Asia-Pacific
Economic Cooperation

2008/SMEWG/SYM/028
Agenda Item: 6.1

Outsourcing Opportunities and Challenges

Purpose: Information
Submitted by: India

APEC Symposium on Improving Market Access for ICT Outsource SMEs
Hanoi, Vietnam
27–29 October 2008

Outsourcing

Opportunities and Challenges

A User Perspective

Lalit Sawhney, *INDIA*

28 Oct 2008

Agenda

- Why Outsource ?
- What to Outsource ?
- Destination Organisation, Road Map
- Steps in Outsourcing
- Outsourcing Models
- Challenges
- Retained Organisation
- Learning from other parts of business
- Benefit Realisation
- Future Opportunities

IT Services, not BPO, KPO

- *Related, but much wider areas*

Why Outsource ?

- Opportunities
- Prioritisation
- Business case
- Motivation of CXO / CIO
- What can be enabled by Outsourcing
  - Can't be done otherwise
- Cost

What to Outsource ?

- High Return vs. Low-hanging fruit
- Ease of implementation

- What outsourcing is not
  - Abdication of Responsibility
  - Staff Augmentation

- What should not be outsourced
  - You can not outsource what you don't understand well
  - ERP is well understood, while Business Intelligence is probably not!
  - IT Governance, budgeting, Application portfolio, Architecture, ...

What to Outsource… ?

- Possible Areas for a Corporate
  - Application Help Desks, support
  - ERP Implementation, Roll-outs, User Training
  - Custom Application Development and Maintenance
  - Application Management
  - Software Upgrades, Migration, Patch Management
  - Website Development, Intranet, Extranet
  - …

…what to outsource ?

- Some more possible areas for a Corporate
  - Remote Infrastructure Management, Desktops, Network
  - Facilities Management
  - Data Centre, Hosting Applications
  - Server, Storage, Database Monitoring, Admin.
  - Disaster Recovery
  - Server, Storage Capacity Planning, Migration
  - Service Desk, Incident Management
  - Technology Refresh
  - Asset Management
  - Leasing Hardware Assets
  - Network Monitoring, Management, Support
- Offshore Product Development
  - Concept, Design, Development, Testing, Support
- Engineering Services

Destination Organisation, Road Map

- Big bang vs. step by step approach
- How much to retain?
- Accountability with Retained Organisation
- Good business knowledge from low level Helpdesk resources
  - can be used during implementation
  - while Service Partner brings in domain knowledge

Steps in Outsourcing

- Pre-requisites
  - standard process, changes in IT organisation
- RFI to 6-8 vendors, Detailed RFP to 2-3 potential partners
- Choice of vendors
  - Domain knowledge, ability to scale up
  - Checking references
- Commercial-end Contract management
  - Service providers are more expert in protecting their interest (have a lot of legal support)
- Execution – without affecting business
- SLAs

Outsourcing Models

- Right-sourcing, not full outsourcing
- Co-Sourcing
  - One vendor or mix of best-of-breed service partners
  - Multi-vendor alliance, can the vendors work co-operatively ?
  - Competitive vendor marketplace, greater service level, contract flexibility
- Offshoring - Managed Outsourcing
  - Meeting business goals
  - Pay by No. of customers
- Offshoring to a Captive IT Shared Service Centre
  - Typical of MNCs
- 3 – 5 years, no more
  - The world, business is changing too fast
- Creating a smart IT organisation

Challenges

- Pitfalls of outsourcing
- Retained organisation
- SLA, measurement
  - you get what you measure!
- No base line data
- Prose not standardised
  - starting from wrong base
- Lack of documentation
- Speed of response
- Outsourcing something structured is easy
  - New things more difficult
- Innovation in outsourced environment
  - Does outsourcing inhibit innovation?

Retained Organisation

- Competencies for running outsourced organisation is different
- Business knowledge inside is more
- Implementation requires more people and effort
  - while motivation of in-house people is low
- Lack of motivation among existing staff
  - “you transfer knowledge and then become redundant”

Learning from other parts of business

- Marketing has been using ad agencies for long time
  - out source lot of work!
- 3rd Party manufacturing is a well-oiled discipline
  - All kinds of pricing
  - Service levels
  - Flexibility
  - Long-term contracts

Benefit Realization

- Measuring benefits
  - tangible and intangible
- Productivity improvements
- Continuous improvement
- Ensuring service
- Customer Satisfaction Surveys

Future opportunities

- Shared Services
- Reaching out to customers – one to one
- Remote facilities management
- Innovation / Design

- What the CEO should look for in right-sourcing?

Thank you

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Asia-Pacific
Economic Cooperation

2008/SMEWG/SYM/011
Agenda Item: 6.2

What Software and to What Extent Vietnamese SMEs Need - Opportunities for Software Suppliers

Purpose: Information
Submitted by: Vietnam

APEC Symposium on Improving Market Access for ICT Outsource SMEs
Hanoi, Vietnam
27–29 October 2008

PROJ 191

What software and to what extent Vietnamese SMEs need - opportunities for software suppliers approaching

MSc. LE VAN LOI
Institute of Information Technology for Business (ITB)
Vietnam Chamber of Commerce and Industry (VCCI)

PROJ 191

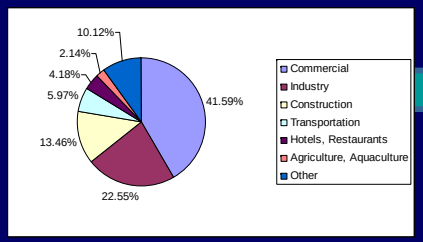
Software for SMEs – Do we know Vietnamese SMEs? (1)

- *Definition*: registered capital not exceeding VND 10 billion or annual labor not exceeding 300 laborers in work force
- *Private sector*: under Enterprise Law
- *State-owned*: under State Enterprise Law
- *Cooperatives*: under the Cooperative Law
- *Business households*: under the Government Decree No. 02/2000/ND-CP (Feb. 2000)

PROJ 191

Software for SMEs – Do we know Vietnamese SMEs? (2)

- Up to the end of 2005:
  - No of SMEs: 113.352, up to the end of 2007: 225,000
  - Commercial: 41.59%
  - Industry: 22.55%
  - Construction: 13.46%
  - Transportation: 5.97%
  - Hotels, restaurants: 4.18%
  - Agriculture, Aquaculture: 2.14%
  - Other: 10.12%



PROJ 191

Software for SMEs – Do we know Vietnamese SMEs? (3)

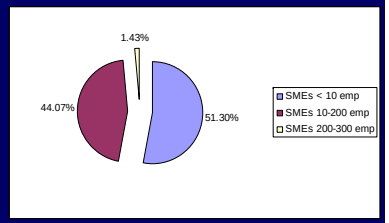
- Up to the end of 2005:
  - 53% of GDP, now believed some 56% of GDP
  - Mobilize about 55% of investment
  - Jobs: 541,000
  - *SMEs have made a considerable contribution to national output and State budget income.*
  - *SMEs created a significant number of jobs and generated incomes for laborers.*
  - *SMEs have actively participated in manufacturing, retail and service businesses and contributed to foreign currency balance through exports.*
  - *SME helped restore, maintain and develop traditional handicraft villages.*

Software for SMEs – Do we know Vietnamese SMEs? (4)

- **Weaknesses and shortcomings in SME development (up to 2005)**
  - Better growth but low performance, efficiency
  - Ratio of benefit / capital investment is low: 4.42%
  - No of enterprises with loss 27.35%
  - No of enterprises with profit 62.58%
  - Most SMEs do not realize the great impact of globalization, the international and regional integration process on the domestic economy
  - Most SMEs are of a small scale, have limited capital, a small number of employees, operate dispersedly, and do not have enough skills to compete effectively in increasingly liberal markets.

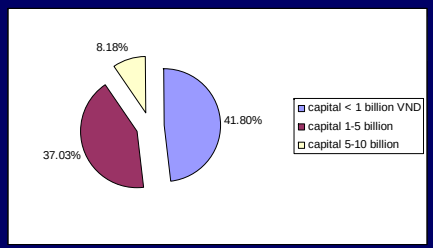
Software for SMEs – Do we know Vietnamese SMEs? (5)

- **Up to 2005:**
  - SMEs < 10 employees: 51.3%
  - SMEs 10-200 employees: 44.07%
  - SMEs 200-300 employees: 1.43%
  - Total: 96.80%



Software for SMEs – Do we know Vietnamese SMEs? (6)

- **Up to 2005:**
  - capital < 1 billion VND: 41.8%
  - capital 1-5 billion: 37.03 %
  - capital 5-10 billion: 8.18%
  - Total: 87.01%



ICT for better competitiveness

- International integration process and sustainable development of SMEs
- ICT actually becomes a vital infrastructure part of any enterprise
- After becoming a member of WTO, needs a higher and sharp competitiveness for SME sector: the world now is flat and any business body is equal to each other

Goal of this discussion

- A diagram of Vietnamese SMEs software needs (too ambitious?)
- A sorted classification of software types by SMEs' need (Descendant)

ICT adoption in SMEs

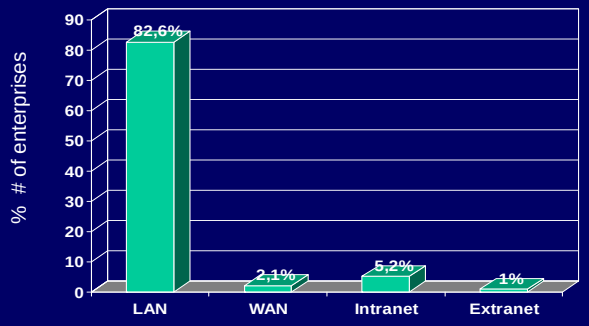
- Not very well aware of what ICT can help them in their businesses
  - Add-on investment, not a planned investment
  - Most buy hardware, hardly ever buy software
  - When they buy a PC, they believe that just like a TV set, everything is in there
- Purchasing ICT (hard, comm & soft) is by spontaneous need for a particular use in some particular units.
- Most lack planned, long term ICT investment

ICT infrastructure

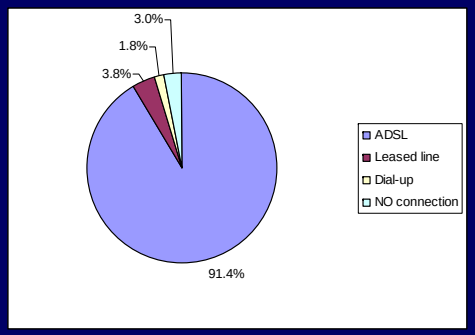
- Server
  - Most still not having a server while many have a LAN serving their information exchange
  - Many not sure of what a server can do – so a LAN with an ADSL would be very happy
- Number of PCs in an enterprise >>

# of PCs	%
0	0,1
1- 10	54,8
11- 20	17,9
21- 50	16,1
51 - 100	7,6
101 - 200	2,7
> 200	0,8

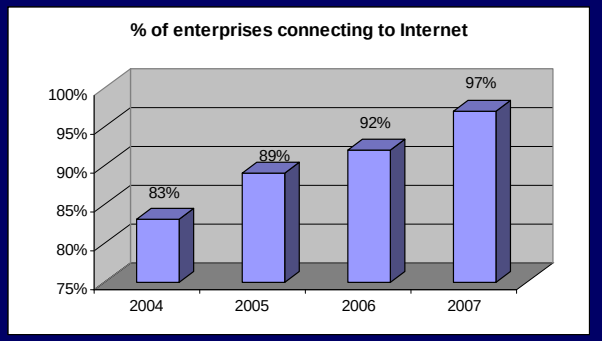
Network usage



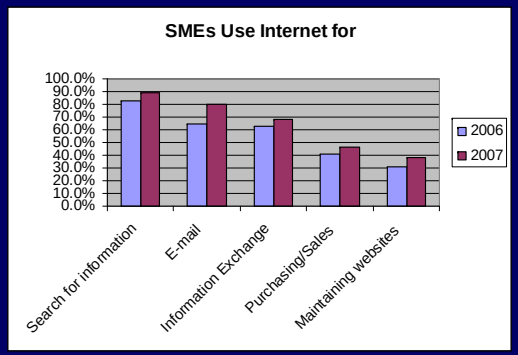
How SMEs connect to Internet?



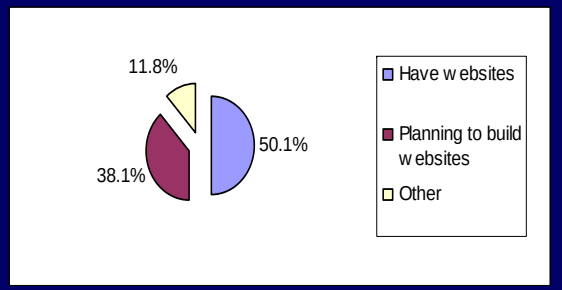
% SMEs connecting to Internet



What SMEs use Internet for?



SMEs with their own websites



What software SMEs use?

Type of software used	2006	2007
Finance, Accounting	71.3%	77.7%
HR management	41.8%	53.7%
Store, warehouse MIS	33.1%	34.8%
CRM	26.9%	30.8%
SCM	10.1%	12.5%
ERP	8.9%	10.6%
Other	7.3%	1.2%
No use of software	8.8%	4.5%

SMEs Software need analysis

- If we start by asking them what kind of software they need?
  - Usually, no answer is given
  - Worst, wrong answer
- Reason:
  - Most SMEs are of small size (< 10 persons), do not have CIO
  - Most depend on “IT experts”, on learning from other companies, on TV, radio, newspapers

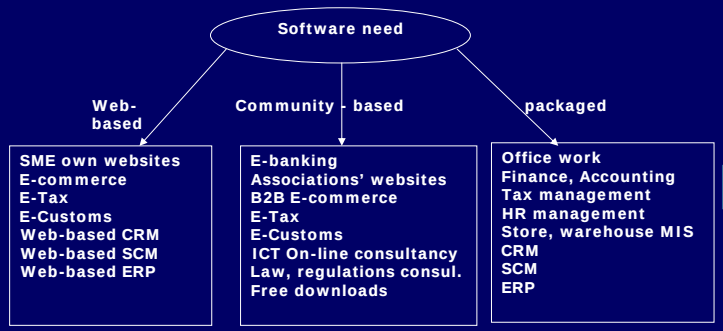
SMEs Software need analysis (cont.)

- What tasks they really need computer help?
  - Office works
  - Financial management
  - Government duties (tax, customs declaration)
- What they think computers might help them do better?
  - Look for partners, new customers, better customer satisfaction, enlarge their markets - marketing
  - With Internet, they might find something free, or cheap.
  - With Internet, they might do e-commerce

SMEs Software need analysis (cont.)

- Through surveys, data collections
  - A large number of surveys carried out annually
  - Most use direct questions like what kind of software they used for their jobs
  - Rarely have direct interviews in a large scale
- Through workshops, seminars
  - Collect data through forms for participants
  - Through Q&A sessions

A brave diagram & classification



Pricing: challenges & opportunities

- For really small enterprises: with a price > USD **1,000**, feasibility is low
- Packaged software should be less than USD **500**
- We should try to look for something that is used by a relatively large community, then each SME only pays a small amount
- We should try to look for **payment by installment**
- We also look for some other SME supporting programs such as **micro-banking**
- Look for some support that divides into smaller chunks: licensing, training courses, service-on-demand, ...

A brief conclusion

- For us to know SMEs software needs, we try to have a better understanding of SMEs
- Then we also try to know what ICT infrastructure they acquired in recent years
- We looked at what they do with their PCs and networks internally
- We tried to figure out what software they look out
- We also look at figures, analysis from surveys
- We express ourselves some reasons why doing SMEs software requirements is not an easy task
- And finally, a brave diagram & classification with recommendations on pricing

Thank you!

- We look for your comments, discussions, questions.

Asia-Pacific
Economic Cooperation

2008/SMEWG/SYM/012
Agenda Item: 6.3

Building Rural Enterprise through Outsourcing Information Technology

Purpose: Information
Submitted by: Thailand

APEC Symposium on Improving Market Access for ICT Outsource SMEs
Hanoi, Vietnam
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Building rural enterprise through outsourcing information technology

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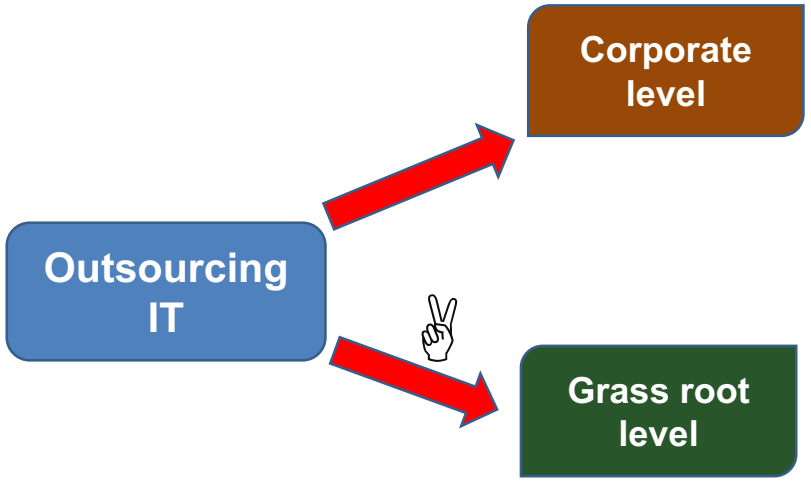
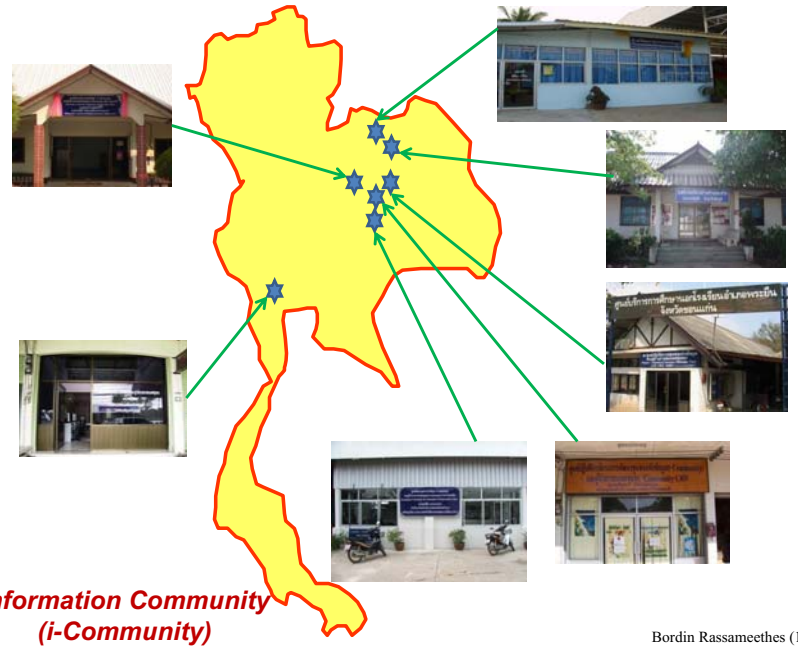
Hanoi, Vietnam



i-Community project, Thailand
e-Agriculture project, Thailand

Information Community (i-Community)

- The community networks through the use of information technology
- Information available in the community allow the community to make smart decisions.
- Low priced access to the high-bandwidth communication supporting the new learning environment
- Every i-Community is managed and received financial support from the community.
- About 5,000 people are members of i-Community
- Some have developed social relations among members in different sites.
- Farmers in the rural areas start to get enough information on livestock, equipment, seed, fertilizer, and market that fit their needs.



Information Community (i-Community)

Bordin Rassameethes (10/28/08)

Electronic Agriculture (e-Agriculture)

- A database that collect data from stakeholders
  - government agencies
  - local wisdom
  - Marketplace
  - farmer 's fields
- Use i-Community as the implementation sites
- Database contains necessary information that caters to all segments of agro industry

Bordin Rassameethes (10/28/08)

www.ekaset.net

kaset (Thai word) = Agriculture

Bordin Rassameethes (10/28/08)

Structure of www.ekaset.net

- Introduction
- Agriculture information
- Environment
- Farmer information
- News
- Agricultural price
- Business/Marketing/Finance

Bordin Rassameethes (10/28/08)

Agricultural information

- General knowledge related to agricultural sector
  - (e.g., Pest hazards, weed control, moisture insufficiency, soil fertility, farm credit, labor shortage, soil erosion, fertilizers, seeds, feeds, plant protection chemicals, agricultural machinery, equipment, water, agricultural technology, agricultural credit, marketing, new agricultural theory, technique that can raise productivity)

Bordin Rassameethes (10/28/08)

How to ensure good information

- A database that collect data from stakeholders
  - government agencies
  - local wisdom
  - Marketplace
  - farmer 's fields
- Use i-Community as the implementation sites
- Database contains necessary information that caters to all segments of agro industry

Bordin Rassameethes (10/28/08)

Bordin Rassameethes (10/28/08)

Community CIO

Bordin Rassameethes (10/28/08)

Training local people

How rural enterprise get build?

- By publicizing information → people in the rural area can get access to better information
- Community collaboration → bringing more diverse ideas/local wisdoms/connection/know how/target market etc.
- Alter the improvement of less skilled community workforces → ability to come up with greatly improved local products and production process

Bordin Rassameethes (10/28/08)

Harvesting collectors

Middlemen

Farmers

Information/ Data

Government officials

Agricultural & Cooperatives office
Agricultural extension office
Livestock office
Fisheries office
Land reform office
Commercial affair office
Etc.

Exporters

Bordin Rassameethes (10/28/08)

Why outsource?

- Problem solving
- Distributed budget
- Solutions to problems are solicited from a wide variety of people
- Encourage people in the community to work on local/business problems
- The gains from new information/ideas can be shared by everyone

What we are outsourcing?

- Information gathering
  - Agricultural price
  - News, local contents
  - Government contents
  - Market information
- Updating information
- Local activity

What do we get?

- Necessary information to arrange better supply chain
- Create social network that improve relationships
- Distributed income
- Keep stakeholders in constant streaming contact with one another
- Build cottage industry and rural enterprise
- Turn information into income, jobs and growth

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2008/SMEWG/SYM/026
Agenda Item: 6.4

Fostering ICT Based SMEs through SME Innovation Center

Purpose: Information
Submitted by: Indonesia

APEC Symposium on Improving Market Access for ICT Outsource SMEs
Hanoi, Vietnam
27–29 October 2008

Fostering ICT based SMEs through SME Innovation Center

By Agus Widodo[1]

Abstract:

SMEs (Small and Medium Enterprises) play significant role in the Indonesian economy. Although the role of SMEs is very important, some indicators related to innovation or technology are contradictorily low. Some studies also show, that interaction between three components of innovation i.e. industry, research institute and government is weak. Meanwhile The opportunity of SMEs to contribute in the ICT (Information and Communication Technology) market is quite promising even though there are several weakneness in the environment of software industry. Several regulations to support the software industries are still under development, and there have been initiatives to prepare skilled workforce for software industry.

To facilitate the growth of software industries, there have been attempts to create a specialized area where the software developers could highly interact. In order to integrate and coordinate programs from several institutions to strengthen the existing SMEs and to promote new entrepreneurs, an Innovation Center for SMEs is initiated by Coordinating Ministry of Economic in collaboration with the Agency for the Assessment and Application of Technology (BPPT), Ministry of Cooperatives and SMEs, Department of Industry and several other institutions. The SME Innovation Center could enhance the ICT based SMEs by promoting them into the potenstial market, enhancing the SME's human resources, helping to access financial market, and linking to the research institutions. In addition, this Center also promotes the use of ICT to support their business, for the back office, production or marketing.

Keywords: SMEs, Innovation Center, Software, ICT

1. Overview of SMEs in Indonesia

SMEs (Small and Medium Enterprises) play significant role in the Indonesian economy. In 2007, SMEs which accounts for 99.99 percent of business units and 97.3 percent of labor force contribute about 53,6 percent of the total Indonesian GDP[2]. Small and Medium Enterprises (SMEs) in Indonesia play a significant role on social and economic growth. The importance of the SMEs is well illustrated in their contributions on the number of employment, establishment and contribution of SMEs to GDP. The number of employment of SMEs in 2006 was 85.42 million peoples or equal to 96.18% of the whole workforce in Indonesia. The economic growth of Indonesia in 2006 was 5.48%, whereas contribution of SMEs is equal to 3.06%.

Although the role of SMEs is very important, some indicators related to innovation or

[1] Working at BPPT (Agency for the Assessment and Application of Technology), currently the Group Leader of Networking dan Database on SME Innovation Center

[2] Beurau of Statistics, 2007

technology are contradictorily low, e.g. Technology Achievement Index, Innovative Capacity Index, Human Development Index, and Growth Competitiveness Index. For example according to UNDP's Technology Achievement Index in 2001, Indonesia was in the category dynamic adaptor or in the rank of 60 out of 75 countries.

Some studies also show, that interaction between three components of innovation i.e. industry, research institute and government is weak. There are indications that some research institute is inward orientated, and industries depend too much on their foreign principal. Furthermore, there are shortage of science and technology resources on some aspects such as the number researcher, research funding, and research facilities. Improvement can be done by managing the correlation between research and industry in a better way.

Furthermore, Indonesia is a very big country with around 17,500 islands, with a total of population almost 240 millions. Condition of the daily life also varies from a very traditional to a modern living especially in big cities. Availability of electricity, telephone and internet are also different from one places to other. The economic condition in a region influences their infrastructure facilities due to the economic of scale. The resources for development e.g. research institute or university also varies among regions.

Most of science and technology research activities in Indonesia are carried out by public research institutions and public universities, whereas private institutions play a minor role. The public R&D institutions consist of two groups namely under departments (Departmental Research Institutes-DRI) and under non-departmental (Non-Departmental Research Institute-NDRI). Although programs for DRI and NDRI refer to the National Mid-term Development Plan (NMDP) 2004-2009, their activities in detail can be different in perspective and substantive, which often there is no relation to each other.

SME development in Indonesia is also supported by different organizations such as Business Technology Center, Incubator organization, Non-Government Organization (foreign and national). Coordination between them, however, is still limited and their activities focus in some regions or some fields of technology only.

Cooperatives and small and medium enterprises are considered to be the engine of economic growth. Therefore, the empowerment of SME is mandatory to be done by solving their handicaps i.e. low productivity, limited access to productive sources and unconducive business environments.

2. Overview of ICT Sectors in Indonesia

Meanwhile The opportunity of SMEs to contribute in the ICT (Information and Communication Technology) market is quite promising. IDC Reports in 2006 shows that ICT sector in Indonesia provides 81,000 jobs and creates 1,100 new ICT based entrepreneurs. Total number of Software Developer is about 56,000 units in 2006 and 63,000 units in 2007. Thus, from the 13.5 billion professional developer in the world, Indonesia shares about 0.5 percent. The greatest share is from India (10.5%) and the USA (18.9%). In addition, the number of Software House or Independent Software Vendor (ISV) is 250 units in 2006 and is projected to become 500 units within the next 5 years. In term of supply, Asia Pacific region has the largest number developers (29.2%), but its demand accounts only 50% of that

from North America Region. In Indonesia, The market share of the local software, however, is still about 16% of the total Indonesian software market share of around USD 60 billion.

The prominent ICT Research Centres are mostly conducted by Government Research Institutes and Universities.

Table 1. ICT Excellence Research Centres

Institution's Type	Institution	Capability
Government	Center for ICT at the Agency for Assessment and Application of Technology (BPPT)	Data Link for Disaster System, Embedded System, O pen Source, EGovernment, Data Mining, Grid Computing, Next Generation Network, Set Top Box, Digital Broadcast, Medical Electronics, Navigation Radar
	Indonesian Institute of Sciences (LIPI)	Grid Computing, Electronic Telecommunication, Intelligent Robot, Radar
Universities	Bandung Institute of Technology (ITB)	Rural Telecommunication technology, Microelectronics, Ubiquitous application
	Indonesia University (UI)	E-Learning, Digital Library, Grid Computing, Next Generation Network
	Gajah Mada University (UGM)	Embedded System
	Surabaya Institute of Technology (ITS)	Electronics Telecommunication, Intelligent Robot

However, there are still several problems that hinder the software industry in Indonesia. First, the is still lack of comprehensive potency mapping in term of human resources and software enterprises. Second, the law to protect the Intellectual Property Right for software is still under development while the piracy rate is still high. Third, the number of business incubator to promote the new entrepreneurs is still limited. Fourth, the information infrastructure is not evenly distributed across the country. Fifth, the lack of coordination among the professional software developer which reduce the strength to capture the market. Sixth, the scarcity of venture capital to support financing the new entrepreneurs.

Up to now, the regulation to support the software industries is still under development. First, there would be Capability Maturity Model in Indonesia which will help categorizing the capability of software industries. Second, there is an IPR Act No 19/2002 about Copyright Law, which could be applied to software, but extra effort is still needed to implement it.

To standardize the competency of human resources in ICT, some software professionals in Indonesia usually try to comply with International standards, such as ISACA for ICT audit, CISCO for networking, and several others. In term of human resources, there have been initiatives to provide skilled workforce, both the human resources who can

skillfully use the ICT product as well as the human resources that capable of producing the ICT products. Those initiatives are Higher Education on ICT, High School specialized on ICT by the Government, School Program 2000 initiated by Association of Internet Services (APJII), etc.

3. Initiatives to strengthen software industry

To facilitate the growth of software industries, there have been attempts to create a specialized area where the software developers could highly interact. Based on the diagnostic study in 2006 by Department of Industry, Bandung city (at West java provinces, about 300 km from the capital city, Jakarta) and its surrounding is designated as a region to develop ICT industrial cluster. The location of the ICT industrial cluster would be build around Telkom High School of Communication and PT INTI at Bandung. The working group to facilitate the cluster comprised of representatives from industry, academics, government, and supporting institutions. The identified champion of this cluster, which named as "KlariTi", is PT. INTI (an electronic industries). Starting the year 2008, the facilitator should give intensive advocacy to the member of the cluster. By clustering software enterprises within the nearby area, the enterprises could get several benefits, such as: easier access to ICT infrastructure, common/supporting facilities, and faster interaction among them.

Other initiatives which involves more private sectors in the development also carried by other institutions, such as Bandung High Tech Valley, Bogor Cyber Park, Solo Technopark, Jababeka Region, and the others, which would integrate between supply and demand of the software industries. Bandung High Tech Valley is the predecessor of the ICT based industrial cluster in Bandung initiated by the Government, whereas Bali Camp is one of the prominent outsourcing software house initiated by private sector. At one time, it could get order from International Finance Corporation to develop financial Software with International scope. But, due to some difficulties such as human resources management, market orientation, etc., this Bali Camp is relocated to a place in nearby the Capital city.

Not all initiatives are fruitful, but the attempt to develop an integrated environment for software industries, which certainly involves SMEs, never stop. Lessons are learned, and better support from government institutions is still needed to strengthen the linkage between technology supplier and its market.

Gu and Ho & Luban indicate that the difficulties of innovation system in developing countries is caused by two factors namely transition from agriculture era to industrial era so that technology depends on foreigner and also R & D activities are not highly prioritized. Secondly, the S&T actors stand alone and it is not integrated in an innovation system. Technology is generally accepted to make changes both in manufacturing and services sectors. In most developing economies, much of technology creation is developed at government research institute and universities. Consequently, linkage between research institute and industry are very important.

4. SME Innovation Center

The improvement of the SME capability is essential since small leverage of SME will

give a high impact for Indonesia. Therefore, Indonesia has to manage the technology and innovation especially for the SME.

In order to integrate and coordinate programs from several institutions to strengthen the existing SMEs and to promote new entrepreneurs, starting this fiscal year (2008), an Innovation Center for SMEs is initiated by Coordinating Ministry of Economic in collaboration with the Agency for the Assessment and Application of Technology (BPPT), Ministry of Cooperatives and SMEs, Department of Industry and several other institutions. The Coordinator minister for economic is also regulated a package policies for empowering SME, including marketing, regulation, human resources development, and funding.

This innovation center is an organization or an organizational unit which acts as a node, hub or gateway from partnership network which provides integrated services to develop innovative SMEs. It is expected to be the solution for some critical issues faced bu SMEs. The most important role of SME Innovation Center is to be the platform for coordination and synergy of the three components of innovation namely research institute, industry and government including different organizations working in Indonesia and also to provide database needed by SME. Some research institutes and universities should be appointed to be the center of excellent in a special field of S&T. Their tasks are to develop S&T needed by SMEs and industries, in a relation technology push, market driven and the combination of both.

The target of SME Innovation Center is to improve existing enterprises and to generate new enterprises. By improving of technology, quality, network, information etc., it can empower the SME to be more competitive in process, products, and their services. Therefore, hopefully SME can be the engine of the economic growth of Indonesia.

4.1 Organizational Structure

To manage the SME Innovation Center, there is a national team which should guide the policy, coordinate the network, and facilitate required budget (Figure 1). The institution which interact directly and provide services to SMEs would be the nodes, which is called Intermediation Institution. Several nodes will be establihed across the region, mostly by empowering existing institutions to provide predefined roles, so that they can be categorized as SME Innovation Center. To become an Innovation Center, an institution should have at least 2 years experience, have selected services, have a network of expertise, and is committed to achieve the stated goals.

The nodes of SME Innovation Center should play some of roles as follow:

- Business development : consultant for productivity improvement, financial
- Technology development : prototyping, licensing of technology
- Incubation technology and business : new enterprises development
- Human resources development : training and entrepreneurship development
- Access facility : providing facilities offices, measurement, standards, testing and quality (MSTQ)
- Access expertise : technical assistance, expert

- Access information : database information on technical aspects, market, funding, IPR
- Legitimating : accreditation and certification
- Intermediaries : technology brokering, financial aspects, market
- Network : synergy between business and technology, research cooperation.

Among those many roles, the Innovation center at least must provide: (1) technology-based services, (2) human resources development, (3) business intermediation/networking, and (4) facilitating financial access.

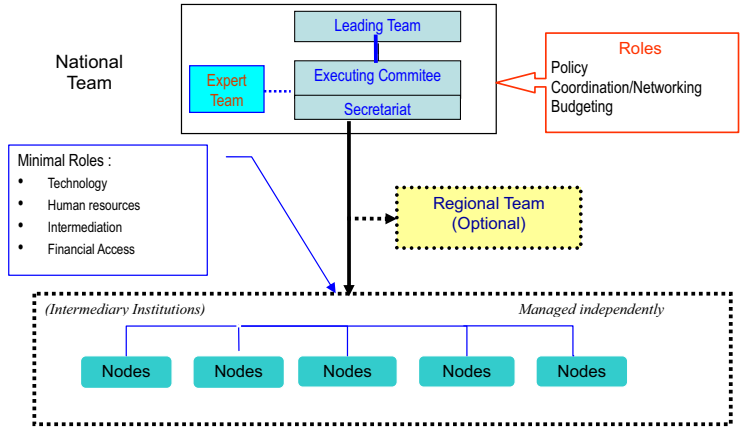

Figure 1. Organizational Structure of SME Innovation Center

The SME Innovation Center could enhance the ICT based SMEs by promoting them into the potential market, enhancing the SME's human resources, helping to access financial market, and linking to the research institutions. In addition, this Center also promotes the use of ICT to support their business, for the back office, production or marketing.

4.2 Action Plan

The short term action plan of the Innovation Center for SMEs can be categorized into: (1) strengthening the institutions of Innovation Center; (2) strengthening the networking and database; (3) intermediation; and (4) promotion of innovation. The activities of the action plan are as follows:

Table 1. Activities of the action plan

Institutional development	Networking and database	Intermediation	Promotion of innovation
– Development of intermediary nodes – Development of outsourcing area – Mapping availability of the certification body – Education of techno-preneurship	– Website development – Database of technology – Database of expired patent – Strengthening the IPR clinics – Technology foresight	– Mapping of SMEs – Academic paper on venture capital – Strengthening business incubators	– Virtual marketplace – Innovation store – Commercialization of R&D product – Innovation reward

The midterm and long-term action plan would be looking for the best practices and creating replicas of nodes of SMEs' Innovation Center in other locations based on the specificity of the regions.

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