

Evolution or Revolution: Top Ten Development Trends

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IT Development Trends: Building a Fighter Jet

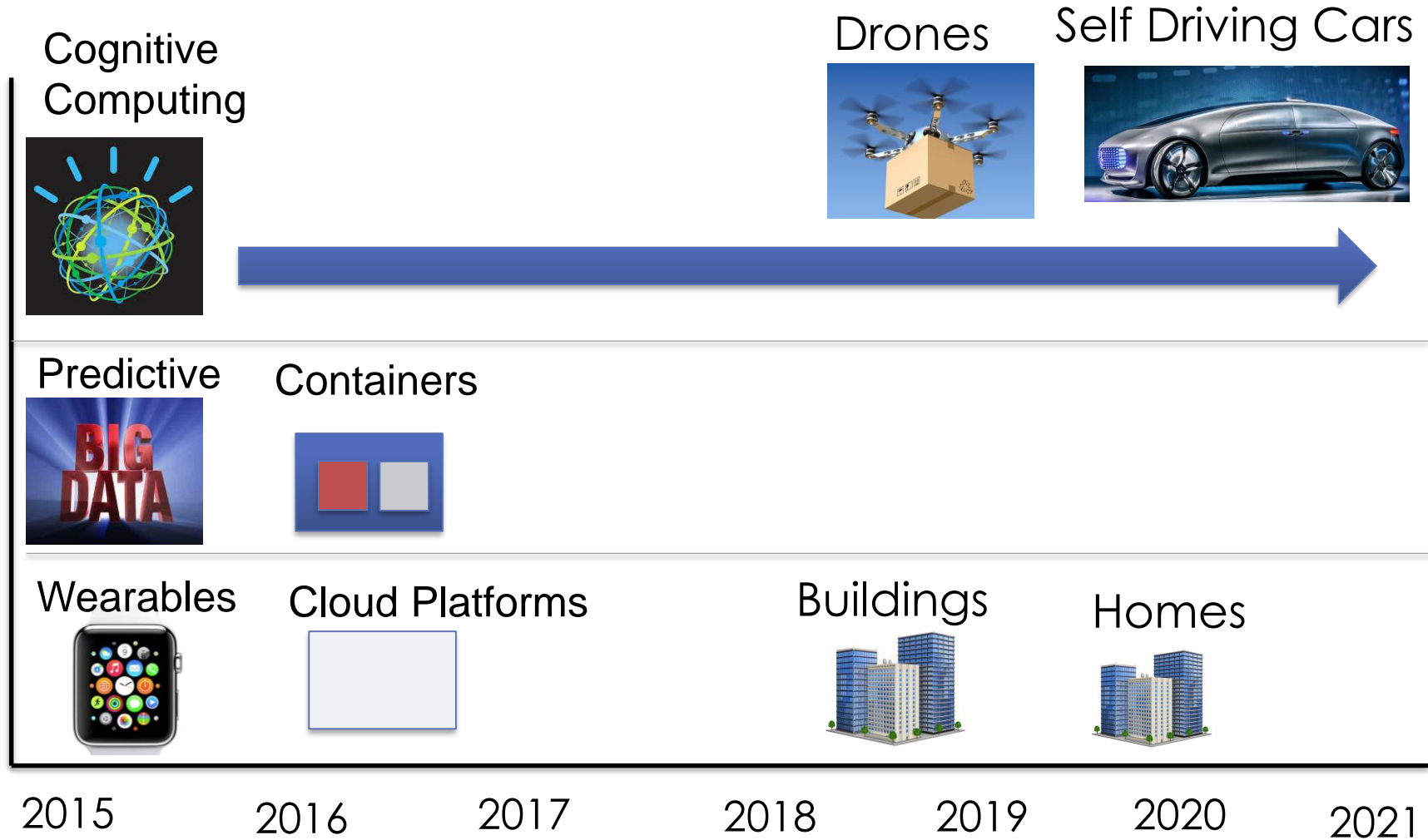


Agenda



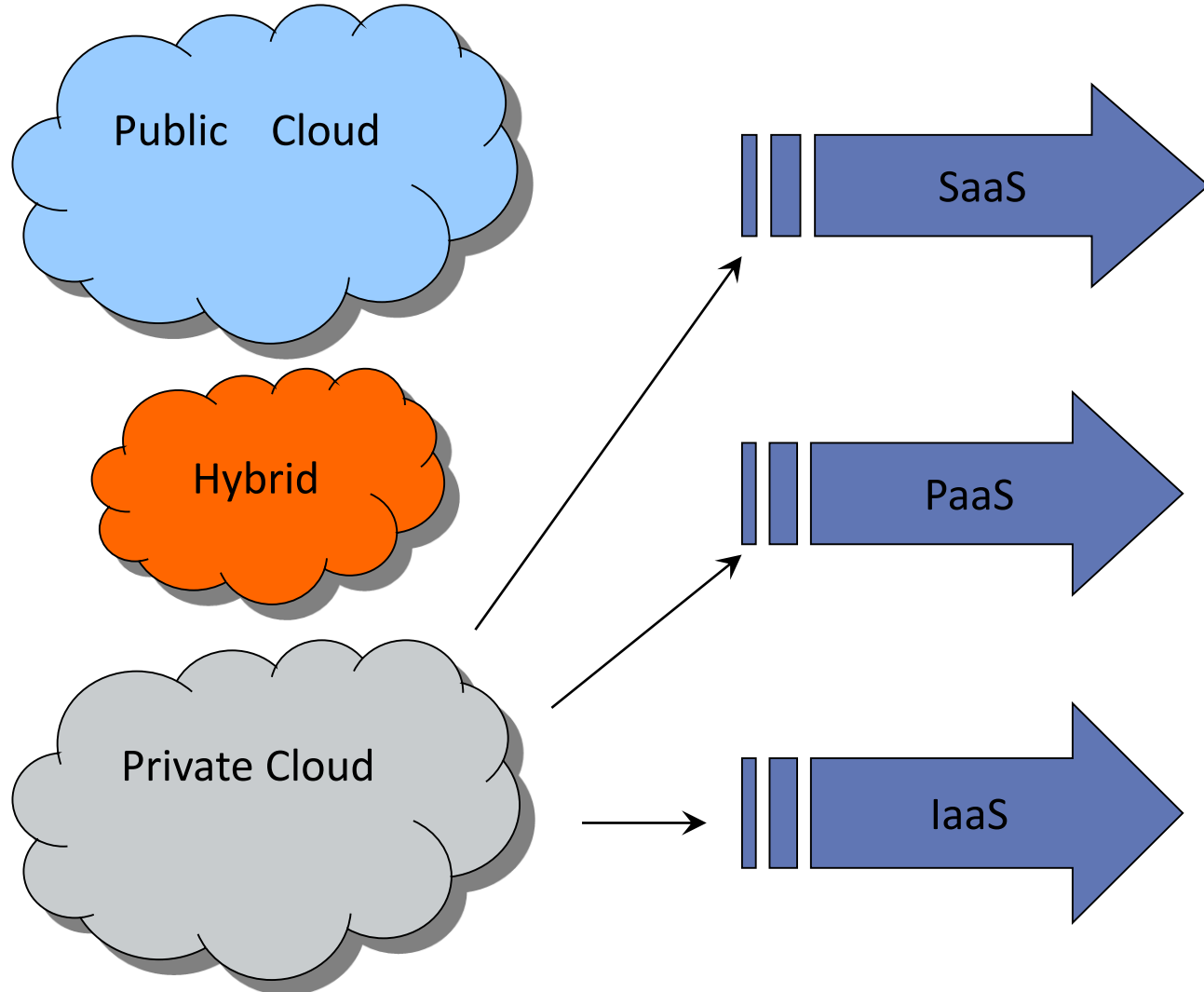
- What are the Top Ten Trends in Development?
- What are the Best Practices to Leverage them?

1. Cloud at the Center of IT Innovation



2. The Rise of Containers

Traditional View



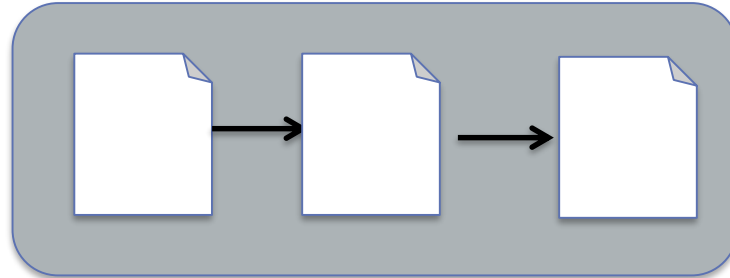
New Model



3. Mobile First Apps: Business and IT Lenses

BUSINESS LENSE

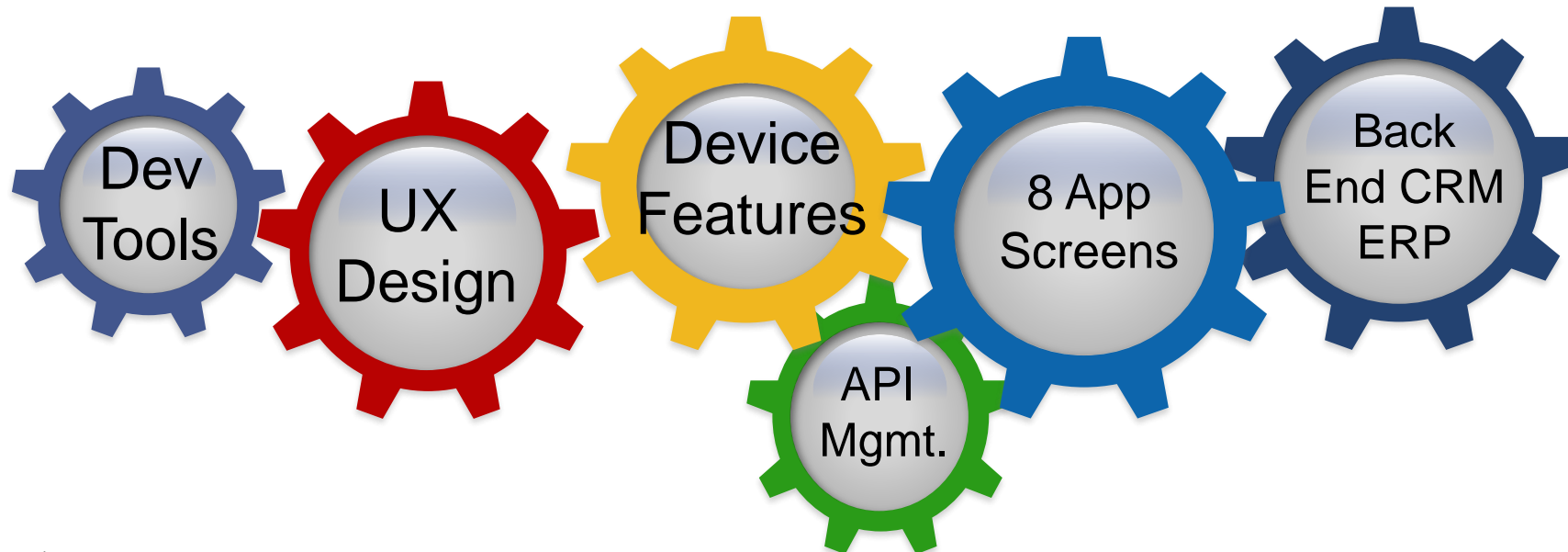
Legacy App or Business Process



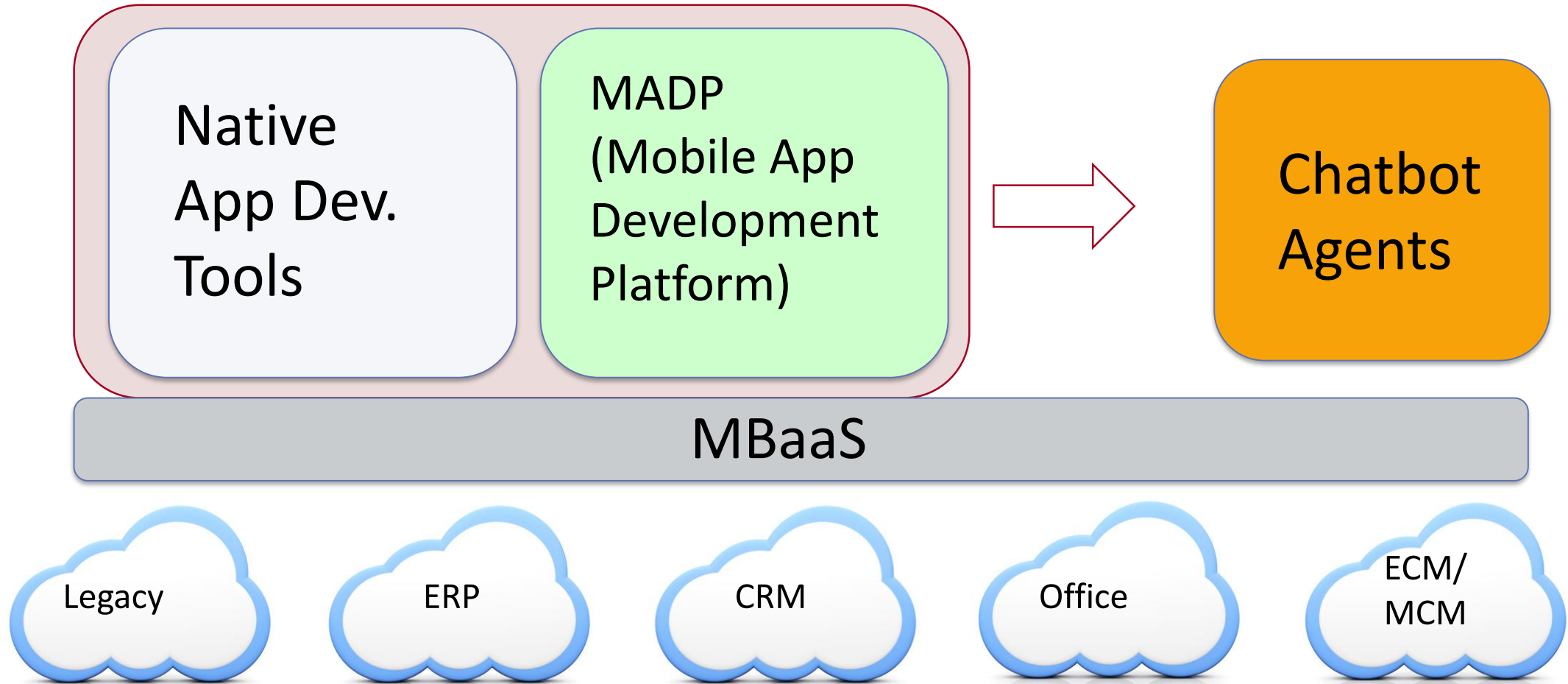
Digital App



IT LENSE



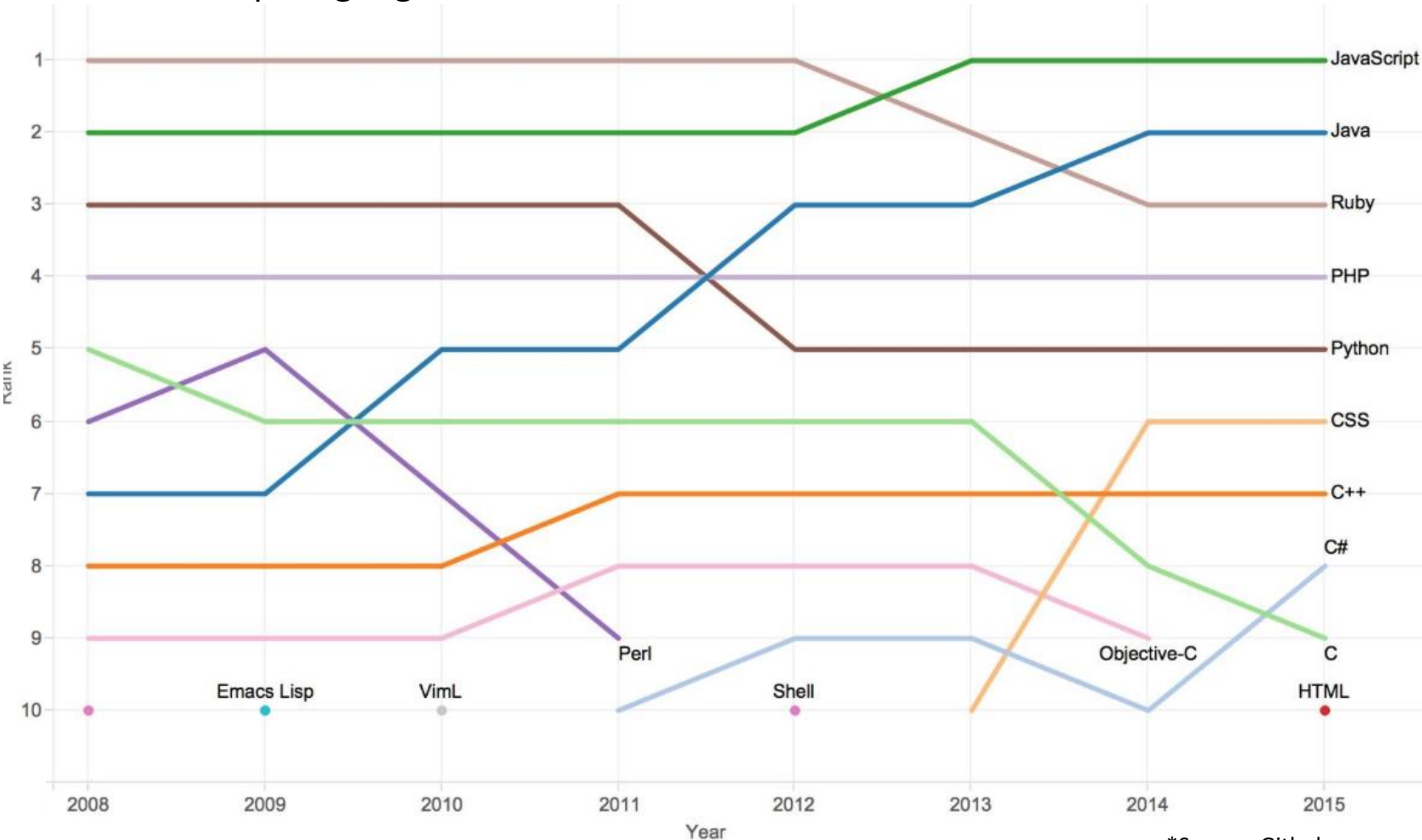
4. Mobile Back Ends – Unleash the Force



5. Shifting Languages



Rank of Top languages on Github.com over time.*



*Source: Github

Mobile

Objective C ⇒ Swift

Java

Web

JavaScript

Ruby

Python

PHP

Skillsets Needed as well

HTML, CSS, MySQL, MongoDB

6. NoSQL – Getting to Big Data Faster



New approach needed to deal with data volumes and data relationships.

NoSQL is the answer.



APACHE
HBASE

 **mongoDB.**
FOR GIANT IDEAS

Cassandra



7. Predictive Analytics: The Race to make Applications Smart

Machine Learning

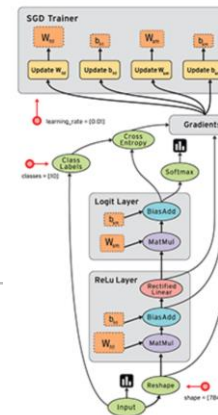
- Lots of Algorithms
- Focus is on Recommendations
- Relatively Easy to Deploy
- Can help discover Important Content or People



Deep Learning

- Neural Network Based
- Learns on the Fly
- Can be used to solve Image Processing Applications
- Could be a Game Changer

Google TensorFlow



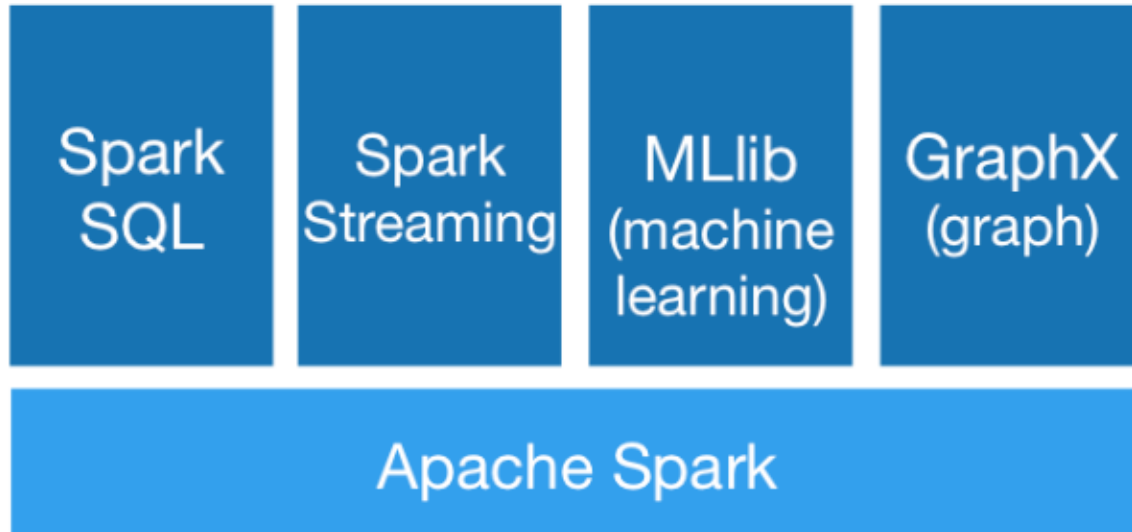
Cognitive Computing

- Expert Systems
- Highly Trained on Specific Topics
- IBM is main Cognitive Provider
- Healthcare is a big focus



8. Apache Spark – Speed and Scale

Spark  MLlib

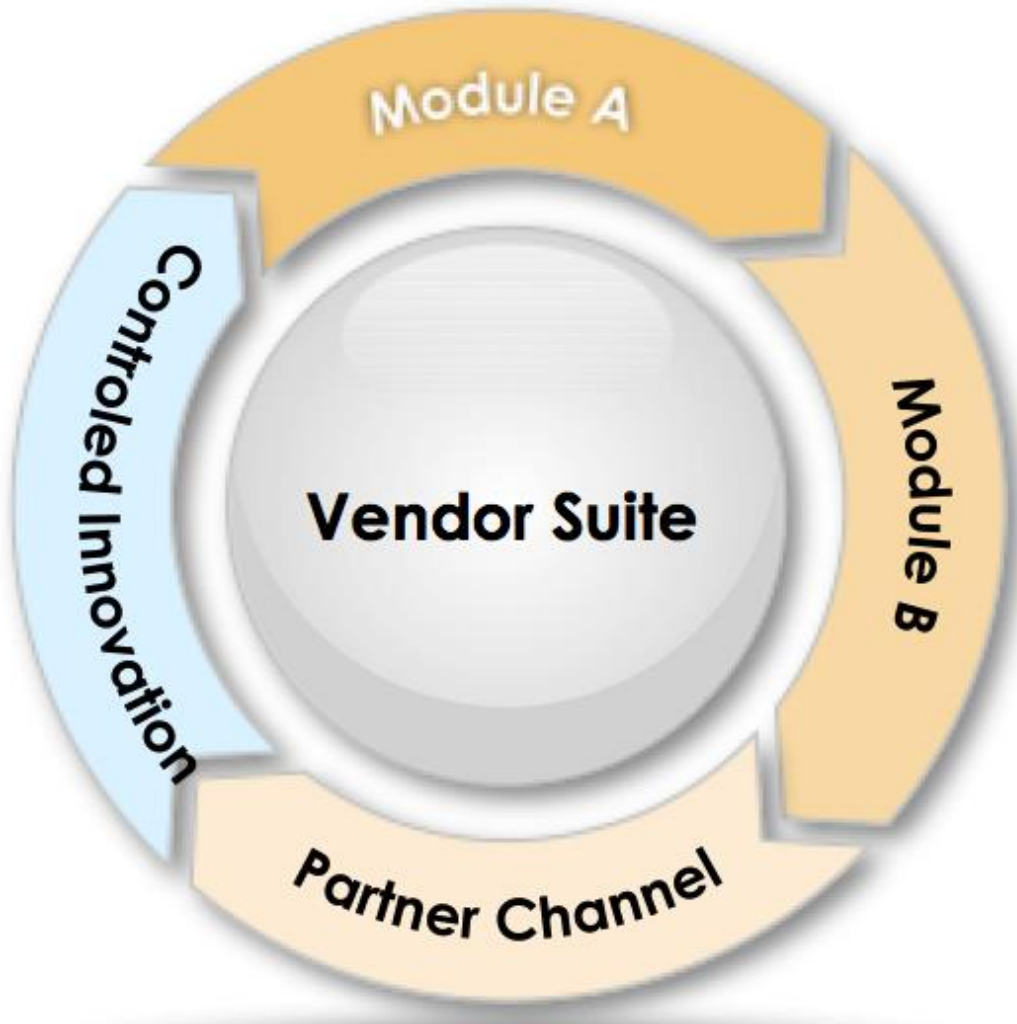


Five Reasons to Look at Spark

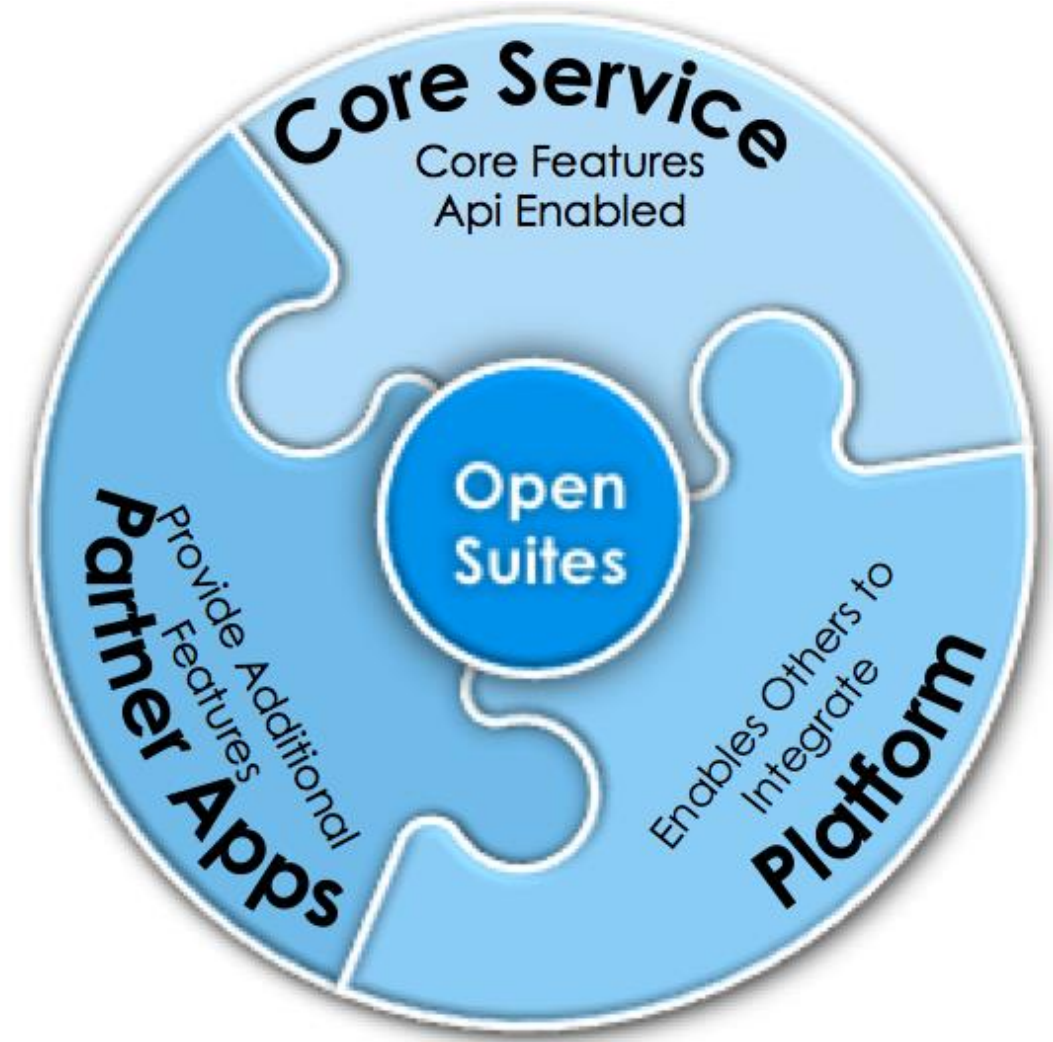
1. Up to 100x faster than other methods (Hadoop) but it will run with Hadoop.
2. Highly Configurable and good for for Batch and Real-time Processing.
3. Streaming is ideal for real-time analytics use cases.
4. Supports Python, Java, Scala, R languages.
5. Major Vendors are supporting Spark.

9. SaaS Apps: Customize via Plug-in Apps

Old Model



New Model



10. User eXperience (UX) will Impact Everything



Why UX Matters

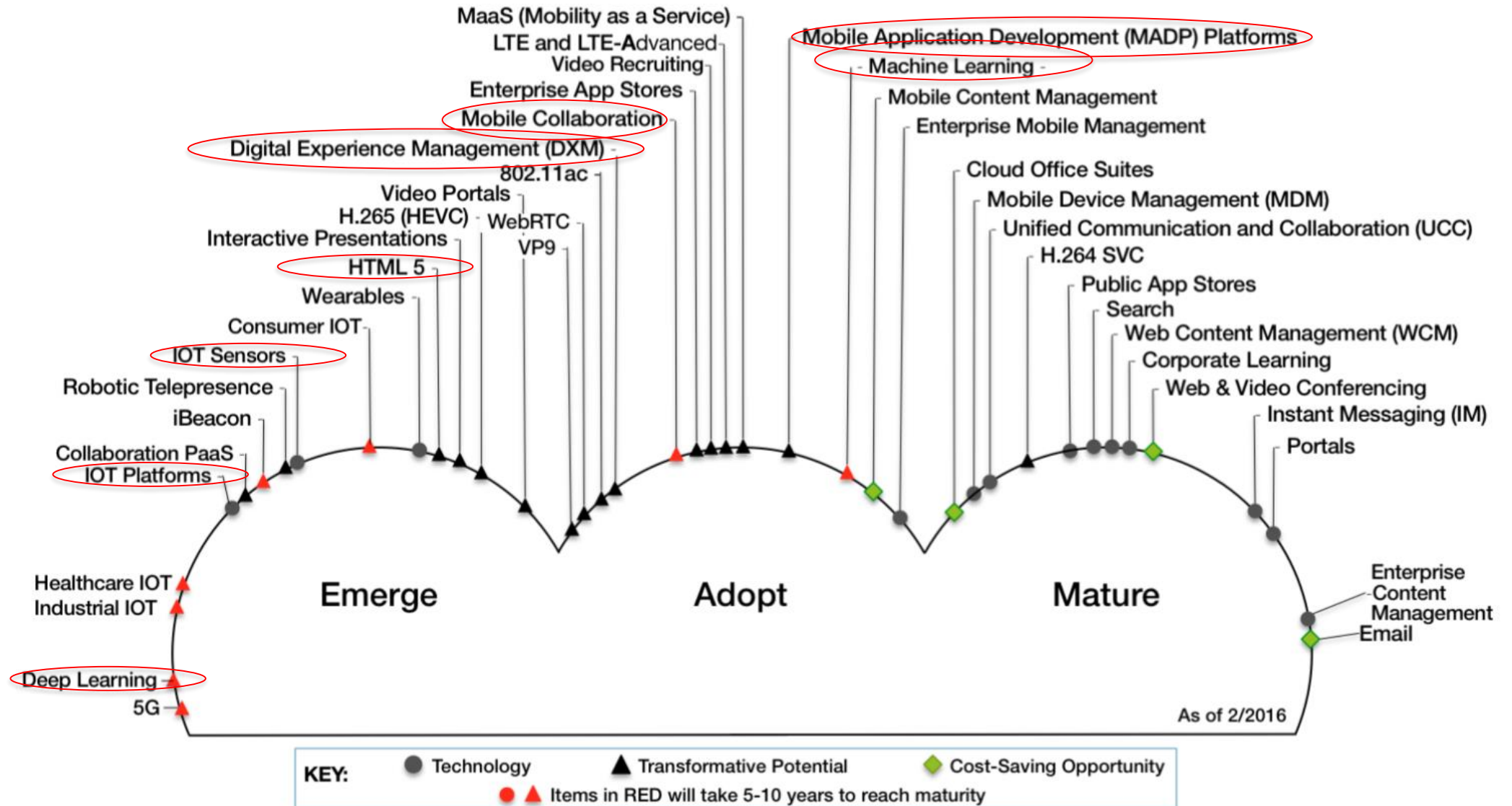
1. Improves Usability
2. Creates Positive Visual Identity
3. Brings users back
4. Can increase revenues
5. It isn't optional in 2016.

Agenda



- What are the Top Ten Trends in Development?
- **What are the Best Practices to Leverage them?**

Aragon Technology Arc for Mobile and IOT, 2016



Case Study: Rise of Cloud Platforms and SaaS Plug-ins



2004 Revenue

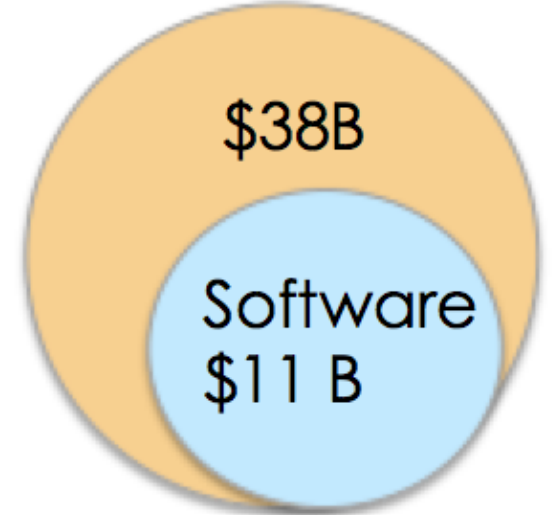
2014 Revenue

Salesforce

Siebel Systems

Salesforce

Oracle



Cloud CRM

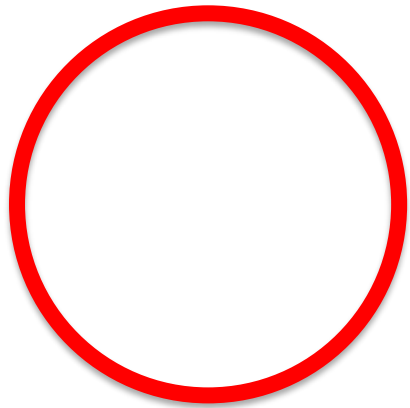
On Premises CRM

2000+ Apps

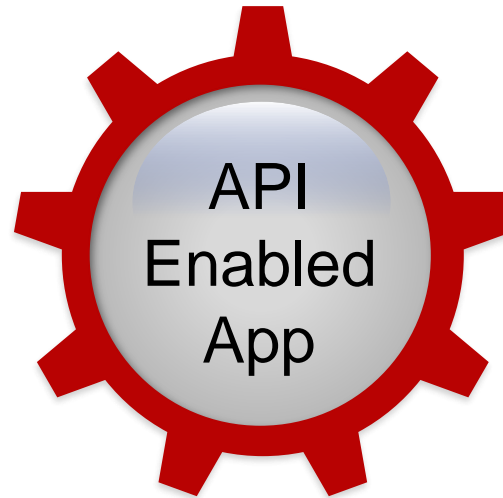
200+ Apps

APIs Become Strategic

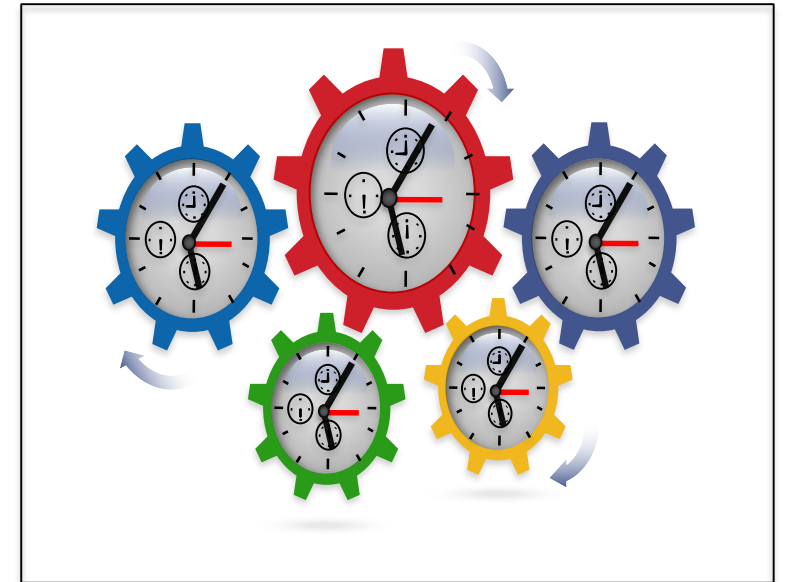
Apps
circa 2007



API Enabled Apps
circa 2014



The Battle to Own Platforms



Getting Started with Predictive



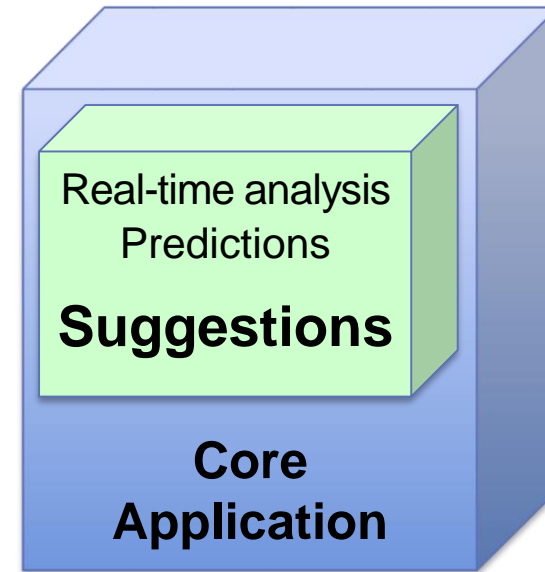
Legacy Application Architecture



Humans still have to decide on best action



2016 Predictive Application Architecture



Applications suggest action to be taken.

Predictive – Let the Machines to the Work

Leveraging Apache Mahout (Open Source Machine Learning)



Four Use Cases

1. Recommendation

- Finds things users might like

2. Clustering

- Organizes documents into topically related groups

3. Classification

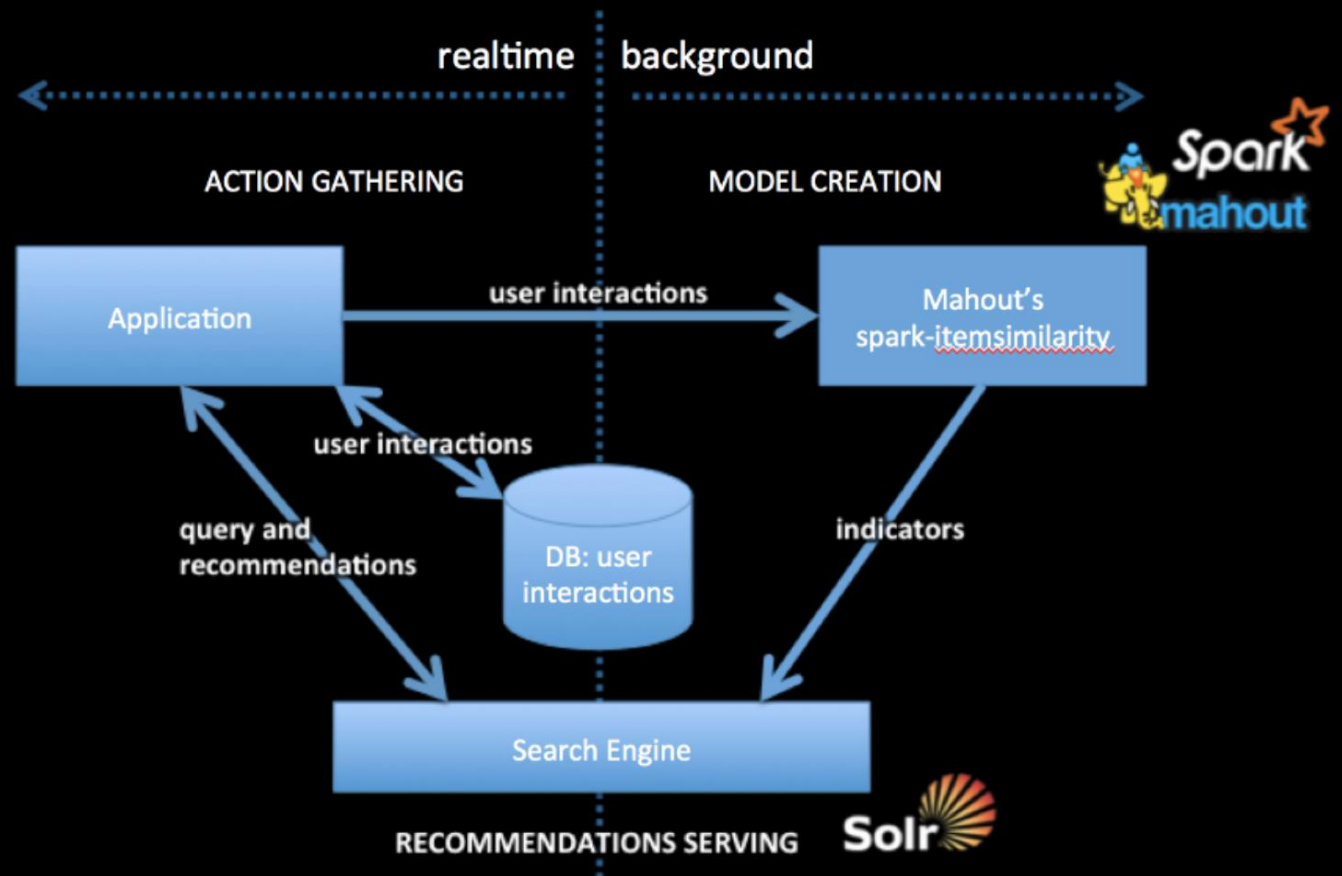
- learns from existing categorized documents
- assigns unlabeled documents to the (hopefully) correct category.

4. Frequent item set mining

- Groups and identifies a set of items, which individual items usually appear together.



Recommender Architecture



Tech Titans – Who is Doing What



Amazon

Google

IBM

Microsoft

SaaS

Workspaces
Workmail
Workdocs

Google for
Work

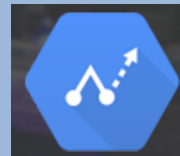
Marketing Suite
IBM Docs, Collab.

Office 365

Predictive



Amazon
Machine
Learning

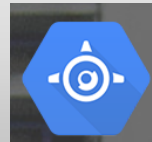


Prediction
API

IBM Predictive
IBM Watson

Machine
Learning Service

PaaS



App
Engine

IBM Bluemix

Microsoft
Azure

Container

EC2
Container
Service



Container
Engine

Bluemix
Container

Windows
Linux

IaaS



Compute
Engine

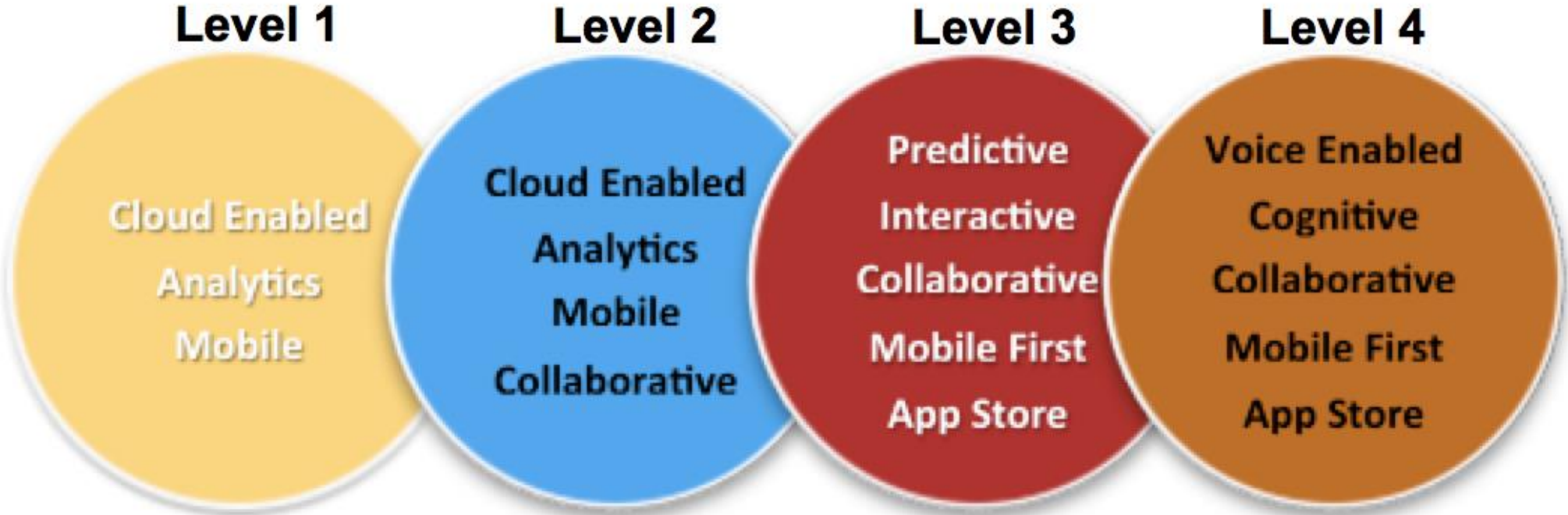
IBM
SoftLayer

Microsoft
Azure

Aragon Research Enterprise Software Maturity Model



Target Here



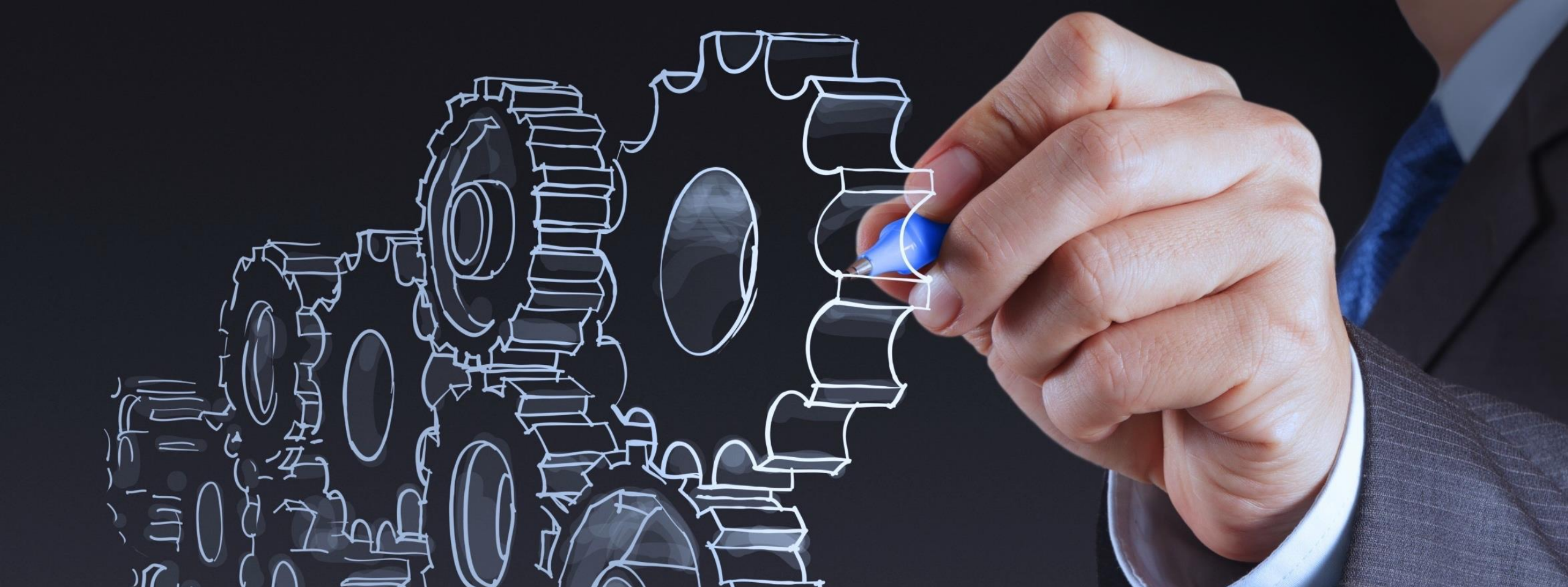


Enterprise Security becomes a way of Life.

Summary

- Biggest shift in Software means leveraging new approaches
- Set Individual, Team and Agency goals
- Lots of Free Tools and Training Available
- Don't Wait to Get Started





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