Business Design Concepts for Digital Transformation

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Presented by:
Robert Weisman, MSc, PEng, PMP, CD
CEO Build The Vision Incorporated

Robert.weisman@buildthevision.ca
www.buildthevision.ca
Business Design Concepts for Digital Transformation

• Abstract
  – Enterprise Architecture / systems engineering is business-driven, yet business analysis and architecture has difficulty, articulating the delivery and sustainment of innovation and competitive advantage.
  – Business design, originating from business schools, offers a refreshing "new" way of formulating the business architecture to address innovation while maintaining current operations.
  – The presentation will highlight the concepts of "wicked problems", reliability and validity thinking (essential for stakeholder management) and abductive reasoning.
  – Business design has articulated a way of making EA relevant to the various stakeholders and the presenter gives several case studies where business design would have been very useful.

• Key takeaways:
  – Formulating innovation based on a deep understanding of the Business and its operating model
  – How to define the future while incrementally transforming the present
  – Using Business Design to understand and manage stakeholder
Robert Weisman, MSc, PEng, PMP, CD

• Robert Weisman MSc, PEng, PMP, CD Robert Weisman has worked for nearly 40 years in business, infrastructure and IM/IT plans and operations. As a portfolio/program manager for major business transformations in both the private and public sectors, he has lived many ways of articulating the business to drive the creation, transformation or deletion of enterprise capabilities. He believes that business design concepts provide a useful addition to EA best practices.

• Robert is a civil / military engineer who also has completed Army staff college and undergraduate and graduate studies in Computer Science (artificial intelligence / decision support. Currently Bob is a Phd candidate at the University of Ottawa where he is studying in the multi-disciplinary domain of e-Business (e-Society, e-Management and e-Technology) specializing in the business of government.

• He has used EA and TOGAF since 1993 and is an ongoing major contributor to the TOGAF® standard.

Robert is CEO of Build The Vision Inc. where he consults, mentors and teaches EA, knowledge management and strategic planning in both English and French. He has lectured extensively in both business and science schools notably the Royal Military College of Canada, Ecole Centrale, University of Ottawa and University of Melbourne.
• Enterprise Architecture is Business Driven
• Business Architecture is crucial to getting it right
• EA is normally in the CIO organization
• Business architecture and analysis is:
  – Through the CIO lens
  – Focused on individual systems
  – Based on Systems Engineering
• Business Arch often poor and subsequently EA is not fit for purpose.
Why Concern Ourselves With Business Design?

• First EA has little traction in business
  – Mainly in CIO ranks

• Roger Martin
  – Former Dean of the Rotman School of Management (University of Toronto)
  – Ranked number 3 on the Thinkers50 List of the world’s most influential management thinkers

• Business Design is a refreshing, business conceived and business led way of essentially doing enterprise business architecture
Enterprise Architecture is About Business Transformation

What are the three Main EA Deliverables?

Baseline Architecture

Target Architecture

Implementation and Migration Plan

Successfully getting to a Future State is the essence of Business Transformation and Enterprise Architecture
MUST HAVE A PLAN TO GET TO THE VISION

"I think you should be more explicit here in step two."

THEN A MIRACLE OCCURS...
Challenge – People Do Not Act Rationally

- EA analysis often treats human and computer actors the same way
  – They are not !!!
- EA is based on system engineering concepts
  • Ergo Logical ≠ Implementable
- Business Design is a way of conducting Business and Enterprise Architecture that is more flexible
  • Focus is on Innovation and Creativity
  • Addresses those “non-functional” requirements key for success
How do We Reason

• Declarative
  – Deductive
  – Inductive
  – Normally used in EA

• Generative
  – Abductive
Deductive Reasoning

- Normally Used in Business analysis
- Based upon a Pre-existing Model
- The Logic of “What Should Be” in terms of True and False
- Capture Rules of the enterprise and core relationships
- Links them together in decision trees and algorithms
  - IF the Sky is Blue AND there are no Clouds THEN it is Sunny
  - IF it is Sunny THEN it is Golf Time
Inductive Reasoning

• Not new
• Reasoning on examining facts and extracting business rules
• Deals with extrapolation, best fit existing data
  – Discards outliers
• Basis for Data Mining and Exploitation of Big Data
• Essentially uses correlation
  – When Users buy Cheese they Buy Wine
  – Ergo
    • Place the Wine close to the Cheese section
    • Send Cheese purchasers Wine Vouchers
Abductive Reasoning

• This is new to most folks
• Invented by “Peirce”
• “Inventive construction of theories”
• Tries to deal with how entirely new models came into being
• Inquires what could be
• Deals with “outliers”

# Characteristics of Exploration and Exploitation

<table>
<thead>
<tr>
<th></th>
<th>Exploration</th>
<th>Exploitation</th>
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</thead>
<tbody>
<tr>
<td><strong>Organizational Focus</strong></td>
<td>The Invention of Business</td>
<td>The Administration of Business</td>
</tr>
<tr>
<td><strong>Over-riding Goal</strong></td>
<td>Dynamically Moving from the current knowledge stage to the next</td>
<td>Systematically honing and refining within the current knowledge state</td>
</tr>
<tr>
<td><strong>Driving Forces</strong></td>
<td>Intuition, Feeling, hypotheses about the future, originality</td>
<td>Analysis, reasoning, data from the past, mastery</td>
</tr>
<tr>
<td><strong>Future Orientation</strong></td>
<td>Long-Term</td>
<td>Short-Term</td>
</tr>
<tr>
<td><strong>Progress</strong></td>
<td>Uneven, scattered, characterized by false starts and significant leaps forward</td>
<td>Accomplished by measured, careful incremental steps</td>
</tr>
<tr>
<td><strong>Risk and Reward</strong></td>
<td>High Risk, uncertain but potentially high reward</td>
<td>Minimal Risk, predictable but smaller rewards</td>
</tr>
<tr>
<td><strong>Challenge</strong></td>
<td>Failure to consolidate and exploit returns</td>
<td>Exhaustion and Obsolescence</td>
</tr>
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</table>
Mystery

Heuristics (Rules of Thumb)

Algorithm

- Messy, Aggressive, Confounding
- Difficult to set the problem
- No model available to solve
- Requires design thinking
- e.g. MacDonalds start, Walmart

- Monopoly of knowledge worker
- Often will not share

- Candidate for automation
The “Reliability Mindset”

- Consistent and Predictable
- Algorithmic
- Persistence of the past
- Eliminate bias
  - Everything data-based
- Honed Analytical Skills
- Managerial skills are built and rewarded
- Six Sigma and ITIL are reliability based
The “Validity” Mindset

- Produce Outcomes meet a certain objective
- Generally Heuristic
- Break with the past
- Understand risk and bias
  - Little supporting data

- Honed Intuitive Skills
- Accept Risk especially “Head in The Clouds”
• The metaskill of being able to face or two (or more) opposing ideas or models
• Instead of choosing one versus the other
• Generate a creative resolution of the tension in the form of a better model
• Which contains elements of each model
• But which is superior to each (all)
Integrative Versus Conventional Thinking

Conventional Thinking
- Simplified Consideration of Causality
- Limited Consideration of Features

Causality
- Multidirectional and nonlinear causality considered
- More features of the problem considered salient

Architecture
- Whole Visualized while working on individual parts
- Ready Acceptance of Unattractive Trade-Offs
- Search for Creative Resolution of Tensions

Integrative Thinking
- Whole Visualized while working on individual parts
- Ready Acceptance of Unattractive Trade-Offs
- Search for Creative Resolution of Tensions

Resolution
- Whole Visualized while working on individual parts
- Ready Acceptance of Unattractive Trade-Offs
- Search for Creative Resolution of Tensions

Salience
- More features of the problem considered salient
- Multidirectional and nonlinear causality considered
Conventional Thinking

- Dominant Dogma
- Refining the existing model
- Driving through efficiencies
- System approach where focus is on each piece rather than the whole
Challenging the Visionary Evolution of Dominant Logic

Development of a New Business Model

Inability to see new opportunities and act upon them; Inability to build new business models

Dominant Logic Becomes the lens Through which new Data is interpreted.

Behaviours, Skills, Analytical Tools Reflect Business Model

Business Model Embedded In Organization

Systems, Business Processes ICT Capabilities Reflect Business Model

Success Crystallizes Business Model

Recipes Become Dogma: Dominant Logic

When Dominant Dogma has Produced This
Tyranny of The Immediate:Trumping New Opportunities

No thanks!
We are too busy
The Three Gears of Business Design

“Design Works” Heather Fraser ©2012 University of Toronto Press (Rotman-UTP Publishing)

Gear 1
Empathy and Deep Human Understanding

Gear 2
Concept Visualization

Gear 3
Strategic Business Design
The Power of Show Me

• Need to Demonstrate Capability and its Business Advantages to Stakeholders
• Use TOGAF Business Scenarios

- Visualize The Capability
- Understand The Possibilities
- Buy-In
Arctic Oil Spill Business Scenario
48 Hours to Disaster

The Right Decision At the Right Time Using the Right Information

The Foundation Architecture

Decision Quality
E-Collaboration
Shared Situational Awareness
Quality Information

Government
Operations Centre

NR Can Shoreline Geomatic Data

Public Safety Evacuation

Environment Canada & Huge Oil Expertise

DND/Huge Oil Clean-up Infrastructure

CSA Spectral Imagery

DFAIT International Coord

A Huge Oil Inc Information Outcome

Huge Oil Vessel Manifest

Resources

Government

Environment

DND
• When quantitative thinking does not work
• “Not everything that can be measured matters and not everything that matters can be measured”
• “When dedicated to the quantity-driven approach of scientific inquiry, we chronically overlook valuable qualitative aspects of the world.”
### Basic Artistic Method

1. **Experience Qualities**
2. **Generate Possible Relationships Between Qualities**
3. **Undergo Experience to Create Further Understanding**
4. **Create and Connect Qualities as Experience Tests Understanding**
5. **Begin Shaping Understanding into an Expressive Form**
6. **Present Understanding in a Qualitative, Expressive Form**

### Basic Scientific Method

1. **Ask a Question**
2. **Do Background Research**
3. **Construct a Hypothesis**
4. **Conduct Experiments and Collect Qualitative Data**
5. **Analyze Results and Draw Conclusions**
6. **State Results in Standardized Formats**
Blue Ocean Strategy

Red Ocean

Compete in Existing Market Space
Beat the Competition
Exploit Existing Demand
Make the Value-Cost Trade-off
Align the Whole System of a firm’s activities with its strategic choice of differentiation or low cost

Blue Ocean

Create Uncontested Market Space
Make the Competition Irrelevant
Create and Capture New Demand
Break the Value-Cost Trade-off
Align the whole system of a firm’s activities in pursuit of differentiation and low cost
Profit & Growth - Consequences of Blue Oceans

**Business Launch**
- Launches Within Red Oceans: 86%
- Launches For Creating Blue Oceans: 14%

**Revenue Impact**
- Launches Within Red Oceans: 62%
- Launches For Creating Blue Oceans: 38%

**Profit Impact**
- Launches Within Red Oceans: 39%
- Launches For Creating Blue Oceans: 61%
# High Level Findings - Organizational Tensions to be Addressed

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<th>Reliability Thinking</th>
<th>Validity Thinking</th>
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<td>Management</td>
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<td>Risk Averse</td>
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<td>Efficient</td>
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<td>Analytical Insights</td>
<td>Intuitive Insights</td>
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<td>Data Rich</td>
<td>Data Poor</td>
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<tr>
<td>Perfection</td>
<td>Innovation</td>
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<tr>
<td>Prescriptive</td>
<td>Descriptive</td>
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<tr>
<td>Red Ocean</td>
<td>Blue Ocean</td>
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<tr>
<td>Stable</td>
<td>Agile</td>
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<tr>
<td>Extractive</td>
<td>Inclusive</td>
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The Necessary EA Mindset

Business Design

Reliability
有效性

Validity
有效性

Service Improvement
改进服务

Service Innovation
创新服务

Enterprise Architecture
企业架构

Effective, Efficient & Consistent
有效、高效且一致

New, Innovative & Game-Changing
新颖、创新且变革

1. 《设计业务：为什么设计思维是下一个竞争优势》，罗杰·马丁，哈佛商业出版社 ©2009
Enterprise Architecture Thinking

Business Design

Analytical Thinking

Intuitive Thinking

Reliability 100%

Validity 100%
Concluding Material

• **Business Design and EA / Systems Engineering are similar BUT Appeal to different stakeholders**

• **Roots**
  – Business Design comes from Business
  – EA/Sys Engr comes from IT/Systems Engineering

• **Business Design will involve a new set of business skills**
  – Must be understood by all Enterprise Architects and Domain Architects
  – Intuitive Thinking complements standard Analytical Thinking

• **Business Design is a solid way to:**
  – Get a cycle of continuous innovation started
  – Get business to take ownership of EA and develop the business architecture

• **Way Ahead**
  – Bring Business Design Thinking into EA/Systems Engineering
  – Incorporate Business Design into Corporate EA Services especially business architecture
Selected Readings


• Rotman Management – The Magazine of the Rotman School of Management, University of Toronto


Questions?

Robert Weisman, MSc, PEng, PMP, CD
CEO Build The Vision Incorporated
Robert.weisman@buildthevision.ca
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