Health 2.0.9

Five Disruptive Innovations That Will Make Health Care More Affordable, Convenient, and Personalized

David C. Kibbe, MD MBA
Healthcare Unbound
June 22, 2009
Your Speaker

David C. Kibbe, MD MBA  recent positions

Principal, The Kibbe Group LLC : 2006-present
Senior Advisor, American Academy of Family Physicians: 2006 - present
Chairman, ASTM E31 Healthcare Informatics Technical Committee: 2008 - 2009
Health 2.0 Advisory Board Member - 2007 - present
Former Director, Center for Health Information Technology, AAFP: 2002-2006
Co-chair, Physicians’ EHR Coalition (PEHRC): 2003 - 2005
Project Director, Lumetra Doctors Office Quality (DOQ-IT) Project - 2003-2005
Co-chair, Workgroup on Data Sharing and Aggregation, AQA: 2004 - 2006
Chair, Subcommittee on Information Technology, AQA: 2005 - 2006
Member, JCAHO HIT Advisory Board: 2005 - 2006
Member, Interoperability Workgroup, CCHIT: 2003 - 2004
Member, Steering Committee, AHRQ NRC-HIT: 2004 - 2005

dkibbe@aafp.org

Wednesday, July 1, 2009
Five *Disruptive* Innovations That Will Make Health Care More Affordable, Convenient, Personalized

1. Clinical Groupware -- interoperable, substitutable platform for IT
   - “Right size” apps for a flexible, plug-and-play EHR architecture

2. Data Liquidity: Continuity of Care Records and shared control
   - Standardize digital health records, make them portable, private, & accessible
   - Separate data from software applications

3. Point-of-care decision support
   - Make every “next step” transparent and evidence-based

4. Tools to close the “collaboration gap” between providers and patients
   - Involve the patients, individually and in groups, as participants in their care

5. Online Care and Telehealth
   - Bring the solution to the patient, not the other way around
“When the great innovation appears, it will almost certainly be in a muddled, incomplete and confusing form. To the discoverer himself it will be only half understood; to everyone else it will be a mystery. For any speculation which does not at first glance look crazy, there is no hope.”

Freeman J. Dyson, Sci. Am. 1958
Questions of the day....

- Why haven’t physicians had any reluctance to adopt iPhones, but only 15% use EHR technology?

- If the components of EHR technologies become modular and commoditized, (and they will), how will the “pieces” fit together?

- Why is it that Google and Microsoft are having so much success so quickly in connecting health data, while most HIT companies still can’t do this, and say it’s another 5 years off?
Clay Christensen’s Theory of Disruptive Innovation

The Basics

Performance vs. Time

- Incumbents nearly always win
- Entrants nearly always win
- Disruptive technologies
- “Good enough” quality and performance
- Performance that customers can utilize or absorb

Pace of Technological Progress

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Clay Christensen’s Theory of Disruptive Innovation

Over Time, Incumbents Over-serve, Out-price the Market

Performance / Price

Incumbents

Disruptive technologies

Tube radios/tvs
Mainframe computers
Airlines
EHRs

Transistor electronics
PCs
Southwest
Clinical Groupware

Time

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Clay Christensen’s Theory: Drivers of Change in the Architecture of Technology and Competition

*Compete by improving functionality & reliability*

*Compete by improving speed, responsiveness and customization*
Changes in integrality/modularity have profoundly changed the structure of the computer industry.

1960 - 1980
- Equipment: Teradyne, Nikon, Canon, Applied Materials, Millipore, etc.
- Materials: Monsanto, Sumitomo Metals, Shipley, etc.
- Components: Intel, Micron, Quantum, Komag, etc.
- Product design: IBM
- Assembly: Control Data
- Operating system: Digital Equipment
- Applications software: Apple Computer
- Sales & distribution: Micro-Center
- Field service: CompUSA

1980 - 1990
- Contract assemblers: Compaq, Dell, Gateway, Packard Bell
- Microsoft
- Word Perfect, Lotus, Borland, etc.
- Independent contractors: Dell

1990 - Present
- Compaq
- Microsoft

01/04/2008

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Five *Disruptive* Innovations That Will Make Health Care More Affordable, Convenient, Personalized

1. Clinical Groupware -- interoperable, substitutable platform for IT
   - “Right size” apps for a flexible, plug-and-play EHR architecture
   - Build a low cost, low risk platform for health IT that will meet the criteria for “meaningful uses” under ARRA, with a glide path toward more complexity

What’s wrong with the current EHR offerings?
As Groucho Marx once said, “Even a five-year-old would know the answer to that!”

“So, go find me a five-year-old!”
TYPICAL APPLE PRODUCT...
A GOOGLE PRODUCT...
### LAB

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**Diagram**

- Allergic Rhinitis
- Asthma
- Diabete
- Hypertension
- High Cholesterol
- URI
- GERD
- Low Back Pain
- Kidney Stones

**Results** (4/14/09)

- Low
- Normal
- High

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**Change from Baseline**

- Green: Within normal limits
- Yellow: High
- Red: Low
Standardization of computer components
The model for EHR technology prescribed by the industry and backed by the Bush administration requires that ALL components of an EHR come from a single vendor, with no flexibility to mix and match components based on the price, quality, and user-friendliness as judged by the customer.

New!
Mandl and Kohane editorial in NEJM April 9, 2009 describes a model for EHR technology built on substitutable applications from one or more vendors.

This is sometimes described as Software as a Service, SaaS, and is also the way that applications are made available on the Google and the iPhone “platforms.”
The iPhone....from appliance to platform

Thanks a billion.
Over 1 billion downloads in just nine months.
Only on the App Store. Learn more

The one billionth app, Bump created by Bump Technologies, was downloaded by Connor Mulcahey, age 13, of Weston, CT. As the grand prize winner of Apple's one billion app countdown contest, Connor will receive a $10,000 iTunes gift card, an iPod touch, a Time Capsule and a MacBook Pro.

Official Rules  Reglas Oficiales
Access services “mash-up” disparate application and information services from different providers into a unified user experience.
Changes in integrality/modularity have profoundly changed the structure of the computer industry

- **1960 - 1980**
  - Equipment: Teradyne, Nikon, Canon, Applied Materials, Millipore, etc.
  - Materials: Monsanto, Sumitomo Metals, Shipley, etc.
  - Components: IBM
  - Product design: Control Data
  - Assembly: Digital Equipment
  - Operating system: Apple Computer
  - Applications software: Micro-Center
  - Sales & distribution: CompUSA
  - Field service: Independent contractors

- **1980 - 1990**
  - Equipment: Intel, Micron, Quantum, Komag, etc.
  - Materials: Contract assemblers
  - Components: Compaq, Dell, Gateway, Packard Bell
  - Product design: Microsoft
  - Assembly: Microsoft
  - Operating system: Word Perfect, Lotus, Borland, etc.
  - Applications software: CompUSA
  - Sales & distribution: Dell
  - Field service: Independent contractors

- **1990 - Present**
  - Equipment: None
  - Materials: None
  - Components: None
  - Product design: None
  - Assembly: None
  - Operating system: None
  - Applications software: None
  - Sales & distribution: None
  - Field service: None
Changes in integrality/modularity have begun to alter the market for HIT

1990 - 2005

Hardware
Health info exchange
Web portal
E-perscribing
Disease registry
Care coordination & planning
Communications & online Care
Decision support
DB management
Implementation
Sales & distribution
Field service

2006 - Present

Dell, IBM, Apple, HP, Toshiba
Accenx, DBMotion, Covisint, NaviNet, Surescripts, AthenaHealth
RMD, Medfusion, Relay Health, VisionTree
Allscripts, DrFirst, Zix, iScribe
DocSite, RMD, 4Medica, VisionTree
RMD, VisionTree, Intel
TelaDoc, RMD, MedFusion, RelayHealth
Anvita, MedAI, ActiveHealth, UptoDate, Keas
SQLServer, MySQL, FileMaker, Oracle
Contract assemblers
AC Group, AthenaHealth
VARs
Hospitals
Independent contractors, HITECH extension offices

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Old vs. New
EHRs vs. Clinical Groupware

- Metaphor: Paper
  - Word, Excel, static data views
  - Document-centric

- Orientation: Tasks
  - Data silos, many clicks,
  - Documentation as end product

- Control: Vendors
  - Tightly bound, client-server
  - Closed systems

- Metaphor: Web, iPhone
  - Graphical representation
  - Interactive, actionable data

- Orientation: Workflow
  - One click, context critical, sharing
  - Documentation as byproduct

- Control: Users, shared
  - Data separated from App
  - Open API

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THE EMR
1969-2009
YOU NEVER REALLY UNDERSTOOD US