



# Pivotal & the big, noisy, dirty machines

@cote

October 2016

Slides: <http://www.slideshare.net/cote/pivotal-and-iot>

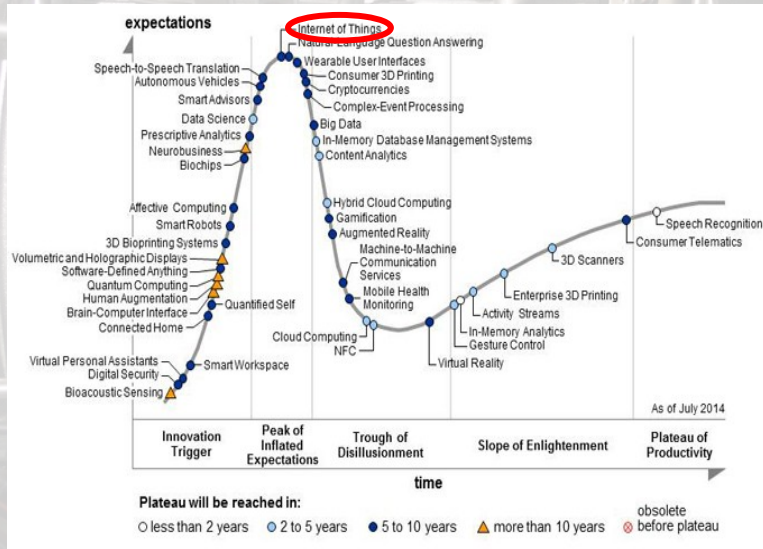
# Hello!



- [@cote](#) – Director, Marketing at Pivotal
- Former industry analyst at 451 Research and RedMonk
- Corporate strategy and M&A at Dell
- Former software developer
- More: [cote.io/podcasts](http://cote.io/podcasts), <http://cote.io>, [cote@pivotal.io](mailto:cote@pivotal.io), Register [DevOps column](#).

# Crazy-making IoT numbers & hype

“The Industrial Internet is growing at twice the rate of the consumer Internet, with **20 billion devices generating 80 exabytes of data.**”



## AWS IoT at Scale



2 million msg/min =  
86.4x10<sup>9</sup> msg / month

IoT @ \$5 / million msg @ 512b / msg = \$432,000 / month

Lambda @ \$0.20 / Million Req = \$17,280 / month  
+ \$0.00001667 / GB-second + \$72,057 / month @ 512MB-100ms

S3 @ \$0.0314 / GB = \$678 / month

DynDB @ \$0.25 / GB = \$5,400 / month  
+ \$0.0065 / hr/10 units "write capacity"  
1 unit = 1KB/s write; ~45,000 units req'd + \$21,060 / month

SNS @ \$0.60 / million for HTTP/S = \$17,107 / month  
Assume 33% outbound for apps

Pivotal

“... more than 40 percent of organizations expect the IoT to have a significant impact in the short term, and this number rises to more than 60 percent in the long term. Industries dealing with tangible equipment, products and services (such as retailers and manufacturers) are more likely to see the IoT as having a significant impact.”

Turbines & Friends

Industrial Big Data 	Industrial Data Science 	Industrial Control 
MICROSERVICE	MICROSERVICE	MICROSERVICE

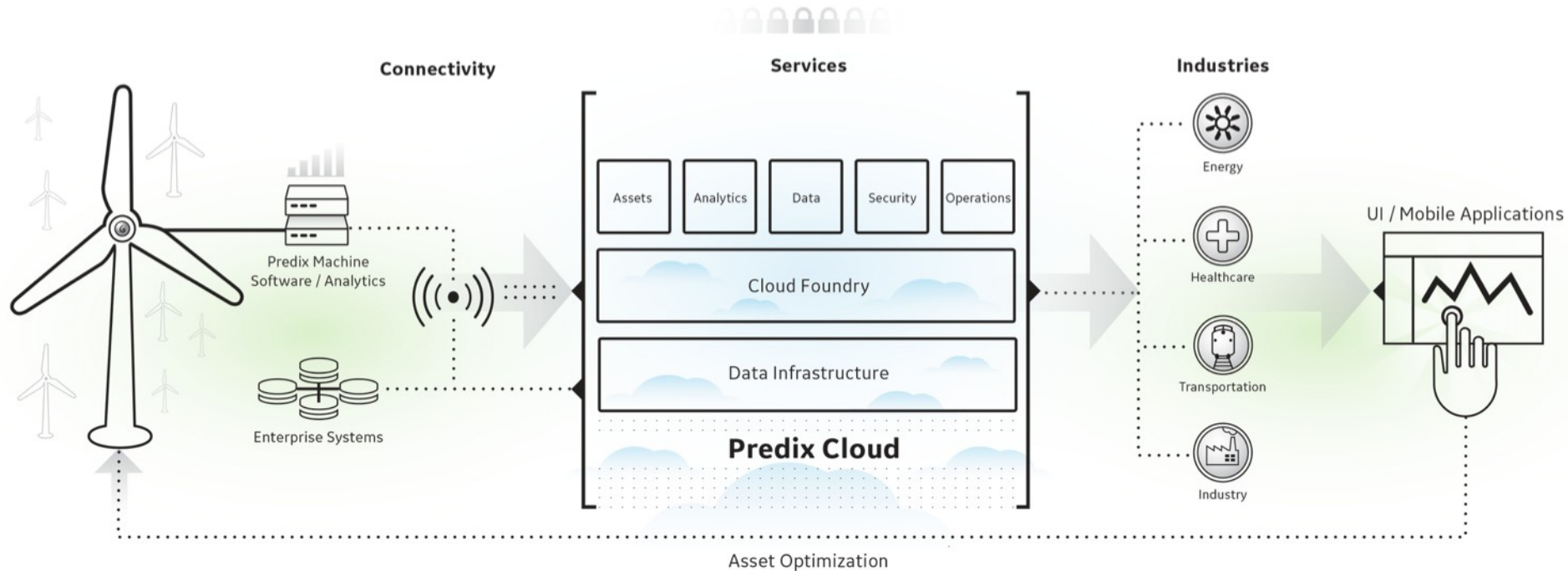
```
cf push wind-turbine -i 30 -m 1024M  
-n GE-Predix-APM  
-p build/libs/GE-Predix-APM.war
```

© 2015 GE Software | @GE\_Software | #IndustrialInternet



# “No offense to the toothbrushes and rice cookers.”

-the big, noisy, dirty machines



# Automating analysis of those terabytes of data exhaust

Current state – ‘the old way’



The future state



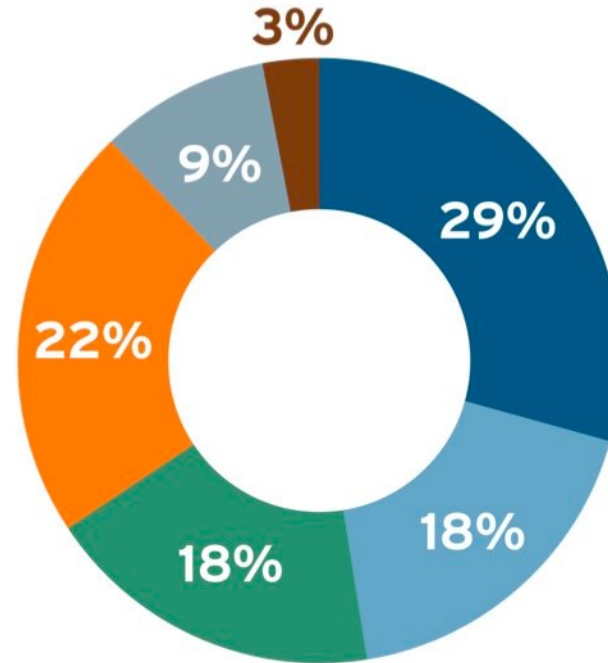
# Conclusion:

Software is eating *your* world too.

Are you great, or even *good* at software?

# When it comes to digital strategy, it's pretty much "drunk and disorderly" out there

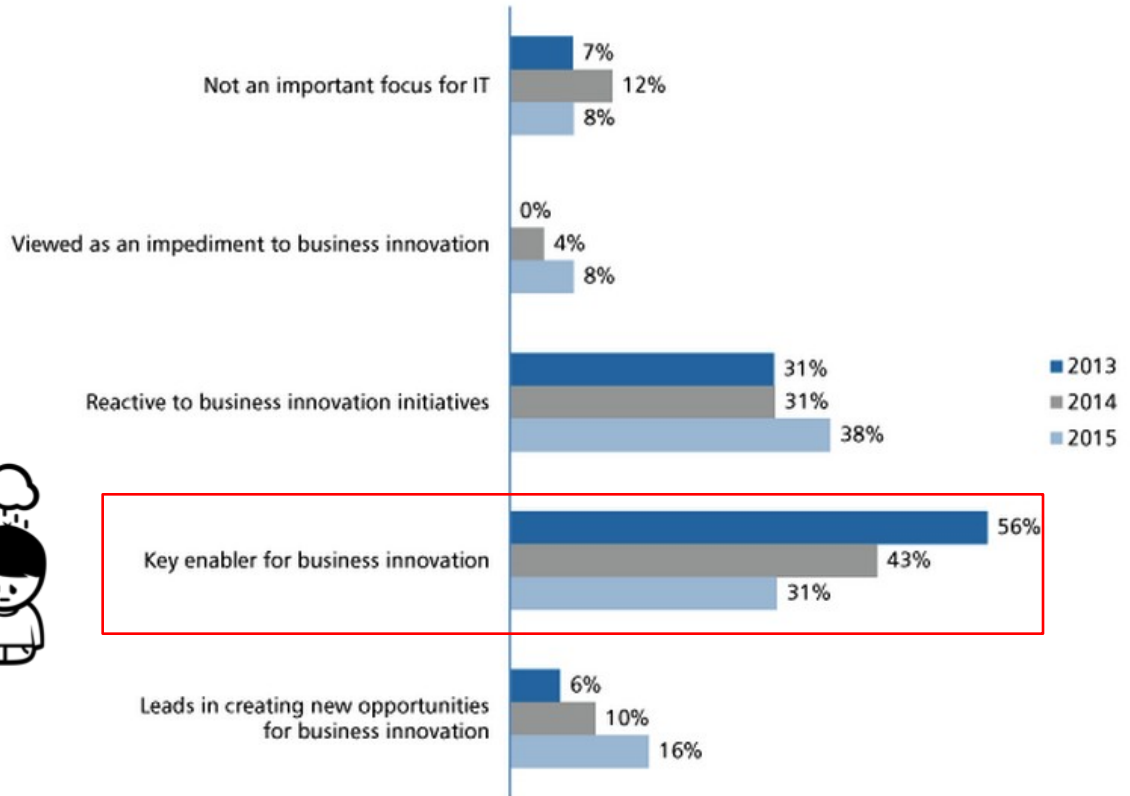
Which of the following best describes your company's status with regards to a digital transformation effort?



- We currently do not have a digital transformation strategy
- We are considering it, but have no formal plans
- We are just in the planning stages researching to form our digital transformation strategy
- We have a formal strategy and are actively digitizing our business processes and technologies
- Don't know
- No answer

# Organizations are held back by an IT agility gap

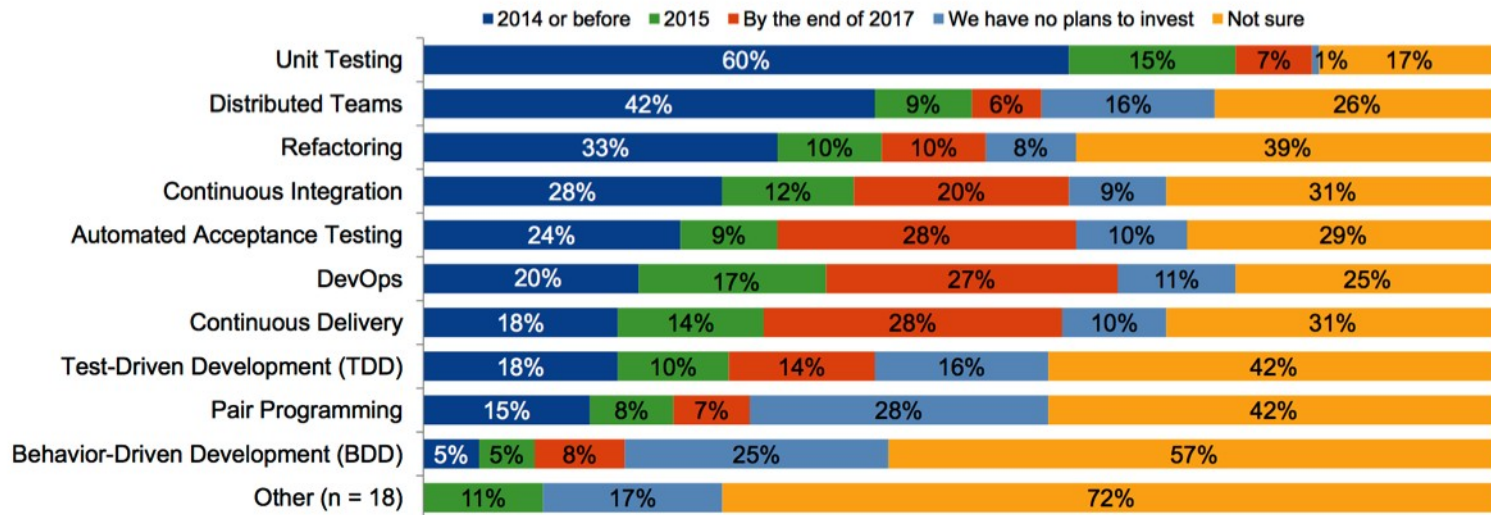
*What is your  
IT  
organization's  
role in  
business  
innovation?*



# After 17 years, “Agile” is not as wide-spread as we think it is – make sure you’re actually doing it

## When did or will your organization begin to use each of the following agile enterprise practices?

n = 155; Base: Organization uses agile or is in pilot implementation phase



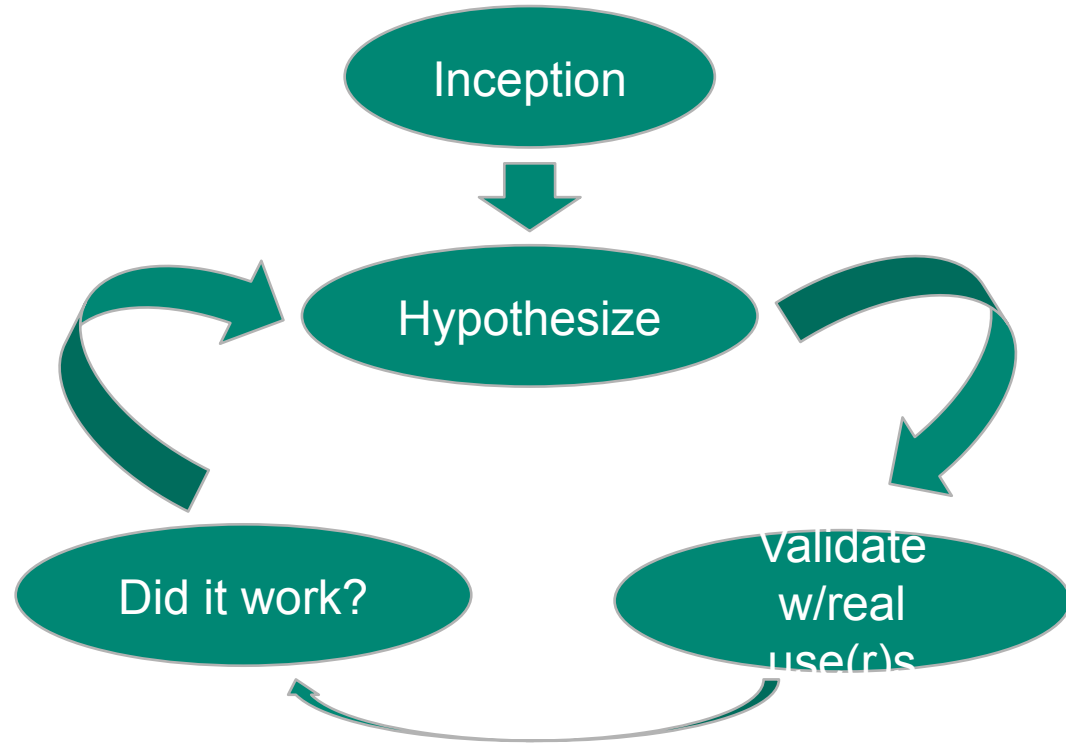
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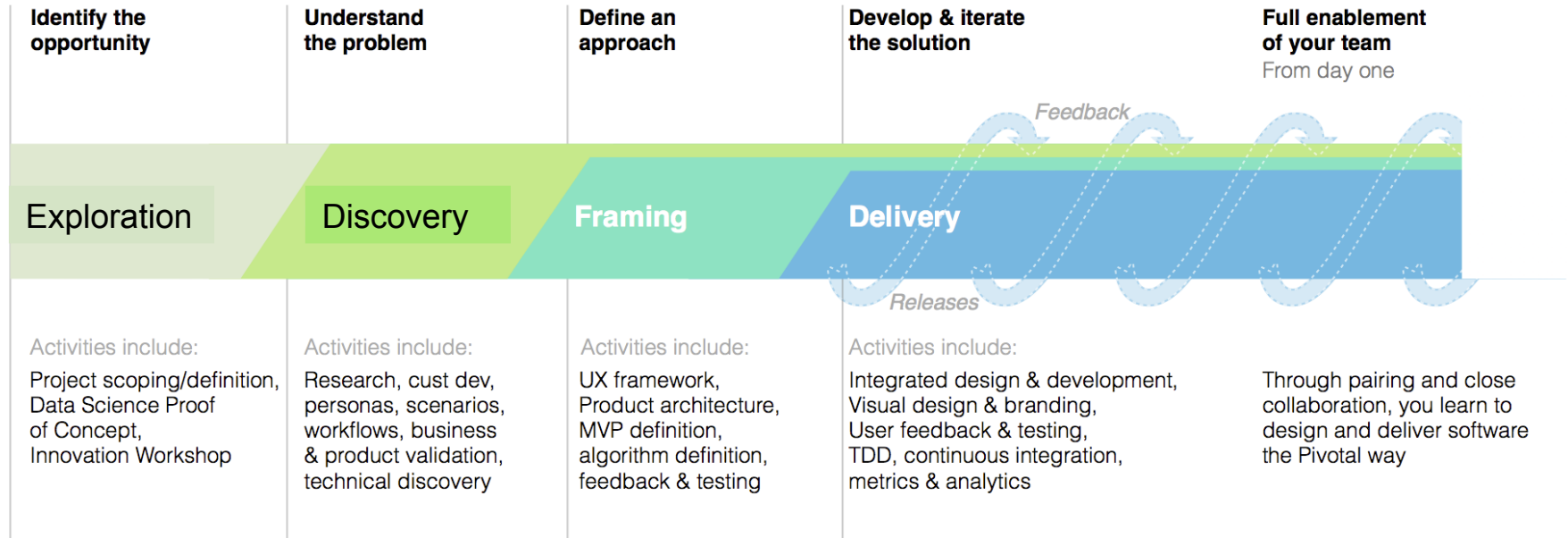
How Pivotal thinks:  
Agile, DevOps, Cloud Native

# The “Lean Startup” Approach, Hypothesis Driven Development, aka, “The Scientific Method

- Deploy to production each time, avoid waterscrumfall
- Relies on:
  - Product approach
  - Small batch oriented pipeline and process
  - Cloud native automation



# Example approach, The Pivotal Way



# Small batches enable a user-centric approach

How much do I owe the IRS?

## Before

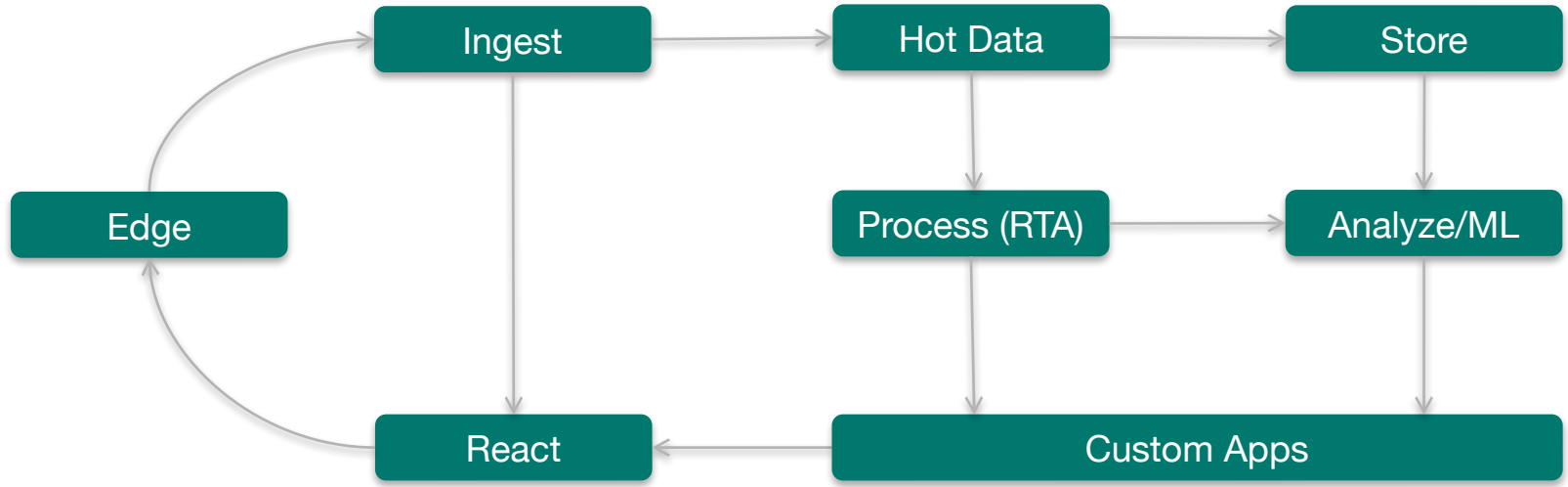
Overview by Year			
YEAR	STATUS	AMOUNT	
2014	Balance Due	\$644	>
2013	Taxes Paid	\$685	>
2012	Refund/Applied	\$100	>
2011	No Information Available	--	

## After

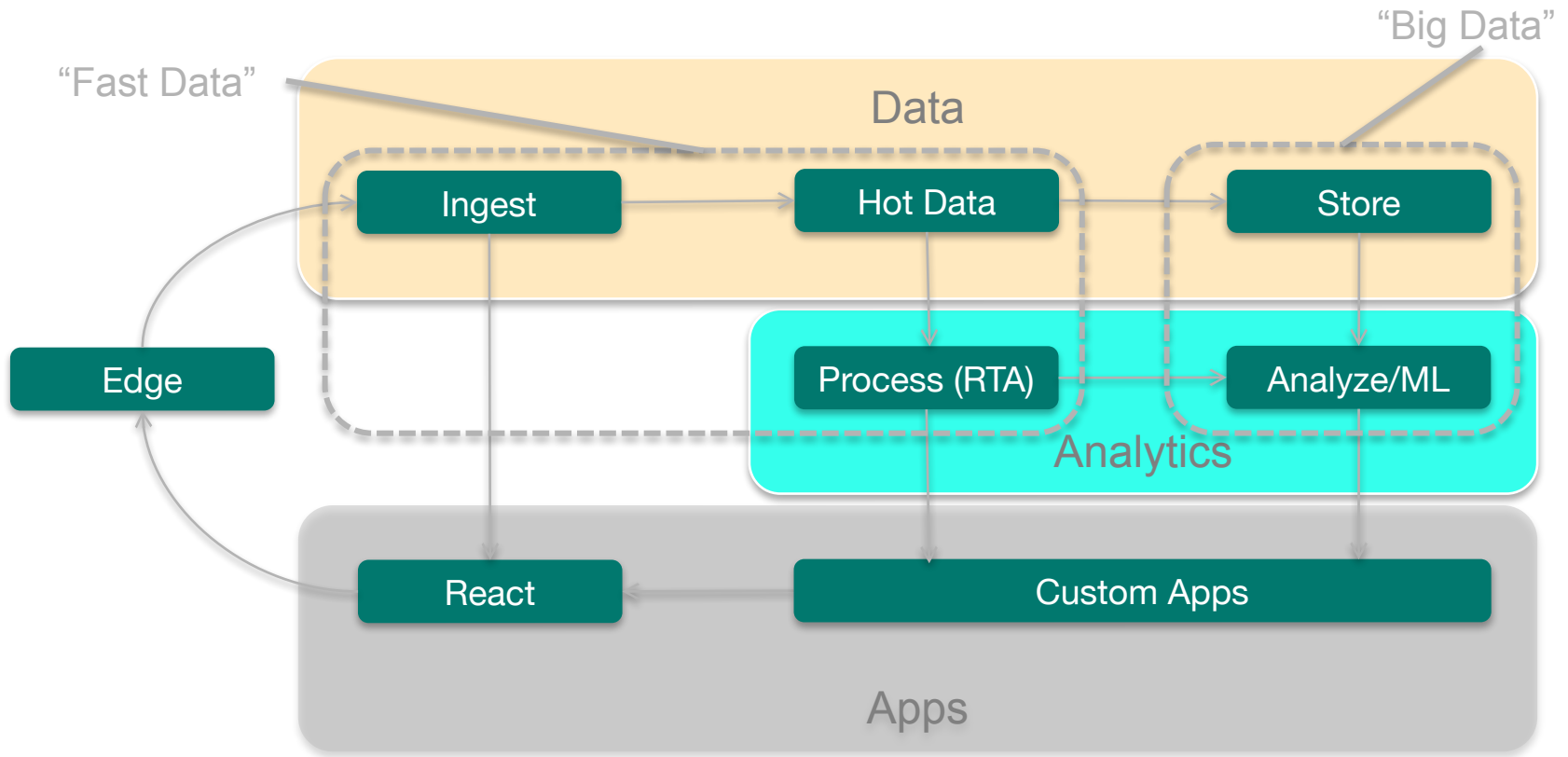
Overview by Year	
YEAR	BALANCE DUE
2014	\$644.00 >
2013	\$0.00
2012	\$0.00
2011	No Return on File >

# Applying Small Batches to Industrial and “IoT” Cases

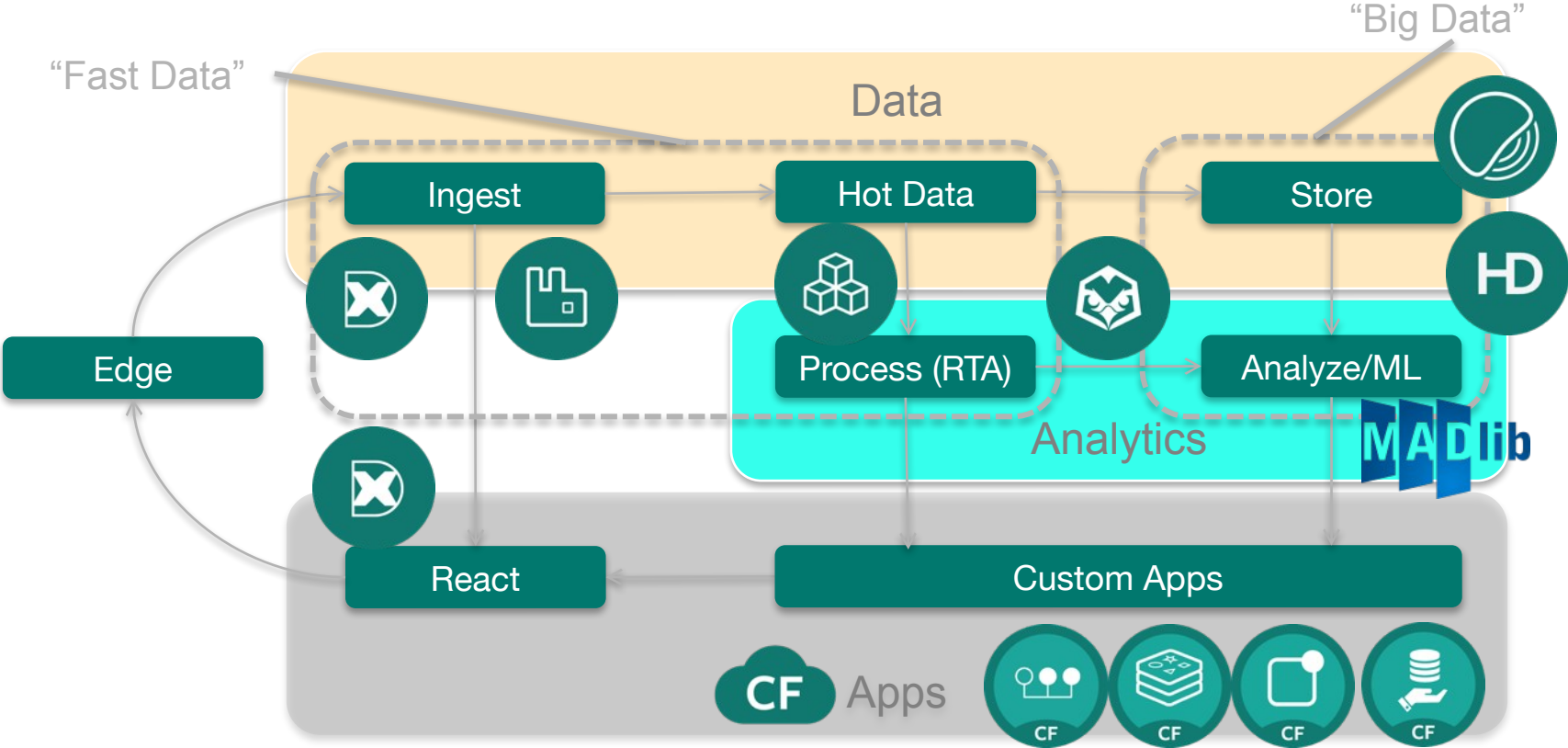
# Pivotal's View of IoT



# How Pivotal Enables IoT

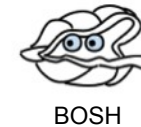
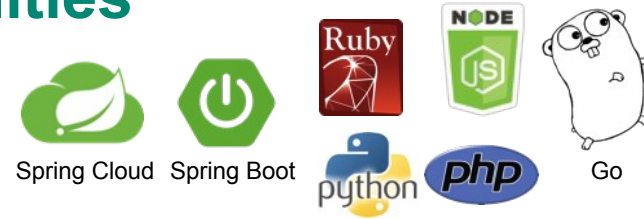
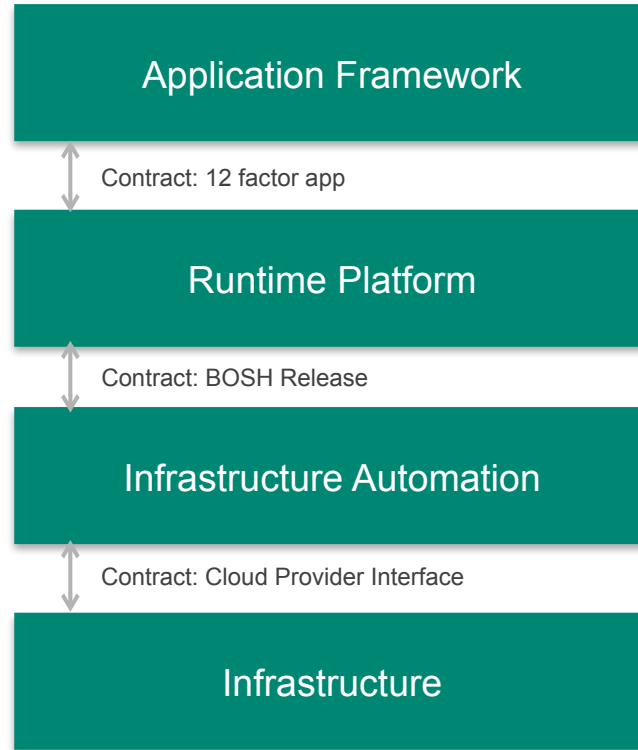
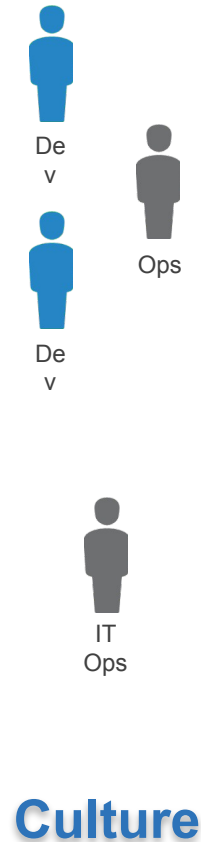


# Pivotal: A Platform for IoT

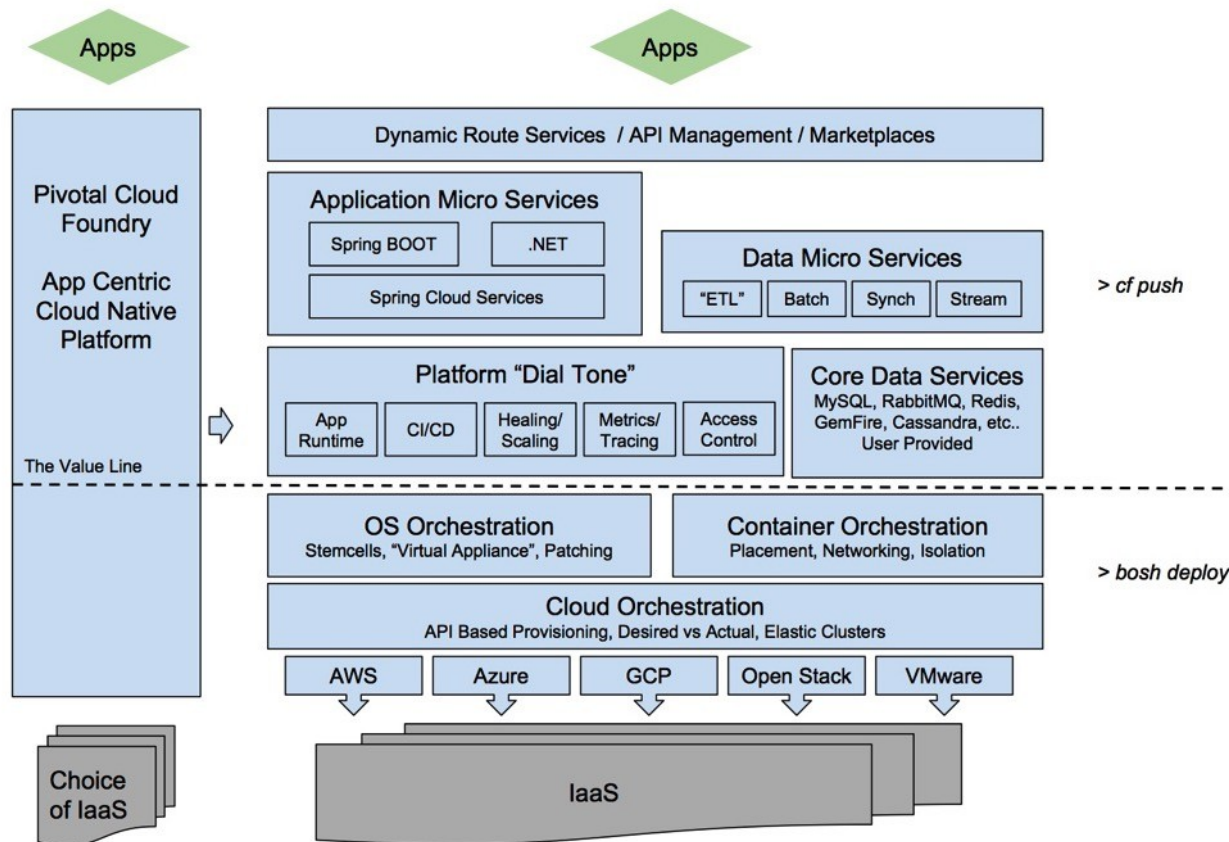


# The Technology: Pivotal Cloud Foundry

# Pivotal Cloud Foundry, layers & capabilities



# A deep look at the cloud platform value line



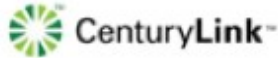
Customers:  
Established Large Organization

# Pivotal Labs & Pivotal Cloud Foundry

*Worldwide, cross industry adoption*



Mercedes-Benz



And  
many  
more...

# IoT Leadership

- 3 of world's top 5 auto manufacturers
- 2 of world's top 3 industrial manufacturers
- 2 of world's top 3 fire & security companies
- 2 of the world's leading healthcare equipment makers
- 5 of top 10 U.S. P&C Insurance providers

“We are uncovering better ways of developing software by doing it and helping others do it.”

- [The Agile Manifesto](#), 2001

Thanks!

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