IBM DevOps Solution Webcast Series

1) Accelerating the delivery of multiplatform applications
2) Continuous Business Planning

Yasser Abdalla, Business Development Representative
My IBM page: www.ibm.com/myrep/yasser_abdalla
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<td><strong>IBM DevOps solution: Accelerating the Delivery of Multiplatform Applications</strong>&lt;br&gt;<em>Presenters: Carmen DeArdo, Hayden Lindsey, Mike</em></td>
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Agenda

• The case for DevOps
• IBM DevOps solution overview
• DevOps in a multiplatform environment
• Problem areas, business challenges that can be addressed with Continuous Business Planning
• How to differentiate the IBM solutions, while initiating new projects or progressing existing projects.
Software delivery drives competitive advantage
Yet few are able to deliver it effectively

86% of companies believe software delivery is important or critical

But only...

25% leverage software delivery effectively today

69% of those who leverage software delivery today outperform those who don’t

a lack of effective continuous software delivery impacts the entire business

**CHALLENGES**

- **Costly, error prone manual processes and efforts** to deliver software across an enterprise
- **Slow deployment** to development and test environments leave teams **waiting and unproductive**
- **Upgrade risk** due to managing multiple application configurations and versions across servers

**Customers**

Software glitch costs major trading firm $440 million in 45 minutes

**Business Owners**

Major telecom provider paid out $2.7 million to 47,000 customers overcharged after a software glitch

**Development/Test**

A bad software upgrade at a global bank left millions unable to access money for four days
New era systems integrate existing systems of record with new client-facing systems of engagement
Inhibitors to software innovation

**Line-of-business:** Takes too long to introduce or to make changes to services/products

**Operations:** Rapid app releases impacts system stability

>70% Of resources devoted to maintaining existing systems and products

>80% applications rolled back

>50% Number of outsourced projects fail to meet objectives

4-6 Weeks to deliver application changes to customers

Development/Test: Speed mismatch between faster moving front office and slower moving back office systems, delaying time to get feedback

Suppliers Delivery in the context of agile
Challenges for Traditional Application Development

1. Dev. driving agile while rest of the organization is **not involved or ready**
2. Dev. teams cannot get customer feedback **without deploying software**
3. Delayed deployments to dev./test environments leave teams **waiting**
4. Costly **error prone manual processes** and efforts across lifecycle

41% experience development delays

34% experience deployment delays

45% experience production delays

4-6 weeks to deliver code changes
Solution: A Continuous Delivery Pipeline

Ensure applications are production-ready throughout the lifecycle and can be released at any time while minimizing rollback due to quality issues.

- Validate on more production-like conditions earlier
- Automate hand-offs/promotions to increase velocity through the different stages
- Standardization on processes and assets between Dev and Ops
- Automated monitoring and dashboarding of quality and performance against service level agreements at multiple stages
Challenges – Continuous Integration

On z/OS

How do we get from this?

To this?
A blueprint for continuous delivery of software innovation

dev·ops noun /ˈdev-əps/
Enterprise capability for continuous software delivery that enables clients to seize market opportunities and reduce time to customer feedback.

DevOps Lifecycle in Action

- Accelerated software delivery
- Reduced time to obtain and respond to customer feedback
- Improved governance across the lifecycle
- Balanced quality, cost and speed
IBM DevOps: An improved software delivery lifecycle
Create Agile and Lean practices to connect business and IT

- Better align investment decisions with value and organizational strategies and priorities
- Plan releases predictably driven by the needs of the business
- Gain control of development initiatives by improving visibility and transparency
- Provide proactive portfolio evolution and delivery governance

Enabling you to...

Rational Focal Point

改善可见性和透明度
Leverage common tools to build multiplatform apps

- Leverage common Eclipse-based IDEs for all types of development
- Access broad coverage of runtimes, languages, compilers, and platforms
- Accelerate business rule changes from weeks/months to days/weeks
- Create agile services from existing mainframe assets
Break down silos by moving to a collaborative environment

Maximize team productivity

- Project Managers / SCRUM Masters
- Quality and Test
- Administrator
- Agile Teams
- LoB / Business Analyst
- Developers

**Continuous Delivery**

Open Lifecycle and Service Management Integration Platform

**Rational Team Concert**

**Rational Requirements Composer**

**Rational Quality Manager**

Enable you to...

- Manage all types of sources - JavaScript to COBOL
- Create work items spanning technologies and solutions
- Accelerate agile adoption on the mainframe
- Integrate existing SCMs and deployment tools, e.g. ChangeMan and Endevor
- Use Lifecycle integration adapters for third-party tools
Automate functional, regression, load, and integration testing

Improve application quality

Rational Test Workbench
- leveraging Green Hat Technology

Enabling you to...

• Fully embrace automated testing

• Create test automaton of native and hybrid mobile and mainframe applications

• Run automated tests to validate builds

• Take advantage of over 70 technologies and protocols out of the box
Offload development and testing to reduce MIPS

Improve development flexibility

Rational Development and Test Environment for System z

Enabling you to...

- Liberate developers to rapidly prototype new applications
- Develop and test System z applications anywhere, anytime
- Free up mainframe development MIPS for production workload
- Eliminate costly delays by reducing dependencies on operations staff
- Try latest middleware, including CICS 5.1, IMS 12.1, and WebSphere 8.5
Reduce provisioning burden on Operations

Maintain test LPARs effectively

Rational Test Virtualization Server - leveraging Green Hat technology

Enabling you to...

- Test in isolation with ‘stubbed’ or ‘mock’ services
- Virtualize CICS applications inside the mainframe and Java applications in the JVM
- Reduce development dependency on operations
- Minimize subsystem dependency during testing
- Reduce infrastructure costs and free up MIPS for production use
The IBM Integrated Solution for System z Development

Establishing a modern, collaborative infrastructure for developing and delivering high quality cross platform applications.

Increase productivity and reduce MIPS with a modern IDE for COBOL, PL/1 & HLASM and C/C++, Java

Cross-platform and Mainframe Development
Rational Developer for System z

Impact Analysis
Rational Asset Analyzer

Better productivity and quality with quick analysis showing application structure and relationships

Collaborative Development
Rational Team Concert

Collaboration and governance across diverse teams, platforms, and programming languages

Off-Host Development and Unit Testing
Rational Development and Test Environment

Free up MIPS for production use, and eliminate delays by providing a low cost Unit Testing environment

Quality Professional
Deployer Engineer

Analyst
Project Manager

Developer
Architect

IBM Services

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Conversation Starters for Opportunity Identification

- Are your COBOL and PL/I staff developing their applications using ISPF?
- Do upcoming projects have application modernization requirements?
- Do you need one team to do multi-tier application development?
- Is it difficult to attract and retain new talent accustomed to modern IDEs?
- Are you spending too much maintaining your existing applications?
- Do you have a growing backlog of work that you need to accomplish?
- How difficult is it for a new developer to understand existing applications?
- What percent of your time do you spend on analysis?
- How do you implement business rule changes across multi-tier applications that include COBOL and PL/I code?
- Are you being asked to use fewer MIPS for development or are your chargeback rates taking a large amount of your budget?
- Are there project delays due to waits on mainframe operations staff or mainframe cycles?
- Are there communication breakdowns between teams?
- Do you have multiple teams or team members working on the same code?
- Have you had problems deploying cross platform applications in the past? What happened?
- Are your processes enforced to prevent unauthorized changes and rogue builds?
- Are you worried about your ability to pass an audit?
- Is determining project status a time consuming, painful process?
- Are you paying too much in zSCM maintenance- and do you incur increased costs when you upgrade your hardware?
IBM Continuous Integration Solution for System z

Reduced delivery time, improved end-to-end visibility of test activities, reduced risk and quicker V2V migrations
Why you need CIz?

- Are your developers or testers delayed because they have to wait for systems personnel to set up the appropriate configuration (LPAR, etc.) required for a test?

- Do your mainframe developers have to wait on your distributed developers to complete their respective components? Or vice versa?

- What impact does any of the above have on your delivery schedule? Does it add much time to the entire project schedule? Do you factor that into the sizing of a project?

- How long does it take to get a simple change tested? (remember the delays caused by the need for Q/A testing)

- How much regression testing do you do?

- If you could eliminate much of these delays for operations staff resources, or teams waiting for others to finish their components, how much more testing do you think your teams could get through? What impact would this have on the quality of your applications delivered?

- Did you know that IBM has solutions which can help your teams do just this?
Rapid solution delivery and test provisioning

Deliver test environments in minutes

Enabling you to...

• Provision consistent images for test environments, reduce rework, and speed redeploy of new instances
• Quickly deploy multiple test instances in minutes versus hours or days
• Orchestrate the development, deployment and management of enterprise clouds
• Quickly clone (and destroy) test CICS regions
Resolve transaction failures and performance bottlenecks

Increase application availability

z/OS Problem Determination Tools
IBM CICS Tools family
IBM Explorer for z/OS

Enabling you to...

• Accelerate deployment of new CICS workloads

• Discover and visualize your real CICS environment

• Analyze and fix application and system failures

• Examine, monitor, and control the execution of application programs

• Identify root cause of performance issues

Sept 4 – Collaborative Development & Integration and Sept 11 Continuous testing
Practices that enable a DevOps approach
A real life story.....
..with a happy ending: Simplify IT to improve business agility

A global conglomerate

**Challenge**

**Cost**
- Too much money spent on maintenance and operations

**Solution**
- Established application inventory in first month
- Assessed business value versus cost and risk
- Reduced number of local and non-strategic applications

**Results**
- Reduced number of applications by 45% in 18 months
- Reduced money spent on daily operations from 85% to 50%

**Challenge**

**Business agility**
- IT not reactive to business needs
- Business had low confidence in IT’s ability to add value

**Solution**
- Established demand management process
- Used tools for improved business and IT collaboration
- Re-invested savings into innovation

**Results**
- Reduced response time to business change request from 200 to 14 days
- Improved trust between Business and IT
- IT is now viewed as an enabler of innovation, rather than as a cost center

[Read the full case study]
Organizational IT wants has to…

*Align their application portfolio to the organizations’ overall strategy*

**Increasing Business Pressures**
- Minimize costs for maintaining and operating existing systems
- Enable new business opportunities through new and innovative systems
- Minimize risk exposure (Compliance, Schedules, Security, …)
- Drive business process optimization through technology
- Aging population possessing key domain, business and technology knowledge
- Complexity driven by continued expansion of technology options
- Duplicated and competing capabilities and technologies
- Degrading maintainability as a result of aging technology and brittle architectures

**Increasing IT Constraints**

*But…*

*Lack of business and IT information makes decision making ad-hoc, error prone and politically driven versus analytical and fact-based. Limited awareness of applications (usage, design, relationship to business requirements, etc.) increases cost, slows development delivery and reduces quality.*
Plan and Measure: Overview

*Continuously plan, measure and bring business strategy and customer feedback into development lifecycle*

**Highlights:**

- Better align investment decisions with *value* and organizational strategies and *priorities*.
- Gain control of development initiatives by improving *visibility* and *transparency*.
- Provide a *governance* model adapted to multi-supplier sourcing structure.
- Plan *releases* predictably driven by the *needs of the business*. 
Continuous Business Planning

Application Portfolio Management

- Gather info, analyze, make decisions
- Minimize risks
- Reduce costs
- Increase flexibility

Determine Disposition

- Retire
- Discontinue
  - As-Is
  - Retool
  - Consolidate
- Retain
  - Upgrade
  - Rehost
  - Wrap
  - Convert
  - Refactor
  - Rewrite
  - Purchase
  - Lease
- Replace
  - As-Is
  - Retool
  - Consolidate
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  - Purchase
  - Lease

“Smarter APM and associated application revitalization has enabled IBM’s IT to cut maintenance costs by 20% and defects by 58%.”

— IBM Corporation
Analyze and set candidate dispositions
Assess Business Value vs. Strategic Value to guide maintenance spend and dispositions

IBM Example

Application maintenance
- All errors
- Severity 1 and 2 errors only
- Severity 1 errors only
- No error corrections

Application enhancements
- All enhancements
- Enhancements which impact revenue, profitability, customer satisfaction, or a demonstrable return on investment
- Only enhancements bringing significant longterm value
- No enhancements

Decommission?

Strategic Value
- Silver services
  - Gold services
    - AO01: eBanking
    - AO02: PMS
    - AO03: AutoFit
    - AO04: Amdocs Billing
    - AO05: APBackup
    - AO06: EMEA Pipeline
- Blue services
  - AO07: Azure
  - AO08: Cloud
  - AO09: Compliance
- Bronze services
  - AO10: Billing
  - AO11: eBanking
- Gold services
  - AO12: AutoFit
  - AO13: Amdocs Billing
  - AO14: APBackup

IBM Example

Apply Portfolio Value Management approach
Apply affordability driven demand management
Typical Integrated APM Project!
Great value with these use-cases and initiatives

Triggering events

- Corporate initiatives to reduce cost, increase business agility and/or consolidate BUs or operations
- Recent Merger and Acquisition (M&A) activity
- Aggressive growth plans (new markets, new products)
- Highly regulated and/or competitive markets
  - Financial Services
  - Telecom
  - Energy
  - Govt./Defense
- Addressing limitations with other competitive tools and platforms.
Do I need integrated APM?

• How do you evaluate business value versus cost / risk for your applications?
• How much of your critical resources are consumed by your maintenance costs?
• Are your customers satisfied with your response time with regard to new fixes and new features to your application?
• How do you determine which applications to consolidate or modernize?
• What is your strategy for freeing up more resources for innovation?
• Which rationalization efforts would provide the greatest value to the organization?
• Does your current spreadsheet-driven implementation of APM help support decision making and governance?
Plan and Measure: Continuous Business Planning

Increase business value with better LOB and IT alignment, proactive portfolio evolution and delivery governance.

- Continuous application portfolio assessment to improve agility and identify savings
- Prioritize business needs and proposals, determine sourcing choices, and align with strategy to maximize value
- Govern project delivery involving the business, development and operations, track status and manage change

✓ Maximized business outcomes and value
✓ Open collaborative and standards-based
✓ Strong governance framework

- Rational Focal Point
- Rational System Architect
- IBM Rational Governance of Application Development Outsourcing Solution
- IBM Operational Decision Manager
- Rational Requirements Composer
- Rational Team Concert
Application Modernization: Having decided, what are the modernization options

- Maintain, Consolidate, Update
- Expand/modernize user access
- SOA modularization/reuse (includes Decision Mgmt based Modernization)
- Modernize language for multiple platforms
- Decision Mgmt based Modernization

Determine Disposition

- Retire
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Incrementally Modernize Applications

Use IBM ODM to unlock rules hidden in existing applications

• Gradually pull out rules from existing applications
  – Focus on those business decisions that change fast and often
  – Re-express business rules in natural language
  – Manage and store them in a central facility
  – Does not require a "big bang" change
Why Operational Decision Management?

**Agility**
- Operationalize policy changes in days versus months
- Decrease cost of implementing business practices, policies & regulations

**Efficiency and Productivity**
- Improve straight-through-processing
- Involve business users for change requests with built-in governance

**Decision Quality and Precision**
- Implement more fine-grained, targeted decisions
- Perform what-if and impact analyses prior to deployment

**Consistency**
- Automate and consistently enforce decision policies
- Ensure policies and associated semantics are consistent across channels

**Transparency, Auditability, Compliance**
- Track what decisions were made and why (runtime)
- Track what policies were changed and by whom (rule management)
Business Rule Management Demands & Capabilities!

- Rules are easy to find, change, test and deploy in ODM
- LOB can make most updates to rules (highly collaborative environment with integrated social media-style comment stream promotes teamwork)
- Natural language rules in ODM can be easily read and changed by LOB
- Wizards assist LOB in writing rules (automatic completion, error checking…)
- Business rules can mimic human decision-making, greatly increasing straight-through processing without sacrificing correctness or granularity of decisions
- Many clients have achieved straight-through processing rates of over 90%
- ODM makes it easy to find any specific rule (even with 1,000’s of rules)
- Rules are easy to read and understand in natural language, rather than computer code (business people can read rules easily in ODM)
Business Rule Management Demands & Capabilities! (cont’d)

My IT department doesn’t have the bandwidth to implement frequent business policy changes

- Day-to-day rule changes can be made by business people in ODM
- IT’s time can be focused on IT-specific activities (deploying the initial rules application, IT-level testing, major application upgrades…)

Change requests are often misinterpreted in the handoff from LOB to IT

- LOB can make the changes directly using natural language that will be interpreted the same by all participants
- Built-in governance ensures that changes are understood and approved by all necessary parties

It’s difficult to trace what decisions were executed and why

- ODM provides a history of all runtime decisions and the specific rules that were applied
- Easy to determine what rules were in effect at any given point in time in the past
IBM DevOps: An improved software delivery lifecycle

DevOps Lifecycle

Customers | Business Owners | Development/Test | Operations/Production

Continuous Innovation, Feedback and Improvements

Ecosystem

Plan and Measure | Develop and Test | Release and Deploy

Monitor and Optimize

DevOps Foundation

Open Lifecycle and Service Management Integration Platform

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Summary

• There are challenges to delivering software-driven innovation

• Disruptive technologies are driving greater need to innovate

• DevOps is critical to your success

• IBM has first-class DevOps solutions and is continuing to invest and improve upon these solutions
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