Knowledge Management for e-Business

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

	TQM	BPR
Level of Change	✓ Incremental	✓ Radical
Start From	✓ Existing Process	✓ Clean Slate
Frequency	✓ One-time/Continuous	✓ One-time
Time Required	✓ Short	✓ Long
Participation	✓ Bottom-Up	✓ Top-Down
Typical Scope	✓ Narrow [within]	✓ Cross-functional
Risk	✓ Moderate	✓ High
Primary Enabler	✓ Statistical Control	✓ I. T.
Type of Change	✓ Cultural	✓ Cultural/Structural

From Reengineering to "Re-Everything"

OLD

NEW

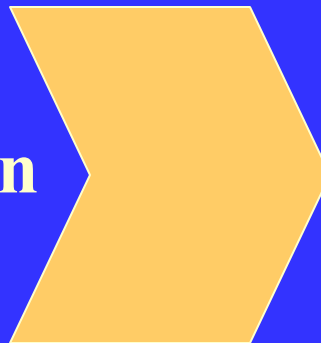**Technology Focus**

e-Customer Focus

Reengineering

Rationalization

Automation

"Re-Everything"
Business Model Innovation

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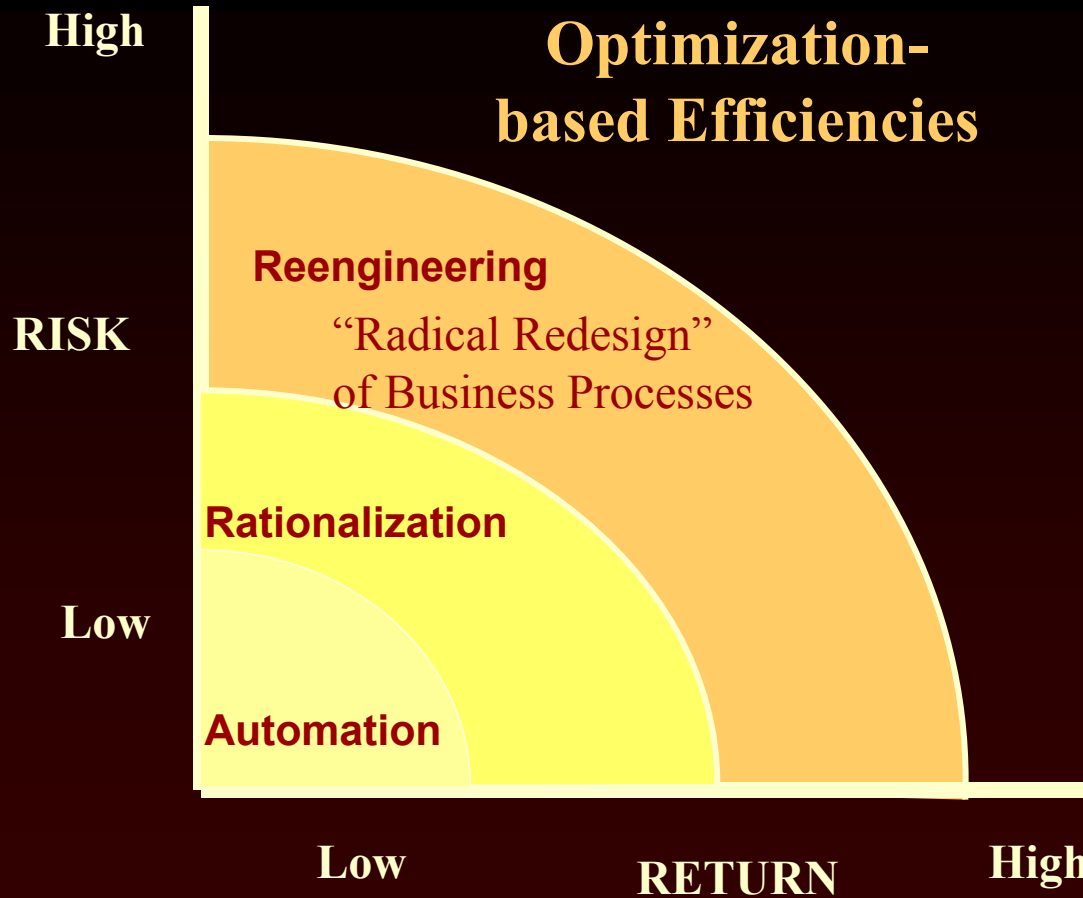Automation   …Replacing humans with machines

"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

Optimization-based Efficiencies

High

RISK

Low

Reengineering

"Radical Redesign" of Business Processes

Rationalization

Automation

Low   RETURN   High

Beyond Reengineering…

"External" Focus

Re-everything

Business Model Innovation

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

REENGINEERING

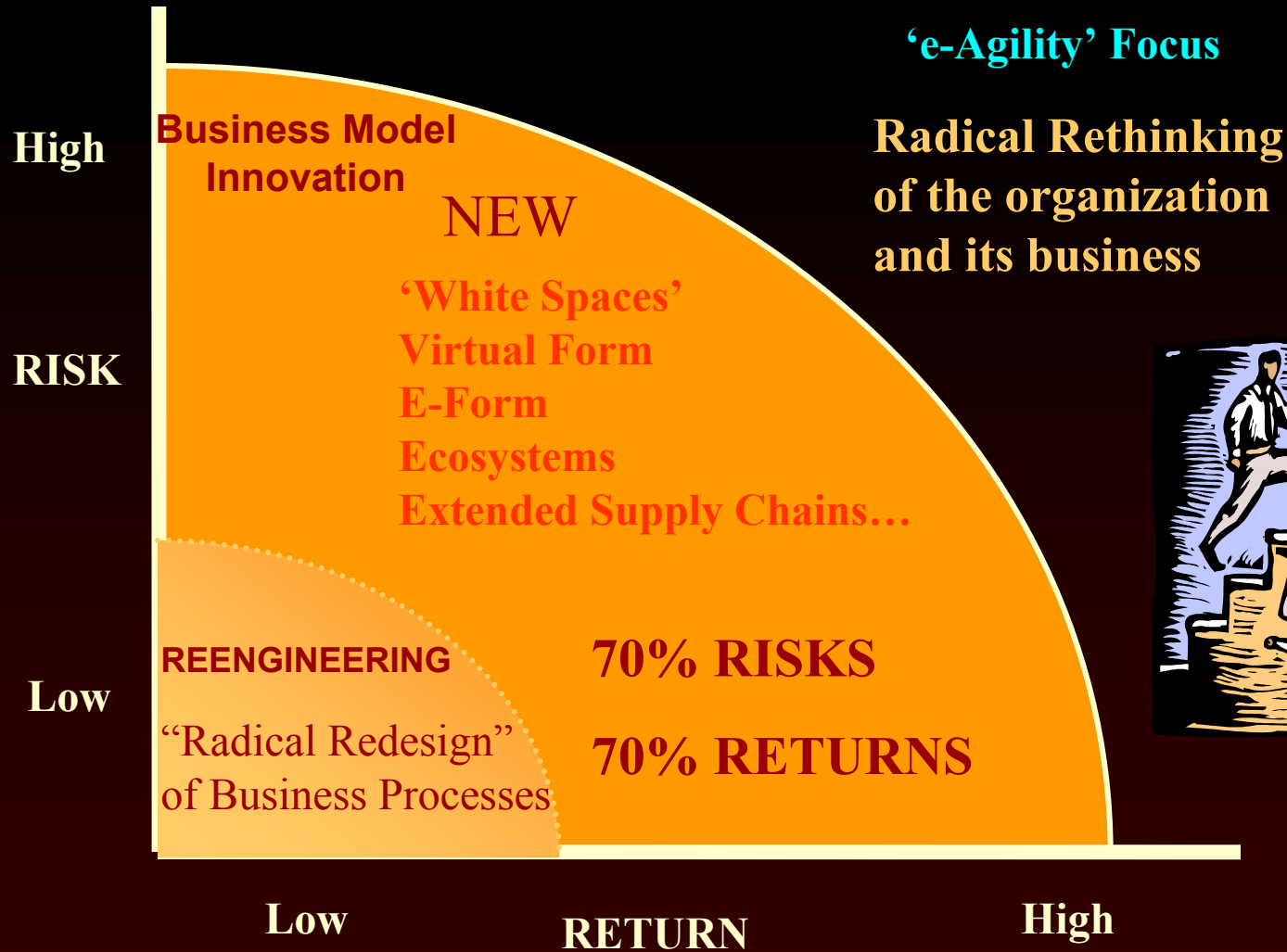"Radical Redesign" of Business Processes

RATIONALIZATION

AUTOMATION

High

RISK

Low

Low   RETURN   High

Beyond Reengineering…

'e-Agility' Focus

High

Business Model Innovation

NEW

Radical Rethinking of the organization and its business

**'White Spaces'
Virtual Form
E-Form
Ecosystems
Extended Supply Chains…**

RISK

Low

REENGINEERING

"Radical Redesign" of Business Processes

70% RISKS

70% RETURNS

Low   **RETURN**   **High**

'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
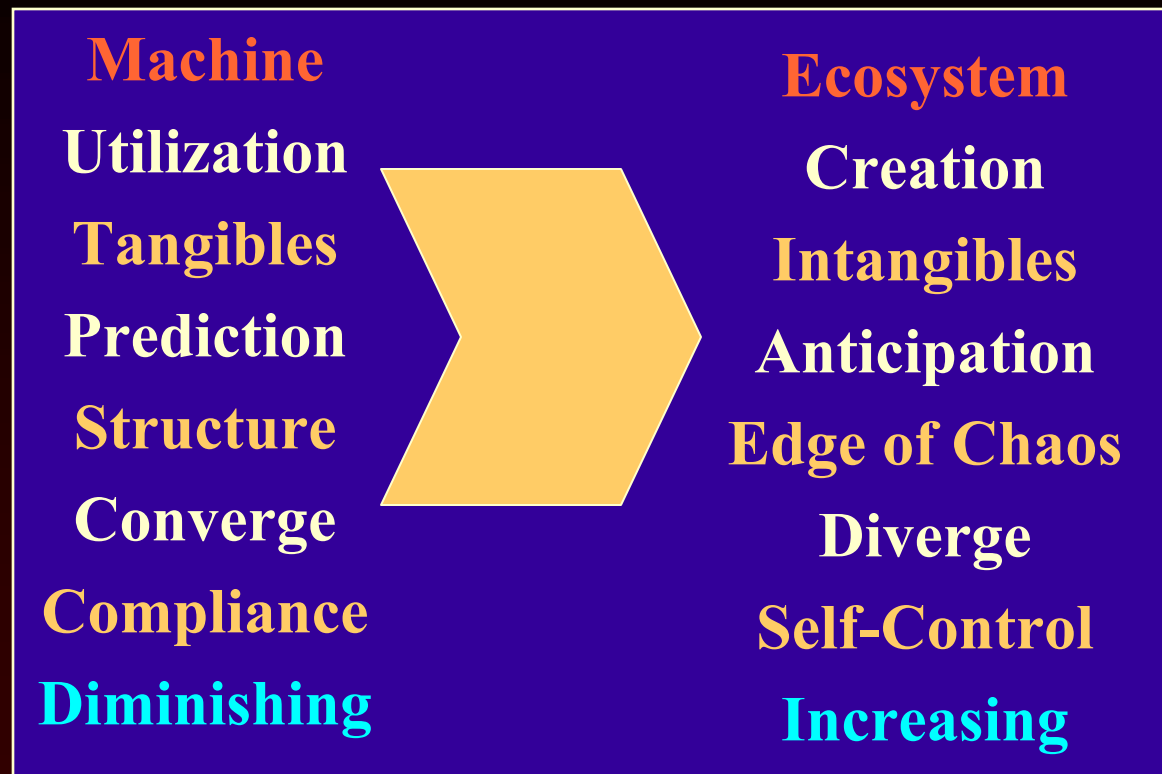- Splitting of the 'atoms' and the 'bits'
- Click-and-mortar vs. 'Pure Plays'

Strategic Context of IT Utilization

'Old' Biz

e-Biz

Metaphor	Machine	Ecosystem
Knowledge	Utilization	Creation
Assets	Tangibles	Intangibles
Strategy	Prediction	Anticipation
Design	Structure	Edge of Chaos
Role of IT	Converge	Diverge
Management	Compliance	Self-Control
Returns	Diminishing	Increasing

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

	BPR	e-Agility
Level of Change	✓ Radical	✓ Radical / Incremental
Start From	✓ Clean Slate	✓ Existing Model
Frequency	✓ One-time	✓ Ongoing
Time Required	✓ Long	✓ Short / Long
Participation	✓ Top-Down	✓ All Levels
Typical Scope	✓ X-functional	✓ X-Network
Risk	✓ High	✓ High / Critical
Primary Enabler	✓ IT	✓ IT / Human Capital
Type of Change	✓ 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'
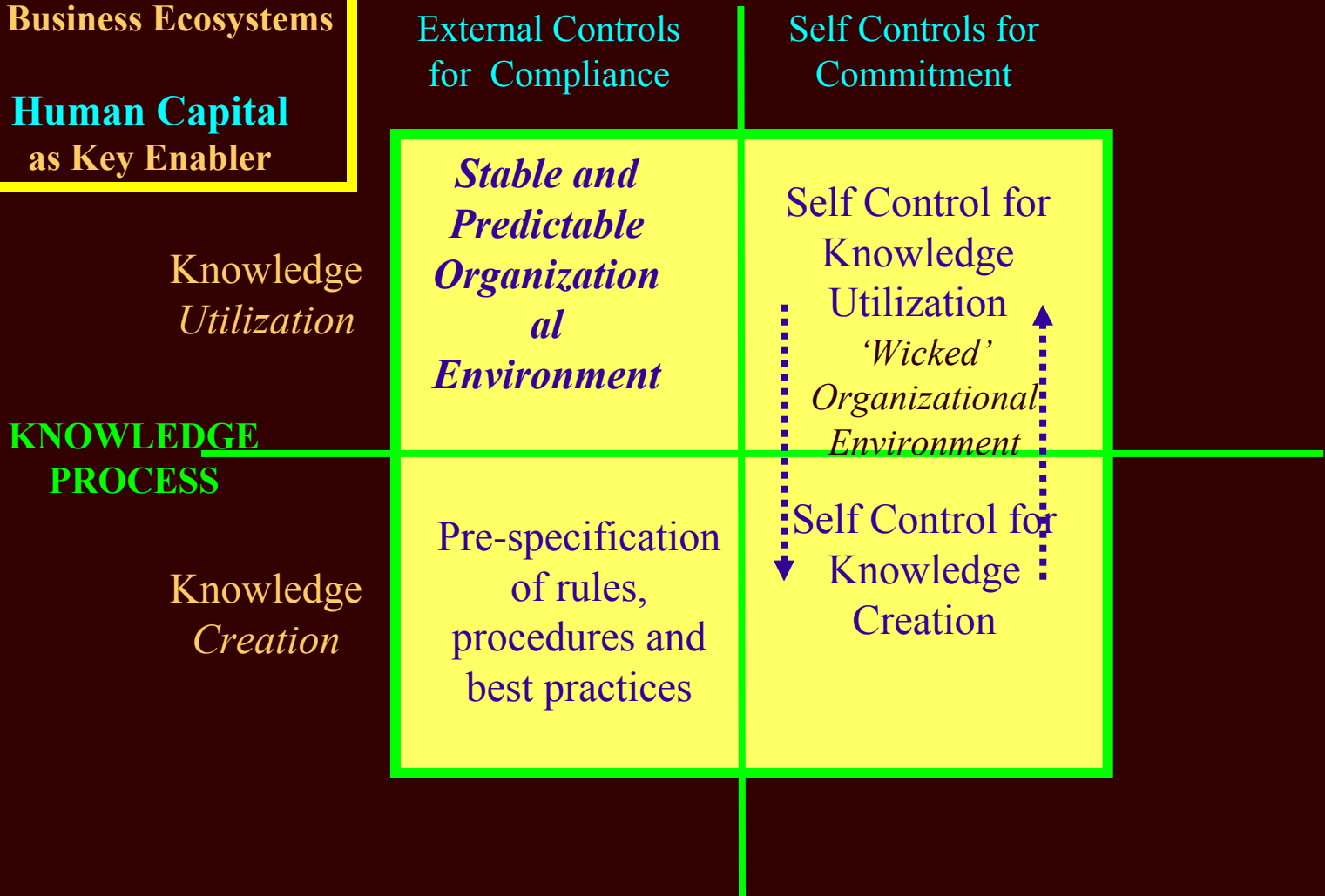 - People are central, Technology is also important

e-Biz (R)evolution

FROM COMPLIANCE TO COMMITMENT

	External Controls for Compliance	Self Controls for Commitment
Knowledge *Utilization*	***Stable and Predictable Organizational Environment***	Self Control for Knowledge Utilization *'Wicked' Organizational Environment*
Knowledge *Creation*	Pre-specification of rules, procedures and best practices	Self Control for Knowledge Creation

KNOWLEDGE PROCESS

Knowledge Management
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
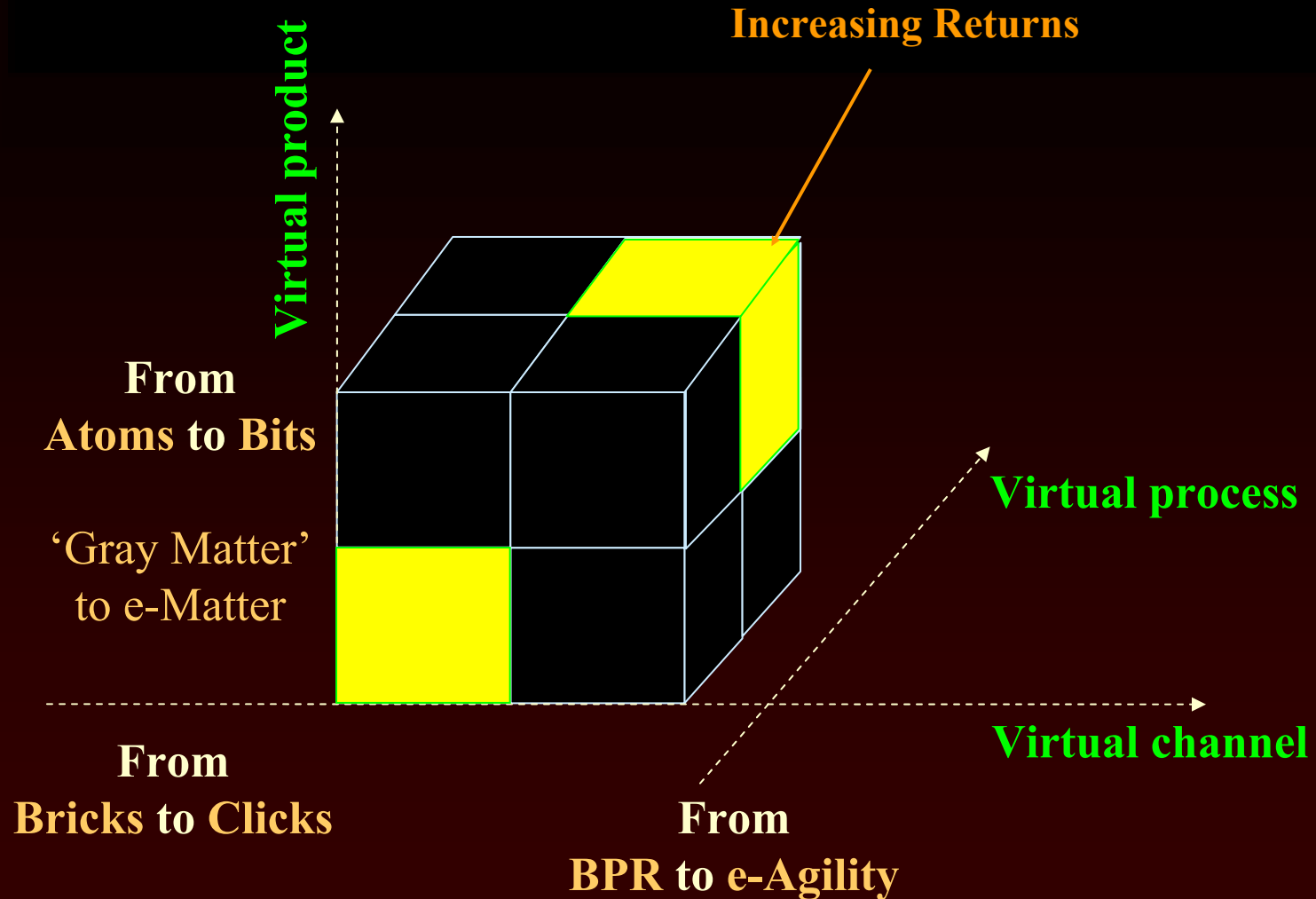
TIGHT EFFICIENCIES OF SCALE & SCOPE	⟷	**ADAPTIVE** AGILITY & FLEXIBILITY

CREATIVE ABRASION & CREATIVE CONFLICT

PROCESS REENGINEERING
WORKFLOW REDESIGN
AUTOMATION

BUSINESS MODEL
INNOVATION
FOR 'RE-EVERYTHING'

Dimensions of e-Business Performance

Increasing Returns

Virtual product

From Atoms to Bits

'Gray Matter' to e-Matter

Virtual process

Virtual channel

From Bricks to Clicks

From BPR to e-Agility

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

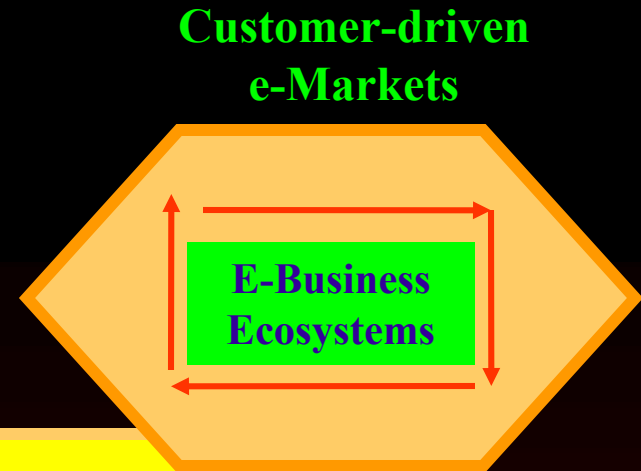**Supplier Coopetition**
in Business Ecosystems

Human Capital
as Key Enabler

Customer-driven
e-Markets

E-Business
Ecosystems

Customer
Driven

Service
enhanced
customization

Value
Creation

Supplier
driven

Mass
production

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

Working Knowledge

How Organizations Mange What They Know

[And What They Don't Know… Yet]

Working Knowledge - Introduction

- State of the KM movement – fad and back
- Implementations of KM
- Current Trends – Publications etc.
- From Data to 'Human Interaction'
- Communities hold answers… do they?
- Looking beyond technology…
- Cultural and organizational change…
- Technological Innovation

Working Knowledge - Introduction

- So far… KM projects… plateau
- From redesign to business model innovation
- Integrate with strategy, process, culture, behavior
- Link K to Business Strategy
  - K is the product
  - K is not the product
- Link K to Work Processes
- Link K to Culture
- Link K to Behavior
- Link K to Physical Business Environment ?

Working Knowledge - Introduction

- Why interest in Knowledge?
- Why now?
- When K walks out the door with people
- Can technology replace K ??
- From D, K, I to Insights
- "Organizations that know how to do things"
- Performance focus – metrics

Data, Information, Knowledge

- Data is not Information

- Information is data endowed with relevance and purpose

- Knowledge derives from minds at work.

- Knowledge in Action