

The current state of enterprise languages, frameworks, and platforms

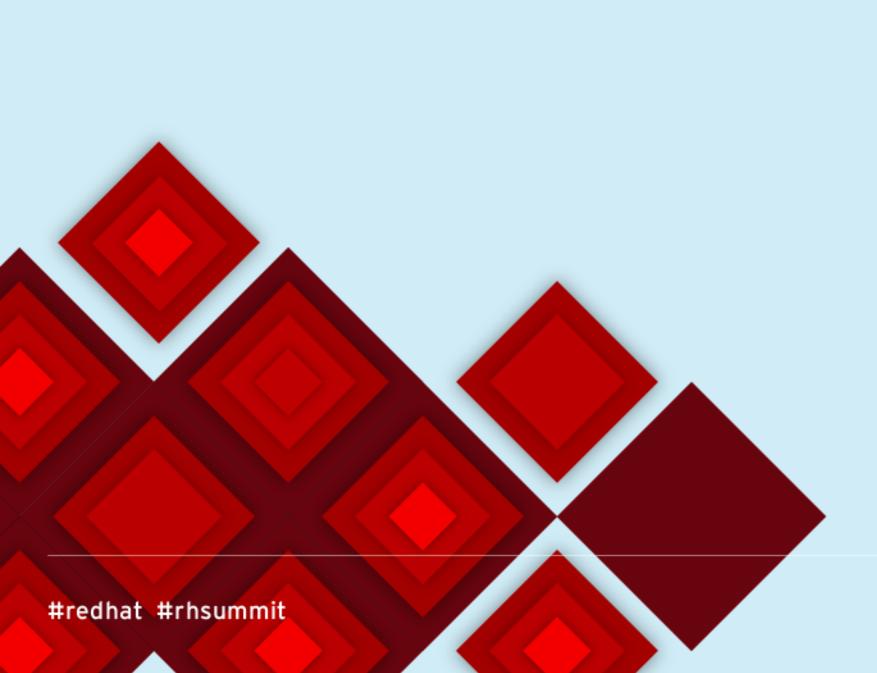
Rich Sharples
Senior Director of Product Management
28th June, 2016



AGENDA

- > TRENDS
- > SOME DATA
- > DRILL-DOWN





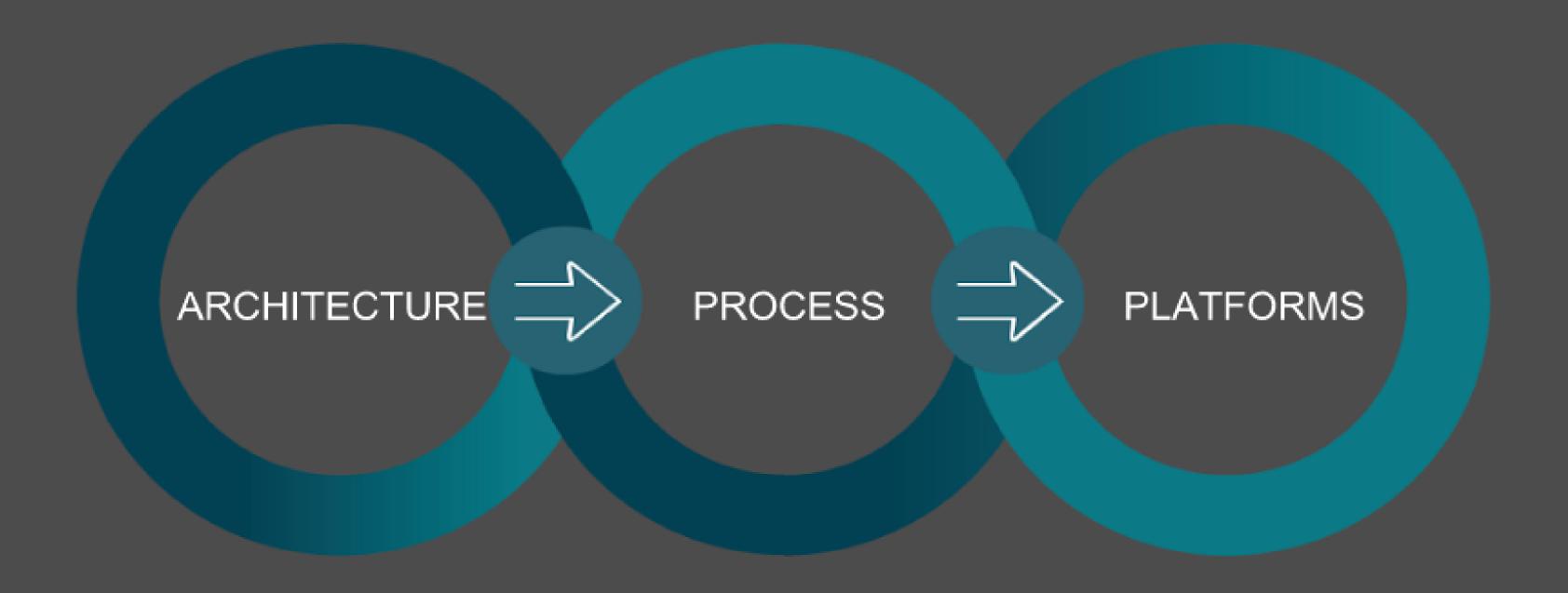
SECTION HEADLINE







FUNDAMENTALLY DIFFERENT





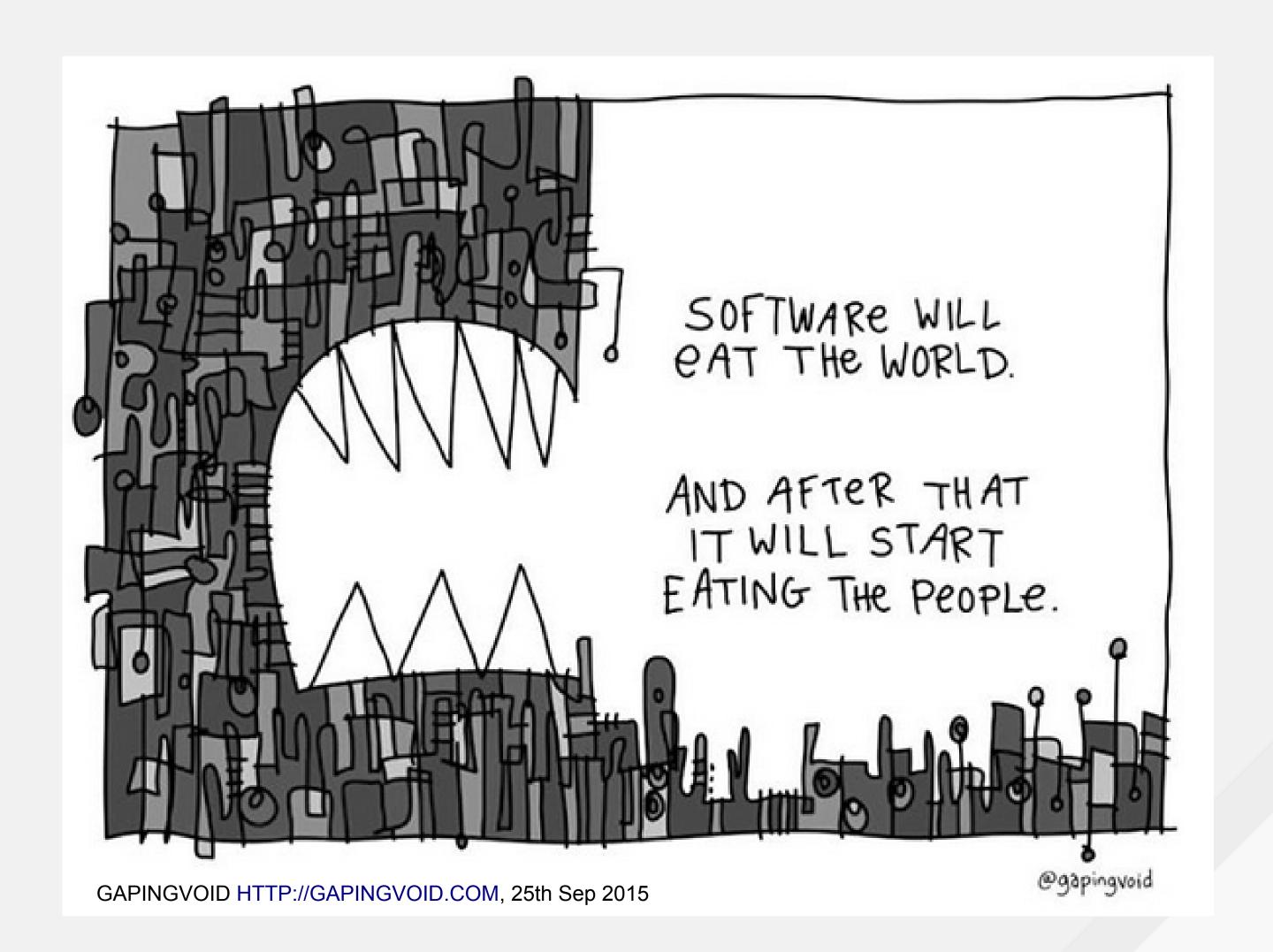
TRENDS: SOFTWARE AS A DIFFERENTIATOR

DEVELOPER PRODUCTIVITY

- -RIGHT TOOLS FOR THE JOB
- -FAST FEEDBACK
- -SMALL INCREMENTS
- -NO SPEEDBUMPS

SPEED OF DELIVERY

- MORE SECURE
- MORE COMPETITIVE
- -BETTER QUALITY
- CHANCE TO EXPERIMENT





TRENDS: MICROSERVICES

"... is an approach to developing a single application as a suite of small services, each running in its own process and communicating with lightweight mechanisms, often an HTTP resource API. These services are built around business capabilities and independently deployable by fully automated deployment machinery. There is a bare minimum of centralized management of these services, which may be written in different programming languages and use different data storage technologies."

SERVERLESS

REACTIVE

MICROSERVICES

SERVICE-BASED

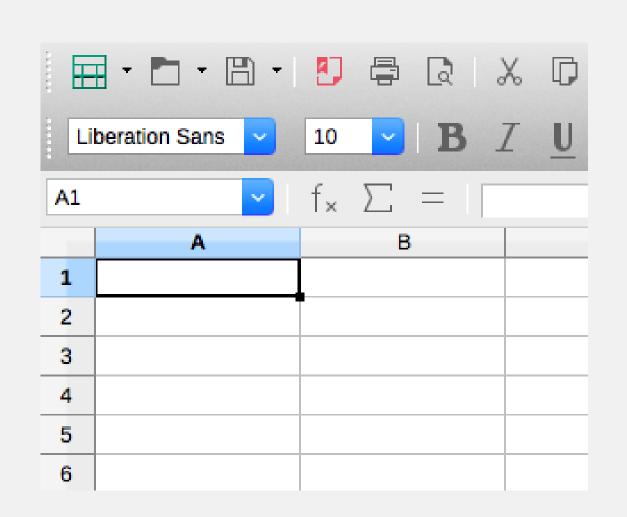
MONOLITH

Martin Fowler

http://martinfowler.com/articles/microservices.html



TRENDS: REACTIVE PROGRAMMING



- ASYNCHRONOUS / NON-BLOCKING
- EVENT / MESSAGE DRIVEN
- HIGHLY CONCURRENT SCALABLE
- REACTIVE EXTENSIONS, SCALA, CLOJURE, VERT.X, AKKA / PLAY, NODE.JS / BACON.JS











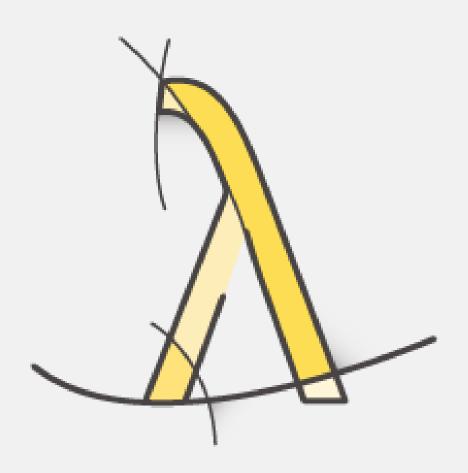






TRENDS: "SERVERLESS"

- "Function as a Service"
- "Ultimate expression of MSA"
- Reactive event triggered
- Someone else's server (aka cloud)
- No application server, middleware
- Just your code
- Disruptive pricing



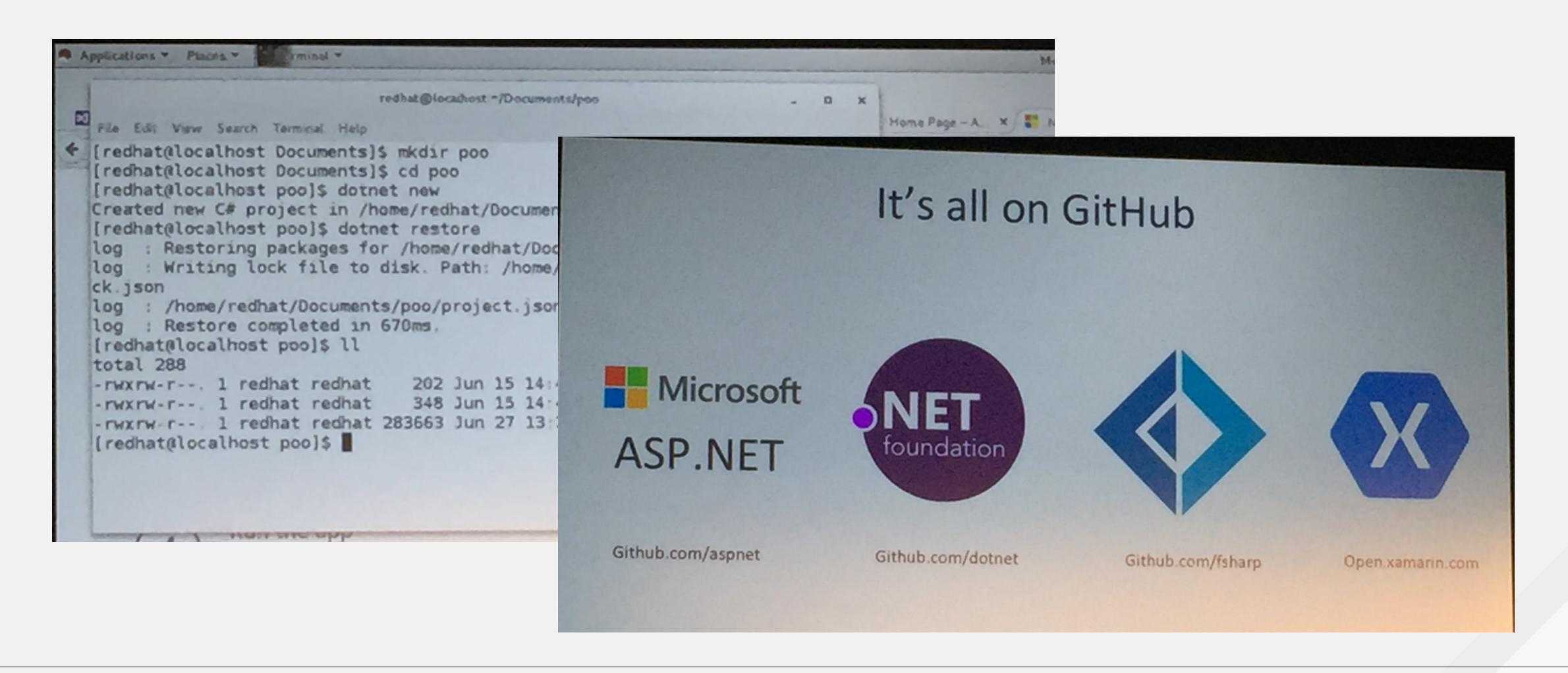


TRENDS: HETEROGENEITY

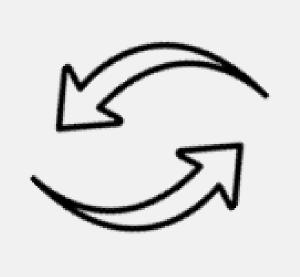
- Huge choice of languages (all open source)
- Generalization > specialization
- Generation Y first internet generation, fast adoption of technology
- Generation Z unaware of the technology just the way to do stuff
- Open standard protocols / interoperability
- Necessity mobile (Native, JavaScript), server (Java, .NET, Python, PHP)



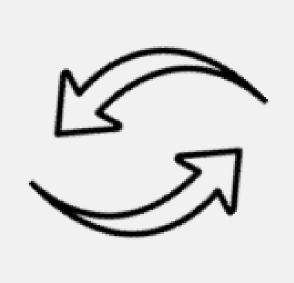
TRENDS: DOGS AND CATS SLEEPING TOGETHER!

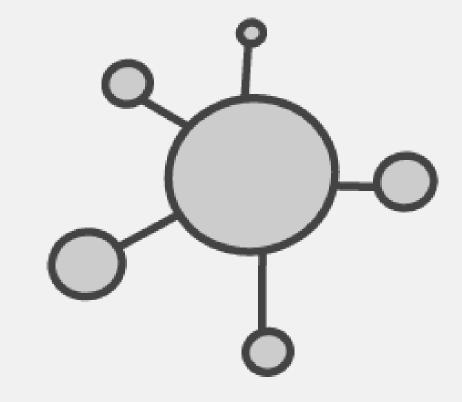












asynchronous

event-driven

reactive

anti-fragile

scalable

polyglot

agile velocity

micro-services

APIs @ Red Hat



RED HAT JBOSS MIDDLEWARE

RED HAT MOBILE APPLICATION PLATFORM



Market-leading, full-stack API management platform

Comprehensive coverage of API Economy use cases from API development through management

API governance for mobile channels with Red Hat Mobile Application Platform OpenShift integration brings API management to containerized applications and microservices architectures

Proven combination with Red Hat customers



The 3scale Platform



Control

- Security
- Key Management
- Rate Limiting
- Policy

Enforcement

App & UserManagement

Provisioning

Flexibility

- Distributed
- Multi-Department
- Multi-Environment
- Highly Scalable
- Powerful APIs
- Webhooks

Visibility

- Analytics
- App Tracking
- User Tracking
- Traffic Alerts
- Engagement
- DeveloperSupport



corba matlab puppet mongodb cloudfoundry azure ini oozie powershell junit maven dockerextjs karma cocoa servlets json jenkins sas jpa cassandra jaxp intellij cloudify sqoop python Javascript leaflet signal ansible ceph polymer lucene spss nosql elasticsearch underscore kafka OraCle git S mockito scala OraCle php bluemix zend impala ruby moment aurelia kibana xcode DIGCata jdbc android avro coffeescript alax gradle riak opencl hive clojure cobolmahout zookeeper spark reactC++pl/sql flash SpringmvC jndi lisp coldfusion backboneexpress Sqlserver splunk openshift saltflume phanton saltflume phanton meteor saltflume phantomjs meteor



SOME DATA: POPULARITY

Jun 2016

Jun 2015

Programming Language

Ratings

20.794%

12.376%

6.199%

3.900%

3.786%

3.227%

2.583%

2.395%

2.353%

2.336%

Change

+2.97%

-4.41%

-1.56%

-0.10%

-1.27%

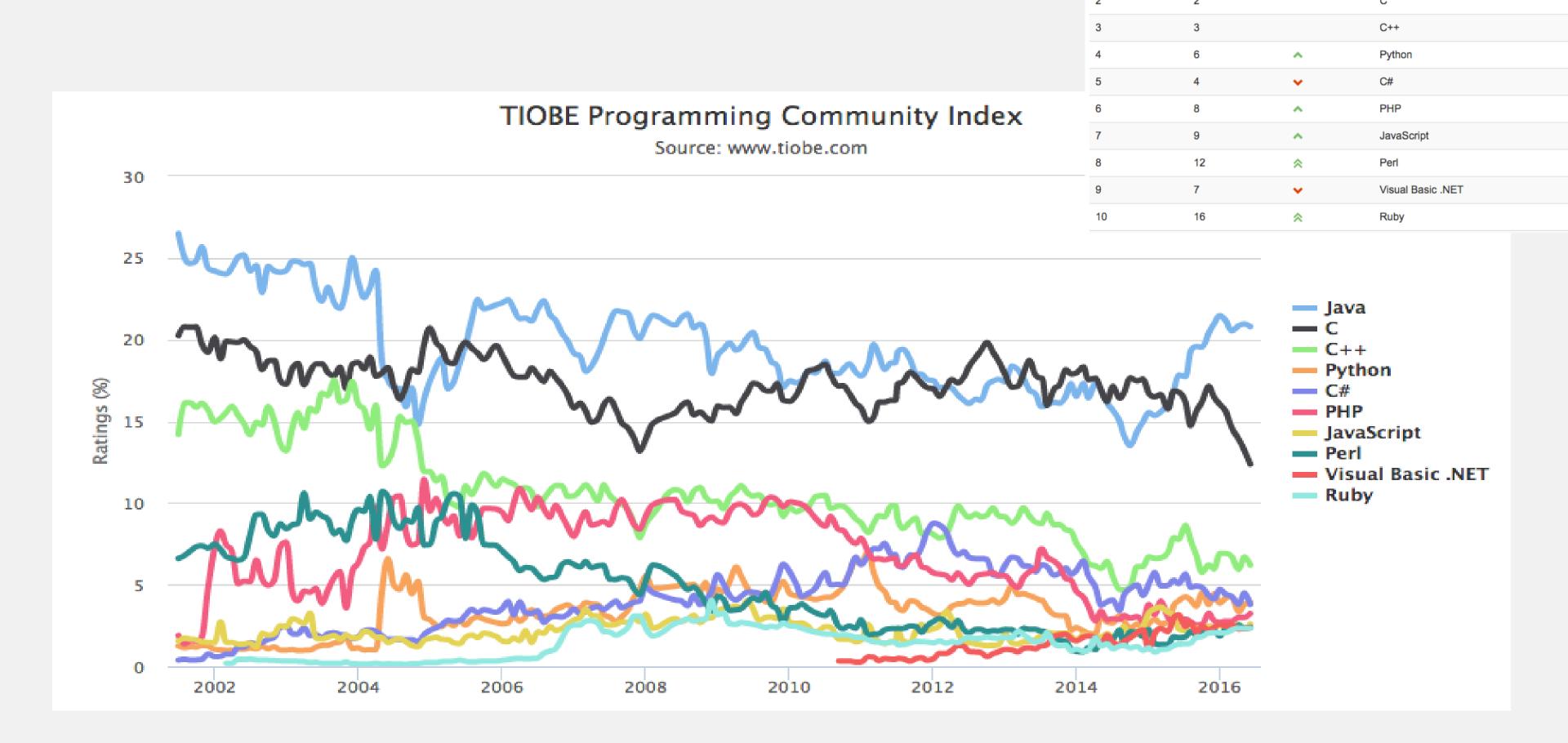
+0.36%

+0.29%

+0.64%

-0.82%

+0.98%

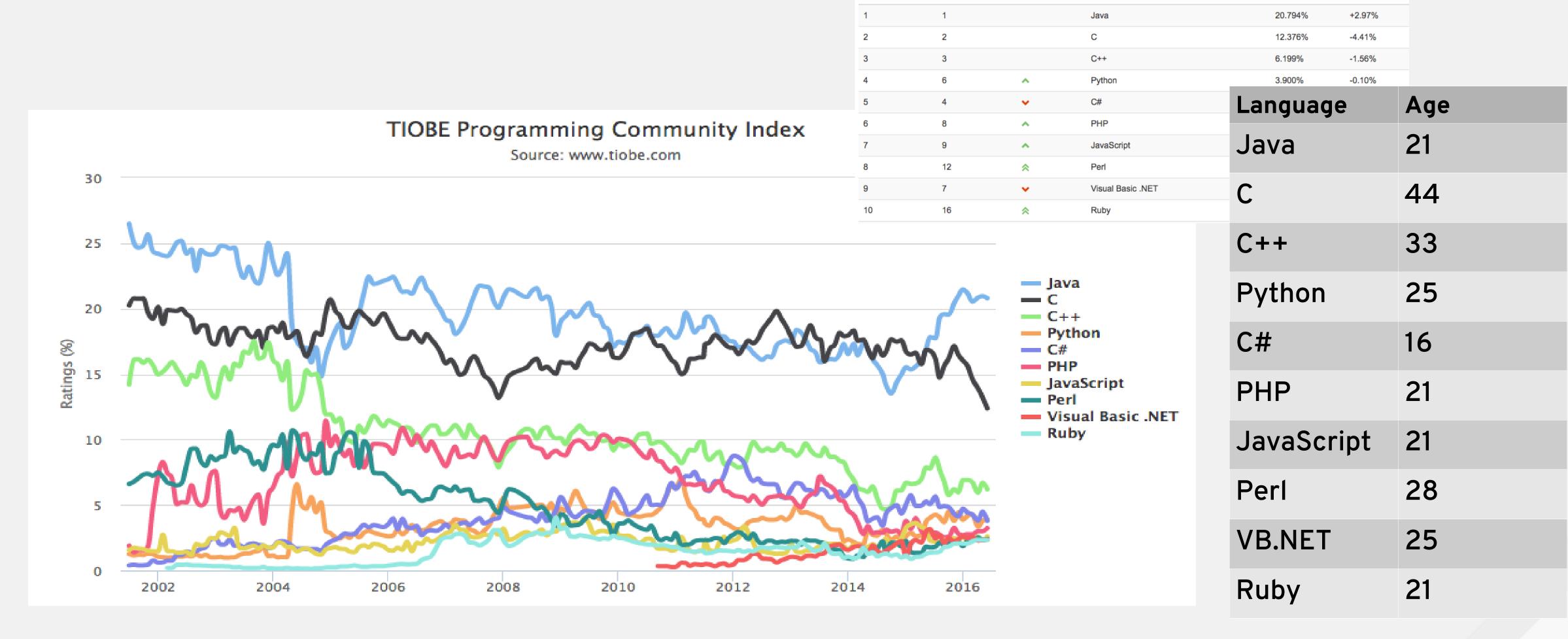


Sources: Tiobe Index, June 2016 - http://www.tiobe.com/tiobe_index



SOME DATA: POPULARITY

Jun 2016



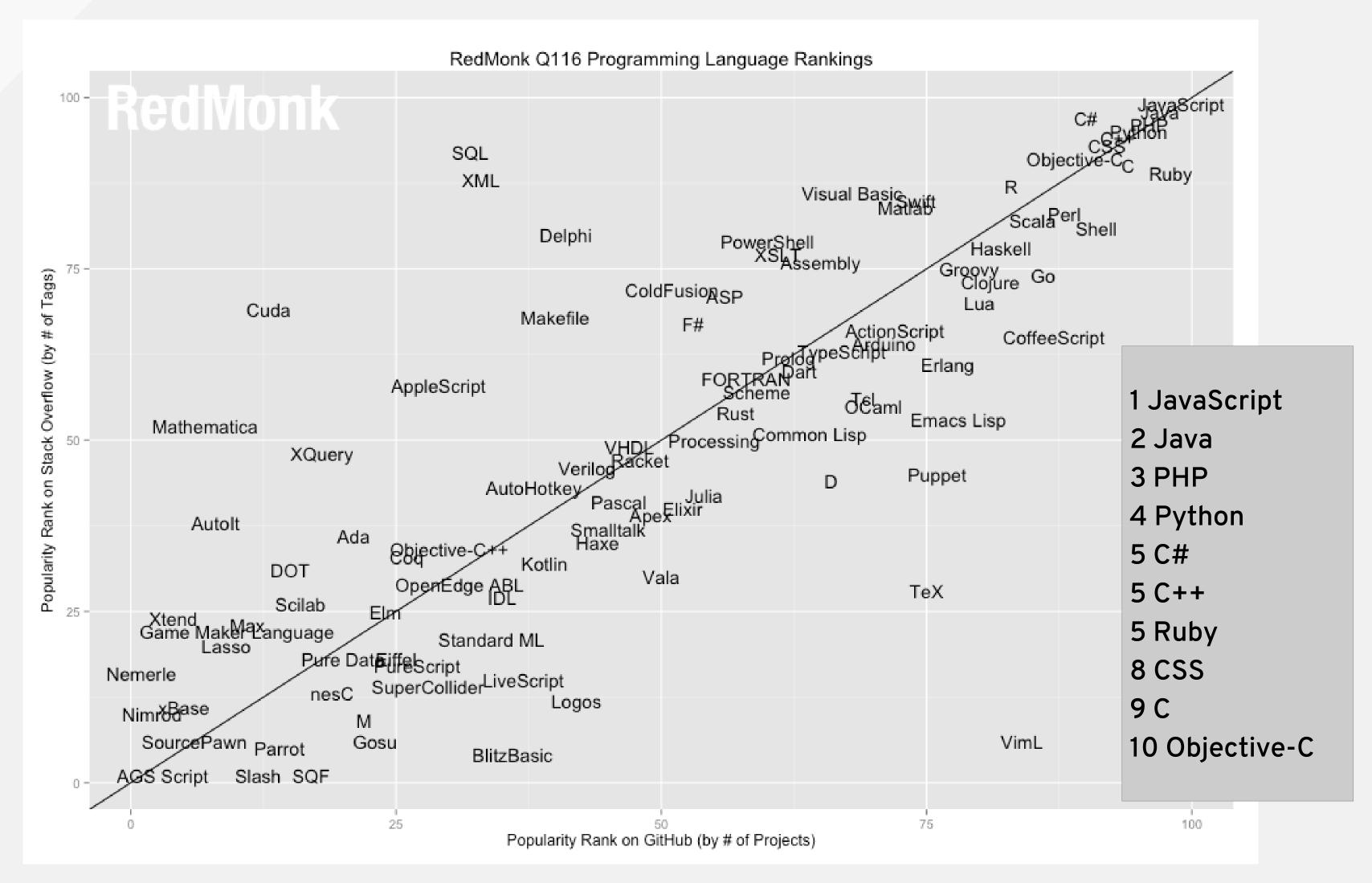
Sources: Tiobe Index, June 2016 - http://www.tiobe.com/tiobe_index



Ratings

Change

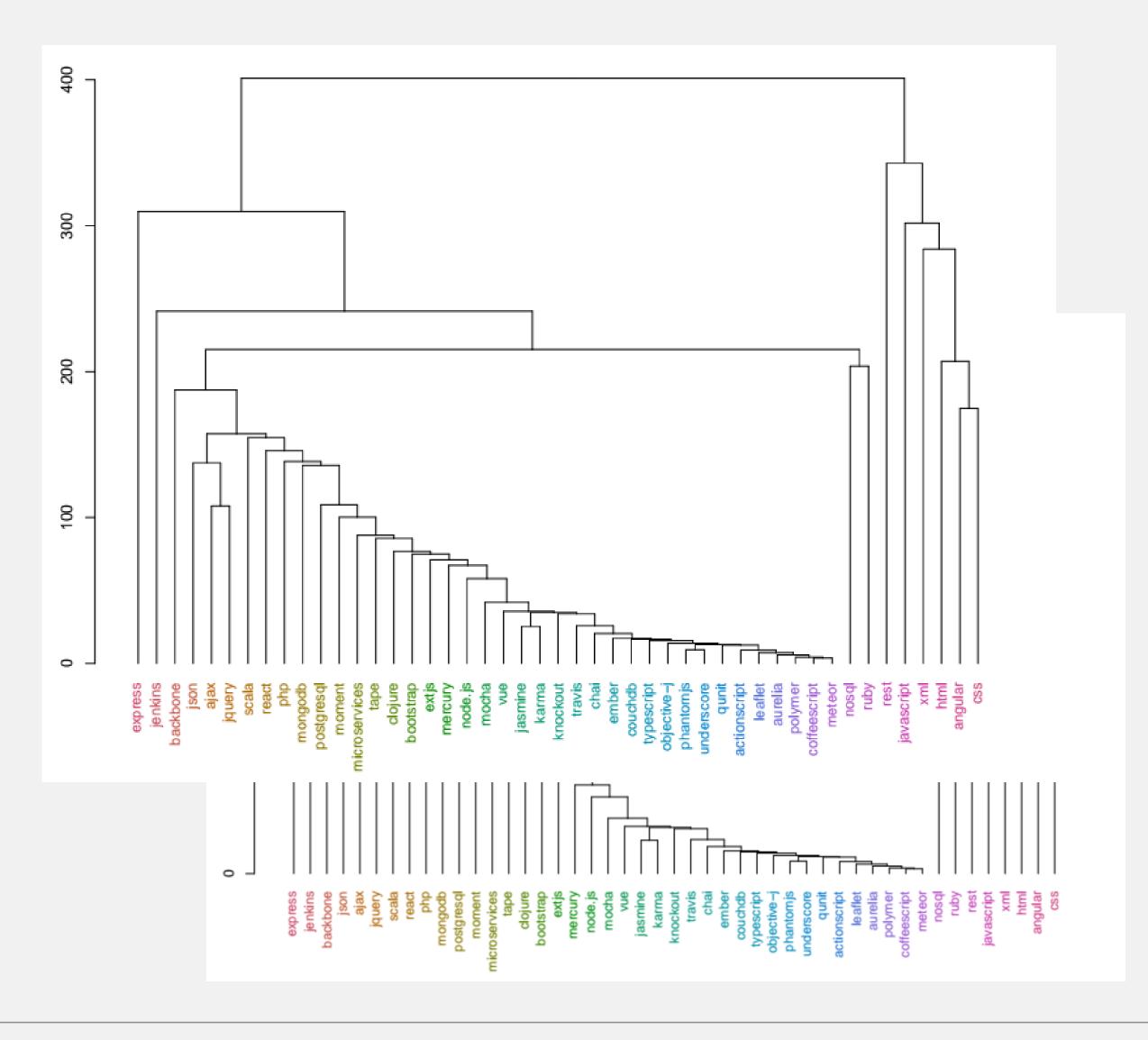
SOME DATA: POPULARITY



Source: Redmonk, January 2016http://redmonk.com/sogrady/category/programming-languages/



SOME DATA: WORK IN PROGRESS

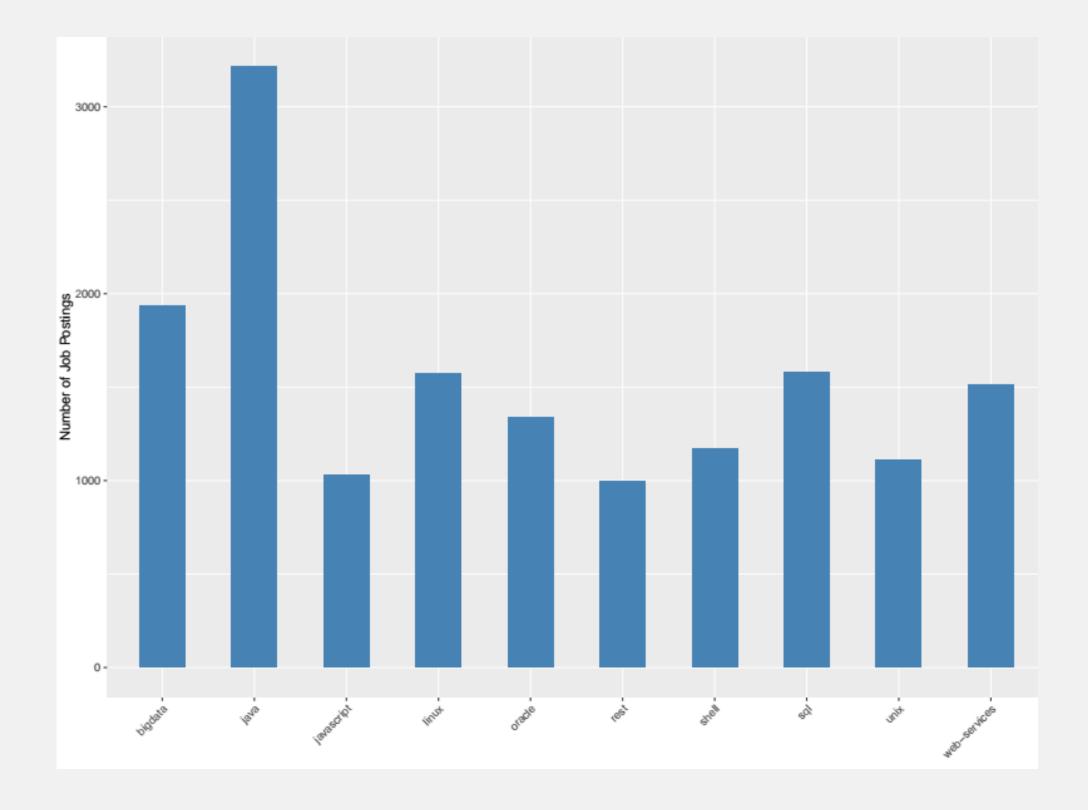


- PYTHON WEB CRAWLER
 COLLECTED DATA FROM EMPLOYER
 WEB-SITES
- ANALYZED USING R
- BREAKDOWNS BY INDUSTRY / GEOGRAPHY
- CLUSTER ANALYSIS
- INTEND TO PUBLISH TO DEVELOPERS.RED.COM



SOME DATA: EARLY INDICATORS

- #1 Java
- #2 Big Data
- Java / Web Services largest cluster
- Java and Ruby / Web Services largest cluster in Retail
- Clusters of node.js and Go
- Scheme big in Financial Services
- Very long tail ...

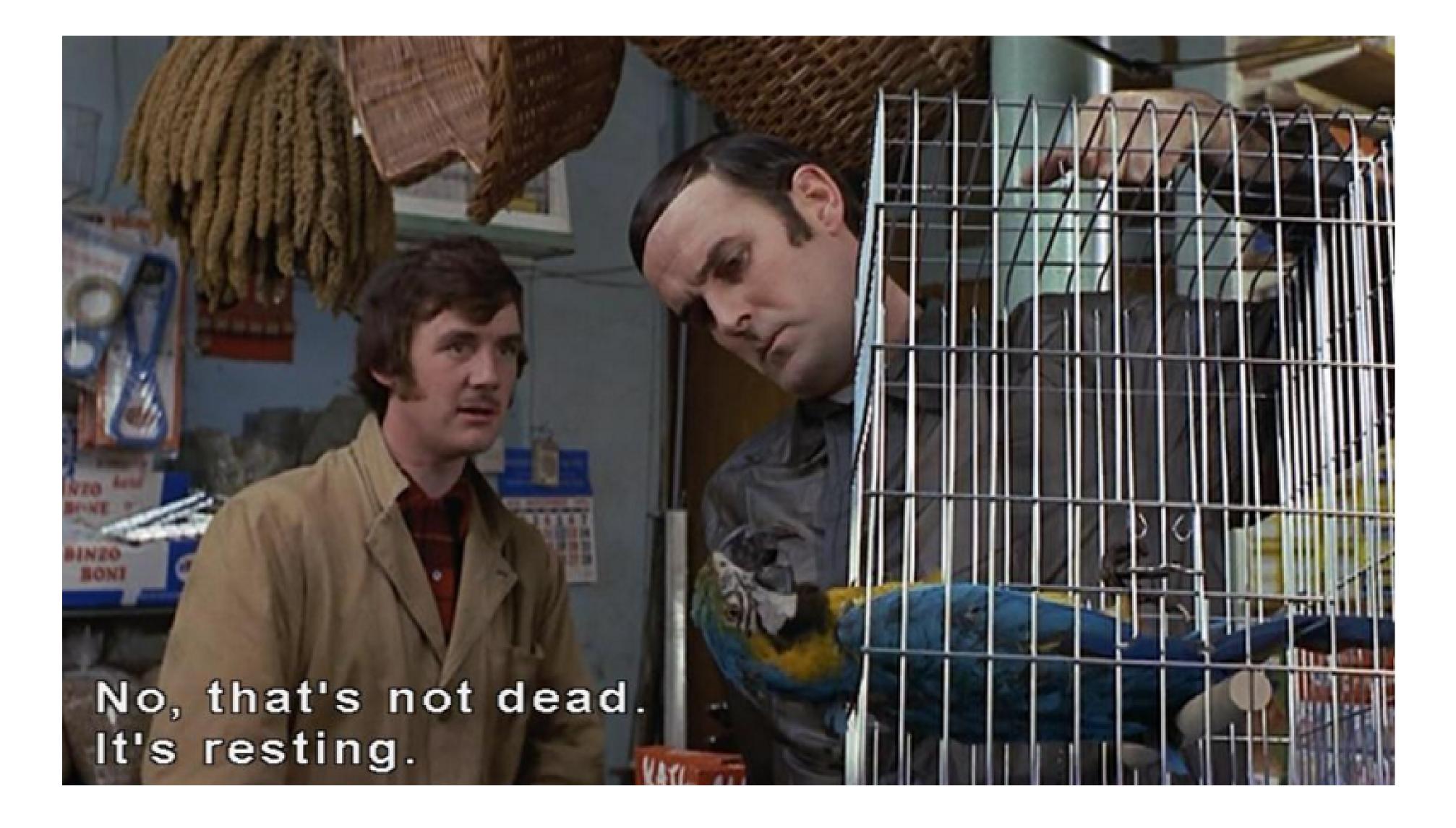




THE STATE OF JAVA



I'll tell you what's wrong with it, my lad. 'E's dead, that's what's wrong with it ...

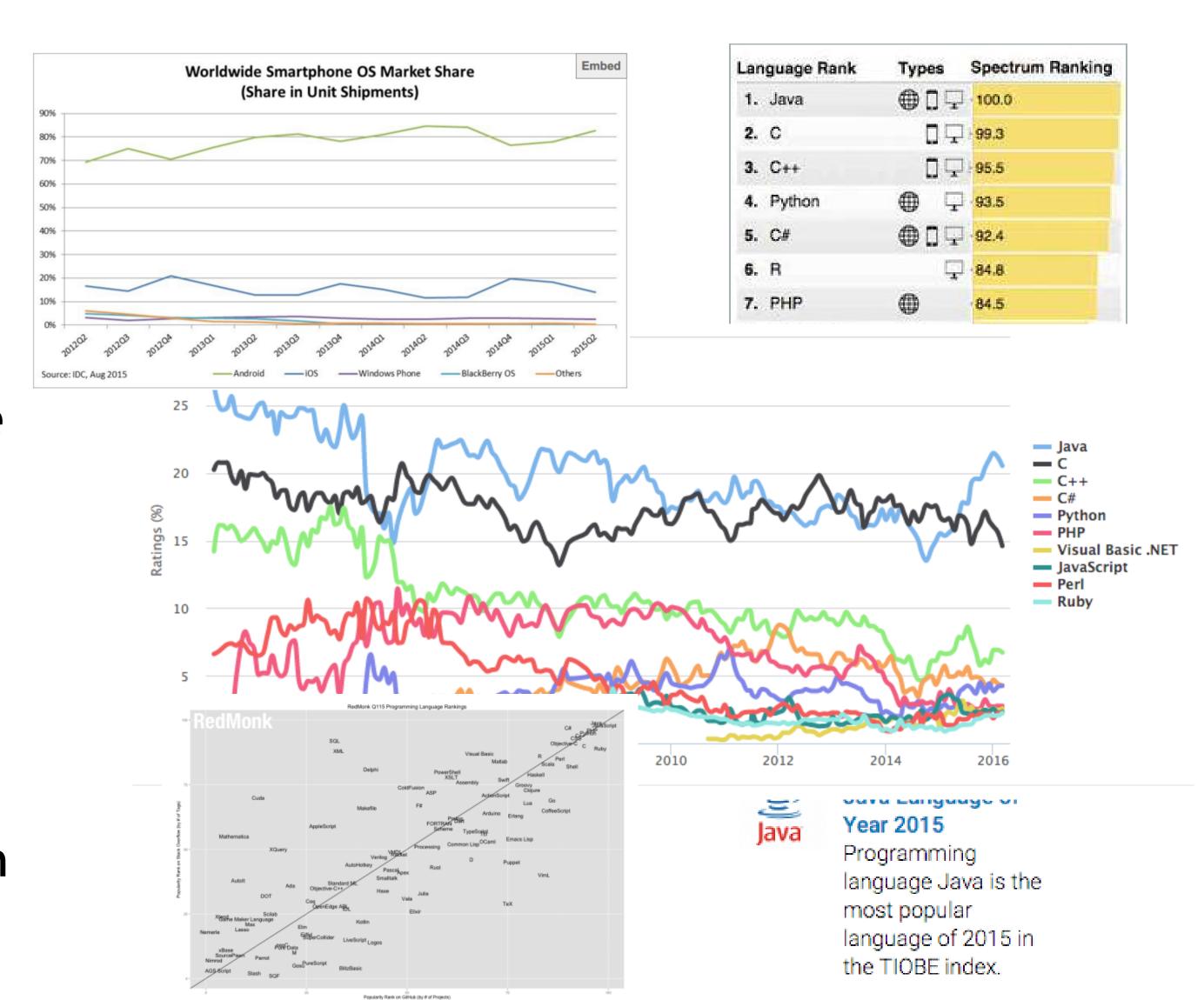




Look, matey, I know a dead parrot when I see one, and I'm looking at one right now ...

- Huge ecosystem
- Choice tools, run-times, training, ...
- 7-10 million developers worldwide
- The standard for Business / Enterprise
- Huge presence in mobile (Android)
- Huge opportunity in the Internet of Things
- Languages and platforms change slowly - no replacement on the horizon

Sources: Tiobe Index, IDC, IEEE Spectrum, RedMonk, Red Hat





The plumage don't enter into it. It's stone dead ...





THE VALUE OF JAVA EE

- An open standard platform that enables vendors to compete on implementation, price, or business model
- A collaborative standard and process that is driven by many vendors and individual developers rather than a single vendor
- Consistent and holistic vision for all architectural tiers of the application
- A strong focus on adherence to the standard and compatibility between vendor implementations and versions of the specifications





Optimizing Enterprise Java for a microservices architecture

- Announced at DevNation on Monday
- Collaboration between Red Hat, IBM, Tomitribe, Payara and the Java EE community
- Focussed on a minimal standard profile for Java microservices
- Starting with existing JSRs
- Working towards implementations by Java One 2016
- WildFly Swarm will be Red Hat's implementation
- Working implementations first, standard spec. second



THE STATE OF JAVASCRIPT

The Rise of JavaScript



Why JavaScript?

- -Familiar language constructs
- -Functions are first class citizens
- -Closures
- -Callbacks
- -Promises
- -Functions vs Methods

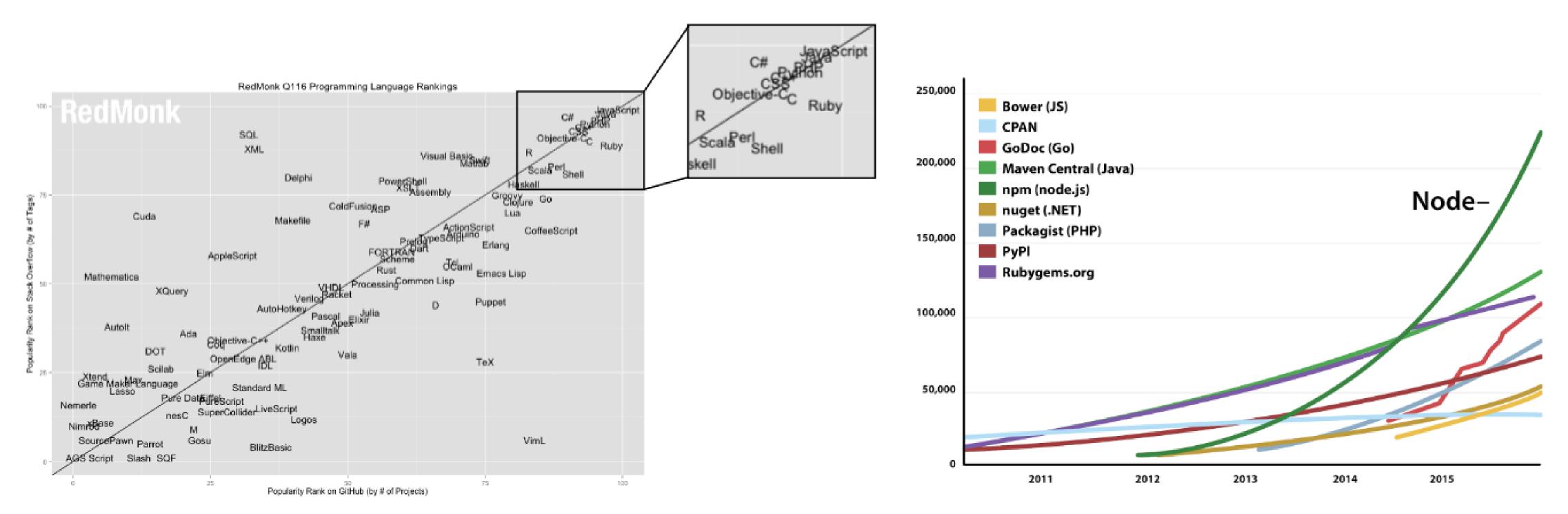
Why node.js?

- Popularity of JavaScript
- -JSON APIs Isomorphic JavaScript
- -Non-blocking / Event Loop
- -NPM
- -Building fast scalable network applicationsNon-CPU intensive tasks



The Growth of node.js





By many measures, Node.js is the fastest growing and most significant development platform right now. With 4 million users and an annual growth rate of 100%, Node.js is truly everywhere.

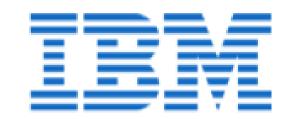


The node.js Foundation



































































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