







■ Represents an opportunity to Asia-Pacific countries, but there is a need for systematic planning and action to create the required human resources in the region

■ Many have initiated steps to address the gap, countries such as China, India, Malaysia, Philippines

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Critical Problems Encountered



- Non-availability of a sufficient number of qualified, trained teachers
- Lack of adequate infrastructure (telecomm, bandwidth, computers, distance learning equipment)
- Access to educational materials, libraries, etc.
- Lack of adequate and timely data
- Countries have not systematically analyzed the HR demand-supply scenario for the ICT sector

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Lack of teachers caused by...



- Shortage has led exodus of teachers from educational institutions to industry
- Higher industry salaries, especially due to shortage

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Three Imperatives for Government



- It is necessary to use ICT for teaching in schools, colleges and other educational institutions in order to improve quality and to overcome the shortage of teachers;
- Government-funded initiatives have serious limitations because of various factors; and,
- It is necessary to create an appropriate framework for the involvement of the private sector and to attract non-government funding

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Roles of Government

- Needs to develop a vision of the country's role in the global IT human resources market (to be developed jointly with private sector)
- To come up with an IT education master plan (Singapore)
- To liberalize the education sector (for example, regulations on establishment, syllabi, number of books, qualifications of teacher, licensure exams)
- To enable private investment in and loan funding for higher and technical education
- To make strategic investments that cannot be done by industry

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- To take the lead in the creation of high-quality, interactive teaching material, utilizing the private sector as much as possible
- To establish the necessary institutional mechanisms to certify educational content
- To evolve a suitable policy framework for telecommunications to make connectivity available at affordable or subsidized cost to educational institutions
- To encourage R&D and innovation in the use of wireless broadband technologies in education, as this could greatly help remote areas
- To effectively complement government and private sector spending to create front-end infrastructure such as computers, network resources and facilitators

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- To encourage language technology research that aims at making network resources and content language-neutral
- To plan and implement a project aimed at retraining existing teachers
- To evolve a suitable mechanism to register private training institutions without curbing their freedom to innovate
- To evolve suitable policies for computer donations (tax-free), tax and custom exemptions on the importation of ICT equipment

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- To use existing institutional resources more intensively
- To adopt a suitably phased programs of introduction of computer education in schools
- To experiment with different models of utilization of ICT in education; and ICT use to plan, teach and assess academic lessons
- To encourage the use of broadcast media for education (distance learning, TV education)
- To provide suitable tax incentives to institutions engaged in teaching and higher learning


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Role of Private Sector

- For countries that have liberalized education, private institutions have come up fairly rapidly
- Greater collaboration between industry and educational institutions
 - Microsoft, Motorola, Cisco, IBM, Intel's Teach to the Future
- Help develop standards in ICT training

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Possible National and Regional Level Incentives

- A proper assessment of the demand-supply gap in human resources for the IT sector
- Development of high-quality digital training and educational content
- Collaboration for teachers' training
- Collaboration in language technology research
- Experience sharing in different PPP models
- Experience in the liberalization of education policy

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Use of ICT for HRD

- Software-based learning programs
- Distance-learning

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Policies with Shorter Lead Time

- Policies needed to produce immediate or near-term impact when a significant shortage exists
- Difficult to generate such policies for high-qualification workers


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Import of IT Workers

- Issuance of immigration visas to attract foreign ICT professionals
 - Examples include USA, Germany, UK
- Some regard this as the best quick fix for a shortage
- This policy aggravates discrepancies between poorer countries and affluent countries. Poor countries find it hard to attract ICT workers


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Retraining of Current Workers

- Solves problem by increasing the productivity of current workers
- However, many individual companies do not have any incentive in providing such training to their employees, considering the expenses involved.
- High level of competition and short product cycles make it tough for companies to maintain their staff
- Companies worry that workers will leave after receiving training


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Conversion Training for Unemployed and non-IT Workers

- Politically tempting: solving 2 problems, unemployment and ICT skills shortage
- However, experience shows that the effectiveness of this policy is rather limited, particularly for skills that require significant amount of knowledge and creativity

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Subsidies

- For private learning centers and short-courses programs
- Non-degree and short term programs very popular
- Limits to the knowledge that this type of education can offer
- Too much focus on this could distort the national education system

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Promotion of Certificate Programs

- Many countries have a national skills certificate programs
- Many are outdated and managed inefficiently
- May be better to promote private and vendor certificates program

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Policies with Longer Lead Times

- Increase in school sizes
 - Can easily degrade quality of education
- Revision of School Criteria
- Boosting awareness of IT careers

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Possible Programs

- Training through the Public Education System
- Training in Higher Education
- Vocational, Specialized and non-formal sector training
- Training to Government Employees
- Training for SMEs and Micro-enterprises
- Training in Rural Areas
- Training by the Private Sector to Employees and Clients
- Looking at possible gender exclusion issues
- How to incentivize private sector to be become involved in human resource development
 - Various schemes
 - Tax breaks
- Low interest loans for HRD and PC or ICT-related purchases
- Mobility of ICT workers

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Group Discussion on the Possible Programs

- Current situation in your country
- Possible policy initiatives
 - Do you agree with the "roles of government" slides?
 - Additional suggestions
- Possible projects for each program
 - Brainstorm as much
 - Prioritize (discuss criteria)

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Thank you!

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