Emtec Team Introductions

Mike Carter, Salesforce.com Practice Lead
Mike has over 15 years of experience in IT strategy, consulting, and technology-enabled business improvement across multiple industries, geographies, and organizations. Responsible for leading and developing Emtec’s Salesforce.com team. Mike’s expertise spans IT strategy, technology implementations, program and project management, business process improvement, and organizational design. Prior to joining Emtec, Mike was responsible for delivery and sales of professional services engagements in the East and Central regions for Salesforce.com. Having worked in the CRM space for 12 years, Mike has implemented SFDC for over 40 clients.

Dan Olsen, Salesforce.com Practice Lead
Excellence in delivery is Dan Olsen's singular focus and his responsibilities include managing the delivery of Salesforce.com projects for our clients in the Michigan region. In addition to his 15 year history developing and managing technology in the automotive sector, Dan has spent the last 9 years working specifically in the field of Customer Relationship Management - including time with Model Metrics, now owned by Salesforce.com. Dan is an expert with the Force.com platform, including Sales Cloud, Service Cloud, Chatter and system integrations. He has a strong record of translating complex business processes and requirements into CRM solutions that solve problems and delight clients.
**Emtec... ‘Big enough to do the work, small enough to care’**

### Emtec The Company

- Serving clients for over 46 years
- 14 locations, including 8 development centers
- Over 1,000 full-time professionals
- Voted One of the Top 100 Places to Work by Crain’s Chicago in 2012
- Our consultants have an average of 14 years of experience. Nearly 45% have advanced certifications
- 73% of our PMs, Architects & Consultants worked at Tier 1 consultancies in a previous life
- $255M IT Services Provider
- Regularly compete & win against larger IT service providers

### Emtec Services at a Glance

- Emtec has completed more than 1,100 Package Application engagements, including:
  - 200+ Oracle clients with more than 415 engagements
  - 206 EPM / Hyperion & OBIEE clients and 323 engagements
  - 186 Microsoft Dynamics and more than 255 projects
- Emtec is a premier provider of SaaS and Emerging technologies market, including 51 Salesforce Clients with more than 75 engagements, Including Sales Cloud, Service Cloud and Custom Cloud
- Emtec has performed more than 6.3M hours of application development and maintenance work ranging from Business Analysis to Product Development
- Emtec has served more than 565 Infrastructure services clients where we have:
  - Deployed more than 1.85M servers, personal computers, tablets and mobile devices
  - Installed or provided more than 925 exabytes of storage (That’s a whole lot…)
  - Triaged more than 30,000 L1 support incidents
  - Implemented service management solutions for more than 125 clients

### Emtec Around the World

**US Locations**
- Springfield, NJ (HQ)
- Atlanta, GA
- Chicago, IL
- Dayton, OH
- Fremont, CA
- Jacksonville, FL
- Herndon, VA
- Minneapolis, MN
- Oakbrook, IL
- St. Louis, MO

**Global Offices**
- Toronto, Canada
- Ottawa, Canada
- Pune, India
- Bangalore, India
Agenda

1. Need for Test Automation
3. Demo: So How Does it Look?
4. Next Steps
5. Q & A
Quality Assurance and Testing: Demands and Challenges

- Companies spend over $50B on QA and the demand is growing
- QA organizations are constantly under pressure to test more within shorter timeframes and a reduced budget.

<table>
<thead>
<tr>
<th>QA Organization Demands</th>
<th>QA Organization Challenges</th>
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<tbody>
<tr>
<td>• Scope Increasing</td>
<td>• Typical QA Effort Planned – 25%-35%</td>
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<tr>
<td>– Cross-browser compatibility – web, mobile-web</td>
<td>• Whereas QA Effort Expended – 15%-20%</td>
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<td>– Regulatory compliance</td>
<td>• Typical Automation Coverage – 55%</td>
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<tr>
<td>– Threat Vulnerability</td>
<td>• Typical Automation Effectiveness – 65%</td>
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<tr>
<td>• Less Time to Test</td>
<td>• 45% of Automation projects stalled</td>
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<td>– Rapid application development</td>
<td>• 55% of Automation projects don’t achieve ROI</td>
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<td>– Shorter product release cycles</td>
<td>• Effective utilization of QA resources – 70%</td>
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<td>– Distributed development</td>
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<td>• Increased Consequence of Defects</td>
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Emtec’s QA Practice offerings are designed to help our clients address these challenges more effectively.
Force.com Application Development and Testing Landscape

• Force.com applications are getting larger and more complex, with shorter development cycles
  – Drives need for a comprehensive test plan
  – As features are added, regression testing becomes key
  – Code coverage must be significant, not just meet the minimum code coverage requirement of 75%

• Agile development methods are driving the need for rigorous testing
  – An ongoing regression test framework is essential to ensure that working functions are not inadvertently impaired during subsequent sprints
  – Building and executing an automated suite of regression tests enhances the ability to develop these applications rapidly and with high quality

Today, we will share with you a way to test Force.com applications effectively and efficiently.
WHAT DOES IT ALL MEAN?

• The trend in software Quality Assurance is to do more with less, with higher stakes

• Force.com applications are becoming more complex

• Agile development methodologies are driving shorter development cycles, with an emphasis on testing.

• Automated testing is the logical solution to meet the challenge.
Best Practices in Building a Test Automation Suite

- **Tool Agnostic**
  - Plug and Play
  - Ability to work with different tools with minimal impact on test coverage

- **Business Aligned Automation**
  - Use case based testing
  - Support reusability of scripts – assemble scenarios using atomic scripts
  - Provide Object-based automation (minimize impact of UI layout changes)

- **Create test scenarios on the fly**
  - Ability to use English statements (leveraging Behaviour Driven Design) to create test scenarios, empowering your business users to create dynamic scenarios

- **Keep configuration effort low**
  - Browsers to be launched for execution
  - Data driven and parameterized (same script can run for multiple data conditions without need to modify scripts)
  - across diverse data sources
  - Should be able to configure multiple environments (dev, test, stage) for same test case execution

- **Analytics**
  - Incorporate automated verification of results
  - Ability to reflect product status in
  - Provide trend analysis for individual features
  - Compare execution results across multiple runs

- **API testing**
  - Somewhat neglected area in test automation
  - Key element in web development where support needs to be provided on various platforms.
  - APIs are mainly used for data transfer and various key operations
  - Ability to verify each parameters and its variation in standalone manner

- **Distributed**
  - Enable Configurable execution for unattended operation
Best Practices for Building Automated Regression Tests

• **Design Tests to Meet Organization Objectives:**
  – Assess product quality objectives
  – Aligned with time-to-market product development objectives
  – Balance cost against resource constraints
  – Tailored to deliver realizable ROI

• **Will Involve:**
  – Up front setup activities including: tools, standards and guidelines to drive consistency and auditability
  – Proof-of-concept / pilots, to validate alignment of direction
  – ABC analysis of test cases – not all test cases are amenable for automation
  – Leverage automation best practices, frameworks and assets (such as eSTAF)
Additional Considerations for Force.com Applications

- Need to ensure and demonstrate adequate Code Coverage (75%)
  - Insertion of Test Classes into custom code in sandbox environment
  - Creation of mock test classes for inbound web services (integration)
  - Add coverage for triggers and batch processes

- Testing against a cloud environment
  - Security considerations (firewall)

- Carefully design and sequence your test to avoid exceeding limits
  - Data limitations
  - API call/governor limits

- Testing integrations from Force.com to external applications (cloud to cloud)
  - Example: Force.com calls to USPS address validation
### Benefits of Automated Regression Testing

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<tr>
<td>Greater Test Coverage where its laborious to generate test data</td>
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<td>Frequent Test Execution</td>
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<td>On Demand Testing as part of continuous integration</td>
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<td>Cross Browser Functional testing</td>
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<tr>
<td>Repeatable Test execution (across customers, environments, scenarios etc.)</td>
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<td>API regression testing using various protocols (SOAP, REST, etc.)</td>
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<tr>
<td>Complete regression testing during specified batch window</td>
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<tr>
<td>Avoid repeating prerequisite steps for executing complex scenarios</td>
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<tr>
<td>Leverage existing automation, record &amp; play tools</td>
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<td>Executing test scenarios across variety of data providers</td>
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<td>Customizable user defined integrated reporting</td>
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<td>Trend Analysis</td>
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Emtec’s Software Test Automation Framework Architecture

Application Under Test (AUT)

UI

Business Layer

MS SQL

WEB / WINFORMS / HEADLESS

SOAP / REST

DATASOURCES

Test Scenarios

Scenario 1
Business Process Workflow(s)

Scenario 2
Business Process Workflow(s)

Scenario N
Business Process Workflow(s)

Business Adaptor (SFDC Example)

OpportunityManager

AccountManager

UserManager

Object Cache

Account

Opportunity

Lead

Contact

eSTAF Core

Application API

API Framework

Configuration Framework

Application Manager Skeleton

Object Cache

Base classes

Utility Framework

Data Driven Capabilities

Utility Classes

Session Manager

Execution & Reporting Engine

Reporting Framework

Result Trend Analysis

Multi process Execution

UAT Automation Team

eSTAF Team

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Deployment Diagram and User Roles Involved

Test Framework Team
- Deploy latest Binaries, Provide support to Automation team

QA Team
- Connect and Execute Test cases
- Execute test cases, generate reports, analyze and verify results, report issues as necessary

Development Team
- Insert test code, fix defects and retest

Automation Team
- Develop new adapters and test cases, upload to server

eSTAF Framework Binaries
- Connect and Execute Test cases

Business Adapters & Test Cases
- Connect and Execute Test cases

QA Server

Staging/UAT Server

Development Server
An Agile approach to test automation accelerates realization of benefits - We can help you get started with the Inception Phase – stay tuned for the details!
Complimentary Automation Readiness Assessment
Let us help you get started on the Inception Phase with an automation readiness assessment aimed at identifying ways to improve the quality of your Force.com Applications.

Sign up for your Complimentary Assessment Today!
For more information or to sign up today, contact Erica Archer at: erica.archer@emtecin.com or 312-216-4911
Join us for Happy Hour at Dreamforce ‘13

Join us at Dreamforce ‘13 on November 20\textsuperscript{th} at Annabelle’s Bar & Bistro for cocktails, food and a chance to connect with other conference attendees at this local favorite, conveniently located just steps away from The Moscone Center!

**Location:** Annabelle’s Bar & Bistro  
**Date:** Wednesday, November 20  
**Time:** 6:00 p.m. – 9:00 p.m.

REQUEST A TICKET!  
Contact Erica Archer at: [Erica.archer@emtecinc.com](mailto:Erica.archer@emtecinc.com) or 312-216-4911
Thank you!