Joint Agile Delivery

Tony Chang, VP of Huawei's US R&D Competence Center / Chief Expert of R&D Engineering
- Sequential Vendor/Customer Development & Deployment – Duplication of effort leads to **lengthy TTM** for end user (and **high cost** for operator)

- With NFV, solutions are developed by multiple vendors and the operator (Value Fabric) using evolving standards, making **integration challenging**

- While deploying services in the cloud premises business agility, the **challenges of managing development and deployment** from multiple parties need to be addressed
Challenges of Multiple Sources

- How do we ensure that requirements are communicated and understood properly among members of the “Value fabric”?

- Who is responsible for integration and when is the overall product/service integrated (Solution Integration)?
  - What are the guiding principles for test design, test execution, and test platform?

- How do we duplicate the success of rapid IT service delivery in CT while still meeting carrier-class standards?
Joint Agile Delivery: a visionary approach to developing and delivering world-class software that capitalizes on cross-organizational (cross-“value fabric”) synergies to dramatically improve TTM, quality, and cost.

**Focus Areas:**
- Joint Requirements & Solution Test Strategy On A Unified Collaboration Platforms
- Continuous Integration At The Solution Level
- Standardized Solution/Customer Acceptance Test Cases & Test Language
- Joint Solution Verification Environment
- Continuous Rapid Delivery At The Solution Level
- Real-time Customer Feedback Throughout The Development & Deployment Cycle
Extended team includes Marketing + Dev + Ops + End Customer (Operator)

- **Joint Requirements & Solution Test Strategy**: Specifications Through Joint Use Case Discussions
- **Joint** Test Design & Execution
- **Joint** Agile Sprint Demos With The End Customer
- **Joint** Solution Integration Environment

**End Customer Involvement And Feedback Throughout The Process**
Full Embrace Of The Spirit Of Agile & DevOps

- **Open culture** with free information flow and cross-functional collaboration facilitated by the ecosystem; feedback to **learn and adapt**

- **Continuous Integration & Continuous Regression** at the **SOLUTION** level

- **Joint Standardized Solution Test Case Structure & Test Language** along with **Dynamic Target Networks Scenarios Adaptation**

Extending The Concepts Of Agile Development To Solutions Coming From Multiple Sources
- Testing with a focus on the **SOLUTION** regardless of the origin of development
  - **Unified Integration Ecosystem** - ensure “deployment readiness” of the **entire solution**
  - Capability to extend the practice of **Continuous Delivery** to the **multi-vendor solution**
  - Synergies in the Integration/Verification area leads to lower **OPEX and CAPEX** for operator

- **Zero to minimal-impact deployment** of incremental functionality (“fast” features)
**Best Practice - Fast Feature Process**

### Full Release

- Requirement Analysis
- Design & Development
- Coding & Implementation
- Testing & Integration
- Acceptance Testing
- Customer Validation
- Support

### Fast Feature

- Support
- Joint Rigorous Testing
- Implementation

- Joint Requirements Specification
- Joint Test Design & Strategy
- Joint Test Execution
- Joint Test Environment

- Separation of deployment from activation (**minimizing deployment impact and trial period**)
- Continuous delivery with **feature left “inert” till customer is ready** (to deploy)
- **Rigorous Verification**
  - New Functionality Coverage
  - Requirements, Code Coverage + Risk Analysis
  - Feature Code Integration + Target Regression
  - Capacity / Key Performance Indicators
  - Security Testing
  - System Upgrade Requirements
  - Multi-vendor System Integration (MVSI)

**Through comprehensive transparent joint test coverage, the customer is empowered to treat fast features as independently (and instantly) deployable entities - duplication of effort is willingly discarded (resulting in lower TTM and lower operator cost)**
## JAD Benefits & Required Investment

### Benefits

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<thead>
<tr>
<th>Benefits</th>
<th>Vendor</th>
<th>Operator</th>
<th>End User</th>
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<tbody>
<tr>
<td>Fidelity</td>
<td>Minimize “unaccepted” (undeployable) functionality</td>
<td>Adherence to Operator’s requirements</td>
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<tr>
<td>Agility</td>
<td>Shorter Acceptance Testing time</td>
<td>Business Agility – Reduced duplication of effort</td>
<td>Just-in-time delivery of new functionality</td>
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<td>Quality</td>
<td>Fewer After-release changes</td>
<td>Fewer Deployment Issues</td>
<td>Superior User Experience</td>
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<td>Cost Reduction</td>
<td>Lower CAPEX and OPEX Cost</td>
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### Required Investment

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<th>Required Investment</th>
<th>Vendor</th>
<th>Operator</th>
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<tbody>
<tr>
<td>Organization</td>
<td>Build Organizational synergies to reduce overlap</td>
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<tr>
<td>Processes</td>
<td>Adopt Jointly-designed Common Processes</td>
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<tr>
<td>Solution Integration Environment</td>
<td>Invest In Open Ecosystem</td>
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