The Flat World: Implications on Enterprise Architecture

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Agenda

The Flat World

Impact on Enterprise Architecture

‘Enterprise Architecture 2.0’

How we need to think differently?
The business world is being flattened by the confluence of 4 disruptive forces:

**Opening of emerging economies**
- GDP of emerging countries growing as a % of World GDP
- Growing % of companies in Forbes Global 2000 from emerging economies

**Structural shifts in global demographics**
- Aging workforce in developed countries
- Talent pool and customers
- Number of engineering graduates (thousands)
- Median age of citizen/customer

**Ubiquity of technology**
- Rapidly declining technology costs

**Accountability and regulation**
- Increasing demand for privacy (e.g. 12 regulations in USA alone!)
- Legal requirements for financials reporting and accountability (e.g. SOX)
- Real-time reporting (e.g. SOX, US Patriot Act, US Bio-Terrorism Act)
- Cross Geography standardization (E.g. acceptance of US GAAP in India, EU ROHS/WEEE (“greener manufacturing”) applicability across geographies)
How does the flattening “world” look like?

Business environment:
*Increasing expectation of “corporate citizenship” through regulation*

**Rising Customer Expectations**
- Hyper-informed customers
- Higher customer expectations for customization and control
- New customer segments in existing markets and emerging economies
- Accountability and transparency expectations

**Intensifying Competition**
- Competition arising from different geographies and different industries (e.g. virtual network operators in telecom can be retail stores or airlines)
- Changing basis of competition (e.g. from relationship to service innovation)

**Changing Cost Structure**
- New levels of efficiency attainable through technology
- Dramatic shift in costs possible by leveraging global talent pool
- Closer partnerships with suppliers and customers

**Sophisticated Operational Capabilities**
- Organizational hierarchies less important
- Information visibility across partners
- Integrated, globally distributed workforce
- New business models possible through global operations and technology
In addition to these macro shifts, we are experiencing the following technological trends...

- **Data and Transaction Explosion**
- **Data Sprawl and Social Networks**
- **Software as a Service**
- **Utility Computing & Convergence**
To compete in the flattening world, Infosys believes businesses should shift operational priorities in four areas…

<table>
<thead>
<tr>
<th>SHIFT FROM</th>
<th>SHIFT TO</th>
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<tbody>
<tr>
<td><strong>1</strong></td>
<td><strong>2</strong></td>
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<tr>
<td>Dreading the “China Price”</td>
<td>Being the “China Price”</td>
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<tr>
<td><strong>3</strong></td>
<td><strong>4</strong></td>
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<tr>
<td>Loyalty through good service</td>
<td>Loyalty through faster innovation</td>
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<tr>
<td>Spending money on information</td>
<td>Making money from information</td>
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<td>Winning in the straightway</td>
<td>Winning in the turns</td>
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How we need to think differently?
Enterprise Architecture is the holistic view of an enterprise’s process, information and information technology assets as a vehicle for aligning business and IT in a structured and therefore more efficient and sustainable manner.

**Business Architecture**
- Describes the business strategy, models, processes, services and organisation.
- Provides the foundation upon which the other enterprise architecture dimensions base their decisions.

**Technical Architecture**
- Defines the strategies and standards for technologies and methods used to develop, execute and operate the Application Architecture.
- Provides frameworks, technical patterns and services that support application requirements.

**Information Architecture**
- Identifies, documents and manages the information needs of the enterprise, assigns ownership and accountability for this information, and describes how data is stored by and exchanged between stakeholders.

**Application Architecture**
- Defines the specification of technology enabled solutions in support of the business Architecture.
- Provides a view on how services should be bundled to support a business process.

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**Context:**
- **Enterprise Architecture**
- **Information Architecture**
- **Technical Architecture**
- **Application Architecture**

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**Visual Representation:**
- Diagram illustrating the four components of Enterprise Architecture with brief descriptions.
The Flat World technology trends will have a major impact on Enterprise Architecture

**External**

- Handling of user generated content and data across multiple channels
- Profiling user actions and reactions
- Tracking usage and determining trends and patterns
- New technical skills for enhanced technology platforms

**Internal**

- Leveraging knowledge sharing and communication platforms internally
- Understanding and embracing new technologies and technology creation mechanisms (e.g. Web 2.0 and Open Source)
- Setting up principle, standards policies and guidelines accordingly
Just as business need to shift to a new operating model, the Enterprise Architecture must evolve accordingly…

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<tr>
<td>1. Enable business processes</td>
<td>Enable business networks</td>
</tr>
<tr>
<td>2. Constrained innovation through standards</td>
<td>Continuous innovation through co-creation</td>
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<tr>
<td>3. Web as an eCommerce platform</td>
<td>Web as a computing platform</td>
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<tr>
<td>4. Component based application development</td>
<td>Service based process orchestration</td>
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<td>5. Reactive Quality of Service Model</td>
<td>Trusted Product Quality Management</td>
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Win in the flat world
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Impact on Enterprise Architecture

‘Enterprise Architecture 2.0’

How we need to think differently?
Enterprise Architecture 2.0 principles

- Assemble, not Build
- Leverage the network
- Collective Intelligence
- Web as the Platform
- Leverage Legacy
- Collaboration
- Modularity
- Rich User Experience

EA 2.0
**EA 2.0 Principles elaborated…**

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
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</table>
| **Rich User Experience** | • A richer user experience is a benefit from rich user interfaces.  
• This is an enabler for social interactions and knowledge sharing  
• Ease in sharing, accessing and consuming information and knowledge |
| **Modularity** | • No tight interconnections  
• Facility for extension mechanisms enabling network participants to contribute |
| **Assemble, not Build** | • Truly leverage the open source community  
• Mass customization and orchestration through assembly of components and services |
| **Leverage the Network** | • Leverage interconnectivity and network externalities  
• Leverage the computing infrastructure as a service grid right at the design stage |
EA 2.0 Principles elaborated (cont’d)

<table>
<thead>
<tr>
<th>Principle</th>
<th>Collective Intelligence</th>
<th>Web as the Platform</th>
<th>Leverage Legacy</th>
<th>Collaboration</th>
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<tr>
<td>Description</td>
<td>• Lays emphasis on the large scale distributed intelligence of the participants in the network over central intelligence</td>
<td>• Shifting of centralized computing to distributed computing</td>
<td>• Legacy will not go away</td>
<td>• Customers and users are active participants co-creating products and services</td>
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<td>• User created, modified, updated content</td>
<td>• Internet browser acting as the de facto platform</td>
<td>• Technology uptake cycle will reduce and applications will become legacy faster</td>
<td>• Individual-centric and contextualized experiences are co-created</td>
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<tr>
<td></td>
<td>• Continuous “Beta” allowing user participation can shape how the applications develop</td>
<td>• Run applications without downloading programs, and save files directly onto the web</td>
<td>• Proactively managing the legacy modernization approach will be key to faster innovation</td>
<td>• Competencies reside in the network that includes customer and user communities</td>
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</table>
Why invest in Enterprise Architecture 2.0?

**Positives**

- User/customer generated information could provide key insights which will aid decision making
- Insights into new products/services
- Influence customer/user decision making
- Broadband has become mainstream and ubiquitous
- Social computing becoming popular
- Increasing role of communities
- Network effects for real
- Browsers are supporting rich user interface technologies

**Negatives**

- Enterprise Architecture 2.0 is no clear-cut upgrade: it doesn’t come on a CD, and you can’t download it
- Vague definitions and diffused understanding of emerging technologies will generate FUD
A few caveats…

- New technologies such as Web 2.0 are still a lot of hype.
- Standards and technologies are still immature.
- Tooling for new technologies is still evolving and need further improvements.
- Security and maintainability concerns.
- Fair use vs. infringement – Enterprise ‘mash-ups’.
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How we need to think differently?
Enterprise Architecture Co-Creation…a new paradigm

**Traditional Innovation Process**

- Product and Service Offerings
  - Suppliers
  - Firm
  - Marketing Channels
- SCM
- ERP
- CRM
- Passive Customer

**Co-Creation Process**

- Communities of Individual customers
- Network of nodal firms

- New paradigm aims to proactively create competencies around active and networked co-creators
- The co-creation process aims to create unique experience environments using the DART principles:
  - Dialog
  - Access
  - Risk Management
  - Transparency
- Technology is then employed to enable linkages within and across experience environments
- Management processes are identified to sustain and govern quality of co-creation experiences
The Enterprise Architect must experience, engage and enable deployment of Technological Innovations successfully.

### 1. Awareness of IT Trends

- **Consultants**
- **Vendors**
- **Internal Processes**
- **Media**
- **Analyst reports**

- What are the new technology based solutions?
- Are these technologies practical?

### 2. Assessing Impact

- **Consultants**
- **Vendors**
- **Internal Processes**
- **Media**
- **Analyst reports**

- Will this technology impact my business?
- Will they solve my problems?
- What are competitors doing?

### 3. Customize to the enterprise

- **Consultants**
- **Vendors**
- **Internal Processes**

- How can the technology be customized to my needs?
- Are there any internal prerequisites to use the technology?

### 4. Stimulate Action

- **Consultants**
- **Vendors**
- **Internal Processes**

- Where can I have a POC?
- How can I have a pilot done?
- How will I manage intellectual property issues?

### 5. Enable Deployment

- **Consultants**
- **Vendors**
- **Internal Processes**

- How can I build a business case?
- What about maintenance?
- What could be some of the implementation blocks?
As we move towards Enterprise Architecture 2.0, we need to separate the hype from true business value enabling capabilities.

We must re-assess how we will develop these architectures, from the perspective of roles, processes and tools.

We must also re-assess how we will operate these architectures, to ensure that business critical capabilities are not impacted and service levels are not only maintained but exceeded.

As Enterprise Architects, you must forge ahead and provide the strategic insight and pragmatic guidance to your enterprise and its value network.
Thank You