

RYAN D. MARSHALL

+1 (206) 326 9096
ryan@sevensoft.com

SOFTWARE ARCHITECT

1820A 11th Avenue
Seattle, WA 98122

Analytical, solution-oriented **Senior Solutions Architect** and hands-on agile **Development Manager** with over 18 years experience building, designing and implementing maintainable, scalable solutions and processes. Enjoy the challenge and collaborative process of breaking-apart complex engineering problems into clearly defined, elegant solutions; working closely with colleagues on enterprise-caliber implementations across a broad spectrum of .NET, Web, Cloud and Windows technologies.

- ☑ .NET Solution Design & Implementation
- ☑ Architect, Leader, Developer & Contributor
- ☑ Cloud, Enterprise, & Desktop Platforms
- ☑ Project Scope & Objective Management
- ☑ Heterogeneous Services & Databases
- ☑ ASP.NET, Silverlight, WPF, MFC, VB, & Forms Clients

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TECHNICAL EXPERTISE

LANGUAGES	C# ~ C/C++ ~ T-SQL ~ Regular Expressions (Regex) ~ Visual Basic (VB.NET/VB) ~ JavaScript
SKILLS	.NET Architecture & Solution Design ~ Complex Service Architectures (SOA/ESB) ~ Vendor / Open Source Solution Assessments ~ SQL & Relational Database Schema Design ~ Legacy Systems and Data Migration, Isolation and Mitigation ~ Scaled Technical Evangelism (audience-appropriate, vision-to-implementations) ~ Technical Discipline Collaboration & Utilization (UA, UE, Infrastructure, Test, SEs, SDE, PM and Architecture)
DEVELOPMENT TECHNOLOGIES / FRAMEWORKS	ASP/.NET (2 - *) ~ Windows Services ~ Win32/64 Native API ~ Windows Forms ~ Windows Presentation Foundation (WPF) ~ Adobe Workflow Automation (via .NET & JavaScript) ~ Microsoft Office Applications (Excel & Word Add-in Development / Dynamic Generation) ~ ADO.NET Entity Framework ~ LINQ-to-SQL ~ DynamicData Sites ~ Build Providers / T4 ~ Windows Communication Foundation (WCF) ~ Web Services (ASMX) ~ REST / SOAP / POX ~ Windows Identity Foundation (WIF) ~ Concurrency Programming (Overlapped IO, Callbacks, Polling, Waiting, Eventing) ~ ASP.NET Custom Server Controls (Inheritance, Composition, Eventing, Design Time Rendering) ~ JavaScript / jQuery / Knockout.js / jsPlumb / Highcharts ~ XML / XSD / DTD ~ XSL(T) (1, 2) ~ SVG (IE) ~ CSS / (X)HTML (client storage, canvas) ~ Silverlight (1 - 5)
MICROSOFT AZURE	Cloud Services (Compute, Multi-Tenant, Auto-Scaling, Analytics, Data Market APIs ~ Access Control Services / Active Directory ~ Office 365 / SharePoint Online ~ Blob / Table / Queue Storage (CDN, CORS, Synchronization) ~ Service Bus (Relay, Hybrid, Port Bridge, AMPQ), Caching (Memcached, Shared) ~ Azure Pack (Runbooks, Powershell Configuration, Service Management API)
AMAZON WEB SERVICES	Ec2 (Compute) ~ VPC / Security Groups / Routing / ELB ~ S3 / CloudFront ~ SQS (AMPQ) / SNS (Notification) / SES (Email) ~ CloudTrace / Cloudalytics / OpsView ~ NewRelic / Powershell / Opsworks (Chef/Knife) / Chocolatey.
SERVER PLATFORMS	Microsoft Windows Server (NT 3.1-2008 R2) ~ Microsoft Windows Azure ~ Microsoft SQL Server (2000-2008 R2) ~ Microsoft SQL Server Integration Services (SSIS) ~ Microsoft SQL Server Reporting Services (SSRS) ~ Microsoft SharePoint (WSS/MOSS)
OPERATIONAL TECHNOLOGIES	Active Directory ~ Group Policies (OU, Trust, Forests) ~ Certificate Services (AD-integration, Trust, Issuance, Enrollment, Revocation) ~ IPsec ~ DDNS

EXPERIENCE AND ACCOMPLISHMENTS

SENIOR SOLUTIONS ARCHITECT, SEATTLE, WA

WINDOWS AZURE ACCELERATORS, INTERNAL BILLING, DISTRIBUTED ANALYSIS

JANUARY 2010 – CURRENT

Principal Consultant and Solutions Architect for design and implementation across multiple strategic cloud solutions for Microsoft, Slalom Consulting, and Cumulux, including the overwhelmingly successful **Windows Azure Open Source Accelerators Project** solutions.

- Assigned leadership of the Azure Accelerator Project mid-stream with a goal of demonstrating solutions for the **top 10 open source service applications** working on Windows Azure (.NET, Java, and LAMP based). Project was in crisis with zero migrated solutions. Assumed lead on both architecture and implementation and delivered a ground-up solution abstracting the common Azure resource provisioning and configuration requirements into XML definitions serviced by a pluggable engine which orchestrating the configuration, startup, runtime and tear-down of applications hosted on the Windows Azure platform. Implementing the solution(s) in this manner allowed each successive service migration to easily build upon any combination of those before—effectively accelerating new Accelerator implementations. **Delivered 18** solutions, **on-time** and **under-budget**, along with an entire framework for migrating services and applications to the Windows Azure platform.
- Successfully designed and delivered the first two generations of the Umbraco Azure accelerators as open source solutions on CodePlex: <http://azureaccelerators.codeplex.com/>. These project extended the Azure platform solutions to include orchestrated account provisioning and massive replication and deployment of read-to-go Window Azure application environments.
- Merited and honored with the prestigious **Slalom Consulting Mogul Award** for outstanding technical achievements **in October 2010**. This award is presented to a single individual or team from across all 850+ consultants after a nomination and selection process driven by regional offices and corporate executives. (Slalom Consulting itself was awarded Partner of the Year for 2010 by Microsoft).
- Co-designed and implemented the **Windows Azure Internal Billing (AIB)** and **Azure Cross Charge (CABS)** systems for Microsoft . This included the ETL of vast and continuous metered usage data, sanitized and aggregated first by the characteristics of hundreds of different rating plans, into thousands of daily, monthly, and quarterly notifications, signoff workflows, waterfall discounts, external partner support, integration with SAP billing system and MOCP customer portal registration system, leveraging Windows Identity Foundation (WIF) and Federated Trust (ADFS) for external authentication and authorization of internal accounts, signoff authority (including reviews aggregated by direct reports at each OU level), with custom review, signoff, reporting and recall via Azure hosted portal as MVC (dynamic views of data and approval) and fiscal events and associated business rules (monthly close usage notices, approval requirements, posted batches) (via Azure), HTM (post-approval), and using audience-specific templates and XSLT transforms to generate HTML (email), Docx (archival, standard mail invoices), Excel 2010 (usage pivots), with both automated and managed handling (or intervention) of fiscal event workflows at the smallest individual service or resource usage to the largest partnership aggregate accross accounts for monthly, quaterly, and yearly cycles.
- Recruited by former Windows Azure technical evangelist Ryan Dunn, to take ownership of a Microsoft sponsored project solving the Windows Azure deployment of a large Linux-native enterprise application deployed on Rackspace and which had never been run on Windows platform. This complex ecosystem included Python, PostgreSQL, and a collection of Bash (Rsync, Wget, Curl, CronTab) based scripts orchestrating numerous data collection pipelines and additional platform requirements around security, byte-level data recovery during catastrophic collection failures. Set and achieved a technical goal considered by most stakeholders as improbable, and by a few as impossible—delivery of a solution that was Zero-touch—requiring no changes in application code

between the existing Linux in Rackspace code and technologies, and the Azure enhanced Windows-based technologies deployment.

- Designed and implemented the web-based Accruals (WFA) application for Microsoft's Windows Finance team, replacing existing InfoPath and Office infrastructure workflows with a service and web application implementation. This project was delivered, concept to signoff, in 6 weeks, including all aspects of Microsoft's internal validation and security reviews and financial auditing controls.
- Authored and retained the license to a hybrid native language localization technology that leverages the full weight and depth of the language localization work already performed by Microsoft itself in its own retail products. Ensures that the expert-level grammatical, linguistic, and even political nuances relevant to a given semantic meaning are perfectly retained in translations. The back-end compile and build technologies supports 3 separate workflows. The first maps to a keyed entry with exact semantic match to an identical resource string from across the breadth of Microsoft retail products. This approach provided for the pre-localization of 83% of all full-sentence, fragments, and headings for the primary client with a fully rendered result set in 14 different languages using Microsoft's own retail product translations (and 5 partial). The remaining un-keyed or new language strings are generated on-demand the first time discovered in the build, by calling into the Microsoft Azure Translation services API. And the third build work-flow providing for the manual persisted override of all generated and keyed entries in any or all instances of any individual string. This extremely successful personal side-project delivered out-of-band for two separate customer engagements remains available for licensing and customization.
- Design and implementation of an end-to-end prototype Windows Azure distributed analysis solution of user-defined functional models. Delivered a highly-scalable, secure, multi-tenant solution. Front-end visual design of functions (and composition of functional variables as related to each other) was based on JsPlumb (DSL/user functional composition), Highcharts (result visualization) and Knockout (templates). Security and authentication provided using Windows Azure Access Control Services (ACS) and accounts from Windows Live, Google and Facebook mapped to custom permissions and security attributes. The middle-tier coordination, orchestration, and communication via a scheduling layer and Windows Azure Service Bus Queues, and back-end processing built on per-instance RESTful, Python-based interface over native x64 Windows binaries. The backend Python operational and data formats were enforced by strongly-typed, composable XSD schema definitions. This approach ensured that user-defined functional logic was fully-transformed and decomposed before entering the computation instances, to provide additional security against attack vectors such as buffer overruns (script injection) even within a single running and restricted back end-process, itself executing in a further restricted backend-processing unit. Validation was also performed in JavaScript during composition of the functional models on the client to ensure immediacy of feedback on syntactically, semantically, or logically erroneous or invalid parameters or functional constructs. Submitted jobs were re-validated and transformed server-side using XSLT (1.0)—decoupling the data language from the engine and ensuring definition-based security. This hybrid system of programmatic and schema based barriers was deliberate to meet and exceed the security requirements of the overall system.
- Nominated and accepted twice by the Microsoft Windows Azure marketing team to represent at both the internal Windows Azure Deep Dive technical review and provide feedback on longer range planning as part of the internal Windows Azure SDR (Software Design Review) events.

SOCIAL MOTION CORPORATION, SEATTLE, WA

SOLUTIONS ARCHITECT & DEVELOPMENT MANAGER

JULY 2007 – JANUARY 2010

Aggressively recruited by the founding team of Social Motion, a "white label" social networking and media startup, to take on leadership of their state-side and outsourced development teams—driving assessment of existing assets, defining processes, procedures, and development guidelines, and leading the implementation of these solutions and technologies. Development became consistently predictable, manageable and overwhelmingly successfully.

- **Met the challenge of reviewing over 250,000 lines of existing source code** written overseas (prior to hire), allowing for the successful repurposing of the entire suite of social technologies for different markets.
- Restructured vendor accountability with stateside management, replacing opaque vendor status updates with per-developer tracking, repatriating all source code repositories, and establishing individual check-ins regardless of geography. Focused on developer, process and platform improvements, skill mentoring, and promoted a candid relationship across teams, while directing feedback to grow and replace staff.
- Designed and reviewed the implementation of new features based on then-modern LINQ-to-SQL, Windows Communication Foundation (WCF) SOAP, POX, REST services, and traditional native Windows Services while mitigating their impact on over 26 existing legacy features and libraries.
- Established a common architecture model for new client features; including common code, style and process guides. Primary focused on quality and maintainability of all code, and delivery of all data via web-services (WCF) for consumption by traditional web, native desktop (WPF) and mobile platforms. Demonstrated this approach successfully by authoring all layers of the media and image browsing, uploading, commenting, and management experience. (Traditional Ajax web experience featuring both Silverlight and Flash-based media clients.)
- Successfully delivered the entire service level code for the beta release of **Mindbloom.com**, a licensee of Social Motion, in 6 weeks, while successfully demonstrating integration with a wide range of Social Motion community features including: **ATOM/RSS** syndications services, automated **Template-based Email Notifications** services, **SQL Reporting Services** for user profiling, and the scalable real-time cross-database querying of 100,000+ record result sets.
- **Integrated ASP.NET authentication, membership, and session providers** with Mindbloom's **ActionScript 3/Flash-based client**; providing seamless session support across multiple HTML frames, JavaScript, Flash Client and WCF based services. Further supported Mindbloom's architecture by creating a Windows Service, Socket-based implementation of the Adobe Flash Policy Server—providing a scalable, multi-threaded .NET alternative to the Perl and Rexx open source versions.
- Designed and implemented all tiers of the **SocialMotion Media Services** and **SocialMotion Hosting Services** platforms as **independent semi-autonomous B2B web services**, providing rich media content workflows, video format transcoding, content delivery (CDN) and video.
- Social Motion ceased paid U.S. operations following unsuccessful merger negotiations.

ALTERNATIVE SPORTS, SEATTLE, WA

MANAGING PARTNER, ONLINE BUSINESS DEVELOPMENT

AUGUST 2003 – MAY 2007

Led online business and software development of a successful cross-channel, multi-platform ecommerce startup.

- Created a fully integrated, end-to-end, supply-to-support e-Commerce solution based on .NET and SQL Server 2005 by successfully managing the outsourcing, integration and quality assurance of Windows and .NET technologies including extensive integration with Amazon.com, eBay, Shopping.com, Shopzilla, Froogle, Google Adwords, and Urchin/Google Analytics.
- Authored an inventory availability solution using .NET-based proxies, SQL (data and ETL logic), and leveraging Windows native (push) and ASP.NET based services maintaining up-to-the second inventory and availability between the disparate retail, web and partner databases, services and feeds (and their respective schemas).
- Brought online a first-in-industry (ASR) drop ship solution based on **SQL Server Integration Services (SSIS)** as the ETL platform; product image processing using Adobe Photoshop workflow automation, and web based reporting and management for live pipeline approvals of new products.

- Provided up-to-the second views on all aspects of the business from end-of-day receipts, returns, charge-backs, and employee sales using SQL Server 2005 Reporting Services (SSRS) and 3rd party controls.
- Online Business Unit was **48% ahead of target** and approaching recording-breaking numbers for FY 20

MICROSOFT CORPORATION, REDMOND, WA

JUNE 1994 – AUGUST 2003

LEAD TECHNICAL PROGRAM MANAGER, MICROSOFT APPLICATION EXPERIENCE TECHNOLOGIES

2001 – 2003

Promoted to direct the implementation of an extensible Windows application compatibility architecture; providing the foundation for mitigating legacy application and service failures on all versions of Windows, while enabling the continued forward progress of features. This foundation remains the primary method for resolving compatibility issues with applications on all versions of Windows to this day.

- Successfully worked with architects and developers to design, implement, and continuously refine the **Windows Compatibility Layers and Technologies**; providing a scalable solution to the thousands of application failures.
- **Designed** the set of **enterprise utilities**, most notably **CompatAdmin**, which allowed external developers the opportunity to leverage the hundreds of OS-internal solutions which were created for thousands of retail applications. Further **established** the first **Windows Application Compatibility Toolkit** which brought together the necessary training, guidance, and tools.
- Served as the key technical liaison for application impact and issue mitigation between **Windows Division Development** and the marketing and developer education teams worldwide, including numerous initiatives with **Microsoft Global Accounts, Platform Technical Evangelists**, and **OEM** groups—ensuring that hardware manufacturers and enterprise customers understood issues at the API level, training developers how to implement solutions in their code, and with IT administrators how to work around line-of-business (LOB) issues leveraging the OS compatibility technologies. (Included dozens of conferences and multiple successful visits with executives and developers on-site in Great Britain, Germany, Switzerland, Japan and Malaysia; and companies which included Compaq/HP, Sony, NEC, Fujitsu, Citibank, Smith Barney, Credit Suisse First Boston (CSFB), Ernst & Young, HSBC Bank plc, and Alliance Capital Management Corporation.)

PROGRAM MANAGER, MICROSOFT SERVER APPLICATION COMPATIBILITY

1999 – 2001

Enlisted by the Director of Windows Program Management to take ownership of the Windows Server application compatibility effort and improve the pass rate from its current 9% of the top 100 enterprise solutions.

- Reorganized the strategic external-facing effort with ISVs on new versions, into an internal series of tactical goals focused on deep root-cause debugging, discovery and self-analysis on each and every compatibility regression from NT4 and 98. Sought out and obtained, through conviction and persuasion, the voluntary reassignment of a hand-picked, best-in-class team of developers and program managers from inside each of the core Windows teams. In the 11 months prior to ship of Windows 2000 Server, this process moved the server application pass rate **from 9% to a final compatibility metric of 97%**. (The only notable exceptions were Anti-Virus related.)
- **Led the creation of the first-ever Microsoft-Oracle joint testing lab** by orchestrating an agreement between Brian Valentine (VP, Microsoft Windows Development), Larry Ellison (CEO, Oracle) and the Technical Evangelism team. Lab was predicated on a common-cause and service to our mutual set of Oracle-on-Windows customers, and an effort to "go twice as far, work twice as hard" on compatibility regressions affecting our competitive ISVs.

LEAD DEVELOPER AND PROGRAM MANAGER, MICROSOFT RESOURCE KITS

1996 – 1999

Hired to take **leadership of the Windows Resource Kit** products, delivering the technologies, tools and information needed by IT Administrators; and to expand this potential to encompass all Microsoft BackOffice Server products.

- Drove the **Microsoft Windows Resource Kits** business from a profit loss center and \$2 million business in 1996 to a **+\$12 million revenue** generating center in 2000.
- Successfully lead the Resource Kit documentation teams through 9 major releases and a total of 24 printed volumes. Ensuring the free flow of information and access to the developers and program managers throughout the Windows and BackOffice server product divisions by Resource Kit Writers, Editors and Production staff, Product Support groups, and Certification and Training teams.
- Boosted tool and utility solutions by over 300%, **from 60 random tools to over 200 support applications and services**, while establishing consistency and standards for each segment of tools: Console/Script tools, Windows Forms, MFC, and Windows Services.
- **Created the Windows Server Admin Pack** as a vehicle for delivering the full set of Windows Server management tools on down level and client versions of the Windows operating system.
- Led the ground-breaking change in release management and expectations to become **the first Microsoft team to complete a product update every 6 months** with no additional headcount.
- Established a higher-tier set of mission-critical utilities and worked with product support and release management to get these pulled into the core OS as the **Windows Server Support Tools**.
- Co-authored the initial **POP3/SMTP** services which became the reference samples for best-in-class **Windows NT Services, IO Completion Ports** and concurrency support. (Shipped on all four then-supported processors: MIPS, ALPHA, PPC, and X86).
- **Implemented the first Windows NT Server Telnet Server** service based on IO Completion Ports.
- Developed **MultiDesk**, the multiple desktops tool for Windows NT, allowing on-the fly switching between security contexts, windows desktops and stations. This tool was used extensively by companies such as USWest (Qwest) with active development continuing until Terminal Server (and WinLogon based active desktop switching) shipped in Windows 2000.

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EARLY MICROSOFT CAREER, MICROSOFT INTERN, CONTRACT DEVELOPER (SDE 3)

1994 – 1996

Started my career as a Microsoft intern (co-op) in the Product Support Services' Operating Systems Support group where I quickly gained division-wide recognition and became the first and only intern or employee pulled off product support calls to develop customer-focused supportability tools full time.

- Authored the **Windows 95 (Chicago) Emergency Recovery Disk (ERD)** feature for the Windows 95 Resource Kit.
- Implemented the **Windows 95 Uninstaller** to return users to Windows (/ for Workgroups) 3.x on failed upgrades.

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EDUCATION

Senior, BS, Computer Science, University of Idaho, Moscow, ID