

***Leveraging Information Systems
for E-Business Performance***

**Advancing Information Strategy
to 'Internet Time'**



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

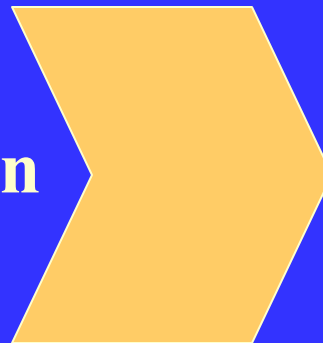
Reengineering



Rationalization



Automation



“Re-Everything”
Business Model Innovation

Reengineering ...IT-intensive Radical Redesign

Rationalization ...Streamlining Workflows

Automation ...Replacing humans with machines

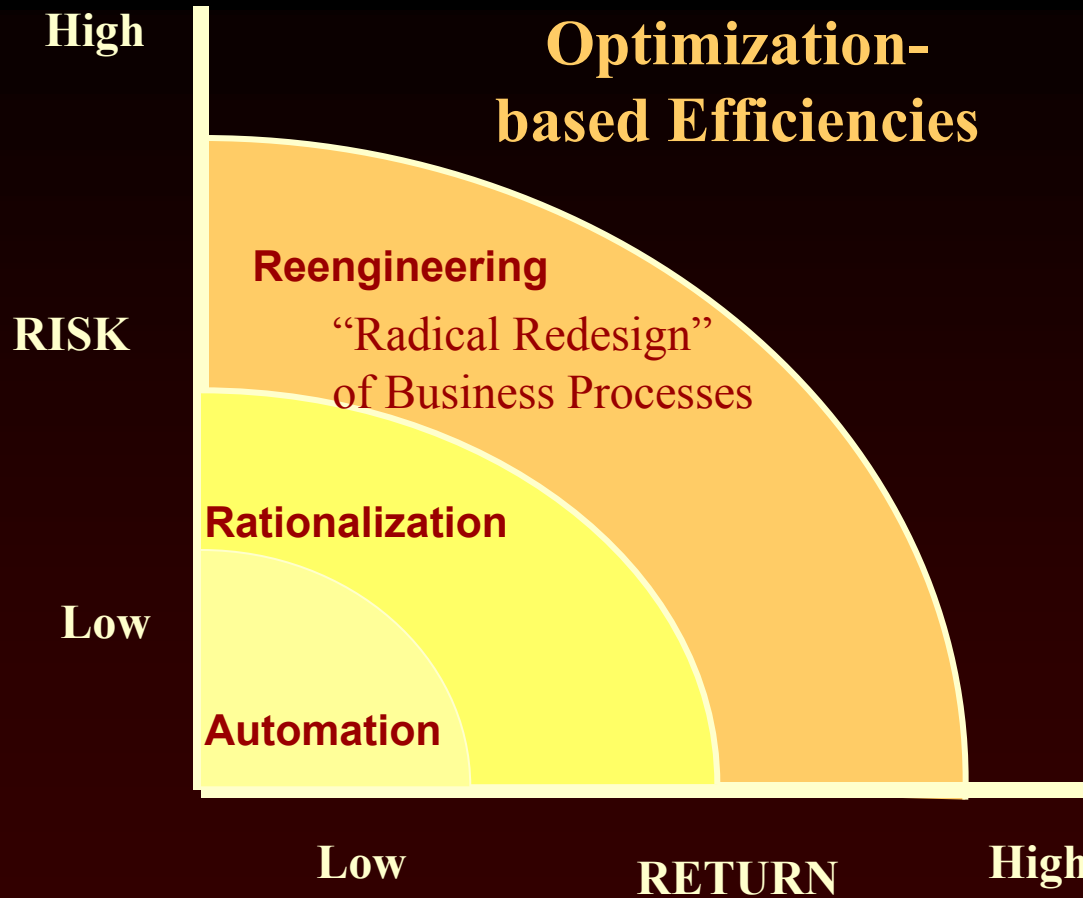
“Re-Everything” for e-Customer Focus

“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

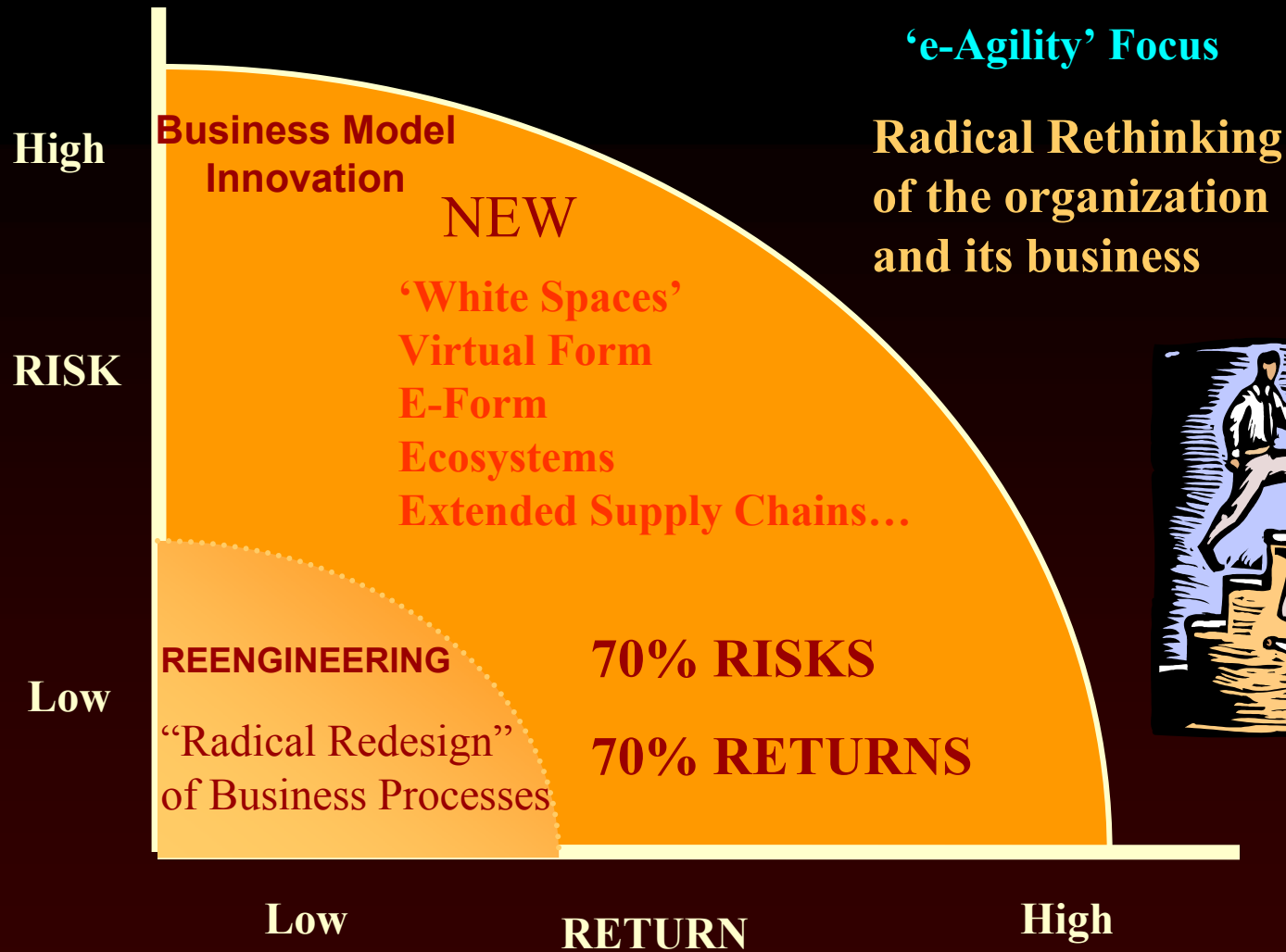
Low

RETURN

High



Beyond Reengineering...



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’

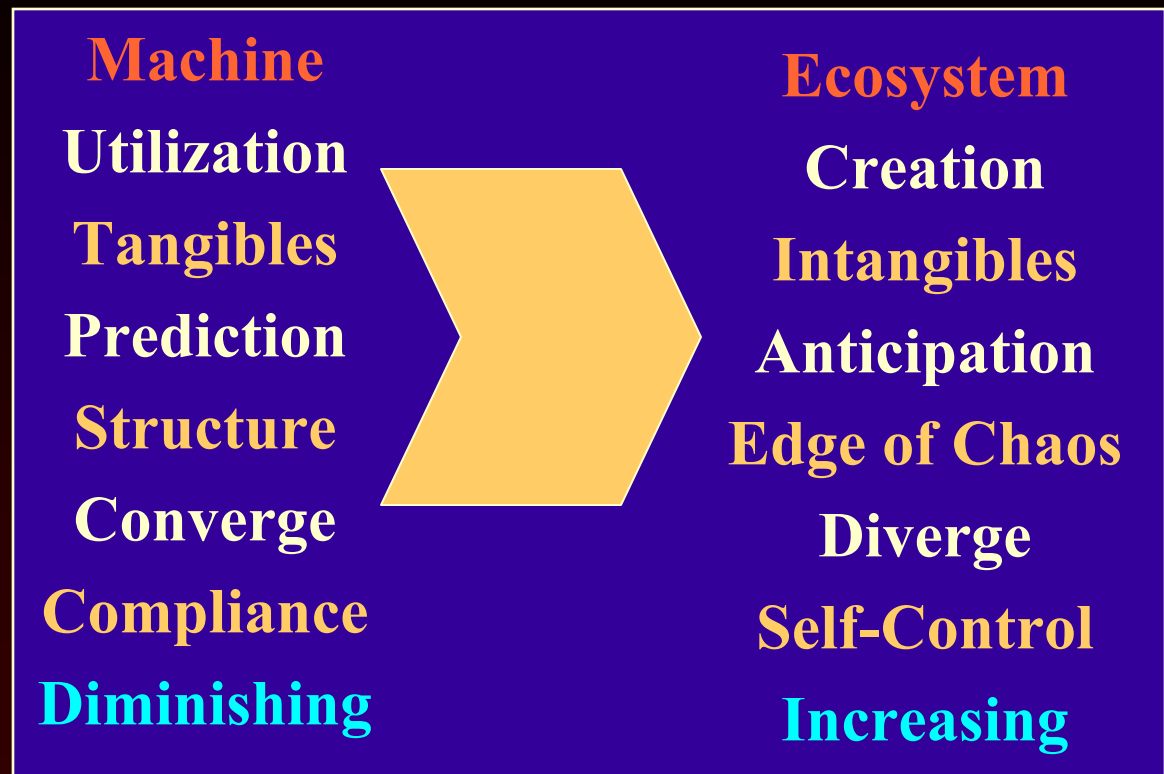
Strategic Context of IT Utilization



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

- ✓ 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

**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

INFORMATION-
PROCESSING
MODEL OF KM



SENSE-MAKING
MODEL
OF KM

**GUIDING FRAMEWORK OF
KNOWLEDGE MANAGEMENT**

INTEGRATION
OF DATA,
ACTIVITIES &
PROCESSES

TIGHT
EFFICIENCIES OF
SCALE & SCOPE



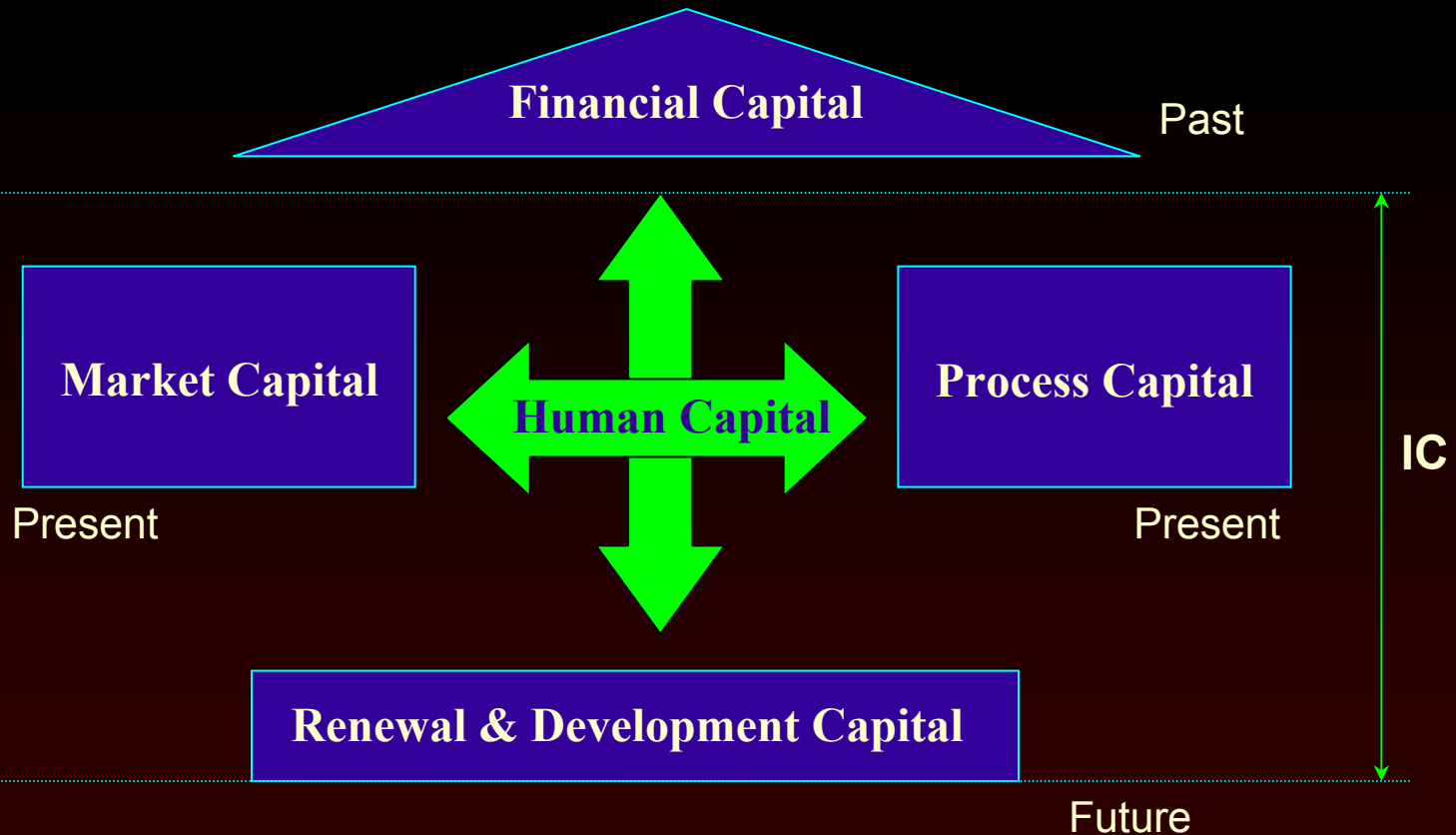
LOOSE
AGILITY &
FLEXIBILITY

CREATIVE
ABRASION &
CREATIVE
CONFLICT

OPTIMIZATION-DRIVEN
PROCESSING FOR
EFFICIENCY

KNOWLEDGE CREATION
& RENEWAL FOR
EFFECTIVENESS

Intellectual Capital & Financial Capital



Intellectual Capital & Intangible Assets

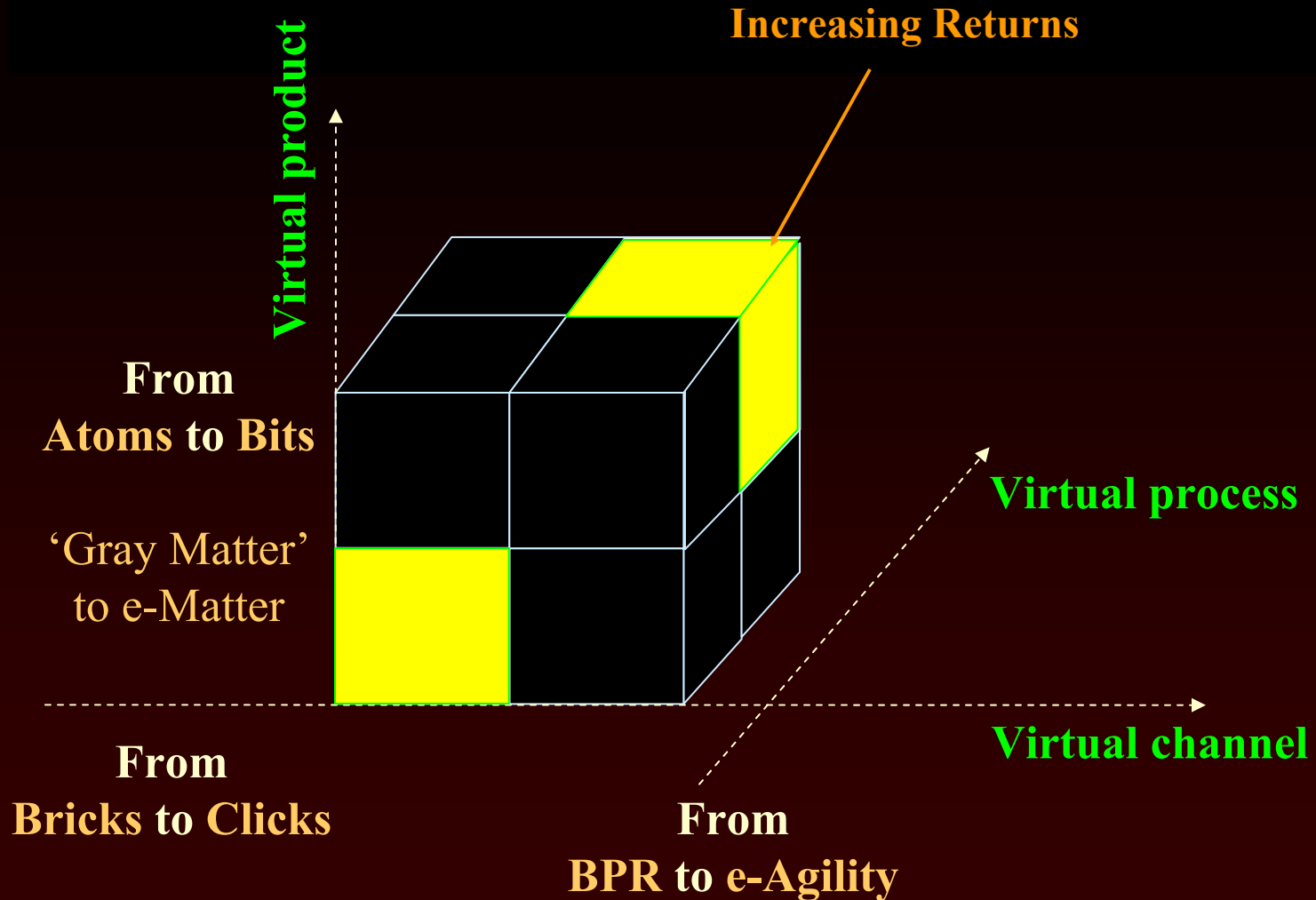
Human Capital: Capabilities of **individuals** to provide **solutions** to the **market** (**Products**)

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

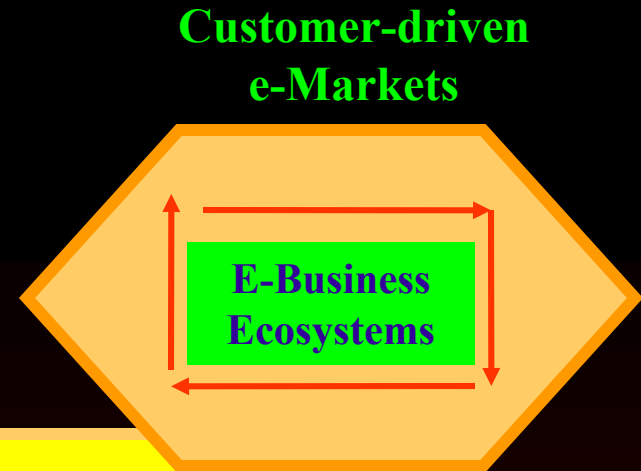
Service enhanced customization

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



Promise & Challenge of Knowledge Markets

- Individual and Organizational Knowledge
- Why people search for knowledge?
- Exchanges of knowledge
- Market forces of knowledge exchange ???
- Formal and informal exchanges of knowledge
- Players in the K-market



Political Economy of Knowledge Markets

- Buyers, sellers and brokers
- Knowledge sharing vs. knowledge hoarding
- Incentives and rewards for K-sharing???
- Formal & Informal roles
- K-experts and K-entrepreneurs
- Price system: reciprocity, repute, altruism
- Deposits in the ‘goodwill’ bank

The K-Price System

- Reciprocity – ‘the favor bank’
- Repute – increasing importance
- Altruism – for the love of it...
- Trust – visible, ubiquitous, from the top...
- Knowledge Market Signals
 - Credentials, positions and education
 - Informal networks – largely unseen
 - Communities of Practice (CoPs) – slackers???

K-Market Inefficiencies & Pathologies

- Incompleteness of information
- Asymmetry of Knowledge
- Localness of Knowledge

- Monopolies
- Artificial Scarcity
- K-trade barriers – NIH, status issues

The Knowledge Edge

- Accounting for K-Assets
- K-assets versus capital assets
- Intangible assets – brands, vision, patents, loyalty, ‘stickiness’, anticipated future...
- Intellectual Capital – Human, Market, Structural

Drivers of KM

- Failing to Know what you Know
- Can't find what is needed...
- Lessons learned but not shared
- Playing the catch up game...
- K-Sluggishness – successes vs. failures
- K-Velocity – I to K to A
- Tacit Knowledge vs. Explicit Knowledge

KM Drivers

- K=Power
- Unlearning vs. Learning
- Compressed Product & Process Life Cycles
- K – Strategy – IT – Linkage
- Product, Service, Industry convergence
- Learning from Past Mistakes
- Predictive Anticipation
- Increasing Returns

