IBM's IT Architecture Profession

Anshu Kak
Executive IT Architect
WW Software IT Architect Lead
Senior Certified
Middleware is Everywhere ... and so is Architecture
Several trends & techniques are dramatically reshaping the practice of architecture …

- **Architecture & the business domain**
  - Flexible business is an imperative
  - Solution design more tightly coupled with the business domain
  - “Business architecture” emerging
- **Service Oriented Architecture (SOA)**
- **Increasing levels of abstraction**
  - Virtualization
  - Loose coupling, other manifestations …
- **From custom crafting to composing**
  - Leveraging architectural and solution assets & services
- **What isn’t changing**
  - The “base” still exists … and matters
    - Infrastructure and management of it
    - Legacy applications & data
Questions You Need to Consider

- What is Service Orientation and SOA and why is it important for your business?
- Is it real? Are customers really using it today?
- What are the core elements brought together under SOA?
- How can you get started?
What is .....?

... a service?
A repeatable business task – e.g., check customer credit; open new account

... service orientation?
A way of integrating your business as linked services and the outcomes that they bring

... service oriented architecture (SOA)?
An IT architectural style that supports service orientation

... a composite application?
A set of related & integrated services that support a business process built on an SOA
## What differentiates SOA from claims like this in the past?

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<tr>
<th>Standards</th>
<th>Organizational Commitment</th>
<th>Investment Protection</th>
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<tr>
<td>Broadly adopted Web services ensure well-defined interfaces.</td>
<td>Before, communication channels &amp; ‘vocabulary’ not in place</td>
<td>Leverage existing business application assets, isolate the impact of change</td>
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<td>Before, proprietary standards limited interoperability</td>
<td>Business and IT are united behind SOA (63% of projects today are driven by LOB)*</td>
<td>Before, …. Rip and replace</td>
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<th>Degree of Focus</th>
<th>Connections</th>
<th>Level of Reuse</th>
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<td>SOA services focus on business-level activities &amp; interactions</td>
<td>SOA services are linked dynamically and flexibly</td>
<td>SOA services can be extensively re-used to leverage existing IT assets</td>
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<tr>
<td>Before, focus was on narrow, technical sub-tasks</td>
<td>Before, service interactions were hard-coded and dependent on the application</td>
<td>Before, any reuse was within silo’ed applications</td>
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*Source: Cutter Benchmark Survey

## Investment Protection

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- Before, …. Rip and replace

## Standards

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- Before, proprietary standards limited interoperability

## Organizational Commitment

- Before, communication channels & ‘vocabulary’ not in place
- Business and IT are united behind SOA (63% of projects today are driven by LOB)*
The SOA Lifecycle

- Gather requirements
- Model & Simulate
- Design

- Discover
- Construct & Test
- Compose

- Model

- Assemble

- Manage
- Governance & Best Practices

- Deploy

- Integrate people
- Integrate processes
- Manage and integrate information

- Manage applications & services
- Manage identity & compliance
- Monitor business metrics

- Financial transparency
- Business/IT alignment
- Process control
SOA Reference Architecture
Supporting the SOA Lifecycle

Business Services
Facilitates better decision-making with real-time business information

Interaction Services
Enables collaboration between people, process & information

Process Services
Orchestrate and automate business processes

Information Services
Manages diverse data and content in a unified manner

Partner Services
Connect with trading partners

Business App Services
Build on a robust, scalable, and secure services environment

Access Services
Facilitates interactions with existing information and application assets

Infrastructure Services
Optimizes throughput, availability and performance

Facilitates communication ESB between services

IT Service Management
Monitor, manage and secure services, applications & resources

Apps & Info Assets

Development Services
Integrated environment for design and creation of solution assets
SOA Solution Layering
Leveraging the SOA Reference Architecture

Consumers

Business Process
Composition; choreography; business state machines

Services
atomic and composite

Service Components

Operational Systems

Channel

B2B

Packaged Application

Custom Application

OO Application

Integration (Enterprise Service Bus)

QoS Layer (Security, Management & Monitoring Infrastructure Services)

Data Architecture (meta-data) & Business Intelligence

Governance

Atomic Service

Composite Service

Registry
The IT Architect population in IBM is diverse, mature, and growing

- **8,500 IT Architects worldwide**
  All geographies, 47 countries, multiple organizations

- **Information technology background**
  Education and experience

- **Most involved in customer facing activities**
  Services
  Technical sales support
  IT outsourcing

- **Technical community affiliations**
  Architecture & technology
  Business role
  Professional interest
The IBM IT Architect population is over 8500 … and growing
The IBM IT Architect exists to …

- Define the principles-based structures of solutions – architectures – to
  Specific customer business problems, and/or
  Applications of technology within an “enterprise”

- How?
  Applying design and architectural techniques, preferably guided by an appropriate method
  Drawing upon broad skills and experience which enable, as necessary, the application and integration of a variety of business and IT components, technologies and service elements
Architecture models & areas of concentration

- Multiple Views

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<tr>
<th>Functional</th>
<th>Application/Services</th>
<th>Component Model</th>
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<tr>
<td>Non-Functional</td>
<td>Infrastructure</td>
<td>Operational Model</td>
</tr>
<tr>
<td>Information</td>
<td>Data/Content</td>
<td>Information Models</td>
</tr>
<tr>
<td>Management &amp; Ops</td>
<td>Sys Mgmt &amp; Security</td>
<td>Management Models</td>
</tr>
<tr>
<td>Strategic</td>
<td>Enterprise IT</td>
<td>Enterprise Architecture</td>
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Building and supporting a Profession

- **IBM IT Architect Profession announced in 1992**
  - Response to client demands for expertise in a variety of areas involved in client-related professional engagements
  - Part of a portfolio of (mostly) IT services related Professions

- **Certification activities are a centerpiece …**
  - … but the Profession is much more
The IBM IT Architect Profession exists to provide value to IBM, our clients worldwide & cross-BU community of IBM IT Architects through programs that foster…

- Capability - Knowledge and skills
- Community – Collaboration, Innovation and Sharing
- Excellence and effectiveness – Common processes across the globe
- Assurance – Mentoring, certifications
- Vitality – Growing
Professional Development Program

- Profession characterized by skills
- Skill development defined by roadmaps
- Roadmaps identify education and experience
- Professional Development measured by passing capabilities checkpoints
IBM assesses qualifications at three levels

- **Senior Certification**
  - Certification
  - Accreditation
- **Senior IT Architect**
- **Senior Technical Leader**
  - Mature, Independent, Qualified practice
  - Developing ITA skills
  - Early career ITA

IBM's ITA Profession
IBM Enthusiastically Supports ITAC

ITAC provides strong value for our clients, the industry, and for IBM and our technical professionals

- **Open Group Support**
  - Developed a quality program process and materials
  - Recognized as an industry leader in developing IT certifications and open standards

- **IBM demonstrates leadership in the IT Architect profession as the first company accredited by the Open Group IT Architect Certification program**

- **1800 IT Architects are ITA Open Group Certified**

- **Strong Industry Participation**
  - Major IT industry players involved in development of ITAC
  - Interest and discussions with several other major IT organizations

- Represents the next logical step in the maturation of the IT Architect Profession
Why does IBM believe ITAC is the right program?

- **Open industry IT Architect Certification program**

- **Offers Flexibility**
  - “Certify the certifiers” model for corporations/company programs
  - Direct certification for individuals
  - An evolutionary framework that can change as IT industry requirements change

- **Includes a “Masters Level” program**
  - Skills and experience based – goes beyond validating the existence of knowledge, with board review

- **Active participation and support by several major industry vendors and client organizations, and the backing of the Open Group**

- **Has a strong commitment to IT Architecture as a practice and can leverage industry recognition**
  - Leads in promoting the use and science of IT architecture
Industry recognition of IT Architect value is growing

- Increased acceptance, adoption, development … and convergence on definition

- Traction, interest in industry “certification” programs
  - The Open Group active in development of first of a kind
    - “Certify the certifiers” model
    - IBM and other vendors active players
  - Microsoft announced IT Architect certification (04/2005)
Learning from a master …

- “Architecture is frozen music.”

- "The architect must be a prophet…a prophet in the true sense of the term. If he can't see at least ten years ahead, don't call him an 'architect'.“

- "Form and function should be one, joined in a spiritual union.“

- "Less is only more where more is no good."

- “The physician can bury his mistakes, but the architect can only advise his client to plant vines.”

- "An architect's most useful tools are an eraser at the drafting board — and a wrecking bar at the site.“

Frank Lloyd Wright (1867 – 1959)
Thank You