

HIMSS[®]16

Conference & Exhibition

FEB 29 – MAR 4, 2016 | LAS VEGAS

TRANSFORMING HEALTH THROUGH IT



Digital Healthcare: Evolving Business Models

2 March 2016

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 #HIMSS16

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Biography

- Partner, Norwest Venture Partners, a \$6B AUM Venture Firm in Palo Alto
 - Investor in HealthCatalyst, iRhythm, Omada Health, Telcare, TigerText, Crossover Health, iCardiac, Misfit Wearables, BASIS
- Former VP Marketing and BD at Hansen Medical
- Attending Emergency Physician (Board Certified)
- Residency Stanford
- MD Harvard
- MBA Harvard
- BS Johns Hopkins (Electrical / Biomedical Engineering)

Conflict of Interest

Robert Mittendorff, MD, MBA

Ownership Interest via Norwest Venture Partners in HealthCatalyst, Omada Health, iRhythm, Telcare, Misfit Wearables (formerly), BASIS (formerly), CareCloud, ClearCare, TigerText, Crossover Health, iCardiac

Learning Objectives

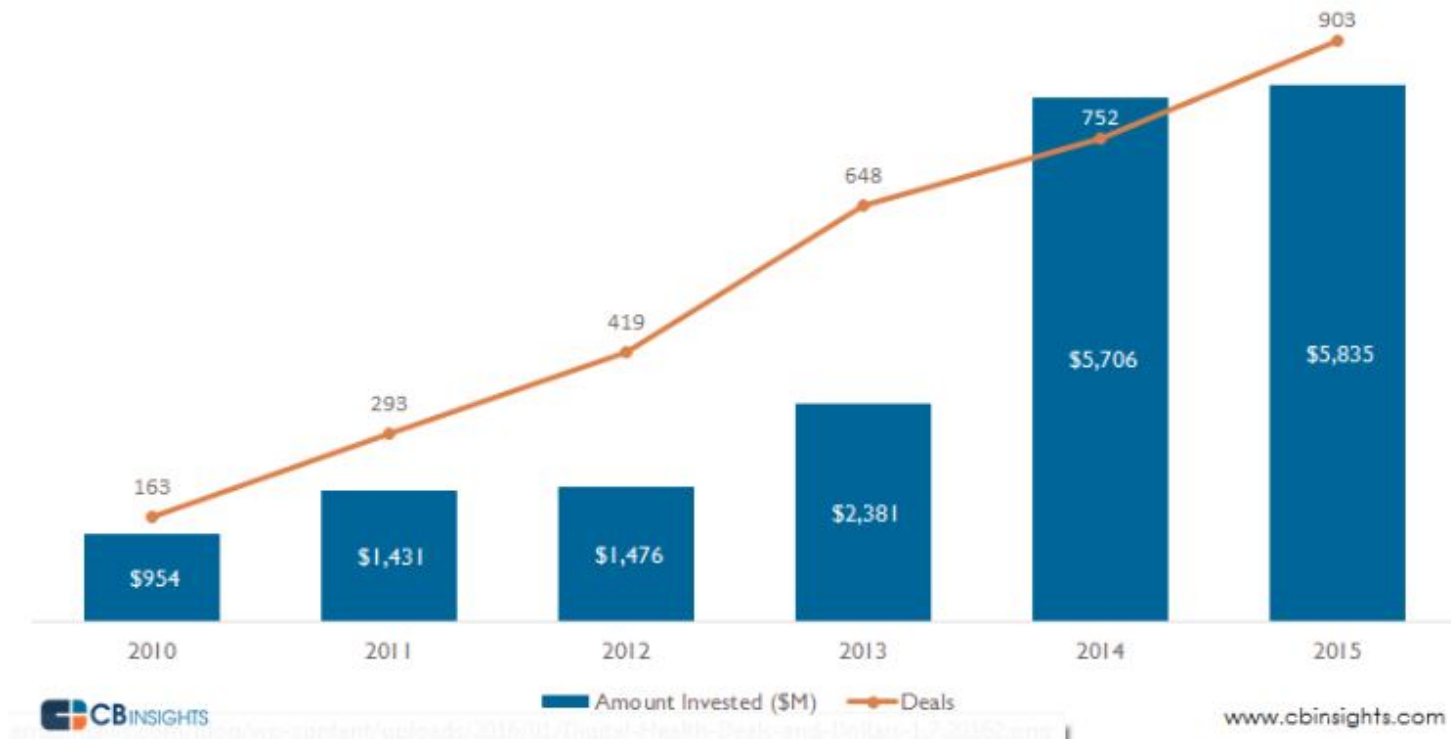
- Understand key drivers of new opportunities in digital health and health IT
- Understand relevant common business models and tradeoffs
- Investigate the challenges in commercialization for each model
- Understand the methods of valuation and analysis applied to each model

Agenda

- Drivers of New Opportunities
- Business Models in Digital Healthcare
- Digital Healthcare Commercialization Strategies and Approaches
- Key Metrics and Valuation Methodology

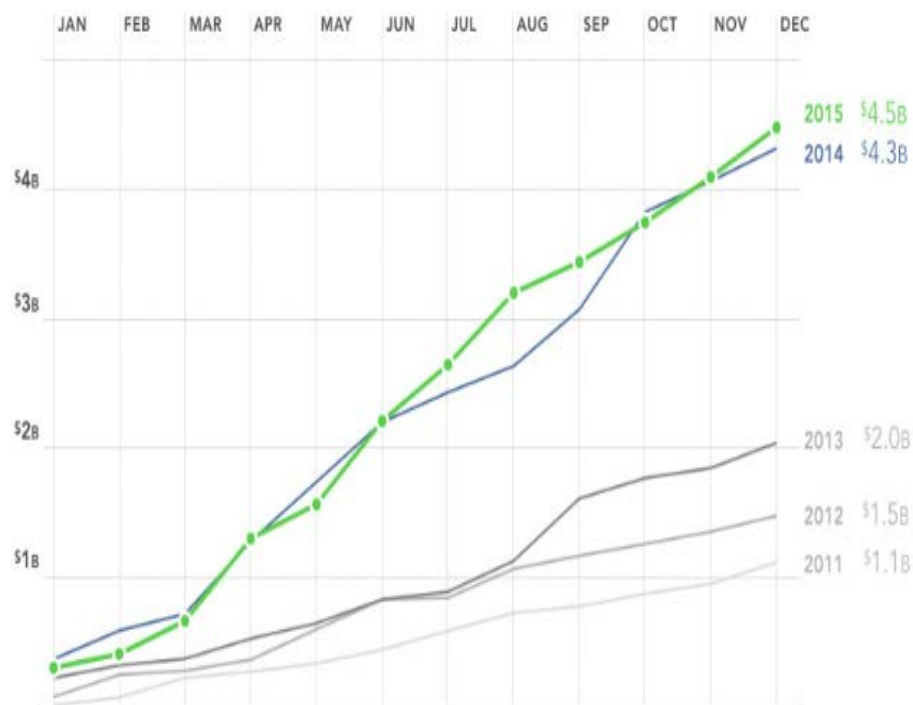
Digital Health Investments (\$6B)

Digital Health Funding Trends: Deals and Dollars Invested
2010 - 2015



Source: CBInsights 2016

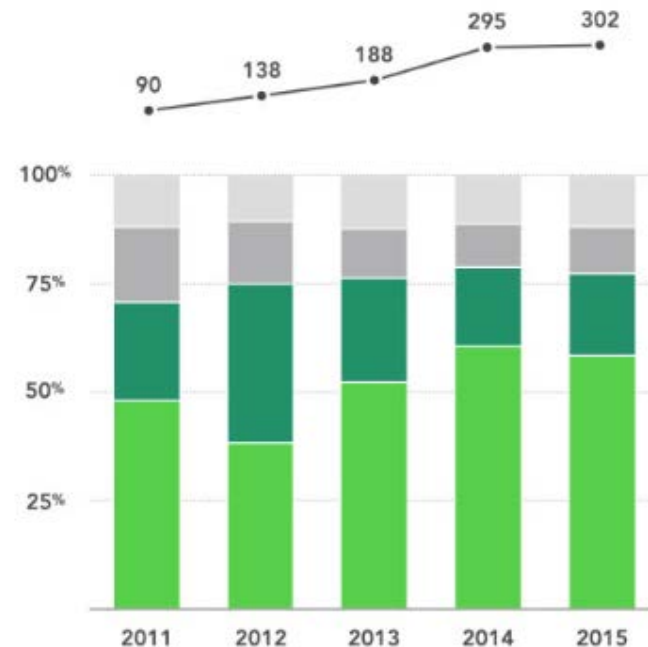
\$4.5B in Venture Funding in 2015



DEAL DISTRIBUTION

2011-2015

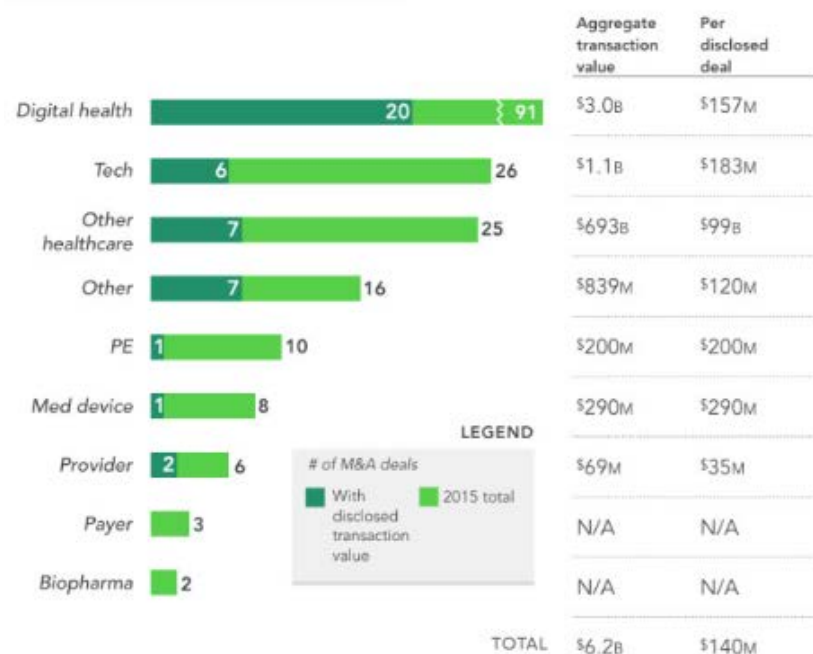
LEGEND



187 M&A Deals and 5 IPOs

DIGITAL HEALTH ACQUIRERS

2015 (notable transactions listed at right)



ROCK
HEALTH

DISCLOSED

| Target | Acquirer | Amount |
|---------------------|--------------------------------|--------|
| Merge Healthcare | IBM | \$1.0B |
| Altegra Health | Emdeon | \$910M |
| Virtual Radiologic | MedNax | \$500M |
| MyFitnessPal | Under Armour | \$475M |
| SoftWriters | Managed Health Care Associates | \$450M |
| CECITY | Premier | \$400M |
| NaviHealth | Cardinal Health | \$290M |
| Aesynt | Omnicell International | \$281M |
| Misfit | Fossil | \$260M |
| Healthland | CPSI | \$250M |
| Sentry Data Systems | ABRY Partners | \$200M |
| HealthFusion | Quality Systems | \$165M |
| Learner's Digest | Wolters Kluwer | \$150M |
| Acclaris | Extend Health | \$150M |
| HealthLine | HealthStream | \$88M |
| DR Systems | Merge Healthcare | \$76M |
| NextCode Health | Wuxi PharmaTech | \$65M |
| Healthcare Insights | Premier | \$65M |

UNDISCLOSED

| Target | Acquirer |
|-------------------------------|-----------------|
| Predilytics | Welltok |
| Explorys | IBM |
| Nextdocs | Aurea Software |
| Clinicast | Elekta |
| Cypher Genomics | Human Longevity |
| Health Heritage | NantHealth |
| Benefitter | HealthMarkets |
| Healthy Communities Institute | Xerox |
| 1DocWay | Genoa |
| Custom Data | TelePharm |
| Silverlink | Welltok |
| DoctorBase | Kareo |
| RazorInsights | athenahealth |
| GenoLogic | Illumina |
| Hot5 | Weight Watchers |
| Lively | GreatCall |
| Cardiolnsight | Medtronic |

A Sample of Funding: Across the Spectrum

B2B2C: Business to Business Sale; then “sale” or “conversion” of individual

B2B: Business to Business Sale

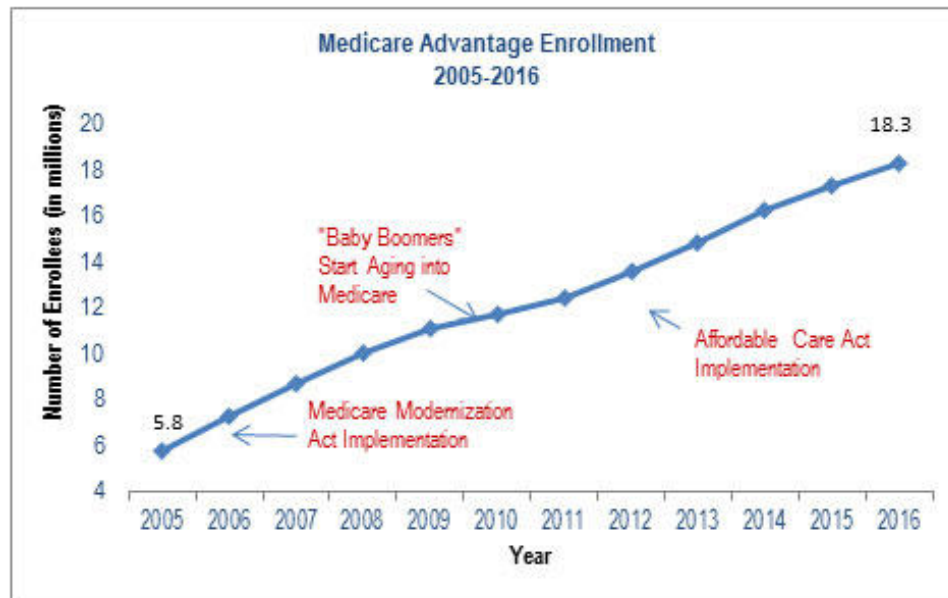
B2C: Business to Consumer Sale

| Company | Amount | Type |
|-------------------|---------|--------------------------------|
| ZocDoc | \$130.0 | Consumer Health; B2B |
| 23andMe | \$115.0 | Consumer Health |
| Virgin Pulse | \$92.0 | B2B2C; Employer |
| Collective Health | \$81.0 | B2B; Employer |
| One Medical Group | \$65.0 | B2C |
| Grand Rounds | \$55.0 | B2B2C; Employer |
| TigerText | \$50.0 | B2B2P; Providers and Companies |
| Doctor On Demand | \$50.0 | B2C and B2B2C; Employer |
| MDLive | \$50.0 | B2B2C; Employer |
| Omada Health | \$48.0 | B2B2C; Employer |
| Evariant | \$42.3 | B2B; Providers |

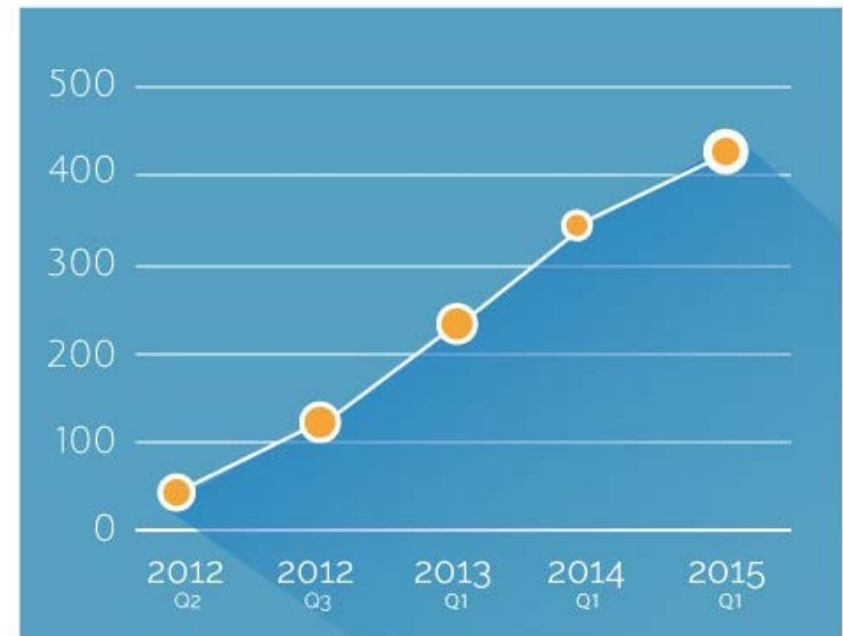
Opportunities and Risks: All Need IT

- **New Payment Models:** Capitation, Bundled Payments, Quality Measurement
- **Alternative Care Models:** Telemedicine, Chronic Care Management, On DemandCare
- **Consumer Directed Healthcare:** High Deductibles, Vouchers, & “Wellness”
- **Data Liberalization:** FHIRE, Exchanges, APIs, & Integrations

Alternative Payments Create Complexity That Demands IT



Medicare Shared Savings Program
Accountable Care Organizations



Telemedicine, Summoned Medicine and New Models of Care Demand Technology

Forbes / Pharma & Healthcare

AUG 9, 2015 @ 09:30 AM 7,735 VIEWS

Doctors' Virtual Consults With Patients To Double By 2020



Bruce Japsen, CONTRIBUTOR
I write about health care and policies from the president's hometown
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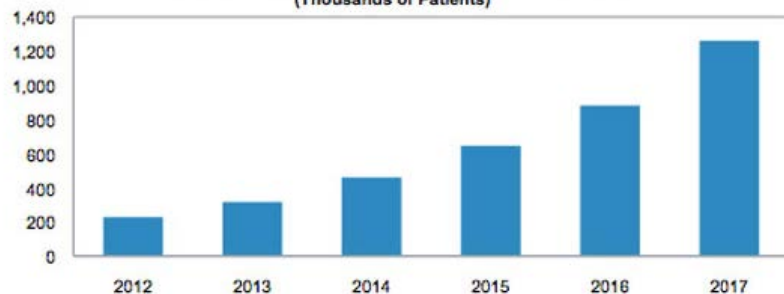
FULL BIO ▾

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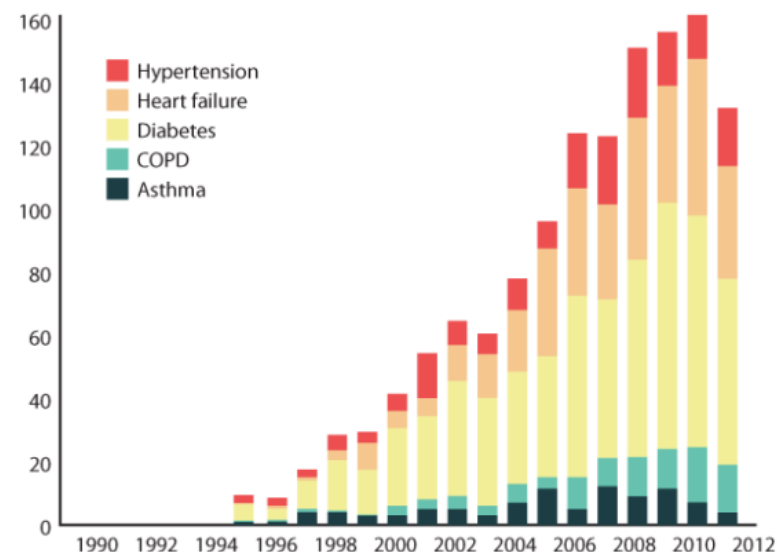
Forecast of Patients Using Telehealth in the United States
(Thousands of Patients)



Source: IHS InMedica February 2013

Medline publications about telemedicine and 5 chronic conditions

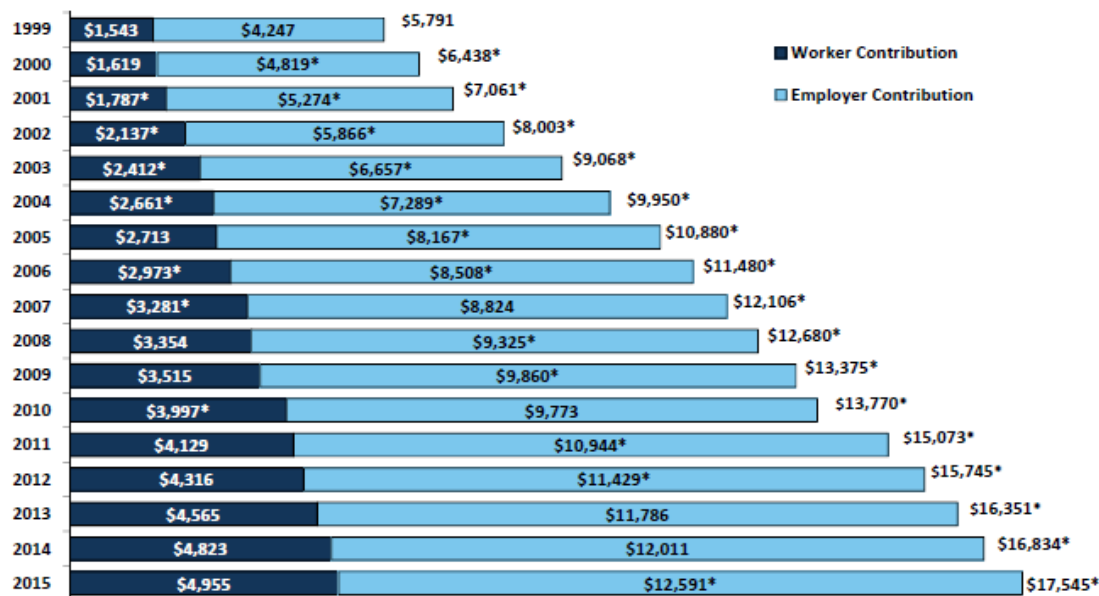
Publications per year



Source: "Twenty Years of Telemedicine in Chronic Disease Management — An Evidence Synthesis,"
Journal of Telemedicine and Telecare, June 2012

Consumer Directed Health Plans Take Over And Patients Expect Better Service At Lower \$

Average Annual Worker and Employer Contributions to Premiums
and Total Premiums for Family Coverage, 1999-2015



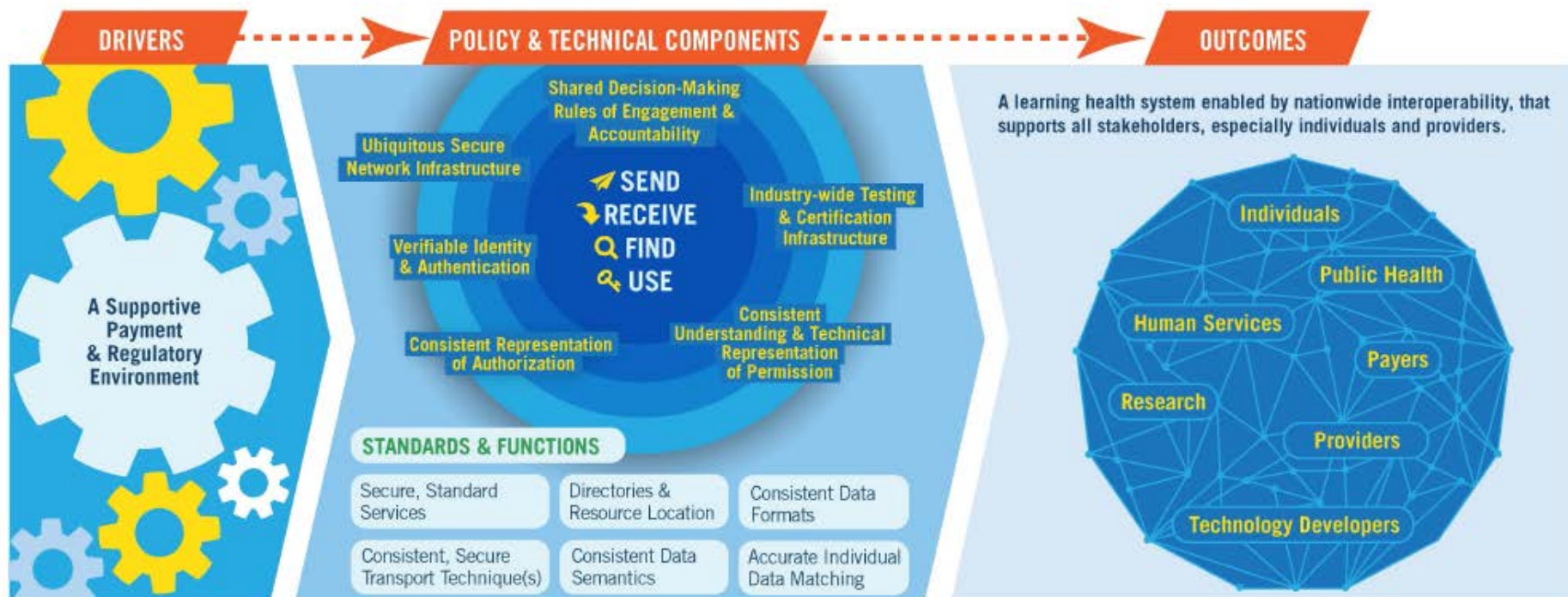
* Estimate is statistically different from estimate for the previous year shown ($p < .05$).

SOURCE: Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 1999-2015.



Data is Liberalized: Interoperability?

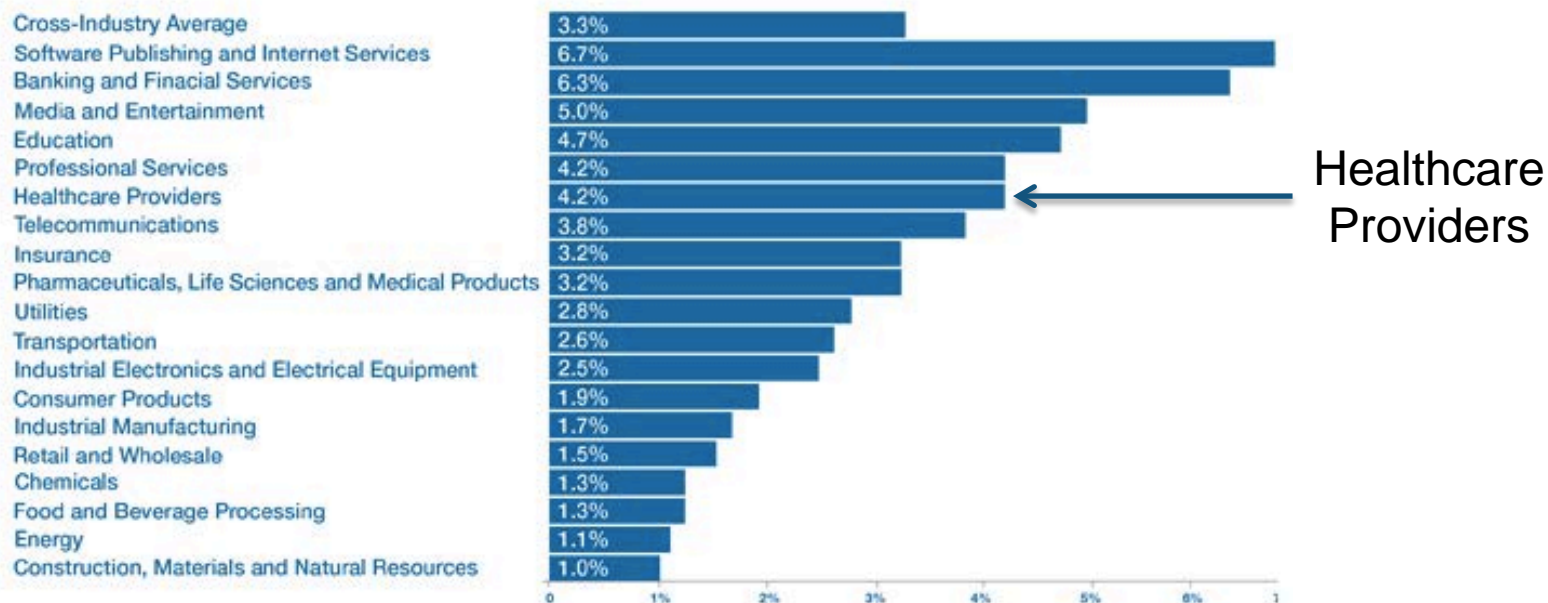
The Start of Something Big From Analytics To Machine Learning to CDS and Prescriptive Analytics



Source: CMS 2015

And We Still Have Headroom on IT Spend In Comparison to Others

IT SPENDING AS A PERCENT OF REVENUE, BY INDUSTRY



Source: IT Key Metrics Data 2014, Gartner Benchmark Analytics

Business Models In Digital Healthcare

Revenue Models

- **Perpetual Licensing** and Maintenance
- **Per click** or Per procedure
- **Software as a Service (SaaS)** & Per Member Per Month (PMPM)

Client Targets

- Enterprise (**Provider, Payor, Employer**)
- **Consumer**

Business Models In Digital Healthcare

Perpetual Licensing & Maintenance

- Aligns selling and implementation costs with revenue
- Can demonstrate rapid revenue ramp and
- Lumpy and unpredictable sales
- Requires maintenance re-up annually

Software as a Service and PMPM

- Aligns use with revenues
- Aligns with user or patient onboarding
- Couples nicely with cloud deployments
- Reduces upfront commitment by client

Per Click or Per Procedure

- Aligns use with revenues
- Requires conversion of customer each click unless “habit” results
- Requires training and implementation investment without known return

Business Models In Digital Healthcare

Hybrid Models

- **Enterprise HIT:** Platform fee upfront + SaaS “per application” fee
- **Digital Health:** SaaS platform fee + Per User Per Month (PUPM)
- **Consumer Health:** Per click fee with migration to SaaS model (upsell via paywall with added services and data network value)

As we will see, Digital Health and several “health IT” plays require human services as a component of the offering (lowers GM)

Business Models In Digital Healthcare Out of Scope (At Risk Models That Require Actuaries)

- Most small companies do not have the data to go “at risk” in any meaningful way
- Can focus on small (5%-20%) “at risk” payment models with clients to demonstrate value without betting the farm
- Should consider the “at risk” business a longer term goal
- “At risk” strategies for small companies play to the idea of “go big or go home”; Unfortunately going home is a probable option for lots of scenarios.

Terms

- **Bookings:** the value of contract between a customer and company (not frequently uniformly time based; examples are 3 vs 1 year contracts). Total Contract Value (TCV) and Annual Contract Value (ACV) are here.
- **Revenue:** recognized when a service is delivered or ratably over a contracted period
- **Monthly Recurring Revenue (MRR):** the recurring revenue on a monthly level. It must exclude the services or one time revenue at a client.
- **Annual Recurring Revenue (ARR):** the annualized MRR
- **Gross Profit:** Revenue minus the costs associated with the revenue

Terms

- **Lifetime Value of a Customer (LTV):** the present value of the future net profit from an individual customer gleaned from the duration of the engagement with the customer.
- **Cost to Acquire Customer (CAC):** the full cost of acquiring users, based on a per user calculation.
- **Weekly/Monthly/Daily Active Users (WAU, MAU, DAU):** The percent of users active on (a) weekly, (b) monthly, or (c) daily basis. The definition of active user is critical.
- **Net Promoter Score:** A measure of brand value and customer satisfaction. The number (out of 100) of individuals who score 9-10 minus those who score 0-6 on the question: “how likely are you to recommend X to a colleague”

Perpetual License and Maintenance

- Lifetime Value of a Customer (LTV)
- Cost to Acquire Customer (CAC)
- DAU/MAU and WAU/MAU
- Net Promoter Score
- Enterprise Sales Efficiency
- “Services” or Subscription Upsell Rates

Per Click & Per Procedure

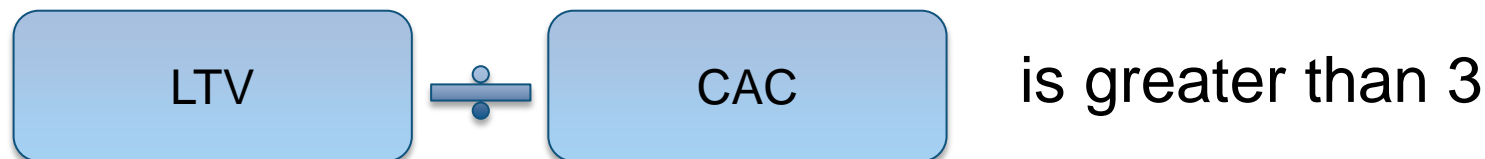
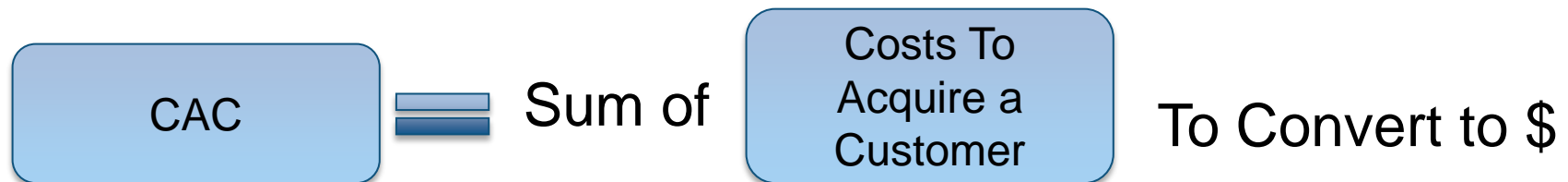
- Lifetime Value of a Customer (LTV) = function of “Reorder Rate”
- Cost to Acquire Customer (CAC): function of Cost Per Lead, Lead Conversion Rate
- Gross Profit and Gross Margin
- Utilization (n/mo) is a function of “Reorder Rate”
- Average Order Size
- Net Promoter Score

SaaS and PMPM

- Lifetime Value of a Customer (LTV)
- Cost to Acquire Customer (CAC)
- LTV/CAC
- MRR (Monthly Recurring Revenue) and ARR (Annual Recurring Revenue)
- DAU/MAU and WAU/MAU
- Net Promoter Score

Guideline 1: $LTV / CAC > 3$

For every dollar spent on acquiring a customer, I get \$3 back in gross profit (over time)



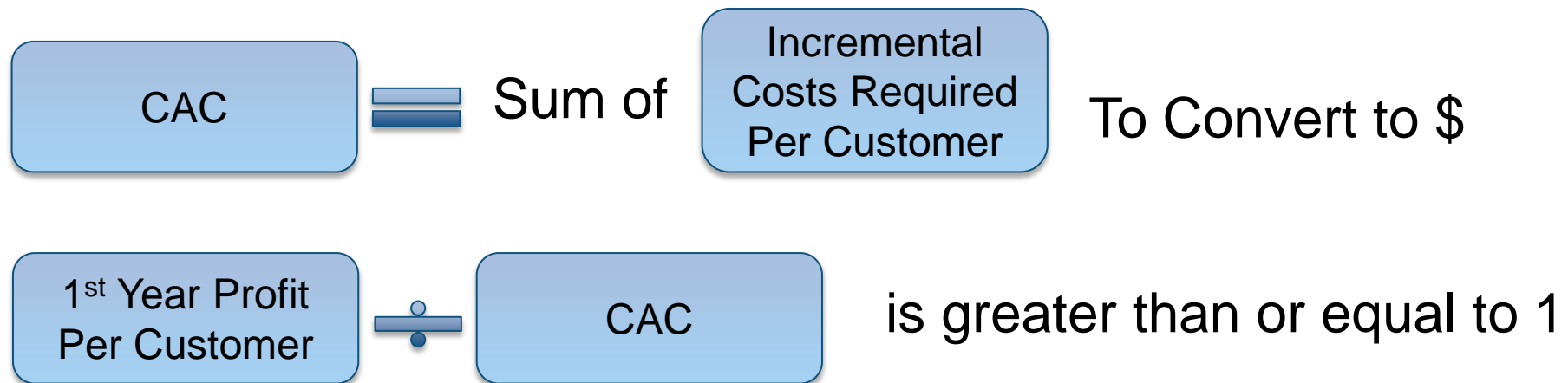
Guideline 1: $LTV / CAC > 3$

LTV can be estimated:

- Net Profit per Customer / Month (revenue per customer – associated costs)
- Monthly Churn
- LTV is estimated to be = Net Profit per Month / customer x (1/monthly churn)
- (blended) CAC can be estimated:
as the delta between time periods(month) of sales and marketing spend
divided by new customers
- LTV/ CAC is then straightforward

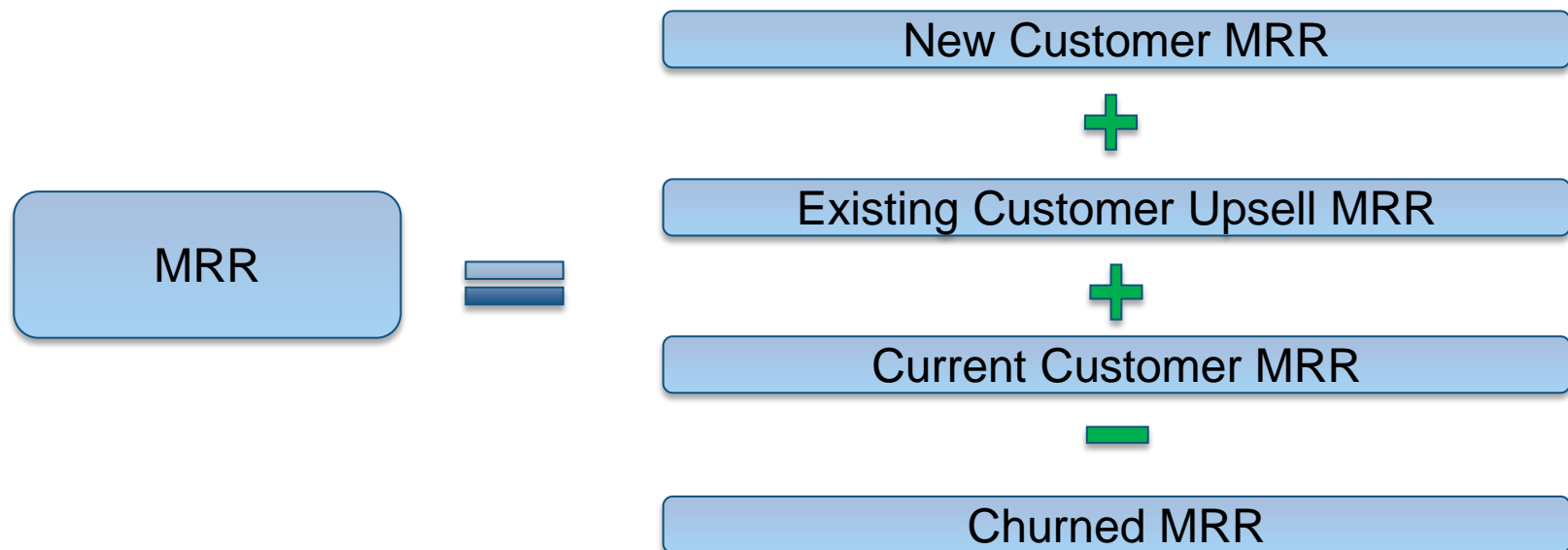
Guideline 2: CAC Recovery < 12 Mos.

The cost to acquire a customer is paid back within 12 months of the investment



Guideline 3: MRR Has 3 Parts (to Manage)

The three components of monthly recurring revenue are useful diagnostics to the health of the story



Guideline 3: MRR Has 3 Parts (to Manage)

New Customer MRR

A measure of the efficiency of 'hunters' (DS)

Existing Customer Upsell MRR

A measure of efficiency of account mgmt (AM)

Current Customer MRR

Measures of efficiency of customer success
(avoid churn) (CSM)

Churned MRR

G4: MAU, WAU, and DAU and DAU/MAU

“Growth hacking” is about creating users that are **highly engaged** and **sticky, happy** and **vocal** about it.

Twitter > 40%

DAU/MAU > 30%

Facebook > 50%

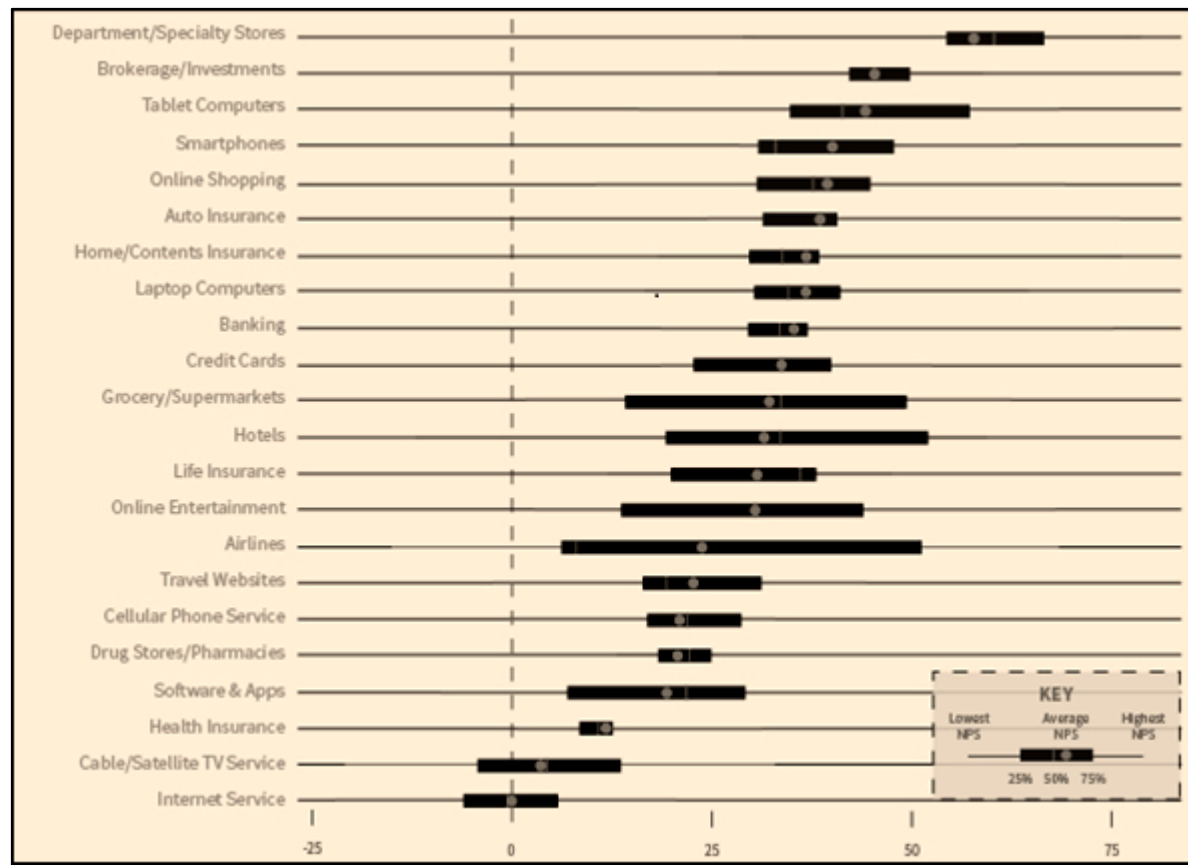
WhatsApp > 70%

G5 - Net Promoter Score® :

Using a 0-10 scale: “How likely is it that you would recommend [X] to a friend or colleague?”

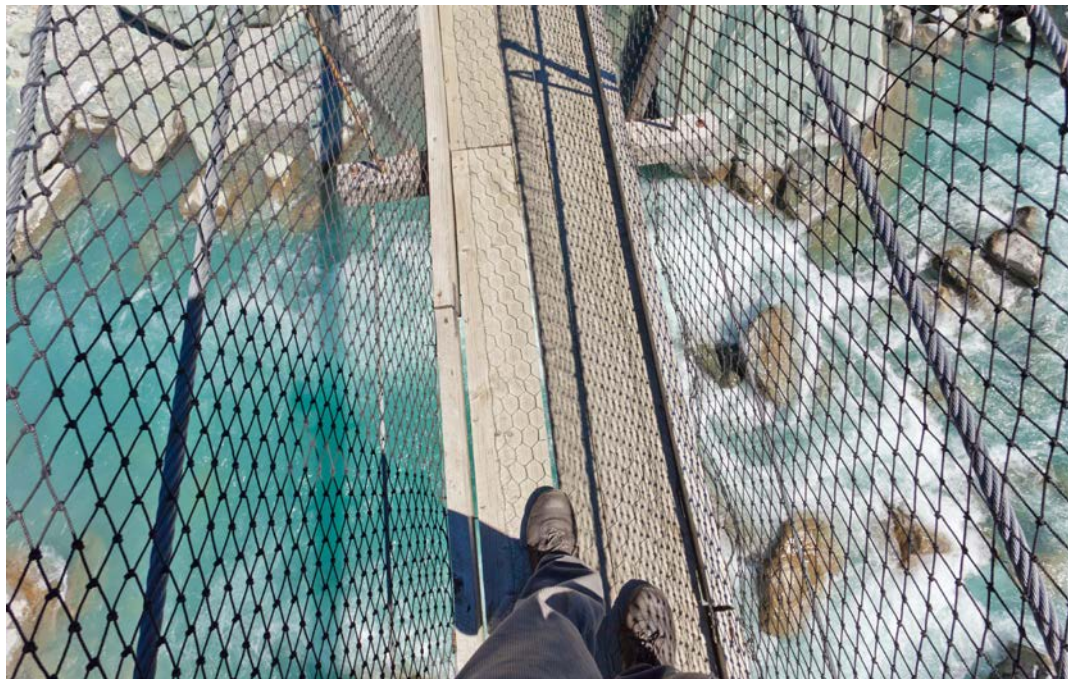


NPS of Smartphones are 30+...



Selling to Healthcare Enterprises

“You’ve got to be very careful if you don’t know where you are going, because you might not get there.” – Lawrence Peter “Yogi” Berra



Selling to (Healthcare) Enterprises

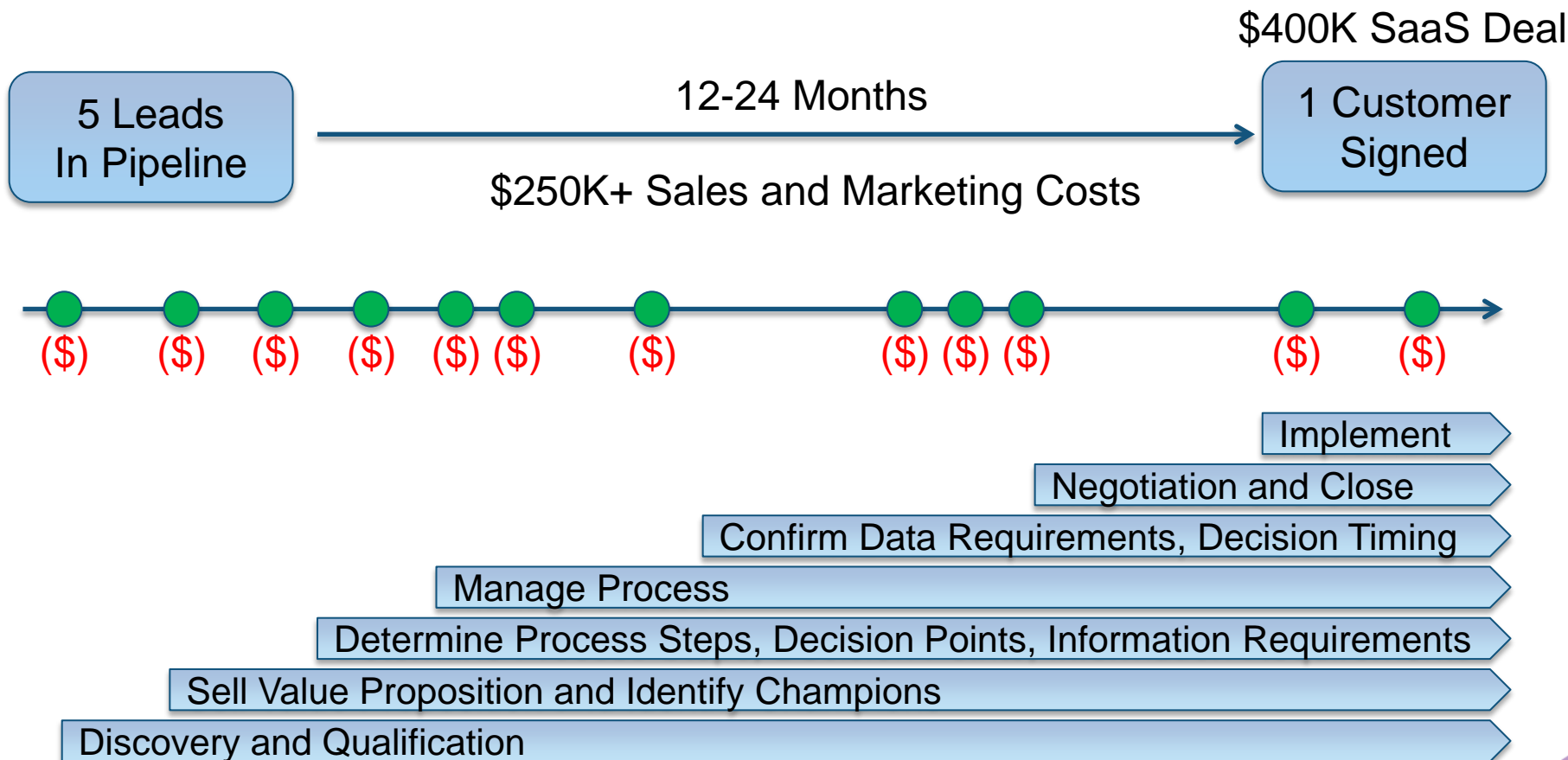
1. **Play** the cycle
2. **Avoid** the cycle
3. **Convert** the pilot (off-cycle)

Selling to Healthcare Enterprises

- **“The Cycle”**: A Sequenced Step of Gatekeepers + A Budget Process
 - Clinical Stakeholders
 - Financial and Operational Stakeholders
 - IT Stakeholders
 - “Process” – Meetings/Reviews/Decision Gates [6-18 months]
- **“The Pilot”**
 - Multiple Stakeholders
 - Can be funded “off cycle” with “grants” or “capital dollars”
 - Define outcomes “On Cycle” to Close a Legitimate Deal
 - Short term “proof of value” is essential in defining a pilot

10% of Pilots are Considered Successful *

Selling to Healthcare Enterprises



One Rational Approach

1. Avoid (early) Complex IT Integrations and Workflow Changes



One Rational Approach

2. Show Value Early (Land and Expand); **DESIGN AND NAIL THE PILOT**



One Rational Approach

3. Use Pilot Data to Cross the Chasm (and then drive further integration or workflow change)



The “B2B2C” Challenge in Healthcare

1. Sell the healthcare enterprise
 - a. ***Sell the individual clinicians***
2. Sell the patient or end consumer to purchase or opt in, or decline opt out
3. Engage and retain the end consumer or patient
4. Demonstrate the value (ROI) to the provider or employer enterprise
5. Expand the contract to more patients or consumers in (1) and (2) ...

This takes substantial time and money
(find a way to ‘go direct to the patient’)

The “B2B2C” Challenge in Digital Health

“Beware of the hunting license if there is no real proof of game” - anonymous



Digital Health and Clinical Outcomes

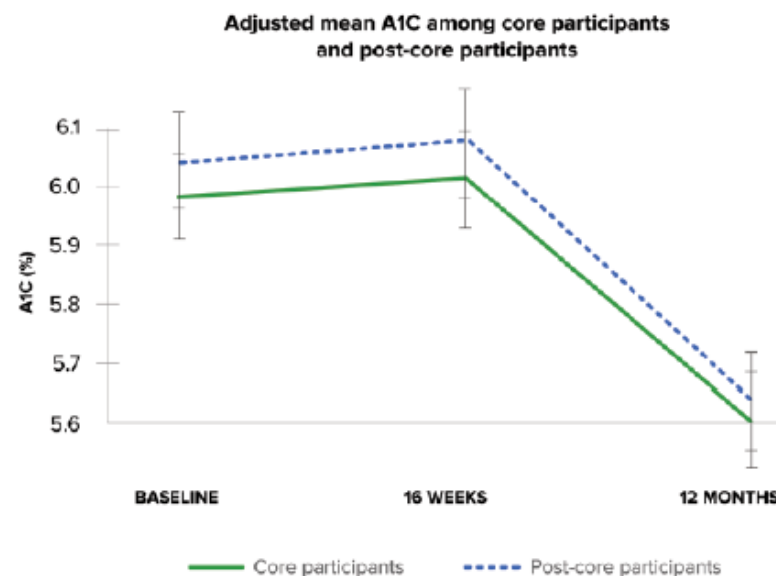
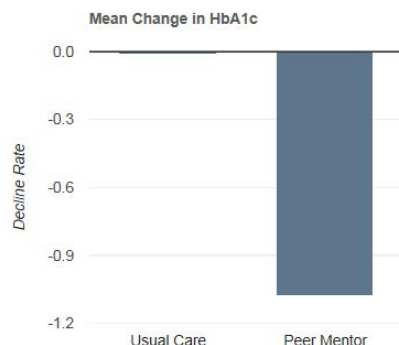
Clinically relevant outcomes are being achieved with digital health offerings, ushering in a new field of Digital Therapeutics

Diabetes Control: 1.08 point average decline in HbA1c

Peer mentorship is a cost effective way of improving glycemic control. In a study done with participants with out-of-control diabetes, those who received weekly contact from a peer mentor had a statistically significant decrease in HbA1c levels by 1.08 points while those with usual care had no improvement.

Published:

Annals of Internal Medicine, 2012



Clinical and Operational Outcomes

1. Significant (statistically) Changes in **Biometrics**
2. Changes in Operational Metrics (**LOS and Throughput**)
3. **Avoidance of Cost** (Procedures, Interventions, or Diagnostic Odysseys)
4. **Increases in Revenue** (market expansion or price increase)
5. **Increases in Gross Profit**

Venture Valuations

- A. Market Value or Comparables (Usually stage or multiples based)**
- B. Sum of Expected Value of Future Cash Flows**
- C. Returns Based Valuation**
- D. Who Knows?**

Comparables (Market Value)

- SaaS companies are currently valued as a multiple of revenues (many are not profitable)
- The multiple of revenues is a function of:
 - **Revenue growth rate**
 - **Gross margin**
 - Defensibility
 - Revenue concentration
 - Average Contract Size
 - Upsell potential
 - Churn
 - Many other factors

Valuation, Revenue Growth & Margin Healthcare SaaS & others

EV/REV = 3.5X

GM = 61%

REV CAGR = 21%

| Name | REV CAGR | EV/REV | GM |
|--------------------|----------|--------|-------|
| Veeva | 32% | 7.6x | 65.0% |
| Teladoc | 51% | 6.0x | 72.9% |
| Athena | 23% | 5.6x | 60.4% |
| Inovalon | 21% | 4.9x | 66.6% |
| Press Ganey | 13% | 4.9x | 53.6% |
| Medidata | 17% | 4.8x | 77.1% |
| IMSHealth | 11% | 4.2x | 51.5% |
| Cerner | 31% | 4.0x | 84.4% |
| MindBody | 45% | 3.8x | 63.3% |
| WebMD | 10% | 3.5x | 61.1% |
| HealthStream | 22% | 2.4x | 57.2% |
| Vocera | 9% | 2.4x | 62.0% |
| The Advisory Board | 32% | 2.2x | 48.7% |
| Allscripts | 1% | 2.1x | 47.8% |
| Imprivata | 23% | 2.0x | 68.1% |
| OmniCell | 10% | 1.9x | 51.2% |
| QSI | 12% | 1.7x | 54.9% |
| Connecture | 16% | 1.1x | 47.6% |
| Everyday Health | 22% | 1.1x | 72.1% |
| Average | 21% | 3.5x | 61.3% |
| Median | 21% | 3.5x | 61.1% |
| Max | 51% | 7.6x | 84.4% |

Valuation, Revenue Growth & Margin SaaS Companies

EV/REV = 6.8X

GM = 70%

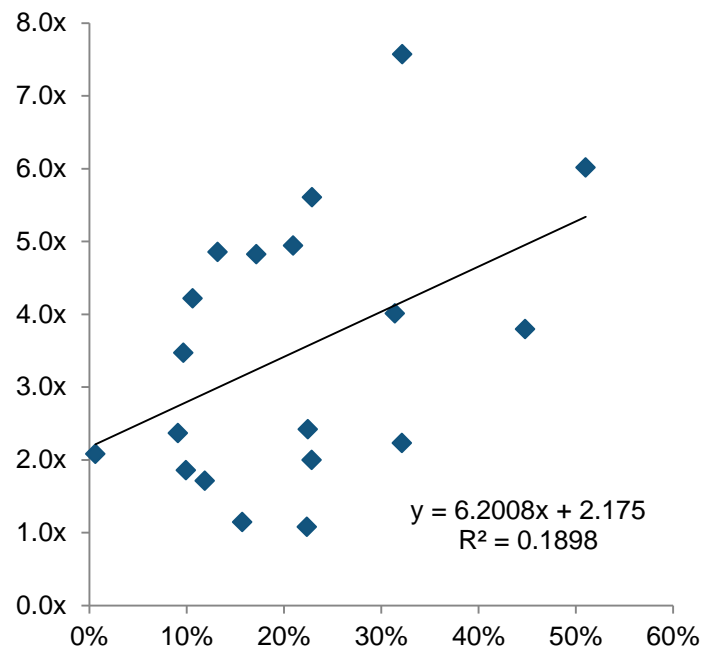
REV CAGR = 37%

| Symbol | Company | CAGR | EV/REV | GM |
|---------|------------------------------|------|--------|-----|
| CRM | salesforce.com, inc. | 32% | 9.8x | 76% |
| BOX | Box, Inc. | 74% | 7.3x | 78% |
| NOW | ServiceNow, Inc. | 47% | 13.5x | 67% |
| CSOD | Cornerstone OnDemand, Inc. | 29% | 5.6x | 68% |
| BNFT | Benefitfocus, Inc. | 35% | 5.7x | 44% |
| MKTO | Marketo, Inc. | 40% | 5.5x | 66% |
| WDAY | Workday, Inc. | 68% | 17.8x | 66% |
| HUBS | HubSpot, Inc. | 57% | 10.1x | 74% |
| ZEN | Zendesk, Inc. | 64% | 9.9x | 68% |
| TWOU | 2U, Inc. | 36% | 7.5x | 79% |
| ATHN | athenahealth, Inc. | 23% | 7.1x | 60% |
| BV | Bazaarvoice, Inc. | 14% | 1.7x | 63% |
| CSLT | Castlight Health, Inc. | 65% | 3.3x | 55% |
| CVT | Cvent, Inc. | 32% | 6.9x | 68% |
| DWRE | Demandware, Inc. | 48% | 7.8x | 72% |
| FLT | Fleetmatics Group PLC | 23% | 6.4x | 74% |
| JIVE | Jive Software, Inc. | 10% | 1.0x | 63% |
| LOCK | LifeLock, Inc. | 23% | 1.7x | 77% |
| LNKD | LinkedIn Corporation | 35% | 9.4x | 86% |
| LPSN | LivePerson Inc. | 14% | 1.5x | 71% |
| LOGM | LogMeIn, Inc. | 22% | 5.5x | 87% |
| MRIN | Marin Software Incorporated | 9% | 1.0x | 63% |
| MDSO | Medidata Solutions, Inc. | 17% | 6.9x | 77% |
| MB | MINDBODY, Inc. | 45% | 4.9x | 63% |
| MOBL | MobileIron, Inc. | 13% | 1.4x | 81% |
| NEWR | New Relic, Inc. | 75% | 14.6x | 80% |
| N | NetSuite Inc. | 33% | 8.9x | 67% |
| PEPT | Proofpoint, Inc. | 36% | 9.8x | 68% |
| QLYS | Qualys, Inc. | 23% | 5.9x | 79% |
| RP | RealPage, Inc. | 16% | 3.8x | 58% |
| RNG | RingCentral, Inc. | 35% | 5.4x | 71% |
| SHOP | Shopify Inc. | 95% | 8.3x | 54% |
| SPSC | SPS Commerce, Inc. | 24% | 6.7x | 68% |
| TXTR | Textura Corporation | 38% | 5.8x | 83% |
| ULTI | The Ultimate Software Group, | 22% | 8.8x | 61% |
| VEEV | Veeva Systems Inc. | 49% | 11.1x | 63% |
| WIX | Wix.com Ltd. | 43% | 3.9x | 83% |
| Average | | 37% | 6.8x | 70% |
| Median | | 35% | 6.7x | 68% |
| Max | | 95% | 17.8x | 87% |

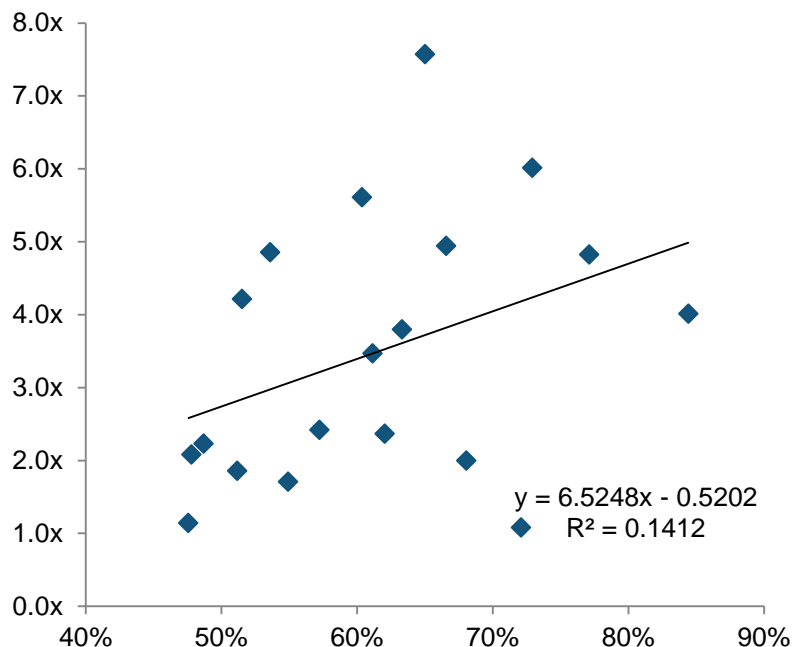
HealthIT and Digital Health Comps (Mkt Value)

(very low R squared = job security)

Enterprise Value / Revenue
vs. % Revenue Growth (yoy)



Enterprise Value / Revenue
vs. % Gross Margin



Present Value of Future Cash Flows

- The discounted sum of expected future cash flows can be used to value an asset.
- In practice, for venture investments, the number of parameters and assumptions is so large and variable that this method provides limited utility (although many of us do attempt it).
- For the purposes of this talk, methods of calculating the net present value of future cash flows of an asset are out of scope.

Returns Based Valuation

- **Series A:** usually the first “institutional money” with \$5M-\$15M in the round
 - Investors expect 10-20*x return
 - e.g.: A \$20M post round would exit at \$200M+
- **Series B:** 2nd institutional round with \$15M- \$30M in the round
 - Investors expect 5-12*x return
 - e.g.: A \$50M post round would exit at \$250M+
- **Series C:** 3rd institutional round with \$20M - \$40M in the round
 - Investors expect a 3-6*x return
 - e.g.: A \$100M post round would exit at \$300M+

Consider Company A

- SaaS Offering
- Total Addressable Market of Over 2K Hospitals
- First Sale to Department or Function at \$50K in ARR
- Realizable “proof of value” ROI in 3 months
- No integration needed at first; able to achieve results with minimal data
- Little change in clinical or operational workflow on first placement
- Upsell and expansion potential to enterprise platform with \$500K ARR potential per hospital
- Data network effects from machine learning

Consider Company B

- Appliance or On Prem Offering
- Total Addressable Market limited to academic medical centers
- First Sale to C suite at \$400K in ARR
- Realizable “proof of value” ROI takes 1-2 years
- Integration with live HL7 feeds and data warehouse required at outset
- Significant change management involving multiple clinical departments
- Limited expansion potential (all or nothing scenario)
- potential per hospital
- No learning or customization over time

Don't Boil the Ocean: Focus on Fast Time to Value and Then Upsell

| | Company A | Company B |
|------------------------------|-----------|-----------|
| Ease of deployment | ★★★★ | ★ |
| Market Size | ★★★★★ | ★★★ |
| Time to First Sale | ★★★★ | ★★ |
| Time to Proof of Value | ★★★★ | ★★ |
| Ease of Integration | ★★★★★ | ★ |
| Degree of Op Change | ★★★★ | ★★ |
| "Trojan Horse" L&E Potential | ★★★★★ | ★★ |
| Data Network Effects | ★★★ | ★★★ |
| Sales Velocity | ★★★★★ | ★★ |
| LTV / CAC | ★★★★ | ★★ |
| Enterprise Value | ★★★★★ | ★ |

Take Aways: Top 10

1. Mid – Big (\$300-\$1B) Markets of Relevance to Customers are Key
2. SaaS Offerings are Valuable; be creative with this business model
3. Clinical and Operation Value Propositions that can be proven are important
4. Time to “Proof Of Value” < 3 mo is very nice
5. A pathway to LTV/CAC > 3 is important
6. WAU or DAU / MAU of > 0.3 is valuable
7. A Net Promoter Score of 25% or above invites a smile
8. A Land and Expand Product Offering that can 3-5x the MRR /client is good
9. Data Network Effects (BI and Machine Learning) are valuable
10. Beware of B2B2C models with “empty” hunting licenses
11. Focus on customer success to drive NPS (which will lower effective marketing costs)

Questions

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