

Hello, we're Salesforce.

We help make your customers love you.

Hello, we're Salesforce.

We help make more customers need you.

What makes "tomorrow's customers" a certainty?

- Demographics
 - Rapidly rising dependency ratios
- Transactics
 - Falling costs → "gig economy"
- Robotics & algorithmics
 - Entire classes of job will vanish
- Energetics & Environmentics
 - Changing models and priorities
- Connectics
 - Quantity and character of data

Is "Big Data" a Thing? Oh, Yeah

Health Care
"We estimate that the value from data in the sector could be more than \$300 billion every year...reducing US expenditures by about 8%"

Profit Sector
"A retailer has the potential to increase its operating margin by more than 60%."

Public Sector
"In the developed economies of Europe, we estimate that government could save more than \$149 billion in operational efficiency improvements alone – not including reduction of fraud, error, and tax gaps."
- McKinsey Global Institute, May 2011

\$600 to buy a disk drive that can store all of the world's music

5 billion mobile phones in use in 2010

30 billion pieces of content shared on Facebook every month

40% projected growth in global data generated per year vs. 5% growth in global IT spending

235 terabytes data collected by the US Library of Congress in April 2011

15 out of 17 sectors in the United States have more data stored per company than the US Library of Congress

McKinsey Global Institute
CELEBRATING 21 YEARS OF INSIGHT

Is "Big" the Most Important Word?

Walter Wriston on velocity:
"Increased velocity of money gives you a difference in kind – not just degree. It's like a piece of lead: you put it on your desk, it's a paperweight; put it in a gun, it's a bullet. Same piece of lead. Big difference."

450 pounds of lead is a barrier

12 pounds is a feat of strength

8 grams is a weapon...
...if well-aimed

Wired magazine cover: "He was the most powerful banker in the world. So why is he talking like a cypherpunk? Walter Wriston on the future of money. The Wired Interview."



Big Data Goes to Work

Liberating Latent Value in a Connected World

Peter Coffee
VP for Strategic Research
Salesforce



Forward-Looking Statements

Statement under the Private Securities Litigation Reform Act of 1995:

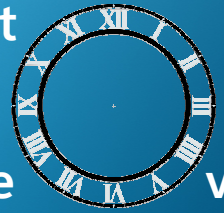
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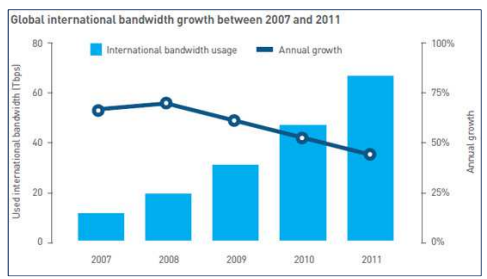
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- i. Environment
- ii. Strategies
- iii. Examples
- iiii. Experience
- v. Next?



It Took a While...But We Are Connecting the Planet



It Took a While...But We Are Connecting the Planet

TeleGeography 25th Anniversary **RESEARCHUPDATE** APRIL 23, 2015

Global Network Construction Resurgence

New data from TeleGeography's Global Bandwidth Research Service reveal that international bandwidth grew 44 percent in 2014, to reach 244 Tbps. The 65 Tbps of new capacity deployed in 2014 are comparable to nearly the entire amount of bandwidth in service globally in 2011.

This rapid capacity growth is driven by a changing mix of global network operators. Private networks, particularly those of large content providers, account for a growing share of international bandwidth, even surpassing Internet bandwidth on the trans-Atlantic route last year. Consequently, network operation has become a core part of the business for some of the largest content providers.

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Median 10Gbps price trends on major international routes between Q1 2009 and Q1 2012

Monthly recurring charge (US\$)

Routes: Miami-São Paulo, London-New York, Hong Kong-Tokyo, Chicago-New York, Los Angeles-Tokyo, London-Paris

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Connection Creates the New Context

Per 100 individuals

- Mobile-cellular telephone subscriptions: 86.9
- Mobile broadband subscriptions: 47.2
- Individuals using the Internet: 48.1
- Fixed-line broadband subscriptions: 42.1
- Population covered by 2G mobile-cellular network: 10.9

Source: ITU, 3GPP, GSMA, Statista

- 1 billion daily active users (24 August '15)
- 844 million mobile daily active users (avg June '15)
- 83.1% of daily active users outside US & Canada

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Connection Creates the New Context

The pace of diffusion of digital technologies has been unprecedented by historical standards

Developing countries (1990-2013)

Per 100 individuals

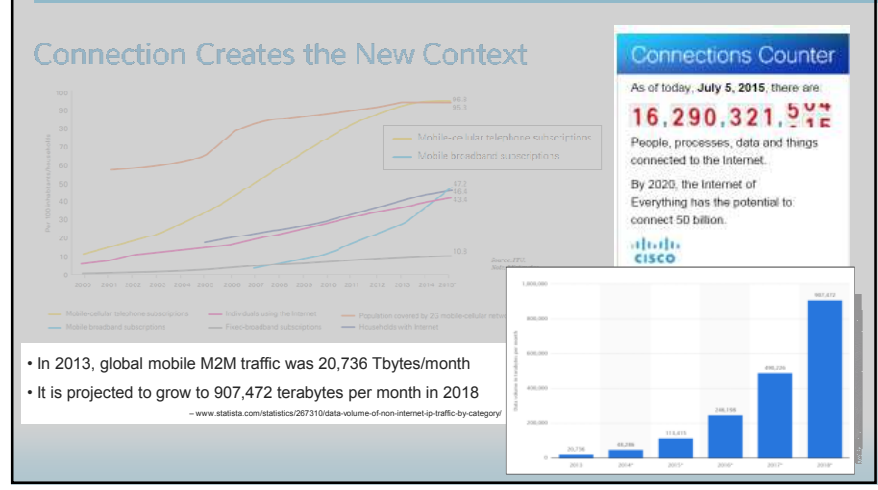
- improved water
- mobile phone
- improved sanitation
- secondary school
- internet
- mobile broadband

Note: ICT and infrastructure indicators (mobile phone and mobile broadband subscriptions, internet users, improved water and sanitation) are per 100 individuals. Net secondary school enrollment is the percent of the relevant age group.

Sources: WDR Team based on World Development Indicators and ITU data.

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Why Do Connected Products Matter?

- People are slow and unreliable reporters of incomplete and inaccurate memories

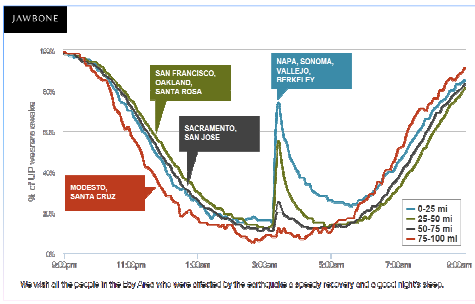
Why Do Connected Products Matter?

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- People are passengers, not test pilots: they're not thinking about indicators of trouble until the trouble is already there



Why Do Connected Products Matter?

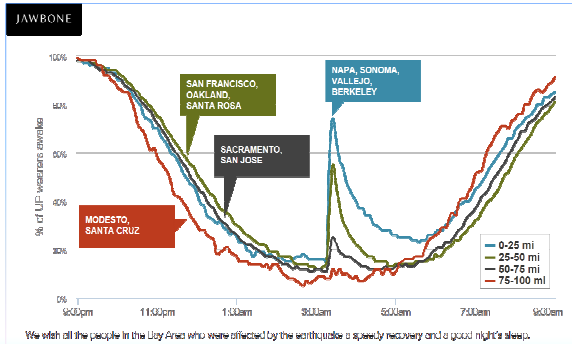
- People are slow and unreliable reporters of incomplete and inaccurate memories
- People are passengers, not test pilots: they're not thinking about indicators of trouble until the trouble is already there
- Statistical significance emerges much sooner with accurate, timely collection at global scale



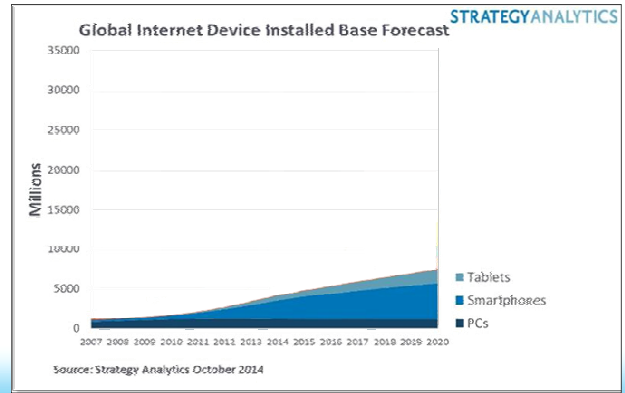
The (Richter) Magnitude of Change

“What we're doing here is on 40,000 people: it is just unprecedented in scale, and this is only the first example we're sharing about the type of work we're doing.”

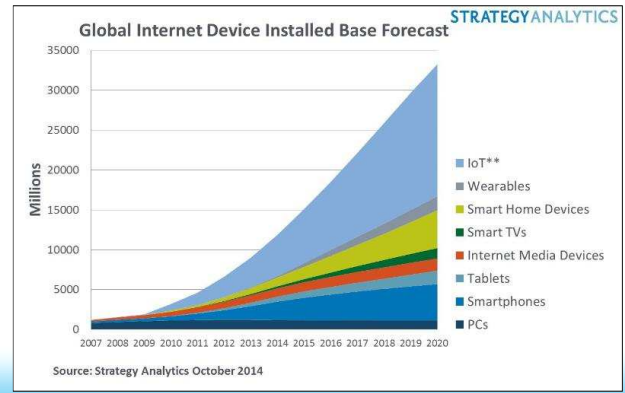
- Andrew Rosenthal




Even Today's Hottest Devices Are Tomorrow's Legacies



Even Today's Hottest Devices Are Tomorrow's Legacies



Wearables Already Entering 2nd Generation



“The demand for basic wearables, those that do not run third party apps, has been absolutely astounding. Vendors like Fitbit and Xiaomi have helped propel the market with sub-\$100 bands.”

“We expect smart wearables, those capable of running third party apps, to take the lead in 2016. The transition from basic to smart wearables opens up a slew of opportunities for vendors, app developers, and accessory makers.”

www.idc.com/getdoc.jsp?containerId=prUS25696715

Reconceiving Your ‘Product’: Perhaps It’s a Data Collector?



Processing
Ever alignment and variant processing

Storage
1 FREE TB
FREE 1 Terabyte Storage for business calls
+ 1 TB
+ 1 TB
+ 10 TB

Apps
Integrate applications. App prices set by vendor.
PLUS ONE
+1 Terabyte Storage \$200/US\$ Month or \$2,000/US\$ Year
PLUS TEN

Illustrina Launches BaseSpace Cloud Platform for MiSeq

“The addition of BaseSpace eliminates the need for expensive IT infrastructure, simplifying the process of adopting a personal sequencer for labs of any size and experience,” commented Illustrina CEO Jay Flatley.

Bio-IT World
Next-Gen Technology • Big Data • Personalized Medicine

Hello, we’re Salesforce.

We’re ready to liberate value on devices that don’t (yet) exist.

Leader in connecting next-gen tech to business value

- iPhone (‘07); Apple Watch (‘15)
- Salesforce Wear Developer Pack: iOS, Android, Samsung Gear, Pebble, Jawbone...
- Mobile Admin app
- SalesforceIQ: breakthrough relationship intelligence
- MIT Tech Review honors: “crucial to incorporating data from Internet of things.”



1. Connect
Remote Sites and Equipment on Widely Deployed Solutions

2. Control
Manage Health and Connectivity of Devices at Customer Locations in Real-Time

3. Engage
Send Proactive Alerts to Customers and Engage Channel in New Ways




ATEK PRODUCTS

DEVICE CLOUD by QETHENOS

SOCIAL MACHINE






ATEK Business Value

- New **recurring revenue** stream
- **Preventative maintenance** model
- **Safer** solution

ROI (estimated)

- \$100K **new revenue** in year 1
- \$50K **ROI** in year 1
- \$250K **profit** expected in year 2



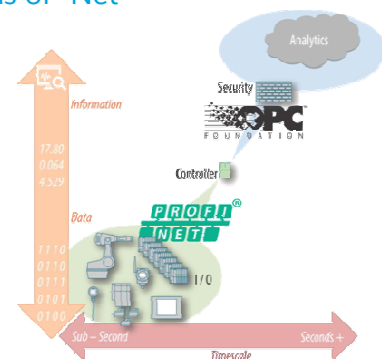
Many Kinds of Data; Many Kinds of “Net”

There are at least four kinds of “thing” data


- Status
- Location
- Automation
- Actionable data

They present different tradeoffs of

- Update interval
- Accuracy
- Downside risk
- Post-collection complexity



David Friedman, CEO, Ayla Networks
readwrite.com/2015/08/13/five-types-data-internet-of-things



Introducing: Salesforce IoT Cloud

Powered by Thunder

- Listen to the world @ IoT Scale**
Connect billions of events from every device & app
Digest into 360 Customer & Device profiles
- Trigger Actions with real time rules**
Use data and insights to take smarter personalized actions
- Engage Proactively and 1:1**
Use Salesforce to reach every customer and employee



“IoT Cloud helps us react to events before they become problems”

Milan Kocic, Director Innovation, Hexagon Metrology



Hexagon Metrology Enables Real-Time Factory Monitoring With IoT

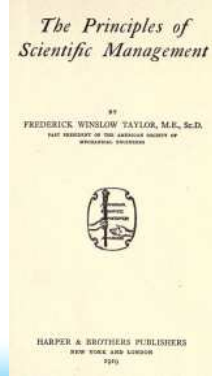
Global manufacturing company headquartered in London builds precision measurement equipment

Monitoring real-time data feeds from quality laboratory and production metrology machines in Salesforce IoT Cloud for catastrophic events (vibration, drastic temperature change, crash)

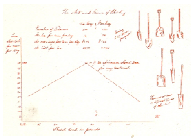
Combine IoT data with real time on-duty manager information and notify manager when event occurs; shows real-time machine status in Platform built Dashboard running on Salesforce App Cloud




Data + Direction := ++Performance



One hundred years ago, Frederick Taylor measured workers' behavior – and found that effective use of data improved both their performance and their health.



He noticed that workers used the same shovel for all materials. He determined that the most effective load was 21½ lb, and found or designed shovels that for each material would scoop up that amount.

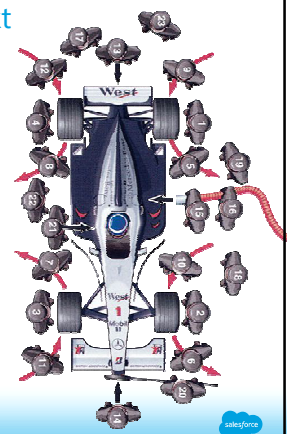
en.wikipedia.org/wiki/Frederick_Winslow_Taylor

It's About Optimizing Capability in Context

McLaren Applied Technologies works on evidence-based systems to maximize human efficiency. Internally the company has been exploring how to get its Formula One teams to recover from jet lag most effectively.

“Our teams are travelling around the world a lot. Some of them have to change wheels in the pit stop and be alert and fit, while others have to look at reams of data and need to be cognitively alert,” explains Duncan Bradley, Head of High-Performance Design.

By plotting data relating to travel schedules with heart rate variability monitors and tests to monitor cognitive alertness, the company was able to reorganize journey times and teams to suit the way different individuals coped with jet lag and stress.



http://www.bloomberg.com/news/articles/2015-08-12/wearable-biosensors-bring-tracking-tech-into-the-workplace

Are We Prepared to Address The Concerns?

“A lot of the web services allow unauthenticated or unencrypted communication between the devices, so we're able to alter the info that gets fed into the medical record ... so you would get misdiagnosis or get prescriptions wrong.”

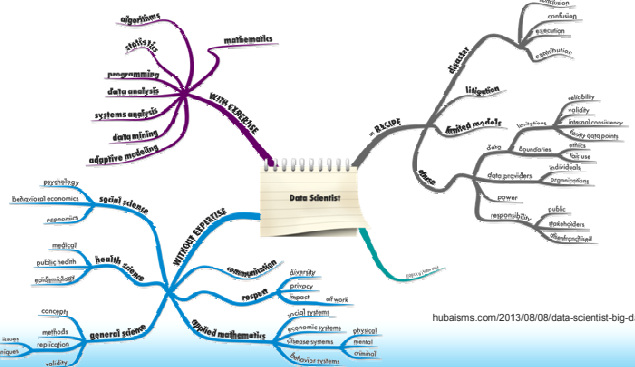
“The physician is taught to rely on medical records ... [but] we could alter the data that was feeding from these systems, due to the vulnerabilities we found.”

It's Insaferly Easy to Hack Hospital Equipment



Source: HealthCareers.com. Hackers have gained free access to the rooms through all of the medical equipment as well as a large stream of hospital health data facilities. The breach has raised kind security problems-but the risks are high for just one record in a sea of...

Value from Mobile Apps and Wearable Devices Poses Challenges of Science – Wrapped in Compliance



hubisims.com/2013/08/08/data-scientist-big-data/



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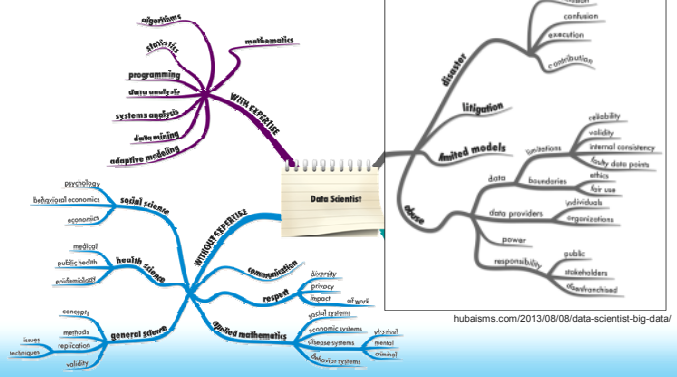
“People making calls or sending text messages originating at the Kericho tower were making **16 times more trips away from the area** than the regional average. What’s more, they were **three times more likely to visit a region** northeast of Lake Victoria that records from the health ministry **identified as a malaria hot spot**. The tower’s signal radius thus covered a significant waypoint for transmission.”

“This is **the future of epidemiology**. If we are to eradicate malaria, this is how we will do it.”

– Caroline Buckee



Value from Mobile Apps and Wearable Devices Poses Challenges of Science – Wrapped in Compliance



hubaisms.com/2013/08/08/data-scientist-big-data/



Do Not Let ‘Big Data’ be ‘Dumb Data’

Unless it is trusted, it will not be a basis for action



“Don’t be silly, it won’t rain until almost morning.”

Hello, we’re Salesforce.

We keep your data safer than most governments wish they kept theirs.

Trust is our #1 Value

- Industry leader in transparency: trust.salesforce.com
- Precise privilege controls
- Unrivaled audit capability
- Leader in key certifications
- Continual test & improvement
- Salesforce Shield: monitor, audit, encrypt at rest



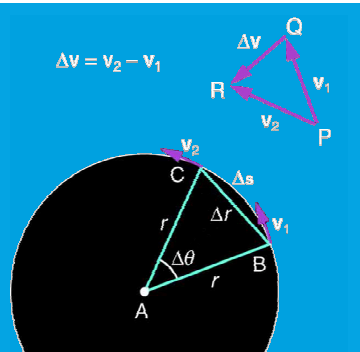
Acceleration is a Vector

“Faster” in the wrong direction may not actually be a “positive” change

We often speak of “the pace of change” as if it were a speed: a scalar quantity, “more” being unambiguously...more

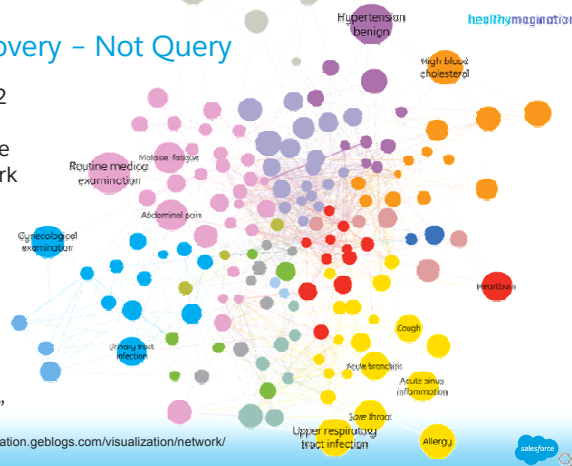
Improvement metrics are conventionally stated as %’age improvement per unit time

“Better, faster, cheaper”
at the **wrong thing**...
...is the **wrong thing**



Disciplines of Discovery – Not Query

“By combing through 7.2 million of our electronic medical records, we have created a disease network to help illustrate relationships between various conditions and how common those connections are. Take a look by condition or condition category and gender to uncover interesting associations.”



You’ll Solve the Problem That You Are Trained to See

“Whereas Britain still used linguists to break codes, the Poles had understood that it was necessary to use mathematics to look for patterns.

“They had then taken a further step by building electro-mechanical machines to search for solutions.

“This understanding allowed Alan Turing to develop his ‘bombe’ capable of breaking the more complex wartime Enigma codes. One new technique was the use of ‘cribs’ - assumed or known parts of the message - as a starting point.” – BBC, July 2014

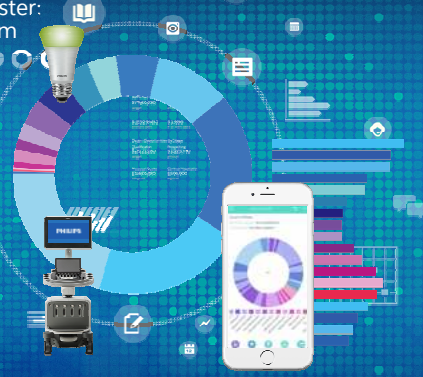
Math to find the vulnerability; **engineering** to scale the process; **domain knowledge** of user behavior to multiply the effectiveness of the solution



Data Science Revolution

It’s not enough to answer questions faster: Data and algorithms must *suggest* them

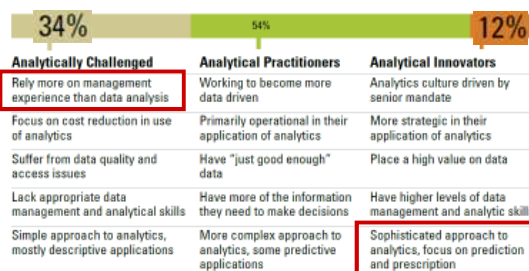
- Predictive Analytics
- Machine Learning
- Artificial Intelligence



Mandate for Forward Motion: Become Truly Data-Driven

Three Levels of Analytical Maturity

We classify organizational analytical maturity based on a company's ability to gain competitive advantage from analytics and its ability to use analytics to innovate. (See last year's report, *The Analytics Mandate*, for details.)



Analytics for the Rest of Us

Wave Platform powers the Salesforce Analytics Cloud



Intuitive Mobile Collaborative Open



So You Want to Be a Data Scientist

This Is *Not* an Utterly New Field of Expertise

"How do you become a data scientist? By behaving like a scientist while studying data."

Scientists Need to Have Good Lab Technique

Hiring typically seeks 5+ years of Java, Scala, Python, R, MapReduce etc.

Other traits? "Compulsive, with propulsive laziness, irritable determination and insensitivity to pain"

Don't Do This If You Need to Feel Popular

"I found a substitution effect in DoD research spending, instead of a multiplier effect: it was not what they wanted to hear" – Annie Flippo, edmunds.com



So You Want to Be a Data Scientist? There's Certainly Demand

"There will be a **shortage of talent necessary for organizations to take advantage of big data**. By 2018, the United States alone could face a shortage of **140,000 to 190,000 people with deep analytical skills** as well as **1.5 million managers and analysts with the know-how to use the analysis** of big data to make effective decisions." – McKinsey Global Institute



What Does This Mean To You?

Media and Entertainment

Community-created content; on-demand views; multi-screen experiences: **What's still urgent?**

Manufacturing and Logistics

Big Data matches demand with free capacity; 3D printing redefines inventory – **What's worth owning?**

Health Care and Elder Care

Gatekeepers lose power; payment for results; elderly = growth market – **What differentiates?**

Financial Services

The asset-light don't borrow to buy big; the data-rich don't pay just to play – **What has value?**



Pacing the “Twelve-Quarter Year”

At Salesforce, we tell newly hired employees that “we run on a twelve-quarter year”

What this means is that we look at numbers, compare them to goals, and initiate corrective action at least three times more frequently than most companies

Why is this necessary, today, in every field? Because the “**half-life of facts**” (the time required for half of what you “know” to become untrue) is **shrinking**

Philippe Kruchten examined 1988 issues of *IEEE Software* and evaluated which ideas “are still important or at least recognizable.” He estimated that the half-life of software engineering ideas is likely not much more than 5 years.

A working engineer needs ~7½ hours’ study per week, 48 weeks/year, to stay as current as at time of first college degree.

spectrum.ieee.org/riskfactor/computing/it/an-engineering-career-only-a-young-persons-game



This Example Actually Is Rocket Science

A problem used to require **two weeks** of trial & error to get “good enough” solution

Changing anything meant starting over

Now it takes **two hours** to get a provably best possible answer; iterations are faster

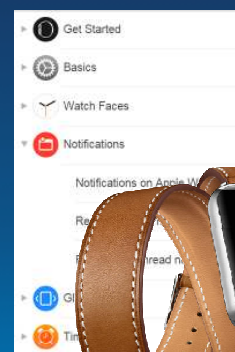
You need a few hundred GBytes of memory to do it; you would have been crazy to suggest it when the work began

Abstract

“We introduce a new approach for global multiobjective optimization of trajectories in continuous nonlinear dynamical systems... Our method is the first that can reliably handle nonconvex nonlinear dynamical systems with substantial instabilities, such as the notoriously ill-behaved multi-body gravitational systems governing interplanetary space trajectories.”



We’re a long way from “indistinguishable”



VS.



Solar powered
Radio-synchronized
200 meter depth tolerant
15 G acceleration resistant

“Any technology distinguishable from magic...”

...is insufficiently advanced”

Gehm's Corollary to Clarke's Third Law



Innovating Like It's 1989?

“The typical large organization, twenty years hence, will be composed largely of specialists who direct and discipline their own performance through organized feedback from colleagues and customers.”

“It will be a **knowledge-based organization.**”



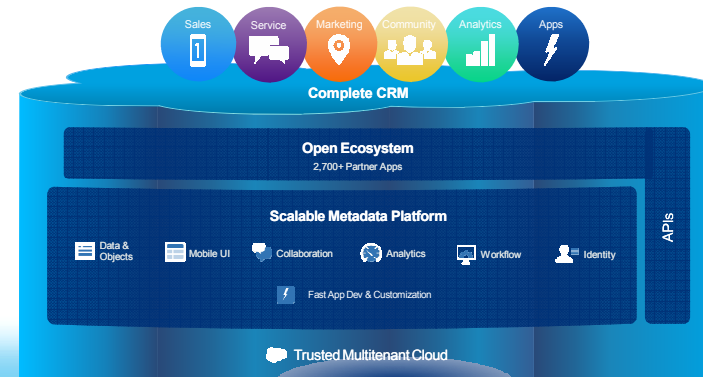
Peter Drucker, in *The New Realities...in 1989*

In 2015, this should not sound innovative



A Connection Platform for Extreme Innovation

Not a Migration of Legacy Stacks – but Integration by Default



6th Largest Software Company in the World Today

FORTUNE 500

2013 • 2014 • 2015

FORTUNE WORLD'S MOST ADMIRABLE COMPANIES

2011 • 2012 • 2013

FORTUNE 100 BEST COMPANIES TO WORK FOR

Forbes
Most innovative companies in the world

2011 • 2012
2013 • 2014
2015



\$1.6B
Q2 FY16 revenue

17K
Employees



Thank you

Peter Coffee
VP for Strategic Research

pcoffee@salesforce.com
[@petercoffee](https://twitter.com/petercoffee)
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