Knowledge Management for the Digital Economy

Systems that Work in the e-World of ‘re-Everything’

"The wise see knowledge and action as one.” - Bhagvad-Gita

"No amount of sophistication is going to allay the fact that all your knowledge is about the past and all your decisions are about the future."
Illusive IT Performance Gains

"The lack of correlation of information technology spending with financial results has led me to conclude that it is not computers that make the difference, but what people do with them..."

-- Paul Strassmann, in The Squandered Computer
Illusive IT Performance Gains

“In the last 20 years, US industry has invested more than $1 trillion in technology, but has realized little improvement in the efficiency of its knowledge workers… and virtually none in their effectiveness...

... the problems businesses have assimilating technology are human ones”

- John Seely Brown in Information Strategy
The New World of “Re-Everything”

“In the increasing-returns world, especially in high tech, re-everything has become necessary because every time the quest changes the company needs to change. It needs to reinvent its purpose, its goals, its way of doing things.”

From Prediction to Anticipation

“The future is moving so quickly that you can't anticipate it...We have put a tremendous emphasis on quick response instead of planning.

We will continue to be surprised, but we won't be surprised that we are surprised...

...We will anticipate the surprise.”

– Steve Kerr in Planning Review
Information & Control Systems for…

- Faster and faster pace of change
- Shift from incremental to radical change
- Shift from continuous to discontinuous change
- Shift from internal to external locus of change
- New world of business: world of “re-everything”
- Shift from reactive to anticipatory response

Shift from “Focus on Core Competencies”… to…
Creation of New Business Models and Industries
Information Strategy - Synopsis

• IT Performance is dependent upon effective utilization of IT…
• IT Performance is dependent upon the strategic context of IT utilization
• Business world of ‘re-everything’ requires ‘re-everything’ IT strategy and IT design

Integrated E-Business IT Architecture supporting…
“Agile” E-Business Service Architecture
Process Focus: CQI to Radical Redesign

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>TQM</th>
<th>BPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incremental</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Existing Process</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>One-time/Continuous</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Short</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Bottom-Up</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Narrow [within]</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Moderate</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Statistical Control</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Cultural</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

| Start From       | ✓   | ✓   |
| Frequency        | ✓   | ✓   |
| Time Required    | ✓   | ✓   |
| Participation    | ✓   | ✓   |
| Typical Scope    | ✓   | ✓   |
| Risk             | ✓   | ✓   |
| Primary Enabler  | ✓   | ✓   |
| Type of Change   | ✓   | ✓   |

Beyond BPR

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From Reengineering to “Re-Everything”

OLD

Technology Focus

Reengineering
Rationalization
Automation

NEW

e-Customer Focus

“Re-Everything”
Business Model Innovation

Reengineering … IT-intensive Radical Redesign
Rationalization … Streamlining Workflows
Automation … Replacing humans with machines

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“Re-Everything” for e-Customer Focus

“The most productive and successful companies focus on increasing market share by staying one step ahead of the customer and coming up with brand-new product innovations that will inspire his imagination, rather than by battling for market share in an already crowded market.”

“Quality, then, means anticipating the needs of the customer.”
Until Reengineering…

“Internal” Focus

Optimization-based Efficiencies

- Automation
- Rationalization
- Reengineering

“Radical Redesign” of Business Processes

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Beyond Reengineering…

**“External” Focus**

Re-everything

- "Radical Redesign" of Business Processes
- ‘White Spaces’
- Virtual Form
- E-Form
- Ecosystems
- Extended Supply Chains…

### RISK

- Low

### Automated Solutions

- Automation

### Rationalization

- RATIONALIZATION

### Reengineering

- REENGINEERING

### Business Model Innovation

- NEW

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Beyond Reengineering…

‘e-Agility’ Focus
Radical Rethinking of the organization and its business

High RISK

Beyond BPR

“Radical Redesign” of Business Processes

NEW
‘White Spaces’
Virtual Form
E-Form
Ecosystems
Extended Supply Chains…

Low RISK

70% RISKS
70% RETURNS

RETURN

‘Machine’ Focus

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Rapid Fire Changes – IT Infrastructures

“The classic timeline of BPR – where consultants are brought in, models are drawn up, and plans are implemented gradually – just isn’t fast enough...”

“Many companies can’t go back to the ‘clean slate’ and completely rearchitect critical systems such as order fulfillment and product databases from the bottom up because they greatly depend on existing infrastructures.”

“E-Business is forcing companies to rearchitect all or part of their IT infrastructures – and to do it quickly.”

- Rapid Fire IT Infrastructures, Information Week, January 31, 2000

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The E-Business (R)evolution

• Why firms exist? The Net changes everything!!
• Emergence of e-Business Communities
  – iVillage.com, AOL, Amazon.com, Geocities, Linux,…
• Emphasis on intellectual capital and intangibles
• Beyond ‘Deep Blue’ and Kasparov…
• Business ecosystems – complementary co-evolution
• From ‘core’ to creating new markets & industries
• Splitting of the ‘atoms’ and the ‘bits’
• Click-and-mortar vs. ‘Pure Plays’
Strategic Context of IT Utilization

‘Old’ Biz
- Metaphor
- Knowledge
- Assets
- Strategy
- Design
- Role of IT
- Management
- Returns

e-Biz
- Ecosystem
- Creation
- Intangibles
- Anticipation
- Edge of Chaos
- Diverge
- Self-Control
- Increasing

Machine Utilization Tangibles Prediction Structure Converge Compliance Diminishing
The E-Business (R)evolution

“We’re shifting back to our natural way of doing business because of the Net. For most business history, people did business through bazaar, where the exchange of knowledge was the rason’d’etre and the exchange of currency and products the by-product.”


“To be truly successful with B2C E-business, you need a different set of skills and deliverables than what would have made you successful in the pre-Web time.”
BPR to e-Agility

**BPR**
- Radical
- Clean Slate
- One-time
- Long
- Top-Down
- X-functional
- High
- IT
- Culture/Structure

**e-Agility**
- Radical / Incremental
- Existing Model
- Ongoing
- Short / Long
- All Levels
- X-Network
- High / Critical
- IT / Human Capital

“Re-Everything”
Changing Business Environment
Information Processing vs. Business Model Innovation

• **OLD Focus on Information-Processing (Automation)**
  – Focus on ‘right questions’ and ‘best answers’
  – Emphasis on Information systems and databases
  – Digitized memory, experience and expertise
  – Technology is central, People are less important

• **NEW Focus on Business Model Innovation (e-Agility*)**
  – Multiple views of the problems and related solutions
  – Emphasis on Vision, Beliefs and Action.
  – Creative conflict, Dialog, ‘Questioning the Status Quo’
  – People are central, Technology is also important
e-Biz (R)evolution

KNOWLEDGE PROCESS

Knowledge Creation

Knowledge Utilization

FROM COMPLIANCE TO COMMITMENT

External Controls for Compliance

Self Controls for Commitment

Stable and Predictable Organizational Environment

Pre-specification of rules, procedures and best practices

Self Control for Knowledge Utilization

‘Wicked’ Organizational Environment

Self Control for Knowledge Creation

Supplier Coopetition in Business Ecosystems

Human Capital as Key Enabler

Customer Driven Virtual Communities

Human Capital as Key Enabler

Knowledge Utilization

Knowledge Creation

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Business Model Innovation for E-Biz Performance

- Focus on performance outcomes of organizational adaptation, survival, and competence
- Embodies organizational knowledge processes
- Seeks synergistic combination of
  - data and information-processing capacity of information technologies, and,
  - creative and innovative capacity of human beings.

"The wise see knowledge and action as one."
-- Stafford Beer, quoted from Bhagvad-Gita
Leveraging Innovation & Technology*

- Non-linear Technologies for a Non-linear era
- Designing Systems for Creative Abrasion
- Designing for **Divergence** of Meaning
- Designing for **Emergence** of Knowledge
- Designing “**Loose-Tight**” Systems
  - Ongoing ‘learning’ and ‘unlearning’
  - Renewal of organizational memory
  - Multiple views of ‘problems’
  - Creating multiple ‘solutions’
e-Business Model Innovation

RADICAL DISCONTINUOUS CHANGE

DESIGN FOR AGILITY,
FLEXIBILITY AND ADAPTABILITY

e-BUSINESS TECHNOLOGY ARCHITECTURE ↔ e-Business SERVICES ARCHITECTURE

BALANCE TIGHT INTEGRATION OF e-TECHNOLOGY WITH ADAPTIVE INTEGRATION OF e-SERVICES

TIGHT EFFICIENCIES OF SCALE & SCOPE ↔ ADAPTIVE AGILITY & FLEXIBILITY

INTEGRATION OF DATA, ACTIVITIES & PROCESSES

PROCESS REENGINEERING WORKFLOW REDESIGN AUTOMATION

BUSINESS MODEL INNOVATION FOR ‘RE-EVERYTHING’

Detect & Correct

Sense & Respond

CREATIVE ABRASION & CREATIVE CONFLICT

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Intellectual Capital & Financial Capital

- **Market Capital**
  - Present

- **Human Capital**
  - Present

- **Process Capital**
  - Present

- **Renewal & Development Capital**
  - Future

- **Financial Capital**
  - Past

**e-Business Performance**

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Intellectual Capital & Intangible Assets

Human Capital: Capabilities of **individuals** to provide **solutions** to the **market** (**Products**)

Structural Capital: Organizational capabilities to meet market requirements (**Processes**)

Market Capital: Value of an organization’s relationships and networks (**Channels**)
Dimensions of e-Business Performance

- Increasing Returns
- Virtual product
- Virtual channel
- Virtual process
- From Atoms to Bits
- ‘Gray Matter’ to e-Matter
- From Bricks to Clicks
- From BPR to e-Agility

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Business Model Innovation for E-Biz Performance

Information Networks + Creativity & Innovation → Knowledge Management ↔ e-Business Performance

Product – From atoms to bits
Channel – From bricks to clicks
Processes – From BPR to e-Agility
**Customer Driven**
Virtual Communities

**Supplier Coopetition**
in Business Ecosystems

**Human Capital**
as Key Enabler

**Customer-driven**
e-Markets

**E-Business Ecosystems**

**Cyber Corporation**
Extended ‘Chains’
Tightly coupled

**Industrial Age Corp.**
Vertical
Fully Integrated

**Product** – From atoms to bits
**Channel** – From bricks to clicks
**Processes** – From BPR to e-Agility

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"Education is not a preparation for life; education is life itself."

-- John Dewey

"The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise to the occasion. As our case is new, so we must think anew and act anew."

-- Abraham Lincoln
"Knowledge is power, which is why people who had it in the past often tried to make a secret of it. In post-capitalism, power comes from transmitting information to make it productive, not from hiding it."

"Past wisdom must not be a constraint, but something to be challenged."


Believe nothing, no matter where you read it, or who said it, no matter if I have said it, unless it agrees with your own reason and your own common sense."

-- Buddha
Working Knowledge: How Organizations Manage What They Know

- New emphasis on ‘corporate knowledge’
- Factors leading to “knowledge boom”
- Ideas, Insights, IP, IA, KA, etc., etc.
- What is Knowledge – from IS Point of view
- Data, Information, Knowledge – Why care?
- Data, Information, Knowledge- Who cares?
What is Knowledge?

"The wise see knowledge and action as one.” - Bhagvad-Gita

'Knowledge' Doesn't Reside in 'Information'?

"Knowledge resides in the user and not in the collection [of information]. It is how the user reacts to a collection of information that matters."

Relating Information, Knowledge and Performance

Data → Performance

Information
Relating Information, Knowledge and Performance

Data → MEANING* → ACTION → Performance

Information
The New World of Creativity & Innovation

“Imagination is more important than Knowledge.”

- Einstein
Knowledge Management Jargon Soup

- Data, Information, Knowledge, Wisdom
- Experience, Truth, Complexity, Judgment
- Rules of Thumb, Intuition, Values & Beliefs
- Knowledge as Corporate Asset
- Sustainable Competitive Advantage ??
Knowledge Transfer and IT

"Successful knowledge transfer involves neither computers nor documents but rather interactions between people."

"To the small part of ignorance that we arrange and classify we give the name knowledge."
The KM Tool-Kit: How Strong is It?

• Why K? IC? What is It?
• What is KM? – Who cares?
• Why KM? Is it new, different?
• KM and Change Management
• Only the Knowledgeable Survive??
Living in Interesting Times

• "Even when the experts all agree, they may well be wrong." -- Bertrand Russell

• "In time of profound change, the learners inherit the earth, while the learned find themselves beautifully equipped to deal with a world that no longer exists." – Al Rogers
Tool Kit… Continued

- Knowledge can drive decision support??
- Why Now? KM and IC?
- What KM is Not About (Tool Kit)
  - KM is not KE
  - KM is about process not digital networks
  - KM is not about building a smarter intranet
10-Step Road Map

• Identify Knowledge Critical to your Biz
• Align Business Strategy and KM???
• Analyze K existing in Your company
• Build upon, not discard, existing IT $$
• Focus on Process, and Tacit, not only Exp..
• Future-proof, Adaptable KM Architecture
• Results Driven KM System

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10-Step Road Map

- Reward Structures, Leadership and Culture
- ROI and Knowledge Metrics
- Learn from war stories
- Why Not the “M” Word??