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The Flat World:
Implications on Enterprise Architecture

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Agenda

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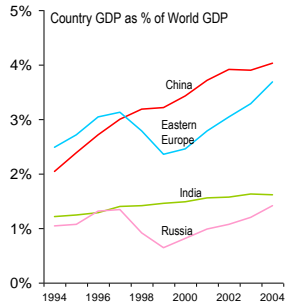Impact on Enterprise Architecture

'Enterprise Architecture 2.0'

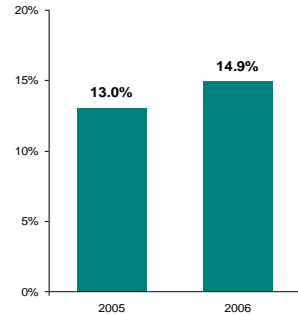How we need to think differently?

The business world is being flattened by the confluence of 4 disruptive forces

Opening of emerging economies

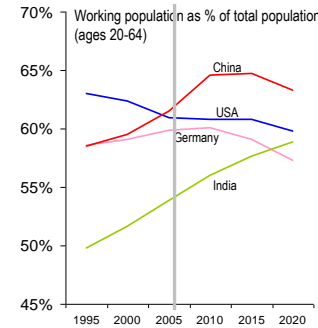**GDP of emerging countries growing as a % of World GDP**

Country GDP as % of World GDP — China, Eastern Europe, India, Russia (1994–2004)

Growing % of companies in Forbes Global 2000 from emerging economies

2005: 13.0%
2006: 14.9%

Structural shifts in global demographics

Aging workforce in developed countries

Working population as % of total population (ages 20-64) — China, USA, Germany, India (1995–2020)

Talent pool and customers

Number of engineering graduates (thousands)

China, India, US

Median age of citizen/customer

Germany 42, US 36, China 32, India 25
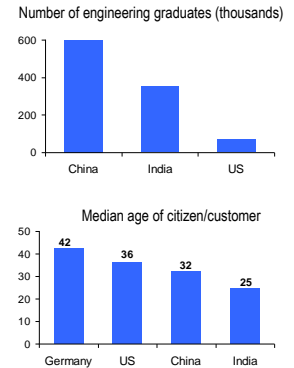
Ubiquity of technology
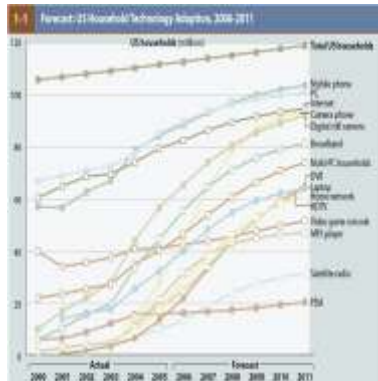
Rapidly declining technology costs

Telecom costs
$'000 per year* for two Mbps fibre leased line, half circuit*
India, Philippines, United States, Ireland (1996–01)
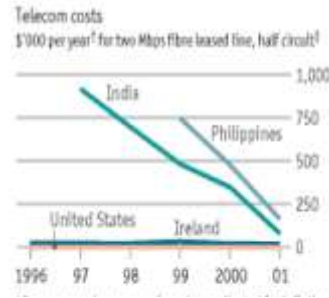
Accountability and regulation

- 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)

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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
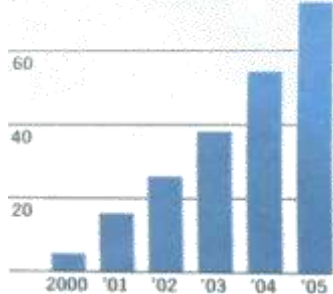- Closer partnerships with suppliers and customers

Sophisticated Operational Capabilities

- Organizational hierarchies less important
- Information visibility across partners
- Integrated, globally distributed workforce
- New business models possible through global operations and technology

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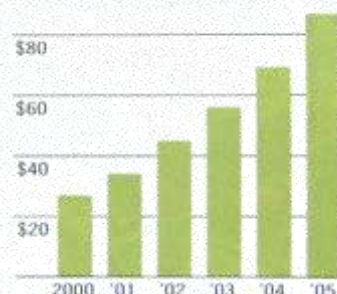Win in the flat world

In addition to these macro shifts, we are experience the following technological trends…

Data and Transaction Explosion

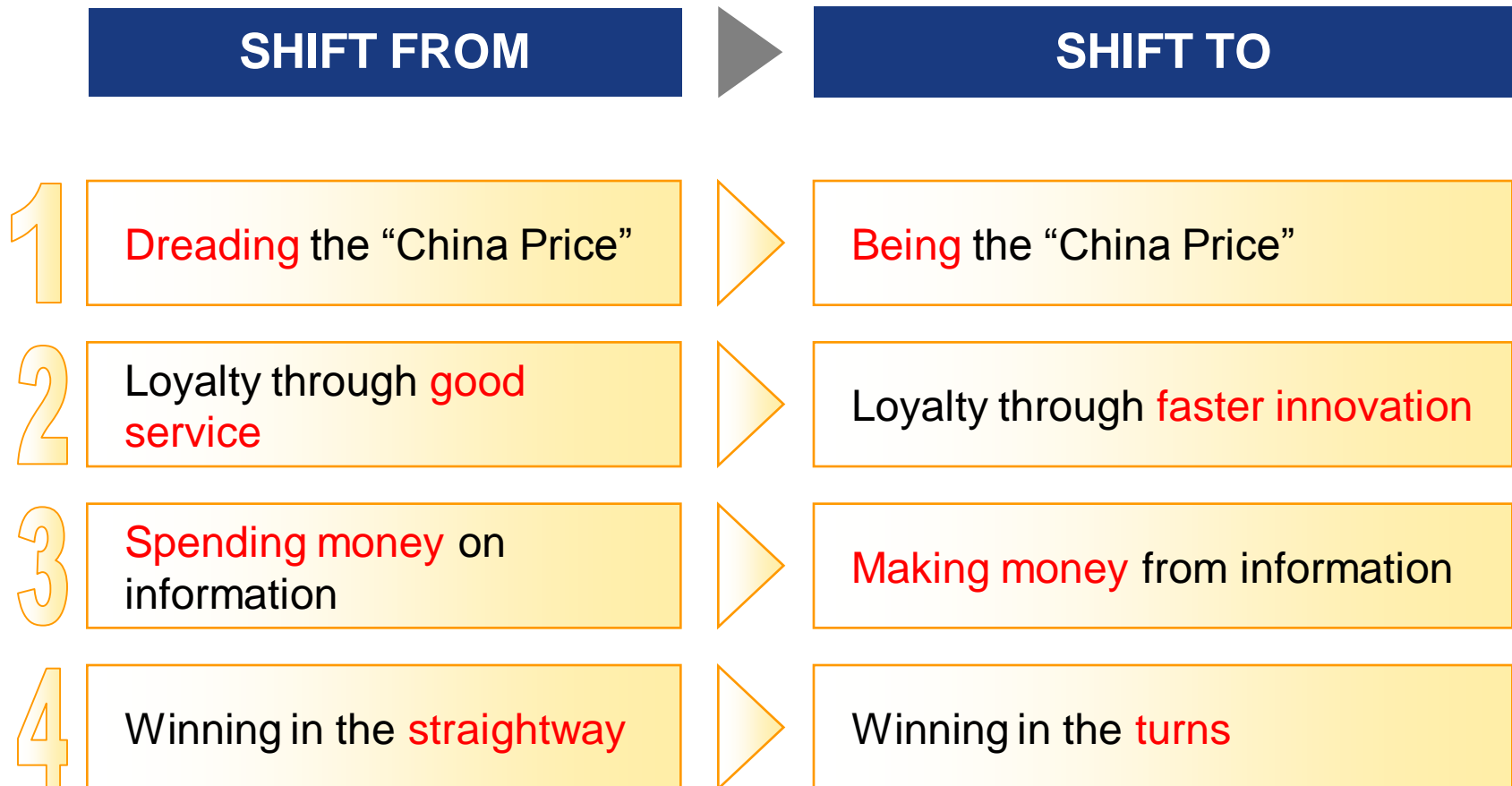**Data Sprawl and Social Networks**

Software as a Service

Utility Computing & Convergence

To compete in the flattening world, Infosys believes businesses should shift operational priorities in four areas…

SHIFT FROM	▶	SHIFT TO
1 Dreading the "China Price"	▷	Being the "China Price"
2 Loyalty through good service	▷	Loyalty through faster innovation
3 Spending money on information	▷	Making money from information
4 Winning in the straightway	▷	Winning in the turns

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Impact on Enterprise Architecture

'Enterprise Architecture 2.0'

How we need to think differently?

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Our traditional view of Enterprise Architecture

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

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.

Business Architecture

Information Architecture

Technical Architecture

Application Architecture

Technical Architecture defines the strategies and standards for technologies and methods used to develop, execute and operate the Application Architecture. It provides frameworks, technical patterns and services that support application requirements

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

The Flat World technology trends will have a major impact on Enterprise Architecture
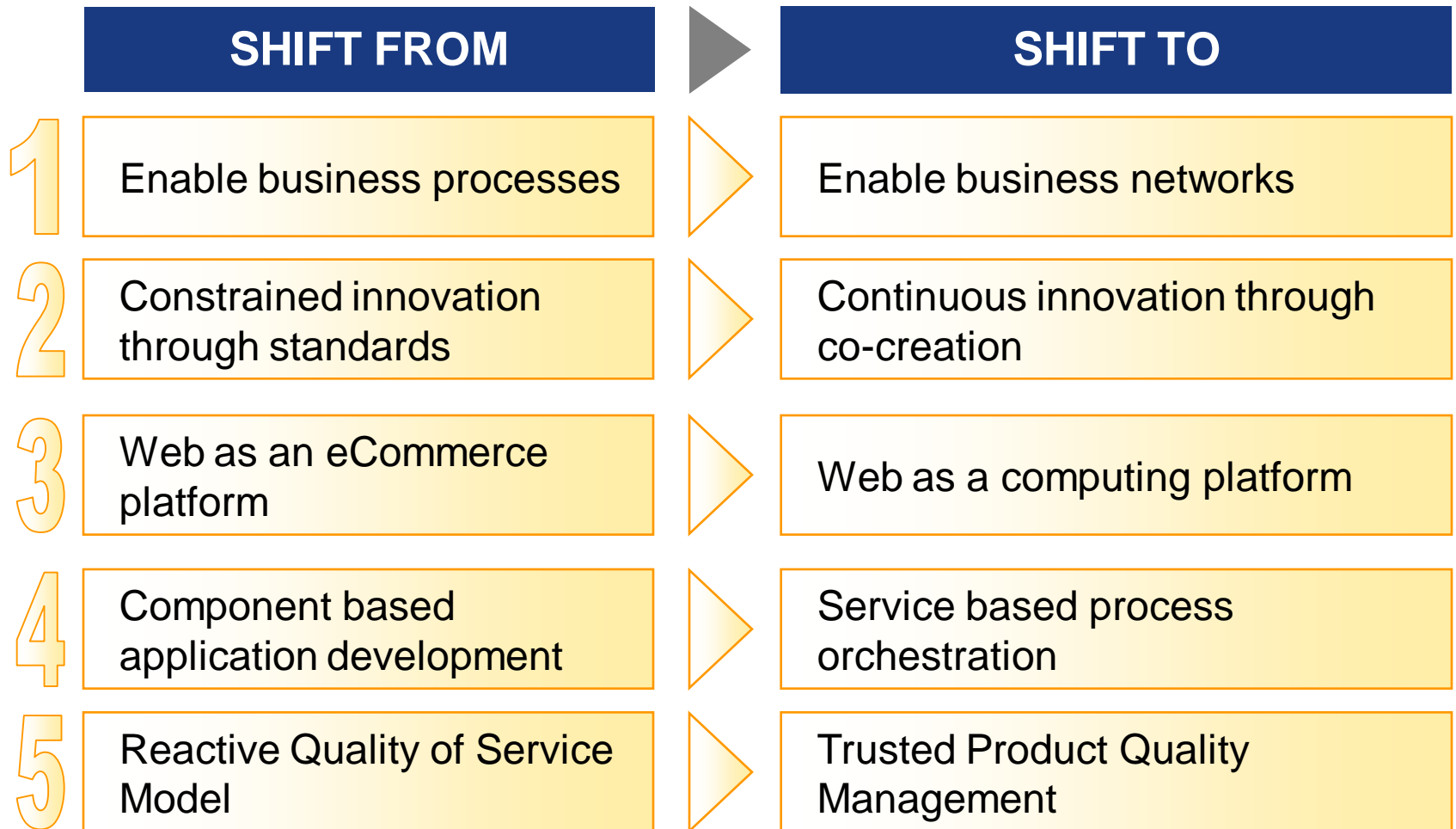
External

- 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

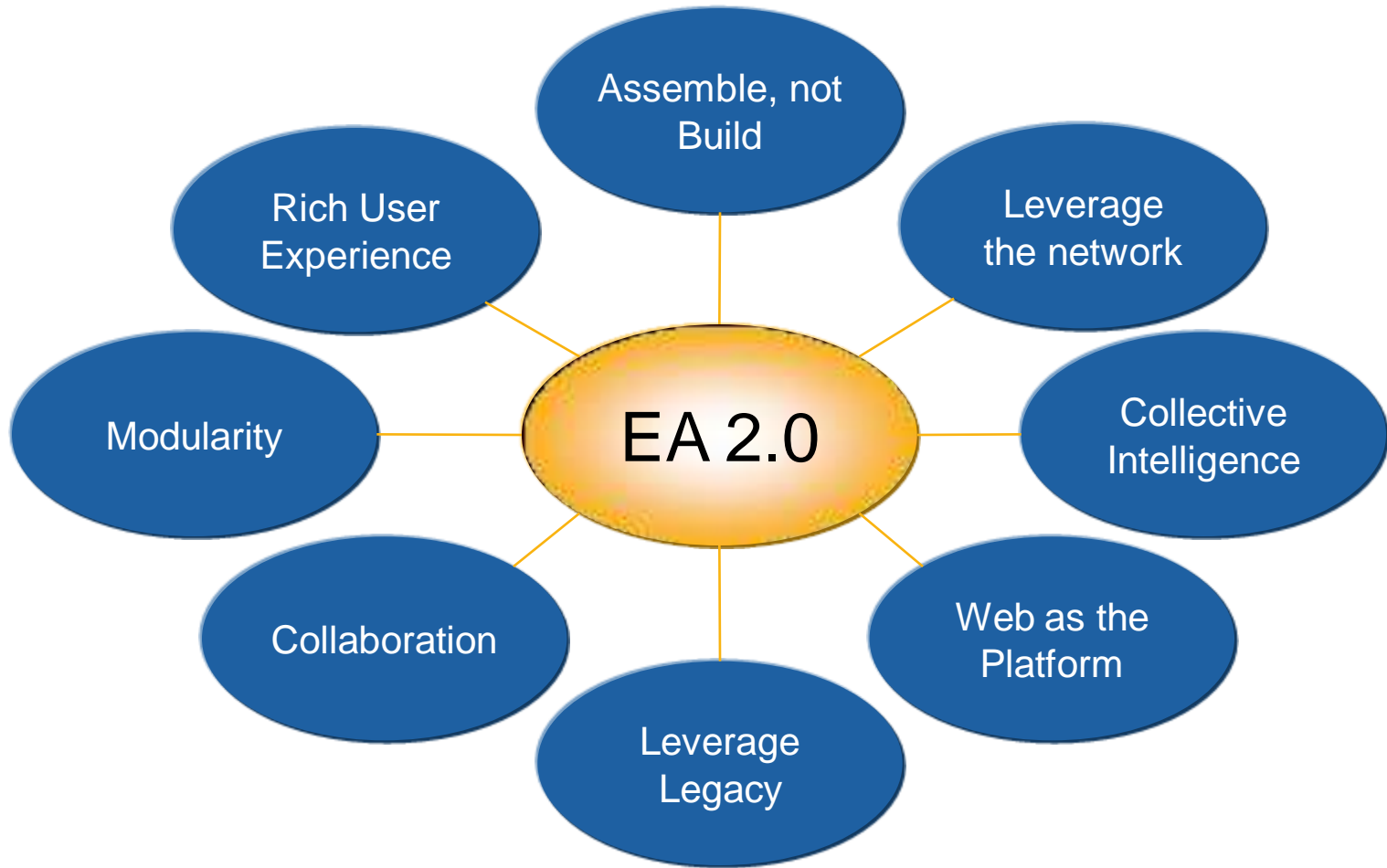# Just as business need to shift to a new operating model, the Enterprise Architecture must evolve accordingly…

SHIFT FROM	SHIFT TO
1. Enable business processes	Enable business networks
2. Constrained innovation through standards	Continuous innovation through co-creation
3. Web as an eCommerce platform	Web as a computing platform
4. Component based application development	Service based process orchestration
5. Reactive Quality of Service Model	Trusted Product Quality Management

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Enterprise Architecture 2.0 principles

EA 2.0 Principles elaborated…

Principle			
Rich User Experience	**Modularity**	**Assemble, not Build**	**Leverage the Network**
• 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	• No tight interconnections • Facility for extension mechanisms enabling network participants to contribute	• Truly leverage the open source community • Mass customization and orchestration through assembly of components and services	• Leverage interconnectivity and network externalities • Leverage the computing infrastructure as a service grid right at the design stage

(Description)

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EA 2.0 Principles elaborated (cont'd)

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

Description

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

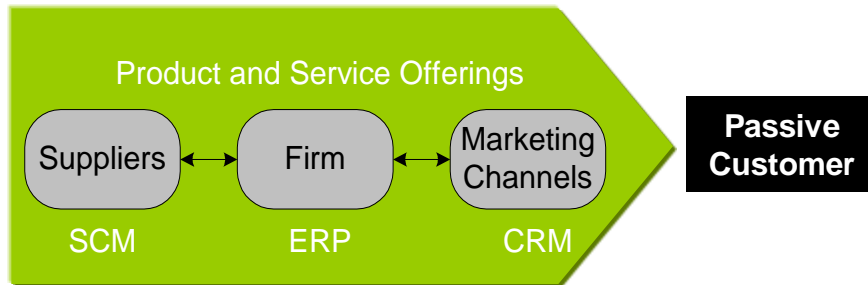Fair use vs. infringement – Enterprise 'mash-ups'

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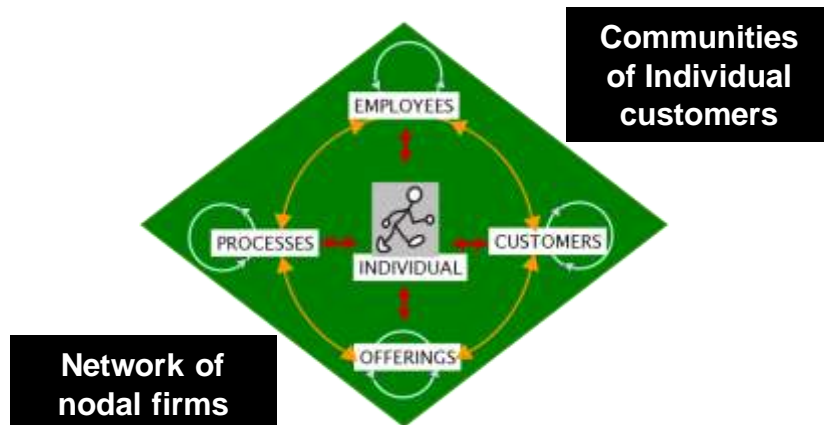
How we need to think differently?

Enterprise Architecture Co-Creation…a new paradigm

Traditional Innovation Process

Product and Service Offerings

Suppliers ↔ Firm ↔ Marketing Channels → **Passive Customer**

SCM   ERP   CRM

Co-Creation Process

Communities of Individual customers

EMPLOYEES
PROCESSES — INDIVIDUAL — CUSTOMERS
OFFERINGS

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

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The Enterprise Architect must experience, engage and enable deployment of Technological Innovations successfully

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?

1. Awareness of IT Trends

Consultants
Vendors
Internal Processes
Media
Analyst reports

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

Enterprise Architect

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?

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?

3. Customize to the enterprise

Consultants
Vendors
Internal Processes

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

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Some parting thoughts…

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

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Thank You