How Internet & its applications as a key to create a sustainable development of Taiwan

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- Current Status of Taiwan eBusiness
- eHub: New Internet Applications
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Internet & eBusiness

- The Internet Era
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  - 4 Stages of Internet Development

- Business Challenges
  - Key Factors Affecting a Business Model
  - The Entire Value Chain
  - How to Reduce Cost

- What is e-Business
  - The Integration of eBusiness
  - Benefits & Saving from eBusiness

- eBusiness change the Textiles Industry
  - Traditional Business Flow for Textiles
  - Problems in Textiles Industry
  - eBusiness in Textiles Industry
Internet Usage Soars

Users in the US (Unit: 10,000)

<table>
<thead>
<tr>
<th>Time to reach 50 million users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio</td>
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<tr>
<td>TV</td>
</tr>
<tr>
<td>Cable TV</td>
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<tr>
<td>Internet</td>
</tr>
</tbody>
</table>

Source: Morgan Stanley

Heading to Internet Era
<table>
<thead>
<tr>
<th>Stage</th>
<th>Core Value</th>
<th>Business Model</th>
<th>Stage of Life Cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Connection</td>
<td>ISP/Portal</td>
<td>Mature</td>
</tr>
<tr>
<td>II</td>
<td>Innovation</td>
<td>B2C/C2C/C2B/ICP</td>
<td>Mature</td>
</tr>
<tr>
<td>III</td>
<td>Benefit</td>
<td>B2B</td>
<td>Growing</td>
</tr>
<tr>
<td>IV</td>
<td>Service</td>
<td>Hub/ASP</td>
<td>Early</td>
</tr>
</tbody>
</table>
Today’s Customer
Faster! Better! More services! But pay less!

• How to cut **Cost** (inventory/process /outsourcing. . . )
• How to cut **TTM**
• How to create **NEW** business Model
Key factors affecting a business model

- ITES (IT Enabling Services)
- TQC
- TTM (Time to Market)
- Cost down (Me-too Product)
- Efficiency

Disruptive Intensity
The Entire Value Chain

Supplier
- Cut lead time
- Cut inv. Cost
- Cut procurement cost
- Better fulfilment of requirements

Manufacturer
- Cut lead time
- Cut mfg cost
- Cut order change Cost
- Better product line scheduling

Distributor
- Cut lead time
- Cut inv. cost
- Min.logistics cost
- Quick fulfilment of big accounts’ orders

End User

Optimise the Total Value

Everybody in the value chain needs optimise the total value, not just to cut its own cost down.
How to reduce cost

- High Tech (including PC) in US spend US$500 billion ~ 1.5 trillion dollars in stock cost
- Where to reduce the stock cost include:
  1. 10-30% in the delay of external process
  2. 10-30% in the delay of internal process
  3. 40-65% in channel (Fake sales)
  4. 10-25% in Collaborative process
What is e-Business?

e-Commerce
Transaction of products or service over Internet

e-Business
Enhancing business operating efficiency, creating new business model and improving the interaction with the customers by the use of ICTs

Adopting eBusiness enables an enterprise to better manage its business procedures which extend to its upper and downstream partners and to increase its market competitiveness.
Benefits of eBusiness

1. Higher sales value
2. Lower in-stock cost
3. Shorter lead time
4. Lower manpower cost
5. Simplified administration process (40% SMEs save 10% manpower)
6. Shortened procurement time (more than 65% enterprises indicate that EB/EC help them to reduce procurement time)
7. Better customer relationship management
8. Quick Response
Saving from eBusiness

- Sharing and circulation of Information
  - enhancing the communication between partners
  - Increasing the efficiency to respond

- B2Bi make supply chain and collaboration easier and faster
  - NIKE: Production lead time (sport shoes) from 15M to 4M
  - CISCO: Production lead time (router) from 24M to 8M
  - GM: Production lead time (car) from 36M to 15M

- Operation cost is hugely cut and competitiveness increased
  - Mfg Industry: O/H cost cut from US$10 → $2, 80% less
  - Bank Industry: O/H cost cut from US$1 → $0.01, 99% less
  - Trade Industry: O/H cost cut from US$150 → $6, 96% less

- Forrester Research
Traditional Business Flow for Textiles

- Waste of time
- Redundant processes
- Re-keying errors
- No quick response to the need for critical materials
- Production information not being re-usable
- No timely report on quality failure
Problems in Textiles Industry

Responding to the market needs and changes by increasing inventory level in respective knots of supply chain
eBusiness in Textiles Industry

- Raw Materials Suppliers
- Contractors
- Garment Factories
- Logistics
- Weaver/Knitter
- Banks
- Trading Company
- Customs Agency
- Internet

- Timely communication
- Enquiry of product information
- Online ordering
- Enquiry of status on order fulfillment
- Engineering data linkage
- Enquiry of shipment delivery
- Financing data linkage
- Enquiry of status on logistics
The evolution of eBusiness

e will be the Trend

The trends to eBusiness

B2Bi-B2B Integration

Saving to Buyer/Supplier
The evolution of eBusiness

- Inter-Corp Re-engineering
- Re-Organization
- Business Process Re-engineering
- Process Automation

- Computerization
- Infomationalization
- eBusiness
B2B online transaction volume will jump to 36%(2005) from 3%(2000) of total business transaction

B2B market will over US$7000B in 2004, 45%-75%

B2B eService companies will provide online marketplace services

Companies purchase thru online marketplace will jump from 23%(2000) to 70%(2002), volume will jump to 1400B in 2004 (53% of total B2B online transaction), yearly growth rate around 200%

-Jupiter

- Mark Hoffman, Chairman of Commerce One

-Forrester
The Trends to e-Business

Vertically Integrated Corporation

- Friends or enemies
- Single trading relationship
- Asynchronous mgnt.
- Labor input/lower need for integration
- Limited info. sharing

- Close interconnected relationship; collaboration instead of competition
- Complicated partnership; information sharing
- Synchronous operation; an emphasis of real-time interaction
- Software integration w/ trading partners

Source: Benchmarking Partners
**Point to Point**
Supplier connects with customer via B2Bi technology

**Hub Integration**
Supplier connects with customers via eHub

**Marketplace**
ASP integrate the suppliers connecting with different marketplaces through B2Bi tools.
Potential savings from electronic purchasing and supply chain management

$100

Before B2B

Price reductions
Better compliance
Process improvement
Standardization
Optimized capacity utilization

28% savings opportunity

$72

After B2B

Savings to Buyer

Source: McKinsey, AMR Research
Savings to Supplier

Cost per sales interaction

- Direct call: $277
- Trade show: $62
- Telemarketing: $31
- Internet: $1

Cost per customer service interaction

- In person: $10
- Call center: $7.50
- Voice response: $2.45
- Internet: $0.18

Order processing cost

- Paper-based: $8-25
- Internet: $0.30-1.00

Source: eStats; Business Week
Current Status of Taiwan e-Business

- eReadiness of Taiwan
  - Distribution of Internet Subscribers
  - Internet Users
  - e-Business Market
  - B2C Transaction Value
  - Business Online
  - Penetration of e-Activities
- Taiwan’s Worldwide Ranking
- iAeB Project
- e-Taiwan Facilitates the Economic Growth
The eReadiness of Taiwan

- Internet penetration
- Broadband penetration

### Household
- 61% Internet penetration
- 47% Broadband penetration

### Enterprise
- 81% Internet penetration
- 78% Broadband penetration

### Government
- 100% Internet penetration
- 100% Broadband penetration

### School
- 100% Internet penetration
- 100% Broadband penetration

Compiled by: FIND, ACI, III / sponsored by DOIT, MOEA (2004/12)
Distribution of Internet Subscribers

Narrowband on the Decline; Broadband and Wireless Internet on the Rise

Source: FIND, ACI, III / sponsored by DOIT, MOEA
Internet Users in Taiwan

e-Business Market in Taiwan

B2C Transaction Value in Taiwan

Source: Department of Commerce (DOC) of MOEA (2004)
Business Online in Taiwan

Penetration of e-Activities in Taiwan

Taiwan’s W/W Ranking

- No. 1 - Mobile Phone Penetration (ITU 2003)
- No. 7 - Broadband Penetration (point-topic 2004)
- No. 9 - Internet Hosts Penetration (ITU 2003)
- No. 9 - Number of IPv4 Address (TWNIC 2004)
- No. 10 - Number of Broadband Lines (point-topic 2004)
- No. 10 - Number of Internet Hosts (ISC 2003)
- No. 14 - Number of IPv6 Address (TWNIC 2004)
- No. 16 - Number of Internet Users (ITU 2003)
- No. 18 - Internet Users Penetration (ITU 2003)

Compiled by: FIND, ACI, III
A Plan: Connect Foreign Buyers & Local Partners

- **Compaq** increase purchase volume more than US$ billions while the supply chain cost was saved more than US$200M
- **IBM** saves costs on R&D, inventory, and operation around of US$60M; R&D lead time reduced from 2~4 wks to 1 wk
- **Hp** increases PO from Taiwan partners for 20% ; PO processing time reduces over 50%

B Plan: Connect 15 1st Tier PC Makers & 3000 Suppliers

- Assisting 15 1st tier PC Makers include Acer, Asus, and Inventec to get connected with 3000 2nd tier suppliers; forming a seamless SCM system
- The estimated profit herein resulted exceeds US$300M
To connect 30 SC systems in 8 major sectors including steel, machinery, automobile, electrical machinery and electronics, petro-chemical, paper, food and textile which covers 6400 SMEs

- Total budget US$24M, gov’t sponsor 30% and the enterprises invest 70%
- The estimated total value created included:
  1. Cost saving: US$150M
  2. Increase of production value: US$300M
  3. Total profit up to US$440M
Projects C/D/E: Introduce e-Service of **Cash flow**, **Delivery**, and **Engineering collaboration** to **25** industrial supply chains

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Project Function</th>
<th>Current Achievements</th>
</tr>
</thead>
</table>
| Project C    | Global e-payment, online financing, global financial management, multi-bank financing and multi-bank account aggregation | • 8 banks construct a financial network  
• 11 IT firms e-SCM connecting about 2,700 upstream suppliers |
| Project D    | Shipment tracking & tracing management, vendor inventory management and transportation planning | • 10 domestic e-Supply chain systems  
• Connect 1000 upstream suppliers, 350 logistics service providers & warehouses, 280 domestic & buyers, and 5 foreign logistics organizations |
| Project E    | Development cost and performance management, engineering design change management, design data sharing and design project management | • 6 e-Supply chain systems  
• Connect 21 international clients and 164 suppliers who will coordinate together to work on design, spec. bug detection, workflow administration & project management |
The Current B2B Framework
Buy or Make
A New B2Bi Framework
Why You Need eHub
eHub Makes Collaboration Easier
How eHub Changes Business
Benefits of eHUB Model
The Vision of eHub
(1) Common suppliers have to invest different IT platforms to meet the requirements from different clients.

(2) Central factories duplicate the same investment on similar systems; an unnecessary waste and increase of overall cost for the specific industry

(3) Multi-layer structure; slower message flow through the supply chain
Buy or Make?

Business Partners
- IBM
- Dell
- HP
- Compaq

Process x
Format x
Channel x
Version = ?

B2Bi is too complicated to maintain for SME!
A New B2Bi Framework

XML message? EDI?

**Current Framework**

- OEM
- CM
- Large Supplier
- Disti
- Logistic Provider

**New Framework**

- CM
- Supplier
- Hub
- 3PL
- Carrier
- Disti

**Multi-Tier Linear Activity**

**Trading Partner Network**

**eHUB Model**
Why You Need eHub?

- Connect with any trading partner **anytime**
  - Hook up and work
  - Year-round support
- An increase or a decrease of trading partners **as you wish** when online
- **No single marketplace** can satisfy all your needs!
- **No need to invest on new systems of data exchange** for specific clients /suppliers
- **A provision of high value added info** for your trading partners
eHub Makes Collaboration Easier

Enterprise internal systems
- Logistics
- CRM
- SCM
- Middleware
- ERP

e-Marketplace
- Money flow
- Electronic components
- Energy
- Hw framework

Middleware

ACI
### How eHub Changes Business

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Today’s B2Bi</th>
<th>B2Bi Hub</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection framework</td>
<td>One to one</td>
<td>One to many</td>
</tr>
<tr>
<td>Connection infrastructure</td>
<td>Decided by e-Marketplaces</td>
<td>Decided by users</td>
</tr>
<tr>
<td>Deployment time</td>
<td>Months</td>
<td>Minutes</td>
</tr>
<tr>
<td>Integration effort</td>
<td>Forever</td>
<td>Once</td>
</tr>
<tr>
<td>Integration cost</td>
<td>Difficult to estimate</td>
<td>Easy to estimate</td>
</tr>
<tr>
<td>Service provider</td>
<td>Many</td>
<td>Few</td>
</tr>
</tbody>
</table>
### Benefits of eHUB Model

<table>
<thead>
<tr>
<th>Why buy a cow when milk is so cheap?</th>
</tr>
</thead>
</table>

- Duplicate investments on different B2B gateway systems among central factories (buyer) & Suppliers  
  - eHub provides a single gateway connection

- Suppliers of the central factories have to get their own suppliers online and integrate all B2B systems  
  - eHub integrates all the central factories & provides professional support

- The cost and trouble to get connected with overseas hubs and bank/logistics partners  
  - eHub integrates them all in advance; all you need to do is to hook up w/ eHub!
The Vision of eHub

Diffusion

Main buyers in manufacturing industry

Supply chain management

Operations headquarter

Developing e-Business

Various spots

Free-trade zone in Great China

Customs clearance

Delivery service

Factory

Overseas manufacturing spots

eHub to Establish Taiwan the Global Logistics Center
Globalization

- Jobs for white collars are decreasing
  - The economic growth does not necessarily reduce the unemployment rate
  - Productivity will be hugely increased, and no need to employ more manpower
  - Fly vs. Bee (The rule of “No Game Rule”)
  - Globalization brings about new jobs, but more old jobs will be lost (structural unemployment)

- Core value exists in the capacities of life-long learning and cross-profession integration
3 Case Study

1. The e-Business Project: For IT and Major Manufacturing Industries

2. viaHub: Global Supply Chain Community Service

3. Vitamin C (Cash): Supply Chain e-Financing Project
Goal

Build a highly efficient e-Supply chain framework to establish Taiwan as a global logistics center
1. Using **IT industry** as Pilot projects to build a benchmark and apply model to other industries

2. Leverage the **buying power** from major int’l manufacturers to enforce suppliers’ B2B application
Objectives

BY 2002 ...

1. Promote at least 15 supply chain systems in IT industry which 2,500 SMEs to establish B2B e-Business capabilities

2. Promote at least 25 supply chain systems in major manufacturing industries which 3,500 SMEs to establish B2B e-Business capabilities

3. Increase internet usage of manufacturing industries from 32.3% to 50%

4. Increase e-Procurement rate of mfg industries from 5% to 10%

5. Generate revenue of Taiwan’s e-Marketplace up to US$120million
1. Enhance industrial e-Business infrastructure

- Develop e-Business standards
- Train e-Business professionals
- Develop ITES industry
- Provide tax incentives & low interest loan

2. Build up the e-Supply chain pilot projects

<table>
<thead>
<tr>
<th>Int’l Buyers</th>
<th>A Project:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract Manufacturer</td>
<td>• Procurement</td>
</tr>
<tr>
<td>Supplier</td>
<td>• Commodity Management</td>
</tr>
<tr>
<td>LSPs</td>
<td>• Supplier Management</td>
</tr>
</tbody>
</table>

| B Project: |
| Contract Manufacturer | • Engineering Collaboration |
| Supplier | • Engineering Collaboration |
| LSPs | • Shipment Visibility |

3. Reinforce industrial e-Supply chain capabilities

1. Duplicate the model of AB projects
2. Target the domestic industries with higher e-Readiness
3. Target 1st and 2nd tier suppliers in the supply chain
e-Business Project Framework

Overseas distributors / customers

Taiwan distributors / customers

Enterprise Headquarter (ERP)

Suppliers

Domestic Production Plant

Logistic Center

Overseas Production Plant

Ordering
Manufacturing
Delivery
Shipping

(PDM)
(SCM)
(SFCS)
GMS
FOCS
M/C
M/C
### Summary of Achievements

<table>
<thead>
<tr>
<th>Index Task Items</th>
<th>Objectives</th>
<th>Reality</th>
<th>Achieved Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of IT supply chain system (Corporation Numbers)</td>
<td>15 systems (2,500)</td>
<td>18 systems (3,955)</td>
<td>120% (158%)</td>
</tr>
<tr>
<td>Other major manufacturing industries systems (Corporation Numbers)</td>
<td>25 systems (3,500)</td>
<td>30 systems (6,421)</td>
<td>120% (183%)</td>
</tr>
<tr>
<td>e-Marketplace revenue</td>
<td>US$120 million</td>
<td>US$196 million</td>
<td>163%</td>
</tr>
<tr>
<td>Internet usage rate in overall manufacturing industry</td>
<td>50%</td>
<td>59.7%</td>
<td>119%</td>
</tr>
<tr>
<td>e-Procurement rate in overall manufacturing industry</td>
<td>10%</td>
<td>14.3%</td>
<td>143%</td>
</tr>
</tbody>
</table>

Over 100% Achieved Level in Each Task!!
Benefits

1. Establish large-scale e-Supply chain system
   • 3 int’l and 15 domestic eSupply Chain(eSC) were established in the IT industry
   • 30 eSC were established in other major industries with US$500M in cost reduction and productivity increase

2. Increase US$3B Int’l purchasing in Taiwan

3. Enhance the global competitiveness of our SMEs in quick response to order-taking from so-called 955 (i.e. 95% of orders delivered in 5 days) to 982

4. Pioneer in the world to adopt the int’l e-Supply chain standard(RosettaNet, PapiNet, CIDX, OAGIS...)

4. The investment for ICT services increased to US$ 48M and a new sector of e-Marketplace service revenue also increased to US$ 197M
3 Case Study

1. The e-Business Project: For IT and Major Manufacturing Industries

2. viaHub: Global Supply Chain Community Service

3. Vitamin C (Cash): Supply Chain e-Financing Project
Background

Problems:
- Different B2B IT platforms between co-suppliers & their customers
- Main enterprises in supply chain invest in the similar information systems, which causes higher total costs of the industry
- Multi-tier structure makes worse supply chain visibility and slows the responsiveness
Business Achievement

- 2,000 trading partners connected to StarBex
- Initiate a government support "Star Project" to connect more than 500 IT firms globally. Industry include BenQ, D-Link, Lite-On, Accton, Elite-group 10 Big brothers. The total revenue of the Big-10 contributed 5% GDP of Taiwan in 2002
- The B2B transaction volume on viaHub is estimated as US$6 billions by 2005/E. The connectivity coverage of domestic electronic suppliers will over 60% and there will be over 90% logistics service providers connected to viaHub by the end of 2005. viaHub will potentially become the worldwide largest IT industry e-community service provider
<table>
<thead>
<tr>
<th>Applications in StarBex</th>
<th>BenQ</th>
<th>SiliTek</th>
<th>Elite WP</th>
<th>D-Link</th>
<th>Accton</th>
<th>TaTung</th>
<th>LiteOn</th>
</tr>
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<tbody>
<tr>
<td>AP Model</td>
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<tr>
<td>Global Shipment Mgt.</td>
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<td>Global Procurement Mgt.</td>
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<tr>
<td>Global Inventory Mgt.(VMI)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transaction amount will be more than US$6B in 2006 !</td>
<td>70%</td>
<td>80%</td>
<td>80%</td>
<td>60%</td>
<td>80%</td>
<td>70%</td>
<td>90%</td>
</tr>
<tr>
<td>Business will in StarBex</td>
<td></td>
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</table>
Enterprise Benefits

- **BenQ** - Used 2/3 of time and 1/3 of cost to implement the same scope as those who implemented private B2B systems.

- **Elite-group** - Carried out "e-VMI" operations to reduce inventory & procurement costs. Total cost saving helped increase profits to **US$2.5M per year**.

- **D-Link** - 153 suppliers connected to process collaborative procurement management. Cost saving of purchase order operation is around **US$0.2M annually**.

- **Star Project** will generate benefit estimated about **US$31M annually through 10 supply chain sponsors**!
Conclusion

- The essence of MIT (Made In Taiwan) is our flexibility embedded in the highly specialized while closely integrated systems alone the vertical chain of manufacturing. Such flexibility enables our quick responses to the versatile market and is the core value of logistics.

- The ICT sector needs most the support of good and global logistics, while it is also the benchmark sector other sectors can learn from.

Made In Taiwan  eHub

Managed In Taiwan or Made by Taiwan

eHub will facilitate Taiwan’s achievement to the goal of becoming the Global Logistics Center.
THANKS

Q & A