ICT Adoption in Enterprises: Constraints and Perspectives

Le Van Loi

Vietnam Chamber of Commerce and Industry

Institute of Information Technology for Business

Goal and Objective

- Discussion on constraints of ICT adoption
- A perspective view of potential ICT adoption markets

Contents

- Overview of SMEs
- Status of ICT adoption in SMEs
- Status of ICT applications by industry
- Mass IT applications
- Constraints
- Perspectives

Overview of SMEs

- Now total ~520,000 registered enterprises. SMEs ~ 97%. No count of affiliates, rep.: ~466,000. From private sectors: 305,000. With tax control: 280,000
- HCM City: ~   120,000
- Ha Noi: ~   90,000
- Hai Phong: ~   17,000
- Binh Duong: ~   14,000
- Dong Nai: ~   14,000
- Da Nang: ~   12,000
- Can Tho: ~   6,000
- By 2015 rough estimate will reach total ~ 1,000,000.

Sources:

1. GDT (MOF) & VCCI

2. Agency for Business Registration (MPI)

Business Liaison Analysis

- Two big business centers in Vietnam:
  - HCMC and the around
  - HaNoi and the around
- Most enterprises have their headquarters either in Hanoi or in HCMC
- Export, import, tourism almost always have their affiliates both in Ha Noi and HCMC
- Most Delta Mekong Region enterprises have rep. in HCMC
- Da Nang is increasingly becoming rep of Central and High Land

Status of ICT adoption in SMEs

- **Provincial Business ICT index** (http://bizinfo.vn/ictindex/) by VCCI-ITB published 2010 (survey done 2009): overall index: ~50/100.
- Best in all provinces: HCMC => 67/100

Status of ICT adoption in SMEs (c)

- Most have word processing and spreadsheet software (91%)

- Email: Less than ½ (46%) use email and similar figure (44%) said no need of using email

- Roughly 2/3 (67%) use accounting/financial software

Status of ICT adoption in SMEs (c)

- HR, salary management: only 1/3 have software and about ½ said no need of using them.

- Sales management: only 1/3 have software and nearly ½ said that do not need such software.

- CRM, SCM, ERP: most either do not understand the concept or no need of.

Status of ICT adoption in SMEs (c)

- Q: why you do not have above-mentioned software and why you do not need such software in the future?
- A: Most
  - Not relevant to their business processes
  - Costs still too high
  - Manpower not ready to use them
- Very few (less 15%) use ICT consultancy services. Main reasons: not accustomed to; ICT investment not significant; service costs still too high; consultancy not yet relevant to their businesses.

Status of ICT adoption in SMEs (c)

- ~ 90% have Internet connection (ADSL or xDSL).

- Main purpose of connecting Internet is searching info – reading electronic newspapers, and using email.

- Less than 20% have their own websites/portals. And these websites mainly self-introduce: who they are, product and/or service catalogues.

Status of ICT adoption in SMEs (c)

- E-commerce: Enterprises still conservative towards e-commerce. Main reasons include users are uncomfortable online purchases, EC costs remain high and Businesses do not have manpower to operate e-commerce processes.

- Regarding the proposal that companies want to have the support: because IT consulting and application price of products, IT services remains high, Gov./Org. should have promotions/policies to reduce the price.

Status by industry: Financial & Banking

- Number of banking institutions: ~6 SO, ~49 Joint-stock commercial, ~13 foreign investment, ~6 venture
- Number of ATM cards, ATM machines increases
- Internet banking, mobile banking piloted by several banks
- A greater portion of investment in ICT: core banking, licenses' fee, information security software & services, software management tools, a core division on ICT, centralized databases with SAN techniques, big CRM
- A clear trend of unified services: the same ATM machines for several banks, internet banking, mobile banking,...
- Online payment is now started by Smartlink, Banknet

Status by industry: Telecom

- 3 main telecom providers: VNPT, Viettel, FPT: ISPs, Mobile networks, PSTN, VoiP, ADSL, Copper increasingly replaced by Fiber optics, 3G, 4G piloted, ...
- 30 mil/pop 90 mil internet users nation-wide. Viettel reaches 5 Int'l markets: Cambodia, Laos, Haiti, Mozambique, Peru
- Internet, mobile services develop dramatically
- Most have their own management software tools valued ranging from millions to hundreds of millions USD
- Some start writing their own OSes, manufacturing their own smart cards, USB compatible devices, provide with call centers (1800, 1900), data centers reaching tens of thousands of servers, have research divisions for Space telecom, cloud computing, manufacturing tablets, ...

Status by industry: IT

- 1,000+ software companies employing ~ 64,000 people
- 10th most attractive global services (A. T. Kearney)
- 200+ companies, with average size of 150-200 employees, engaged in software outsourcing services
- 1000+ employees companies include FPT software, FPT Information Systems, TMA, PSV, etc.
- Software applications focused on electronic entertainment, value-added services on the Internet and mobile networks
- US$/person/year (2009):
    - Hardware industry: 1,809
    - Software industry: 4,250
    - Digital content industry: 3,505
- Weak points:
    - Foreign language skills
    - Approach new technology
    - Meeting int'l standards

Sources:

1.   **http://www.business-in-asia.com**

2.   **Vinasa**

Status by industry: Manufacturing - Transportation - Energy

- Timekeeping system, payroll by product made integrated with HR software: textile and garments, factories.
- The energy businesses such as electricity trading, the application of IT has become popular since decades, mainly subscriber management. There have been trials of electronic meters. When fully developed (resulting power consumption management to synchronize the subscriber) will save a great resource for the community and for the business.
- Railway system has software for selling tickets for decades. Recently, airlines also had e-ticket system, the "ticket stubs" achieve much greater customer satisfaction.
- Currently e-ticket system on the bus are being developed. Some companies are investing research GPS with integrated measuring petrol consumption on the car to help control the car on long trips online.
- A number of taxi companies integrate pay by credit card machine

Status by industry: Health - Education

- Medical software focus on clinic management, pharmacy management, or software such as ultrasound, endoscopy, ECG analysis, electronic medical records, ...
- Some companies offer solutions in the overall Hospital Information System (HIS. HIS is similar to ERP in enterprise application; should want to be an effective way needs to synchronize all the processes of medical inpatient care and outpatient. Not many hospitals in Vietnam meet these conditions.
- Application of IT in education varies according to different courses of education for children, teaching at home, software to support classroom instruction, entertainment software for educational purposes, customized educational software, ... One feature of the educational software is a lot of free open source software (FOSS).
- Distance learning system, online training programs (e-learning) is into the application. However, the assessment of learning outcomes through the system remain unanswered.
- Most universities and some colleges, schools have student management, student records through databases stored online.
- Training via video-conferencing system is still relatively new and only tested in some schools.
- Viettel has supported Internet connections to about 40,000 schools.

Status by industry: Construction - Services

- The software for construction is mainly built around software design, drawing support engineers, architects and other design professionals. The products from 2D vector-based system to the surface and the 3D imaging. Fields applied includes design, product design, manufacturing machinery, Transportation, Space, consumption goods, machinery, shipbuilding, manufacturing process...

- Tiny companies use spreadsheet software to record sales, payment, debt, salaries

- SMEs very often use all-in-one software: sales management, accounting, tax calculation, salary management, ...

Mass IT Application: e-customs - Applied in Customs Procedures

- 50,000+ companies involved in import/export
- For clearance through customs, they have to submit documents and get approval/certification from Customs Authorities
- e-customs procedures focus on exchanging docs, approval/certification between Customs Authorities and Companies
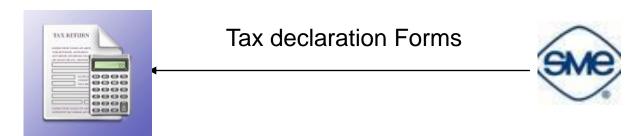
Docs

approval/certification

Mass IT Application: e-customs - Applied in Customs Procedures (c)

- Project began in 2005, initially in HaiPhong and HCMC by "remote declaration" now expanded to all Customs Departments with "electronic customs procedures"
- Benefits:
  - Initiative on time and location procedure
  - Reduce exposure to customs officials
  - Reduce paperwork procedures, costs for businesses
  - Clearance and liquidation procedures more quickly than traditional
  - Re-use of forms previously prepared
- This leads to provision of software at both sides (Customs and Company) and identification issue: find an electronic solution for an equivalence of traditional signature and stamp: digital certification/signature

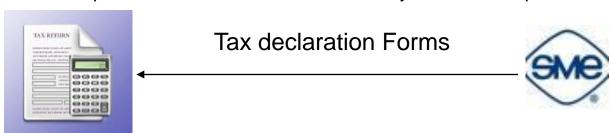Docs

approval/certification

Mass IT Application: e-tax - Applied in tax declaration

- The same principles as e-customs apply to taxation but with ~300,000 companies

- Monthly, all businesses have to declare tax by filling tax forms and submit to Taxation Authorities

- e-tax focuses on sending docs from a company to a Taxation Authority

Tax declaration Forms

Mass IT Application: e-tax - Applied in tax declaration (c)

- GDT began with the idea that companies submit both electronically and on papers (with signature and stamp) and identified by 2-dimensional bar code. This helps taxation officials not to retype those declared on paper
- Benefits:
  - Initiative on time and location procedure
  - Reduce exposure to taxation officials
  - Reduce paperwork procedures, costs for businesses
  - Help both taxation and SMEs avoiding tedious, useless works
  - Re-use of forms previously prepared
- This leads to the same problem: should provide software for both sides (Taxation Authority and Company) and also identification issue: find an electronic solution for an equivalence of traditional signature and stamp: digital certification/signature
- One of the problems arrived is the overload of GDT servers: most enterprises only send docs at the last minutes that regulations allow: the day 20th each month
- GDT also promotes socialization of taxation activities. To overcome this overload, they grant ICT solutions providers with T-VAN certificate if they meet their requirements.

Tax declaration Forms

Digital Certification: PKI, Root CA, Sub CAs, Applications

- Through e-customs & e-tax, there is a clear need of digital certification (law and practice). GoV has chosen Public Key Infrastructure for the solution to this problem.
- As a result, there are Public Root CA, and Sub CAs:
  - Public Root CA managed by MIC
  - Currently, there are 5 Public Sub CAs: VNPT, CA2 (NacenComm), BKAV-CA, FPT-CA, Viettel-CA
- This opens up a market for digital certification / digital signature. Businesses, individuals pay annual fees for subscription of electronic certificates. And also a (smaller) market emerged for value-added services: CA- training, CA integration.
- Digital certification also applied to other fields: online public services, e-commerce, online payment, secured document exchange over the internet, ...
- In the near future this will be applied to NSW & ASW

Constraints

- Awareness - Consulting – Connection –Trust – Purchase – Training – Support
  - Educate markets before sales (raising awareness, where to fit in business processes, ...)
  - Consultancy: for many SMEs, consultancy is still considered free of charge!
  - Have a firm believe in Government policies
  - One of the major limitations of SMEs are resource: weak financial resource and poor ICT educated human resources
  - The issue of training for businesses is a major challenge
  - Many ICT solutions lead to process re-engineering: this could be a big hurdle

Constraints (c)

- ICT yet to be considered as Infrastructure and Long-term Investment
  - Still purchasing ICT as goods, not investment
  - ICT viewed as hardware, lack considering software, manpower, business process integration
  - SMEs prefer every thing in a box (tablets and cloud computing)
  - SMEs lack a model for optimal ICT investment: hardware, software, manpower, outsourcing, services
  - SMEs lack a strategic planning on ICT adoption

Perspectives

- ## Hardware
  - Brand names: compete with ones from US, Japan, South Korea
  - Prices: compete with China
  - Services/Support: Consider local partner(s)
  - Potentials: Mobile devices, tablets, laptops, network devices, peripherals
- ## Software
  - Potentials: Banking, Telecom, Cloud Computing, E-commerce, Video conferencing, Information Security, Education, Venture Capital
- ## Digital Content
  - Potentials: Location-based services, Domestic Information Sharing (pictures and video sharing), Education Content (e.g. textbook on cloud computing), Domestic Social/Professional Networks, Venture Capital

Thank You!