

Software Quality Analysis with Cloud

Challenges and Approaches

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- Masters & Ph.D. from National University of Singapore
- **Interests:** Kathakali, Traveling, Photography, Cooking
- <http://ganeshniyer.com>

  **GANESHNIYER**

- Master of Computer Applications from JNTU, Hyderabad
- Hands-on experience: functional/non-functional testing with Cloud
- **Interests:** Cricket, Blogging, Listening Music

  **SanthoshSoma**

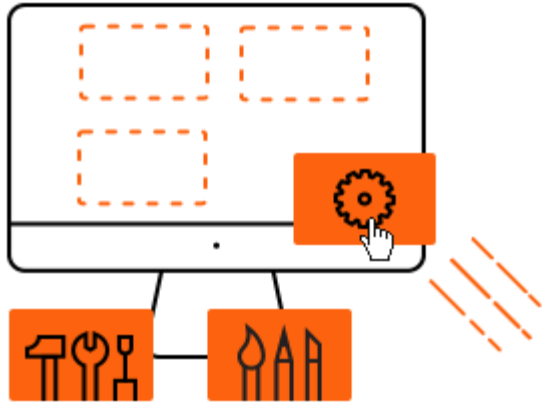


- Masters in Artificial Intelligence from University of Hyderabad
- Working on Rollbase – OpenEdge Integration for last two years
- **Interests:** Dance, Traveling, Surfing

  **KiranAngara**

Agenda





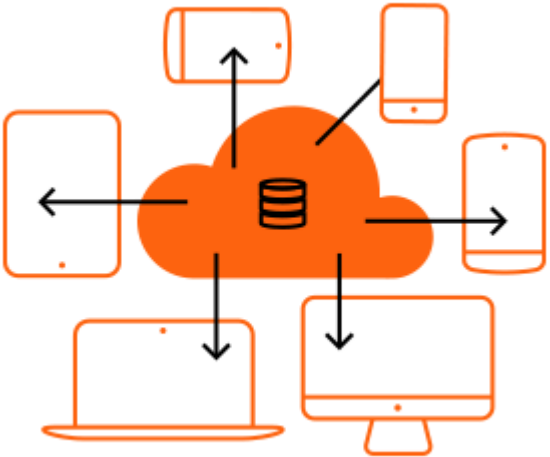
ENJOY SERIOUSLY FAST DEV



DEPLOY ON YOUR TERMS



LIBERATE IT



GO MOBILE



CODE YOUR APPS – OR NOT



MODERNIZE LEGACY APPS

Cloud Delivery Models...

SaaS

PaaS

IaaS



Software Test Challenges With Cloud

Paradigm Shift

- Web-driven SaaS applications
- Everything in a few mouse clicks

Everything is Agile

- Frequent releases / Frequent changes
- No SRS documents

Availability

- High Availability and Resiliency are key
- Seamless upgrades

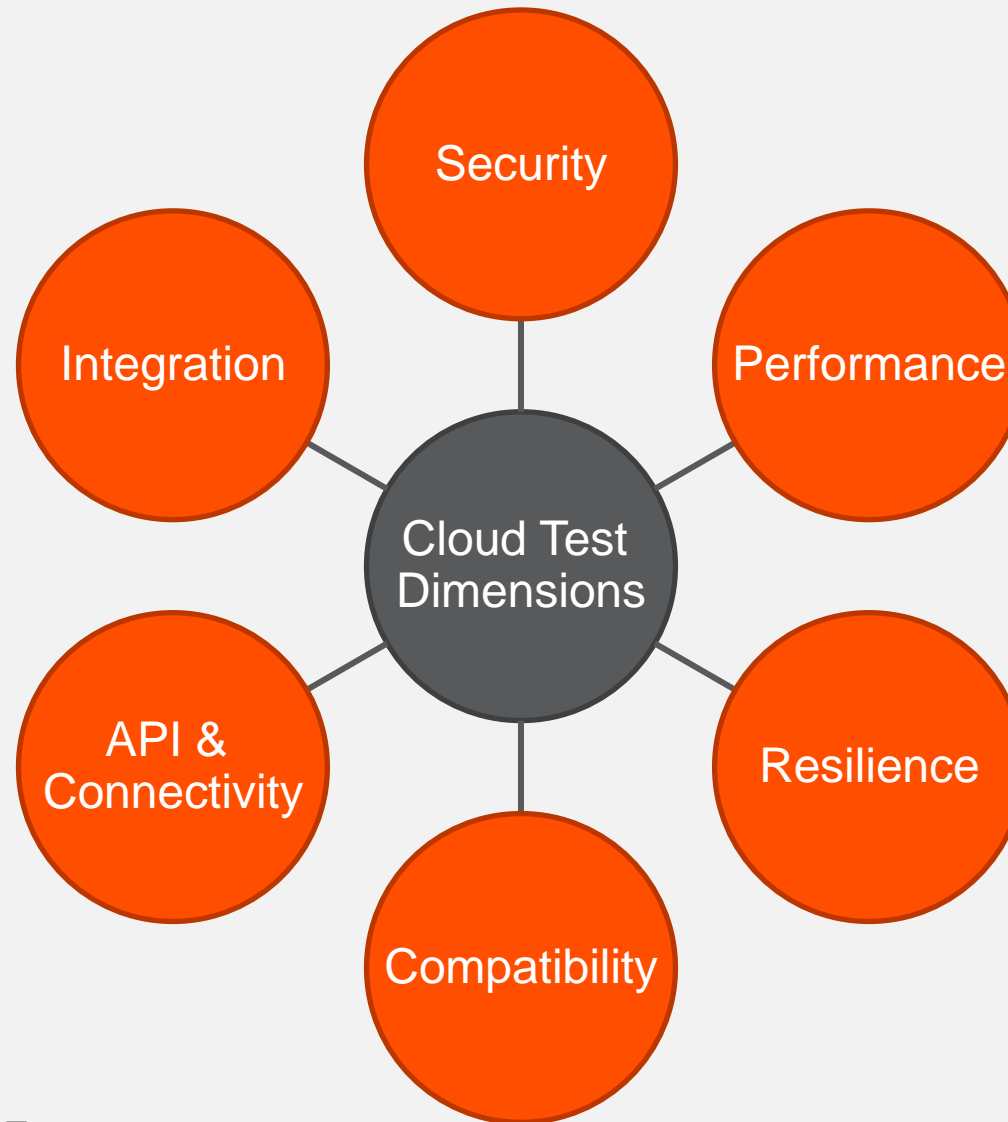
Everything is shared

- Publically shared resources
- Multi-tenant penetration testing

Cloud Test Dimensions

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Cloud Test Dimensions in a Nut-shell

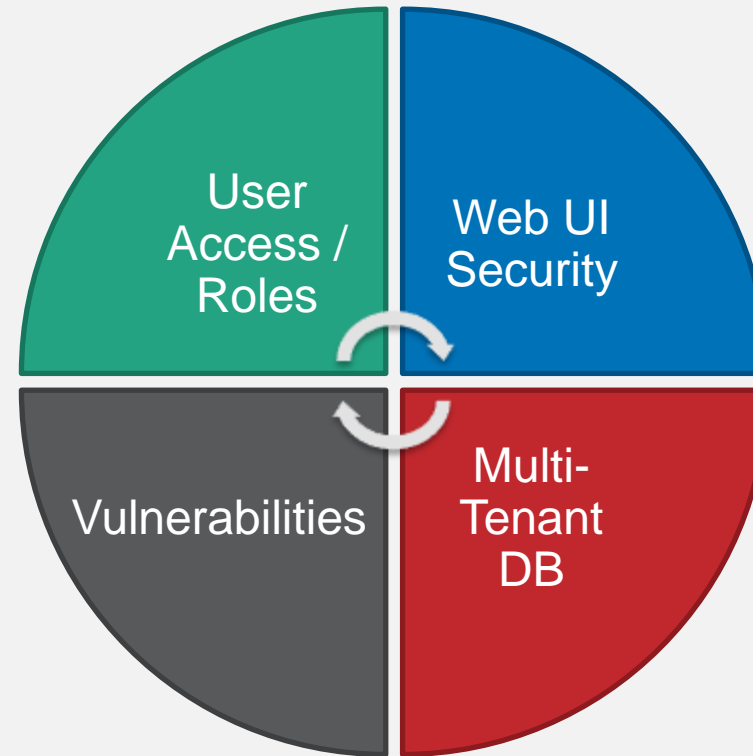


Security

Security
Traversal vulnerability
User access/ roles
Identity federation management
Multi-tenant penetration

Automation:

- Websecurify
- ZAP tool
- Scripts



API Invocation

API Invocation

Connectivity and invocation

API load

API security

Multi-tenancy

Automation:

- SoapUI
- Node.js
- PySys
- In-house Frameworks

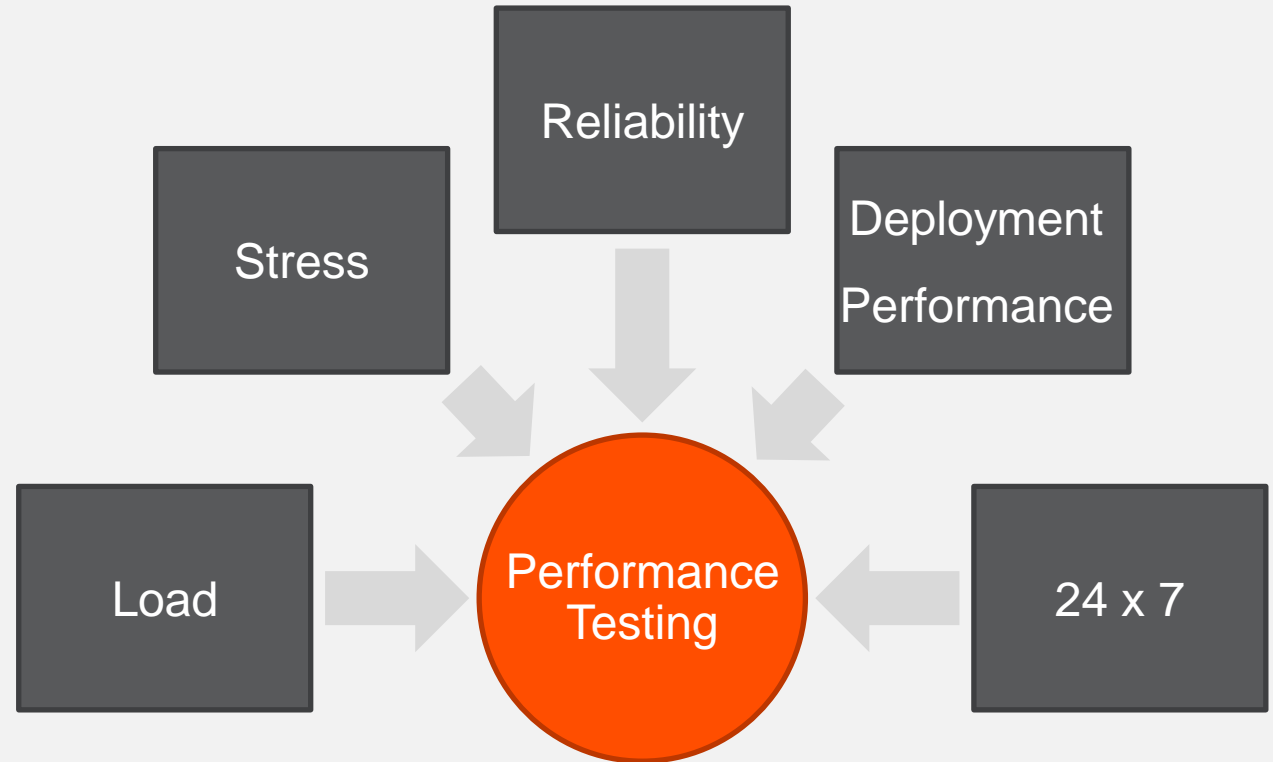


Performance

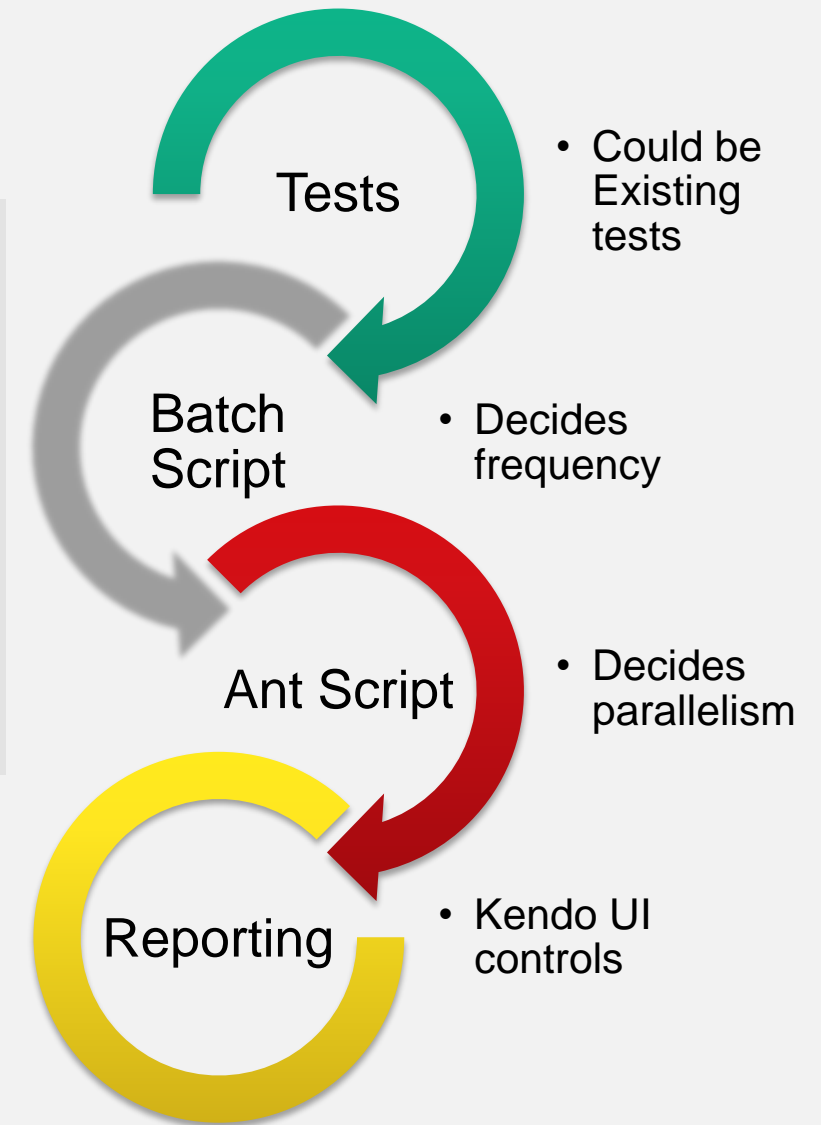
Performance
Time to deploy
Multi-tenancy
Latency
Connectivity and reliability with 3rd parties
Reliability and availability

Automation:

- Telerik Test Studio
- NeoLoad
- JMeter

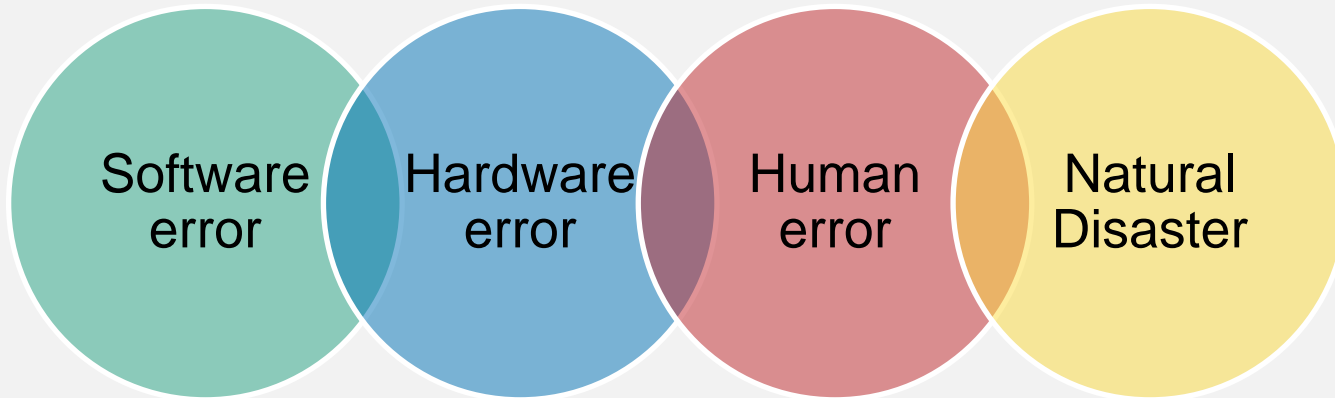


24 x 7 Testing – Key highlights

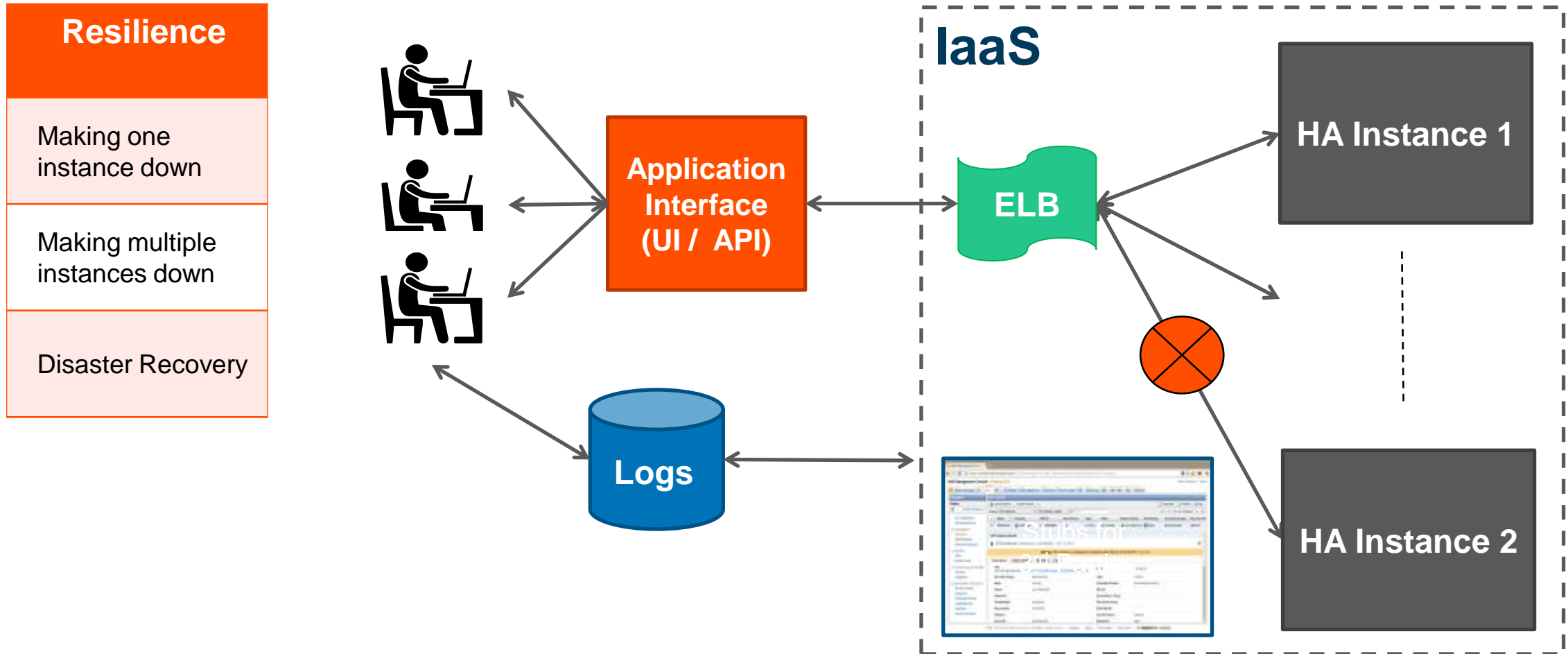


Resilience and Failover

Ability of a server, network, storage system, or an entire data center, to continue operating even when there has been an equipment failure, power outage or other disruption



Resilience and Failover



Compatibility

Compatibility

Accessibility

Globalization and localization

Compatibility under different situations

Automation:

- Telerik Test Studio
- Telerik DeviceCloud
- Sahi
- Selenium



Testing Mobile Apps in Cloud

Telerik DeviceCloud



>300

Devices

29

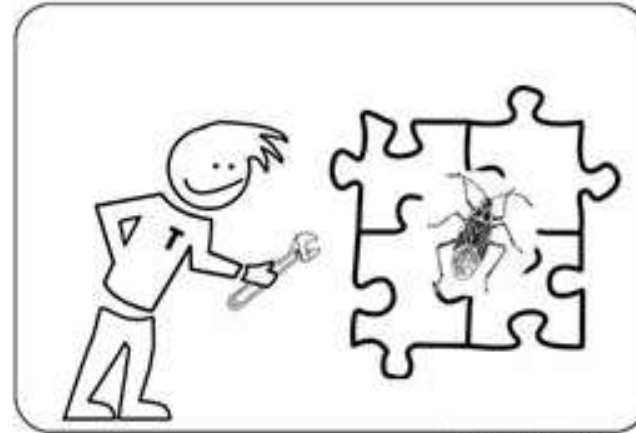
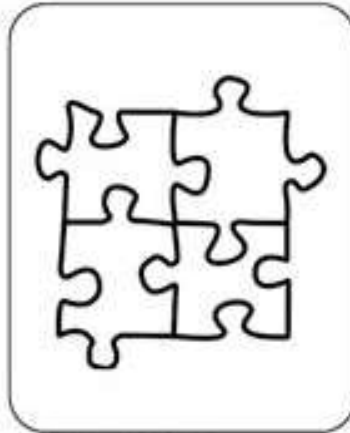
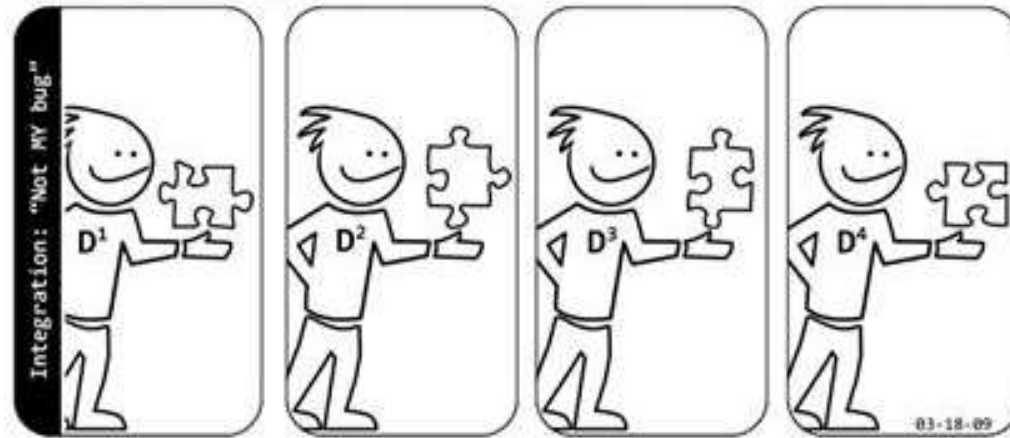
Manufacturers

27

OS versions

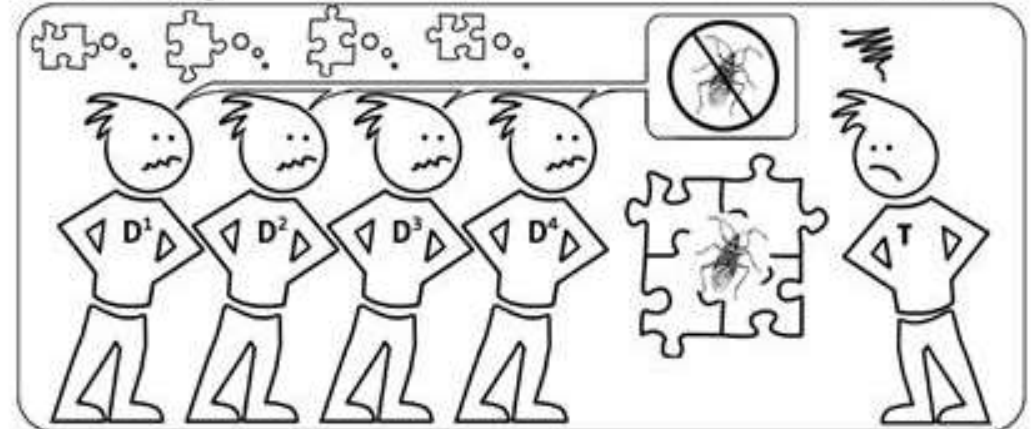
Integration

Integration
P2P Integration
System Integration
End-to-End Integration
SSO
Customer Scenarios

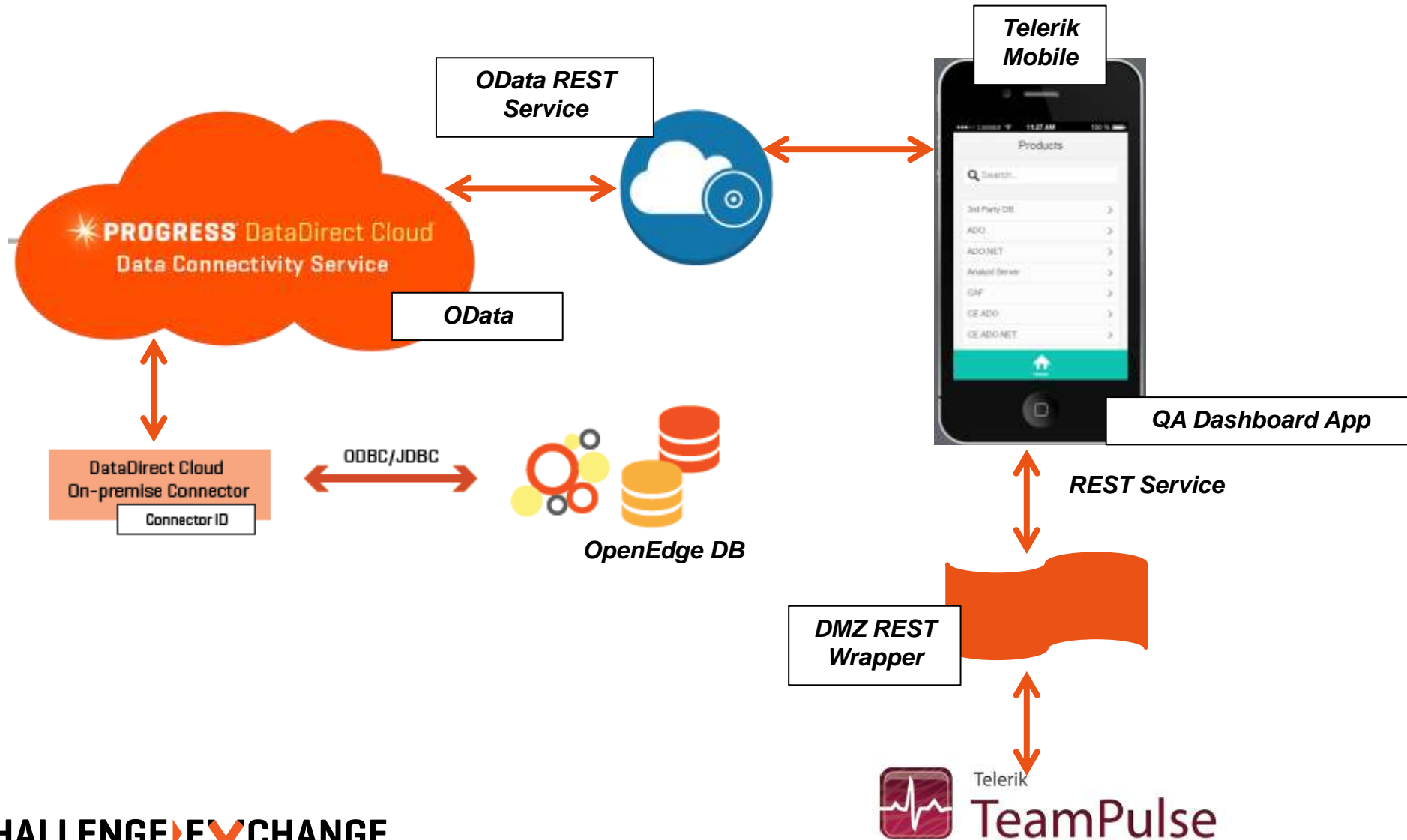


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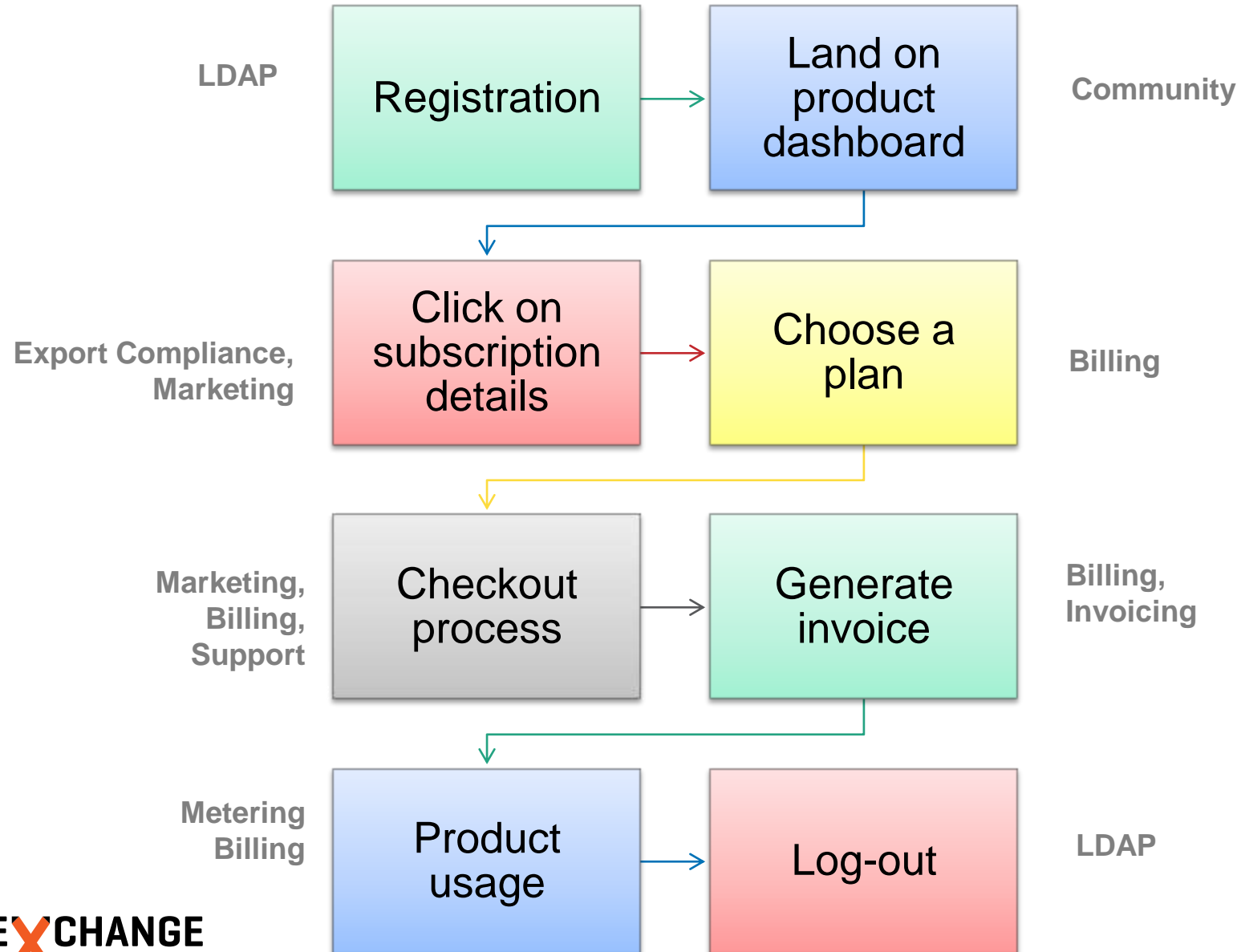
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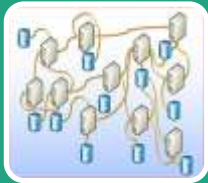
A Typical Integration Scenario in Progress Pacific



Typical End-to-End Scenario



Integration Test Challenges and Approaches



Multiple systems behave differently



No automated deletion of test data in some systems

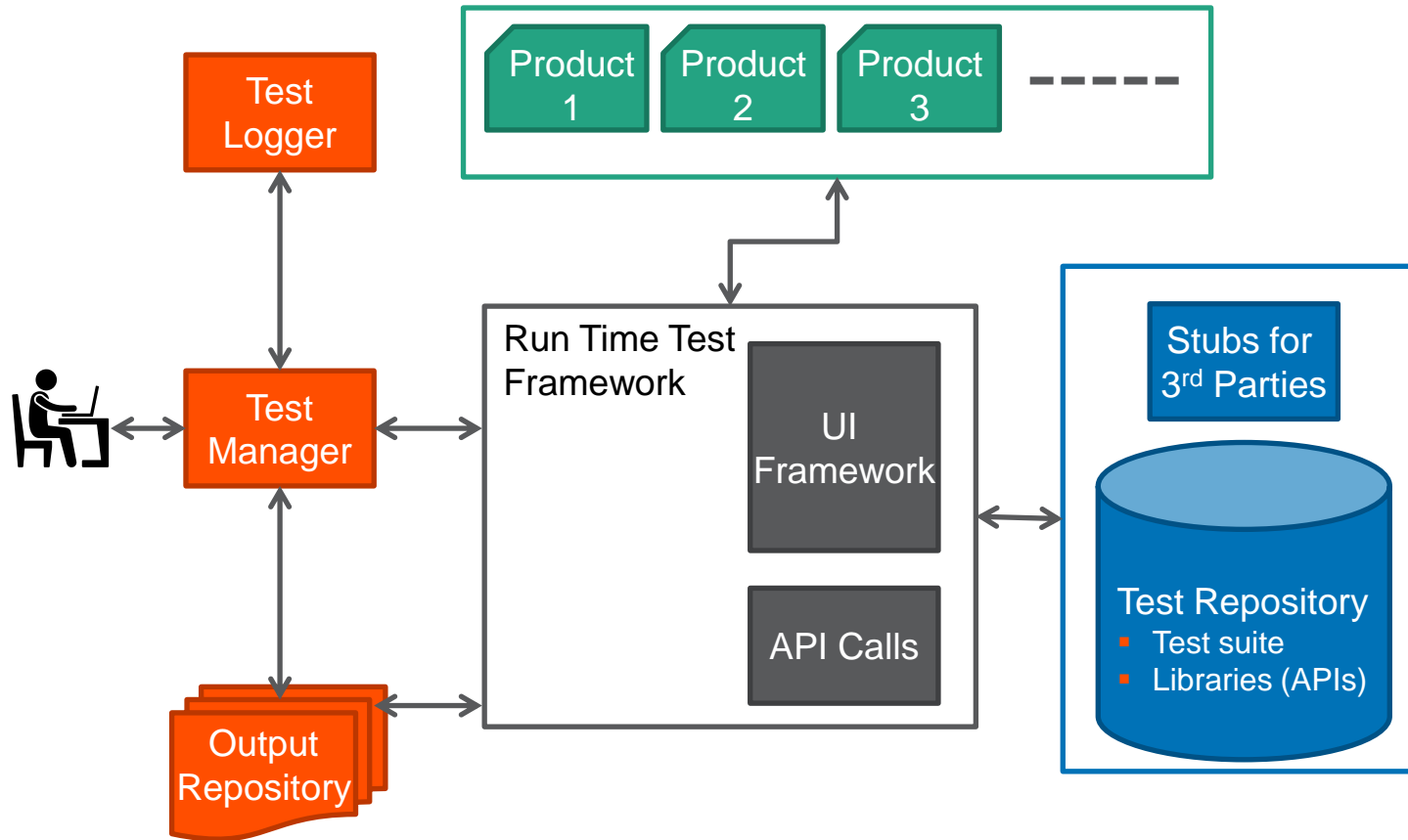


Unpredictable delays in updating various systems



Different types of environments for testing

Integration Test Automation With Cloud



Telerik Test Studio as the UI framework, C# as the Runtime framework

Additional Test Dimensions with IaaS

Repercussions on SaaS and PaaS

Elasticity

Multi-tenancy

Disaster
Recovery

*Service
(De)Provisioning*






Graceful
Degradation

Cloud Portability

Cloud Test Dimensions in a Nut Shell

Security	Performance	Resilience & Failover	Compatibility	API Connectivity	Integration
Traversal vulnerability	Time to deploy	Making one instance down	Accessibility	Connectivity and invocation	P2P Integration
User access/ roles	Multi-tenancy	Making multiple instances down	Globalization and localization	API load	System Integration
Identity federation management	Latency	Disaster Recovery	Compatibility under different situations	API security	End-to-End Integration
Multi-tenant penetration	Connectivity and reliability with 3rd parties			Multi-tenancy	SSO
	Reliability and availability				Customer Scenarios

Automation Frameworks

 <p>Functional (Web/Mobile UI)</p>	Telerik Test Studio, Telerik DeviceCloud Sahi / Selenium scripts
 <p>Performance</p>	Telerik Test Studio for Load / Performance Testing Neoload, JMeter
 <p>API Invocation</p>	SOAP UI / Node.js / PySys
 <p>Integration</p>	Telerik Test Studio (with C#) TestNG + Java + Sahi combined approach
 <p>Security</p>	Websecurify ZAP Tool

Conclusion

With Cloud, QA has

- Unique opportunities &
- Challenges

New test dimensions

- Security, API Invocation, Integration, etc.

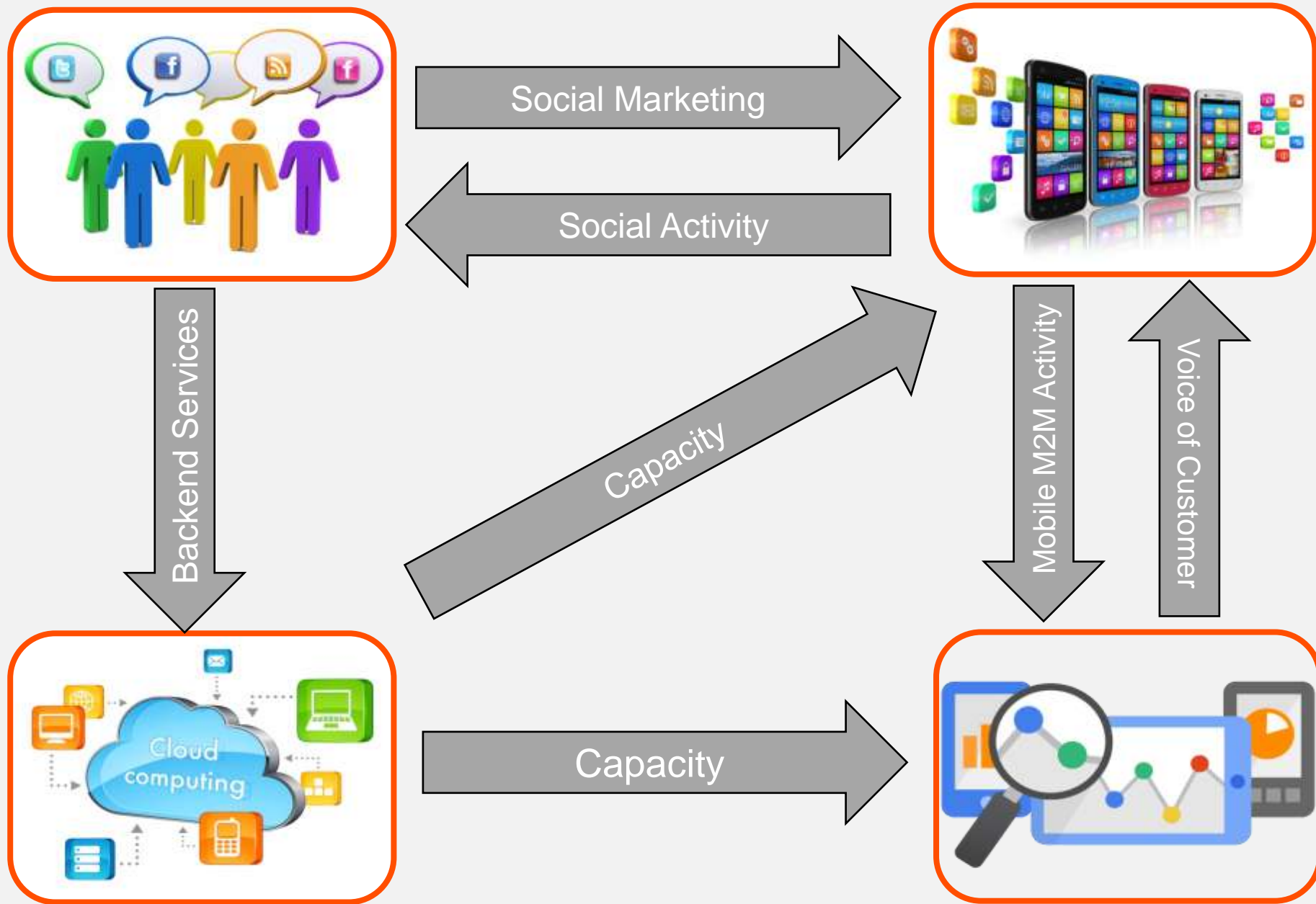
Faster test execution

- Agile
- Leveraging automation tools and develop new automation frameworks

Cloud & Beyond

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IoT or IoE?



Feedback Time

SESSION EVALUATION

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Please take a moment to give us your feedback on the overall value of this session.

SESSION: **Software Quality Analysis with Cloud**

Speaker(s): **Dr Ganesh Iyer, Santhosh, Kiran**

1 = Poor to 5 = Excellent

Value/usefulness of information presented	1	2	3	4	5
Preparation/Knowledge of speaker(s)	1	2	3	4	5
Use of Examples	1	2	3	4	5
Retention of Interest	1	2	3	4	5
Handling of Questions	1	2	3	4	5
Handouts/Audio Visual materials	1	2	3	4	5

Comments: _____

Please leave completed evaluation form at the Registration Desk. Thank You!

AT&T 2:24 pm

PUG Challenge Exchange Americas

session

Software Quality Analysis with Cloud 

Provide Session Feedback



Who: Dr. Ganesh Iyer
KiranKumar Angara
Santhosh Kumar Soma

When: 06/09/15 4:45 pm

Where: Concord

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The Cloud and other Web 2.0 technologies are revolutionizing how software is developed, deployed and used. With Software as a Service (SaaS) software is

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