Competing on Analytics: Technology Perspective

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Agenda

- Introduction + Background
- Top 3 Trends
- Client examples
- What IBM is doing
- Q/A
What trends are we seeing?

Open Source  
Cloud  
Rise of the ‘New Builder’
The 4 Generations of Software Valuation*


**First Generation** (1950 – 1986)


Fourth Generation (2004 – present)
Examples of Open Source

- PostgreSQL
- Hadoop
- elasticsearch
- cassandra
- Spark
- jupyter
- CouchDB
- mongoDB
- Zeppelin
- Lucene
- Redis
- TinkerPop
- etcd
- RethinkDB
- TITAN
- kafka
- RabbitMQ
“By sharing our code, our stack, and in some cases even our hardware designs, we think that other companies and individuals are just able to move faster. Far from this being a competitive threat, we find that this value accrues back to us.” James Pierce, Facebook – OSCON 2015
since roughly 2008

NoSQL

Document: CouchDB, RethinkDB

Key-Value: Redis, Riak

Column-Family: Cassandra

Graph: Neo4j
Some Commonalities (usually)

- Based on open source technologies
- Global database key: easier to partition or shard the data
- More use-case-specific and developer-friendly than RDBMS
- Flexible schemas
  - But always "implicit schemas"
- Designed for modern Web
  - Generally some kind of HTTP REST API
What trends are we seeing?

Open Source

Cloud

Rise of the ‘New Builder’
What trends are we seeing?

Cloud computing, often referred to as simply “the cloud,” is the delivery of on-demand computing resources—everything from applications to data centers—over the Internet on a pay-for-use basis.
It’s not about Cloud or On-Premises it’s about Cloud **AND** On-Premises

Through 2020, the most common use of cloud services will be a hybrid model combining on-premises and external cloud services.”

*Gartner, Cloud Computing Innovation Key Initiative Overview, July 2014*
72% of business leaders say cloud will be vital to their success by 2016.
Clients Are Aggressively Moving Workloads to Cloud

- Applications with Sensitive Data
- Applications with Complex Processes & Transactions
- Isolated Workloads
- Database Workloads
- DevOps
- Risk & Compliance
- Disaster Recovery
- Collaboration
- Web Applications
- Big Data & Analytics
- e-Commerce
- Customer Service
- Mobile
- Front Office / Desktop
- Social Business
- 3rd Party Applications
- ERP / CRM
- Development & Test Workloads
- High Performance Computing
- Compute Workloads
- Business Processes (e.g. Expense Reporting)
- Storage Workloads
- Batch Processing
- Information Intensive Applications
- High Intensive Applications
- Not Ready for Cloud
- Not yet virtualized applications
- Not Ready for Cloud
- Mature Workloads

Moving to Cloud
New and Existing Workloads Use Cloud Differently

Cloud Enabled
- Scalable
- Virtualized
- Automated Lifecycle
- Heterogeneous Infrastructure

Cloud Centric
- Elastic
- Multi-tenant
- Integrated Lifecycle
- Standardized Infrastructure

Existing Middleware Workloads
Compatibility with existing systems

Emerging Platform Workloads
Exploitation of new environments
The number one reason to adopt cloud is NOT cost savings, it is **agility**. Cloud enables businesses to compete *faster*. And speed kills, a chess grandmaster would lose to a beginner that gets four moves every turn.

### Business Scalability
- Provides limitless, cost-effective computing capacity to support growth

### Cost Flexibility
- Shifts fixed to variable cost
- Pay as and when needed
- CAPEX vs. OPEX

### Market Adaptability
- Faster time to market
- Supports experimentation

### Ecosystem Connectivity
- New value nets potential new business

### Context-Driven Variability
- User defined experiences
- Increases relevance

### Masked Complexity
- Expands product sophistication
- Simpler for customers and users

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Source: IBV Analysis
What trends are we seeing?

Open Source

Cloud

Rise of the ‘New Builder’
Rise of the New Builder
Who are the ‘New Builders’?

…and a growing number of self taught casual users!

“By 2020, 60% of all fast-mode Application Development projects will be done outside of formal IT teams, driven by the rise of citizen developers.”

- Gartner 2016 Predictions
Cloud Data Services is Open for Data
Better compliance, resiliency, and value

A premier provider of auto, home, and business owner’s insurance is expanding across New England and needed to reduce cost, improve disaster recovery preparedness and become audit ready leveraging a Bridge to Cloud strategy with IBM.
Over time, the goal is to replace the existing PureData for Analytics dev/test installation with the dashDB managed service.

Cognos BI executive dashboards use dashDB service that loads data through Data Stage from the existing PureData System.

dashDB is also being used as a disaster recovery (DR) system.

DashDB (4TB) for Dev/Test

DashDB (1TB) for executive dashboard & DR

Data Stage for ELT

PureData for Analytics

Policy Admin

AS/400
Cloud Data Services is Open for Data

Scaling the business by focusing on the business

Cabify, a European on-demand high-end car service, is using IBM Cloudant to help position itself for rapid growth and market expansion that requires a scalable, high-performance data layer.
Cabify Use Case
Solution Diagram

Mobile & browsers-based users

Cabify application infrastructure

redis
for caching to reduce the reads to Cloudant cluster

IBM Cloudant
(based on CouchDB)
as persistent data layer

elasticsearch.
for data indexation & creation of dynamic views

IBM Cloudant
(based on CouchDB)
as persistent data layer
A low-fare US airline enhanced its online booking conversions with real-time tailoring of the customer experience using IBM analytics.
Use Case: Airline On-line Reservations

Solution Diagram

IBM Cloud

Cloudant DBaaS

Clickstream data

JSON

DB2 on Cloud

XXL instance

Query results

(that drive app UI behavior)

SQL

User behavior analysis

Customer

Travelers

Travel App Server

Cognos Analytics

Query changes

(to developers)

Analysts

3rd Big Data & Business Analytics Symposium – March 24, 2016
Innovation is at the Core of IBM: Don’t Take Our Word for It

The company's Watson invention … and its work on capturing and analyzing Big Data to make it actionable in a corporate environment could have a positive effect on the world for decades to come.
2015 World’s Top 10 Most Innovative Companies

2106 Awards Technology of the Year:
Best hardware, software, and cloud services for developers, IT pros, and businesses.

“ground-breaking … [Watson Analytics:] a cloud-based machine learning service may set the bar for all predictive analytics tools.”
Open for Data

A comprehensive portfolio of...

hybrid services

on-premises and on multiple clouds
Hybrid cloud services, based on open source, allow data to easily flow amongst different services to the right user in the right context.
For more information our ‘Open for Data’ initiative:

www.ibm.biz/open-for-data

To get hands-on TODAY for free....

www.bluemix.net
Thank You!

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