A view from the trenches

Moving from legacy monoliths to modern microservices platforms in the cloud

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Introduction
Agenda

- Trends in the market
- Intelligent Payments
Moving to cloud

- Finance, public sector, energy
Moving to cloud

- Finance, public sector, energy
- PAYG
Move away from central IT

• Empower LoB and partners

• Acceptance that innovation happens at the edge

• Accept and enable a more controlled form of shadow IT

• Enable agile fail-fast approaches
Microservices

- SOA is dead

- Teams want to make incremental changes and release quickly

- 2 Pizza Teams
Do it all for cheaper and on-demand

- Infrastructure Efficiency
- Staff Efficiency
- Operational Efficiency
Red Hat Container Stack & Tools

Red Hat Application Services (JBoss)

Red Hat OpenShift Container Platform (incl. CloudForms)

Red Hat Enterprise Linux & Atomic Host

Traditional, Stateful & Microservices-based Apps

- Business Automation
  - CONTAINER
- Integration
  - CONTAINER
- Data
  - CONTAINER
- Web & Mobile
  - CONTAINER
- 3rd party frameworks
  - CONTAINER

- LIFECYCLE AUTOMATION
  - CONTAINER MANAGEMENT
    - (Self-service, CI/CD, Image Stream)
    - (Monitoring, Capacity, Policies)

- CONTAINER INFRASTRUCTURE
  - (Orchestration & Scheduling, Storage, Registry, Security, Networking)

- ENTERPRISE-GRADE CONTAINER OS
  - Physical
  - Virtual
  - Private
  - Public

Red Hat Registry

- CloudForms
- Ansible
- Storage
- Satellite
- Developer Studio
- CDK
Overview

- Originally formed to provide gateway and risk services to large merchants in the gaming sector
- Providing gateway services to some of the largest corporate merchants in Europe
- Developed turnkey low cost payments solution for SME merchants
- Channel partnerships with major acquirers in Europe
- Management team - original founders and senior management at OmniPay together with payments and fraud execs from gaming sector

Selection of Intelligent Payments customers:
Business Case for OpenShift at IPG

• Challenge at IPG to refactor existing in-house application for multitenancy, scalability and high availability whilst providing business continuity to customer base.

• Business case to implement multitenancy driven by cost savings, and scalability for SME market.

• Solution needed to support security levels compliant with industry requirements, PCI-DSS.

• Solution can be deployed to a private hosted environment
Business And Functional Requirements

• How to refactor current application into smaller modules or libraries in a gradual timeline, while still managing customer base and new customers.

• Evaluating solutions, looking for ESB and application integration platform.

• Support existing Active-MQ product for inter-application messaging

• Preference to use Open source solutions, focused on Apache ServiceMix (Apache ActiveMQ, Apache Camel, Apache CXF, and Apache Karaf), with premium support backing.

• FUSE ESB (a recently acquired Red Hat product in 2013), fulfilled all the requirements.
Benefits of FUSE ESB (Apache ServiceMix) at IPG

• Using Apache Karaf that is powered by OSGi enables the ability to package applications in modular plug-ins that can be deployed independently and dynamically. This is essential for refactoring the existing applications into more maintainable components, without a very long development cycle. a.k.a. Microservices.

• Opens up the possibility of outsourcing development for specific functionality without disclosing the entire code source.

• Supports Enterprise Integration Patterns via Apache Camel that enable application routing and integration.

• A Web Services Framework via Apache CXF that Integrates applications with SOAP, XML/HTTP and RESTful HTTP. This facilitate the construction of an API foundation.
Challenges

• Training and upskilling on the open source standards and frameworks used in the product, namely Apache ServiceMix (karaf, camel, CXF).

• Operations / Maintenance for production environment. How to setup a highly available setup, with rolling updates to minimize or eliminate downtime. IMPORTANT!
Roadmap

• Deploy FUSE ESB as a highly available, scalable service. Reduce network complexity, and provide cluster session persistence.

• Next step Upgrade OpenShift Enterprise 3.x, and deploy FUSE as xPaaS.
LEARN. NETWORK. EXPERIENCE OPEN SOURCE.