

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.”

-- W. Brian Arthur in ‘Increasing Returns and the New World of Business’, *Harvard Business Review*



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



Level of Change

Start From

Frequency

Time Required

Participation

Typical Scope

Risk

Primary Enabler

Type of Change

TQM

- ✓ Incremental
- ✓ Existing Process
- ✓ One-time/Continuous
- ✓ Short
- ✓ Bottom-Up
- ✓ Narrow [within]
- ✓ Moderate
- ✓ Statistical Control
- ✓ Cultural

BPR

- ✓ Radical
- ✓ Clean Slate
- ✓ One-time
- ✓ Long
- ✓ Top-Down
- ✓ Cross-functional
- ✓ High
- ✓ I. T.
- ✓ Cultural/Structural

From Reengineering to “Re-Everything”

OLD

NEW

Technology Focus

e-Customer Focus

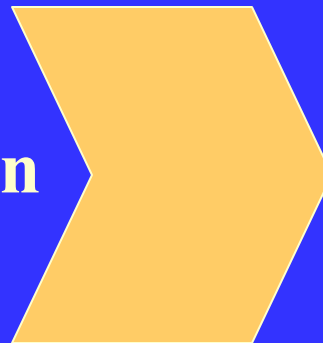
Reengineering



Rationalization



Automation



**“Re-Everything”
Business Model Innovation**

Reengineering ...IT-intensive Radical Redesign

Rationalization ...Streamlining Workflows

Automation ...Replacing humans with machines

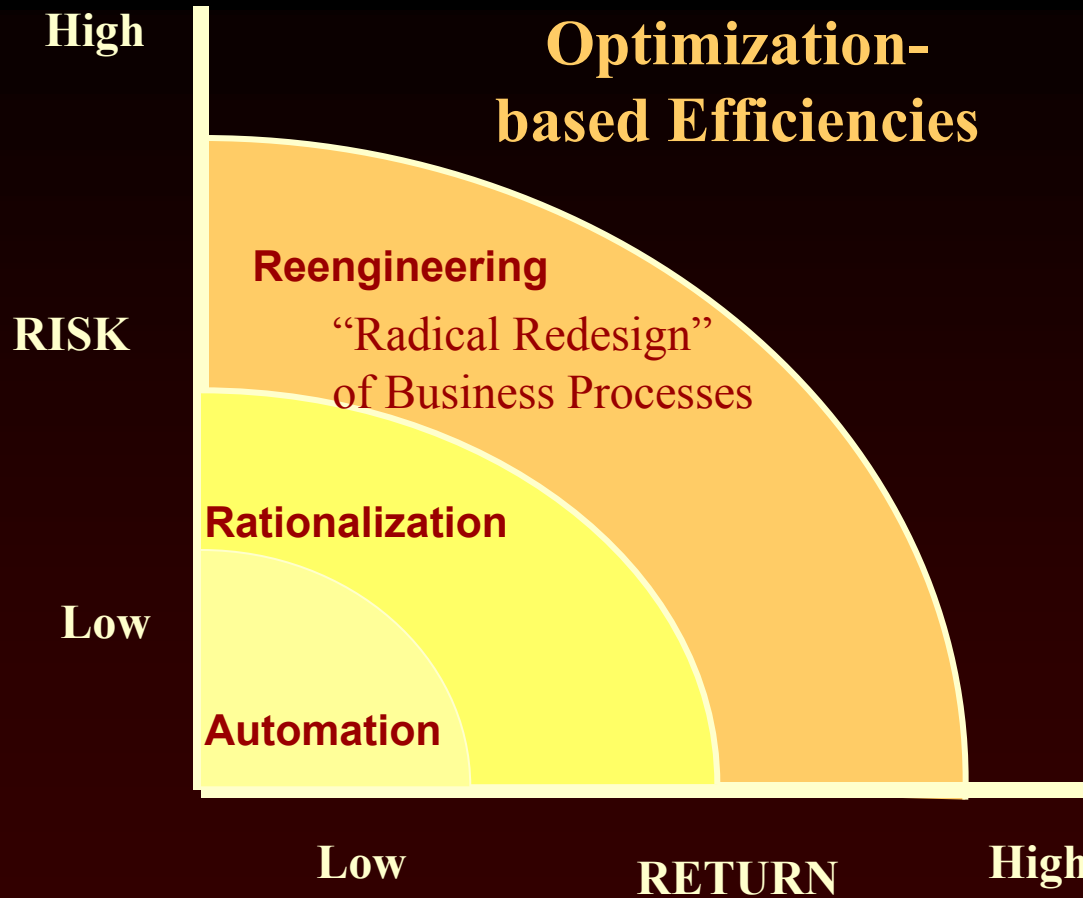
“Re-Everything” for e-Customer Focus

“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



Beyond Reengineering...

“External” Focus

High

Business Model
Innovation

Re-everything

NEW

‘White Spaces’

Virtual Form

E-Form

Ecosystems

Extended Supply

Chains...

RISK

REENGINEERING

“Radical Redesign”
of Business Processes

RATIONALIZATION

Low

AUTOMATION

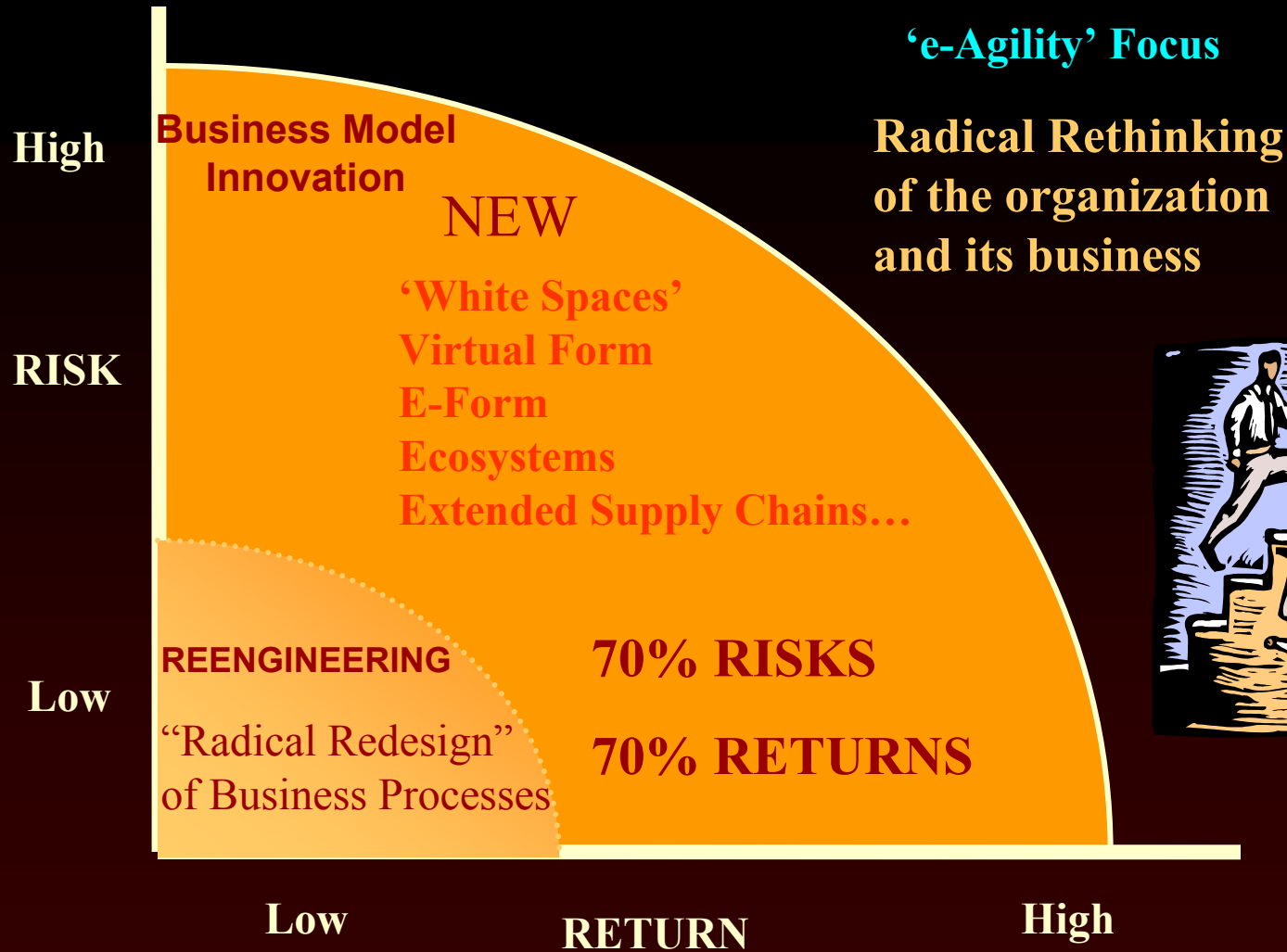
Low

RETURN

High



Beyond Reengineering...



'Machine' Focus

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**

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'

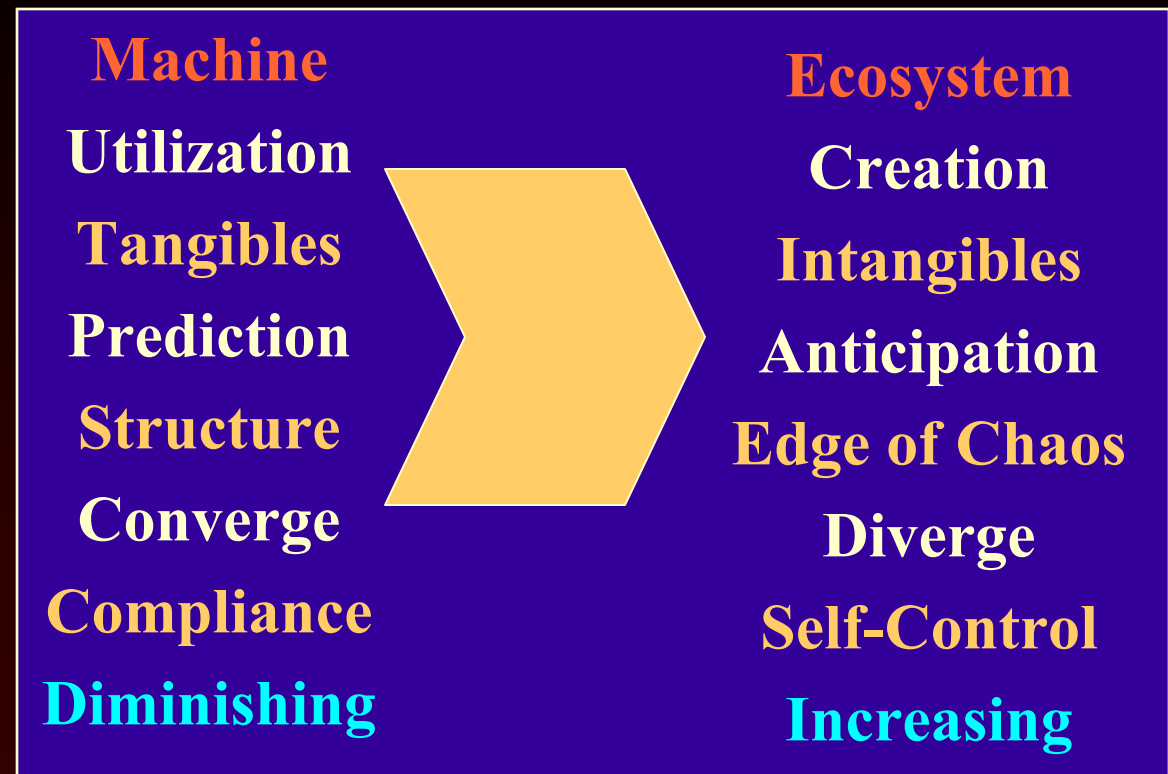
Strategic Context of IT Utilization



Metaphor
Knowledge
Assets
Strategy
Design
Role of IT
Management
Returns

'Old' Biz

e-Biz



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 rasond’etre and the exchange of **currency and products** the by-product.”

- E-Biz? Get A Clue, *Information Week*, Feb. 7, 2000.

“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

Level of Change

Start From

Frequency

Time Required

Participation

Typical Scope

Risk

Primary Enabler

Type of Change

BPR

e-Agility

- | | |
|---------------------|--------------------------|
| ✓ Radical | ✓ Radical / Incremental |
| ✓ Clean Slate | ✓ Existing Model |
| ✓ One-time | ✓ Ongoing |
| ✓ Long | ✓ Short / Long |
| ✓ Top-Down | ✓ All Levels |
| ✓ X-functional | ✓ X-Network |
| ✓ High | ✓ High / Critical |
| ✓ IT | ✓ IT / Human Capital |
| ✓ Culture/Structure | ✓ “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

**Customer Driven
Virtual Communities**

**Supplier Coopetition
in Business Ecosystems**

**Human Capital
as Key Enabler**



FROM COMPLIANCE TO COMMITMENT

**KNOWLEDGE
PROCESS**

Knowledge
Utilization

Knowledge
Creation

External Controls
for Compliance

Self Controls for
Commitment

*Stable and
Predictable
Organizational
Environment*

Self Control for
Knowledge
Utilization
*'Wicked'
Organizational
Environment*

Pre-specification
of rules,
procedures and
best practices

Self Control for
Knowledge
Creation

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**

Detect & Correct

Sense & Respond

**INTEGRATION
OF DATA,
ACTIVITIES &
PROCESSES**

**TIGHT
EFFICIENCIES OF
SCALE & SCOPE**



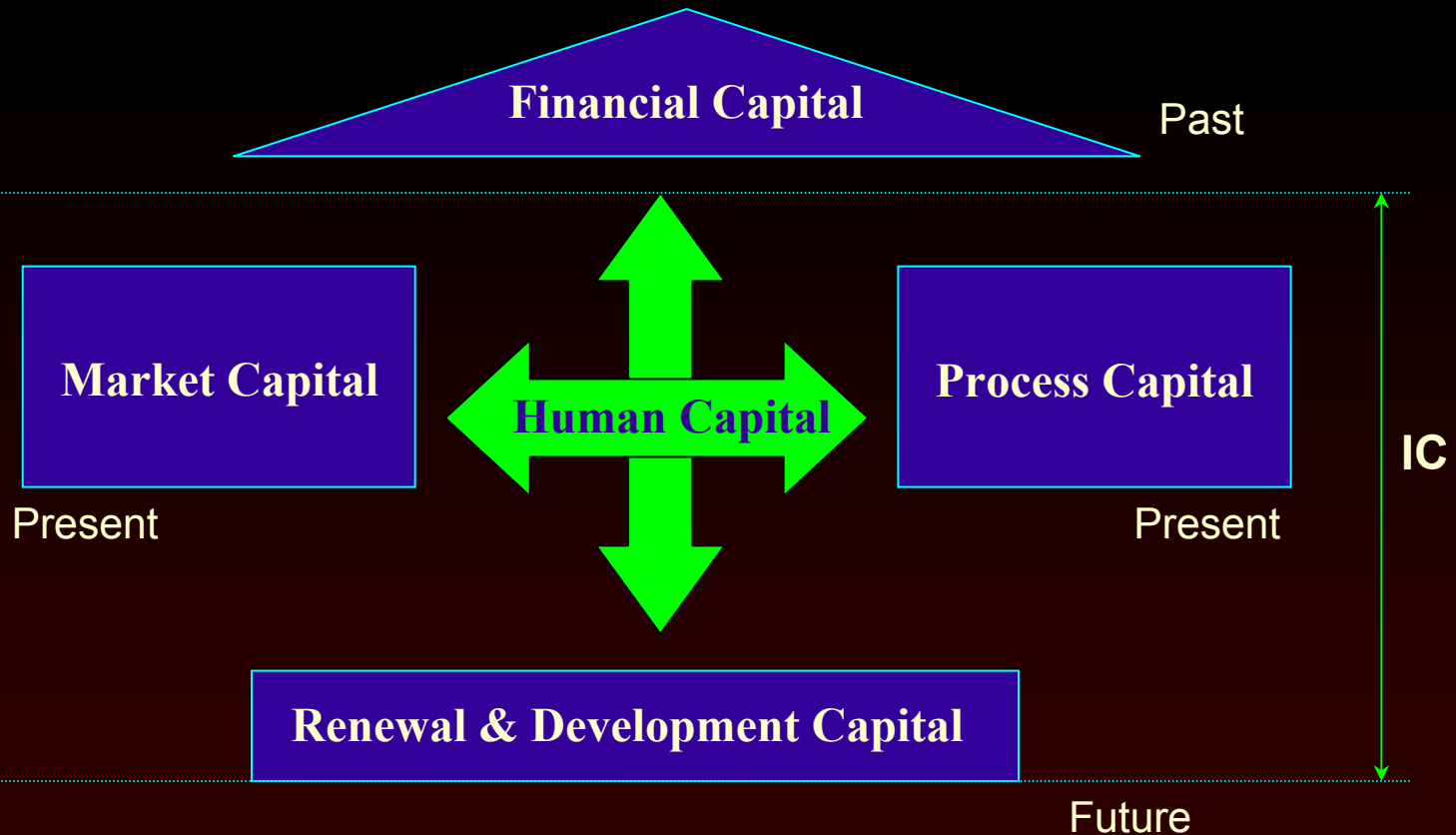
**ADAPTIVE
AGILITY &
FLEXIBILITY**

**CREATIVE
ABRASION &
CREATIVE
CONFLICT**

**PROCESS REENGINEERING
WORKFLOW REDESIGN
AUTOMATION**

**BUSINESS MODEL
INNOVATION
FOR 'RE-EVERYTHING'**

Intellectual Capital & Financial Capital



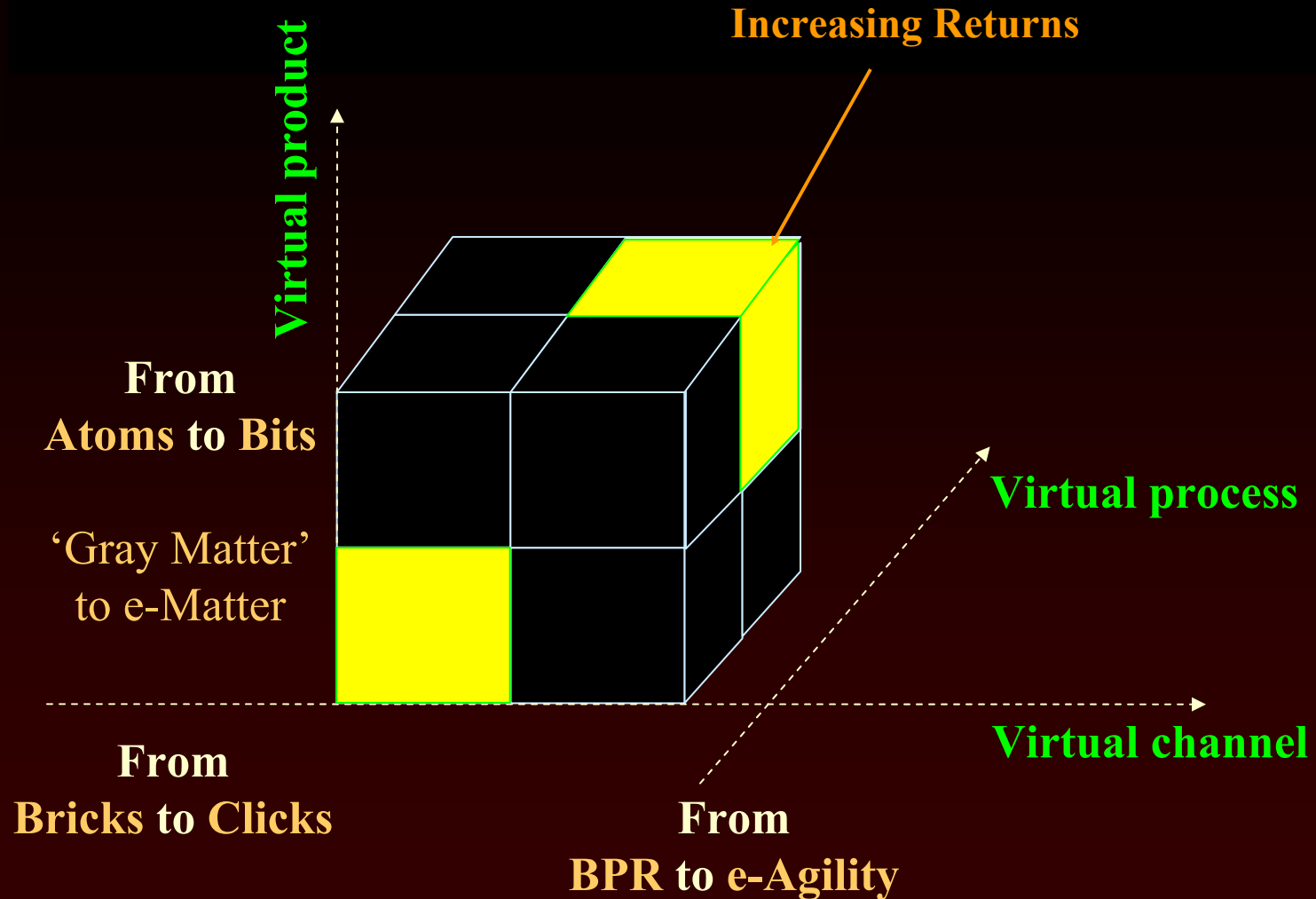
Intellectual Capital & Intangible Assets

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



Business Model Innovation for E-Biz Performance



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

e-Business Performance

Customer Driven

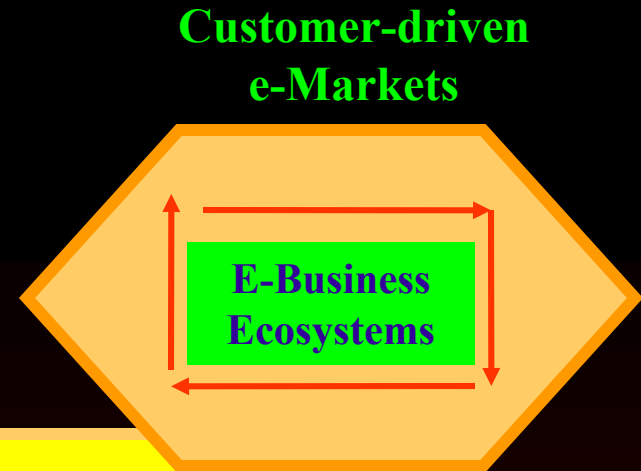
Service enhanced customization

Value Creation

Supplier driven

Mass production

Customer Driven
Virtual Communities
Supplier Coopetition
in Business Ecosystems
Human Capital
as Key Enabler



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



" 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."

--Drucker, P.F. (1995). "The Post-Capitalist Executive," in *Managing in a Time of Great Change*, Penguin, New York, NY.



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

-- Ghoshal, S. & Bartlett, C.A., in "Rebuilding Behavioral Context: A Blueprint for Corporate Renewal," Sloan Management Review, Winter 1996.

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?

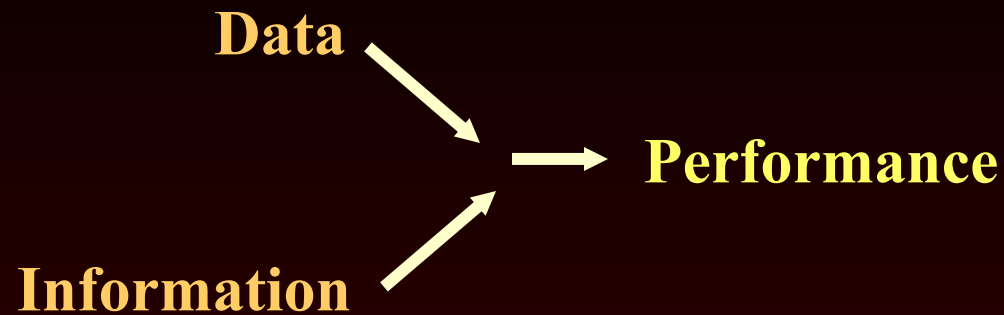
"The wise see knowledge and action as one." - *Bhagvad-Gita*

'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."

-- *Churchman, C.W. (1971). The Design of INQUIRING SYSTEMS: Basic Concepts of Systems and Organization, Basic Books, New York, NY.*

Relating Information, Knowledge and Performance



Relating Information, Knowledge and Performance

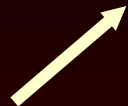
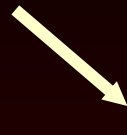
Data

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."

--- Davenport, T.H. "Think Tank: The Future of Knowledge Management," CIO, December 15, 1995.

"To the small part of ignorance that we arrange and classify we give the name knowledge."

-- A. Bierce. In Peter, L.J. The Peter Prescription: How to Make Things Go Right, Bantam, NY, 1972.



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

10-Step Road Map

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

