

What's Really Going On? *or* PHRs, Platforms, & Consumer Trends

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Three Take-Aways

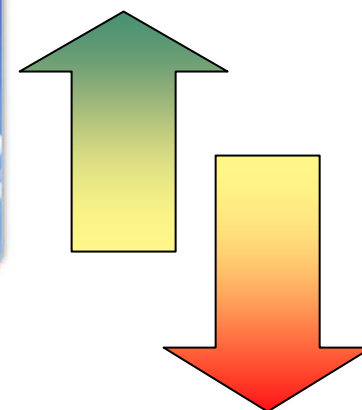
- ◆ **What is State of PHR Market Today**

- ◆ **Advent of Health Clouds**

- ▲ Implications

- ◆ **Trajectory**

- ▲ Drivers
- ▲ Challenges
- ▲ What to Watch



Macro Trends Reshaping Healthcare

◆ Growing Consumerism in Healthcare

- ▲ Employee Accountability
 - ◆ **Rise of CDHPs, ever increasing co-pays**
- ▲ Disintermediation of Care
 - ◆ **Retail Clinics, eVisits, MedTourism, Virtual Labs**

◆ Information Liberation

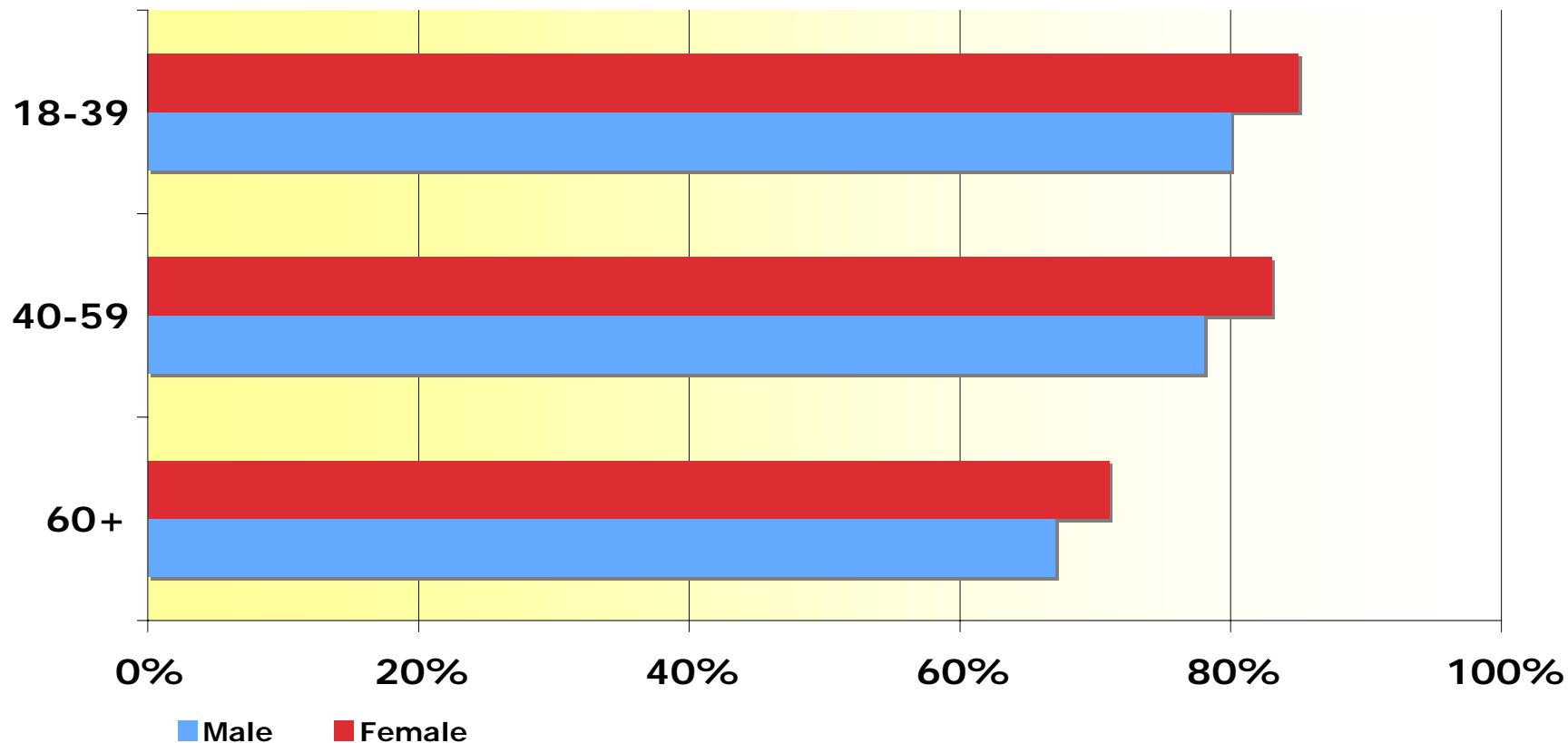
- ▲ Traditional: PubMed, Mayo, WebMD
- ▲ Crowd-sourced: Wiki(s), Blogs, Twitter, Communities

◆ Stimulus Bill & Healthcare Reform

- ▲ Unprecedented \$\$\$ to Digitize Healthcare
 - ◆ **Too much, Too Fast?**
- ▲ Comparative Effectiveness
 - ◆ **Data Driven Care = Rationed care?**

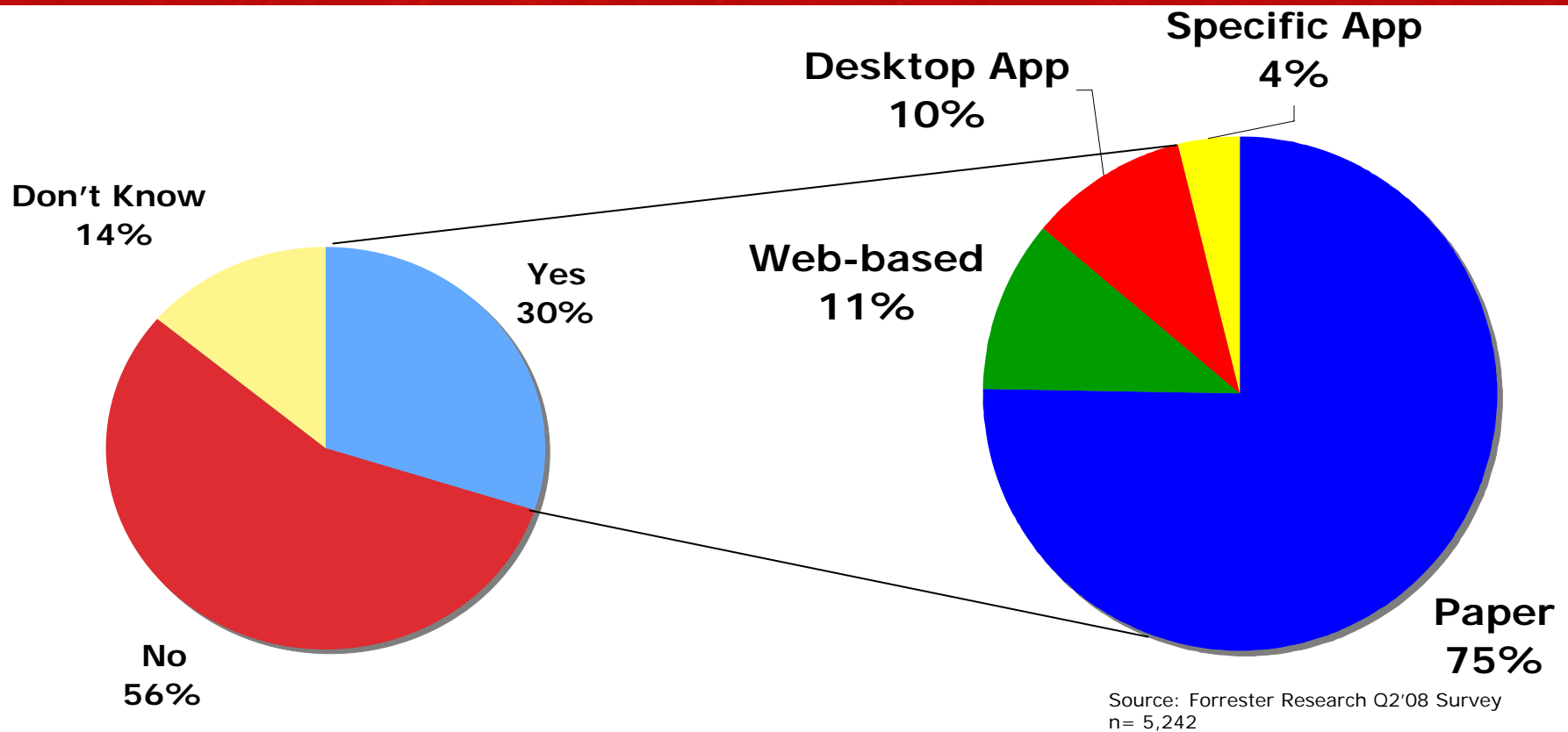


While Consumers Increasingly Go Online for Health Info...



Source: Pew Research 2006
74% of all adults are online

Few Manage Their Health Records That Way

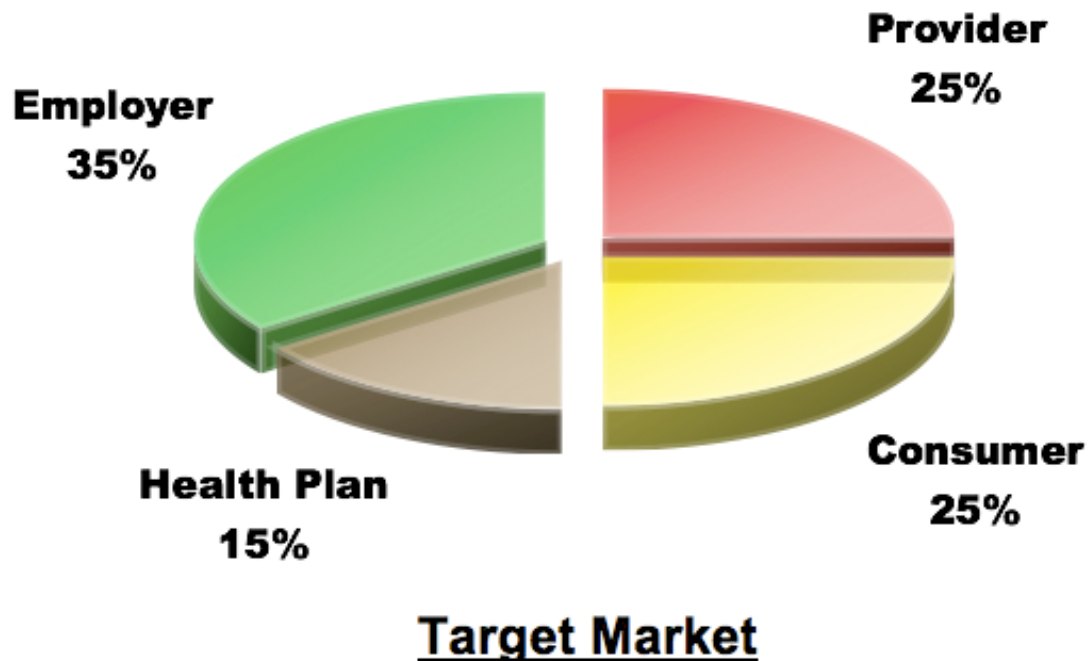


Today, Meager 3.3% iManage PHI

iPHR Adoption is Widely Dispersed

| Entity | Type | No. of Users | PHR Platform | Features |
|-------------------|------------|--------------|------------------|--|
| Kaiser-Permanente | Provider | 3.0M | MyChart | EMR portal w/email & transaction services <i>Portability w/HealthVault</i> |
| Veteran's Admin | Provider | 650K | RYO (Vista) | EMR portal , <i>Not portable</i> |
| WebMD | ISV | 500K | WebMD | Client defined, claims-based HRA & alerts <i>Rarely portable</i> |
| Aetna | Payer | ~ 700K | ActiveHealth | Focus on HRA, DM, aggressive build-out <i>Portability w/HealthVault</i> |
| United Health Grp | Payer | ~ 200K | HealthAtoZ | Claims-based, part of new OptumHealth Div. <i>Portability w/HealthVault</i> |
| Cleveland Clinic | Provider | 100K | MyChart | Similar to KP <i>Portability w/Google</i> |
| BIDMC | Provider | 40K | RYO | Ageing portal w/email <i>Portability w/Google & HealthVault</i> |
| <i>All Others</i> | <i>Mix</i> | <i>2.5M</i> | <i>Countless</i> | Highly variable, most simple templates <i>Little portability</i> |

iPHR Market has Moved to B2B Model



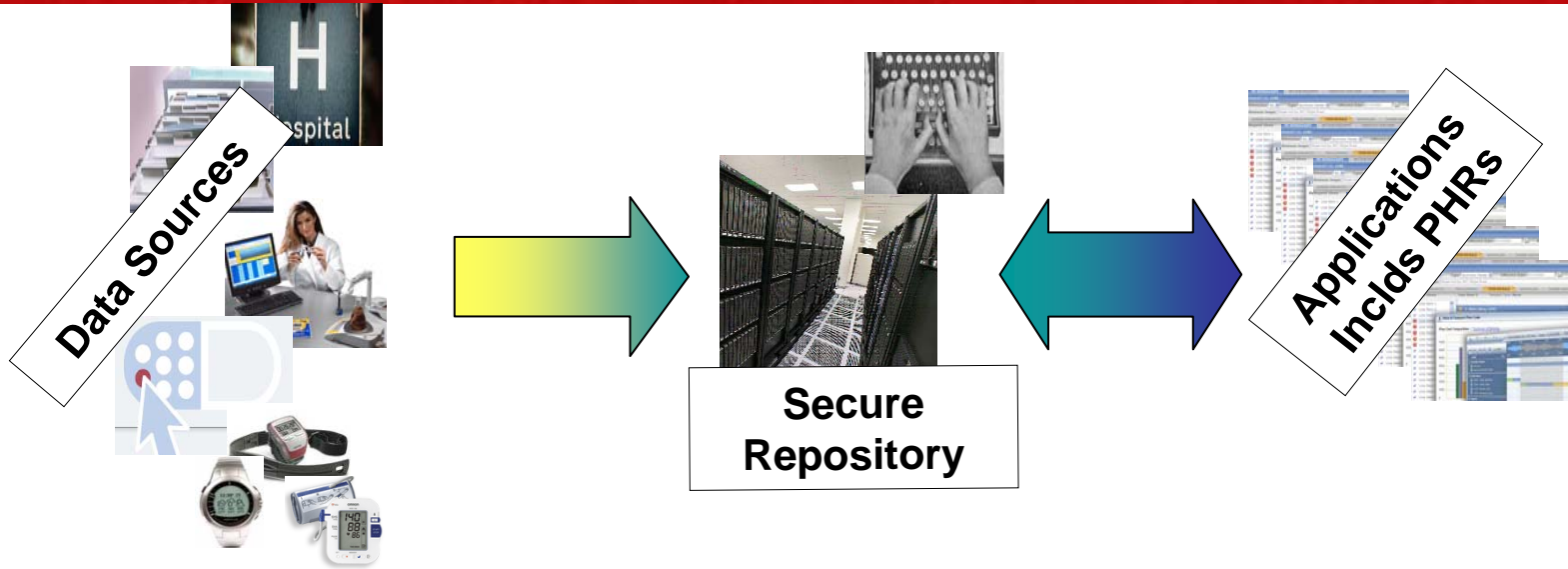
- ◆ High Barriers to Entry in Provider Market
- ◆ Employer & Health Plan Markets Similar
- ◆ Consumer Plays are Often Legacy

B2C is Road to Ruin

Three Dominate iPHR Models

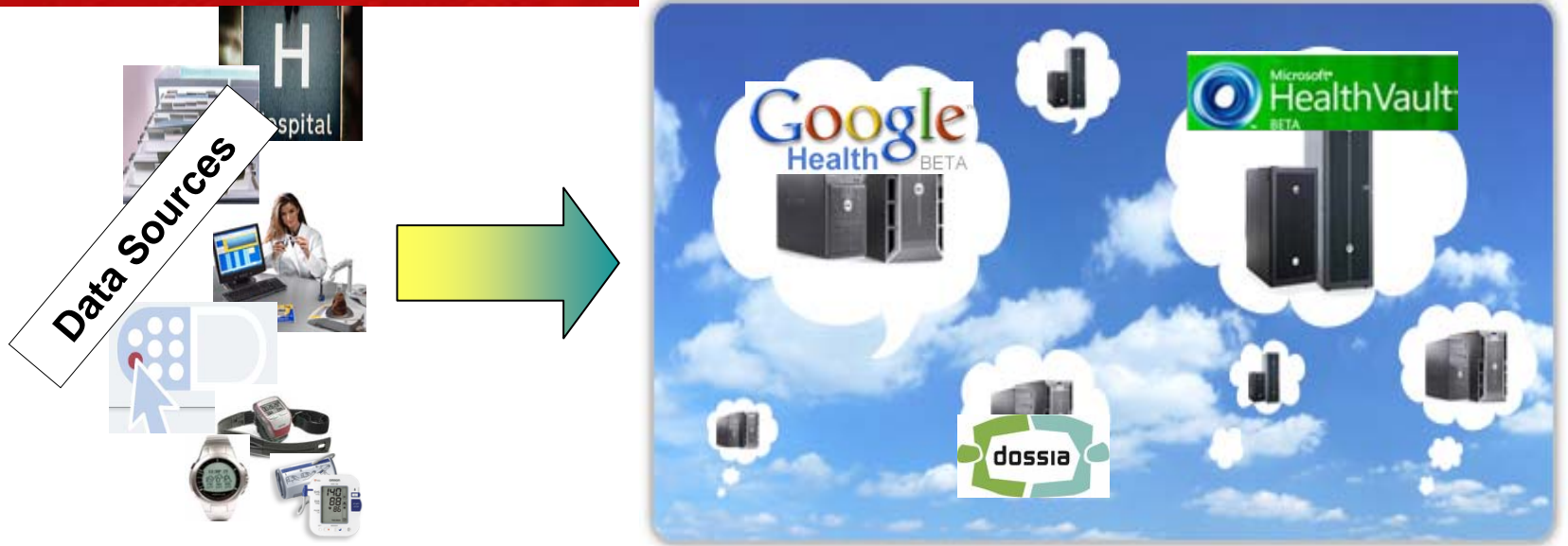
- ◆ **Direct to Consumer => Manage Records**
 - ▲ Consumer has Full Control
 - ◆ **Consumer self-populates, disconnect**
 - ▲ Small ISVs with Little Market Influence
 - ◆ **CapMed, Medikeeper, PassportMD**
- ◆ **Payer or Employer Sponsored => Lower MLRs**
 - ▲ Consumer has Limited Control
 - ◆ **Trust issues, portability**
 - ▲ Focus on HRAs, Health & Wellness
 - ◆ **Incentives common to drive adoption**
- ◆ **Provider Sponsored => Customer Retention**
 - ▲ Consumer has Limited Control
 - ◆ **Little portability, modest tools, thin slice**
 - ▲ Present Labs, Meds, Discharge
 - ◆ **Facilitate transactional processes**

Utility Service Model for PHRs: *Creating an Ecosystem*



| Attributes | Potential | Notes |
|------------------|-----------|---|
| Data Source(s) | NA | Virtually any pertinent data source |
| Control | High | Strong consumer control of data |
| Interoperability | High | Adoption of Open Systems and standards |
| Portability | Medium | Still under development |
| Tools | Very Good | Multiple tools/widgets, communications??? |
| Personalization | High | Farther down the road |
| Adoption | High | Perceived value? |

Utility Service Model for PHRs: *A Health Cloud Ecosystem*



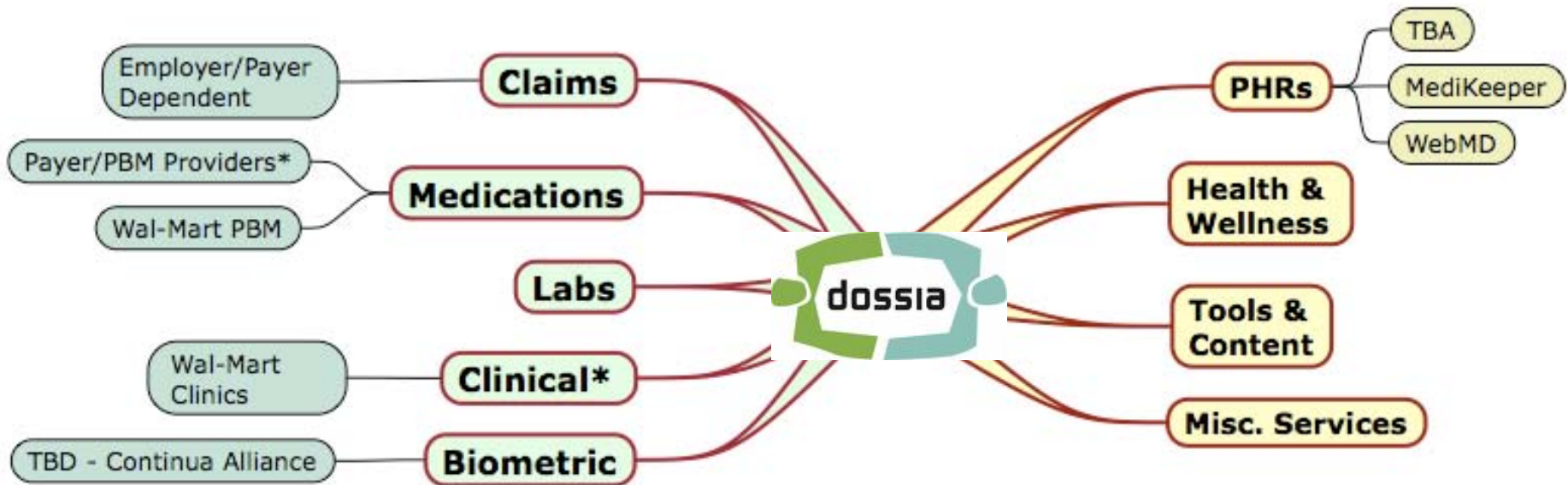
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Dossia: An Employer Health Fog

- ◆ **Purpose: Ecosystem to Support Health Programs**
- ◆ **Model: \$1.5M from Each Founding Member**
 - ▲ Follow-on Subscription Fees
- ◆ **Technology: IndivoHealth from CHIPs**
 - ▲ Straight Platform, Open Source
- ◆ **Little to Show After 2yrs+**
 - ▲ Extremely slow Roll-out
 - ◆ **Only one ISV & member live today**
 - ▲ Governance Challenges
 - ▲ Still Lacking APIs for ISVs

“Where’s the Value?”

Dossia's Ecosystem: Where is It?



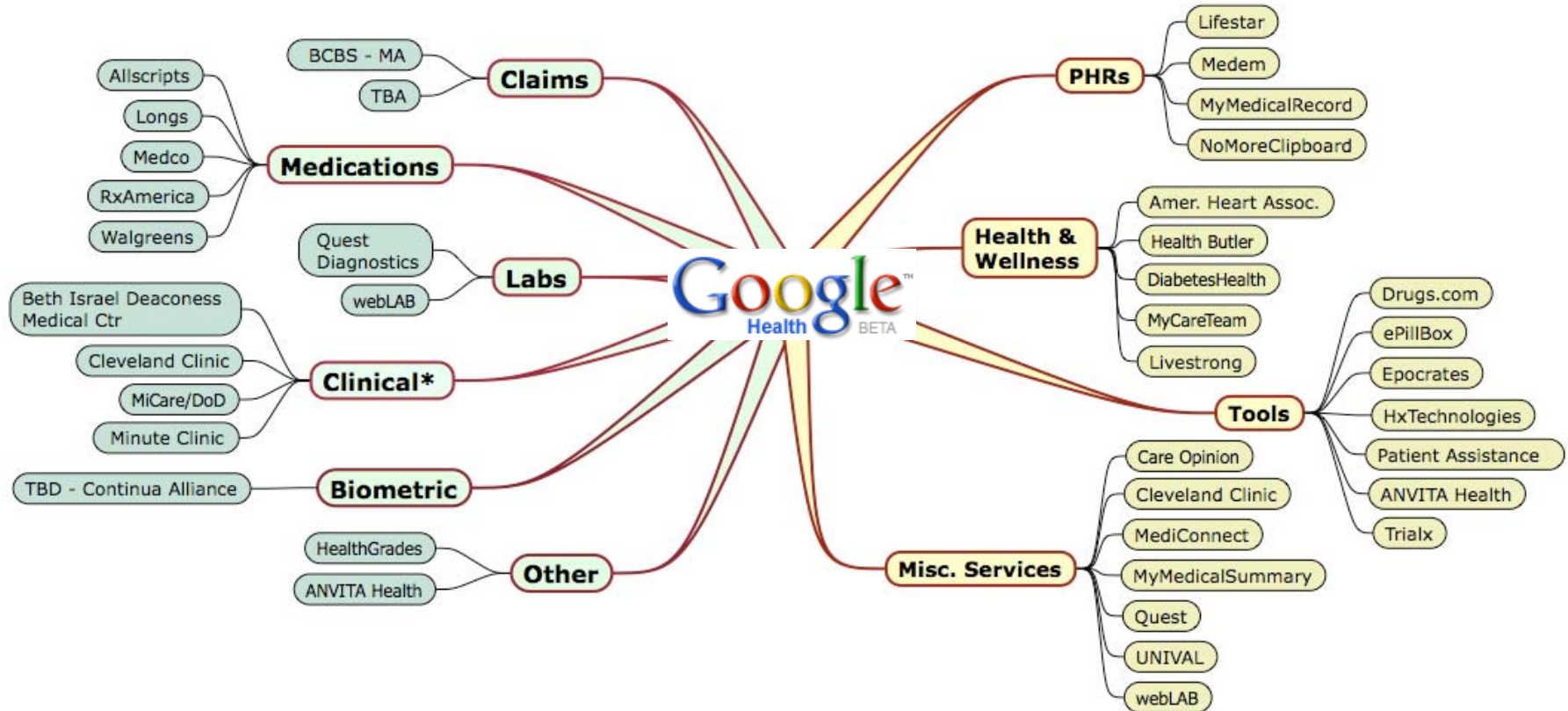
Only WebMD "Live" Today

Google Health: A Thin Cirrus Cloud

- ◆ **Purpose**: Increase Google “Stickiness”
- ◆ **Model**: Ubiquitous Google on Net
- ◆ **Technology**: Proprietary w/ Developer SDK
 - ▲ Platform with Basic PHR Functionality
 - ◆ Supports modified CCR standard, CCR-R
- ◆ **Modest Efforts to Date**
 - ▲ Very Small Team (est. 25 > total)
 - ▲ Few, New Partners
- ◆ **Limited to Structured Data Only**
 - ▲ No Journals, Notes, Advanced Directives...
 - ◆ Is CCR-R holding them back?

“How Serious are They?”

Google's Ecosystem: Stalled



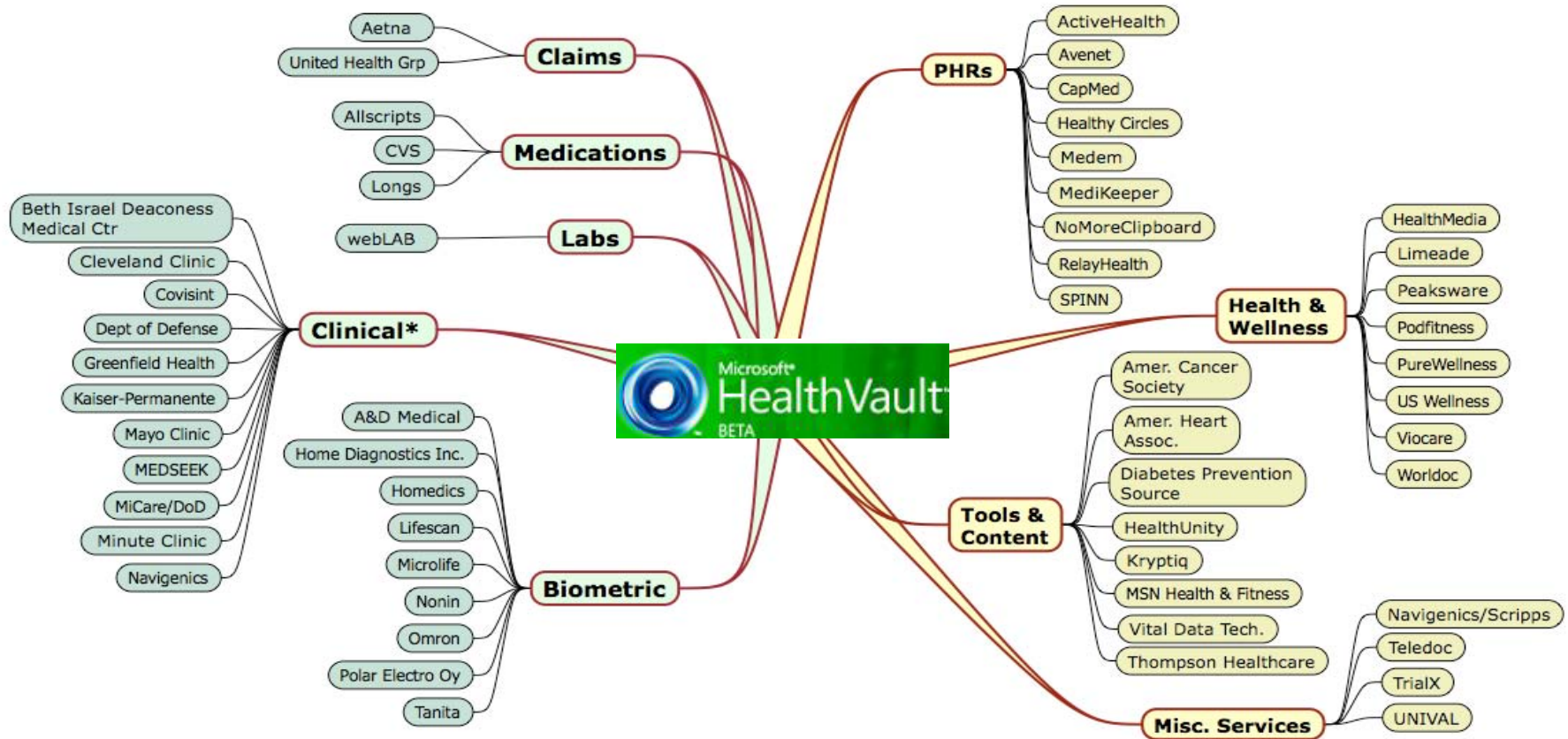
Slow Progress Recruiting Data Sources

HealthVault: A Thunder Cloud

- ◆ **Purpose: Dominate Healthcare Market**
- ◆ **Model: Drive Consumer Traffic, Sell More MS Products**
- ◆ **Technology: Microsoft Stack**
 - ▲ 15,000+ Downloads of SDK to date
- ◆ **Very Aggressive Strategy**
 - ▲ Huge Resource Investment
 - ▲ Targeting Data Sources
 - ◆ Amalga as aggregator
 - ◆ CCD standard support instrumental
 - ◆ Biometrics - *Brilliant Move*
- ◆ **Still Cumbersome**
 - ▲ UI is Challenging

“Where’s the Consumer Education?”

HealthVault's Ecosystem: Growing



Excellent Partner Recruitment

Looking Into the Future...

- ◆ **HealthVault No Longer Standalone Property**
 - ▲ Consumer: Embedded in MSNHealth
 - ▲ Maintains Strong Clinical Underpinnings
- ◆ **Google Focuses on Wellness**
 - ▲ “Healthy” Consumer-centric
 - ▲ Turns to Ad-rev Model for Support
 - ◆ **Ads outside private domain**
- ◆ **Dossia Fades**
 - ▲ Governance Challenges Hamper Advances
 - ▲ New Members Fail to Appear
- ◆ **New Entity Arrives**
 - ▲ Many circling today



Biggest Challenge: Sourcing Data

HIEs & RHIOs as Data Sources?

- ◆ **Hundreds of Millions in Stimulus Funding**
 - ▲ “Shovel-ready” Regional Health Information Organization (RHIOs) Programs
 - ◆ More than doubles current market size
- ◆ **Strong State Support for RHIOs**
 - ▲ Health Information Exchanges (HIEs) Sponsored by IDNs
 - ◆ Strong growth in HIE Market
- ◆ **Numerous Federal Agencies Getting Involved**
 - ▲ Social Security Admin & Other Fed Agencies
- ◆ **Aggregate Data at Local Level**
 - ▲ Standards Often Used
 - ◆ Demonstrated success with lab results & meds

Lab Data One of First to Go “Liquid”

HIEs & RHIOs are Challenged

- ◆ **Few RHIOs Actually Exchanging Data**
 - ▲ Less than 7% Live
- ◆ **Governance, Data Ownership & Liability Issues**
 - ▲ HIPAA Extension in Stimulus Bill Complicates Issue
 - ◆ **State A.G.'s right to file suit**
- ◆ **No Compelling Reason for HIEs to Participate**
 - ▲ HIEs are Established for Competitive Reasons
 - ◆ **Data sharing perceived as defeating core purpose**
 - ▲ Liability Issues for HIEs as Well
- ◆ **Little Consistency Nationwide**
- ◆ **Sustainability Models for RHIOs Remain Elusive**

Biggest Challenge: Liability of Data

Are Health Banks the Answer?

- ◆ **Consumer Controlled, Govt. Sponsored**

- ▲ Hybrid Tackles Data Ownership Issues

- ◆ **Liability moves to consumer**

- ▲ Consumer Defines Access Rights

- ◆ **Health data unalterable**

- ◆ **Clear audit trail**

- ◆ **WA State Go-live March '09**

- ▲ Three Sites

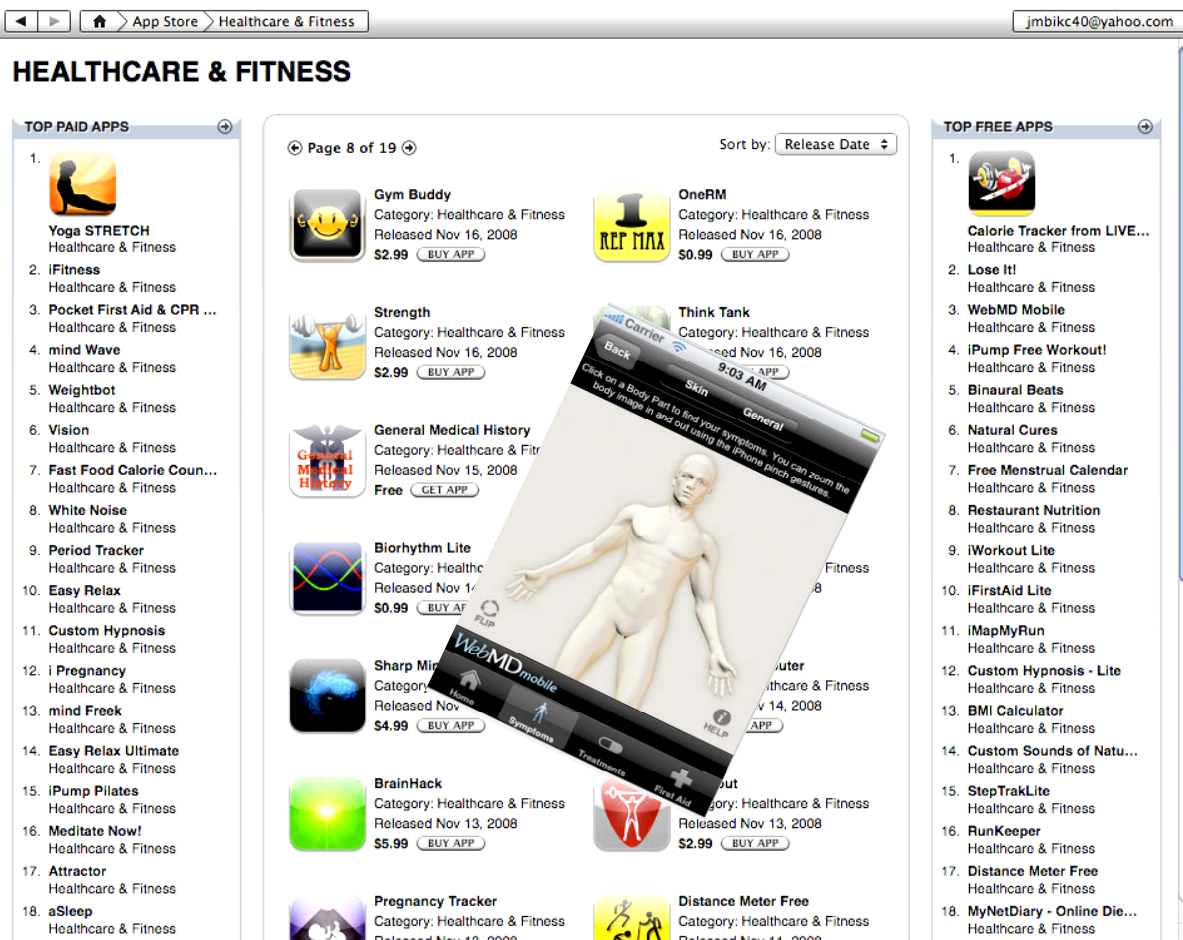
- ◆ **One Google Health, Two HealthVault**

- ◆ **Will Other States Follow Suit?**



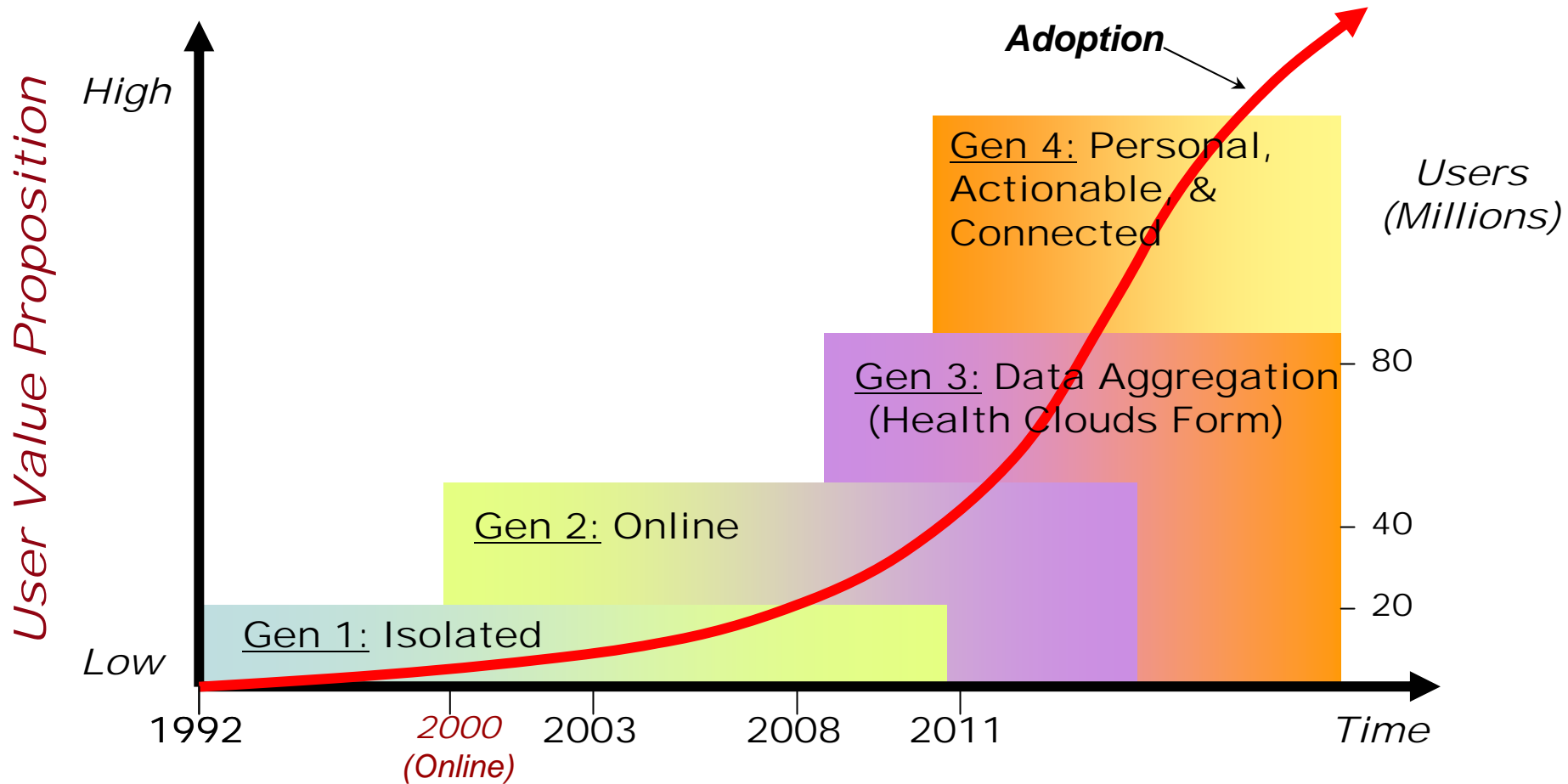
Biggest Challenge: Consumer Engagement

Is Mobile the Key to Engagement?



- ◆ **Explosive Growth in Use**
 - ▲ Over 800M iPhone App Downloads
 - ▲ iPhone Rep. 0.5% of **All** Internet Traffic
- ◆ **Over 20K Apps**
 - ▲ Nearly 1K are Health Focused
- ◆ **Every Major Mobile OS Now has App Mkt**
- ◆ ***And Still Only mHealth 1.0***

Evolution Accelerates PHR Adoption



Generation 4: "Convergence" *Personal, Actionable, Connected*



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Value: About Me, By Me, With Me, For Me

What to Watch

◆ Traction of Platform Plays

- ▲ Data Sources (agreements)
 - ◆ E.g., Cleveland-Google, KP-MS
 - ◆ New HIPAA Extensions
- ▲ Consumer Adoption
 - ◆ Sub-group types
- ▲ Developer Adoption
 - ◆ Popular apps/services

◆ Employer Successes

- ▲ Demonstrable ROI

◆ All Things mHealth

- ▲ Smartphones change equation
 - ◆ Biometrics play key role

QuickTime™ and a decompressor are needed to see this picture.

Final Thoughts...

- ◆ ***“Liquid” Lab & Medication Data is Where it Begins***
 - ▲ *Highest Demand*
 - ▲ *Easiest to Go-live*
 - ◆ ***Core to “meaningful use”***
 - ▲ *Quick Payback*
 - ◆ ***Lower ADEs, Reduce duplication***
- ◆ ***Without Consumer Engagement, HIT Adoption DOA***
 - ▲ *Stimulus Funding is Not Enough to Move Needle*
- ◆ ***Govt. Sponsored NHIN is Folly***
 - ▲ *Health Clouds will Rain on NHIN Parade*



WHAT YA
GONNA
DO WITH
YOUR
EIGHT
BUCKS?

ORDER
ANOTHER
ROUND!



THE STIMULUS

Personal Health Platforms (PHP): Model & Attributes

| PHP | Business Model | (+) | (-) |
|------------------------------|---|--|--|
| Dossia | <ul style="list-style-type: none"> ◆ Lg. Employer Sponsors ◆ <i>Initial joiners fee (founding mbrs, \$1.5M ea.)</i> ◆ <i>Annual fee based on number of subscribing employees</i> | <ul style="list-style-type: none"> ◆ Instantaneous user base of over 8M+ employees ◆ Built on open, Indivo Health platform ◆ Future biometrics, via Continua ◆ Free to employees | <ul style="list-style-type: none"> ◆ Poor partner strategy = ecosystem non-existent ◆ Lack of traction, slow uptake by employers ◆ Portability of records? |
| Google Health | <ul style="list-style-type: none"> ◆ Attract more visitors to Google properties ◆ <i>Ubiquitous in all aspects of consumer's life</i> ◆ <i>Have not ruled out ads in future</i> | <ul style="list-style-type: none"> ◆ Clean, easy to use interface ◆ Good consumer controlled process for data collection ◆ Reasonable ecosystem ◆ Future biometrics, via Continua ◆ Free to consumer | <ul style="list-style-type: none"> ◆ Limited to structured data ◆ Limited to CCR standard ◆ Small internal development grp (commitment) to build out platform ◆ TBD - ability to attract consumers |
| Microsoft HealthVault | <ul style="list-style-type: none"> ◆ Similar to Google's ◆ <i>Become base for MSN Health</i> ◆ Extend desktop OS to health e.g., Connection Center ◆ Advertising revenue via health search | <ul style="list-style-type: none"> ◆ Largest & most complete ecosystem (> 14,000 SDK downloads) ◆ Largest investment of resources ◆ Unique biometric capabilities ◆ Free to consumer | <ul style="list-style-type: none"> ◆ Cumbersome, messy interface ◆ Mish-mash of partner apps ◆ Ulterior motives? (no support for Apple OS) ◆ TBD - ability to attract consumers |

Listening-In: *Early Reports on PHPs*



- ◆ **Few Click-thrus from HealthVault**
 - ▲ But good enterprise visibility
 - ▲ Connection Center gaining traction
 - ◆ **Over 20K users of AHA widget for BP monitoring**
 - ▲ Highly structured, significant resources
 - ◆ **Grumblings: “Where’s the marketing?”**
- ◆ **Significant Traffic from Google**
 - ▲ ~4k/day seen by partner ISV
 - ▲ Loosely structured, few resources
 - ◆ **Grumblings: “Are they serious about healthcare?”**
- ◆ **Dossia Remains an Enigma**
 - ▲ Extremely slow roll-out, only one ISV & member live
 - ▲ Very political, governance issues, lacking APIs for ISVs
 - ◆ **Grumblings: “Where’s the value?”**