



E-Business Value in Dynamic Business Environment

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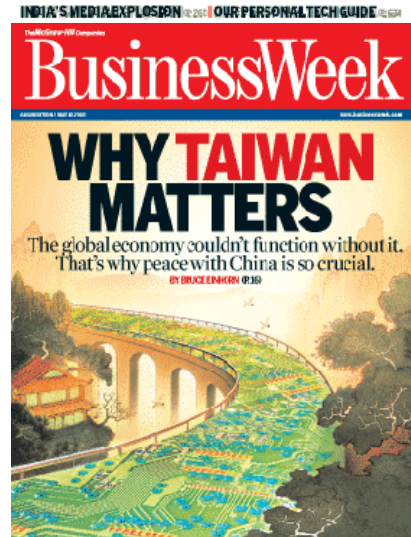
Challenges Facing Today

- **Cost Reduction**
 - Eliminate duplicate systems
 - Re-use, don't re-build
- **Reduce cycle time and costs for external business processes**
 - Move from manual transactions with suppliers towards automated transactions
 - Facilitate flexible dealings with partners with minimal process or IT impact
- **Support an agile business model**
 - Many existing IT systems are inhibitors to change: complex and inflexible
 - Existing integrations can be inhibitors to change: multiple technologies, point-to-point integration, inflexible models
- **Integrate across the enterprise**
 - Integrate historically separate systems
 - Completion of mergers and acquisitions
 - Across physical and technology barriers



Taiwan's Tech Clout

- #1 Provider of chip foundry services, with **70% of the market** worth **\$8.9 billion**
- #1 Provider of notebook PCs, with **72% of the market** worth **\$22 billion**
- #1 Provider of LCD monitors, with **68% of the market** worth **\$14 billion**
- #2 Provider of servers, with **33% of the market** worth **\$1.8 billion**
- #2 Provider of digital still cameras, with **34% of the market** worth **\$2 billion**
- #1 Provider of PDAs, with **79% of the market** worth **\$1.8 billion**



Example: Taiwan PC Industry

- **Why it matters?**
 - Global No. 1 IT supplier
 - LCD screens, routers, notebook, cable modems, to name a few
 - The revenues of Taiwan's 25 key tech companies should hit \$122 Billion this year
 - 40% to 80% of China's exports in ICT industry are made in Taiwanese-owned factories
- **Challenges ahead**
 - Most of production has shifted to China
 - Coordination becomes more complex and dynamic
 - Global logistics issues
 - Fierce competition, squeezed margin, and scale economics
 - Real-time responsiveness is more important than efficiency



The Best Supply Chain Aren't Just Fast and Cost-Effective



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Trends in E-Business

Trends in E-Business

- **R&D Activity** : from internal R&D process integration to the sharing of design data and product information among customers and suppliers
- **Procurement**: from operational-oriented e-procurement, to strategic-oriented e-sourcing
- **Production** : from internal capacity planning optimization to advanced production planning, which integrate the entire supplier group
- **Logistics** : from the management of regular activity such as in-transit status updates to exception management such as event-driven technology

Missions in E-Business Technology Development

- ✓ *How to Enhance Supply Chain Visibility and Sharability?*
- ✓ *How to Effectively Collaborate?*
- ✓ *How to Be a Real-time Enterprise?*

More internally focused integration → More externally focused integration

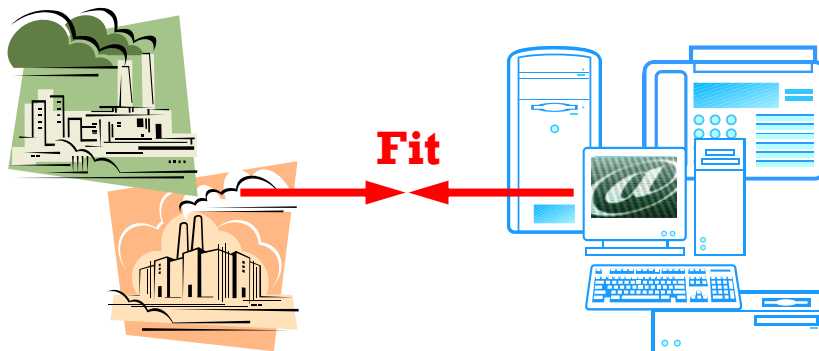


Observations

- **Observation 1:** IT by itself cannot meet the challenge, as its real power is an enabling human judgment and decision making, not replacing it.
- **Observation 2:** It is likely to find that even when firms have implemented the same IT, the outcome of their e-business development differs



“Fitness” between IT and Business Environment



A “right” IT should be able to handle alternative uncertainties arising from business environment



Studies of IT and Uncertainty

- **External** environment
 - From the views of *transaction cost economics (TCE)*:
 - Environment
 - Partnership
- **Internal** environment
 - From the views of *resource-based perspective (RBP)* and *dynamic capabilities approach (DCA)*:
 - Process
 - Knowledge



The Fit Concept in Previous Studies

- **Task-technology fit (TTF) theory**

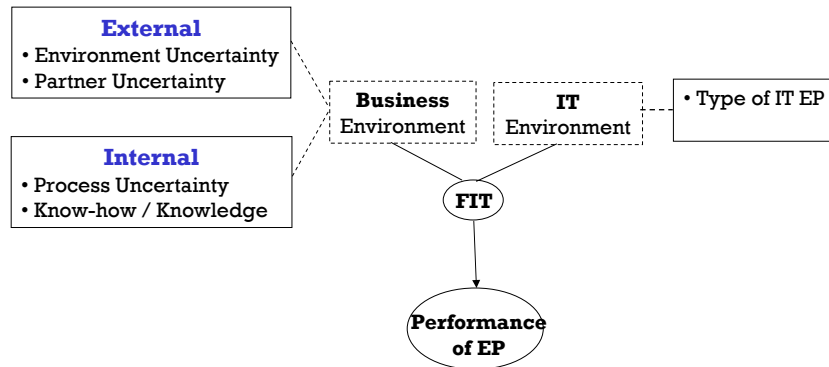
The individual level:	Goodhue (1995), Goodhue and Thompson (1995).
The process level:	Gribbins et al. (2004)
The group level:	Zigurs and Buckland (1998), Dennis et al. (2001).

- **Information processing theory**

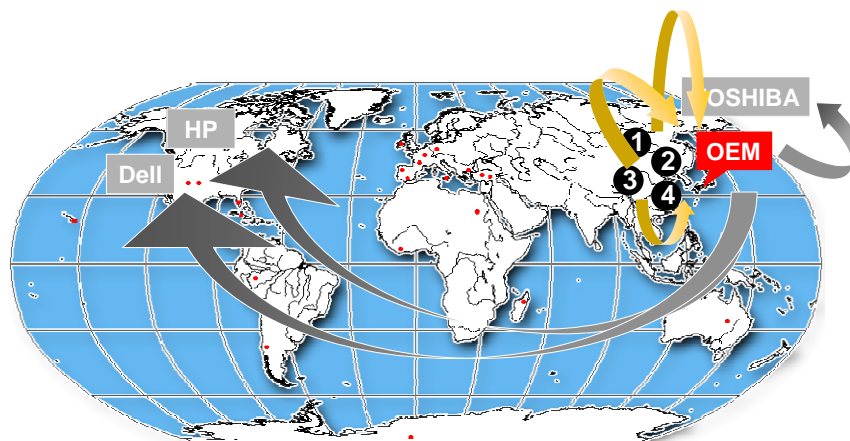
Bensaou and Venkatraman (1995),
Premkumar et al. (2005)



Business-IT Fit Model



A Case Study: E-Procurement Systems in Greater China



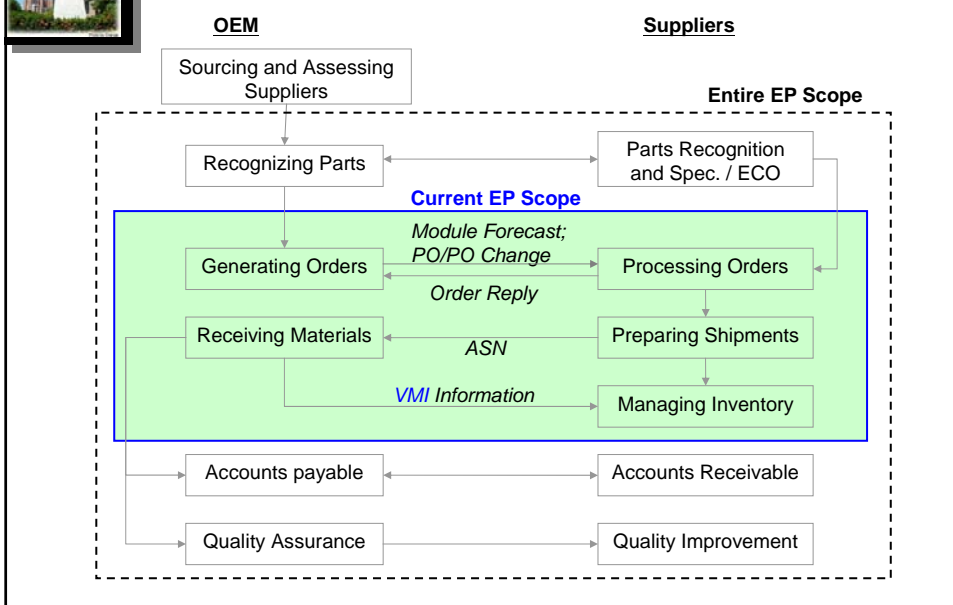


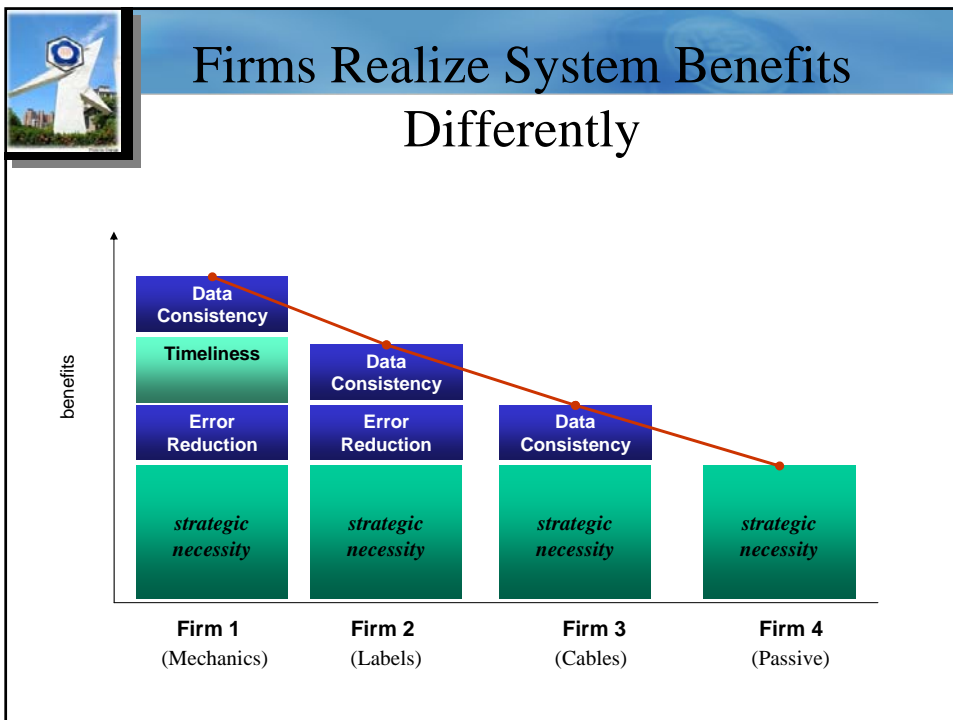
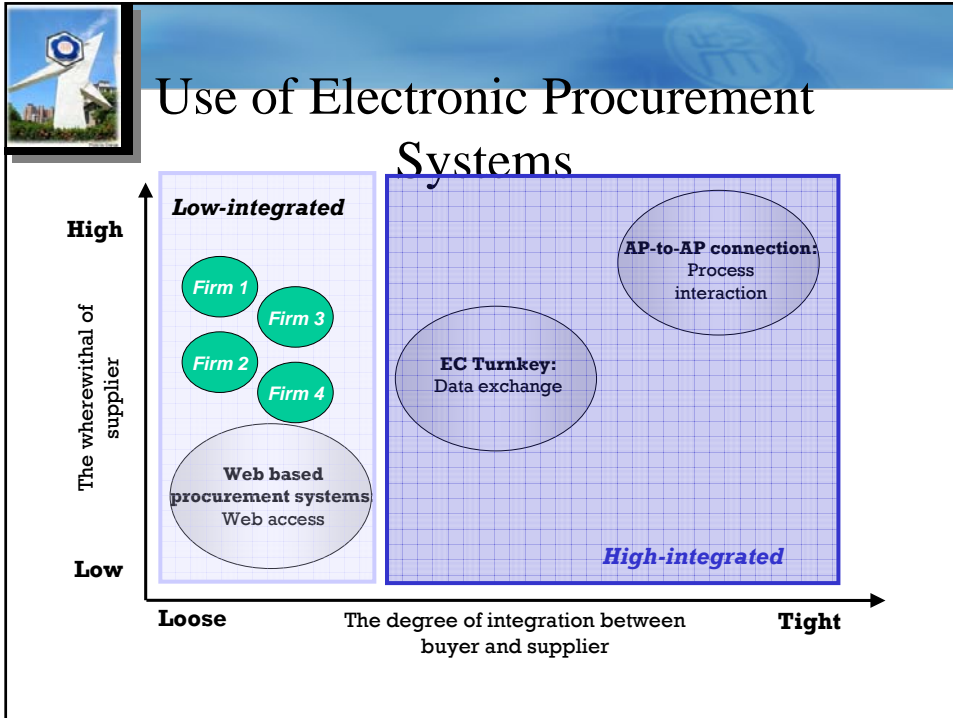
Sample Companies

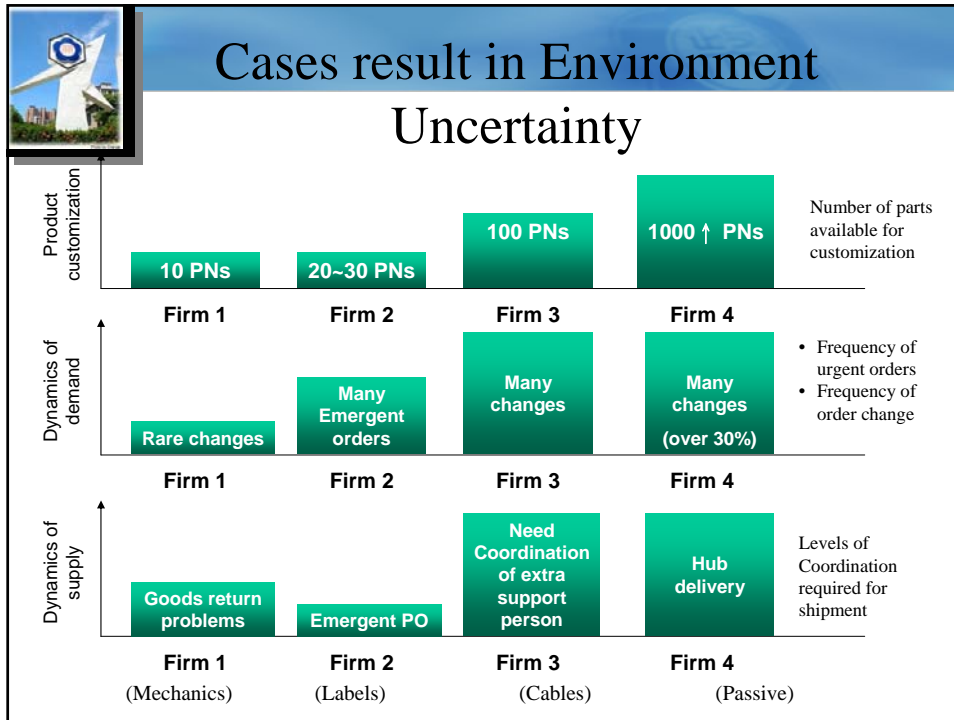
Firm	1	2	3	4
Industry	Computer peripheral	Printing	Computer peripheral	Manufacturing
Capital	2.82	0.49	32.3	31.7
Employees	21,000	240	200,000	7,000
Major products	<ul style="list-style-type: none"> •Aluminum Die Casting •Magnesium Die Casting 	<ul style="list-style-type: none"> •Labels •Nameplates, Overlays, and Tear-drop Doming •In Mold Labeling •In Mold Decoration 	<ul style="list-style-type: none"> •Cable •Connector •Flexible PCB 	<ul style="list-style-type: none"> •Multilayer Chip Capacitors •Electrolytic Capacitor •Fixed Resistors •Leaded Resistors •Inductor •HF Products
Material category in the central firm's typology	Mechanical	Packaging	Electrical engineering	Electrical engineering
Delivery instructions	Direct Shipping	Direct Shipping	Direct Shipping	VMI HUB



System Background in the Cases





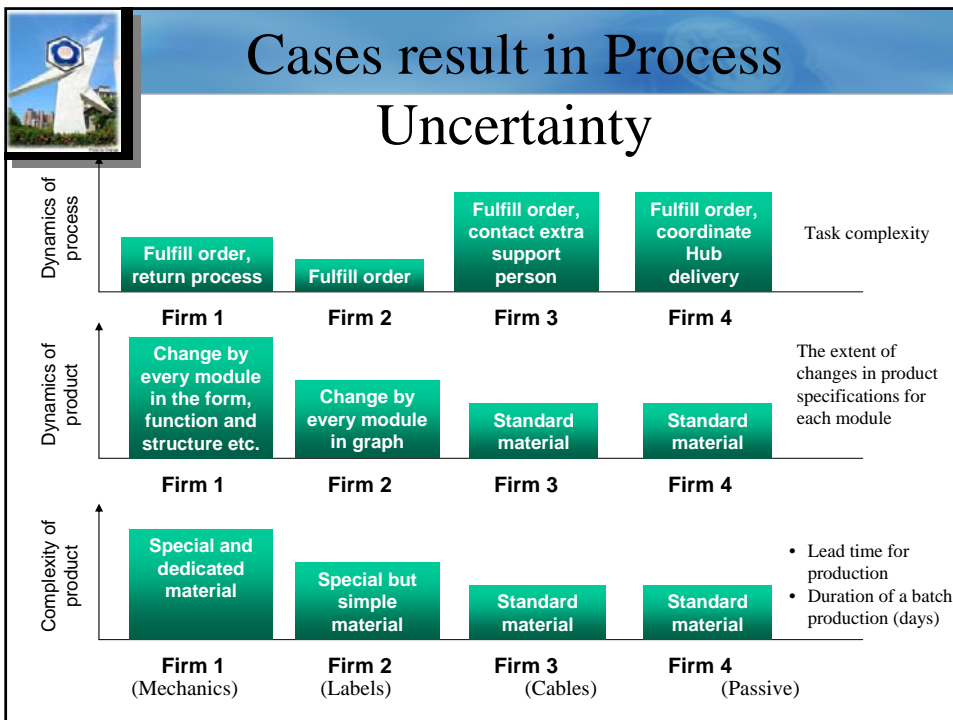
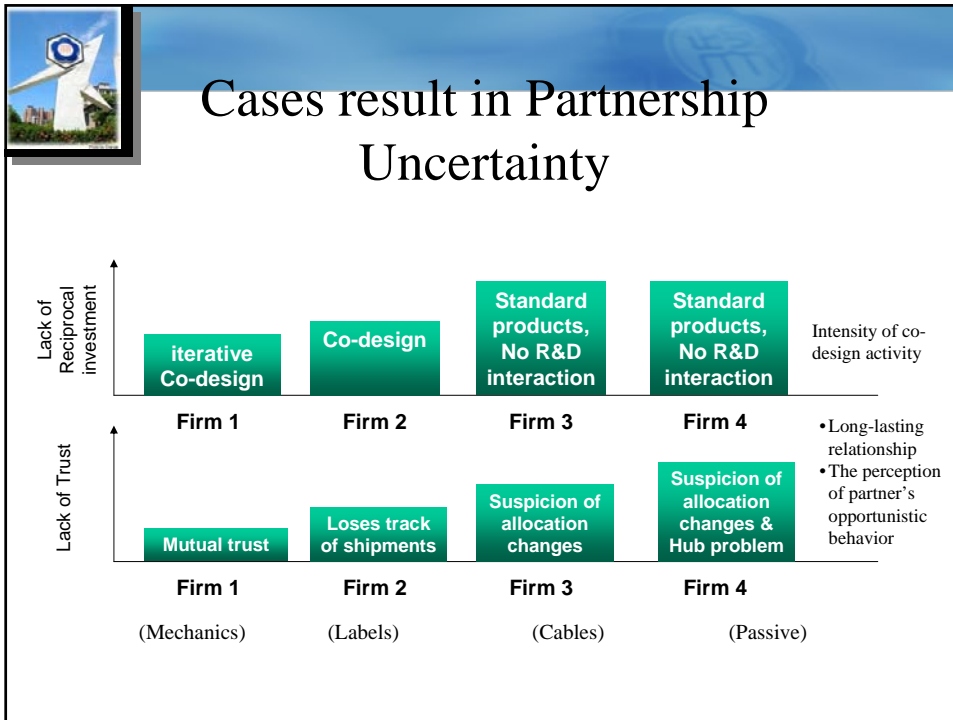


The respondents in Firm 3 and Firm 4 commented a lack of fit between the current weakly integrated EP and business environment

“The current EP system only allows 10 items at most to be processed in a Web page, but for us there are usually more than a hundred items in a purchase order.”

“The system does not support re-do function, which creates a lot of frustration. Usually I need to check hundreds of boxes to fulfill a purchase order. Once I check a wrong box, I start again from the beginning.”

“When the OEM updates its forecasts, which occurred very frequently, the changed parts were not highlighted in the system, so we had to find out what was being changed by ourselves.”





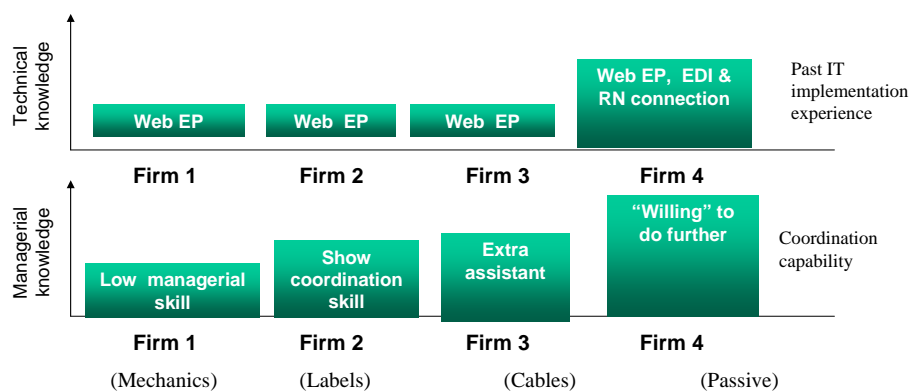
The current weakly integrated EP can not fulfill the needs of dynamic processes in Firm 3 and Firm 4.

“When customers return defective items the OEM requires us to carry them back. However, the current system does not provide real-time quality information. The OEM always informs us in an urgent manner which increases the difficulty to efficiently arrange the return.”

“The OEM requires us to coordinate with the hub to fulfill the orders. However the order information shown in our system is often inconsistent with the information at the hub.”

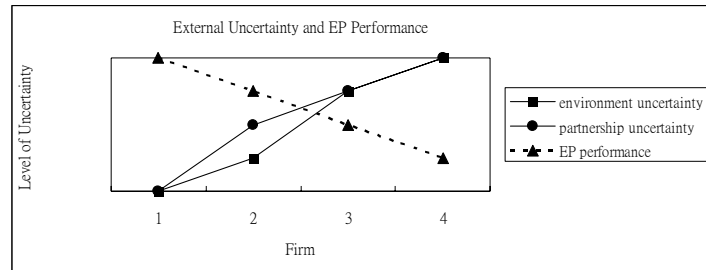


Cases result in Knowledge Uncertainty





External Uncertainties and EP Performance

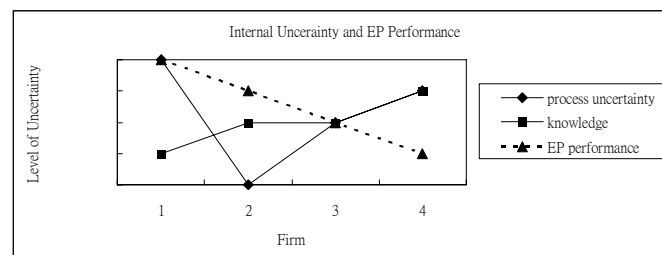


Simple Web solutions do not fit Firm 3 and Firm 4 for the following reasons:

1. No support for customized IT component suppliers
2. No control for OEM opportunistic behavior

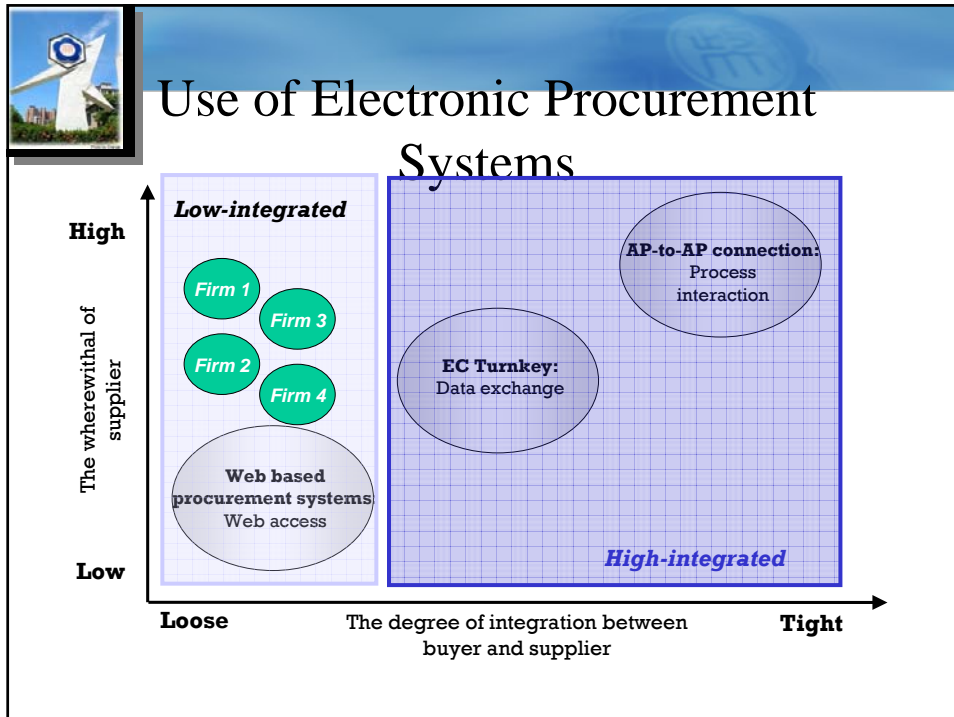


Internal Uncertainties and EP Performance



Simple Web solutions do not fit Firm 3 and Firm 4 for the following reasons:

1. No support for key competencies
2. Too ready to use



Managerial Implications

- Though a simple basic EP system can not live up to expected benefits in complex and dynamic environment, a powerful highly integrated EP system can not fit all suppliers neither.
- We argue that companies should align their EP with different suppliers just like they provide several versions of their products for different customers to get maximum profits.
- Improper alignment makes suppliers fail to cooperate and harms the focal firms eventually. Therefore, fit between business environment and technology can produce win-win situation and best profits to both buyer and sellers.



Q&A