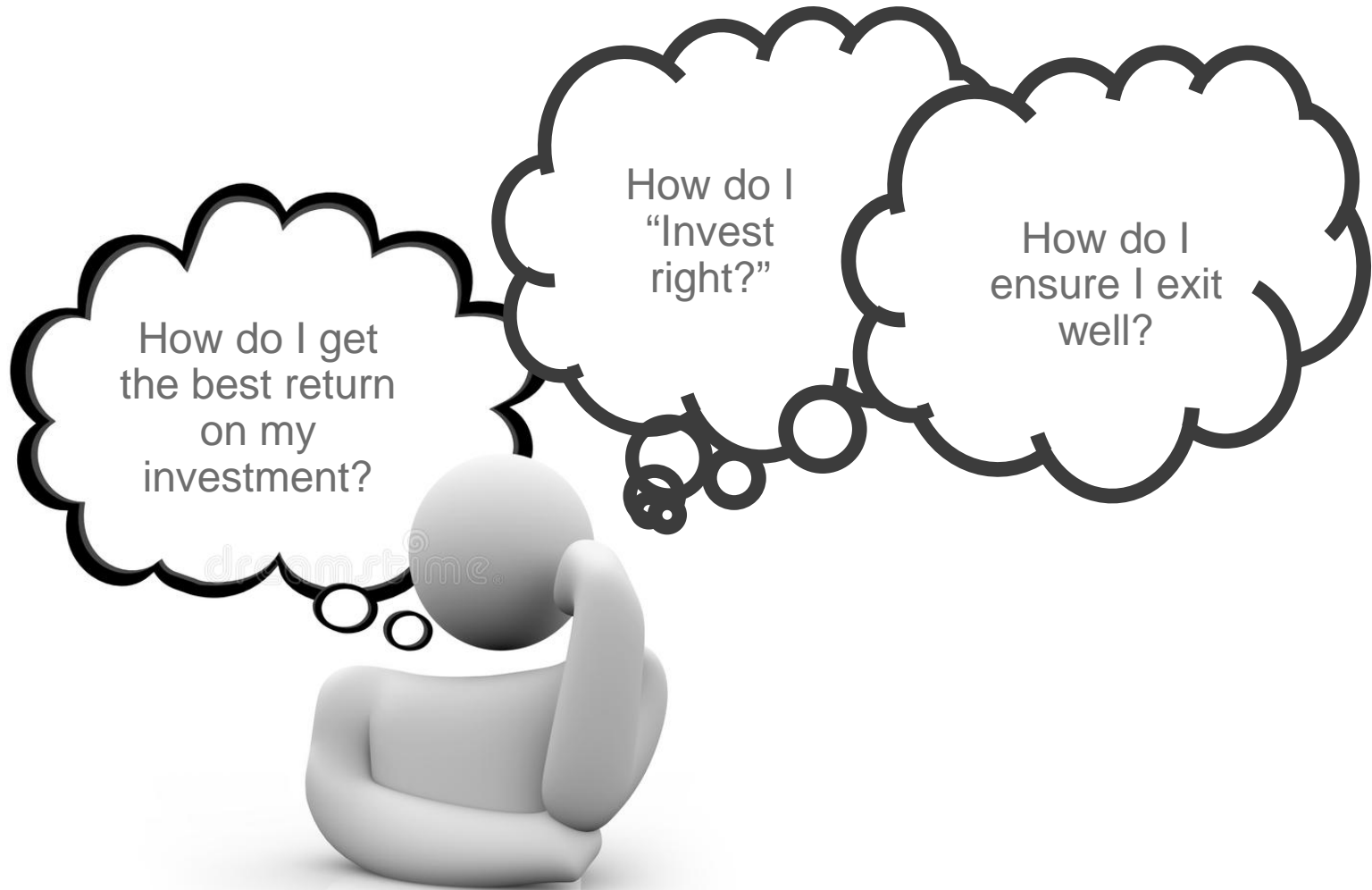




CORUM
**Top Ten Tech Trends
Driving M&A**

Three Questions I always get from Investors



Three Questions I always get from Entrepreneurs





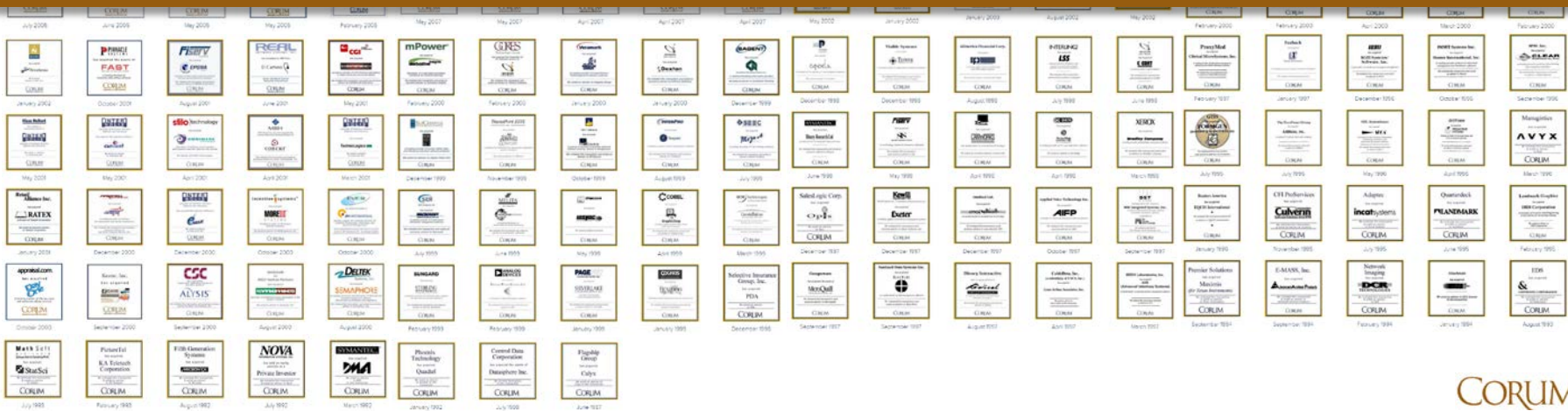
Agenda

- Setting the stage
- Top 10 disruptive technology trends - and why they matter
- Who's buying?
- How much are they paying?
- Some closing thoughts

Representative Corum M&A Transactions



Unique Viewpoint: Sold More IT-related Companies than Anyone in the World



Global Perspective : 60% of transactions cross border

Headquarters
(Seattle, USA)



Our Foundation...



Research

Education

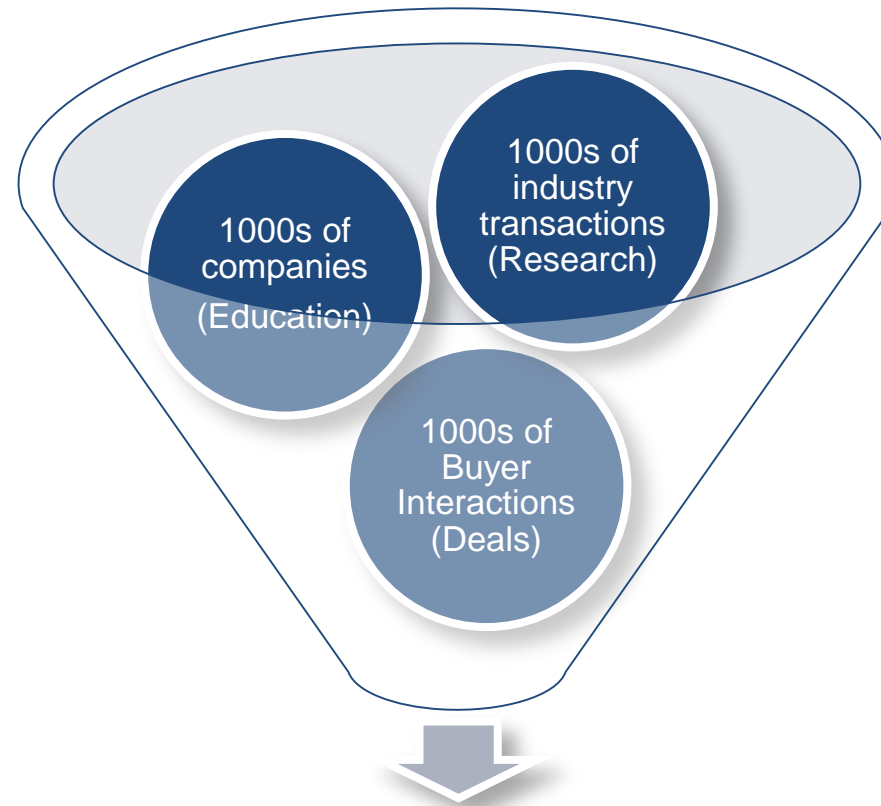


HANDBOOK
OF BUSINESS
VALUATION

Second Edition

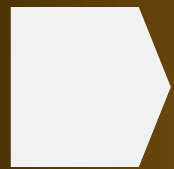
Valuation

Leverage of Corum's Unique Perspective and Global Reach



Top 10 Technology Trends Driving M&A

TOP TEN



**disruptive technology
trends . . .**

and why they matter

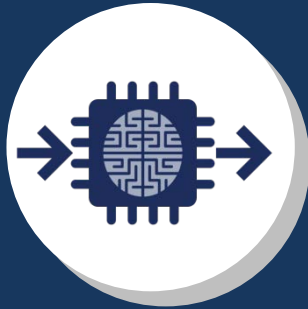
Technology Trends Do Matter

1. Trends create **change**
2. Change drives **strategic imperative**
3. Strategic imperative drives **acquisitions**
4. Well-positioned companies get **sold**

So ... Alignment is Important!

Corum Top Ten Technology Trends 2017

CORE



AI Enablement



IoT Software



Visual Intelligence Systems



Digital Currency Flow



Data Science Monetization

CONTOUR



Online Exchanges



Omni-channel Sales



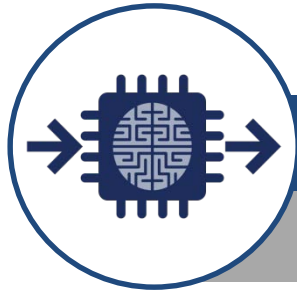
Connected Health



Focused IT Services



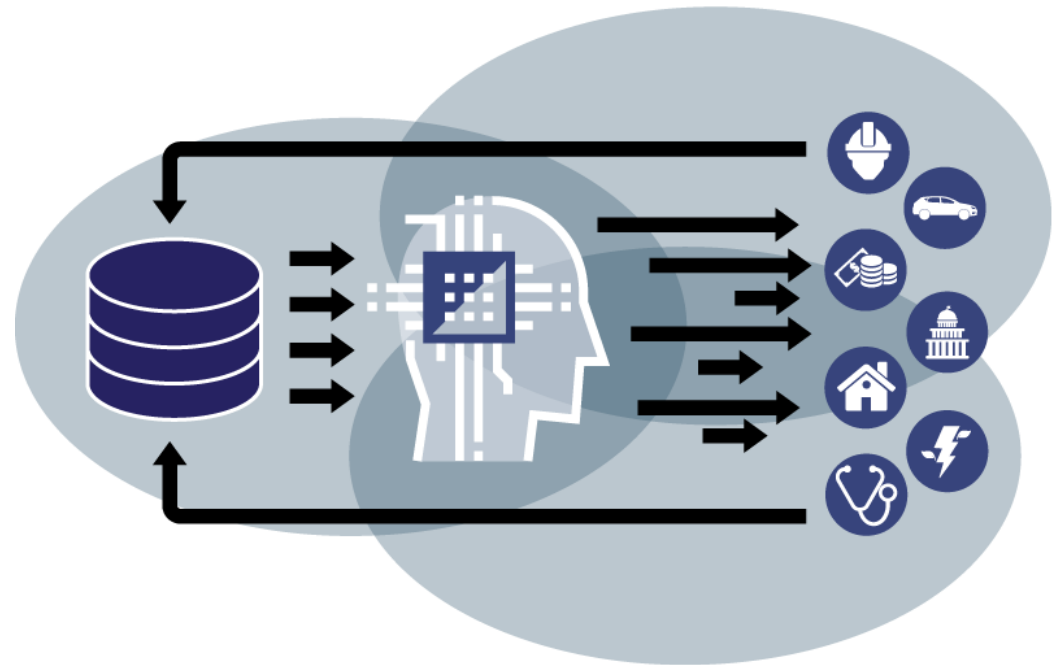
Data Security


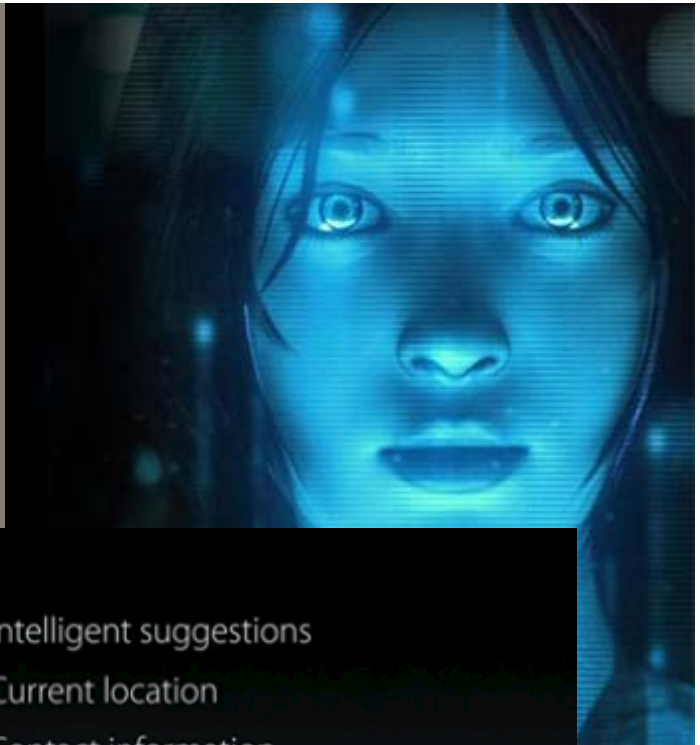
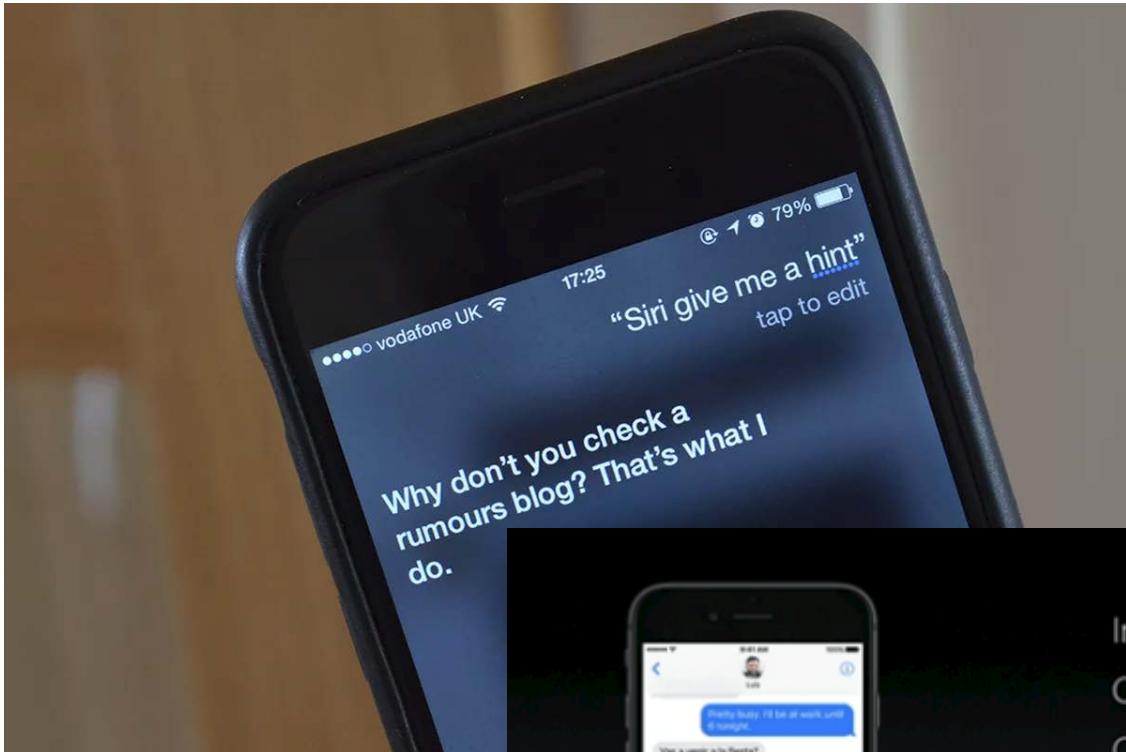


#1: AI Enablement

Putting AI to work by means of big data and feedback

- Nascent AIs and other machine learning platforms need data.
- Need tasks that provide data, benefit from improving expertise, then provide feedback to improve the platform.
- Business cases emerging rapidly across all sectors.
- Significant stores of unique data can short-circuit “build vs. buy” debates in M&A.

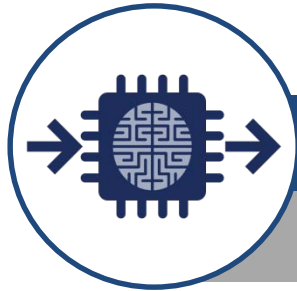




Intelligent suggestions
Current location
Contact information
Intelligent scheduling
Calendar availability
Recent addresses
Lookup
Multilingual typing

onds

The central graphic features a smaller smartphone screen showing a text conversation. The messages include: "Really busy, I'll be at work until 8 tonight.", "Was a vent to Tenda?", "I don't know, no punto de vista.", "I'm driving if you want a ride.", "I can pick you up at 7 and we can grab a bite before.", and "¿De verdad? Then I did!". Below the messages is a standard QWERTY keyboard. To the right of this graphic is a list of features, and below it is the word "onds".



#1: AI Enablement

Putting AI to work by means of big data and feedback

- Dramatic demand for all things AI: 62% CAGR - \$16B market by 2022
- Over 400 AI-related acquisitions since 2012 alone
 - Salesforce acquired BeyondCore (\$110M) – Business Intelligence
 - Oracle acquired Crosswise (\$50M) – Mobile ad tracking
 - Infor acquired Predictix (\$125M) – retail forecasting
 - LinkedIn acquired Connectifier (\$105M) – recruitment engine
 - IBM acquired Truven (\$2.6B) – “200 million lives”
- Becoming ubiquitous - soon, tech companies not AI-enabled will become unsellable



#2: IoT Software

Emerging platforms, standards & analytics

- Internet of Things (IoT) growth brings us into its first full software cycle.
- Each “Thing” needs platforms, communication, analytics, etc.
- Competing platforms and associated ecosystems beginning to coalesce.
- IoT software often, but not always, inextricably enmeshed with hardware.
- Compatibility-driven, as in other cycles of disruption.



THE INTERNET OF THINGS

- 2016 Spending: \$737 Billion
- Growth rate: 15%+ annually - by 2020: \$1.3Trillion market!
- Most of the hype is in Consumer
- Most of the action is in B-to-B – especially manufacturing, transportation & utilities



#2: IoT Software

Emerging platforms, standards & analytics

- New players constantly emerging
- Alliance networks forming to drive standards
- Some consolidation around Google (Android Things), GE (Predictix), PTC (ThingWorx) and Siemens (MindSphere)
- Industrial firms top buyers in 2016 – security, analytics, connectivity, controls, data storage
 - Siemens acquired Mentor Graphics (\$4.5B)
 - GE acquired ServiceMax (\$1B) - and 6 others
- Compression of IoT tech cycles resulting in consolidation on both the platform and hardware fronts this year



#3: Visual Intelligence Systems

Intersection of AI, computer vision & analytics

- Evolution of Positioning Intelligence beyond GPS required computer vision.
- Drones and self-driving cars driving advanced vision tech with even larger implications.
- Retail, security, energy, agriculture, advertising are all being impacted.
- Companies creating practical solutions with this tech—especially utilizing analytics—are in high demand.





#3: Visual Intelligence Systems

Intersection of AI, computer vision & analytics

- Mashing of technologies continues to drive M&A
 - Intel acquired 15% stake in HERE (mapping and location services – owned by consortium of car manufacturers)
 - evolving into software companies - collect, process and act upon not only street and location data, but also object, vehicle, human, and behavior.
 - eBay acquired Corrigon (image analysis and visual search)
 - Netgear acquired Placemeter (vision algos into Arlo Smart Home security)
- Huge leaps in facial recognition and embedded analytics (e.g. drones)
- Visual Intelligence poised to transform nearly every sector of economy



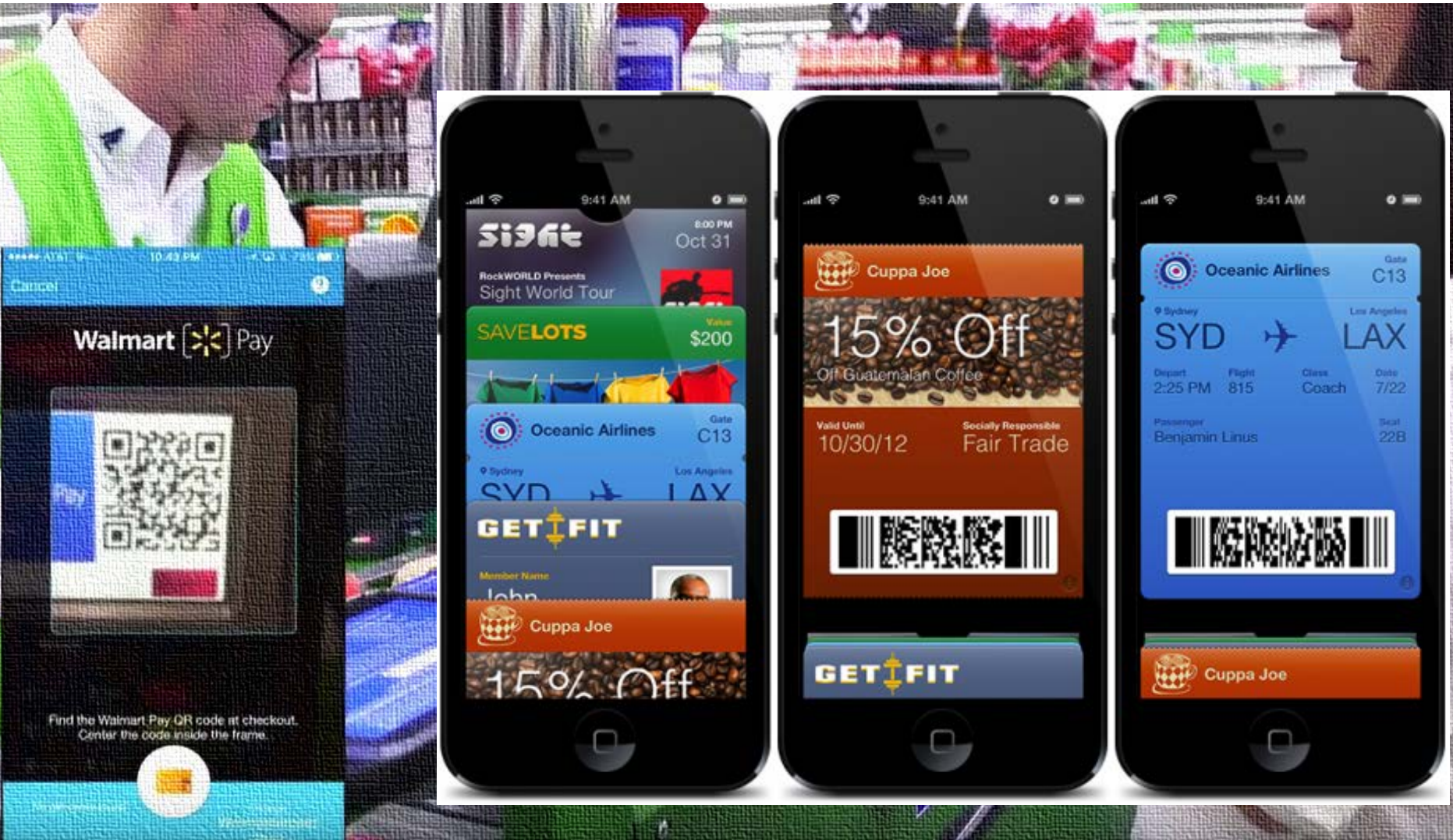
#4: Digital Currency Flow

Decreasing friction in payments & exchange

- Currency flow moving towards fewer barriers, reduced regulation and less friction on transactions globally.
- Banks face competition from nimbler mobile and web point solutions.
- Includes alternative currencies—from blockchain/bitcoin to in-game currencies to Starbucks payments.
- Software & systems that speed or harness payment flow have significant potential.



Digital Wallets





#4: Digital Currency Flow

Decreasing friction in payments & exchange

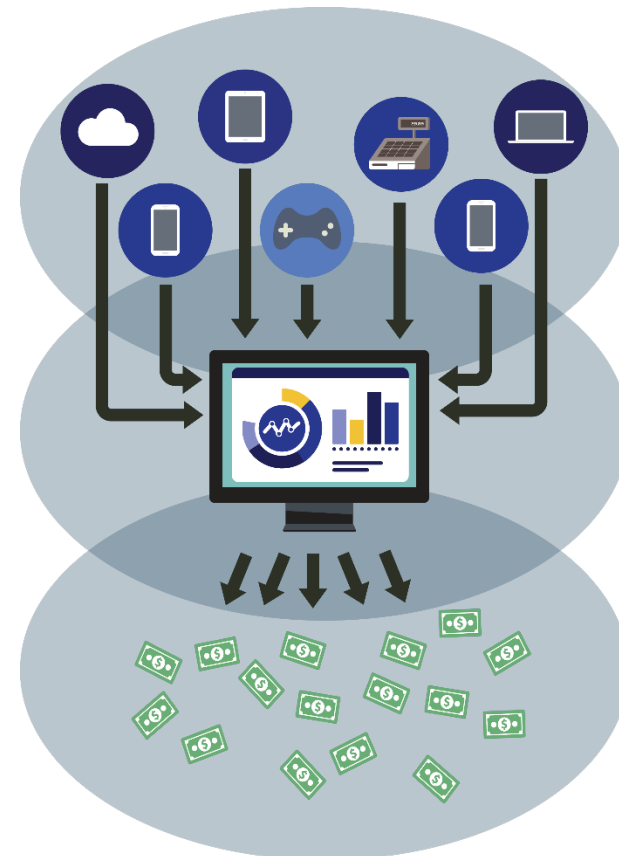
- M&A driver: consumer expectation for payment to be mobile, personalized, customizable and accessible 7x24 – this will not change soon
- Credit card companies are becoming technology companies / electronic exchanges – EMV chips in credit cards
- Demand areas - payments technology, anything facilitating automation and improved efficiency of banking, insurance, POS, wealth management, robo-advisors and lending
- Huge continuing interest in all things Distributed Ledger (Blockchain)



#5: Data Science Monetization

Maximizing return with real-time analytics

- In a world of freemium, free-to-play & declining ad effectiveness, turning users or viewers into dollars is a premium capability.
- Robust analytic tools are no longer optional, especially for consumer-facing companies.
- Gaming companies are leading the way, deriving value from their analytic capabilities as much as entertainment.
- Video ads are close behind with opportunities in e-commerce, brick & mortar, B2B and beyond.

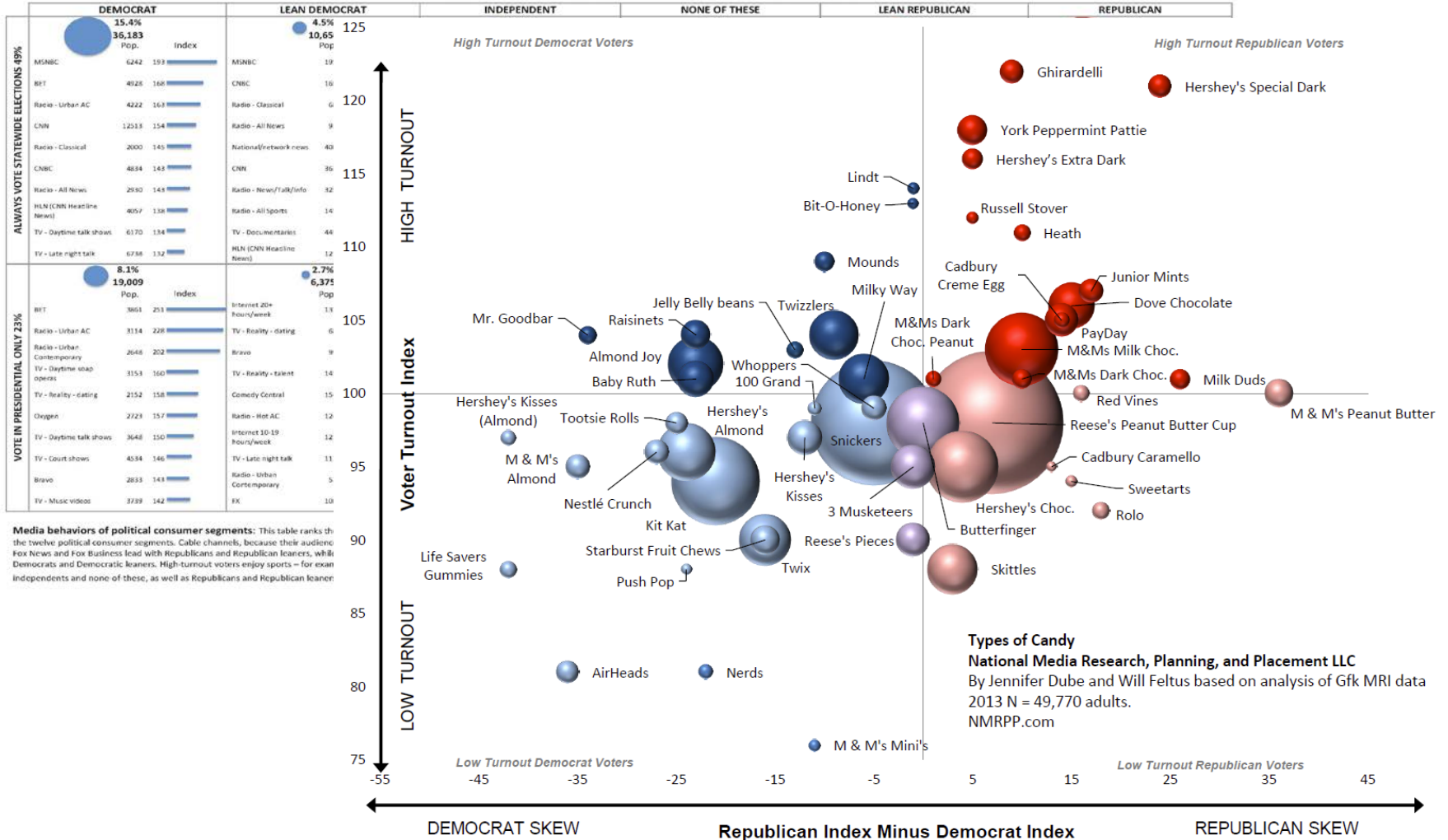


Increasingly, Data Defines Us

- We are increasingly interconnected
- Every click we make in cyberspace can be tracked
- Our cell phone broadcasts our geolocation constantly
- All our purchases are cataloged somewhere
- Taken together, this information can be analyzed to paint a behavioral picture of us
- Companies are paying a premium for new, or better, ways to monetize this data

Monetization Examples

MEDIA CHARACTERISTICS OF 12 KEY 2012 VOTER GROUPS





#5: Data Science Monetization

Maximizing return with real-time analytics

- Key to value is finding more and more information about how customers use your software, when they pay for it, and why they spend even more
- SaaS providers tracking successful and unsuccessful strategies within an ecosystem can provide monetization capability to customers, for everyone's benefit
- Short-term focus on monetizing video advertising
 - Facebook acquired LiveRail
 - Adobe acquired TubeMogul
- Work out how to find the shortest possible distance between the data and the money – you will be bought!



#6: Online Exchanges

Connecting creators & consumers

- Uber & others recharging the concept that created online commerce, putting unused capacity to work.
- Not just connecting buyers & sellers, but creating previously non-existent opportunities on both sides.
- Disruptive opportunities include:
 - Personalization
 - Real-time commerce
 - Financial disintermediation

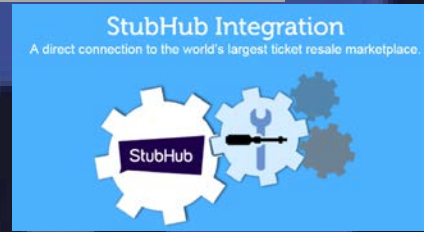




#6: Online Exchanges

Connecting creators & consumers

- eCommerce : \$2 Trillion in 2016
- Driver: need for new technology
- Established exchanges and enabling tech is in demand
- Traditional players growing via acquisition
 - e.g. eBay's Stubhub acquired Ticketbis and TicketUtils
- New buyers jockeying for position
 - e.g. Ritchie Brothers acquired IronPlanet
- Companies with technology that successfully connects sellers and buyers in unique ways will continue to be in demand





#7: Omni-Channel Sales

Purchasing decisions anywhere, any platform

- Consumer platforms & devices continually fragmenting.
- Marketing keeping pace – next challenge is sales, both decision points and actual purchase.
- Point at which money changes to product must be immediately with customer, moving closer by being on their favorite device.
- Persuasion must move there as well, taking new forms as it does.
- Consumer brands leading the way, but enterprise is not far off.





#7: Omni-Channel Sales

Purchasing decisions anywhere, any platform



- All businesses seeking to bring persuasion and purchasing as close to the customer as possible
- Spurring demand for personalization, analytics and engagement
- Lots of M&A Activity
 - Salesforce acquired Demandware (\$2.8B)
 - Microsoft acquired LinkedIn (\$26B)
 - Many, many others
- More to come as technology meets challenge of facilitating seamless customer experience



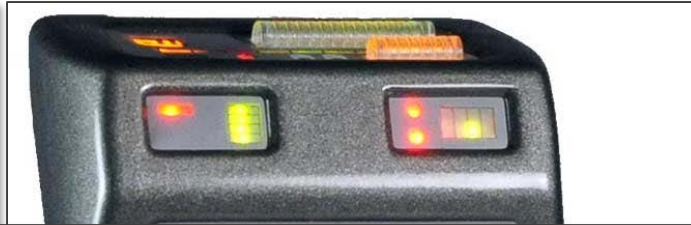
#8: Connected Health

Linking people to their health data & services

- Technological, regulatory and demographic changes converging to create significant opportunity.
- Leveraging new tech: smartphones, trackers, connected medical devices, genomics, remote monitoring.
- Improved self-care and remote care/diagnosis.
- Makes healthcare more patient-centric by enabling healthcare consumerism.



Spock's Tricorder





#8: Connected Health

Linking people to their health data & services

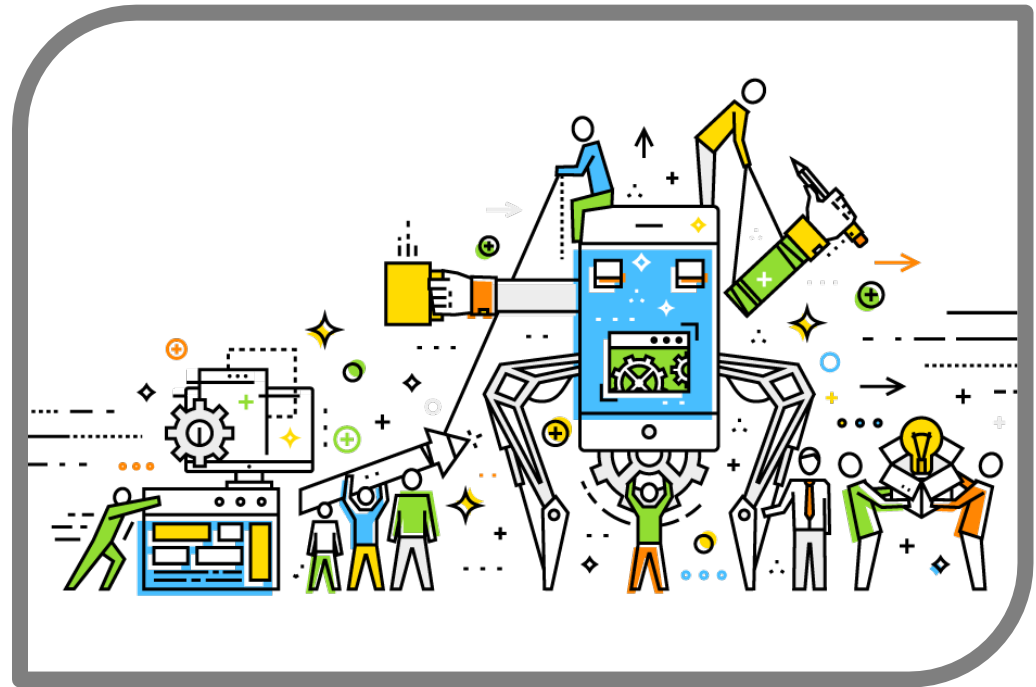
- M&A Drivers:
 - demand for improved interoperability between previously isolated data for population health analytics, genomics, and predictive and personalized medicine
 - demand for healthcare transparency as individuals creating and curating their own health data
 - demographic change tailwind
- Connecting with patients - more money spent on patient engagement solutions than on typical EHR M&A
- Feeding frenzy will continue:
 - Wolter acquired EMMI (\$175M)
 - TeleDoc acquired HealthiestYou (\$155M)
 - Swedish PE EQT acquired Press Ganey (\$2.3B)



#9: Focused IT Services

Differentiation drives new value in a sleepy sector

- New and more pervasive technologies creating new needs for maintenance, extension and utilization.
- Teams that provide customer value around a specific technology, sector or problem are seeing increased value.
- Buyers seeing more value in purpose-built IP emerging out of services firms.
- Services on the edge of key trends seeing particular interest.





#9: Focused IT Services

Differentiation drives new value in a sleepy sector

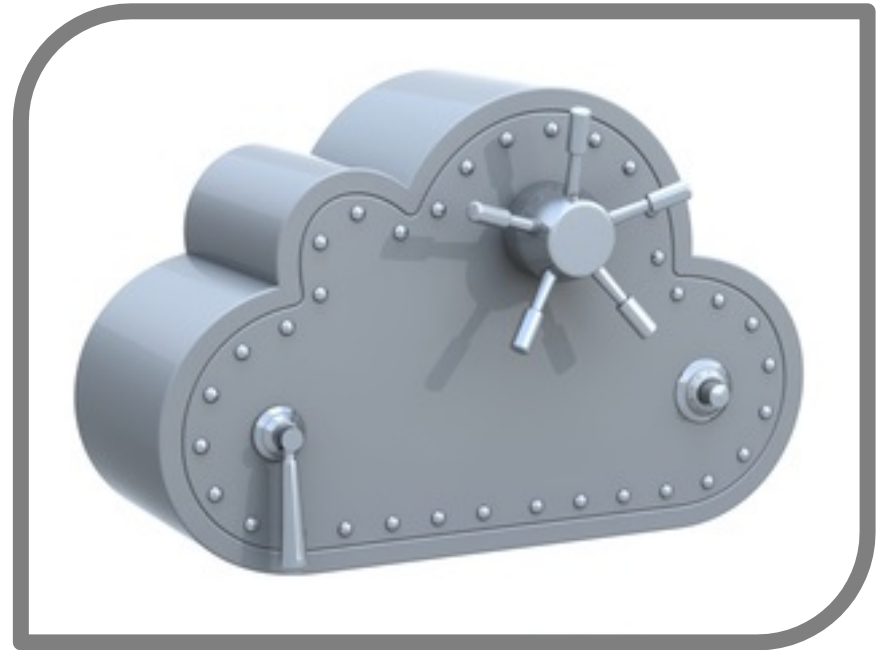
- Demand for IT Services firms focused on a particular platform or vertical industry interest has doubled valuations since 2012
 - These deals are clustering around vertical domains such as CRM, supply chain, and HR
 - In 2016, CRM deals exceeded 16 acquisitions of Salesforce-based services companies alone
- Better alignment of business processes and best practices with new systems has become fundamental



#10: Data Security

Building barriers in an age of blurred lines

- New technologies creating new risks from freer flowing data.
- High impact breaches (DNC, Yahoo, Dyn DNS, Oracle Micros) drive broad recognition of security needs.
- Key trends include security analytics, rapid detection & in-process threat response.
- Internet of Things opening a new front in this fight – the Dyn DDoS attack came from infected IoT devices.



Cyber-criminals Attack Almost Immediately

- Security firm set up a “honeypot” – superficially resembling real servers but with sensors to map attack activity
- Highly automated attack tools (“attack bots”) assaulted system within 71 minutes of being switched on
- A wide variety of attack bots probed the servers seeking weaknesses - unrelenting and continuous
- After 21 hours - the first booby-trapped phishing email targeting employees
- About 15% of the emails contained a link to a compromised webpage that, if visited, would launch a further attack

BBC experiment August 2017

Cyber-criminals Attack Almost Immediately

- 17% of the attack bots were spiders that sought to suck up all the web content they found
- 37% looked for vulnerabilities in web apps or tried well-known admin passwords
- 10% checked for bugs in web applications the servers might have been running
- 29% tried to get at user accounts using brute force techniques that tried commonly used passwords
- 7% sought loopholes in the operating system software the servers were supposedly running

BBC experiment August 2017



#10: Data Security

Building barriers in an age of blurred lines

- Will remain a Top Ten trend for a VERY long time
 - “Arms Race” of Measure / Counter-Measure
- Big security firms can’t keep up with pace of innovation – but CAN fill product gaps and acquire innovative teams
 - Symantec acquired Blue Coat (\$4.7B) and Lifelock (\$2.3B)
- Huge demand for
 - predictive threat intelligence
 - multi-factor authentication
 - highly secured cloud platforms for short-term sharing of data
- Add to this - By 2020 there will be an estimated 80 billion connected IoT devices to protect!

Why These Trends Matter

CORE

CONTOUR

- If you are not aligned with these trends you will be swamped by them
- If you are not aligned with these trends you may not get buyer attention
- If you are not aligned with these trends you will not secure an optimal exit

Online
Exchanges

Omni-channel
Sales

Connected
Health

Focused IT
Services

Data
Security



These trends
determine who
will buy you –
or whether
you'll be
bought at all !



Who's buying?

Types of buyers and what's driving M&A

M&A “Forcing Function”

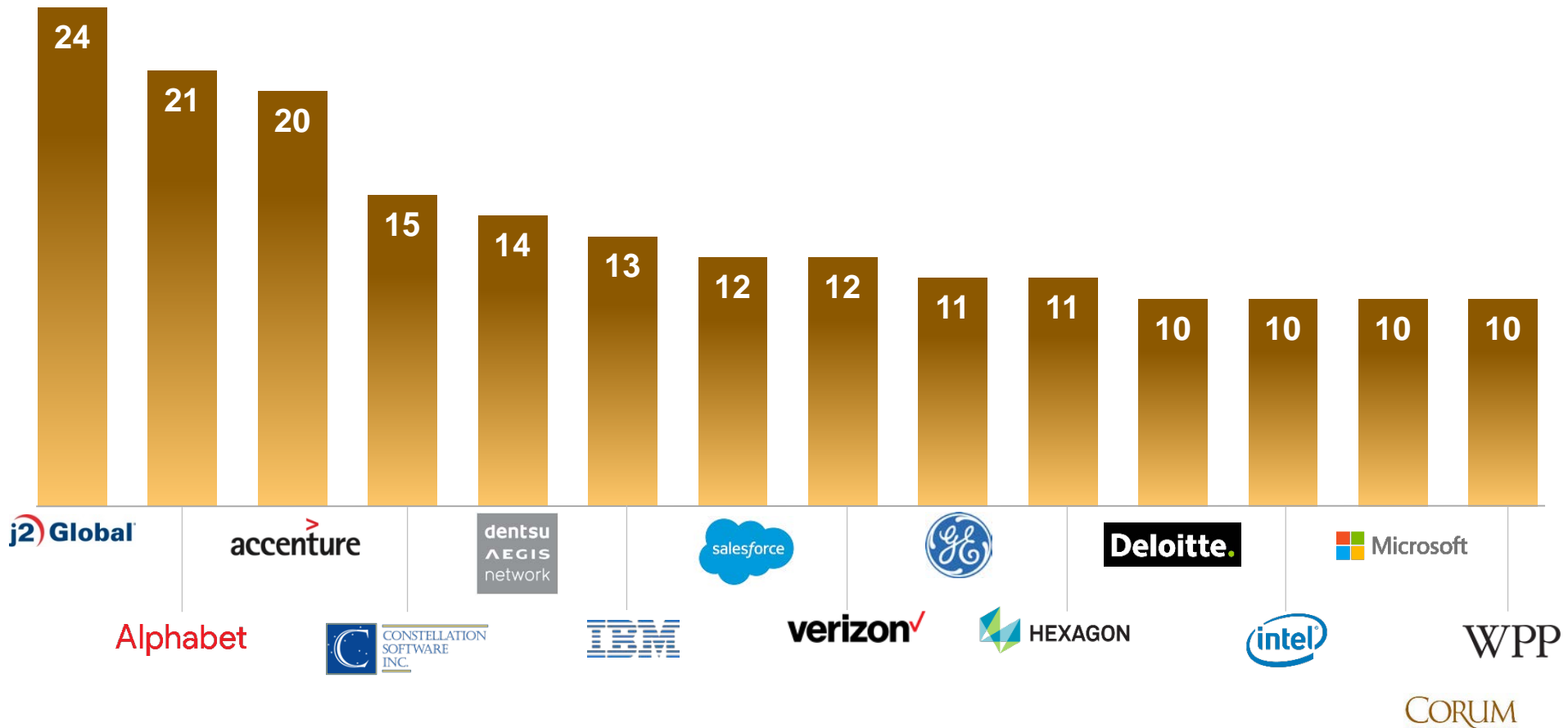
- As a group, large companies are not good at innovation
 - Three year failure rate for internal innovation is the same as for any startup
- But, large companies are very good at scaling businesses
 - that’s how they got to be big!
- Have to buy to survive and thrive
- What and when they buy depends on their strategic imperatives

Strategic Buyers (\$1T cash)



- Complementary products/services/ distribution
- Similar businesses – different geography
- Part of your “food chain”
- New advanced technology
- Competitors (approach with caution)

Top Strategic Acquirers – 2016

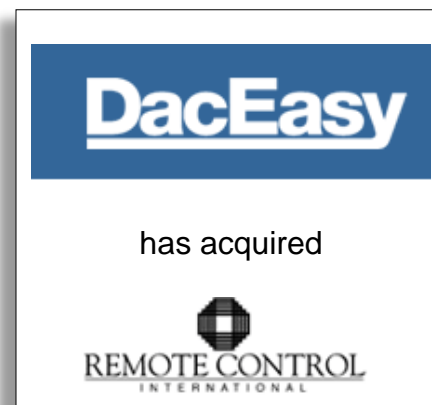


It's Not Just About Technology

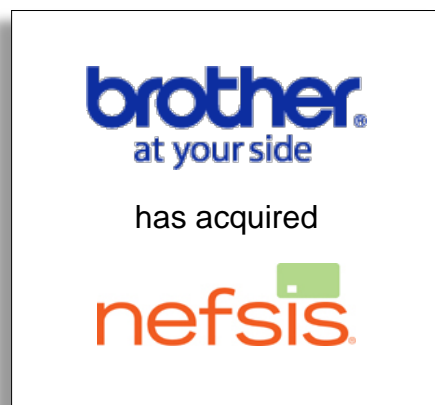
User Base – NT



Agent Network



New Market Opportunity



Market Solution



Other Compelling Reasons

Content Purchase



has acquired



Market Beachhead



has acquired



Domain Expertise



has acquired



Management Team



has acquired



Unusual Circumstances

RAPID Divestiture



Apax
PARTNERS

ADVENT CDP Capital PARTECH INTERNATIONAL

has acquired

CARTESIS[®]

(a division of PricewaterhouseCoopers)

Conflict of Interest



DST
SYSTEMS

has acquired

MSE Integrated
Systems

(a subsidiary of the Chicago Stock Exchange)

Expanding Footprint

International Expansion

Kewill
systems

(Kewill Systems Inc., a subsidiary of Kewill Systems plc)

has acquired

Exeter

New Technology Partner

IDEXX
LABORATORIES

has acquired

**Advanced
Veterinary Systems**

Financial Buyers (\$3T cash)

MARLIN EQUITY
PARTNERS

TA Associates

THOMA BRAVO

AKKR

ACCEL-KKR



Riverside



VISTA
EQUITY
PARTNERS

- Financial engineers (“smart money”)
- Some high-volume, tech-savvy firms
- Others lower volume and/or less tech-savvy
- Usually cash – be careful of complex structures
- Primarily concerned with ROI
- Usually plan to hold and sell again
- Due Diligence is tougher (NO leverage)
- Platforms, bolt-ons, roll-ups

Private Equity Portfolio Companies

- Financial buyers behaving like strategics
- Deploying cash through portfolio companies
- Doing deals for strategic reasons (technology, footprint, channels, etc.)
- Often with strategic prices



TA Associates



MARLIN EQUITY PARTNERS



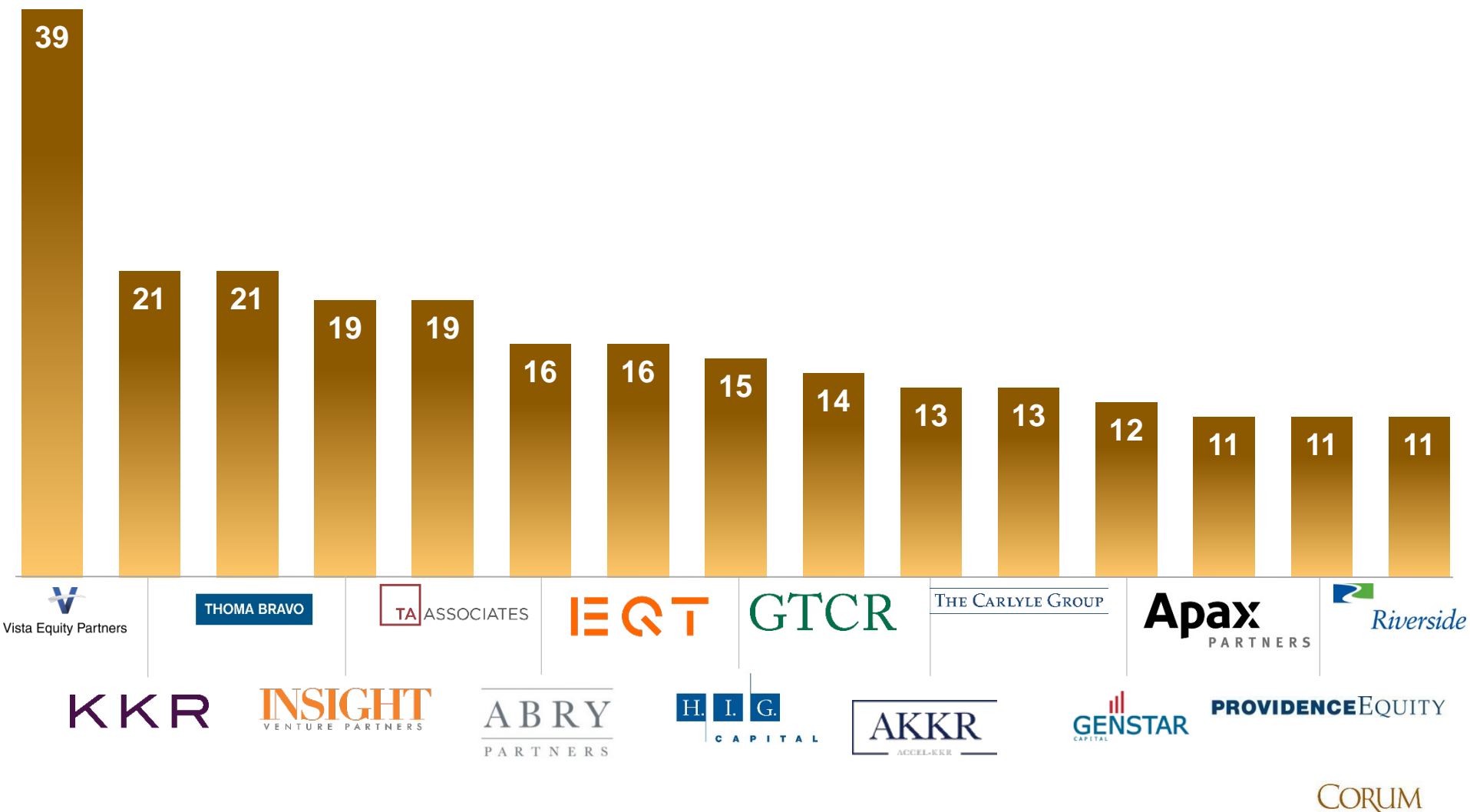
Bregal Sagemount



BC Partners

CORUM

Top Private Equity Acquirers – 2016





**How much are
▶ they paying?
Valuations and the
market today**

Some Facts About Value

- Value is “relative”
- Value to a buyer depends on its strategic imperatives at the time of purchase
- So value depends on the seller’s unique mix of attributes

Value Is Driven By A Range Of Dynamics

MARKET

- Market Growth
- Market Position
- Level of Competition
- Barriers to Entry/Exit
- Threat of Substitution

ORGANIZATIONAL

- Leadership
- Talent/Skills
- Product/Technology
- Sales Channels
- Customer Base

FINANCIAL

- Revenue
- Earnings
- Growth Rate
- Cash Flow
- Balance Sheet

Top 10 Intangible Assets that Add Value

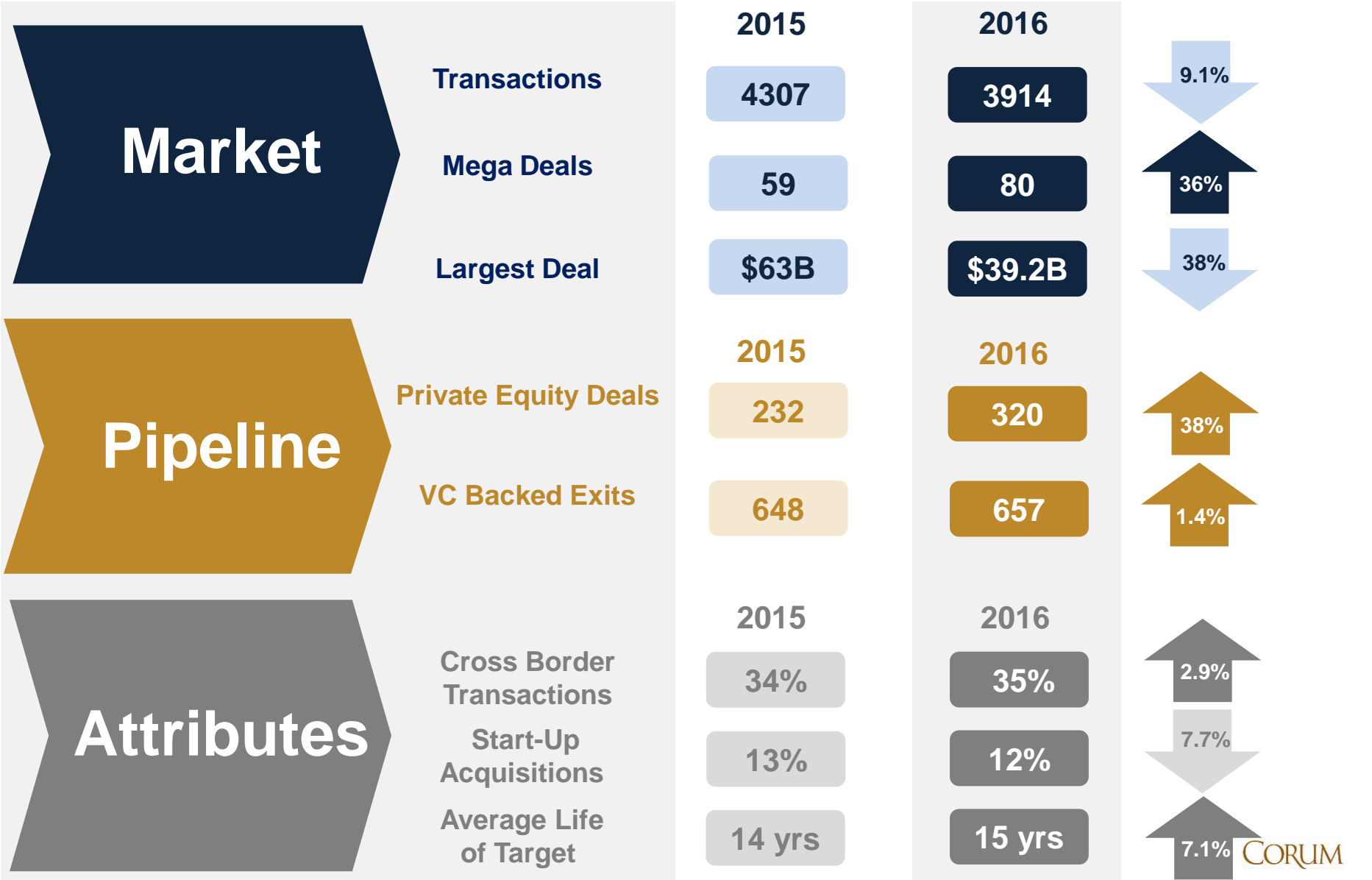
- ✓ Intellectual property
- ✓ User base
- ✓ Channels
- ✓ Leads
- ✓ Domain Expertise
- ✓ Alliances
- ✓ Staff
- ✓ Technology
- ✓ Processes
- ✓ Web-SEO



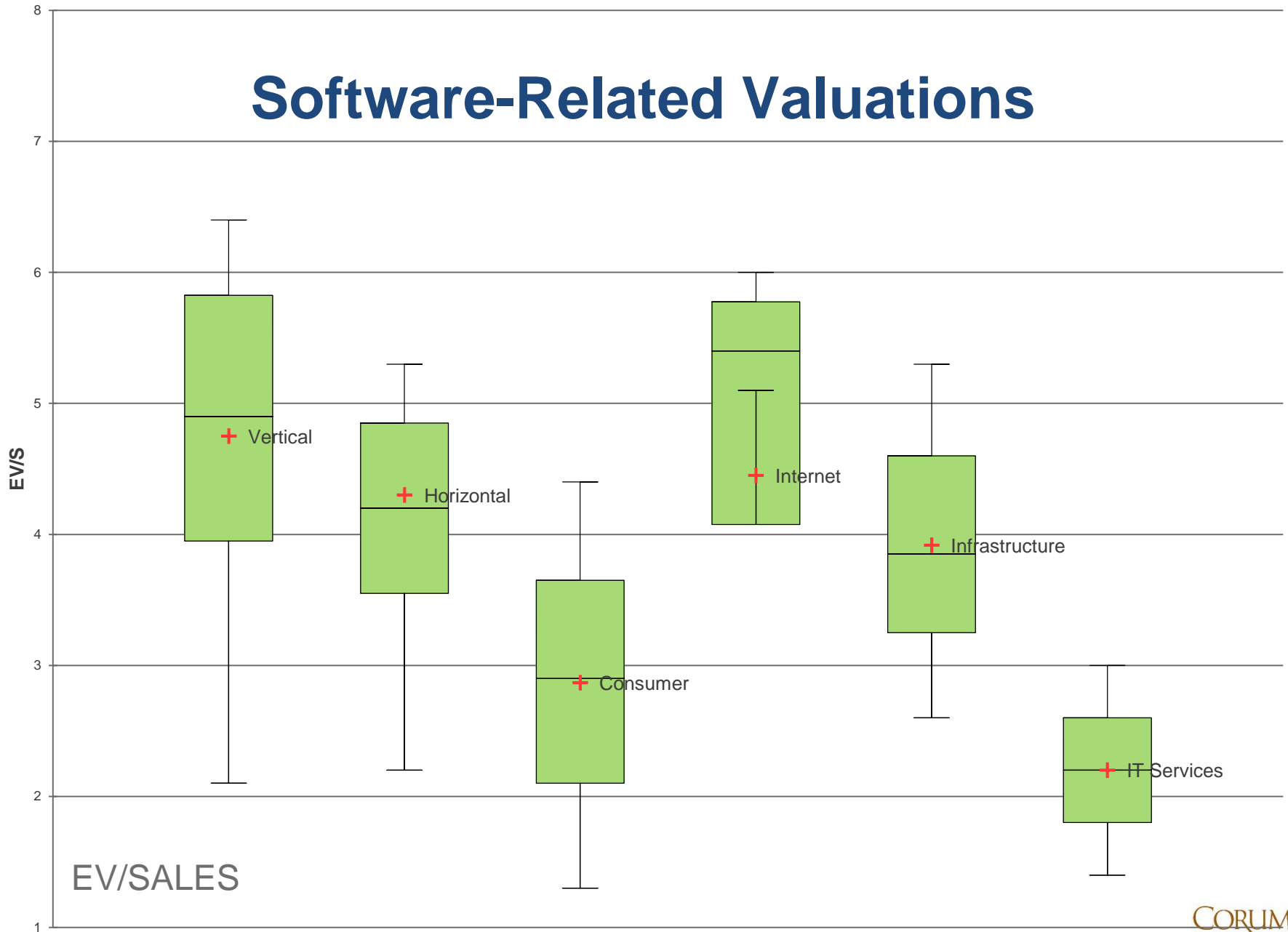
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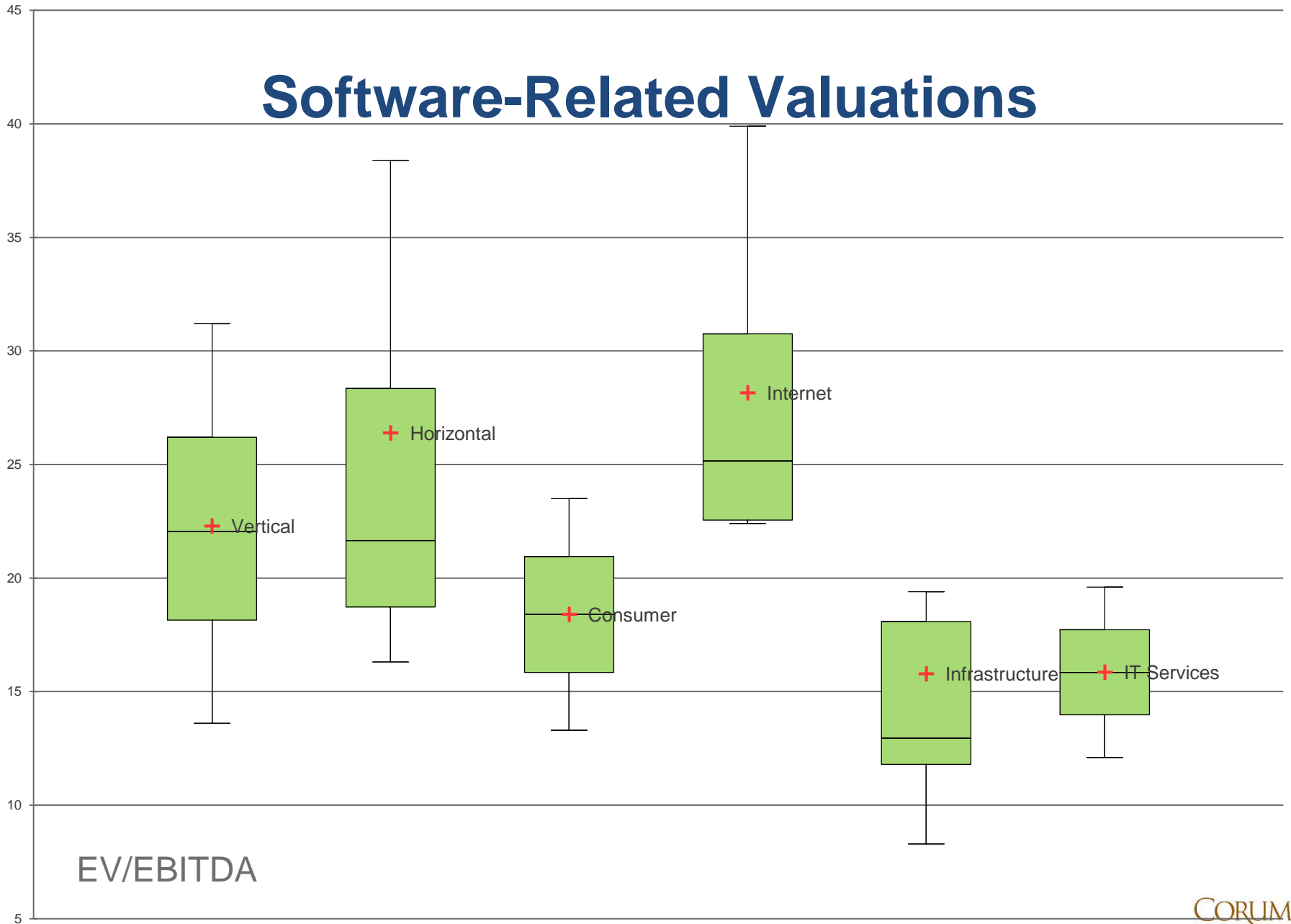
Corum Index




























Software-Related Valuations



Software-Related Valuations



























Vertical Application Software Valuations





Subsector	Sales	EBITDA	Examples		
A/E/C	6.17x	25.59x	 AUTODESK	 DASSAULT SYSTEMES	 SYNOPSYS®
Automotive	5.67x	18.42x	 Autotrader 	 BitAuto 易车	 CDK Global
Energy & Environment	4.40x	18.94x	 IHS Markit	 Itron	 Schlumberger
Financial Services	5.35x	17.39x	 Broadridge	 FIS	 fiserv.
Government	2.11x	13.21x	 NORTHROP GRUMMAN	 Raytheon	 tyler technologies
Healthcare	4.04x	25.18x	 Allscripts	 athenahealth	 Cerner
Real Estate	6.40x	28.03x	 CoreLogic	 CoStar Group	 Zillow®
Vertical Other	3.68x	13.56x	 amadeus®	 Rockwell Automation	 Sabre



Horizontal Application Software Valuations

Subsector	Sales	EBITDA	Examples		
Business Intelligence	3.99x	18.94x			
Marketing & Ad Tech	2.19x	22.03x			
CRM	3.41x	50.91x			
ERP	5.31x	25.30x			
Human Resources	6.84x	38.38x			
SCM	4.71x	21.29x			
Payments	4.38x	18.16x			
Other	3.64x	16.26x			



















Consumer Application Software Valuations

Subsector	Sales	EBITDA		Examples	
Casual Gaming	4.36x	23.45x	DEVSISTERS		
Core Gaming	2.90x	13.29x	ACTIVISION		
Other	1.32x	N/A	GoPro	NETFLIX	PANDORA internet radio

Internet Application Software Valuations




Subsector	Sales	EBITDA		Examples	
Diversified Internet	5.70x	22.44x	Alphabet	Baidu 百度	Tencent 腾讯
eCommerce	1.00x	39.85x	ebay	JD 京东	zalando
Social Network	5.06x	22.55x	f	mixi	twitter
Travel & Leisure	6.05x	27.65x	JUSTEAT	Expedia	priceline.com

Infrastructure Software Market

Subsector	Sales	EBITDA	Examples		
Endpoint	3.67x	19.39x			
IT Services Management	5.32x	14.09x			
Network Management	2.59x	8.30x			
Security	3.98x	29.27x			
Storage & Hosting	3.11x	11.75x			
Other	4.81x	11.77x			

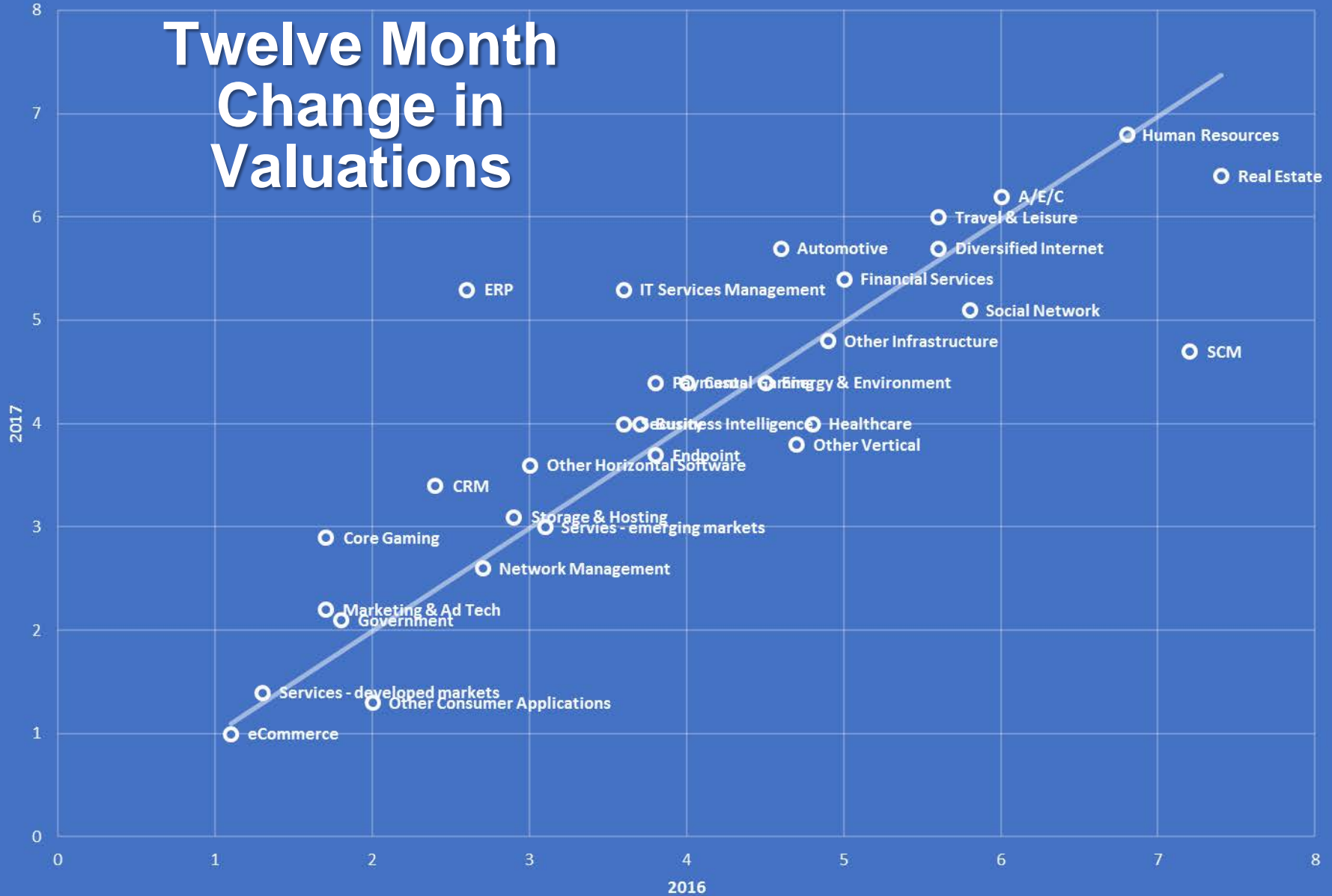


IT Services Valuations

Subsector	Sales	EBITDA	Examples		
Developed	1.44x	12.13x	accenture	 Capgemini	 Cognizant
Emerging	3.00x	19.57x	Infosys	 WIPRO Applying Thought	GENPACT

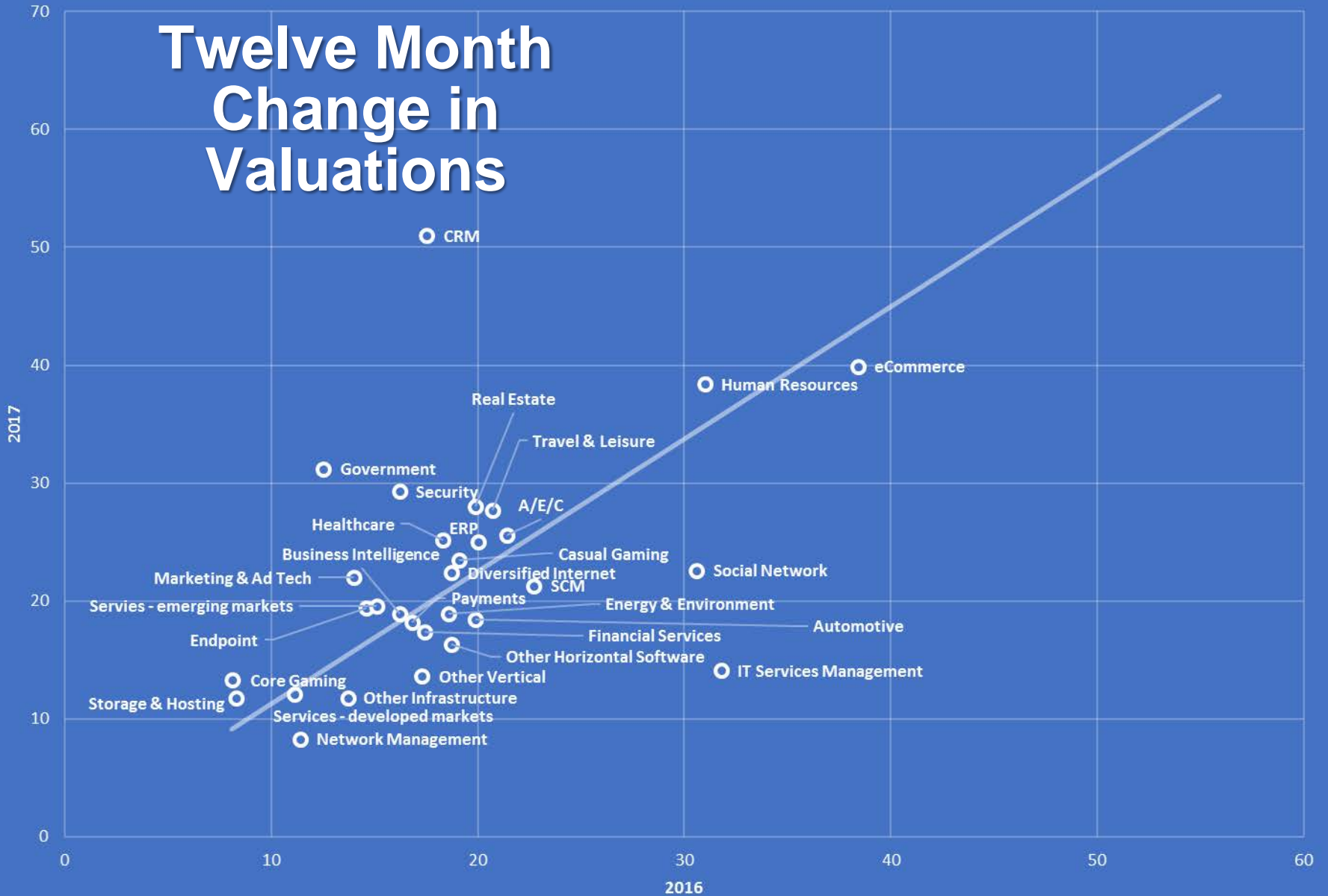
EV/SALES 2017 VS 2016

Twelve Month Change in Valuations



EV/EBITDA 2017 VS 2016

Twelve Month Change in Valuations

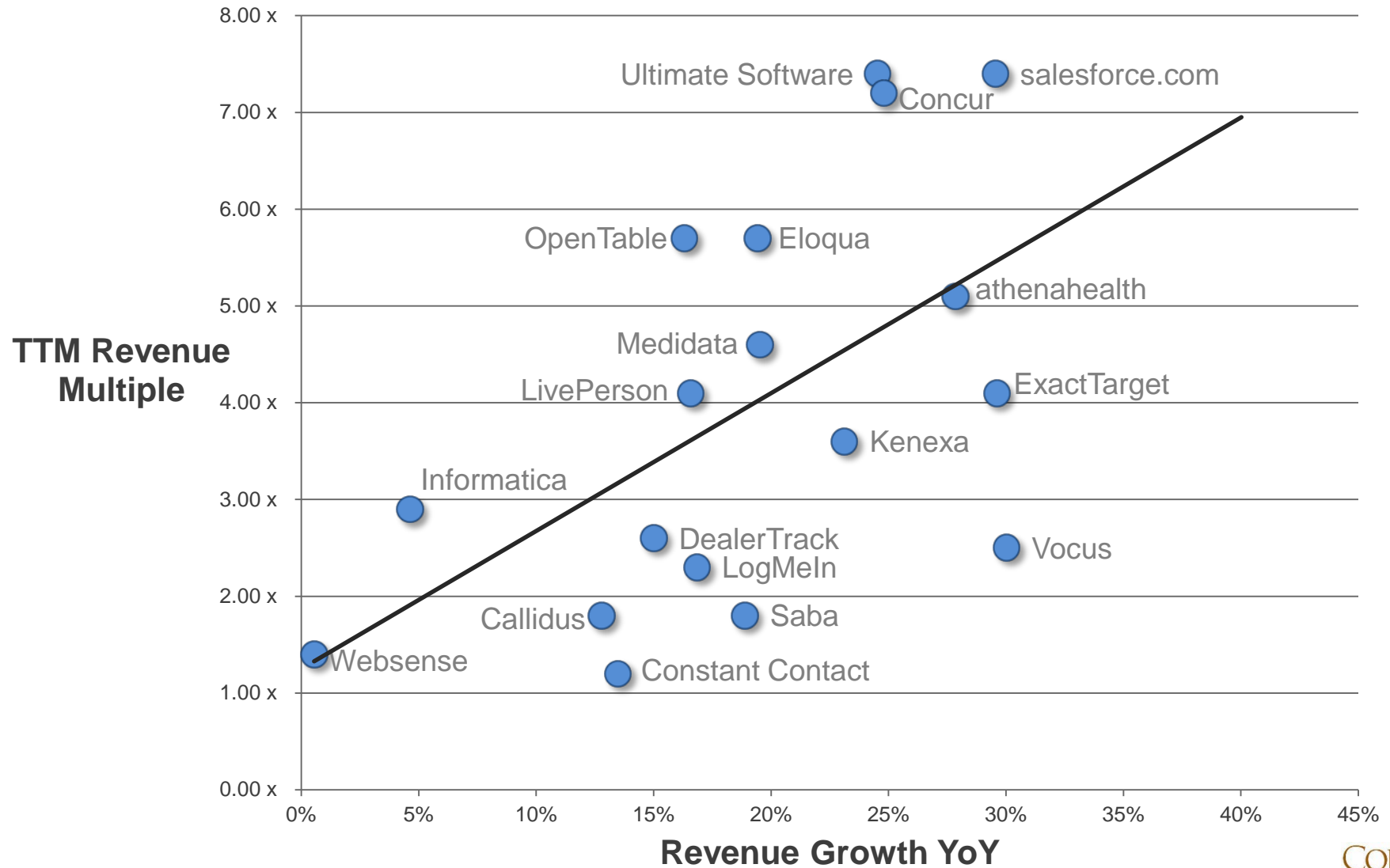


When Should I Sell?

Company A - ERP	2016	2017	Change
Revenue	\$5.0M	\$6.5M	+30%
EV/Sales	2.6	5.3	+104%
Nominal Valuation	\$13.0M	\$34.5M	+165%

Company B – SCM	2016	2017	Change
Revenue	\$5.0M	\$6.5M	+30%
EV/Sales	7.2	4.7	-35%
Nominal Valuation	\$36.0M	\$30.6M	-15%

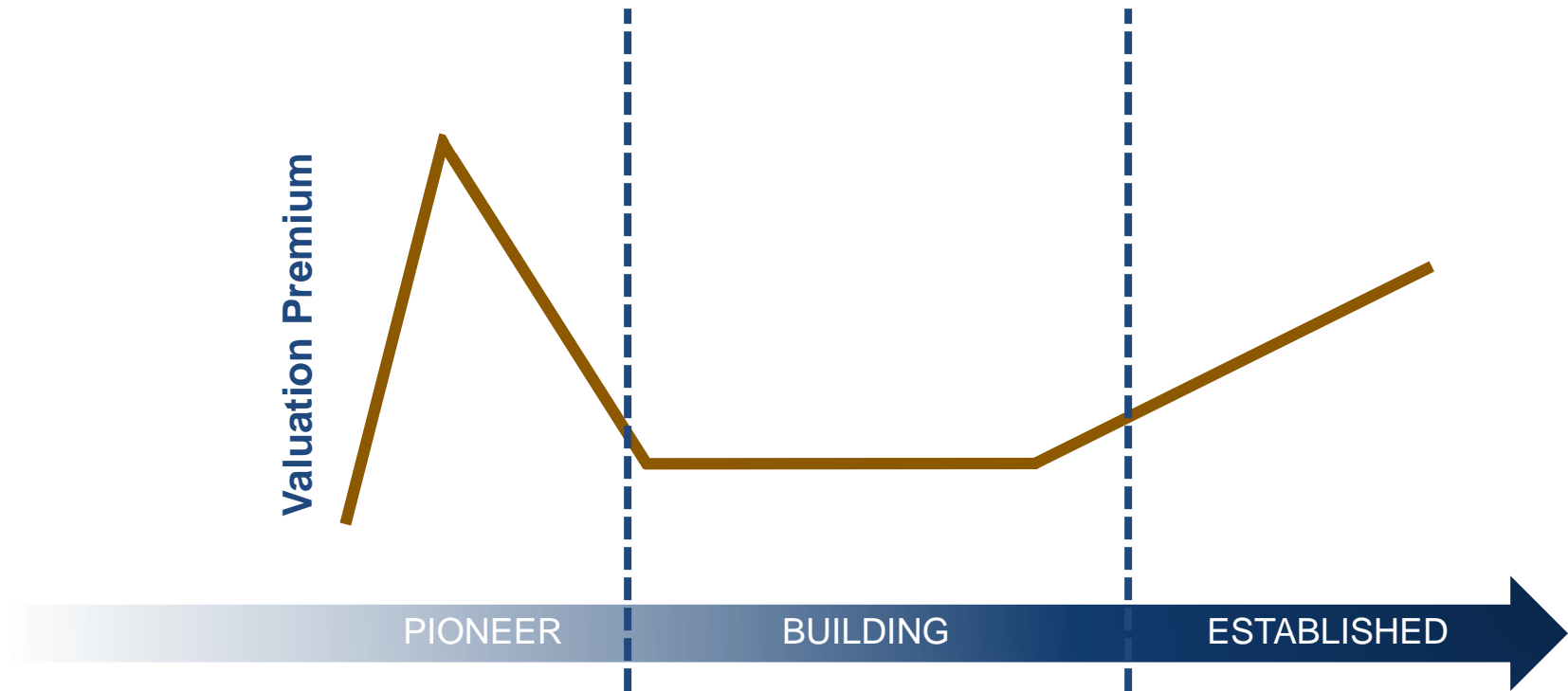
High SaaS Growth Tracks Valuation



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- So value depends on the seller’s unique mix of attributes
- Value is driven by supply & demand and fluctuates by market sector
- Value depends on product and market lifecycles

Corum Valuation Lifecycle

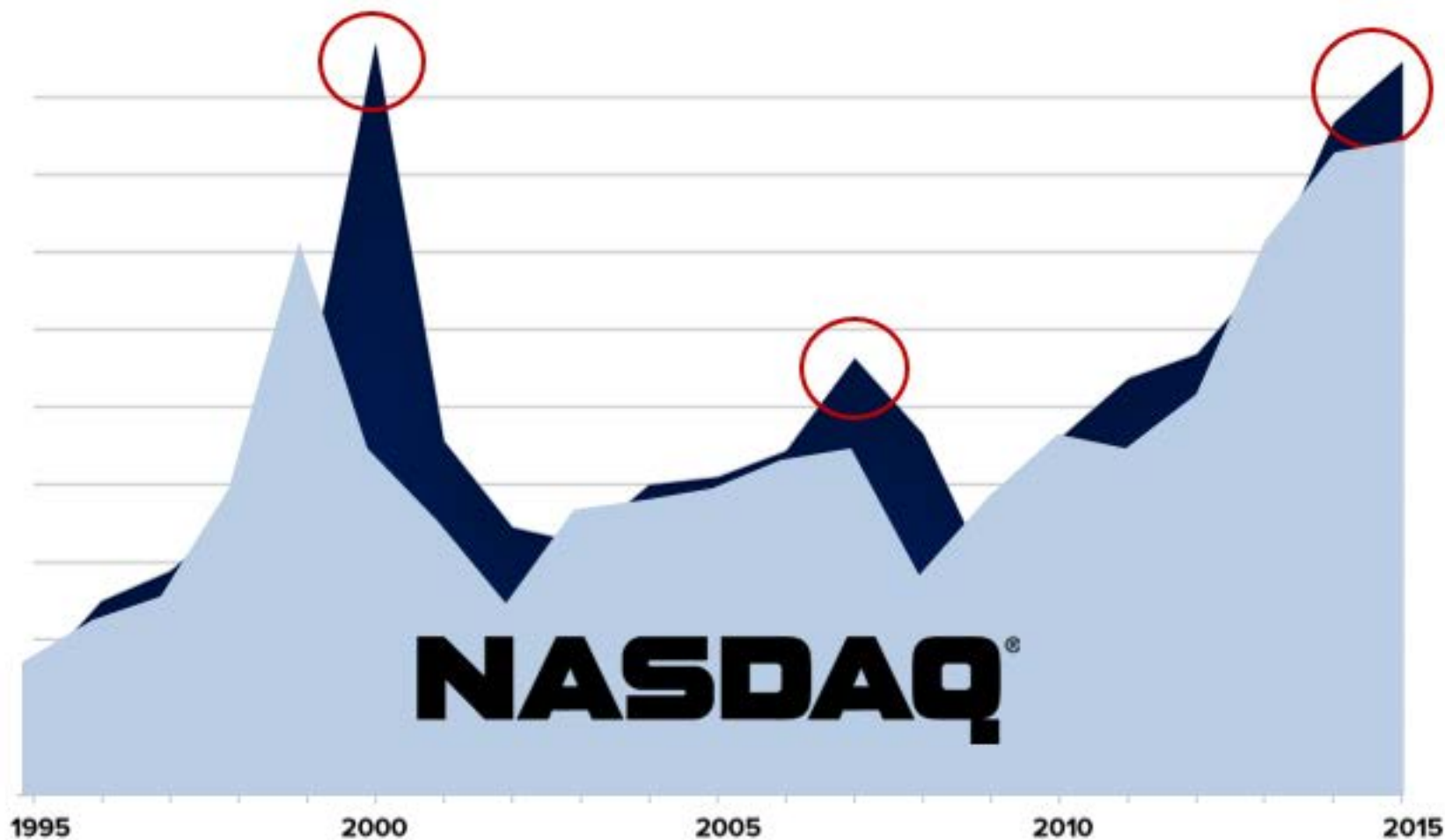


Stages of Growth

Some Facts About Value

- Value is “relative”
- Value to a buyer depends on its strategic imperatives at the time of purchase
- So value depends on the seller’s unique mix of attributes
- Value is driven by supply & demand and fluctuates by market sector
- Value depends on product and market lifecycles
- Value also depends on financial market cycles

M&A Follows Financial Cycles







Some closing thoughts



Five Reasons Tech M&A Will Remain Strong

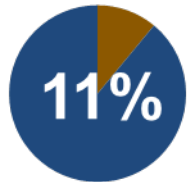
- 1. Disruptive trends – Strategic imperative to buy**
- 2. Cash – Strategic & financial buyers**
- 3. Low cost debt for leveraged buyouts**
- 4. Many new buyers (IPOs, non-tech)**
- 5. Strong financial markets**



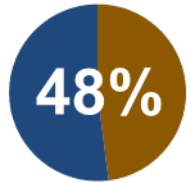
And Then Again ..Six Reasons Why it May Not

- 1. Geopolitical Disruption**
- 2. Currency Crisis**
- 3. Inflation Increasing**
- 4. Rising Interest Rates**
- 5. Stock Market Adjustment**
- 6. M&A Cycle Ends**

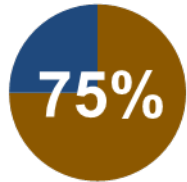
Tech M&A Guideline Percentages



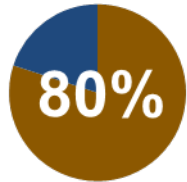
- Buyer solicitations that result in transaction



- Average improvement from first offer with an auction process



- How often another firm is willing to pay more than the initial bidder



- Failure rate in “self-managed” tech M&A



- Deals involving only one bidder that are suboptimal


Finally


- A company is worth what a knowledgeable buyer is willing to pay for it
- Formal valuations don't capture the strategic value to a given buyer
- If selling, be sure you fully understand your unique value enhancers relevant to buyer interests
- You will never get maximum value unless you align with the trends driving the industry
- You will never get maximum value without discussions with multiple buyers

Questions ?

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