The Central Role of Business Analysis in Enterprise Architecture

currentation to the

IIBA Western Cape Chapter
Nov 2007

by Graham McLeod
Coverage

- Background (myself and Inspired)
- Enterprise Architecture
- Components of EA
- Business Architecture
- Business Process Architecture
- Business Process Engineering
- Requirements Definition
- Impact into other EA dimensions
  - Information
  - Applications
  - Technology
- Scoping Initiatives
- Examples and Case Studies
- Discussion
- References and Further Info
What is an Enterprise Architecture?

1. **A map of the forest**
   - What have we got?
   - How good is it?
   - Redundancies
   - Gaps
   - Risks

2. **Blue Print**
   - High Level Conceptual Design
   - Covers whole business/enterprise
   - A current "best plan"
   - Guides acquisition and implementation choices

3. **Policies, Procedures and Processes**
   - Whereby Strategy and Vision are transformed into Designs and Initiatives to realise them
Why We Need Enterprise Architecture

- Improve business benefit derived from I.T.
- Reduce costs associated with I.T.
- Reduce risk
- Enable desirable business changes, pursuit of opportunities
- Shorten lead times to realizing benefits
- Exploit emerging technologies which can provide strategic advantage
- Provide framework for decision making and practice within development, technology purchase and operations
- Basis for good governance
- If your company is listing and needs to be SOX compliant
- If you want budget in the US Federal Govt.
EA Frameworks and Methods

- Zachman
- FEAF
- IAF
- DODAF/C 4ISR
- TOGAF
- Inspired
- Related:
  - COBIT
  - ITIL
Include shareholders, community etc.

Provide and expect a variety of things

Services and Products are delivered to customers in markets via channels

Customers

Channels

Markets

Services

Products

Culture

Resources and Technology are used in the business process to produce the products and services

Partners participate in the business process

Suppliers contribute inputs to the products and services

Suppliers

Partners

Risks

Resources

Opportunities

Other Stakeholders
Include shareholders, community etc. Provide and expect a variety of things

Business Processes

Deals

Business Model

Technology

Control

Support

Service

Organization
Process Architecture Example

Stakeholders
- Customer
- Delivery Partner
- Supplier

Business Rules
- Discount Policy

Organizations
- Sales
- Purchasing
- Customer Relations
- Delivery Partner
- Accounting

Locations
- Our retail premises
- Supplier
- Delivery Partner

Business Goals
- Low Cost per Sale
- Increased Sale Volume
- Good customer experience

Risks
- Staff Expertise
- Non-Integrated Systems
- Stock Outage

Key Indicators
- Time to Delivery
- Return Rate

Resources
- Sales People

Applications
- Order Taking
- Customer Management
- Fullfillment
- Debtors

Product or Service
- Goods

Business Object
- Customer
- Product
- Supplier
- Order
- Supplier Order
- Delivery Request
- Business Partner

Business Objects/State
- New Customer

Sub-Processes
- Order Taking
- Customer Management
- Fullfillment
- Debtors

inspired!
Relationship between Strategy, Architecture, Program and Project Management

External Influences -> Current Reality -> Strategy Formulation

Vision

Desired Future Architecture

Business
  - App
  - Info

Technology

As Is Architecture

Initiatives -> Delta Models

PROJECT MANAGEMENT

PROGRAM MANAGEMENT

inspired!
BA Plays Major Role in

- Shaping the business approach
  - Evaluating environmental impacts and imperatives
  - Focussing effort of analysis
  - Defining Desirable Scenarios
  - Envisioning Future Processes
  - Creating new relationships

- Defining Requirements
  - Functional Requirements
  - Process Requirements
  - Organization/Job Design
  - Business Rules
  - Information Requirements
  - Scoping of Information Systems, Change Initiatives, Projects
Layers of Models

- Conceptual
- Logical
- Solution Architecture
- Physical
Example: System Level Model

- **Purchase Request**
  - Customer
  - Sales Person

- **Capture Sale**
  - Sale Created
  - Product Valid

- **Cash Sale**
  - Check Stock

- **Credit Sale**
  - Customer Creditworthy
  - Not Creditworthy

- **Advise Customer**
  - Delivery Date
  - Backorder Created

- **Logical Tx Backorder**
  - Supplier

- **Check Stock**
  - Stock Received
  - Purchase Order Filled

- **Obtain + Stock ex Supplier**
  - Stock Sufficient
  - Insufficient

- **Rule D1**
  - Discount Calculation
  - Allow Discount only for Category 1 and 2 Clients on Product with Margin > 25%

- **Conclude Sale**
  - Customer Debited Stock Issued

- **Delivery Note**
  - Delivery Date

- **Logical Tx Sale**
  - Sale complete

- **Deliver Goods**

- **Logical Tx**
Example: Design Level Model

Rule D1
Discount Calculation
Allow Discount only for Category 1 and 2 Clients on Product with Margin > 25%

UI001
EDI002
Windows Client
Unix Server

Delivery Note Print
Capture Sale
Sales Person

Cash Sale
Credit Sale

Record Sale
Sale Created
Product Valid

Check Stock
Stock Sufficient
Insufficient

Obtain + Stock ex Supplier
Stock on order
Purchase Order created

Record Back Order
Backorder Created

ED1002

Deliver Goods
Sale complete

Customer Debited
Stock Issued

Supplier

Sale

Conclude Sale

Advise Customer
Delivery Date

Approve Backorder

Approved Backorder

Credit Sale
Customer Creditworthy
Not Creditworthy

.2
.8

.9
.1

Sale

Receive Stock
Purchase Order Filled

Credit Sale

.95
.05

Example: Design Level Model

REP003
Clear Linkage from Business

- **Goals and Events to**
  - Business Services
  - System Services
  - Technology Services and Infrastructure
  - Information Services

- **Requirements Traceability**
- **Governance Traceability**
- **Impact Analysis**

- **BA needs a high level of Domain Knowledge**
  - viz. Assurance vs Banking vs Retail...
  - Certainly a requirement for international positions
4 Layer Model Example

- Short video clip illustrating modeling from the business dimension, thru process, down to application and technology
Models can be enhanced with additional dimensions of:

- Methods, Process, Deliverables
- Costs
- Metrics and Quality

The above can reflect both:

- Current Position
- Benchmarks from Industry/Competitors
- Goals

TIMING and RISK can also be brought into the picture.
Enhancing the Models - Cost Perspective

Turns out that most of the cost elements are already in the architecture models! We need to add attributes to individual items to record the various relevant costs; then implement a mechanism to accumulate them. This adds a model element for Cost Centre. Costs accumulated there can, in turn, be apportioned across business units. This is a flexible approach that allows various cost categories to be monitored - various models can be simultaneously implemented.
Architectures and Process Management Enable Quality Improvement

Product

Process

Applicat'n

Database

Platform

Profit
Quality of Deliv.

Thruput
Error Rate

Uptime
User Satisfaction

Data Quality
Availability

MTBF
MTTR
Standards for Interorganizational Systems

Modeling Tool

Policies & Rules

BPMN

Workflow Engine

BPEL

Rules
Flow
Flow
Flow
Condition
Flow

ORG 1

BPMN
Business Process Modeling Notation

BPEL
Business Process Execution Language

Messaging
e.g. SOAP/XML or MQ Series or CORBA

STD API
e.g. Web Service or CORBA object

Directory Service
e.g. UDDI, LDAP, X500, Active Directory

DIR SVC

Message Bus

 STD API

APPLIC. COMPONENT

STD API

APPLIC. COMPONENT

STD API

APPLIC. COMPONENT

ORG 2
Conclusion & Discussion

- Very large overlap between Business Analysis and EA scope
- Also between required skill sets.
- BA's have a very central role to play in EA
- EA role is a career growth path for analysts, particularly in the Business and Process Architecture dimensions
References and Further Info

- Archi Collaborative Enterprise Modeling Tool: http://www.inspired.org
- Cover page image of development of universe simulation:
  T. Di Matteo, J. Colberg, V. Springel, L. Hernquist & D. Sijacki, “Direct Cosmological Simulations of
- General EA Coverage: (Extensive site!) http://www.enterprise-architecture.info/
- Inspired Enterprise Architecture Frameworks: http://www.inspired.org
- TOGAF - Open Group: http://www.opengroup.org
- Zachman - ZIFA: http://www.zifa.com
Contact Us

- Graham McLeod  
graham@inspired.org  
+27 82 578 1834

- Inspired  
www.inspired.org  
+27 21 531 5404
Established 1991: Consulting, Training and Research
Small but highly skilled I.T. consulting house
Cape Based, UK and Spain
Blue Chip clients in
- Assurance, Finance
- Retail
- Telecomms
- Software/IT
- Government and Education
- Media
- Healthcare

Deep Expertise In
- Linking Business and IT Strategy
- Enterprise Architectures
- Process Improvement
- Project and Program Management
- System Delivery Methods and Techniques
- Repository/Knowledge Management
- e-Commerce, CRM, Knowledge Management, Web Services, SOA, TOGAF

Independent of vendors, but richly networked
Benefits of Collaboration

✓ Involvement of more perspectives and subject experts
✓ Higher quality input and models
✓ Distribution of effort and greater total effort applied
✓ Reduction of time to produce results
✓ Higher awareness and buy in of all relevant parts of the organization => higher architectural compliance
✓ Greater agility