The Power of Data: Thriving in a World of Change

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Big Data

HIGH DEFINITION | By Farhad Manjoo

You Are The Most Destructive Force in Tech

What's the most destructive force in the tech world, the thing that has nearly killed BlackBerry, pushed Dell to go private, and made a mess of Microsoft?

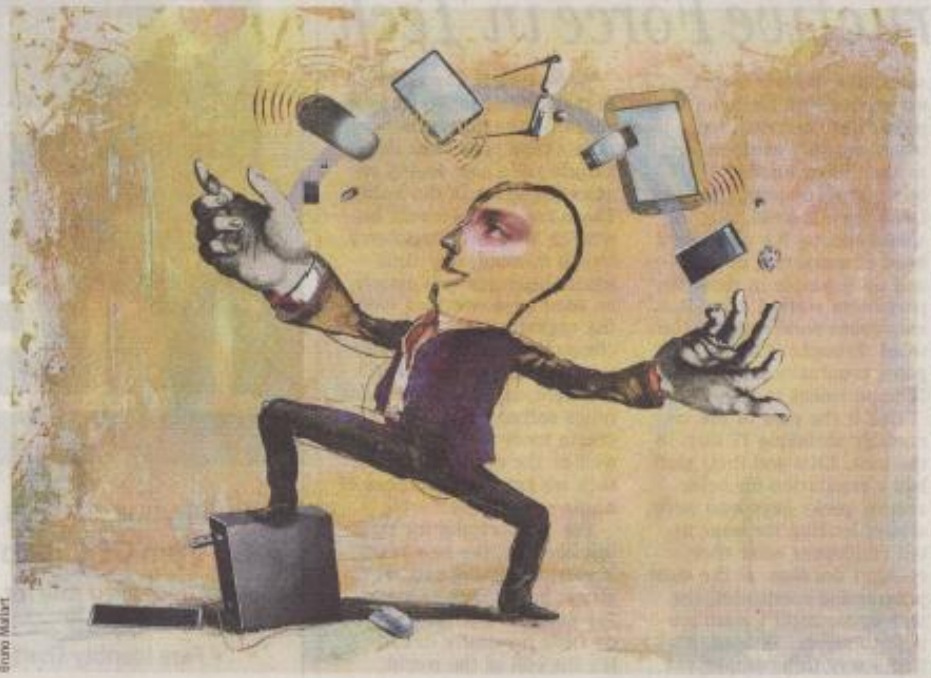
Conventional wisdom in Silicon Valley would finger one of the following technologies: smartphones, tablets, social networks, "the cloud," app platforms, or some other inscrutable bit of jargon.

Actually, though, the most destructive, unpredictable, and fickle force in the tech industry is much closer to home: It's you and me and everyone we know.

In the not-too-distant past, most of us didn't have much of a say in the technologies we used every day. Instead, your gadgets were delivered to you from afar, chosen by faceless people in nameless offices based on criteria that you didn't understand. If you went to buy a cellphone, you'd be presented with a handful of devices that were approved for your carrier, and they were all locked down in ways that prevented you from running apps that conflicted with the carrier's business plans. In your living room, you had a cable-company issued set-top box, and if its video-on-demand system didn't feature your favorite show, you'd better find a new favorite.

At the top of the tech food chain sat your boss—or, more specifically, your company's chief information officer. Most of the world's tech devices were purchased for corporate use, and IT guys tended to make decisions based on security and price rather than user-friendliness. Tech companies that catered to CIOs rather than users tended to thrive. That's why—whether you liked it or not—your office computer was made by Dell, it ran Windows and Office, and why your company-issued phone was a BlackBerry.

Then, more or less overnight, a series of technological and marketing revolutions—like ubiquitous broadband Internet and the lure of consumer devices such as the iPhone—completely upended the market for technology. Over the past few years, for the first time, we "end users" have been allowed to choose the tech we want to use at home, on our wireless networks, and, crucially, at the office.



Bruno Mallart

Just a few years ago, **BlackBerry** Ltd.'s executives were promising that their gadgets would win out over rivals because the BlackBerry was "way ahead" on "CIO friendliness." But the beleaguered execs hadn't considered that CIOs themselves might lose their power. As employees began demanding the ability to use t phones, tablets, and apps th we had at home, the most fo ward-thinking corporations found ways to allow a whole new class of technology ont their networks.

Now you could use an iPhone instead of a BlackBer an iPad instead of a Dell cor puter, and Google Docs inst of Word. In the end, CIO friendliness couldn't help BlackBerry one bit.

BlackBerry's downfall ar the struggles of **Dell** Inc. a **Microsoft** Corp. offer an o ject lesson for any firm try ing to crack the "enterpris tech market. It suggests th even if you want to sell tec nology to CIOs, you can't f get employees, the people who will actually have to u your stuff.

"It's an amazing lesson i what happens when one se buyers implements a techn ogy for another set of user without a care or sensitivit for what the users were go to need to get their jobs done," says Aaron Levie, th CEO of **Box** Inc., one of the Valley's most promising en

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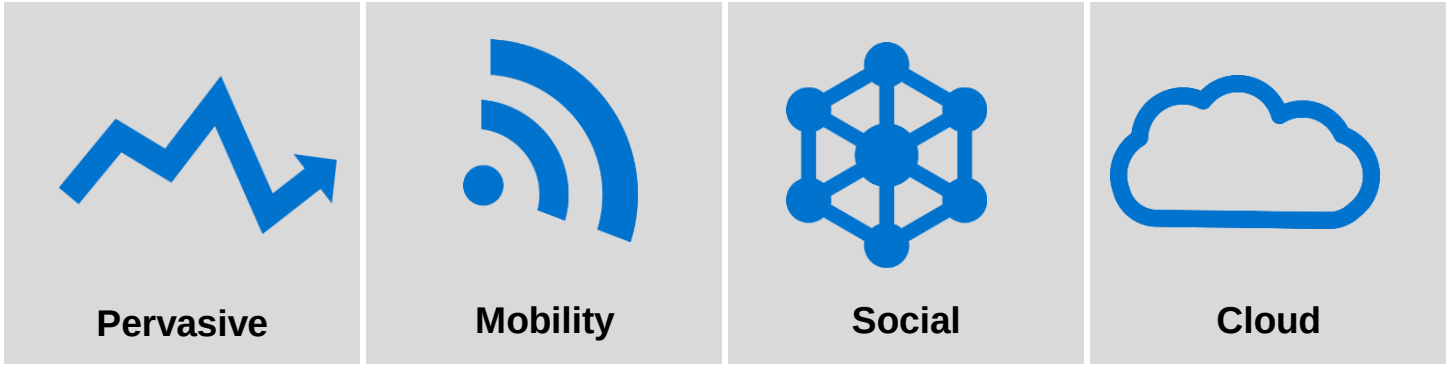
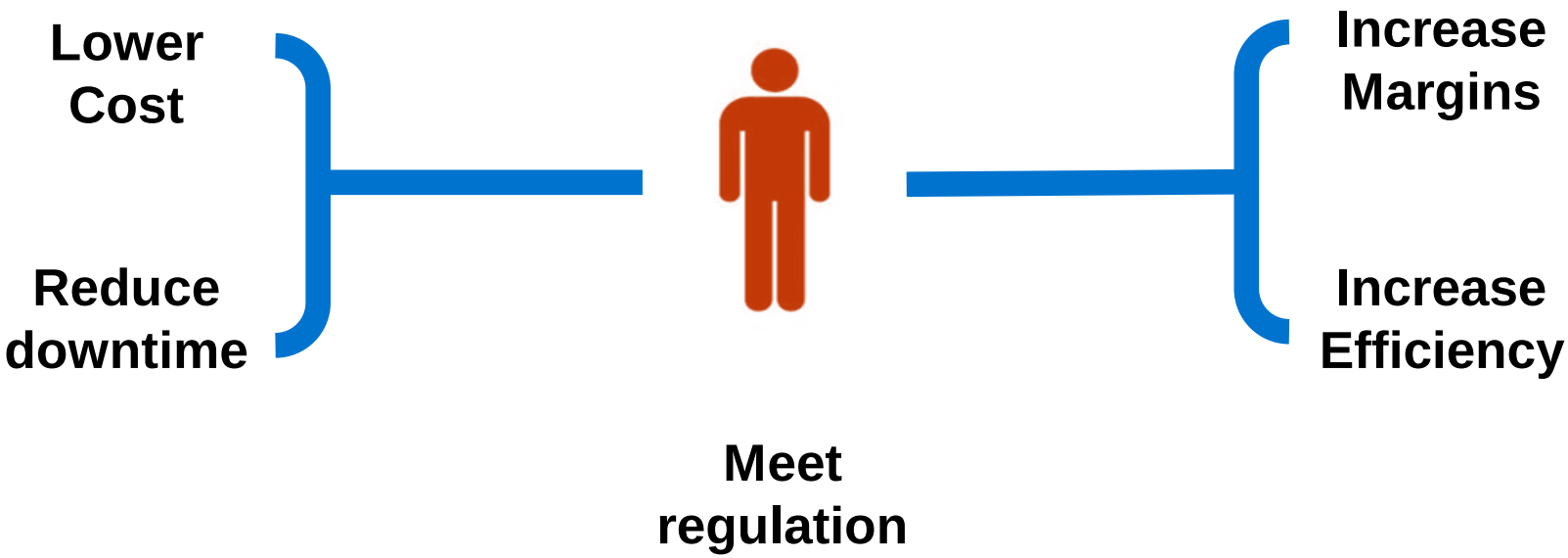
A World of Change: “Consumerization” of IT



Social connections, mobility, cloud delivery and pervasive information are converging in a powerful way. This convergence is creating a new era of computing and new opportunities for business.

– Gartner, August 2012

Business Objectives



Influence of Consumerization in the Workplace

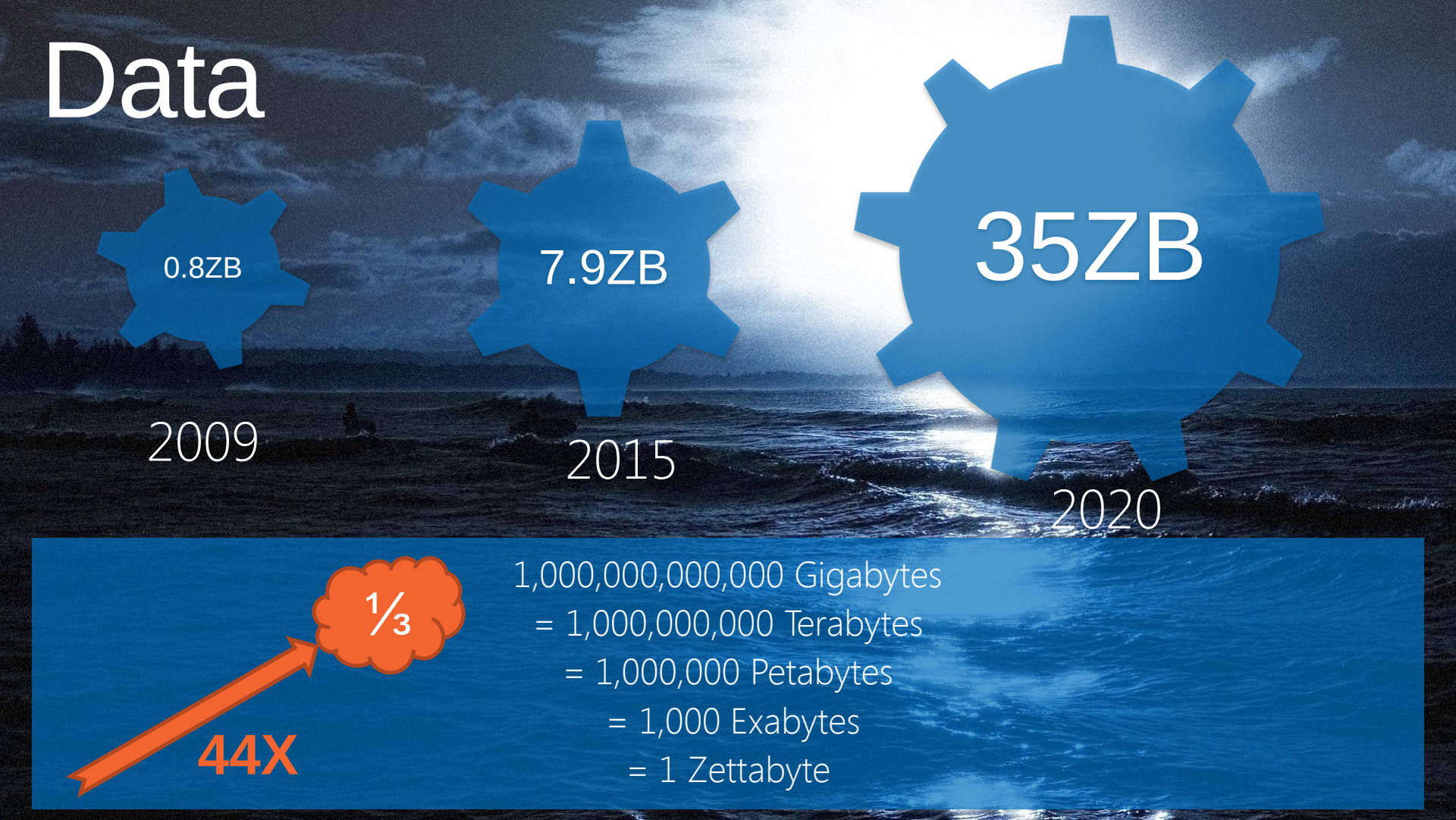
More than a third of new grads are willing to take a lower paying job to have modern powerful, interactive and collaborative working tools

- Cisco 2011

More than 50% of our customer base has a BYOD policy

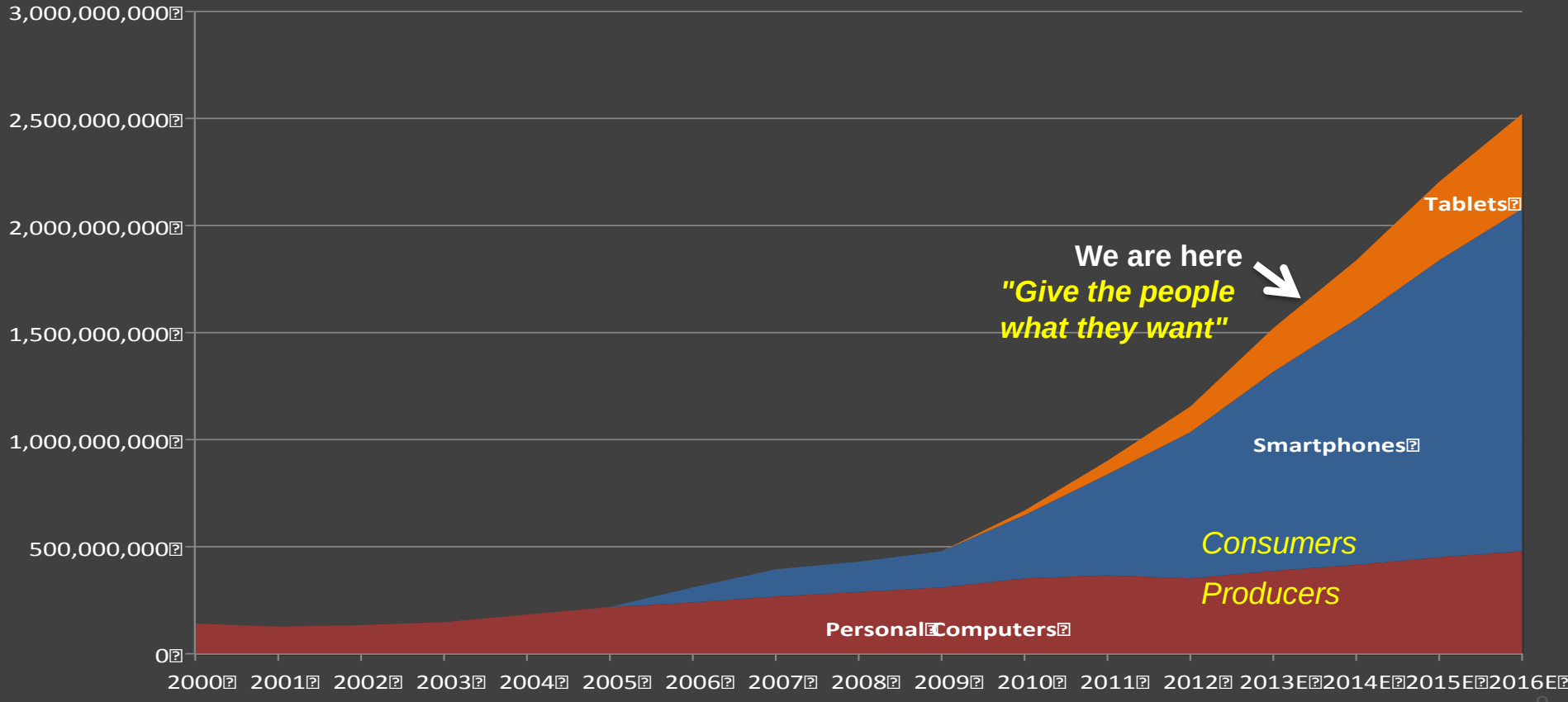
- OSIsoft 2012

Data



1,000,000,000,000 Gigabytes
= 1,000,000,000 Terabytes
= 1,000,000 Petabytes
= 1,000 Exabytes
= 1 Zettabyte

Device types



Source: Gartner, IDC, Strategy Analytics, company filings, BI Intelligence estimates

Connected Devices

Consumers today, but Industry will follow tomorrow

By 2020, IoT will see such rapid growth that there will be over 25B things in use, compared to 7B connected PC/ smartphone/tablets. - Gartner, Sept 2013

Through 2015, 85% of Fortune 500 organizations will be unable to exploit big data for competitive advantage. – Gartner, December 2013

A Tsunami Of Empowerment Will Hit Your Network With The Internet Of Things" – Forrester, Oct 2013

"Much of the focus on big data has missed one key point: big or small, it's still data. It must be managed and integrated across the entire enterprise to extract its full value, to ensure its consistent use." -DigitalWire, 2013

Table 1. Total Economic Value-Add From IoT, Worldwide, 2013-2020

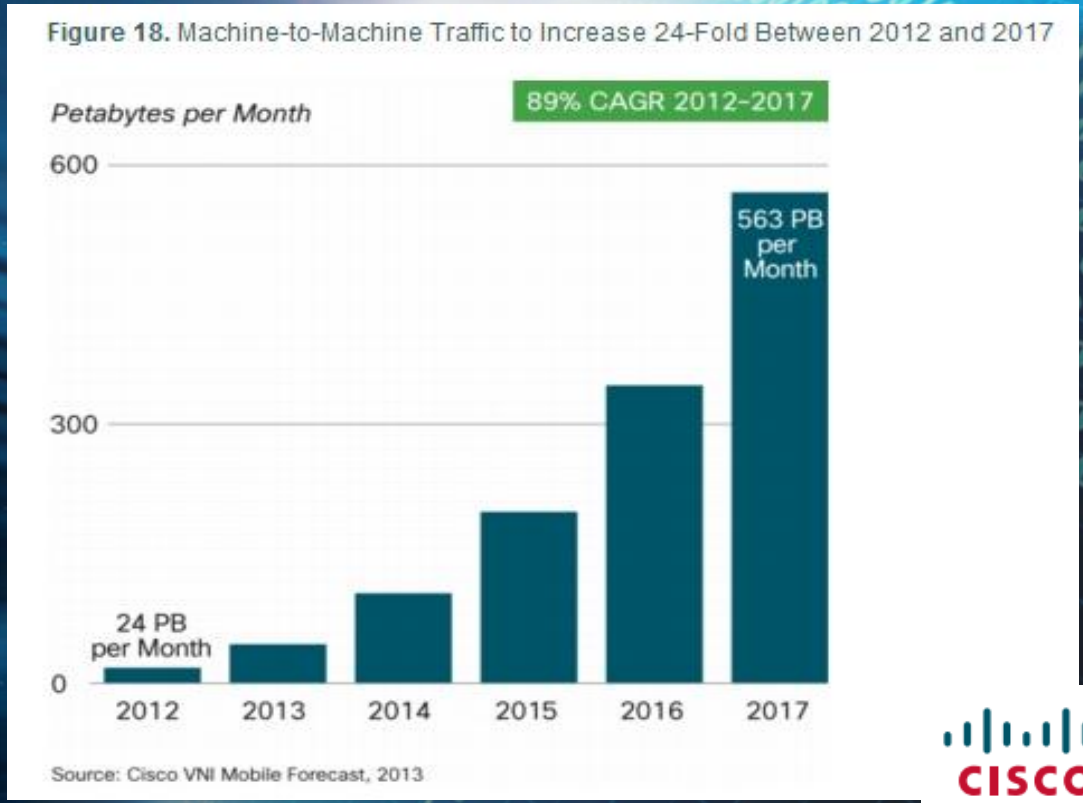
	2013	2014	2015	2016	2017	2018	2019	2020
Value-Add ($T)	0.3	0.4	0.5	0.6	0.8	1.0	1.4	1.9
Growth (%)	-	25	26	27	29	31	34	39

Source: Gartner (November 2013)

"The Information of Things: Why Big Data will Drive the Value in the Internet of Things" - Gartner, April 2013

Gartner

Communication Traffic



24X

Software as a Service

"SaaS will grow nearly five times faster than the software market as a whole reaching $67.3 billion by 2016."

"By 2016….nearly $1 of every $5 spent on applications will be consumed via the cloud."

Maintenance, Updates, Security…the Delivery model demands it

People

From anywhere

At any time

With any device

Consumerization of IT has driven a new paradigm in the enterprise

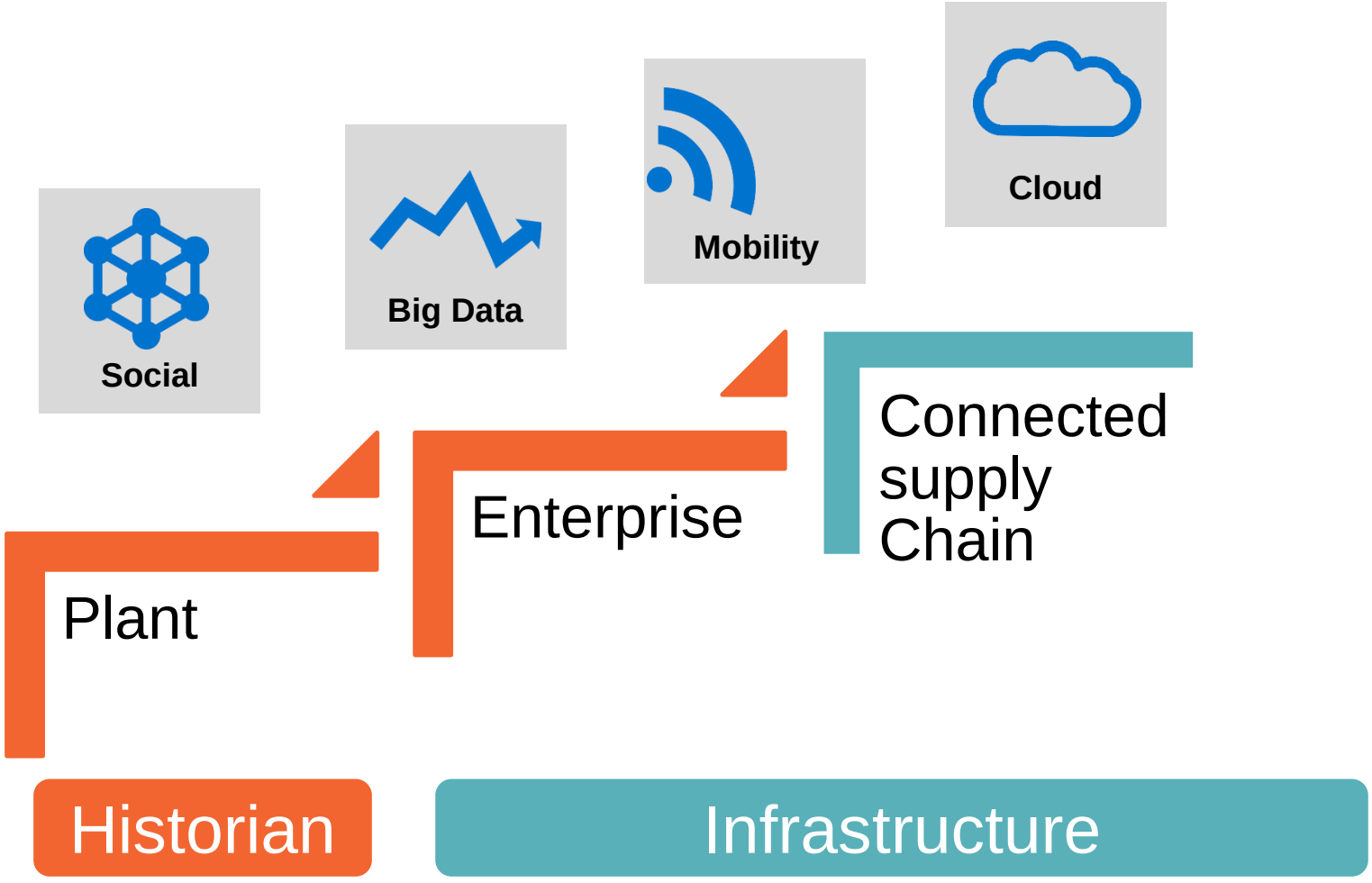
With anybody

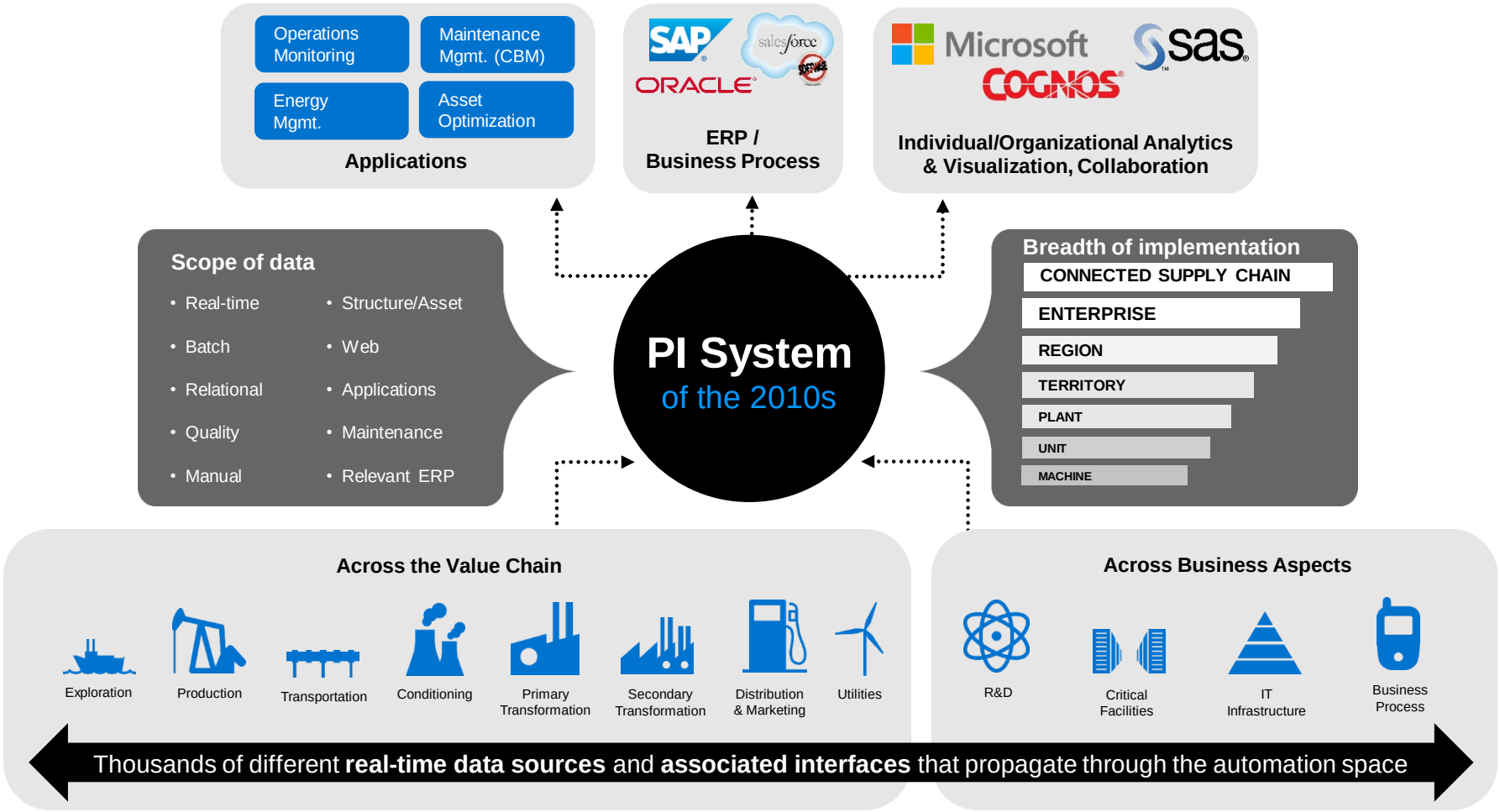
Example of the modern PI Infrastructure

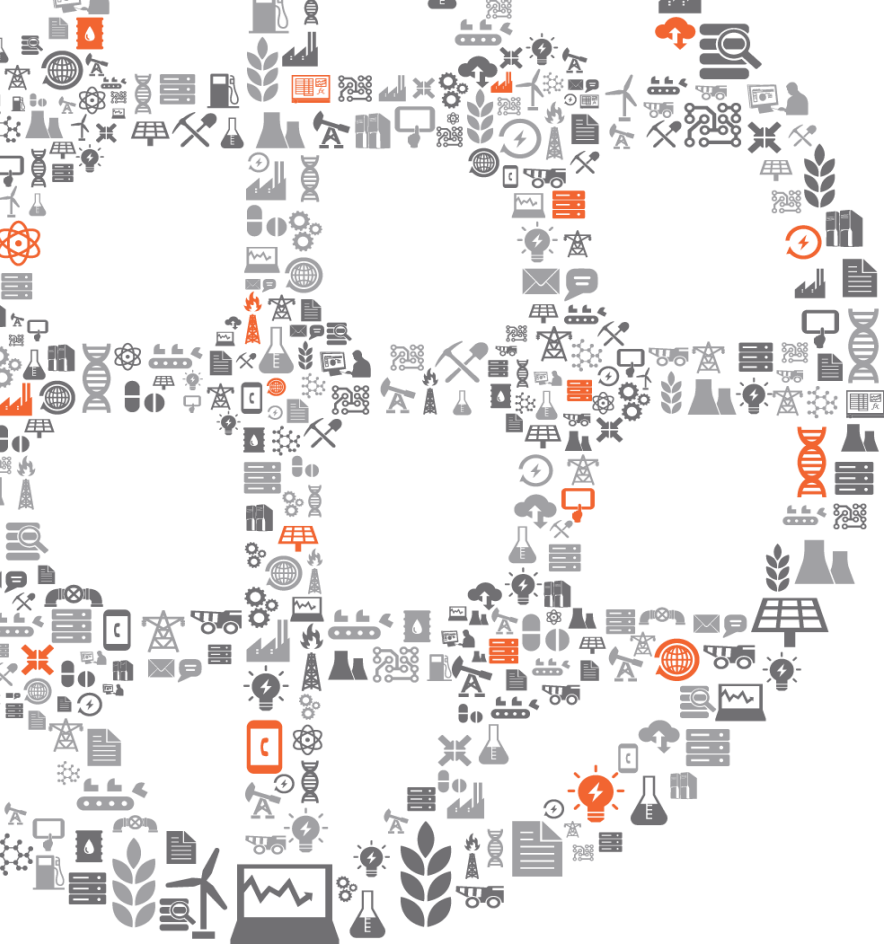
- Nalco is an Ecolab company that spans the globe and has sales of over $11 billion and has over 40,000 employees
- Nalco offers programs and services for all industrial markets in more than 160 countries
- *Refined Knowledge*® is an O&M solution for the Petrochemical industry based on OSIsoft and Microsoft technology

In summary

- Nalco developed a solution based on services and applications that helps their customers be more efficient and also prolong the life of key assets
  - Centralized and normalized the data
  - Standardized analyses, displays and reports
  - Provided decision making infrastructure that is complete and agile



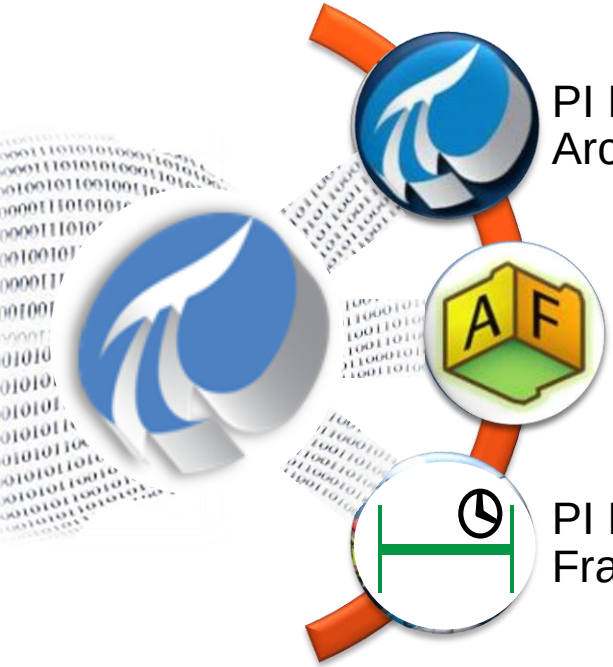




Today's Themes

- Integration and "contextualization" of information
- "Visualization"
- Sharing information

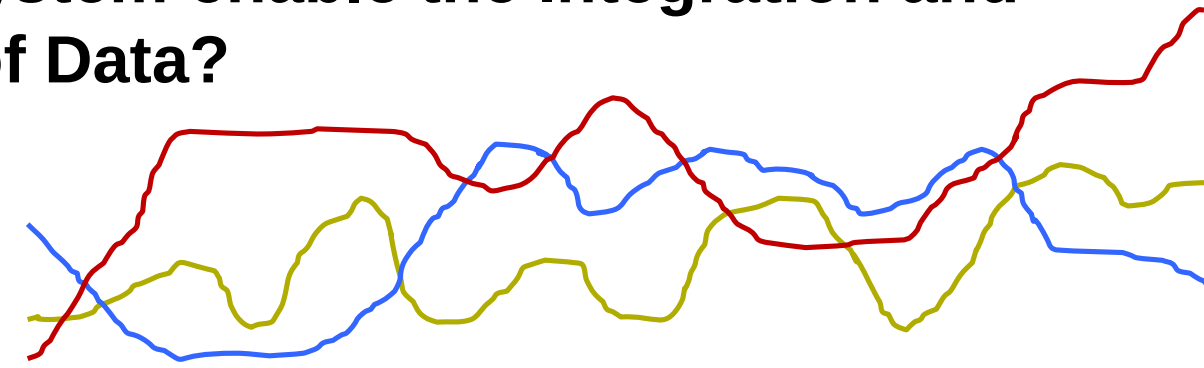
How does the PI System enable the Integration and contextualization of Data?

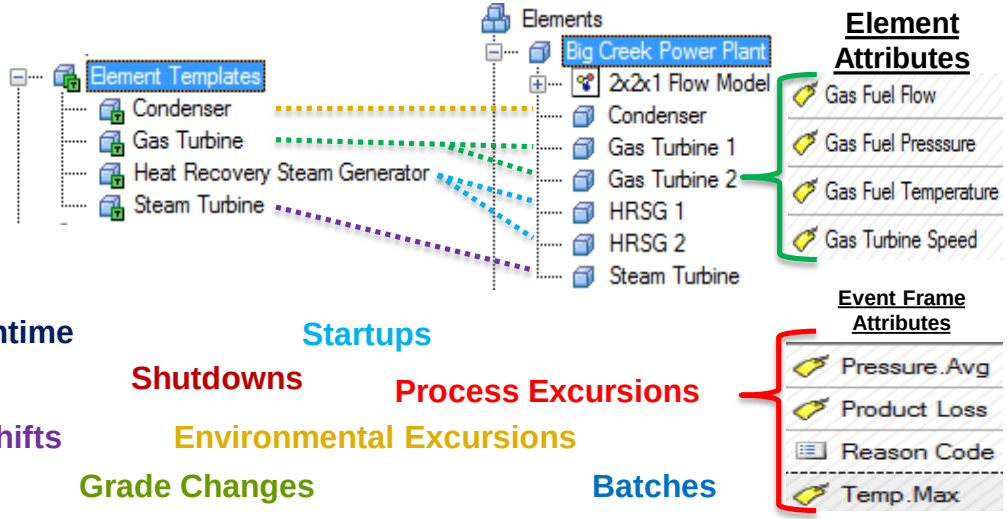


PI Data Archive

PI Asset Framework

PI Event Frames





Downtime

Startups

Shutdowns

Process Excursions

Shifts

Environmental Excursions

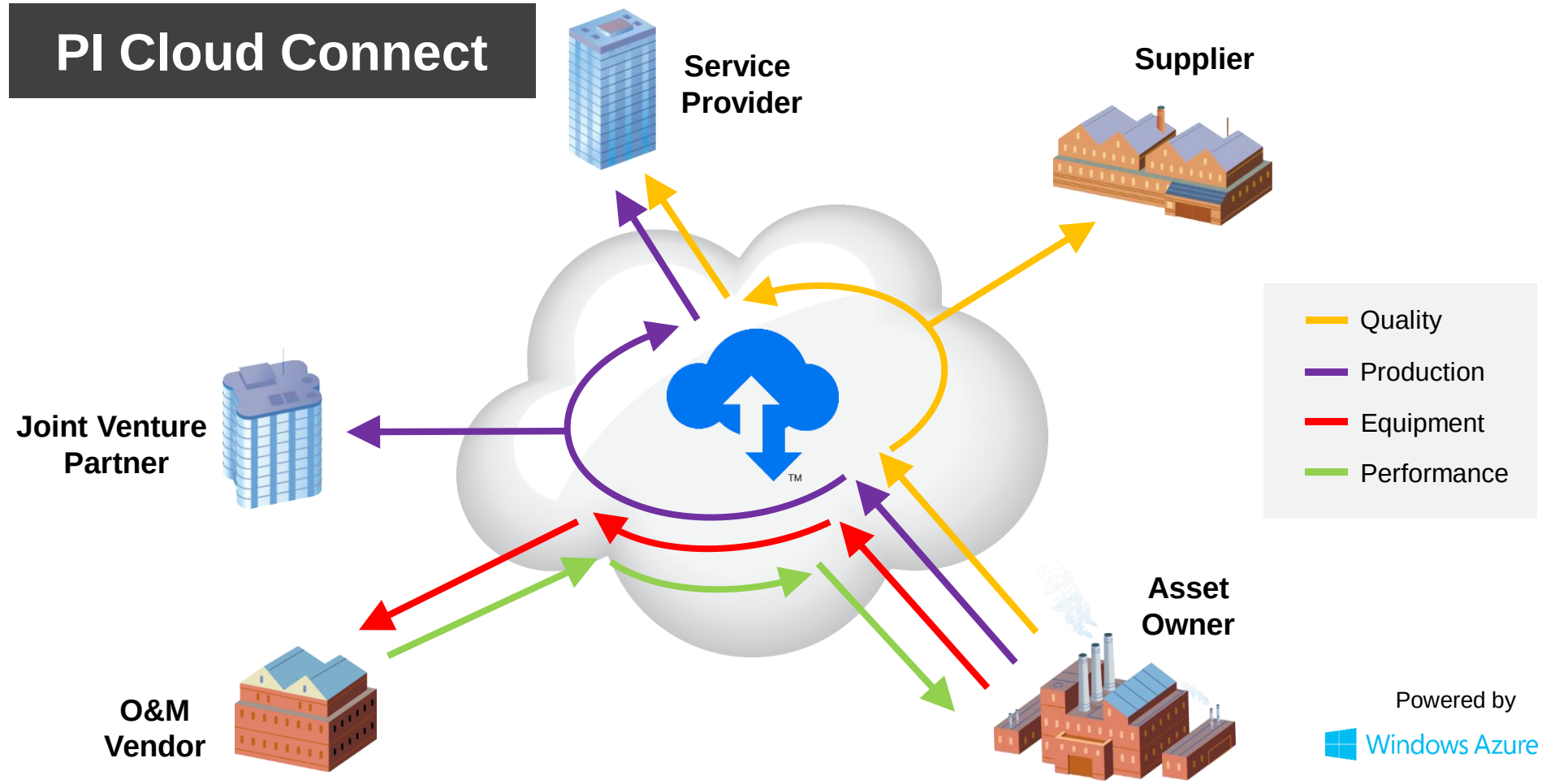
Grade Changes

Batches

Visualization

- Powerful tools
- User friendly
- Mobile
- Multiplatform
- Push relevant events to the end user

PI Cloud Connect



OSIsoft Enterprise Agreement

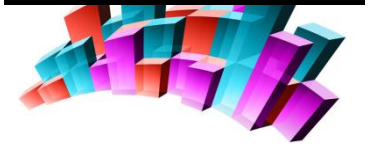
- Engineering Projects → Enterprise Infrastructure
- Counting Tags, Servers, Interfaces, Users…
  - Doesn't scale, and is almost futile
  - Is not the best use of our collective time
- Scope based on Assets → one and done
- Unlimited software and services
- Provides "change insurance" → Future proof

Back to Big Data…

Data Warehousing

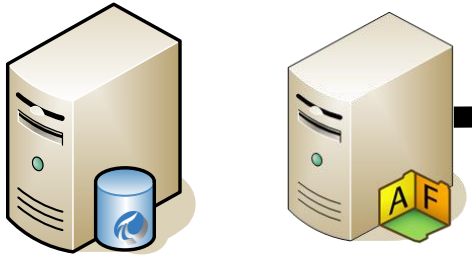
Statistical Analytics

Visual Analytics



Making the Connection

So what does the PI System mean to Big Data?



OSIsoft.

System of Record

- Guaranteed Delivery & Storage
- Full Fidelity of Sensor
- Optimized for Real-Time
- Backup/Restore
- HA
- Security

Needs:

- Cleanse
- Augment
- Shape
- Transmit

Streaming Data
"CAST"

Visual Analytics

Excel, tableau, Spotfire TIBCO Software, COGNOS, QlikView

Statistical Analytics

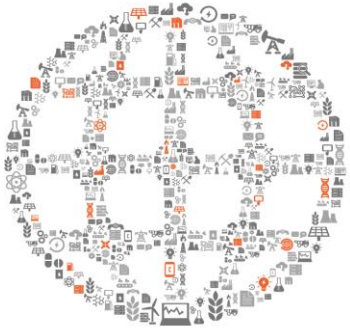
hadoop MapReduce, SAS, SAP

Analytics Packages

- Designed to Analyze Large Sets
- Expects that the Data Exists
- Problem Defines Data Shape
- Typically Evenly Spaced in Time

“Every day I wake up and ask, ‘how can I flow data better, manage data better, analyze data better?’”

- Rollin Ford, CIO Walmart



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The Power of Data
THRIVING IN A WORLD OF CHANGE

THANK YOU

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