

The Evolution and Application of Knowledge Management in Logistics



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KM CONTEXT

- Management has long grappled with the problems of the division of knowledge:

'managers assume ...the burden of gathering together all of the traditional knowledge ... possessed by the workmen and then of classifying, tabulating, and reducing this knowledge to rules, laws, formulae'

Frederick Taylor 1911

KNOWLEDGE BANK

There has long been academic debate about the nature of knowledge:

- Carl Ludovici was appointed to a chair in 'Knowledge of the World' in Leipzig in 1733.
- Royal Society was described as a 'knowledge bank' as early as 18th Century.

Peter Burke 'A social history of knowledge', 2000

KM REVOLUTION

'What characterises the current technological revolution is not the centrality of knowledge and information but the application of such knowledge and information to knowledge generation...

....For the first time in history, the human mind is a direct productive force, not just a decisive element of a production system.'

(Castells, 1996: 32).

Policy implications

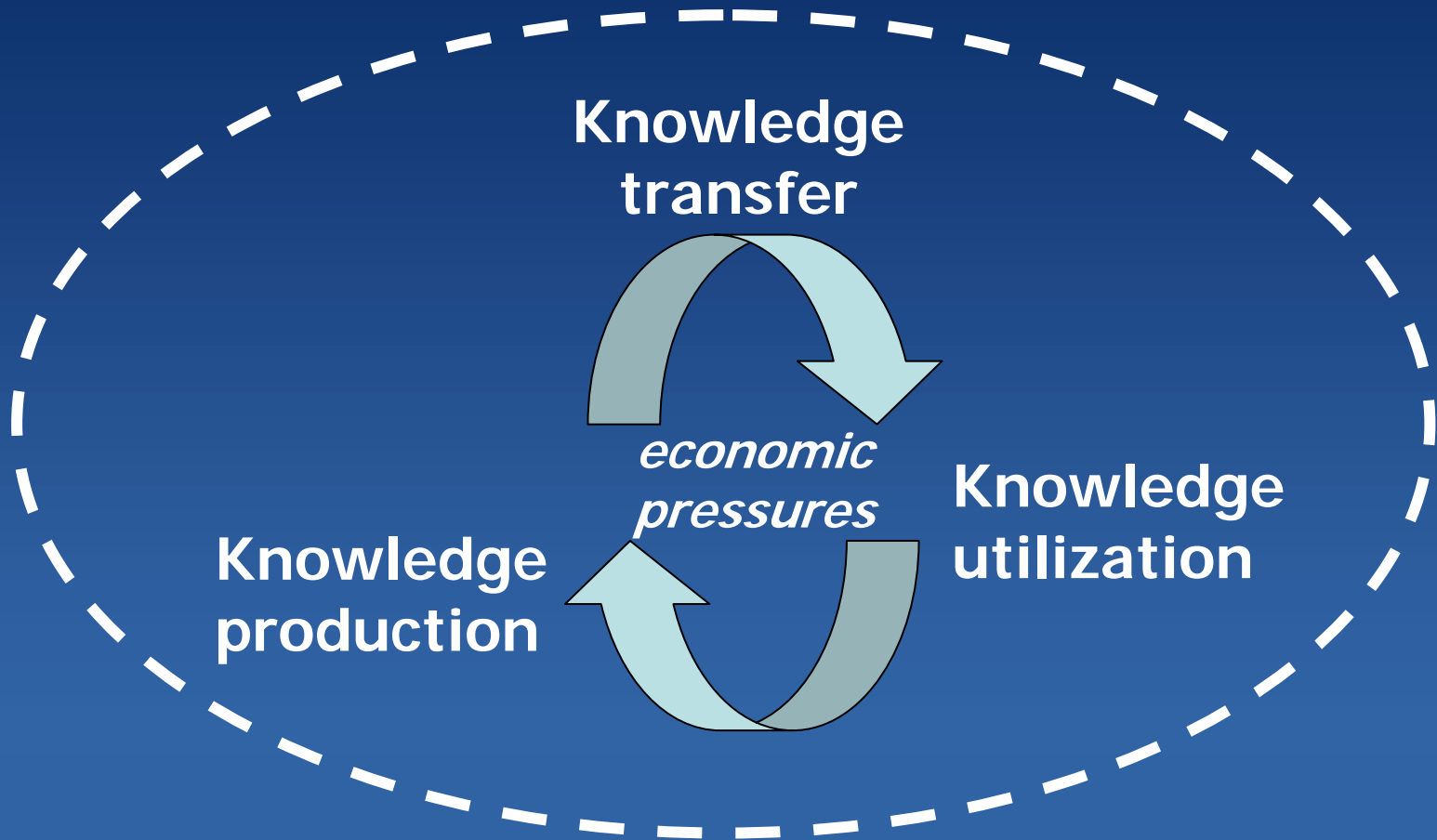
- Highlights our ability to process knowledge as distinctive feature of the new economy.
- Competitiveness comes not from *possession* but from the *intensification* of knowledge and learning.
- This involves developing and managing knowledge and learning as directly productive resources for the firm, and not as a cost or an accidental by-product of its activities.

BUT

- Knowledge is embedded in social and institutional contexts.

Evolution of knowledge

Social and institutional contexts



NEW VIEW OF KM

Narrow view of KM

- Knowledge as a free-floating entity
- Knowledge a resource to be extracted, codified & transferred through generic tools/systems
- KM can be grafted onto existing structures or practices
- Knowledge is shared through more efficient communication systems

NEW view

- Knowledge is linked to context-specific practices
- Transfer of knowledge may require changes in context
- Making knowledge a resource involves changes in management practices
- Evolution of knowledge linked to changes within & between organizations

INTEGRATION

- **Integrating knowledge for innovation**
- **Shaping knowledge through dialogue**
- **Mobilizing knowledge in projects**
- **Management knowledge in action**
- **Measurement of intangible assets**
- **Knowledge-based strategy**

Integrating knowledge for innovation

Innovation and change programmes draw on organizations' capabilities to process knowledge in new and different ways.



Shaping knowledge through dialogue

Dialogue within and between groups and organizations is important in shaping the knowledge that they apply in practice.



Mobilizing knowledge in projects

Project-based forms of organization are crucial in applying disparate sources of knowledge to new challenges.



Management knowledge in action

What are the factors which influence the production and application of management knowledge in different contexts.



Measurement of intangible assets

The challenge of quantifying knowledge-based assets is important if we are to manage knowledge as a resource rather than a cost.



Knowledge-based strategy

Competitive strategies depend on the firm's ability to continuously acquire and apply knowledge to deal with market uncertainties.



Modern KM Challenges

Constant innovation and changing market forces have drive companies into fierce competition in the world economy.

In today's global competitive market, organization are challenged by :

- A. mass customization, rapidly
 - B. shrinking product life cycles
 - C. inventory cost
 - D. depreciation
 - E. supply and demand misalignment
 - F. complex multi-source supply chains
- rising expectations of customers



KM In Supply Chain

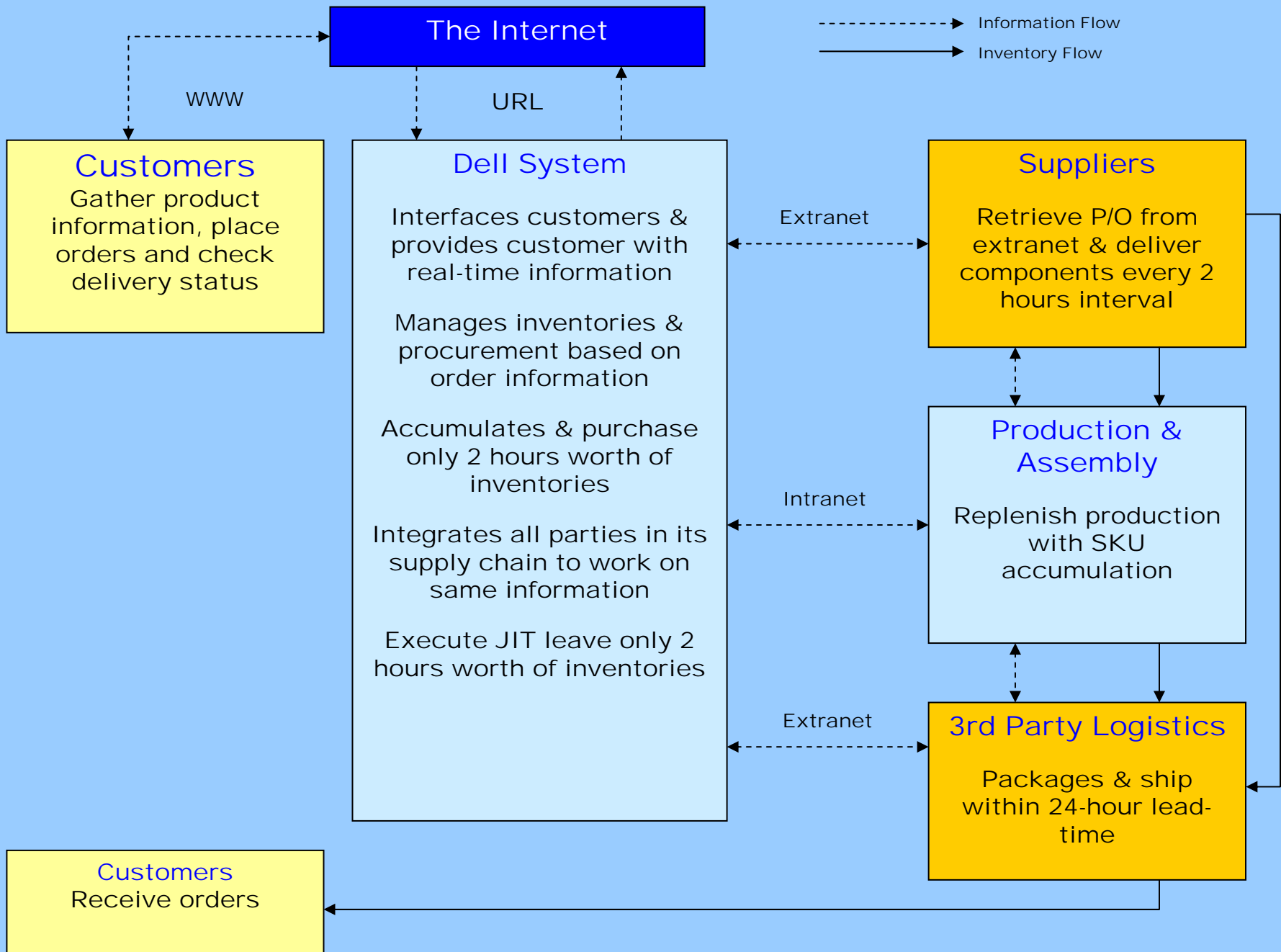
Automate the supply chain in the many ways such as

- A e-fulfillment
- B e-procurement
- C on-line inventory management
- D on-line tracking.



The Five Steps in Re-engineering

Step 1	Define	Define functional objectives Determine the functional management strategy Streamline and standardize processes Establish the process, data and information system baselines Establish improvement framework
Step 2	Analyze	Analyze business processes to eliminate non-value added processes Simplify and streamline limited value added processes Examine processes to identify more effective and efficient alternatives processes, data and system baselines
Step 3	Evaluate	Evaluate alternatives to baseline processes through a preliminary functional economic analysis Select a preferred course of action
Step 4	Plan	Establish implementation plan Develop detail statement of requirements, baseline impact, costs, benefits and schedule
Step 5	Approve	Finalize functional economic analysis that supports senior management approval decision Propose process improvements and any associated system changes



Nonaka and Takeuchi

Nonaka and Takeuchi, the authors of the best seller *The Knowledge-Creating Company* has re-emphasized that only human beings can take the central role in knowledge creation.

A. Computers are merely tools.

B. knowledge resides in the user's subjective context of action based on that information.

C. Peter Drucker has argued organizations were hobbled by their past recipes of success. Archetypes of such organizations have included IBM and GM that have created historical records in terms of annual corporate losses.

Transition from Incremental to Radical Change

Change Management	TQM	BPR
Level of Change	Incremental	Radical
Starting Point	Existing Process	Clean Slate
Frequency of Change	One-time/Continuous	One-time
Duration of Change	Short Period	Long Period
Participation	Bottom-up	Top-Down
Scope of Change	Narrow [Within]	Cross-functional
Risk Involvement	Moderate Risk	High Risk
Primary Enabler	Statistical Control	Information Technology
Type of Change	Cultural	Culture/Structural

KM Competitiveness

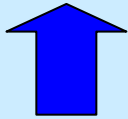
In this new world of business, most enterprises success or failure would be depend upon their ability to:

- A. adapt to the new competitive environment led by technological advances and shorter product life cycles.
- B. competitive survival and ongoing sustenance would primarily depend on their ability to continuously redefine and adapt organizational goals, purposes, and an organization's "way of doing things."
- C. It is crucial for companies to develop and grow systems that can be readily adapted for the dynamically changing business environment.
- D. Organizations operating in the new business environment therefore need to be adept at creation and application of new knowledge as well as ongoing renewal of existing knowledge archived in company databases
- E. It is a transition from the old economy of information processing to knowledge creation
- F. *We have to ensure that our KM systems account for the renewal of existing knowledge and the creation of new knowledge.*

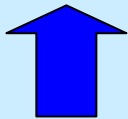
SCM process

Traditional SCM

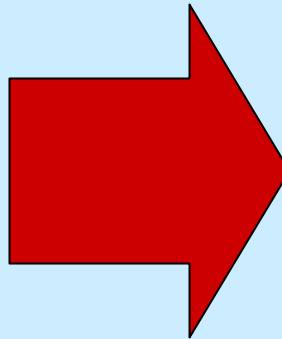
Redesign of Process
Information processing
for process change



Rationalization
Streamlining
bottlenecks



Automation
Replacing humans with
machines



SCM Re-engineering

Knowledge Creation

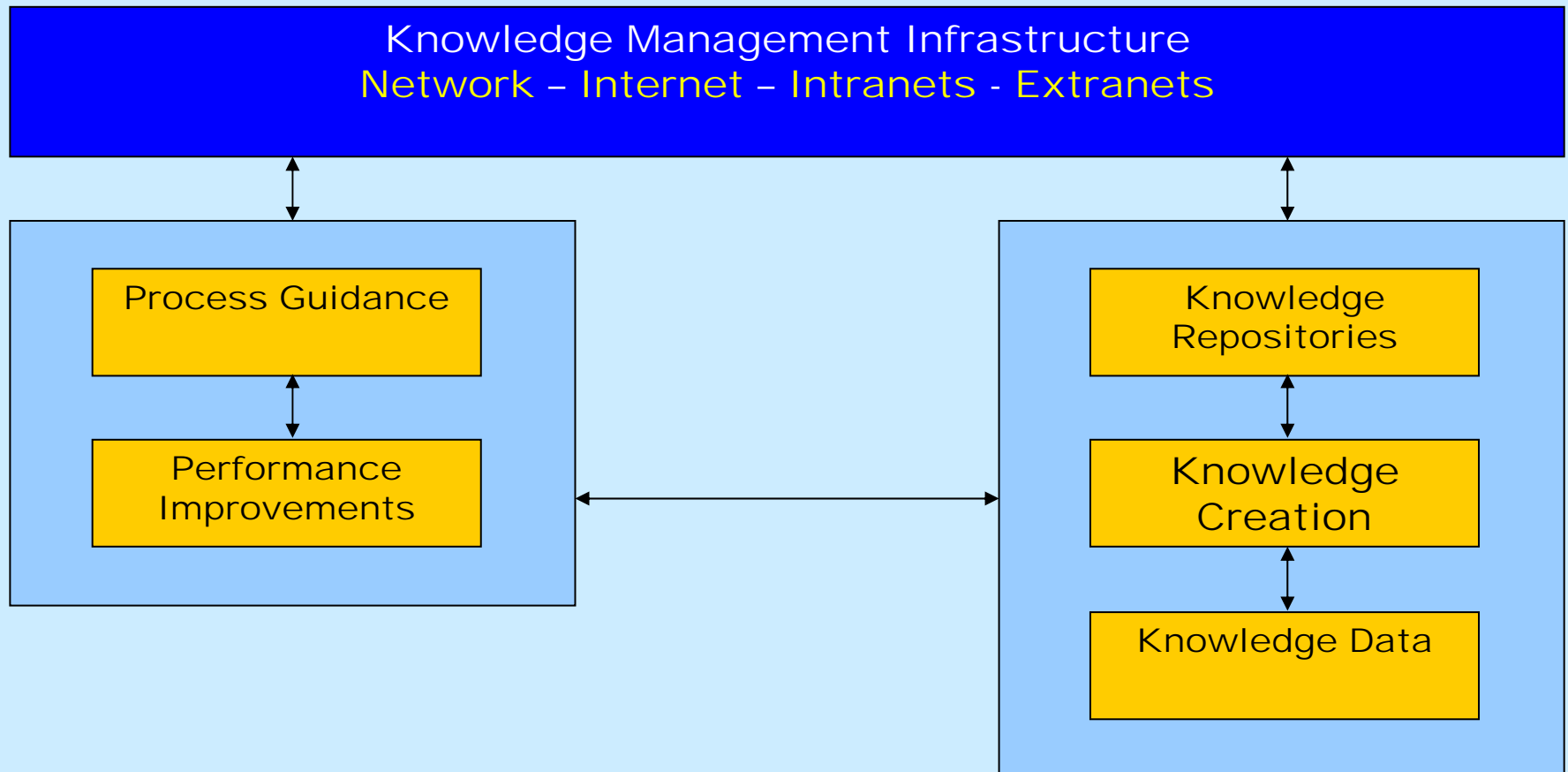
Knowledge Data Bank
Employee Contribution

Paradigm shift to new
processes

CASE STUDY: CISCO RE-ENGINEERED SUPPLY CHAIN SYSTEMS

Cisco had developed, and deployed a knowledge portal that provides service and support managers with a single source for learning, performance support, and ongoing knowledge sharing needs.

Cisco KM Model



Cisco Supply Chain Management (SCM) Model

Using the SCM model technology to integrate its core processes and culture was the standard set by Cisco for business transformation and the result was outstanding: -

- 90% of orders were placed online
- Monthly online sales exceed US\$1 billion
- US\$1.4 billion in financial benefits have been realized
- 82% of support calls are now resolved over the internet
- Customer satisfaction increased significantly

Conclusion

Despite significant advancement in technologies and substantial investment by companies in such technologies we need to identify:

- A. How to we capture, store and transfer knowledge?
- B. How to ensure that knowledge workers share knowledge?
- C. Based on the Dell and Cisco the NDB (never done before) syndrome and the YDI (NDB yet I did it) syndrome encourages questioning of all given assumptions, regardless of their legitimization,
- D. This model encourages continuous pursuit of *better* practices that are aligned with dynamically changing business environment.
- E. By explicitly encouraging experimentation and rethinking of premises, it promotes reflection-in-action and creation of new knowledge.
- F. *There's a great big river of data out there. Rather than building dams to try and bottle it all up into discrete little entities, we just give people canoes and compasses.*

“Knowledge management caters to the critical issues of organizational adaptation, survival, and competence in face of increasingly discontinuous environmental change. Essentially, it embodies organizational processes that seek synergistic combination of data and information-processing capacity of information technologies, and the creative and innovative capacity of human beings.”

