



# IBM's BlueMix Cloud Operating Environment

[www.ibm.com/jstart](http://www.ibm.com/jstart)



solutions start here.

# What Customers Tell Us

## Their IT Needs

- Quick development time
- Low Cost
- Low barriers to ramp up & maintain (SW & HW purchases, updates, maintenance)
- Scalability
- Keep development in-house

## Their IT Challenges

- Slow development time
- Expensive
- Slow to provision internal cloud infrastructure
- Cumbersome bureaucracies bottleneck the process
- Non-scalable
- Often hire 3<sup>rd</sup> party vendors to avoid the above issues
- IT drives requirements

# Systems Of Record



- Traditional focus of Internal IT
- Also known as “commoditized” IT – highly structured, transactional systems
- Apps and DBs that store business records and automate standardized processes
- Inflexible but reliable
- Further investment provides diminishing returns
- Examples: CRM app, HR database, etc

## Systems of Record

- Targeting employees
- Supported by ERP packages and large databases
- Recording transactions and accounting data as part of core business processes
- Maintain state, status, and history
  - Long development and deployment cycles

# Systems Of Engagement

- Complement and unite Systems of Record
- Typically add context to an SoR via social and mobile components
- Adaptable to changing requirements
- Offer an engaging user experience
- Development process is usually agile and iterative with a quick time to value



## Systems of Engagement touch people

- Serving customers, partners, & employees

- Enabled by smart phones, tablets, & smart products

- Focused on in-the-moment tasks & decisions

- Delivering in an individual's personalized context.

- Providing analytics-driven experiences

- Leveraging social and cloud technologies

- Short, rapid, iterative release cycles

## Systems of Record

- Targeting employees

- Supported by ERP packages and large databases

- Recording transactions and accounting data as part of core business processes

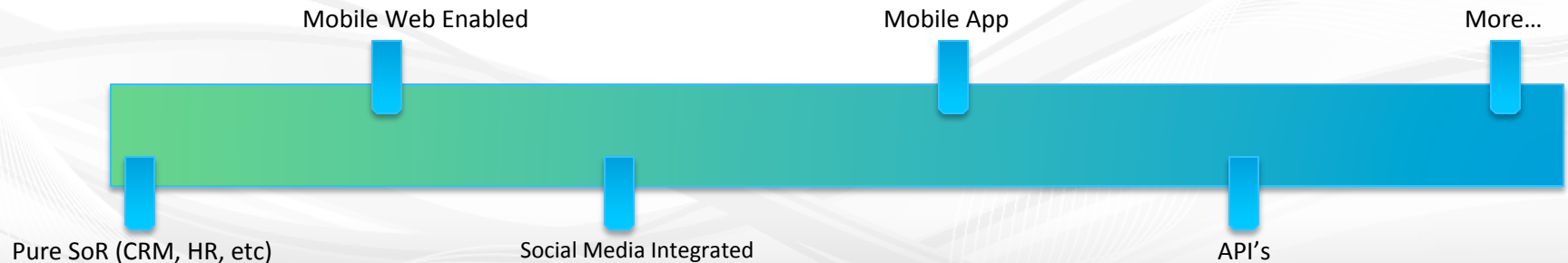
- Maintain state, status, and history

- Long development and deployment cycles

# SoE's Explained



There is no such thing as a “pure” SoE. SoE’s are capabilities that expand the usefulness of SoR’s and make them more engaging to users. It is a sliding scale, where each feature added to an SoR further extends the SoE capabilities



# SoE's and the Cloud



- SoE development is enabled by the cloud due to:
  - “Plug and play” nature of cloud services
  - Scalability
  - Quick, easy deployment process
- Requires a new way of thinking about development
  - “Minimum viable product” (Eric Ries, *The Lean Startup*)
  - But it's more than just development...





# DevOps

- Collaborative software development method
- Entire infrastructure is code (PaaS)
- Embraces application changes by lowering risk through:
  - Repeatability & Scalability
  - Automated, self-healing infrastructure
  - Dark launches/bucket testing
- Very fast development and deployment cycles





# DevOps Success Story: Flickr

- “10+ Deployments per DAY”
- Automated, consistent infrastructure
- Shared version control
- One-step build & deploy: one click compiles, packages, and stages code
- Feature flags for testing
- Heavy reliance on metrics to monitor change impacts
- Supportive working environment/culture

The Flickr logo, featuring the word "flickr" in a bold, lowercase sans-serif font. The letters "f", "l", "i", "c", "k", and "r" are blue, while the letters "i" and "r" are pink. A registered trademark symbol (®) is located to the upper right of the "r". The logo is set against a light gray rectangular background.

**flickr**®



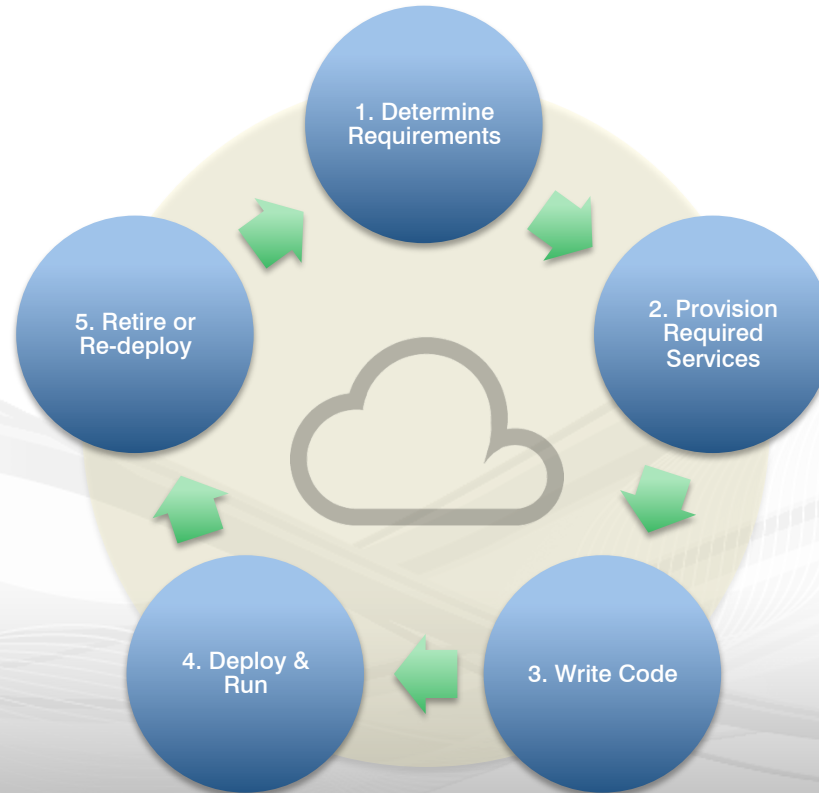
# IBM's Cloud Vision



- Evolution of existing SmartCloud into a complete operating environment
- Enable SoE development and DevOps
- Create your own components for re-use
- “Marketplace” development environment, with IBM products as the services
- Based on proven, open source technologies
- Pay only for what you need, when you need it (operating vs. capital expenses)
- Highly integrated environment that allows for mixing and matching frameworks, services, and databases



# Typical Application Development Flow



# Step 2: Provision Required Services



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Home Applications Services My Stuff Documentation

## Services

Choose a service to add to an application.

- Foundation Services
- Social Data
- Social/Collaboration Services
- WorkloadAutomation Services
- Monitoring Services

**WorkloadAutomation\_provisioned** +

**Get Location** M2M

GetLocationSIMULAT... +

**Send SMS** M2M

SendSMS\_static +

**DBaaS**  
IBM's Multi-tenant Database-as-a-Service

dbaas\_provisioned +

**Chat, Comment, Collaborate**

chat\_svc +

**IBM Elastic Caching**  
powered by WebSphere eXtreme Scale

ElasticCaching\_free +

**decision\_service\_static** +

**SOCIAL**

social\_tenant +

**SmartCloud**  
Monitoring Application Insight

*Monitoring and root cause analysis for your CloudOE applications.*

SCM-AI-Monitor-Service\_static +

# Step 3: Write Code



ORION Get Plugins Navigator Repositories Shell Sites Related Search Orion Content morrisben

Orion Content / Sample HTML5 Site / test

Save Make Favorite

Outliner

```
197 end
198
199 get '/savedata' do
200   existstest = infcoll.find("twitname" => params[:t_name]).to_a
201   if existstest.empty?
202     doc = {"twitname" => params[:t_name], "fcount" => params[:fcount].to_i, "fscore"
203     id = infcoll.insert(doc)
204   else
205     infcoll.update({"twitname" => params[:t_name]}, {"$set" => {"fcount" => params[
206     infcoll.update({"twitname" => params[:t_name]}, {"$set" => {"fscore" => params[
207     infcoll.update({"twitname" => params[:t_name]}, {"$set" => {"rtcount" => params
208     infcoll.update({"twitname" => params[:t_name]}, {"$set" => {"rtscore" => params
209     infcoll.update({"twitname" => params[:t_name]}, {"$set" => {"totalscore" => par
210     infcoll.update({"twitname" => params[:t_name]}, {"$set" => {"mcount" => params[
211   end
212   redirect '/displayall'
213 end
214
215 get '/displayall' do
216   cursor = infcoll.find.sort(:totalscore).to_a
217   totinf = infcoll.count - 1
218   tblhtml = ''
219   for j in (0..totinf)
220     tblhtml = '<tr><td> <input type="checkbox" name="twitname" value=' + cursor[j][
221   end
222   res = '<html>
223   
224   <a href="http://www.logomaker.com"><img src="http://www.logomaker.com/images/logo
```

Orion build I20130416-1030. See the FAQ for terms of service

FAQ | Report a Bug | Privacy Policy | Terms of Use | Copyright Agent

# Step 4: Deploy & Run



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[Home](#) [Applications](#) [Services](#) [My Stuff](#) [Documentation](#)

## My Stuff

Running apps

0 of 20

Memory

0B of 2.00GB

Services

1 of 16

My Apps

My Services

Create app

Name



State:

Runtime

Framework



influencer

 Stopped

ruby18

sinatra



Total: 1



# Additional Cloud Success Stories

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# Twitter Influence Analyzer

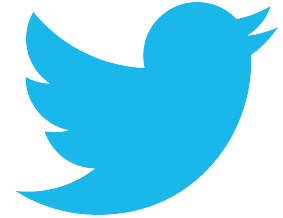


- Twitter app to score users' influence
- Small, inexperienced development team (me)
- Mere hours from requirements to deployment
- Developed with no previous knowledge of Ruby, HTML, Twitter API, or MongoDB

## Twitter Influence Analyzer Version 1.0

### Influencer Score Result: 200/200

Twitter Name: justinbieber  
 # of Twitter Followers: 37285262  
 Follower Score: 40  
 Retweet Count: 115849  
 Retweet Score: 60  
 Recent Mentions: 100 out of a possible 100



### Last 10 Tweets:

Tweet Text	# Retweets
#blessed to be out here seeing the world. not taking it for granted. live and learn. always growing. always beating @scrappy at 2k. #fact	5110
@TheEllenShow i love u too. is portia jealous of what we have? ;)	4598
shoutout to @UncleRUSH . gotta support him to #EndTheWarOnDrugs and show that we the youth have a voice. hashtag and support the cause	4189
RT @UncleRUSH: I'm going to always keep encouraging people to move in the right direction.	1533
@dankanter yeah... @thatrygood is a real creeper	4271
@IAmSteveHarvey thanks man. all love over here	2289
RT @IAmSteveHarvey: Hey @justinbieber keep loving the ones that love you. Cause they help make us who we are..The rest can't break what ...	3452
@scrappy still love u man. but that was a beating! lol	4249
How r u?	40066
Best fans ever! Thank u http://t.co/GroJSzzSUU	46092

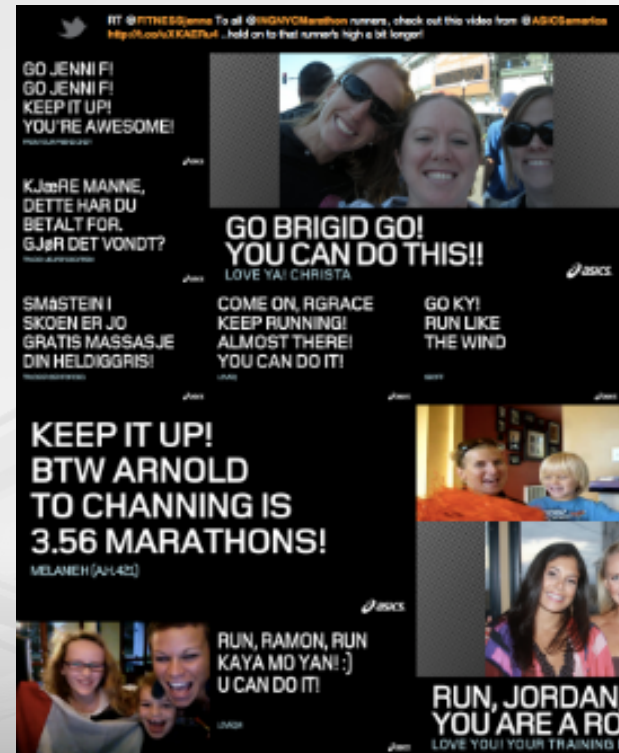
Twitter Name:

Twitter Name:

# Asics: [supportyourmarathoner.com](http://supportyourmarathoner.com)



- Marketing campaign for 2010 NYC Marathon
- Personalized support text & videos submitted online automatically displayed to the runner as they pass points in the race
- 3 weeks to code, test, and promote to production
- Reused in 2011 and 2012 as well as for the LA Marathon







# NASA: Mars Curiosity Streaming

- Live, streaming video of the Mars rover exploring the planet
- Repository for all images and metadata captured by the rover
- Able to service hundreds of gigs/sec of traffic all over the world, scaling up during the landing and down at off-peak

The screenshot shows the NASA Mars Exploration Program website. At the top left is the NASA logo and the text "National Aeronautics and Space Administration". Below this is a banner for the "Mars Exploration Program" with a navigation bar containing links for HOME, PROGRAM & MISSIONS, ALL ABOUT MARS, NEWS, MULTIMEDIA, PARTICIPATE!, and SEARCH. The main content area features a large video player titled "MARS IN A MINUTE" with a play button. To the right of the video player is a text box titled "What Happens When the Sun Blocks our Signal? - 03/20/2013" with a sub-headline "How can you communicate with Mars spacecraft when the Sun is in the way? Learn more about 'solar conjunction' in this 60-second video. >>". Below the video player is a navigation bar with icons and labels: "What's New?", "Recent Videos", "Where are the Spacecraft?", "Fun", and "Ask Dr. C". At the bottom, there are two sections: "CURRENT MISSIONS" with a list of links (Mars Odyssey, Mars Exploration Rovers, Mars Express, Mars Reconnaissance Orbiter, Mars Science Laboratory, MAVEN) and "FAVORITES" with two featured items: "Mars Rover Curiosity" showing a "Time on Mars" counter at 236:17:49:59, and an "ART CONTEST" for the MAVEN mission with the slogan "SEND YOUR NAME & MESSAGE TO MARS".



# Thank you.

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Or contact us at: [jstart@us.ibm.com](mailto:jstart@us.ibm.com)

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