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Kevin Fickenscher, MD

CREO Strategic Solutions
Washington, DC



Information Technology in the New, New World of Healthcare: *Challenges and Opportunities*

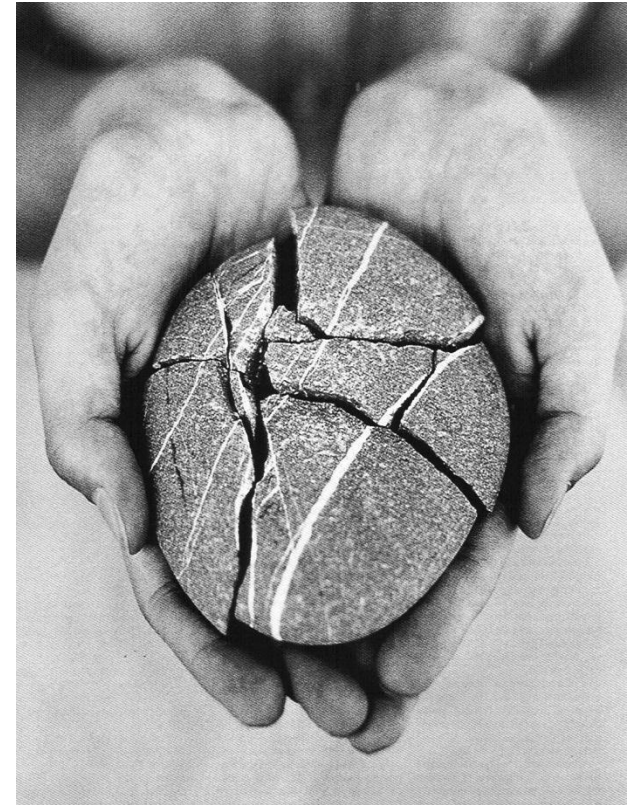
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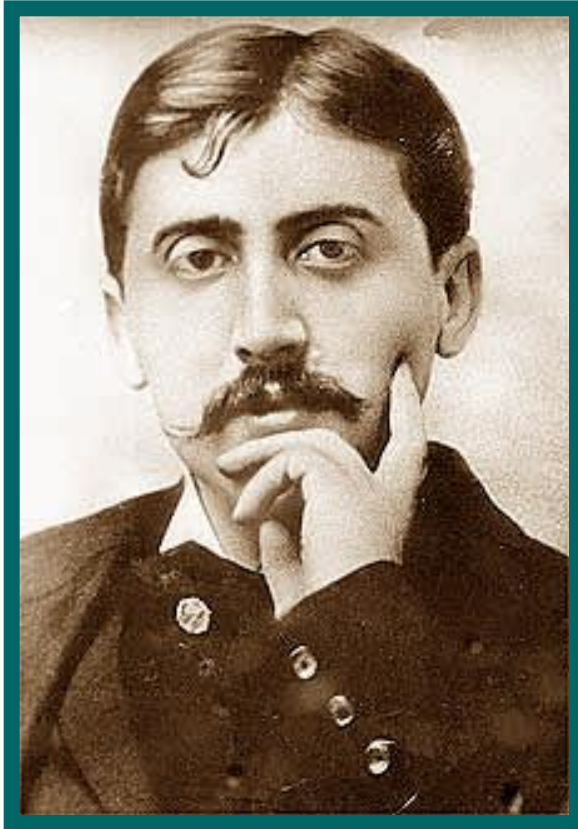
“You never change things by fighting against the existing reality. To change something, build a new model that makes the old model obsolete.”

F. Buckminster Fuller

The Session...

- The Context
- The Direction
- The Drivers
- The Elements
- The Approach

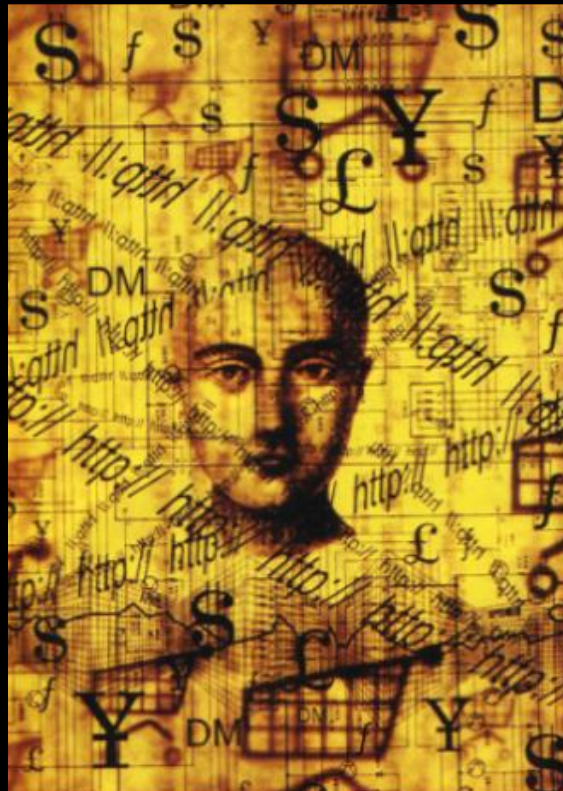
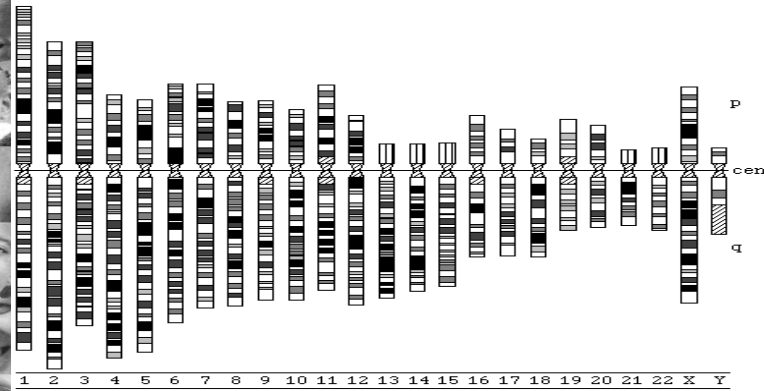




"The real voyage of discovery consists not of finding new lands but of seeing the territory with new eyes."

- Marcel Proust

The Domains of Change – in Healthcare...



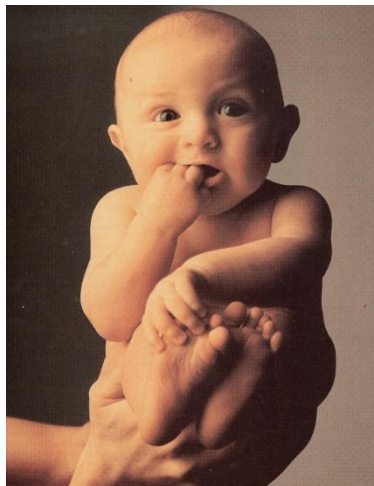
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“Change is
the price of
survival.”

Sir Winston Churchill

Health Care Forces

- Large scale consolidation
- Breakdown of traditional boundaries
- Cross-industry convergence
- Rising tide of technology
- Workforce globalization



The Premise...

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- Society is demanding for all goods and services but – especially for healthcare – that we...
 - ↓ Costs
 - ↑ Quality
 - ↑ Service
- The inherent incentives of healthcare are disparate, inconsistent and dysfunctional – causing leaders significant challenges
- Society is moving inextricably towards an information democracy rather than professionally dominated theocracy
 - = Focal point for healthcare change
 - = Appropriate management of information required
 - = Intellectual capital of medicine
 - = Simultaneously empowering (consumers) and disempowering (physicians)



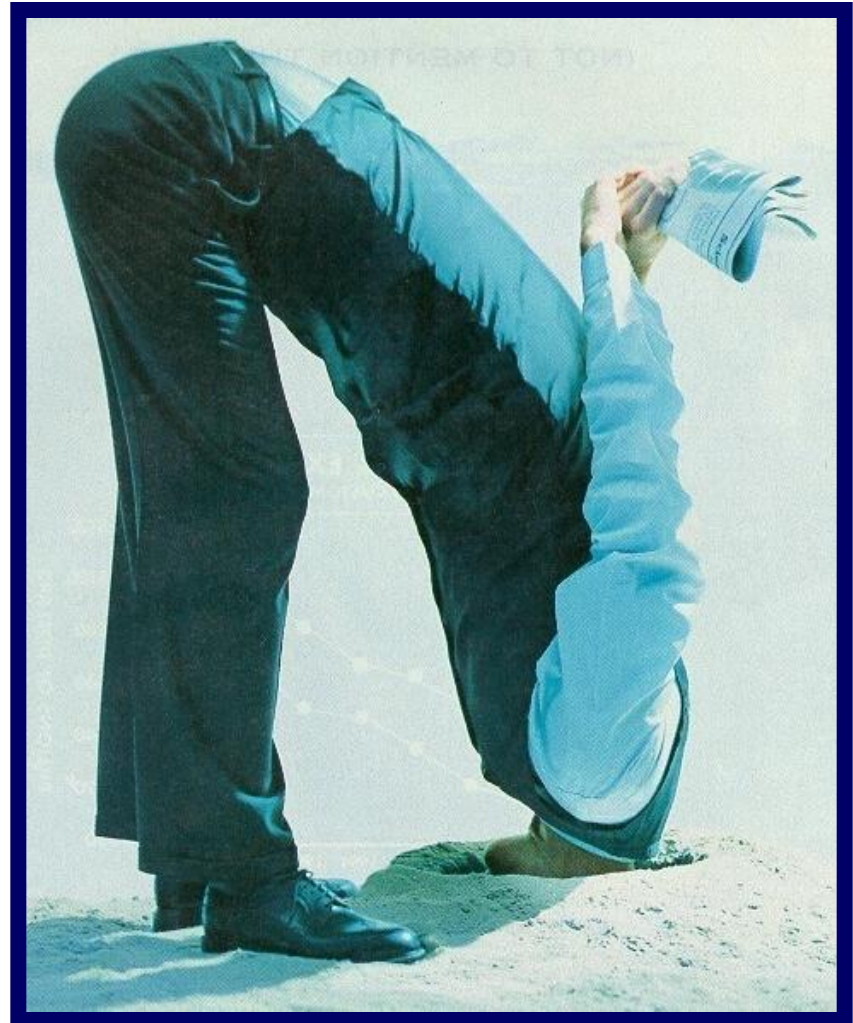
**What individual saved the most money
in the shortest time related to US
healthcare costs in the last century?**



October 28, 1956

A Perspective on the New Millennium...

***Embracing the
future: reaching
for the reality
beyond the
rhetoric...***



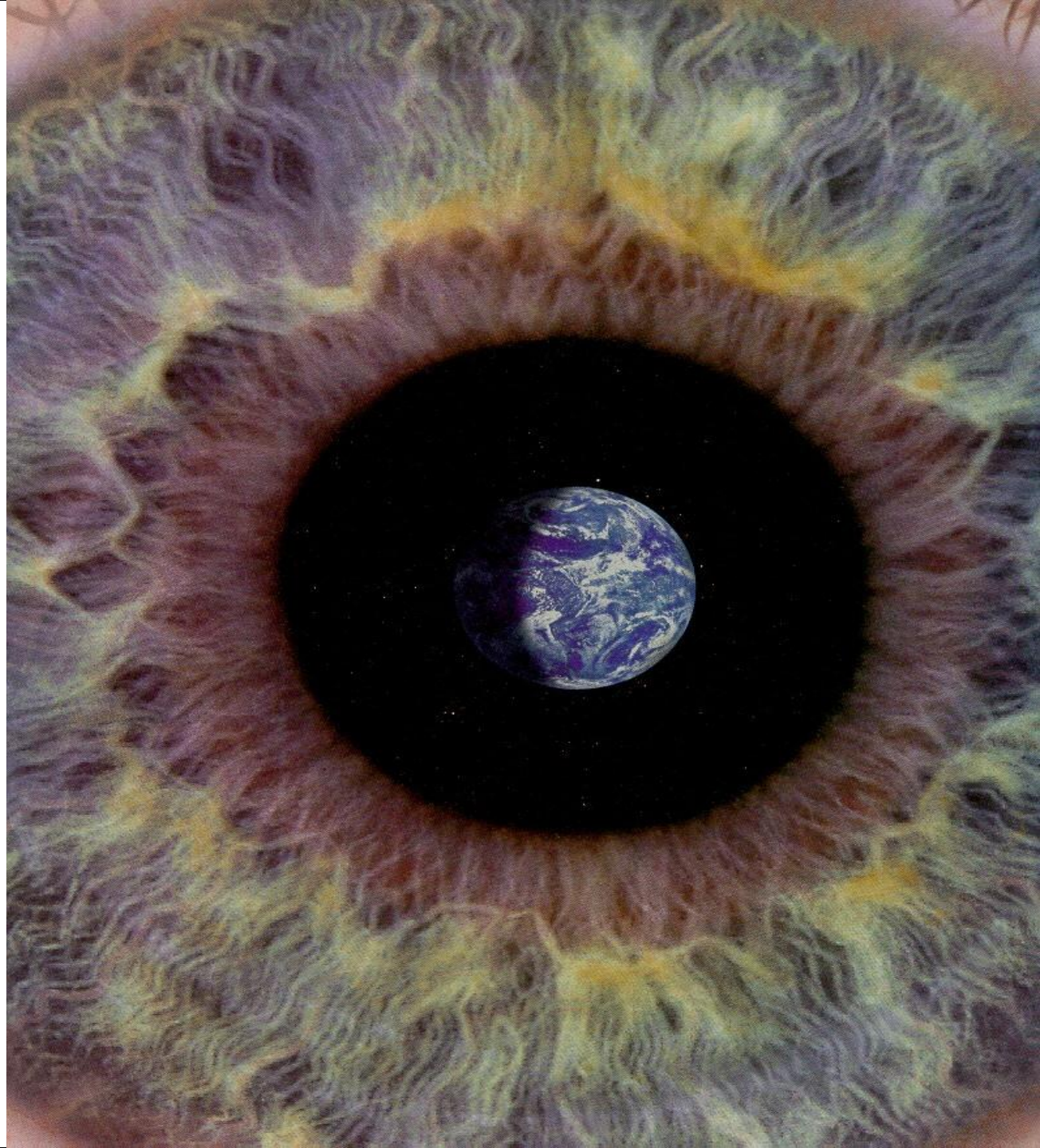
So...Where are we going?

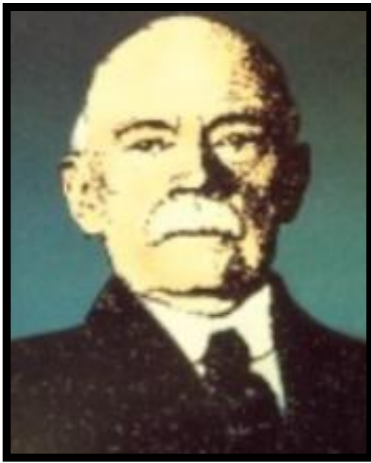


The Story of
Oliver Wendell Holmes

***“Vision...is
the art of
seeing
things
invisible.”***

***Jonathon Swift
1711***





Charles Duell, 1887

*“Everything that can be invented,
has been invented.”*

Harry Warner, 1927

*“Who the hell wants to hear actors talk,
anyway.”*



Bill Gates, 2003

*“The spam problem will be solved
by 2006.”*

Spammers fired off 183 billion emails in 2006 or, 70% of all email traffic in the world and, double the 2005 rate.

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*I never make
predictions,
especially
about the
future.*

Yogi Bera

The Reality Check...

- Philip Tetlock, Ph.D. – a psychologist at the University of California has studied “pundits” and “opinion makers” for the last 25 years.
- Focused on 284 prominent economists, foreign-policy specialists, and journalists and evaluated 82,000+ predictions
- His finding? – the vast majority of experts perform “worse than random” with an accuracy rate of less than 50% and liberals, moderates and conservatives were “equally ineffective” in their predictions.
- Conclusion: *“Our political discourse is driven in large part by people whose opinions are less accurate than a coin toss.”*

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The Resource Issues

The New Virtuality

The Approach

The Anticipation

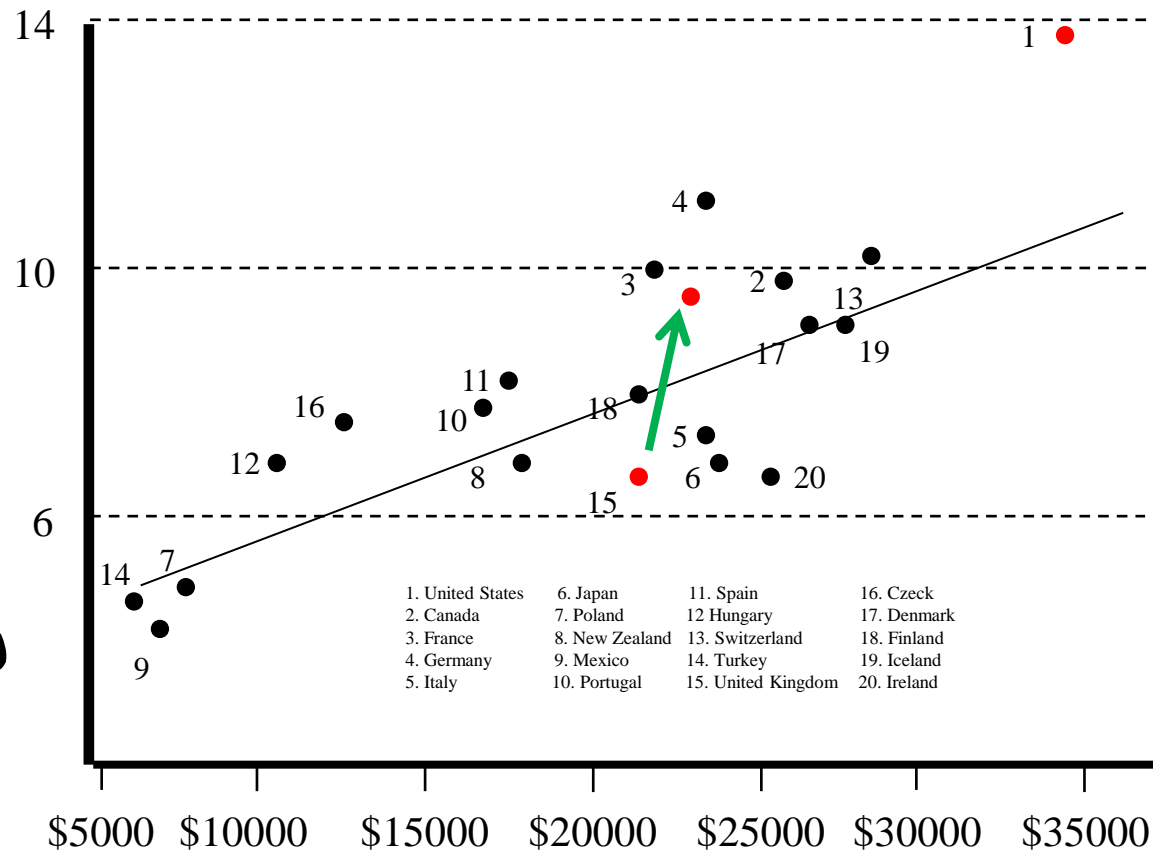
The Resource Issues...



The Resource Issues...

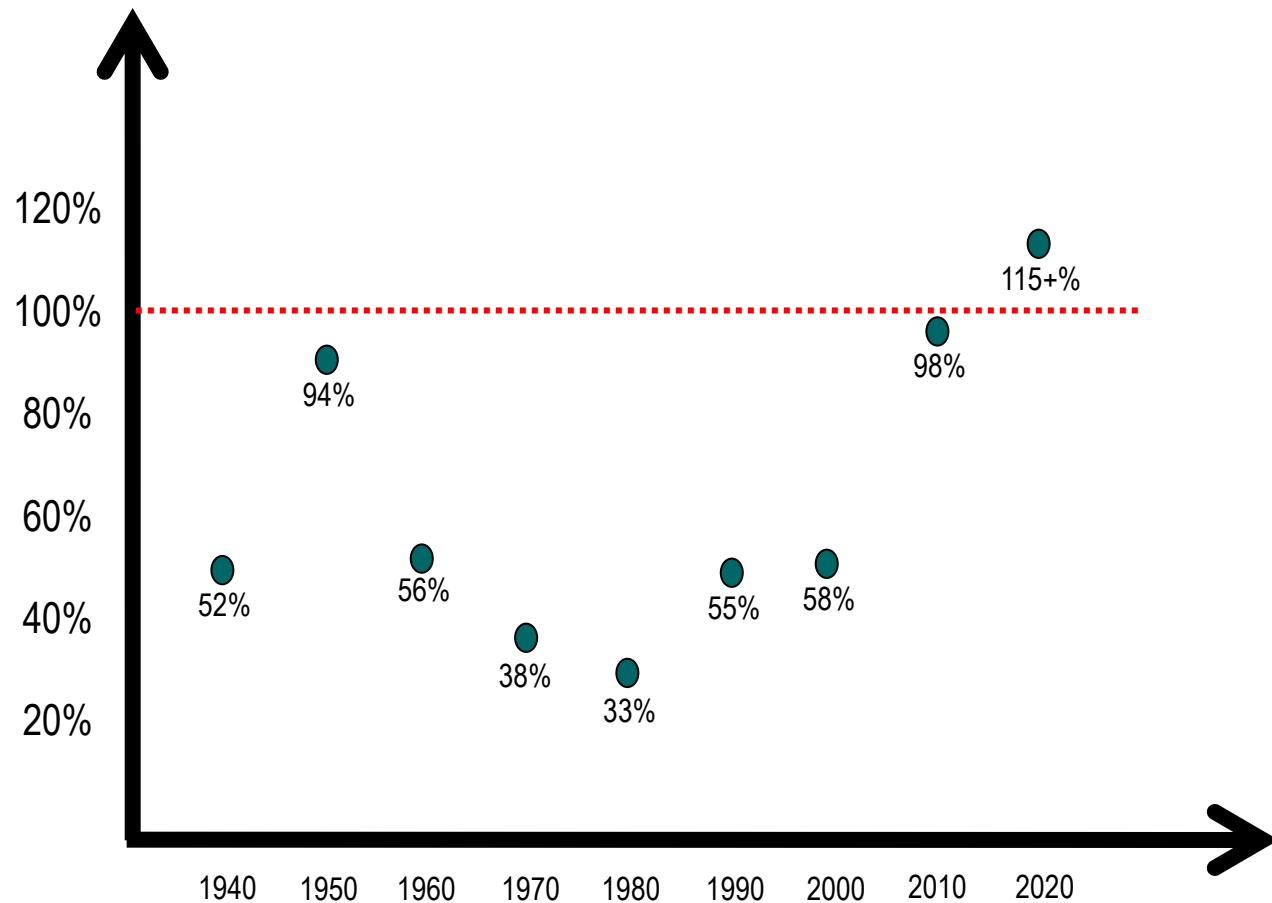
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Among the developed countries, health care spending is correlates with economic development as reflected in % of GDP spend by the nation.



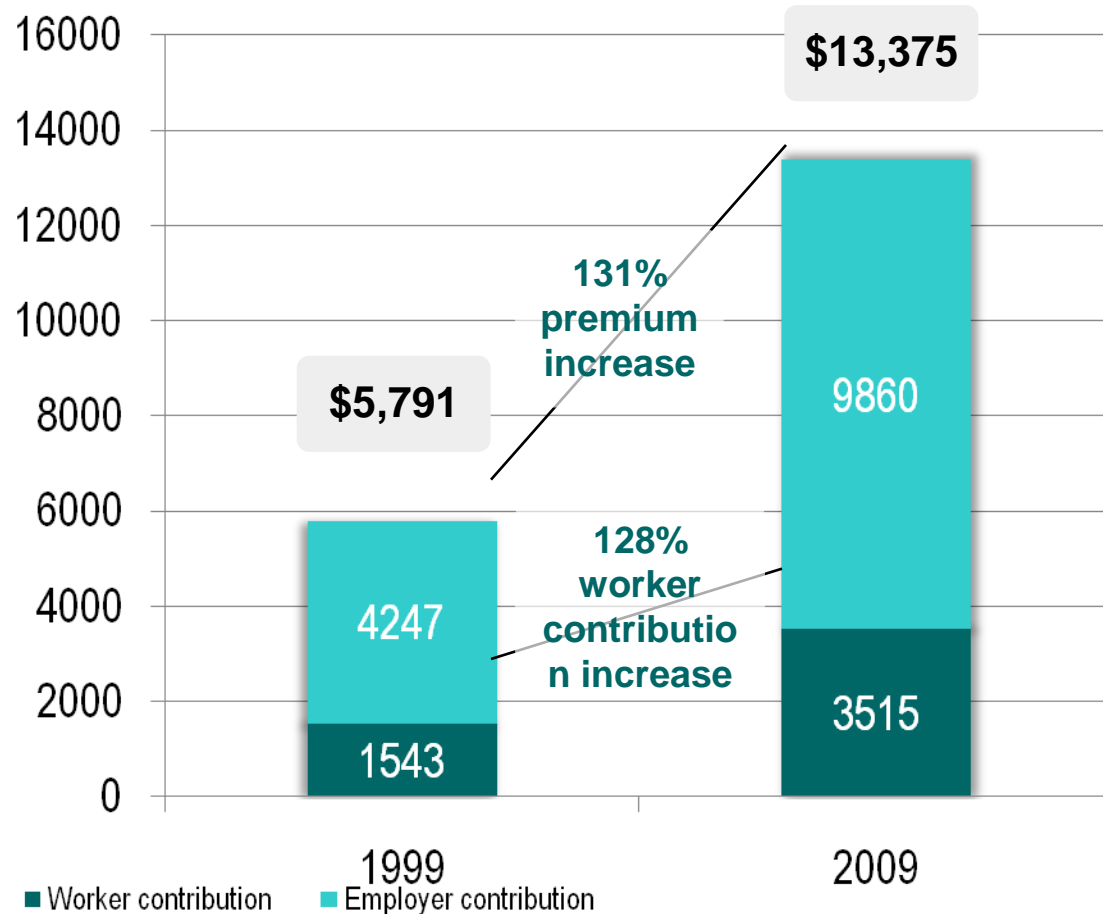
Debt to GDP Ratio Pattern of the USA

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The Resource Issues...

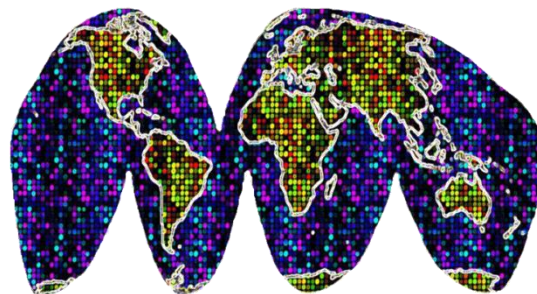
Average Health Insurance Premiums and Worker Contributions for Family Coverage, 1999-2009



Note: The average worker contribution and the average employer contribution may not add to the average total premium due to rounding

Source: Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 1999-2009

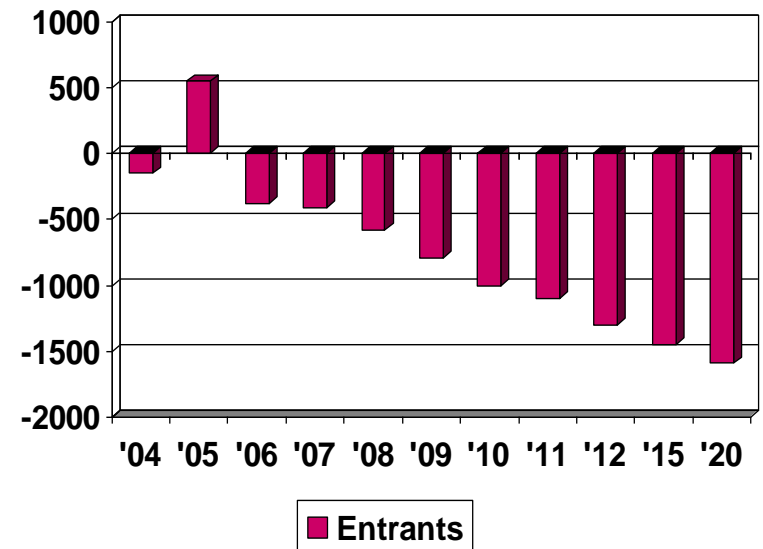
The New Virtuality...



The Approach...

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- In the US, the shortfall of healthcare workers is @ 2 million and the trend only gets worse over time
 - Net Worker Deficit (2002 – 2012) =
 - Technical 2,959
 - Providers 1,849
 - Other 1,088
- The Net Worker Deficit occurs growth in total number of healthcare professions thru 2012
- Doing the same work, the same way = system fails



The New Virtuality...



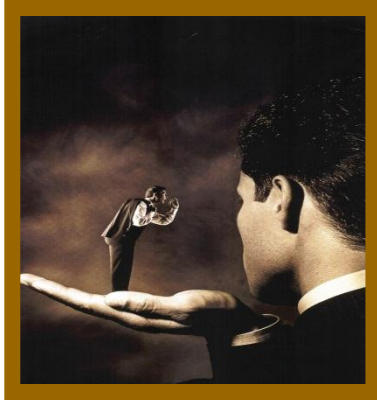
- Higher education participation will likely shift from @ 10% level for developing countries to the 50% level of developed nations
- Poorest nations of the world...
= *Population of 4 billion people*
- If a modest target of 35% participation rate in higher education is reached...
= *50 million additional students will be added...or, far more than today's global total...*



The Approach...

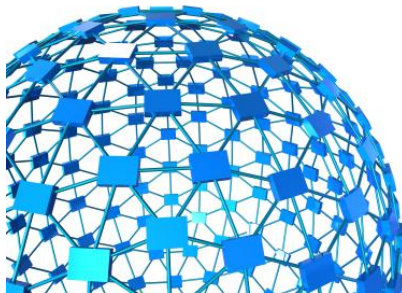


Workforce Globalization



Professional Collaboration

Virtual Care Delivery

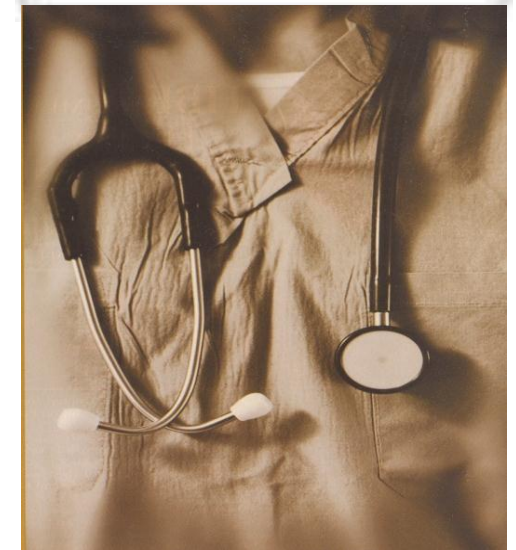


Knowledge Diffusion

The Approach...

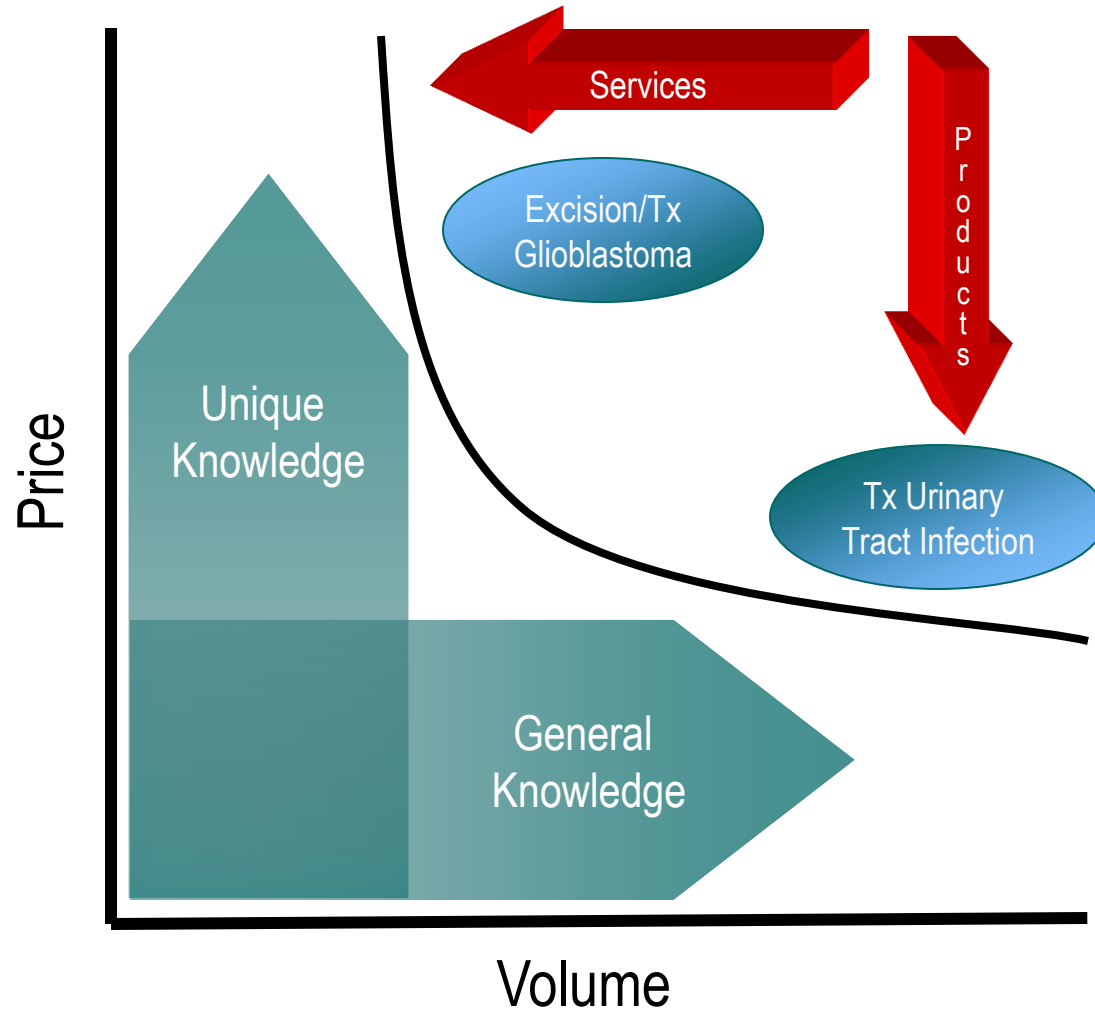
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- When is a radiologist a radiologist?
- How is a cardiologist different than a radiologist?
- What's the value difference between a nurse practitioner and a family physician?
- If 85 – 90% of pediatric care is protocol driven, who should provide it?

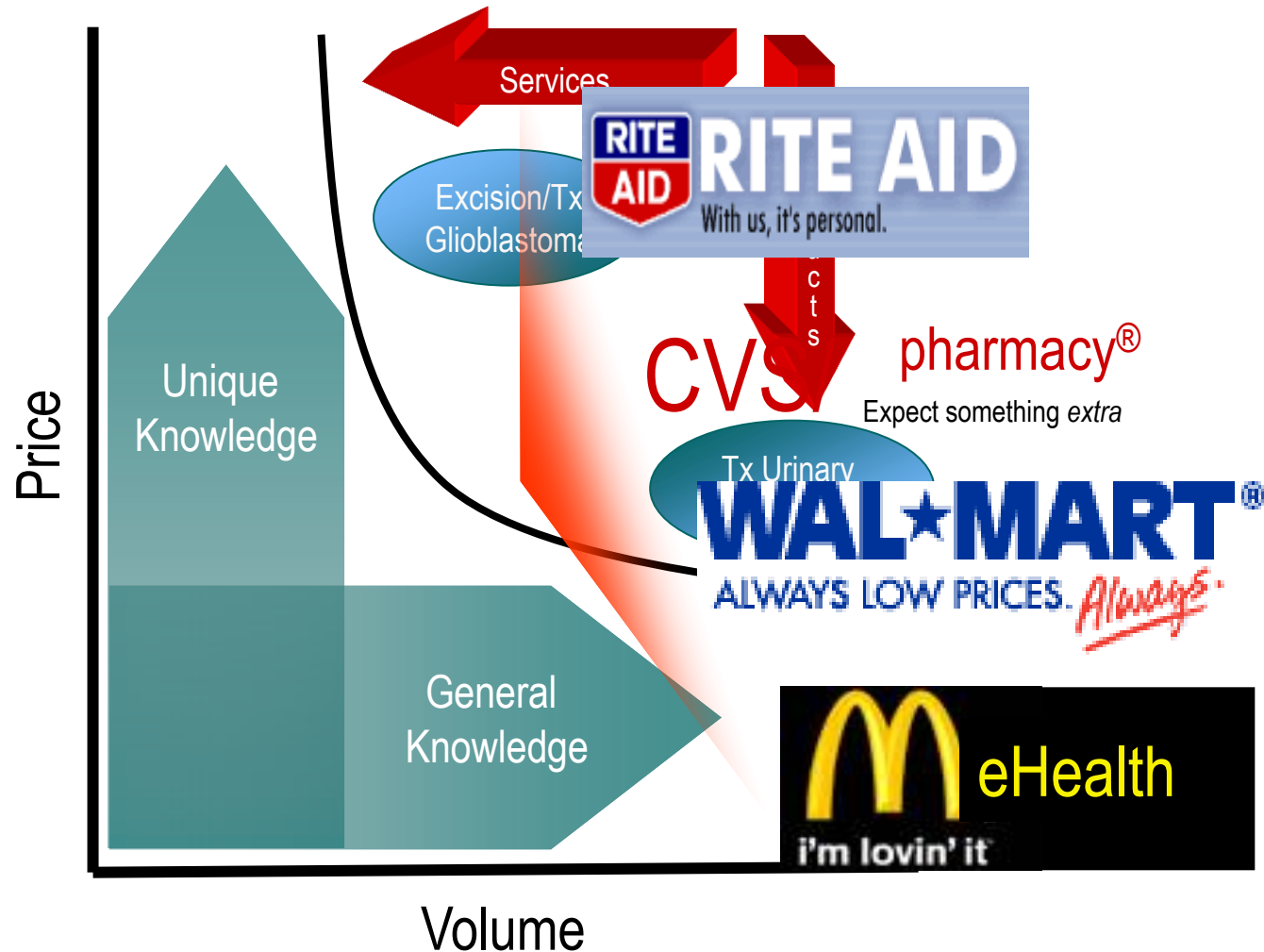


The Approach...

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The Approach...



The Anticipation...



The Politicians



Henry Waxman



Nancy Pelosi



Wyden (D-OR)



Conrad (D-ND)



Reid (D-NV)



Baucus (D-MT)



Eric Cantor



Kennedy – *An Institution*



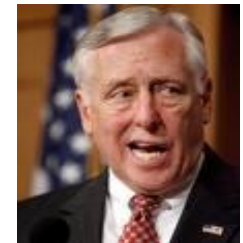
Rockefeller (D-WV)



Nelson (D-NE)



John Boehner



Steny Hoyer



Leahy (D-VT)



Grassley (R-IA)



McConnell (R-KY)



Ryan (R-WI)



Dodd (D-CT)

Where Are We At?

- **Remembrance of Things Past** – consider the decade following the implementation of Social Security, Medicare, Medicaid as social policy
- **The Uninsured** – 32 million move into the insured category
- **Debate Precipitated** – society now expects something to be done
- **Legal Challenges** – implications of the Florida / Virginia decisions, the appellate court process and involvement of the Supreme Court
- **Efficiency & Effectiveness** – the new watchwords
- **Accountability** – will the healthcare industry step up?
- **Health Reform Moves to State Level** – the *laboratories of democracy* model expands

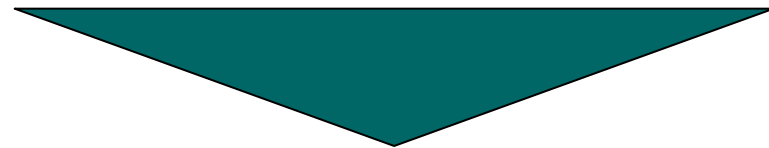


The Focus?



The new care delivery model requires a change in paradigm by all providers

- ↓ Hospitalizations
- ↓ Readmissions
- ↓ ER visits
- ↓ Inappropriate use of Dx services
- ↑ Outcomes



- ↓ Hospital revenue
- ↓ Hospital expenditures
- ↑ Alternative Care Venues

And, What to Expect?

- **Consolidation** – of hospitals / physicians
- **Efficiency and Effectiveness** – the new watchwords
- **Globalization** – of care delivery
- **Virtualization** – of support and delivery
- **Accountable Care** – the required capability
- **Productivity** – the essential ingredient
- **Information Exchange / Data Analytics** – fostering open data sharing, transparency and interoperability



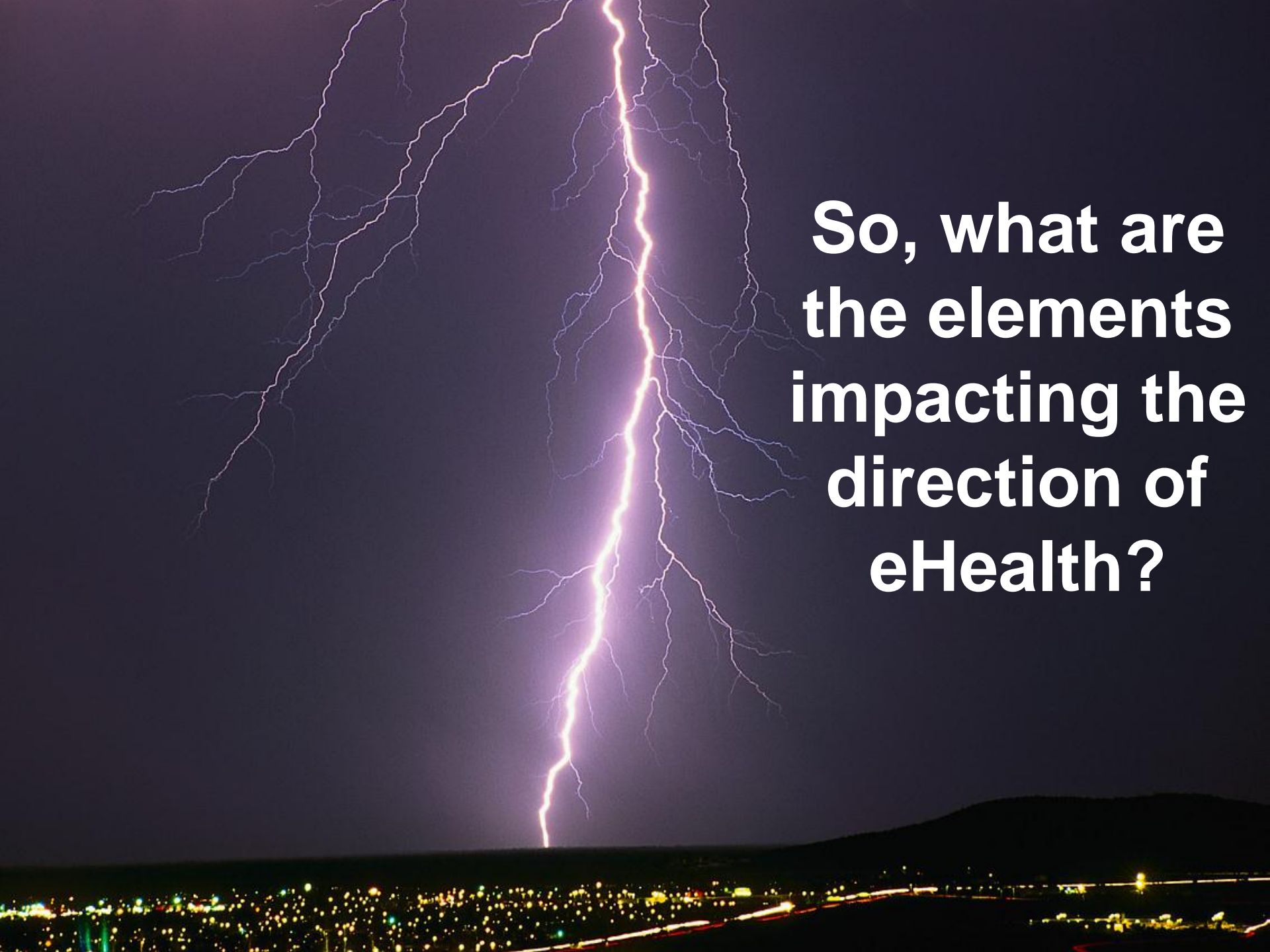
*“Trends, like horses, are
easier to ride in the
direction in which they are
going”*

John Naisbett



Five Drivers: eHealth...

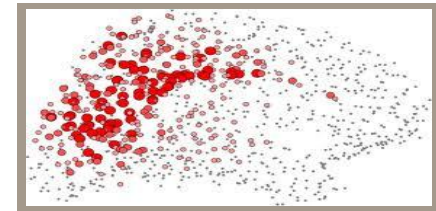




**So, what are
the elements
impacting the
direction of
eHealth?**

Elements of eHealth...

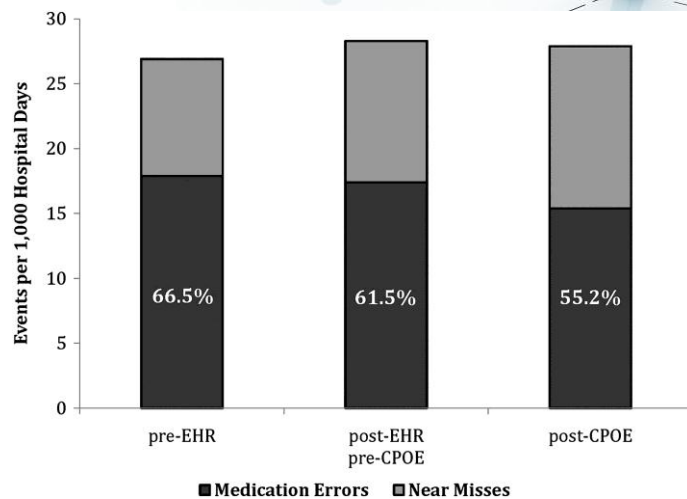
- **The Community**
- **The Diffusion**
- **The Connectivity**
- **And, Transparency**



The Community



Electronic Health Records



The Cloud is anywhere...
And, everywhere...
For, whomever, whenever
And, for whatever...

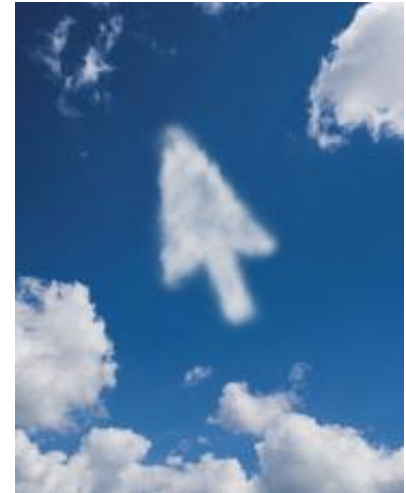


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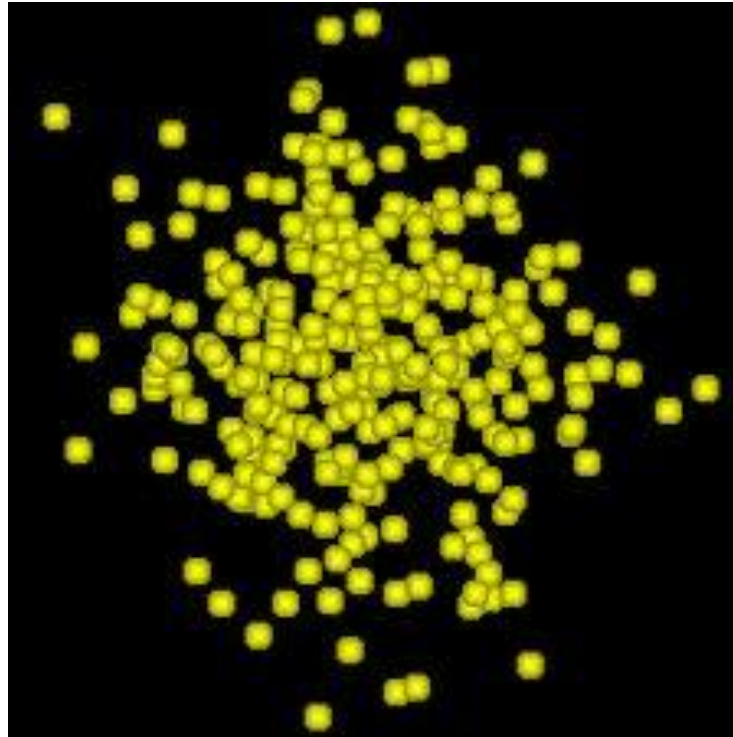
*The only
sustainable
competitive
advantage is
the ability to
learn faster
than the
competition*

Peter Senge

Best Practices
**Communities of
Practice**
Precise Diagnostics
**Real-time
Therapeutics**
Decision Support
**Knowledge
Dispersion**



The Diffusion

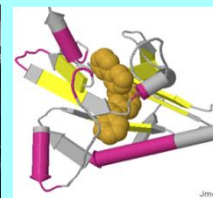
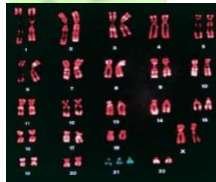


Understanding Generational Workforce

Generation	Traditionalists	Baby Boomers	Generation X	Millennial
Date of birth	Before 1945	1946-1964	1965-1978	1979-present
Cohort size	27 Million	76 Million	60 Million	88 Million
Workplace characteristics	<ul style="list-style-type: none"> • Respectful of authority • Value duty, sacrifice and accountability • Strong work ethic with emphasis on timeliness and productivity • Strong interpersonal skills • Believe promotions and recognition come with job tenure • Value academic credentials • Accept limited resources • Loyal to employer and expect employer loyalty to them 	<ul style="list-style-type: none"> • Individuality • Driven by goals for success • Measure work ethic in hours worked and financial rewards • Believe in teamwork • Emphasize relationship building • Expect loyalty from co-workers • Career equals identity • Want work-life balance 	<ul style="list-style-type: none"> • Self-reliant • Highly educated • Skeptical • Risk averse • Most Loyal employees • Want open communications • Respect production over tenure • Value control of their time • Invest loyalty in a person, not in an organization 	<ul style="list-style-type: none"> • Image conscious • Need constant feedback and reinforcement • Value instant gratification • Idealist • Team-oriented • Want open communications • Search for an individual who will help them achieve their goals • Want job that is personal fulfillment • Racial and ethnic identification of reduced importance

Source : 2009 AHA Long Range Policy Committee Report

Diagnosis



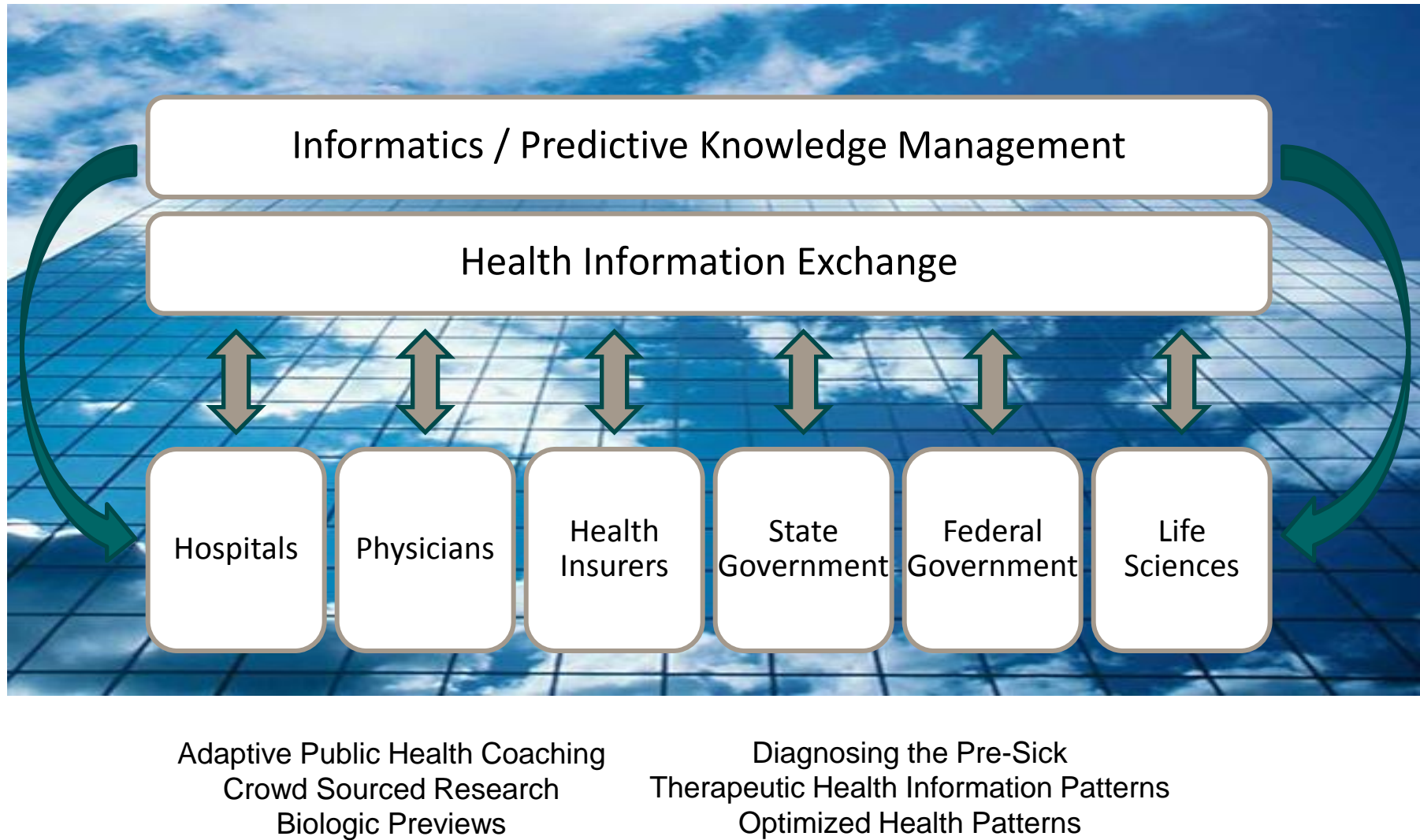
Information
Technology
Makes
Healthcare
Personal
... Again

Treatment

The Connectivity



The Evolving Healthcare Platform...



Strategic Value of Community Based Networks

HIE market drivers

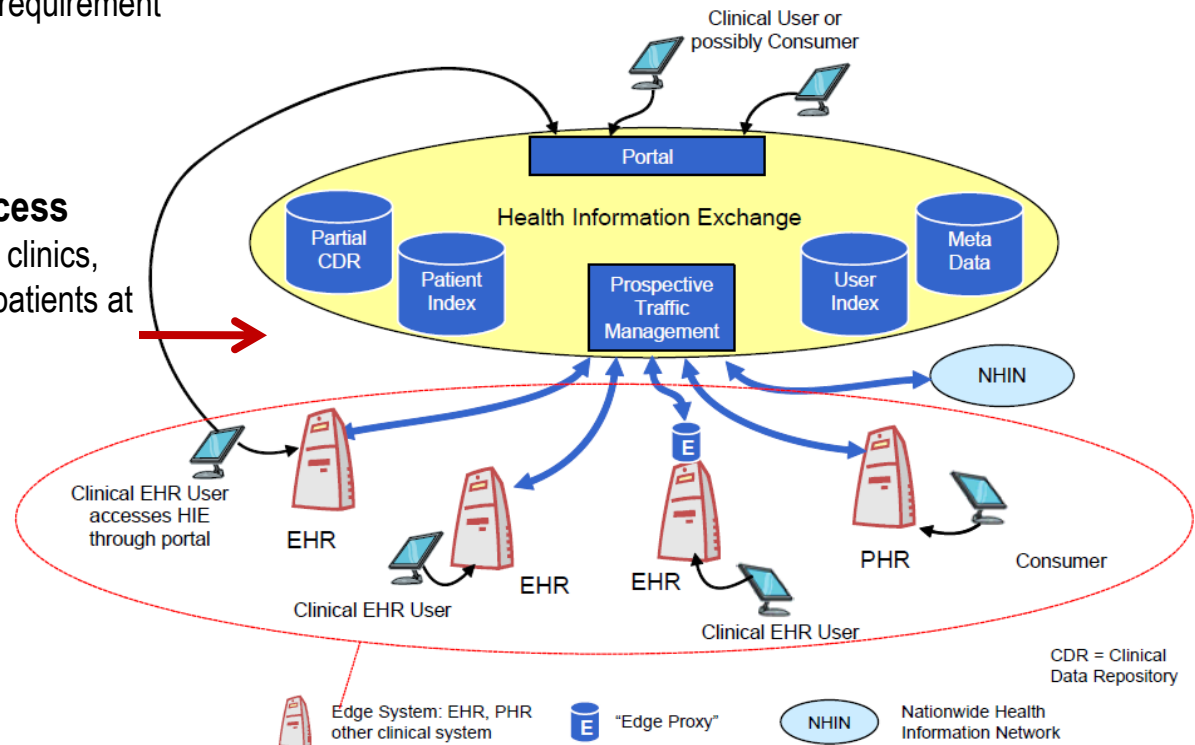
- HIE's provide the connectivity infrastructure required to achieve longitudinal electronic health records - an unmet market requirement
- ARRA stimulus package released \$564M in FY11 to fund the creation of State HIEs
- Health information interoperability is a requirement for EMR/EHR "Meaningful Use"

HIE Operators have customer access

- Access to dozens of hospitals, payers, clinics, hundreds of physicians, thousands of patients at the community level

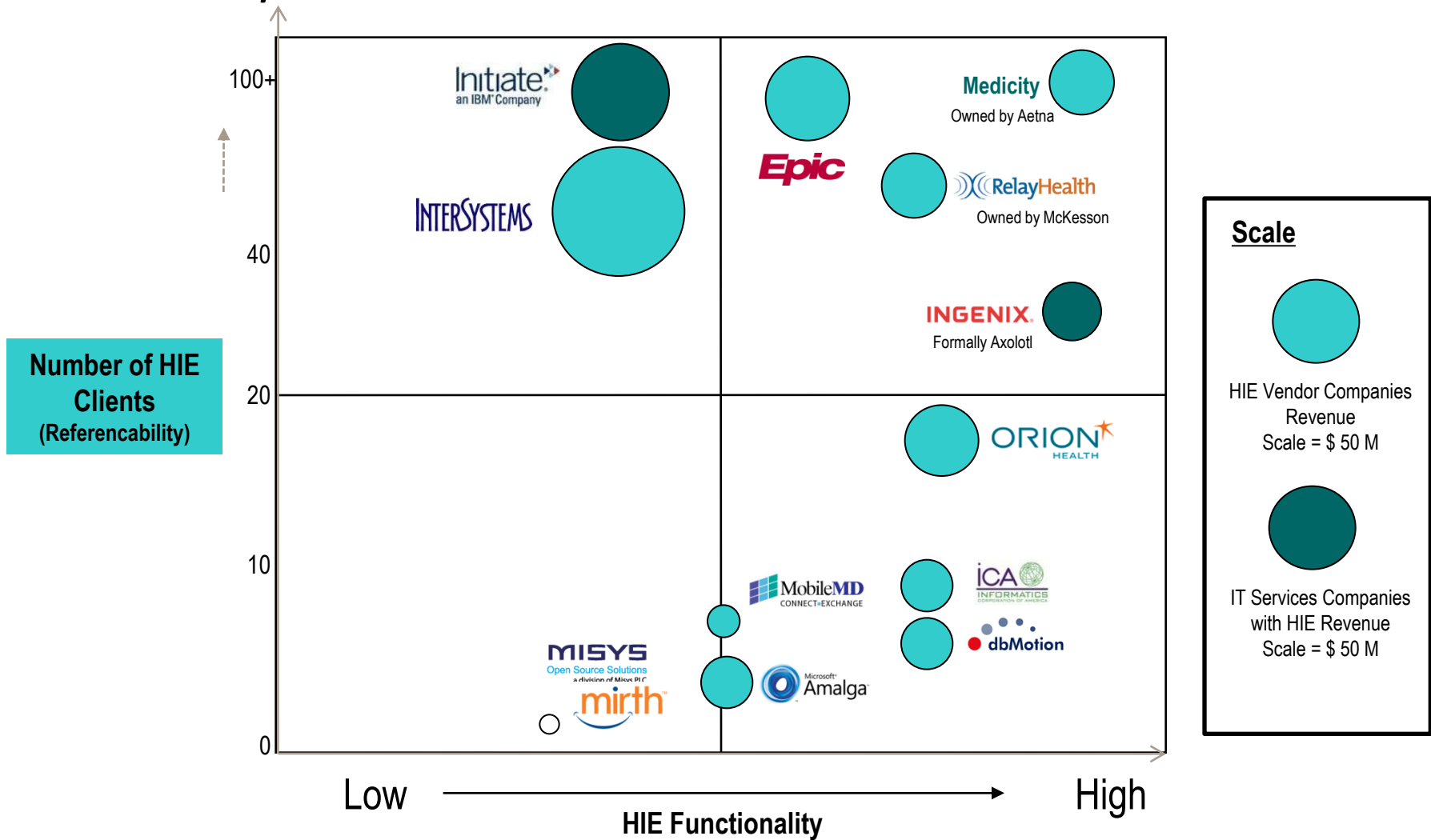
HIEs enable new businesses

- Longitudinal health record services
- Healthcare informatics
- Medical Image Archiving as a Service
- Clinical & business consulting
- Health reform technology and services
- Integrated health management
- Other consumer based services



Health Information Exchange

A Competitive Environment



*Source: IDC Health Insights, 2010

NOTE: Pure HIE Vendors are beginning to consolidate into Services or EMR organizations creating increased competition

Health Information Exchange *Supporting Solution*

Play



Focus Strategies

Knowledge

Informatics As A Service	Storage As a Service	EHR & other Cloud Solutions
--------------------------	----------------------	-----------------------------

Anticipated Health
Hyper Growth Strategies



Healthcare Providers

3rd Party HIE's



3rd Party Healthcare Platform's



HIE Platforms



at&t



Transparency

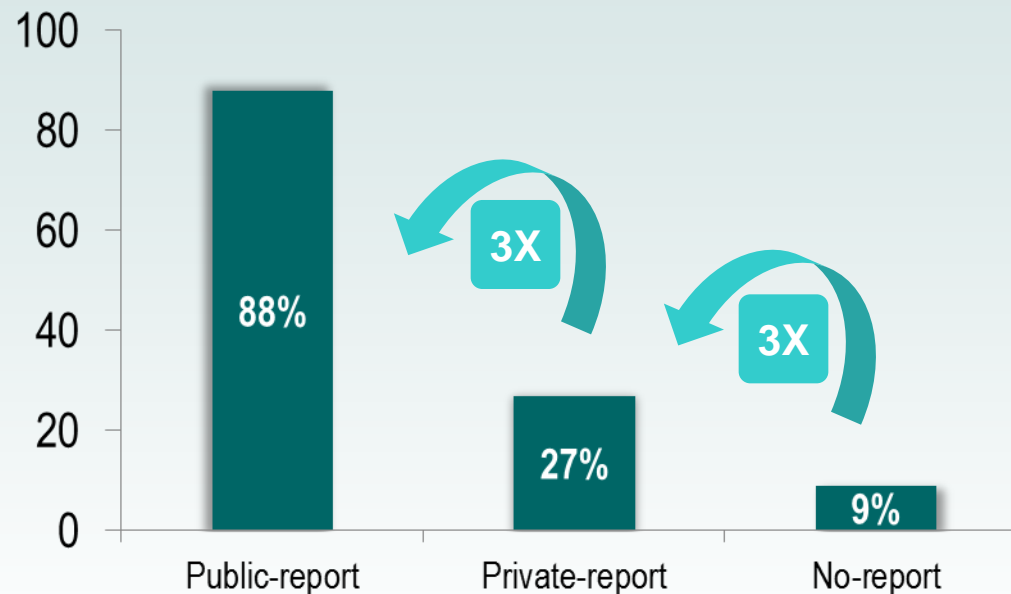


Transparency

The Provider Side...

Public disclosure leads to performance improvement

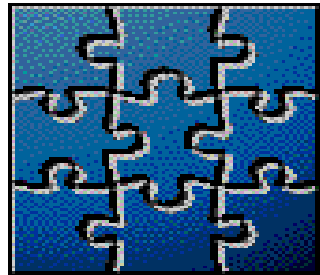
Percentage of hospitals with quality improvement activities in reducing hemorrhage following poor results in OB performance



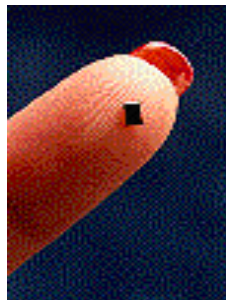
Reference: Hibbard et al. Health Affairs 2003;22(4):84

Transparency

The Community Side...



Standardization



Peripheral Intelligence



CaaS

Artificial Intelligence

Knowledge Management



Pattern Recognition

Data Mining

In May, 2010 *Lancet Neurology* published a study showing that the generic drug lithium did nothing to slow the course of amyotrophic lateral sclerosis (ALS) Decision-Support

In December 2008, PatientsLikeMe, a for-profit patient networking site and data aggregator based in Cambridge, MA, came to a similar conclusion more quickly and at much less cost. Benchmarking Personalization

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***So, how
does
eHealth
become a
reality?***



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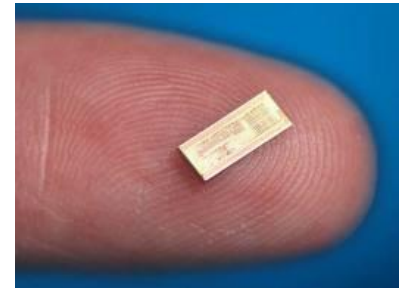
The basis for success is not how much you know but how fast you can learn.

Jeffrey Immelt
CEO, General Electric

Peripheral Management



Making Small Smaller...



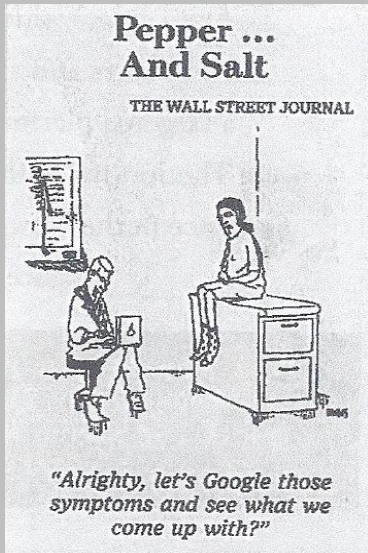
- Embedded Chips = Intel “Atom Chips”
 - @ \$10B market with only \$1B generated in 2009
 - Not as powerful as PC-based chips but economical
 - Examples
 - Nautilus – Embedded in treadmills to stream your favorite video when you show up at the gym
 - LG Electronics – Placing in signs that will recognize your age, gender and other characteristics as you pass by creating customized messaging
 - India – banks are placing in handheld terminals that serve rural areas off the electricity grid so that when an itinerant teller visits a village, it allows locals access to loans and other banking services

Peripheral Management: CHF



- Remote monitoring of homebound heart failure reduces hospital admissions
- > 5 million people affected in the USA with incidence increasing
- CHF hospitalizations have tripled in the last three decades
- ~ \$37+ billion in direct costs
- Non-pharma interventions can have a huge impact
- Signs and symptoms frequently start before ER admission

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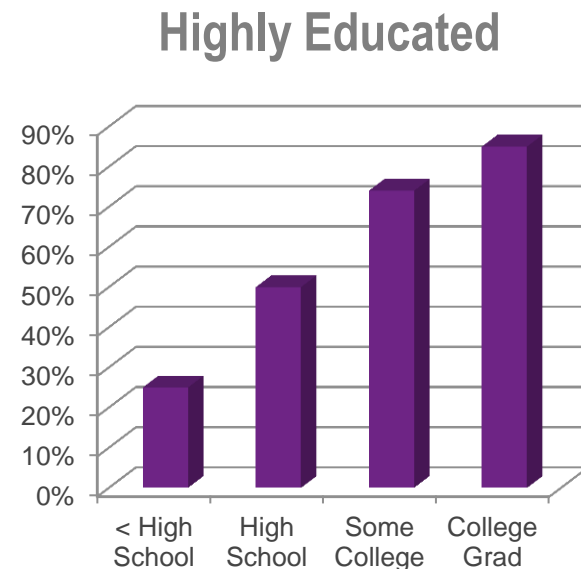
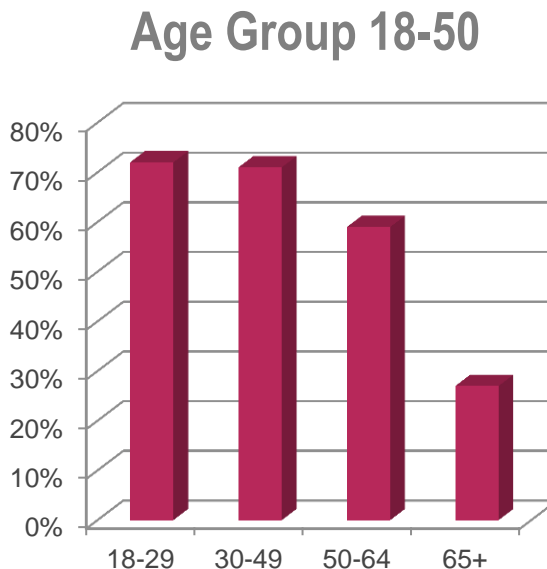
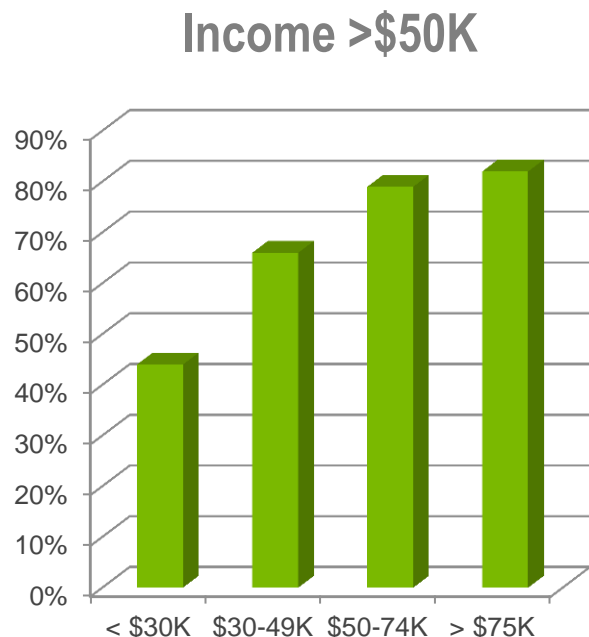


Interactive Management



Who seeks Health Information Online?

The majority are those who



Source: Pew Internet & American Life Project Survey, November-December 2008. N=2253. Interviews conducted in English or Spanish. Margin of error is $\pm 2\%$.

Twitter – Care Management Reminders



twitter

The New Social Media

Human speech is the first social media. The new technologies simply extend our voice...

- Social media are simply a new way of staying connected with those we want to be connected with – it's just that the scope and breadth have changed.
- We don't totally understand the impact of social media.
- Communications are about relationships not, technology.
- If you have nothing to say, it doesn't make any difference what medium you use. It will still be irrelevant.
- The power of the simultaneity of conversations beyonds our grasp.
- Fear of the future never got us there...

Three Examples: The CDC

- Use “eCards” – send messages as a friendly reminder from a *trusted source* to get screenings (e.g. mammography, colonoscopy, etc.) + much more effective than a public service announcement
- Partnered successfully with Whyville (a virtual world) for youths aged 12-14 to present messages on seasonal flu
 - In 2007, some 41,000 visitors to the site had their avatars vaccinated against the fictitious Why flu in the virtual world
 - 1,800 seniors who play the game online with their grandchildren
- Pilot HIV/AIDs prevention campaign that uses videos made by college students sent via cell phones to friends...Smoking cessation next.

The Virtual Physician-Patient Relationship...

The Academic Perspective:

- <http://hsc.unm.edu/som/telehealth/> = Center for Telehealth and Cybermedicine Research
- <http://www.amda.com/about/mission.cfm> = American Medical Directors Association

The Commercial Perspective:

- MDLiveCare.com = primary care services
 - SpecialistsOnCall.com = specialty services
 - NuPhysicia.com = primary and specialty services
 - YouChoseYourFavoriteVirtualHealthcareWebsite.com = ???
-

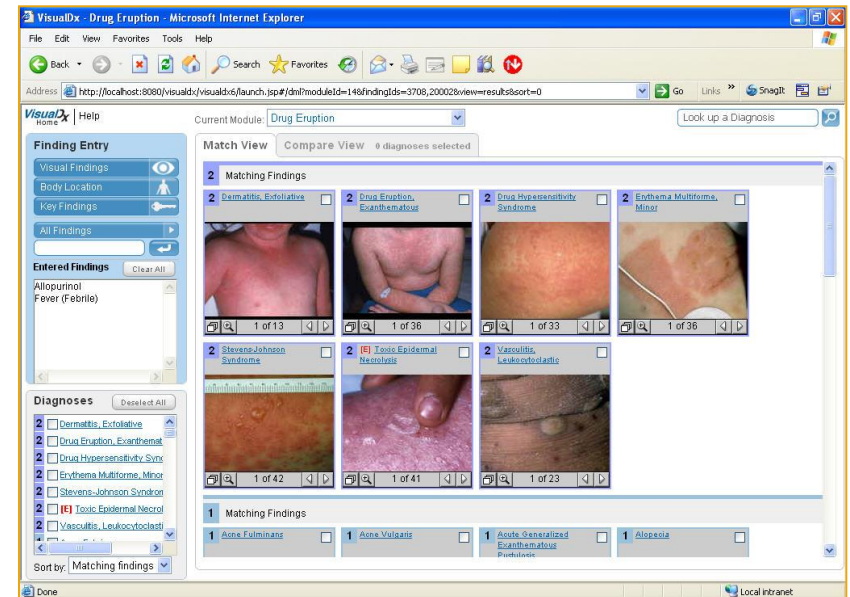
An Example: Logical Images



- Used by 1,300 health care sites nationwide & six state public health departments have licensed VisualDx for every hospital in their respective states
- 30+ medical schools have integrated VisualDx
- Integrates into telemedicine

An Example: Logical Images

- Search by patient factors
- Develop a **visual** differential diagnosis
- Desktop and Laptop
- i-Phone, i-Pad, i-Touch
- Droid



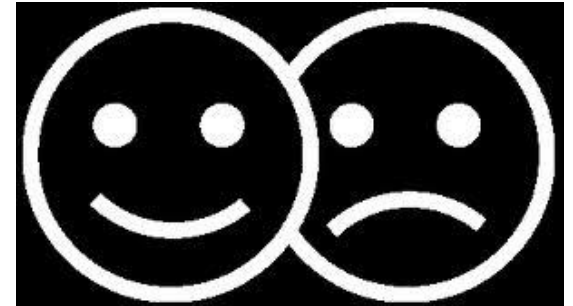
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“I would rather
entertain and
hope that
people learned
something than
educate people
and hope they
were
entertained.”

Walt Disney

Caretainment

Edutainment!



“Medisode”

The Case for Video

“Picture trigger instinct, emotion, and impulse” (Bergsma, 2002 – TV Goes to School)



People remember:

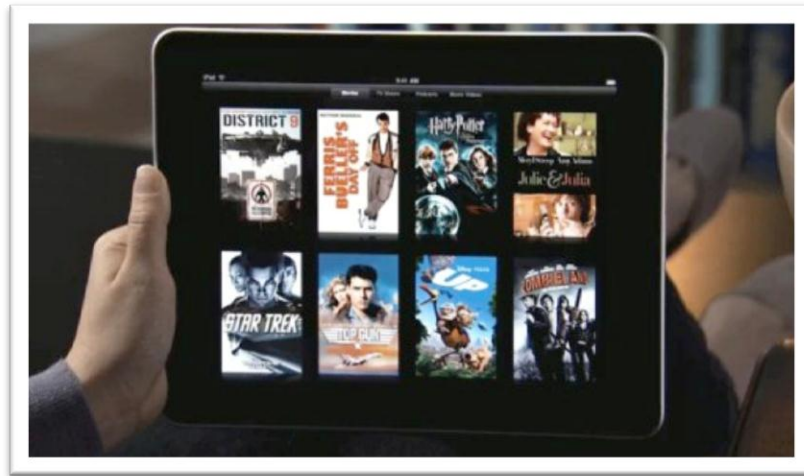
10% of what they read

20% of they hear

30% of what they see

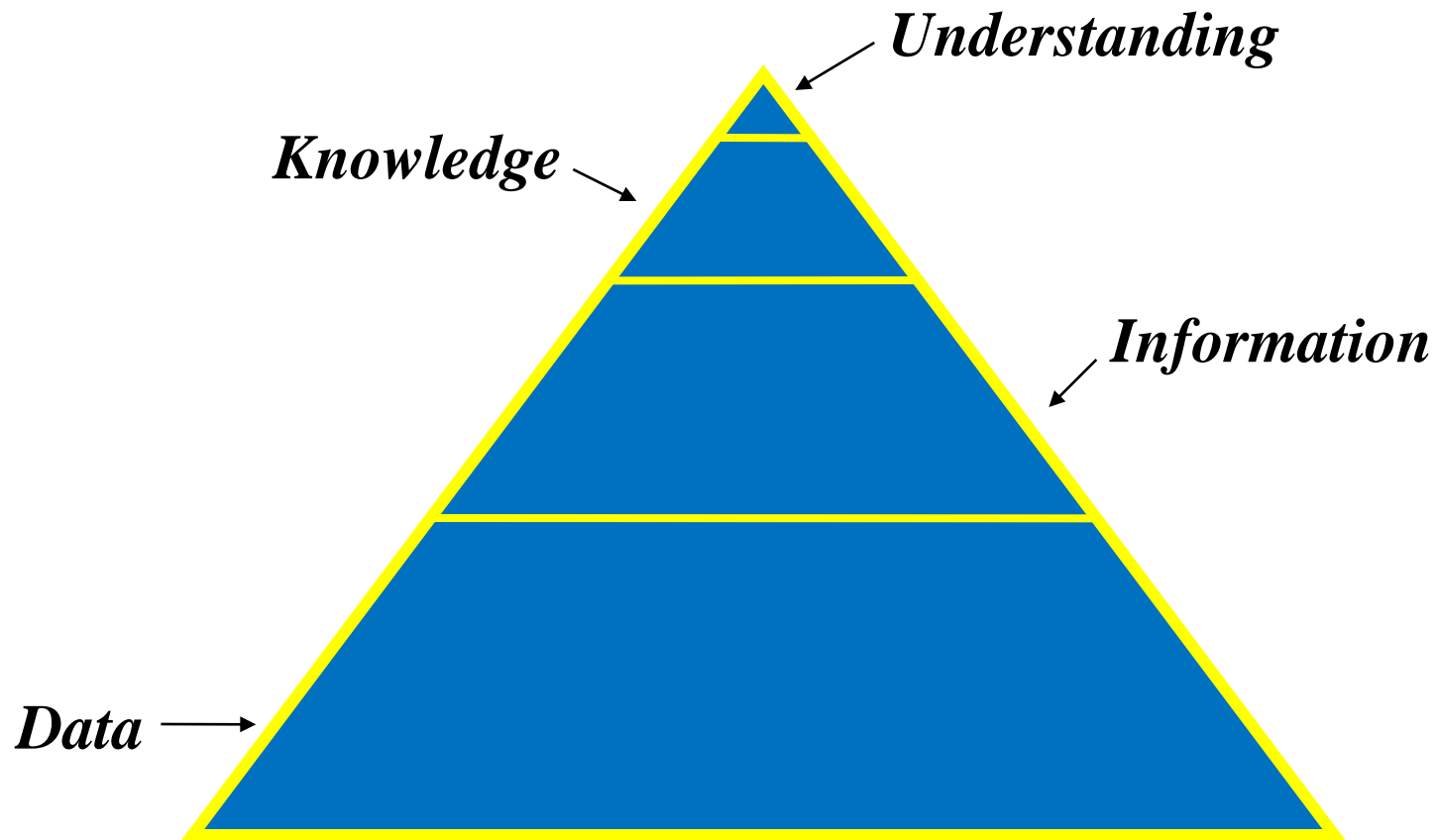
50% of what they see and hear

The Case for Video



- Number of American users frequenting online video destinations climbed 339% from 2003-2009
- Time spent on video sites increased 2,000% over the same period
- From 2008-2009
 - number of video streams grew 41%
 - streams per user grew 27%
 - total minutes engaged with online video grew 71%

The Knowledge Framework...



The World of Healthcare is Changing...



Some Final Thoughts...

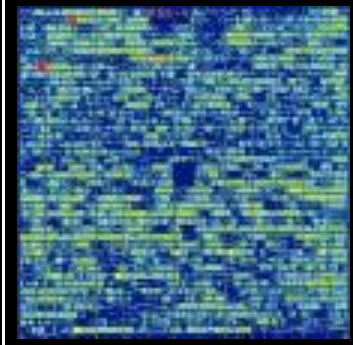
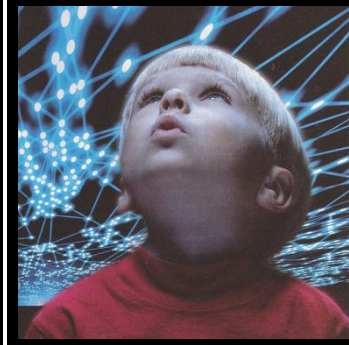
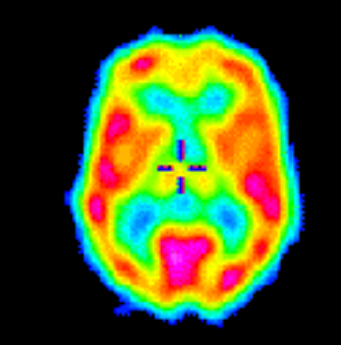
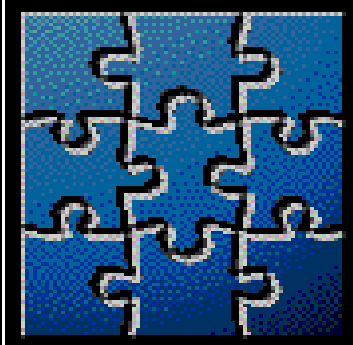
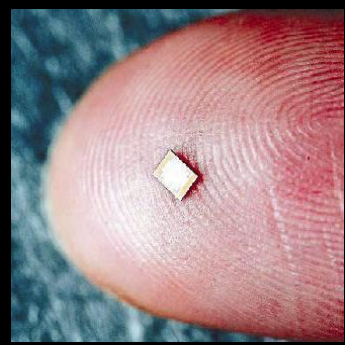
- **Transparency** will increase
- Demands for **value** are accelerating
- **Costs** must be managed effectively
- Consumers will **empower** themselves
- Innovation is derived from **virtualization**/partnering— not, control
- **Unanticipated competitors** will enter the market
- **Digitalization** absolutely changes the landscape in healthcare
- Healthcare must become much more **process** savvy
- Healthcare must **renew a focus** on its core competencies
- Activities that touch the patient will remain as core competencies



And, Don't Forget – Find Elvis...



Satisfaction – when I want it...
Outcomes – with the results I want...
Value – at the right cost





A Final Thought

Kevin Fickenscher, MD

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CREO Strategic Solutions
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Suite 2407
Washington, DC 20005
(415) 450-1515 - Mobile



*...to make a
difference in the
lives of people by
working diligently
to improve the
human condition*

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