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

<table>
<thead>
<tr>
<th>Year</th>
<th>Cognitive Computing</th>
<th>Predictive</th>
<th>Containers</th>
<th>Wearables</th>
<th>Cloud Platforms</th>
<th>Buildings</th>
<th>Homes</th>
<th>Self Driving Cars</th>
<th>Drones</th>
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<td>2015</td>
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2. The Rise of Containers

Traditional View

- Public Cloud
- Hybrid
- Private Cloud

New Model

- Identity Cloud
- Security Cloud
- Office Cloud
- ERP
- CRM

SaaS
PaaS
IaaS

Container APP

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3. Mobile First Apps: Business and IT Lenses

Legacy App or Business Process

Digital App

BUSINES S LENSE

IT LENSE

Dev Tools
UX Design
Device Features
8 App Screens
Back End CRM ERP
API Mgmt.
4. Mobile Back Ends – Unleash the Force

Native App Dev. Tools

MADP (Mobile App Development Platform)

Chatbot Agents

Leverage Power of Legacy Applications by Mobilizing.
5. Shifting Languages

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

Mobile
- Objective C → Swift
- Java

Web
- JavaScript
- Ruby
- Python
- PHP

Skillsets Needed as well
- HTML
- CSS
- MySQL
- MongoDB

*Source: Github
6. NoSQL – Getting to Big Data Faster

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

NoSQL is the answer.

Cassandra
7. Predictive Analytics: The Race to make Applications Smart

<table>
<thead>
<tr>
<th>Machine Learning</th>
<th>Deep Learning</th>
<th>Cognitive Computing</th>
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</thead>
<tbody>
<tr>
<td>▪ Lots of Algorithms</td>
<td>▪ Neural Network Based</td>
<td>▪ Expert Systems</td>
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<tr>
<td>▪ Focus is on Recommendations</td>
<td>▪ Learns on the Fly</td>
<td>▪ Highly Trained on Specific Topics</td>
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<tr>
<td>▪ Relatively Easy to Deploy</td>
<td>▪ Can be used to solve Image Processing Applications</td>
<td>▪ IBM is main Cognitive Provider</td>
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<tr>
<td>▪ Can help discover Important Content or People</td>
<td>▪ Could be a Game Changer</td>
<td>▪ Healthcare is a big focus</td>
</tr>
</tbody>
</table>

Google Cloud Platform

Google TensorFlow

TensorFlow™
8. Apache Spark – Speed and Scale

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 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

Vendor Suite

Module A

Module B

Partner Channel

Controlled Innovation

New Model

Core Service

Core Features

Api Enabled

Open Suites

Partner Apps

Provide Additional Features

Enables Others to Integrate

Platform

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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

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App Customization is now a Legacy Business Practice.
APIs Become Strategic

Apps
circa 2007

API Enabled Apps
circa 2014

The Battle to Own Platforms
Humans still have to decide on best action

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.
Tech Titans – Who is Doing What

<table>
<thead>
<tr>
<th>SaaS</th>
<th>Amazon</th>
<th>Google</th>
<th>IBM</th>
<th>Microsoft</th>
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<tbody>
<tr>
<td></td>
<td>Workspaces</td>
<td>Google for Work</td>
<td>Marketing Suite</td>
<td>Office 365</td>
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<td></td>
<td>Workmail</td>
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<td>IBM Docs, Collab.</td>
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<td>Workdocs</td>
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<tr>
<th>Predictive</th>
<th>Amazon Machine Learning</th>
<th>Prediction API</th>
<th>IBM Predictive</th>
<th>Machine Learning Service</th>
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<td></td>
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<th>App Engine</th>
<th>IBM Bluemix</th>
<th>Microsoft Azure</th>
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<th>Container</th>
<th>EC2</th>
<th>Container Engine</th>
<th>Bluemix Container</th>
<th>Windows Linux</th>
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<th>IaaS</th>
<th>Amazon Web Services</th>
<th>Compute Engine</th>
<th>IBM SoftLayer</th>
<th>Microsoft Azure</th>
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Tech Titans – Who is Doing What

- Amazon: Workspaces, Workmail, Workdocs
- Google: Google for Work
- IBM: Marketing Suite, IBM Docs, Collab.
- Microsoft: Office 365

- Amazon Machine Learning
- Prediction API
- IBM Predictive, IBM Watson
- Machine Learning Service

- Amazon Web Services
- App Engine
- IBM Bluemix
- Microsoft Azure

- EC2, Container Service
- Container Engine
- Bluemix Container
- Windows Linux

- Amazon Web Services
- Compute Engine
- IBM SoftLayer
- Microsoft Azure
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