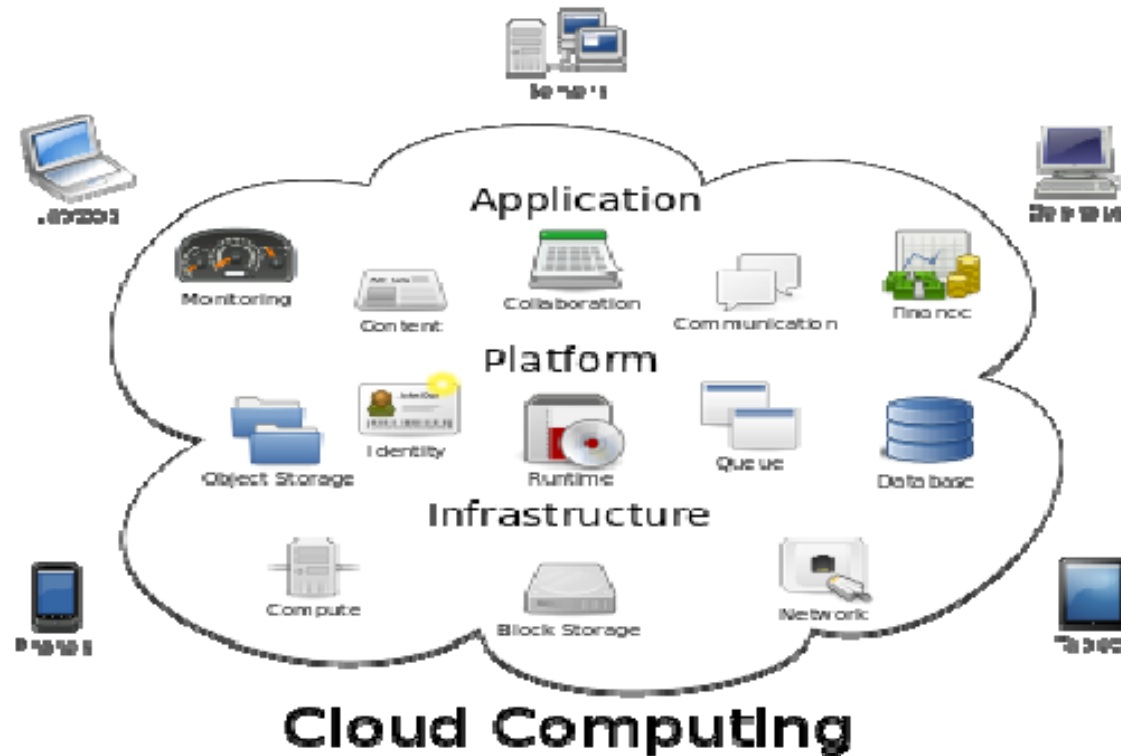


<https://www.youtube.com/watch?v=hShY6xZWVGE>  
Star Trek IV: The Voyage Home (1986)



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[http://en.wikipedia.org/wiki/Cloud\\_computing](http://en.wikipedia.org/wiki/Cloud_computing)



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## The supercomputer in your pocket revolution

- Access, convenience, accessibility, monitoring, communicating, analysing, assessing...





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# Nostalgic?



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## MEDICAL APPLICATIONS AVAILABLE TODAY ON MY SMARTPHONE

- High screen resolution and camera lens allow for photometric diagnostics and medical-grade imaging.
  - Attachments to create otoscope or multimodal colposcope create → high quality images.
  - Especially useful in dermatology
- Increase accessibility and overall convenience for patients
- Innumerable medical calculators and decision support tools

# THE EMERGING FIELD OF MOBILE HEALTH

Steven R. Steinhubl, Evan D. Muse, Eric J. Topol

- Wearable sensors that allow for non-invasive monitoring of patient.
  - Biometric data
  - Electrical signals – ECG, EMG and beyond.
  - New forms of vital sign capture:
    - Photoplethysmography – measures blood pressure by optically measuring blood volume changes in patient tissues
    - Removes the need for an inflatable blood pressure cuff!



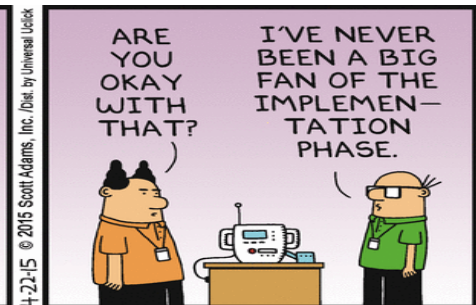
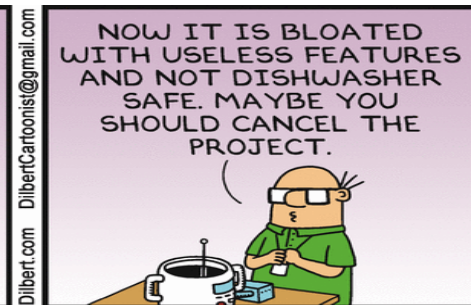
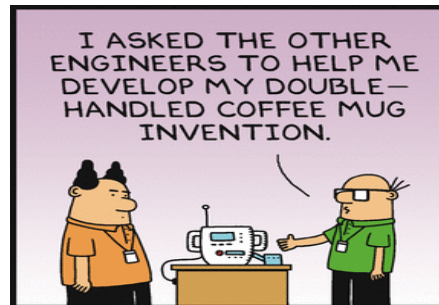
# Next Generation Mobile Technology



# SMARTPHONES LABS

- Processing power and connectivity will allow for many tests now only available at specialised labs to be done directly by the patient at their convenience.
  - Nanolitres or picolitres of body fluids examined with microelectronics, used to quickly diagnose infections or chemical changes instantly.

## Concluding Remarks...



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