TOWARDS SUSTAINABLE OUTSOURCING:
A RESPONSIBLE COMPETITIVENESS AGENDA FOR IT-ENABLED SERVICES

Prepared by
Oshani Perera (IISD),
Paul Begley (AccountAbility)
Alex MacGillivray (AccountAbility)

FOREWORD BY NANDAN NILEKANI

Contribution by Rafiq Dossani

iisd — International Institute for Sustainable Development / Institut international du développement durable

Norad

03.2009

TOWARDS SUSTAINABLE OUTSOURCING: A RESPONSIBLE COMPETITIVENESS AGENDA FOR IT-ENABLED SERVICES

Prepared by
Oshani Perera (IISD),
Paul Begley (AccountAbility)
Alex MacGillivray (AccountAbility)

FOREWORD BY NANDAN NILEKANI

Contribution by Rafiq Dossani

TOWARDS SUSTAINABLE OUTSOURCING: A RESPONSIBLE COMPETITIVENESS AGENDA FOR IT-ENABLED SERVICES

Any mistakes, omissions or errors are the sole responsibility of the authors.

CONTENTS

ABOUT THE AUTHORS

Oshani Perera is a Programme Officer at the International Institute for Sustainable Development

Alex MacGillivray is the Head of Programmes at AccountAbility

Paul Begley is a Senior Researcher at AccountAbility

ACKNOWLEDGEMENTS

FOREWORD
BY NANDAN M. NILEKANI

I am delighted that our friends at the International Institute for Sustainable Development have put remarkable effort to publish this report on sustainable Information Technology Enabled Services (ITES). It is particularly a timely contribution given that the recovery of the global economy will bring forth new ideas and approaches, some of which have been covered in this report. I also hope that this will be just the first of many future contributions from IISD that will track and catalyze new ideas and solutions to make this planet a more equitable and sustainable home for all.

In the short and medium term, the primary challenge is to achieve an equitable increase of the Human Development Index. Economic interaction between nations is a true value creating process that, if conducted with fairness and trust, will generate more universal wealth and well-being. Information and communication technology has indeed enabled economic interaction by making, communication, collaboration and transportation more accessible and affordable. In turn, ITES have moved in to develop efficient ways of increasing productivity through outsourcing and offshoring. Together these industries have given rise to new vehicles for growth and competitiveness. Though this appears to be simple economics, the impact and the implications are more complex. Corporate and national policies have been changed, political agendas have been transformed, and business practices have evolved to deal with the impact of outsourcing.

This report explores the various dimensions of outsourcing and its interplay with other forces. It captures the lost opportunities as outsourcing processes mature and makes a case of new horizons that are emerging out of the prevailing economic downturn.

However, there is more potential for the future than past achievements. ITES is still being used as a lever to 'manage', not 'create'. This industry can further leverage global resources, build competencies' and provide value to all stakeholders in ways far beyond our current thinking. ITES can further transform business models, make governance more effective, address delivery challenges of public goods and services, bring better livelihoods to poor and deprived areas, provide incentives for investment in education and much more. But global societies need vision, investment and a shift in mindsets to make this happen. This report will certainly help both leaders and stakeholders take the first steps in this important direction.

Nandan Nilekani

Co-Chairman and Co-founder, Infosys Technologies Ltd.

KEY FINDINGS

This report sets out an ambitious agenda for countries, cities and companies which they can use to create an outsourcing model that is genuinely sustainable. It concerns the crucial role of Information Technology Enabled Services: that is, all the services that can be provided remotely through cables, phones and computers.

In the past decade, Information Technology Enabled Services (IT-enabled services, or ITES) have missed two opportunities to play a proactive role in sustainable development worldwide. They now have a third chance. The report calls this agenda for sustainable ITES "Outsourcing 3.0".

The outlines of this agenda emerge from the report's critical review of the past decade's experience of ITES and its close look at the next decade's likely trends. The study—supported by the Norwegian Agency for Development Cooperation (NORAD)—uses new research from the International Institute for Sustainable Development (IISD) and AccountAbility, which is based on the best available data and in-depth interviews with thought-leaders and practitioners.

The report's key conclusions include:

- Emerging-economy leaders must *make the right IT investment decisions*—not just the fashionable ones—if they want to unleash its poverty-reducing potential;

- ITES hubs like Bangalore and Manila must, if they are to migrate from IT destinations to IT innovators, *build sustainability into their development models*—even if this initially raises costs relative to competitors;

- Companies throughout the value-chain need to *upgrade their corporate social responsibility* (CSR) practices, both to manage risk and to identify new profitable opportunities;

- Policy-makers, investors, industry analysts, business schools, consultancies and civil-society groups need to *take ITES seriously as a new sector* that demands as much critical scrutiny and policy-intervention as other industrial sectors.

The Outsourcing 3.0 agenda is timely because the current model of outsourcing is in disarray—a condition that the serious global economic downturn of 2009 (and perhaps beyond) could accentuate.

The report identifies six key drivers of change:

- A loss of confidence and resources among investors: this pinpoints the need for much better information on *what constitutes sustainable quality in ITES investments*, going well beyond the current AGOBI approach ("as good as or better than India");

- A failure in many countries to get and stay on track with the Millennium Development Goals: this leads to a growing awareness that *ITES does not inevitably contribute to the core development effort* and that some cherished projects do not have the potential to get beyond the pilot stage;

- A return to high unemployment rates (over 10% in many countries) means that outsourcing decisions will have to be justified—and probably formally approved—on the basis of rigorous criteria;

- A current of pessimism about the prospects of securing a serious climate deal in Copenhagen in December 2009, or of salvaging the failed Doha trade round: this puts the spotlight on *which companies and countries are really on the pathway to low-carbon prosperity*;

- A concern with the way *financial collapses and scandals* are moving beyond the financial and automotive sectors into the ITES sector (e.g. accounting irregularities and the rise in IT-enabled fraud);

- A serious step-change in the *quality of IT technologies and social architecture*: this now enables ITES to move from the incremental and often frivolous to the innovative and potentially radical.

How does this agenda for IT-enabled services—Outsourcing 3.0—differ from previous outsourcing models?

Outsourcing 1.0 was driven by increases in the affordability of information technology and reliable communications. The result was that companies moved business-process jobs, such as customer-services and human resources, offshore. The model was led by a desire for low-cost solutions, and little attention was paid to the impacts on sustainable development.

Outsourcing 2.0 saw higher-value jobs being moved to new export-zones. Policy-makers recognised that ITES jobs could promote dynamism in other sectors and deepen the pool of experienced managers. The model generated some interest in sustainable development, which became an issue for cities or regions seeking to manage the social and environmental impacts of ITES jobs. But serious efforts to mitigate impacts were at the margin.

Outsourcing 3.0 develops out of the experiences of these earlier models, in a context where incumbents are in trouble and there are first-mover disadvantages. In contrast to the previous versions, the evidence suggests that this time there need not be a "race to the bottom". It is possible for companies, cities and countries all to compete responsibly—but this will only happen if an integrated approach replaces the current piecemeal one.

The research informing this report uses a *"responsible competitiveness" framework* for ITES to show how this can be achieved. This framework is both a diagnostic benchmarking tool and an aid to policy development.

The report builds on earlier work by AccountAbility on designing responsible competitiveness strategies for sectors, and by the IISD on advancing sustainable trade strategies, to consider the ITES sector across three components in the development cycle:

- *Strategic leadership* Despite visionary leadership among a few CEOs, most ITES players have been content to be back-office operators in the sustainable development arena. Some have ignored supply-chain risks; others have over-hyped development solutions. As ITES leadership moves from Silicon Valley and the leading financial centres towards the principal Asian vendor hubs, there is a real opportunity for new leadership to emerge;

- *Systems* ITES has not (with the exception of e-waste) taken systematic ownership of sustainability problems in the supply chain. This must change, for ITES faces a host of challenges. For example, the sector accounts for the same level of carbon emissions as aviation. The sector must now move from pilot projects to become systematically part of the development solution (IT4D at scale); and ITES companies should start delivering on their claims of massive carbon-abatement potential;

- *Engagement* ITES firms are individualistic and fiercely competitive, and a culture reflecting these qualities has dominated their efforts to solve sustainability problems. Serious efforts at intra-industry collaboration (such as the Electronic Industry Code of Conduct and the Global e-Sustainability Initiative) have appeared only recently. The next step must be dedicated efforts to make global IT collaboration a reality in the (still largely low-tech) sustainability sphere.

Table 1: The Responsible Competitiveness Framework for ITES			
	LEADERSHIP	**SYSTEMS**	**ENGAGEMENT**
Responsible Business Climate	Incentives offered to help companies to improve positive impacts of ITES in India, South Africa and the Philippines	Use of ITES to build better public institutions	Civil society organisations working to improve the competitiveness of BPO industries in Uganda
Smart Philanthropy	Businesses providing opportunities in ITES in rural India	People working to create 'fair trade standards' for software development	Opportunities for start-up Base-of-the-pyramid providers to collaborate to scale - up quickly
Talent	Nasscom and the Indian Ministry of Human Resource Development's commitment to establish 20 Indian Institutes of Information Technology	Nasscom and the Indian Ministry of Human Resource Development's commitment to establish 20 Indian Institutes of Information Technology	Inclusive partnerships to mitigate the risk of losing jobs to outsourcing
Standards and Compliance	New "green" building standards being developed in China and India	Increases in the efficiency of data centres	Indian Industry Association, MAIT, working with civil society to promote better regulation for e-waste
Innovation	Development agencies providing local research and development facilities to harness ideas in outsourced hubs	Development agencies providing local research and development facilities to harness ideas in outsourced hubs	Development agencies providing local research and development facilities to harness ideas in outsourced hubs
Communications	Professional computer-game players in China being set up to win a share of the $1.8 billion trade in virtual items	Development of learning networks to promote 'responsible innovations'	Tribe-sourcing shows how inclusive competition can contribute to sustainable development

Source: AccountAbility Responsible Competitiveness Index

The ITES value-chain is complex and getting more so. The report assesses the responsible competitiveness drivers using AccountAbility's sector framework, which identifies six such drivers:

- *Responsible business climate* Policy-makers are looking to ensure that financial packages are delivering the desired positive externalities from ITES. The evidence presented here from South Africa, India and the Czech Republic shows how incentive packages are promoting the take-up of environmental management systems, contributing to better institutions and sustainable development;

- *Smart philanthropy* Companies are applying development-oriented "base-of-the-pyramid" (BoP) projects through initiatives like ITC's e-Choupal, which involves 4 million farmers. But too few companies appear to be developing serious BoP propositions; more needs to be done to mobilise the actions across ITES companies;

- *Talent* The "war for talent" is more intense than ever. As countries like India, Brazil and China look to move up the value-chain, skill shortages are emerging. The report finds that a number of practical attempts to deepen the talent are underway; but such activities are often fragmented and poorly structured, and thus fail to produce a sufficient number of graduates with the appropriate skills for business, and that some hubs are struggling to retain IT workers;

- *Business and compliance standards* These standards are becoming more important in shaping the ITES sector. From green building standards to data-centre efficiency, there is some evidence that progress towards Outsourcing 3.0 is indeed being made. There are real opportunities to extend this, but seizing them will requires greater ambition in meeting both international and local standards, particularly in regard to investment strategies. The necessary drivers to ensure uptake of international standards will not necessarily come from schemes originated in North America and Europe;

- *Product and service innovations* New product and service offerings are being made available to a wider audience. The research here finds evidence that, for example, regions in China are gearing up to co-create the next wave of ITES offerings through "tribesourcing". These models may have originated in online gaming and social networking but they have an enormous potential to provide dynamism across broad areas of the "real economy" and enable cities to quickly access new high-value jobs;

- *Communication* Many ITES firms have seen managing their sustainability performance as a distraction and headache rather than a core business opportunity. Smart firms (e.g. IBM and Wipro) are now creating user-friendly add-on and stand-alone tools to enhance their own performance metrics and reporting systems and then bring them to market. There is an opportunity here for a sector-wide initiative to monitor, benchmark-and ultimately certify sustainability performance;

In sum, there are rich opportunities across the six areas of the Responsible Competitiveness Framework—yet there is also the real prospect that 2009 will see no further progress towards Outsourcing 3.0. The worldwide economic downturn could limit R&D expenditure on sustainability, corrode existing levels of trust between fiercely competitive firms and tempt them to return to their established business models. In addition, export-zones could refocus their planning regulations and incentive packages to appeal to businesses who are becoming risk-averse and seeking to cut costs. In such circumstances, the problems of a current ITES model that lacks coherence and needs to be fundamentally reset would be intensified.

This report finds that this outcome is not inevitable. In fact, the global economic crisis could provide the very opportunity that businesses and outsourcing hub innovators have been waiting for to move vigorously in the direction of Outsourcing 3.0. The evidence in this report provides much of the detail for the Outsourcing 3.0 blueprint. If the ITES sector takes a leadership position of this blueprint, the outcome will be enhanced sustainability and a more responsible competitiveness for all involved: employees, citizens, businesses, cities, regions and countries.

CHAPTER 1
TOWARDS SUSTAINABLE OUTSOURCING 3.0

Thomas L. Friedman, *The World is Flat* (2005)

"The best companies
outsource to win, not to shrink.
They outsource to innovate faster."

Information Technology Enabled Services (ITES) are reshaping today's global economy. ITES are changing how all stakeholders interact. Businesses are looking to maximise value-creation along their supply-chains; policy-makers are devising new incentives to attract jobs; and civil-society organisations are now alert to the environmental and social impacts.

ITES are now clearly into their second generation. Outsourcing 1.0, characterised by the increased affordability of information technology, saw reliable communications—creating opportunities to attract new jobs to cities, regions and even new nations. Multinational companies such as SAP, IBM, HSBC and Accenture moved business processes overseas. The model was driven by their desire to produce quality outputs at low cost; these companies found value in sending teams offshore to fulfil tasks like accounting, customer services and processing CVs.

It was largely a quick fix; issues of sustainable development were not on the agenda. The globalisation of service jobs led to an inflow of jobs into new areas around the world. Those countries with large, highly-educated workforces, reliable Internet connections and political stability soon benefited from the increased employment opportunities: China, the Philippines and Ireland among them. But India was the main success story.

India has continued to dominate the global Business Process Outsourcing (BPO) industry. By 2005, it had attracted 65% of the global industry in offshore IT. Moreover, ITES is integral to the economies of many Indian cities. An annual study by GlobalServices, the media platform, rates the world's top outsourcing cities using a six-theme framework which includes such issues as the quality of the workforce, the risk profile and transaction costs. Its 2008 report finds that two of the top eight destinations were Dublin [Ireland] and Makati City [the Philippines], but that the other six were in India: Bangalore, Chennai, Delhi, Hyderabad, Mumbai and Pune.

"Cost-cutting in New York, boom time in India"

Key Definitions:

Information Technology Enabled Systems (ITES)
ITES, which encompasses BPO, includes all services that can be provided remotely through cables, phones and computers.

Business Process Outsourcing (BPO)
This is the contracting out of operations and responsibilities for a specific business function or a business process to a third-party service provider. It covers back-office outsourcing (which includes internal business functions such as billing or purchasing) and front-office outsourcing (which includes customer-related services such as marketing or tech support).

Knowledge Process Outsourcing (KPO)
This is a form of outsourcing where knowledge-related and information-related work is carried out by workers in a different company or by a subsidiary of the same organisation (which may be in the same country or for cost-saving reasons in an offshore location).

Near-sourcing
This is the movement of jobs and services to a low-wage country that is relatively close in distance or time-zone.

The rise of ITES providers has been a prominent feature of the last 20 years. India has played an important role here in working with local companies to build expertise in ways that reinforce the attractiveness of the country. Welters of firms, like Infosys and Satyam, founded in the 1980s, have thrived in providing bespoke outsourcing packages. These specialist providers found it possible to provide solutions in much shorter periods than the 12–15 months that others might take to establish a partnership with an appropriate company. Such changes also make it easier for first-time buyers, small- and medium-sized enterprises (SMEs), and intermediaries like law firms and consultants.

Outsourcing 1.0 oversaw the beginnings of a thriving ITES sector. The model was driven by the fusion of advances in technology (especially affordable communications), access to reliable Internet connections, and more sophisticated software applications. The timing was fortuitous, for the period also saw the collapse of the Soviet Union and communism and the formation of new states, which opened up new regions for commerce.

At the same time, sustainable development was overlooked in Outsourcing 1.0. Policy-makers and business leaders were concerned mainly with tapping into existing human resources and finding solutions for short-term problems.

In other parts of the world, companies and competitors looked with envy at the way India was making a success of the model, and tried to replicate it (see the contribution by Rafiq Dossani in this report on Page 45). Brazil, the Philippines and China started vying for the new jobs that were becoming available, by offering better incentives and attracting more companies. Some Indian companies moved from copying western business models to innovating in order to improve their own business processes.

This phase reached a decisive point in early 2004 when Russia's then President Vladimir Putin visited Bangalore to learn about ITES. This visit was, in the eyes of *Business Week*, the inspiration of one of the world's most aggressive IT strategies, which saw Russia become the third-largest software outsourcing destination in only two years. More importantly, it began a process of diversification of investment destinations which irrevocably changed the ITES sector.

OUTSOURCING 2.0

The paradigm shifted with Outsourcing 2.0. It reflected the accelerating pace of globalisation in the 2000s, and involved a major redistribution of power. Many jobs moved to yet more new territories; there was an increase in the types of jobs available; and hubs like Bangalore and Chennai themselves began to outsource work. IT-enabled companies began to analyse supply-chains, staff costs and outsourcing opportunities in more detail. United States-headquartered companies in particular realised that they could cut costs and improve the quality of their services by outsourcing; Indian firms moved from copying western notions of sustainability to innovation; and new markets opened up to provide ITES.

Export-zones—from Uganda and Estonia to (for the US) near-shore locations like Canada—began to offer better incentive packages for new jobs. Nicaragua offered an impressive economic package in special economic zones; Botswana's government reimbursed companies US$2 for every US$1 they spent on training local workers in call-centres. In this new context, where policy-makers and governments often invested heavily in IT infrastructure as a way to move towards the knowledge economy, ITES was seen as a legitimate strategy for development.

Table 2: Three phases of outsourcing, and the impact on sustainable development			
	OUTSOURCING 1.0	**OUTSOURCING 2.0**	**OUTSOURCING 3.0**
Responsible Business Climate	Development of outsourcing hubs to attract international jobs	Policy to drive ITES innovations into other sectors	Policy-makers and businesses working together to co-create regulation in areas like e-waste, green infrastructure and planning applications
Smart Philanthropy	Investment incentives customised to screen best employers	Companies working in disadvantaged communities to provide jobs in ITES	Policy-makers and businesses alignment investment to create sustainable hubs and low-carbon export zones
Talent	Government-led training to meet requirements of business (e.g. language skills)	Public-private partnerships and ongoing training to deepen availability of business-relevant skills	Quality educational systems that produce high-calibre graduates able to promote responsible innovation
Standards and Compliance	Policies to reduce violation of worker rights and environmental infringement	Percentage of companies satisfied with local infrastructure and facilities	Development and mainstreaming of local and international standards for data centres, green buildings and adoption of carbon-efficient infrastructure
Supply Chains	Vendors offering integrated outsourcing solutions	Improvements in the efficiency of data centres	Coordinated management of sustainability footprint of ITES sector
Innovation	Development agencies providing local research and development facilities to harness ideas in outsourced hubs	Fiscal incentives for certification for environmental management systems and companies incorporating green criteria in their outsourcing contracts	Use of 'tribesourcing' to spur entrepreneurship and low-carbon competitiveness
Communications	Use of 'tribesourcing' to spur entrepreneurship and low-carbon competitiveness	Use of 'tribesourcing' to spur entrepreneurship and low-carbon competitiveness	ITES sector provide regular updates towards ambitious targets to contribute towards major global problems like climate change

At this time, the mid-2000s, sustainable development increasingly became an issue (see Table 2 on Page 9). Policy-makers began to consider the social and environmental impacts of these jobs on broader economic development. They considered the impact of these jobs in three ways:

- *Income* The increases in foreign-exchange earnings and foreign direct investment (FDI) could provide a steady flow of foreign currency to pay for imports, thus allowing the economy as a whole to expand without an unsustainable current-account deficit bringing the process to a halt.

- *Dynamism* The growth of the IT and ITES sectors could lead to improvements in the management capability of the economy as a whole, the creation of new entrepreneurs and investors, and more demanding consumers. All this in turn could help domestic producers to develop expertise in marketing, quality and logistics necessary to compete successfully in international markets. The result could be to promote dynamism in other sectors of the economy.

- *Employment* Every job exported from developed countries could—because of lower costs and greater density of labour—leads to the creation of more jobs in developing countries. The potential for significant further employment growth existed as more services became commoditised. The employment generated by the IT and ITES sectors may have been primarily limited to highly educated workers, and not large enough to provide work for growing young populations; but IT and ITES growth could also stimulate growth in local manufacturing and service jobs.

The ITES market was expanding geographically, but also in character. By the middle of this decade, ITES was no longer restricted to business processes; higher value jobs were moving offshore. "Knowledge process outsourcing" (KPO) became a popular phase in boardrooms. Wall Street, once the icon of the American dream, recognised the new opportunities from KPO. Investment banks like Morgan Stanley, Credit Suisse and Citibank quickly switched data-crunchers earning low- to mid-six figure salaries in Manhattan with MBA-ers in India. A report by banking consultancy Celent reported that in 2007, the US finance-sector had saved no less than $18 billion by these methods.

As well as banking, new jobs and services began to move offshore. Increasingly, research and development for industries like aerospace, automobiles and pharmaceuticals started being done overseas. The healthcare industry is just one example that illustrates the potential of Outsourcing 2.0. IT had already enabled medical records and x-rays to be sent securely to medical teams in developing countries for speedy and accurate analysis. Then, US healthcare providers such as United Health Group and Blue Cross Blue Shield started sending workers to hospitals in Bangkok, Singapore and India. Finally, innovators like ICICI in India began to offer personalised insurance for diabetes sufferers, with variable premiums based on constantly updated feedback on how insured people are managing the condition.

ITES has evolved throughout the Outsourcing 2.0 model. The Sharks Annual Wealth Management Forum has, for example, been featuring ITES and software services amongst their top five portfolios since 2004. New regions compete to attract jobs—some (Canada, eastern Europe and north Africa) on their geographical proximity to major markets, others (the Philippines, for example) by creating appealing packages and leading hubs to devise incentives which amplify the positive spillovers from outsourcing. In the recent wave, where high-value jobs are being relocated, these spillovers can be significant.

But is the global movement of jobs contributing to a "race to the bottom", where big developing countries are offering low wages and large workforces in order to win outsourced service jobs? How can citizens, cities and countries ensure that the opportunities from outsourcing are genuinely sustainable? How do policy-makers design systems to deal with the global movement of jobs? What is the real potential of outsourcing to tackle climate change? How will the large-scale economic downturn of 2009 and perhaps beyond affect outsourcing?

This report examines these issues in the context of the evolution of a third wave of outsourcing: Outsourcing 3.0.

OUTSOURCING 3.0

There is evidence—both anecdotal and quantitative—from across the "flat" world that ITES companies and export-zones are on the path to making outsourcing sustainable. It is not easy, but it is possible.

AccountAbility's Responsible Competitiveness Index (RCI) looks at how 108 countries are embedding responsible-business practices. The latest (2007) ranking uses 21 indicators on major issues like human resources, signing and ratification of labour-standards, and CO_2 emissions from authoritative third-party sources to understand how civil society, public policy and business action are aligned for sustainable development.

Figure 1 compares the RCI with the A.T. Kearney Global Services Location Index (GSLI) for 2007. The GSLI pools data from three key areas:

- *financial attractiveness:* for example, average wages, rental costs for offices and perception of corruption;

- *people and skills availability:* this includes the size of existing BPO sectors, scores on education and language, the attrition-risk and labour-force availability;

- *quality of business environment:* this is assessed in terms of infrastructure quality, availability of reliable Internet connections and access to telephones, and of security risks and security of intellectual property (IP).

| **Figure 1** | **Responsible Competitiveness in Major Global Service Locations** |

A.T. Kearney Global Service Location Index, 2007 (y-axis, 3.5 to 7.5)
Responsible Competitiveness Index, 2007 (x-axis, 40 to 80)

A comparison of RCI rankings to a small cluster of successful BPO shows evidence of a mild negative correlation with the major outsourcing hubs. A.T. Kearney's GSLI findings of 2007 show some top performers—such as India, China, Philippines, Brazil and Indonesia—underperforming on business responsibility, while Ireland is losing ground as a service location.

A vital question is raised by this finding: will success in BPO translate in due course into more responsible business performance in emerging markets, as the major players become global citizens and fight to attract the best talent—or will there indeed be a "race to the bottom" as BPO firms cut corners to compete in a global slowdown?

A big part of the answer will be whether ITES companies and export-zones together pursue the sustainability agenda. A number of current developments suggest that new patterns are already emerging. Gary Ebeyan, chief executive of Infosys Technologies Australia, has said that his team can learn a lot from the emerging hubs: "When we looked at what we were doing, we realised the work we did in India was potentially greener than we were doing in Australia."

At the city level, too, export-zones are managing to combine liveability with effective knowledge-creation. MasterCard's Worldwide Centre of Commerce Index for 2008, for example, analyses 75 of the world's leading global cities and evaluates their strengths and challenges across seven dimensions: legal and political conditions; economic stability; ease of doing business; financial flow; business centre; knowledge-creation and information-flow; and liveability.

Figure 2 — Liveability and Knowledge Creation in Cities

Liveability (y-axis, 30 to 100)
Knowledge Creation (x-axis, 0 to 40)

Cities plotted: Rome, Lisbon, Budapest, Prague, Athens, Buenos Aires, Johannesburg, Warsaw, Santiago, Tel Aviv, Kuala, Dubai, Mexico, Istanbul, Manila, Rio de Janeiro, Sao Paulo, Cairo, Bogota, Caracas, Jakarta, Beijing, Mumbai, New Delhi, Moscow, Chengdu, Bangalore, Chongqing, Shenzhen, Beirut, St. Petersburg

Figure 2 presents the performance of six major outsourcing hubs on the MasterCard Index. This combines knowledge creation (defined to include search-engine hits, the density of researchers and the number of scientific and technical journal articles per million people) and a complex measure of liveability (which measures how conducive the city is to attracting and retaining talent). It finds that there is a weak positive correlation; for example, Buenos Aires manages to combine success on both indicators, whereas cities like Bangalore and New Delhi have an innovative culture but appear to be less successful at attracting workers to live there.
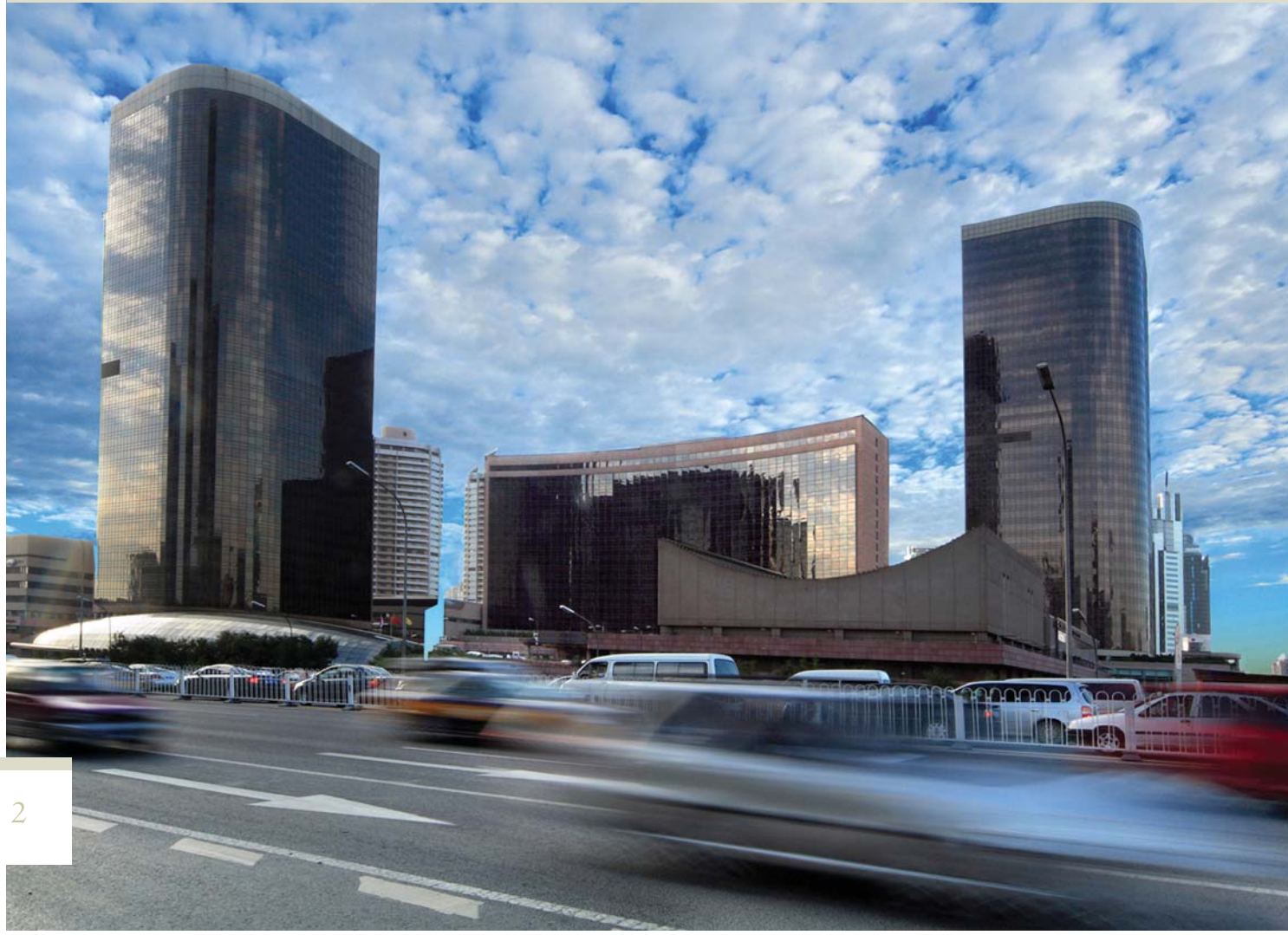
The conditions conducive to progress towards establishing a coherent and sustainable knowledge-centre are analysed further in Figure 3. This illustrates that export-zones are able to marry good living-standards with cultures which nurture and support hi-tech innovation. It shows that cities like Singapore and Tokyo score high on Mercer's 2007 Quality of Life Index and Robert Huggins's 2005 knowledge competitiveness index, while highlighting the tasks that face leading outsourcing hubs like Mumbai.

These graphics also demonstrate that simply to gain insight into the performance of outsourcing hubs is a real challenge—in great part because little information about BPO is collected in a systematic way. More needs to be known about the measurements of economic competitiveness, the number of 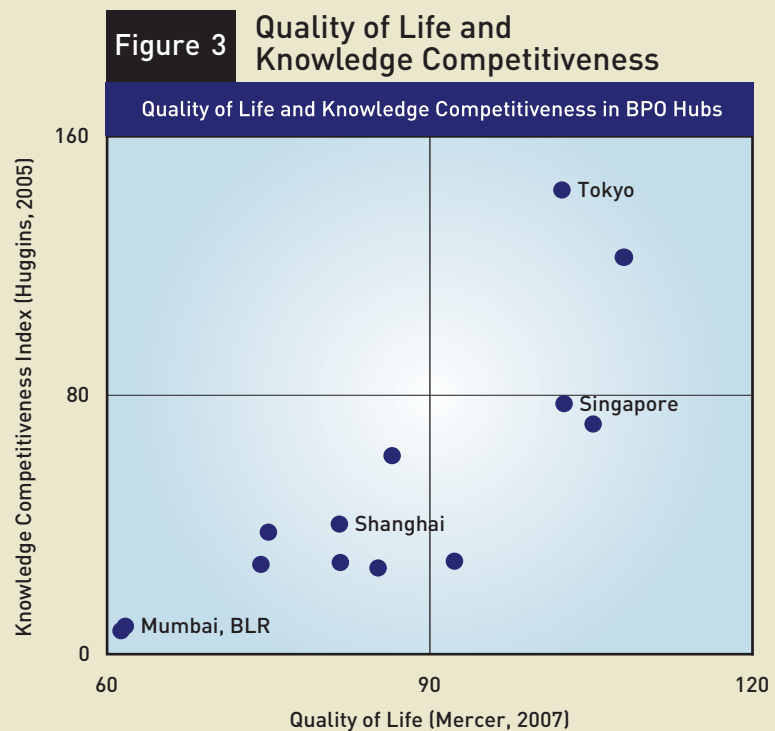ITES jobs, the density of Internet hubs, as well as broader sustainability indicators, such as the percentage of office space considered green, the energy-efficiency of data-centres or how many graduates are equipped with the skills required by business.

Yet, with all these gaps, there is evidence that export hubs are moving towards providing more sustainable solutions for ITES.

China, India and other major emerging economies have ambitious

Figure 3 Quality of Life and Knowledge Competitiveness

Quality of Life and Knowledge Competitiveness in BPO Hubs

plans to build "green outsourcing solutions". At the Business Process Industry Association of India summit in October 2008, it was clear that—despite the acute problems becoming apparent in the international economy—green issues and the social impacts of business were high on the agenda.

The next wave of Indian innovations is focused on issues of energy-efficiency, e-waste and new green IT parks like Silicon City. Two senior executives at Serco BPO India (formerly Infovision)—

Deepak Malik, the managing director, and Navtej Matharu, chief information officer—are among the entrepreneurs who are beginning to take these issues seriously. As Navtej explained, it is helping them grow as a company: "Once we get our house in order," he told us, "we can think about talking publicly about green issues. I am optimistic in thinking it will help us grow. Several customer groups, like the public sector for example, will be interested to work with environmentally and socially conscious companies".

Competing for green outsourcing: China

Position on the 2007 A.T. Kearney Global Services Location Index: 2nd
Suitable talent pool, McKinsey Global Institute Labour Supply Distribution: 5,875,000

A report by McKinsey in 2008 says that China, as it passes India to become the world's top outsourcing destination, stands to win a market share worth US$56 billion a year by 2011. The progress in making environmental security is integral to China's overall strategy is reflected in remarks by Jin Shihe, the vice-president of the China Outsourcing Research Institute, to AccountAbility in November 2008: "Environmental standards have been set and reached during the process of the current large scale infrastructure investment in Shanghai, for example standards in raw materials and dealing with waste water, waste gas and solid wastes".

China's success in attracting manufacturing work is now being replicated in ITES. The country offers companies good deals on tax and financing, reliable transport and access to a vast pool of highly-skilled workers. Already, it has become a force in writing software which is incorporated into other products. But China—the difficult economic downturn of 2009 notwithstanding—has ambitious plans to seize new opportunities. "The future trend for China", explained Jin Shihe, "will see an improvement on innovation and an upgrade of technology. It will see Chinese policy and law promoting domestic outsourcing and supporting environmentally-friendly outsourcing".

13

This is part of a general trend where companies are beginning to align their strategies to meet demands for more sustainable products and services. Figure 4 shows the performance of the 16 largest ITES companies from the Karmayog's 2008 rating of the largest 500 companies. It shows that there is a weak positive correlation between responsibility and profitability, but there is considerable difference in performance across the main ITES firms, with some doing very much better on responsibility.

Figure 4 — **CSR Performance of India's Software and ITES Companies**

CSR in India's Software and ITES Companies

Y-axis: Corporate Social Responsibility Performance (0.0 to 5.0)
X-axis: Net Profit (million Rupee, FY06) (0 to 2500)

Data points: Infosys, GTL, i-flex solutions, Satyam, Wipro, Mastek, Mphasis BFL, CMC, Polaris Software, Tata (TCS), iGATE Global Solutions, Flextronics, Rolta, Patni, HCL Technologies, Hexaware
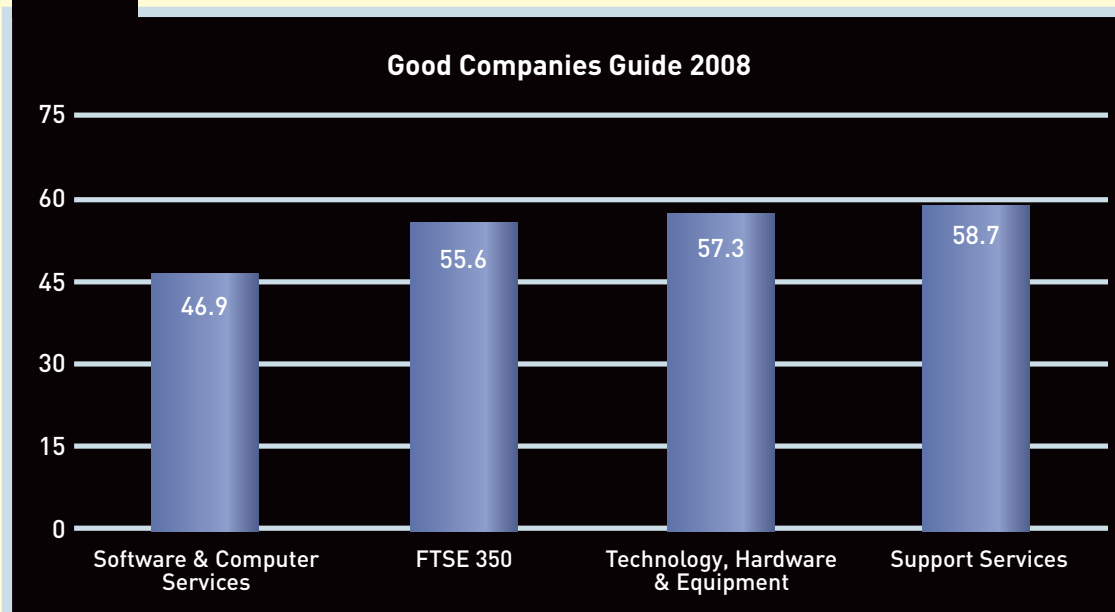
Infosys (the first Indian company to publish a sustainability report to the Global Reporting Initiative standard) and Wipro score particularly well for their leadership on sustainability issues such as carbon accounting and paperless-office solutions. Tata Consultancy Services is rewarded for innovative products like its eKrishni offering (which enables farmers to access weather forecasts through their mobile phones). But these companies appear to be the exception: six companies score below average, and 11 score less than 50% for their CSR performance.

In addition, the Co-Operative Asset Management's Good Companies Guide of 2008 shows that there is a significant range of performances in ITES companies listed on the London Stock Exchange. This rating assesses the UK's largest 350 companies in terms of a number of responsible-investment criteria (including sound governance) and broad social and environmental factors. It finds that:

- "Support Services" like Capita Group and Interserve score well compared to the average (see Figure 5 on Page 15);

- The 11 companies in the "Software and Computer Services" sector score less well, with an average performance of just 46.9%;

- There are examples of individual companies like ARM Holdings, the computer-chip manufacturer, are adopting responsible business practices;

- Companies score best on environmental impacts, but—remarkably—on the analysis of risk, three software and computer companies score zero;

- The performance of companies within these sectors varies greatly and there is a striking difference on both graphics (see Figure 6 on Page 14) between the highest and lowest performances.

Figure 5 ITES Sectors on the Good Companies Guide, 2008

Good Companies Guide 2008

Sector	Value
Software & Computer Services	46.9
FTSE 350	55.6
Technology, Hardware & Equipment	57.3
Support Services	58.7

While progressive Indian voices like Deepak Malik and Navtej Matharu might be recognising the need for business to become more sustainable, they do at present appear to be the exception rather than the rule. In the early months of 2009, much more needs to be done if businesses are really to incorporate "green" issues in their outsourcing decisions. There is a long way to go for sustainability to be included in real transactions: the 2008 Black Book shows that just 21% of companies include some "green" criteria in their existing outsourcing contracts.

Figure 6 — CSR in the Software and Computer Sector

Good Companies Guide: Software & Computer Services (FTSE350, 11 companies)
Source: Cooperative Asset Management 2008

Legend: Average, High, Low

Category	Average	High	Low
Governance	5.4	7.0	3.0
Risk	2.2	7.5	0.0
Environment	3.3	7.9	0.8
Social	5.5	7.9	2.9
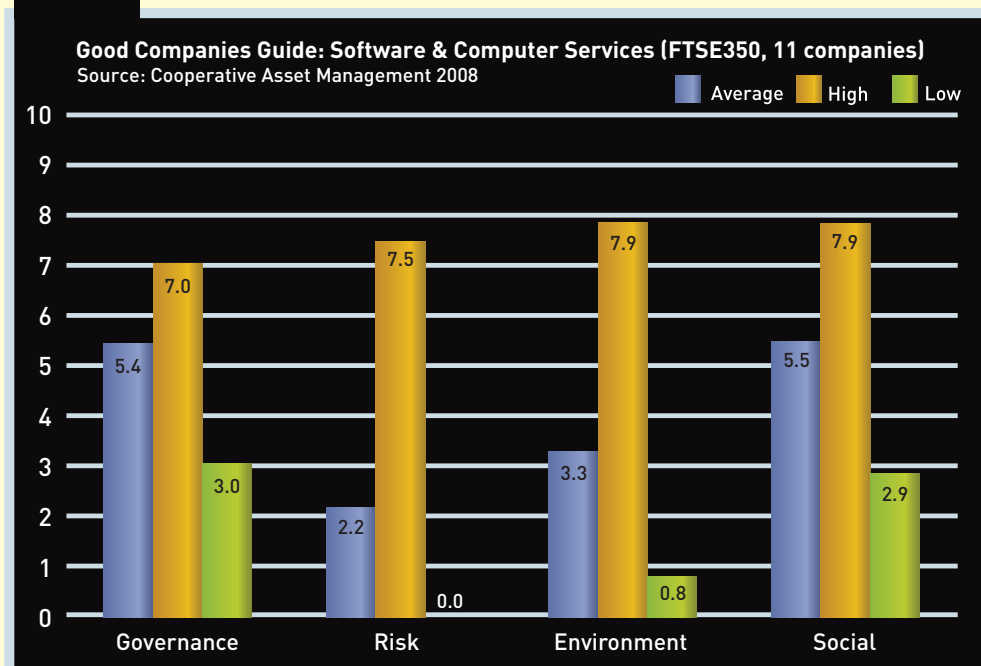
Our analysis, based on the best data available, shows that the issue of sustainability is not yet business-critical in the ITES sector, and that stakeholders, investors and companies are not recognising the potential contribution that ITES firms can make to sustainability. The tools to understand, analyse and discuss these issues are not yet fit for purpose. At present, the widely varied performances show that companies are able to avoid the spotlight for their ITES activities; and that the corporate social responsibility (CSR) debate overlooks outsourcing and the movement of service jobs.

Our research also shows that outsourcing is neglected by the CSR movement. Few companies have assigned managers who specifically deal with outsourcing contracts; it is managed rather in an ad hoc way, often being one task of the operational planning team.

So while there is evidence that the global ITES sector is moving towards Outsourcing 3.0, it is clear that many bottlenecks to progress remain.

CHAPTER 2
SIX DRIVERS FOR RESPONSIBLE COMPETITIVENESS IN THE ITES SECTOR

Bill Gates

"When change is driven by proper incentives, you have a sustainable plan for change because profits and recognition are renewable resources".

2.1 CREATING A RESPONSIBLE BUSINESS CLIMATE

THE QUEST FOR INVESTMENT IN ITES

"Irrespective of global economic health, jobs and work will move to where they can be produced efficiently and cheaply and where infrastructure to perform these jobs is available at a reasonable cost. ITES and software sectors are the cornerstones of knowledge economies. They provide incentives for modernising infrastructure and educating workforces for the next generation of skilled jobs. They offer industrialising countries a way out of complete reliance on agriculture and manufacturing and a way into economic diversification in the service sectors. And more than that, IT software and the ITES sectors provide governments with a unique opportunity to attract foreign investors while allowing for the crowding in of national players. Balancing foreign and national investment is the foundation for sustainable development and free trade in the 21st century".

Dr Nagesh Kumar, Director-General, Research and Information System for Developing Countries (in an interview with IISD, June 2008)

Investment in ITES has been controversial. The backlash against the globalisation of services reached its height in 2004-05 with a rise in the number of state bills in the US to restrict outsourcing: there had been only four in 2003, but more than 200 were tabled in 2004.

Only seven of these became law: California, Illinois, New Jersey, North Carolina, North Dakota, Maryland and Colorado legally restricted outsourcing and offshoring in varying degrees (regarding voter-data, procurement and other government functions). This, however, was followed by similar policies in the European Union which restricted the outsourcing and offshoring of all functions involving personal data outside its boundaries. At the same time, these measures did little to dampen investment in outsourcing, which in 2003–06 achieved annual growth rates of 15%–20% and indexes expanded from twenty to over fifty countries.

The accumulated result of these pressures and processes is that global outsourcing is likely to remain a vital resource and even survival strategy in 2009 and beyond—for even as world economic growth declines, organisations will be seeking additional ways to cut costs and improve productivity. In response, ITES and BPO vendors are readying themselves to provide even more cost-effective, integrated and streamlined solutions.

In the words of a CEO of a global firm: "Competition with more streamlined and high-end solutions is the way forward. Yes, clients will have less to spend on outsourcing, but we have to leverage this reduced spending to propose solutions that cannot be ignored. The focus will move from 'where can we cut costs' to 'where can we make more gains in slow and no-growth markets'. And we have to be ready to propose solutions."

It is also true that investment-promoters are competing even harder to market their regions as attractive delivery-locations. Competition is not limited to lower-income nations where capital is scarce. Both emerging and industrialised countries have also been targeting ITES inflows to such an extent that the annual magnitude of service inflows is considered today as an indicator of successful government policies on sustainable development.

The World Economic Forum (WEF) and other such events are increasingly becoming trading grounds for policy-makers to woo investors and multinational corporations rather than forums for policy dialogue alone; indeed the 2008 WEF focused almost exclusively how technology could spur sustainable development. This theme was less prominent in the 2009 event that focused on "shaping the post-crisis world", but it remained a backdrop to many discussions.

Since 2001, there has been increasing anecdotal evidence of intense competition between destinations bidding for ITES, particularly where the size of an individual project is large and where investors publicly shortlist several, equally attractive, alternative locations. In some instances, these destinations have continued raising their incentives until they reach levels at which they amount to little or no positive externalities for the host economy. A wealth of academic literature and studies performed by the OECD Development Centre indicates that bidding wars are commonplace over attracting high-value sectors such as ICT, electronics, auto/motor and ITES; over large investments; and where there are expected spillovers in terms of job creation, future tax revenues and the creation of an improved (in many cases, high-tech) business environment (the "trophies that that cannot be lost").

This brings legitimate concern that as the search for investment intensifies, investment-promoters and policy-makers tend to compromise too much and even overlook the development objectives of investment incentives in an effort to secure the deal. The investment-promoters that we engaged with in this project all stated that they would prefer not to compromise on incentives—but are obliged and even forced to do so in order to meet and beat the offers of competitors. An investment-promoter in Africa said: "We are ready to say 'yes' even before negotiations begin, and we say 'yes' knowing full well that—aside from employment— the gains may be few and far between for our country. But the prize is too big for us to even consider a 'maybe', let alone a 'no'."

This suggests that, in many cases, attracting investment has become an end in itself. This itself has lessons for the quest for investment in ITES; for sustainable development requires that foreign investment is viewed also as just one vehicle to access funds and put them to good use across an economy. The larger purposes of sustainable development need to be a core part of investment policy-makers' decisions as they work to design policies that will stand their ground in a globalised world economy.

This in turn raises three further questions:

- What determines the "quality" of ITES investment to a host economy?

- What do investors consider as "quality destinations" or "quality geographies" for locating their outsourcing and offshoring operations?

- How can ITES investments be designed to realise positive externalities for the host economy while providing adequate bottom-line benefits to investors?

HOW ITES INVESTORS DETERMINE "QUALITY" INVESTMENTS

Market intelligence has long established that BPO and ITES are no longer "only" about cost—but far more about efficiency, integrated and seamless global-delivery models, and the movement from low-end to high-end service provision. This was confirmed by our engagement with investors, who similarly indicated that decisions on where to locate were governed by its potential to satisfy seven criteria:

- generate scaled BPO and ITES to a new client base within the host economy;

- reduce recruitment and marketing costs through improved and two-way partnership programmes offered by investment-promoters;

- engage and do business with the public, private and SME sectors in the host economy;

- benefit from cheap and reliable electricity-supply and broadband infrastructure;

- receive tax and other fiscal concessions on the imports of ICT hardware that may not be available locally;

- negotiate incentives and potential "pioneer" ITES industry benefits that host economies could offer to investors;

- benefit from post-incentive programmes for longer-term capital-formation and business stability.

Even when these considerations are met, investors still remain highly receptive to investment incentives and low labour costs. Our interactions with ITES investors indicate that the investment environment and investment incentives remain the foremost indicators of investment attractiveness. The box on "Primary determinants of 'quality' ITES geographies" provides a detailed list of incentives and additional elements that ITES investors seek when they consider locating and expanding their operations.

Table 3: The Primary determinants of 'quality' ITES geographies

Our interactions with ITES investors enable us to identify the following as key determinants of investment attractiveness when selecting regions to locate and expand services:

Macro-economic conditions
Income of skilled workers
Size of the host economy
Liberal trade and payments regimes
Economic and political stability
Requirements around environmental-impact assessment
Stable rate of inflation
Low restrictions on FDI
Performance requirement

Investment policies
Non-discriminatory incentives
Domestic/regional trade integration and targeted investment policies
Low restriction on FDI
Flexibility between mandatory and discretionary incentives

Foreign Investment Incentives
Fiscal incentives
Financial incentives
Regulatory incentives

Tax rates
Corporate income tax rates and related concessions

Skills
Size and demographics of skilled labour pool
Investment in graduate education
Western language-speaking capabilities
The number of advanced education establishments offering programmes in key subjects such as
    mathematics, IT and engineering
Labour laws

Infrastructure in host economy
Condition of physical infrastructure
Telecommunications and broadband capabilities
Reliable and cost effective electricity supply
Programmes for energy management and efficiency
Focus on energy-efficient buildings and the wider priorities on "green infrastructure"
Ongoing infrastructure improvements and property developments

Patent regime
Provisions and protection provided by intellectual property rights regimes

Geographical location
Proximity to client markets
Time zones that allow for a 24-hour working day across global delivery locations
Historical and cultural ties with client economies

Subsidies
Subsidies on office infrastructure and utility costs
Subsidies of employment and recruitment costs
Subsidies or cost participation in workforce training
Assistance provided by investment-promoters such as reduced red-tape and administrative delays

Transparency
Level of enforcement of commercial and cooperate laws
Evidence on the ease of doing business – low incidences of red tape and administrative delays
Anti corruption practices
Transparency and in public procurement and lending

HOW HOST ECONOMIES DETERMINE "QUALITY" ITES INVESTMENT

The keen interest in attracting foreign investment in service industries is owed largely to the fact that this can directly induce growth, irrespective of the development context of the host economy. In lower-income countries where local businesses may have limited access to equity and global markets, foreign investment offers a promising avenue of longer-term finance. Even in richer nations which have a much wider choice of potential investors and sources of finance, foreign investment is highly valued for the wider benefits it can bestow on the host economy:

- Foreign entities by default provide host economies with improved access to global investment circles. During the first wave of globalised manufacturing, countries, cities and regions (especially those from states facing balance-of-payment difficulties) saw foreign investment principally as a means to boost exports and reduce foreign-currency spending on imports. The expectations that accompanied this second wave of globalisation (this time in services) were very different, as foreign investment is considered as the prime indicator of a country's overall readiness for modernisation and industrialisation.

- Foreign ITES firms can bring significant additional benefits in terms of improved human capital and modern technologies. These spillovers can be amplified in certain conditions: if investment strategies are targeted to priority sectors or areas of development, or if they are accompanied by clustering and linkages strategies that encourage foreign entities to build closer links with the host economy. In the context of global economic downturn in 2009 and perhaps beyond, investors in ITES will have even more incentives to achieve such outcomes.

- In particular, ITES investment introduces new technologies, boosts efficiency and improves corporate governance across the host economies. Moreover, ITES investment intrinsically offers "investment depth": the ability to "add value per unit of service/sales produced" in chosen locations.

- The concept of "value-added" is a critical lever in knowledge industries. As national firms seek to include value-added elements, the strength and dynamism of the host economy improves, and thus in turn its attractiveness as a market to invest in. At the same time, it must be emphasised that foreign-investment policies need to be designed so as to allow the "crowding" in of national players if real and sustainable growth is to take place. In other words, entry barriers for national players need to be lowered and foreign entrants need to be prevented from gaining too much dominance over the host economy. Such policies have been essential in enabling India and China to emerge as global leaders, with the result that a multitude of homegrown firms now compete as leaders in global markets.

Foreign investment in ITES offers particularly high potential for positive externalities, since innovation and R&D are intrinsic elements in its business model. In addition to knowledge- and technology-transfers, ITES can also stimulate wider e-literacy and the development of "green" and other services that are particularly adapted to suit local markets.

DESIGNING INVESTMENT POLICIES THAT DELIVER "QUALITY"

To deliver on these aspirations and bring sustainable growth to host economies, investment policies and investment incentives must be carefully thought out.

An important step in this direction must be to address the question of decentralisation below the level of the nation-state. The patterns of investment in the service industries in a range of countries—Canada, China, Ireland, India, the Philippines, South Africa and Malaysia, for example—support the view that regional governments and regional investment authorities can be effective promoters of both overall macro-economic investment policies and more targeted strategies aimed at increasing investment in selected sectors and/or areas.

Such region-focused policies have been effective in directing investment to "new" locations within the host economy. This helps ease infrastructure and labour bottlenecks, and spread development benefits more evenly across the relevant territory. It is also critical to recognise that ICT and ITES investors typically "longlist" countries and "shortlist" regions. It is thus at the sub-national level that investors begin to shortlist investment location for in-depth evaluation.

Performance incentives are also being used to promote environment and social improvement. For example, several regional-investment incentives (in India, the Philippines, Chile and Costa Rica) have established funds for the certification of management systems on environmental and social performance. The International Standards Organisation (ISO) estimates that these measures have played an important role in the uptake of ISO 14000 series on environment management and ISO 14065 on greenhouse-gas monitoring in lower-income countries, and in smaller organisations for whom compliance costs can be hugely prohibitive.

Performance incentives are also proposed by several states in the US and provinces in Canada to promote the uptake of renewable-energy technologies, green building design and electronic waste-collection systems in export-zones. It is not yet clear, however, if performance incentives are truly cost-effective in the medium term.

The principle of non-discrimination is closely connected with the question of decentralisation. To allow the benefits of foreign investment to be shared by the wider economy, investment incentives need to be non-discriminatory and offer similar sorts of benefits to similar classes of investors (whether they are homegrown or foreign). There is a growing consensus that promoting investment incentives that focus on foreign firms alone is not to be recommended, since in itself foreign investment does not automatically guarantee technological and human-capital benefits.

The quality of the investment environment—which affects a country's ability both to attract FDI and to benefit from it—is equally important to domestic investors. Thus, attractive investment terms should be seen as a part of a country's overall industrial policy and be available on equal terms to all investors, foreign as well as domestic. The implication is that incentives should focus on those activities that create the strongest potential for positive externalities, including linkages between foreign-owned and domestic firms, education, training and R&D.

In the same way that incentives should be non-discriminatory, investment policies should include a mix of mandatory and discretionary conditions. Mandatory incentives help increase investor confidence, as they are automatically conferred (provided they meet pre-determined criteria). These incentives also allow investors and host economies the policy space to negotiate on the discriminatory incentives.

While "win-win" compromises may be more prevalent in theory than in practice, the case for investment policies to be targeted and sector-based is compelling. This makes the arduous task of attracting the "right" type of investors easier and helps policy-makers allocate limited resources to where they are the most useful. The downside with mandatory incentives is that, inevitably, they will also on some occasions subsidise (incentive-free) investments that would have taken place anyway.

There are different views about what types of subsidies are best suited to serve as investment incentives. There is always a risk that host economies "over-subsidise" projects and incur deadweight loss. In larger federal economies, there is also the risk that regions find themselves bidding competitively against one another without ultimately influencing the direction of investment flows that could allow benefits to reach lower levels of the economy.

Good practice also reveals that incentives should not rely excessively on "frontloading", as this increases the risk that investors design their projects for a limited time (perhaps only until they can make better deals in a competing location). The risk is particularly acute when upfront cash-payments and tax-breaks are offered. That said, upfront fiscal incentives are—in a highly competitive global market—needed to demonstrate political openness and long-term commitment to targeted investment sectors. In addition, upfront investment is a necessity for domestic investors to enable them to offset early loss-making periods and to successfully scale up for longer-term survival.

On a more practical level, targeted policies on global services-provision need to foster R&D and innovation in order to encourage inventors to set up timely higher-end BPO and KPO in the host economy. China, Taiwan and Singapore, for example, have established fiscal incentives to promote technology and knowledge spillovers between investors and local firms, research institutes and SMEs, and to encourage R&D and progressive upgrading of local firms. In California, India and the Philippines, ITES expansion has been accompanied by innovation policies that support new start-ups, university spin-offs, science and technology parks and incubators: all of which contribute to an increasingly innovative, IT-savvy and entrepreneurial culture.

Most investment-promotion authorities have yet to realise that ITES investors are increasingly seeking to develop not just service-supply bases but also large-scale client-bases in host economies. An important investment-promotion strategy in this context lies in the expansion of supplier-development programmes that link foreign investors with local partners and client-bases. Ireland's National Linkage Programme and the Czech Republic's National Supplier Development Programme are examples of supplier associations that are expanding to include in-country business opportunities for foreign investors.

The Czech Republic's investment promotion authority describes its approach thus:

"CzechInvest, the Investment Promotion Authority of the Czech Republic, launched its Supplier Development Programme in 1999 to increase the number of domestic subcontractors for foreign-affiliate investors. A database of over 900 potential suppliers, including 73 potential BPO suppliers, is maintained online; CzechInvest also mediates contacts and joint-venture agreements between foreign investors and Czech suppliers. Selected subcontractors are provided with advisory services to meet quality specifications and improve productivity."

Source: Direct communication with CzechInvest (August 2008).

Another key service in improving investment attractiveness is to provide dedicated assistance in circumventing administrative and bureaucratic delays. Investors regularly report lengthy administrative procedures that reflect an apparent lack of market intelligence and coordination across public services; they demand greater speed in decision-making and processing of paperwork of a kind at present beyond the scope of bureaucracies in most host economies.

The Republic of Ireland has pursued targeted investment strategies with a focus on continued investment. These strategies have played an important role in establishing Ireland as a leading hub for high-value services, including financial software development and ITES.

In the late 1970s, Ireland's economy was stagnating: there was a minimal flow of inward investment, high unemployment, and a debt/GDP ratio of 130%. A report by the National Economic and Social Council in 1982 identified several weaknesses of the country's dependent economy: (i) the low-skill content of much employment; (ii) the high cost and short duration of much of the assisted employment; (iii) the low levels of commitment to R&D; (iv) the poor performance of the indigenous sector; and (v) the limited linkages with the rest of the economy.

Since that period, Ireland has become one of the world's biggest economic success stories, such that by 2008 its GDP per capita was the sixth highest in the world (though it now faces some severe problems that are in part a consequence of policy decisions made during these years of outstanding growth).

A number of investment and development policies contributed to Ireland's economic progress between the 1980s and the 2000s. The National Linkage Programme, for example, fostered links between inward investors and domestic industry. This programme covers market research, matchmaking, monitoring and troubleshooting, business and organisation development, and the creation of a specific arm of the Investment Development Authority (IDA) to promote national firms.

A dedicated post-investment policy concentrated on about 50 "cluster companies" in five target industries, including software and ITES. The cluster companies are those having a high potential for new investment, or that can leverage investment from other companies. The IDA forms links with the management, in particular with committed local managers, in order to improve their knowledge on "Ireland's advantages" and inform them about new investment opportunities. About 20 senior staff in the IDA are each responsible for between two and five target firms.

Ireland's policies to build skills in IT and the sciences involved the expansion of education (especially in information technology and science subjects); over 50% per cent of school-leavers now go on to higher education. Computer provision and training in schools has increased dramatically; IDA officers have visited every school and have written to every parent to explain the nature of the training. A wide range of training initiatives has also been introduced for older people.

A national technology policy includes the 2000 Technology Foresight Fund, which has a $1 billion expenditure plan to boost R&D in information technology and biotechnology. Telecommunication services were deregulated in 1985; this was followed by a National Development Plan (worth US $65 billion) which focused on e-business and infrastructure development, intended to establish Ireland as an IT-service hub by 2000.

Ireland's inward-investment strategy keenly targeted handpicked companies. In parallel, overseas operations were refocused on locations that had a high concentration of the right kind of companies in the new target industries. Sector/industry specialists were recruited to develop the industry-based strategy and meet potential investors.

For example, in the 1970s, the IDA targeted United States electronics and pharmaceutical industries; in the late 1980s and 1990s, software and ITES services; and in 2000, information technology, multi-media and e-business. In the 1990s, the IDA also adopted a cluster-based targeting approach, where target industries and companies were attracted to industrial clusters. From 2000 onwards, the IDA began to focus on attracting companies to more peripheral regions. The objective shifted in parallel from job-creation to the promotion of outsourcing linkages with domestic firms.

Throughout these years, incentives based on low corporate tax rates have been maintained. These are the time of writing set at 12.5%, and are in turn supported by a range of exemptions and rebates.

Source: Direct communication with the International Development Authority, Ireland; www.idaireland.com

POSITIVE EXTERNALITIES OF ITES INVESTMENTS: THE ROLE OF INCENTIVES

Incentives are important in investment decision as they help compose the package on which discretionary incentives are negotiated. In recent years, bidding wars between nations have been decided on the incentives offered and rather than on the more traditional determinants of investment attractiveness. Moreover, incentives also form the finer points of the contract which will determine the extent to which positive externalities can be realised across the host economy.

The incentives offered in services-related projects are usually some combination of three kinds: fiscal, financial and regulatory.

Financial incentives are among the most widely used in services-sector projects; indeed, without them, lower-income destinations could not aspire to attract investment in these sectors. They are offered to encourage investment in comparatively disadvantaged areas. The rationale behind their design is to correct market imperfections, reduce transaction costs, and level the playing field by offering all investors an array of "site-equalisation outlays" to lure them in.

There are several types of financial incentives on offer:

- Infrastructure subsidies to encourage investors to upgrade physical and ICT-enabling infrastructure;

- Job-training subsidies that reduce and eliminate the costs of training and up-skilling the local labour force;

- Wage subsidies that cover significant tranches of employees' wages for a given period;

- Relocation and expatriation support, to lower capital spending and relocation costs;

- Administrative support offered by investment-promoters, to circumvent bureaucratic and administrative delays in setting up operations; and

- Targeted incentives such as soft loans or interest subsidies, sale of land and buildings at cost, and cost participation (when the host government picks up the bill for particular expenses incurred in setting up, marketing, supply-chain management, R&D, and even operating costs).

As a young industry with significant spillover potential, many of these incentives have been widely offered to service-related projects in all established service-providing areas.

BPO investment incentives: South Africa

The South African government has identified the Business Process Outsourcing and Off-shoring (BPO&O) sector as one of the top three priority sectors to stimulate growth within its "Accelerated Shared Growth Initiative (ASGI-SA)". The South African Department of Trade and Investment published the following incentives in March 2007 (they are valid from December 2006 to March 2011):

- Provision of investment grants between R37,000 and R60,000 per seat

- Training-support grant towards costs of company-specific training up to a maximum of R12,000 per agent

Source: South Africa Department of Trade and Industry, Business Process Outsourcing and Off-shoring (BPO&O) Programme Guidelines (March 2007); plus direct communication with Call the Cape, South Africa

Fiscal incentives to attract services-related investment are also widely offered by lower-income countries which have limited funds to provide financial incentives. Among the types of fiscal incentives that are increasingly being included in ITES investment portfolios are:

- Reduced rates of corporate income tax;

- Tax holidays that provide exceptions for paying income tax for specified timeframes or until upfront capital is recovered;

- The establishment of special tax-privileged zones which offer lower rates of corporate taxation;

- Incentives for capital formation which link lower taxation to corporate investment, in order to encourage continued investment when incentive periods end. These measures include allowances that permit write-offs for qualifying capital costs, usually in the form of accelerated depreciation or via large deductions. Many policy-makers also now propose tax credits which can be earned as a percentage of qualifying expenditure and offset against taxes which would be otherwise payable.

- Reduced costs on the cross-border transfer of funds, goods and services. This can includes lower rates of withholding tax; reduced import taxes and customs duties (especially for products not available locally); and lower personal income-tax rates for expatriate employees; lower sales taxes and VAT reductions; lower rates of property taxes; and the option of lump-sum payments instead of taxes.

Investment incentives offered by the Philippines Economic Zone Authority (PEZA) to IT and ITES investors

- Income Tax Holiday (ITH) or exemption from corporate income tax for four years, extendable to a maximum of eight years. After the ITH period, the option to pay a special 5% tax on gross income, in lieu of all national and local taxes;

- Exemption from duties and taxes on imported capital equipment, spare parts, supplies, raw materials;

- Domestic sales allowance equivalent to 30% of total sales;

- Exemption from wharfage dues and export taxes, imposts and fees;

- Permanent resident status for foreign investors and immediate family members;

- Simplified procedures for the employment of foreign nationals;

- Simplified import and export procedures;

- Other incentives under Executive Order 226 (Omnibus Investment Code of 1987), as may be determined by the PEZA Board.

Source: Philippines Economic Zone Authority (PEZA)

Regulatory incentives are those that offer investors derogations from national and regional legislation with the general intention of "easing the burden of compliance". The downside for sustainable development is that the laws subject to negotiation are often social, labour, environment and governance regulations which form the blueprints for positive macro-externalities.

Many investors and promoters have been quick to meet this critique with evidence that regulatory incentives are not usually included in incentive packages; and that even when they are, they are offered to low-impact, high-value sectors including ITES. Despite such reassurances, there is little empirical evidence to demonstrate the use of these incentives and how they operate as instruments for transformative and sustainable development. Global investment circles also acknowledge that such incentives only appear come in the run-up to bidding wars between several competing destinations for large, one-off, "trophy" projects.

Incentive offers to the BPO and ITES industry by the State of Karnataka, India

Exemption from stamp duty and registration charges:

- All investors qualify for an exemption of 50%

- SMEs are eligible for an exemption of 100%

- Projects larger than Rs.50.00 crore which provide continuous employment for two years to over 5,000 persons in Bangalore or 1,000 persons in cities like Mysore, Udupi, Mangalore & Hubli-Dharwad or 500 in other parts of the state are eligible for 100% exemption

Waiver of import taxes:

- Exemption from payment of entry tax on all capital goods required for implementation of the projects for a period of three years from the date of commencement of implementation

Investment subsidies:

- Larger investments established outside the limits of Bangalore Metropolitan Region Development Authority [BMRDA] are provided a one-time investment subsidy of 20% up to a ceiling limit of Rs.1.00 crore. The subsidy will be determined based on employment potential.

Other incentives:

- The BPO units employing 100 persons and above outside the BMRDA limits are exempted from payment of conversion fees in respect of converting agricultural land for non-agricultural purposes up to a limit of 0.30 acres for every 100 personnel employed.

- The Government will facilitate the large BPO companies to enter into a contract with the State-owned Road Transport Corporations and BMTC to provide suitable dedicated transport services for commuting employees.

- The State is committed to simplifying venture establishment procedures.

- The State is committed to simplifying labour laws especially on the employment of women at night, flexible and mandatory working hours.

- The State has established a technology upgrade fund for SMEs to the value of Rs.50.00 crores over a period of five years.

- The Government will meet 50% of the cost of obtaining ISO 9000 and ISO 14000 certification, subject to a ceiling of Rs.75,000 per site.

In addition to the incentives and concessions offered in this policy, a separate set of incentives will be worked out by the State on a case to case basis for "anchor" companies. "Anchor" companies are those which support cluster development and linkages programmes across the State. The objective is to encourage "anchor" companies to establish their activities in "non-metro" cities.

Source: Karnataka BPO Policy (2007).

CHALLENGES FOR INVESTMENT POLICY-MAKERS

How investment incentives will play out in realising externalities depends on multiple variables, including the revenue potential of the industry sector, a country's investment attractiveness, and the wider economic and development policies being pursed.

The World Bank and the International Monetary Fund (IMF) have since 2001 acknowledged that some of their former investment-promotion recommendations (especially tax exemptions) have been inappropriate to middle- and lower-income countries with often weak revenue administrations and frequent leaks from special economic/export-zones. Tax exemptions are also open to abuse by investors; and they tend to attract footloose investors planning to leave the country when incentive periods expire.

A survey of the way tax incentives operate in four countries—Malaysia, the Philippines, Thailand and Brazil—shows that tax holidays have failed to encourage synergy among national investors, to assist infant industries or to direct investment to deprived areas. The World Bank and the IMF report that these countries have spent significant resources in granting incentives to unjustified trophy projects; unjustified because their return on investment was so high that investment would have taken place regardless of the incentives offered.

Similar experiences are reported in Mexico, Turkey and Pakistan. All these countries are redesigning that investment policies to pursue alternative tax incentives such as investment allowances and investment credits which are more cost-effective to rollout and are less open to abuse. The advantages and issues linking different types of tax incentives are presented in the form of "Pros and cons for the government of different types of tax incentives".

Table 4: Pros and cons for the Government of different types of tax incentives

Advantages	Disadvantages
Reduced corporate income taxes	
• Cost effective to roll out • Revenue costs are more transparent	• Largest benefits go to high return project that are likely to take place irrespective of investment • Prompts tax avoidance as investors will shift profits to low tax regions via transfer pricing within and outside national boundaries • Can be a windfall to existing investments
Tax exemptions	
• Allows investors to avoid contact with tax administrations (which can be advantageous if administrations are inefficient, corrupt and complicated).	• Can be costly to administer • Attracts footloose investors • Prompts tax avoidance as investors will shift profits to low tax regions via transfer pricing within and outside national boundaries • Creates competitive distortions between existing investors and newcomers • Revenue costs are not transparent unless the filing of tax returns is made mandatory. In this case the administrative benefits of the incentives are foregone
Investment allowances and tax credits	
• Can be targeted to earmarked, high-value industries including ITES • Revenue costs are more transparent	• Difficult to administer • Distorts choice of capital assets in favour of short-lived projects as a alliances is available each time an asset is replaced • Open to abuse as investors can buy and sell the asset several times • Discriminates against longer term and potentially more sustainable investments if provisions to carry forward losses are provided
Accelerated depreciation	
• Can be targeted to earmarked, high-value industries including ITES • Revenue costs are more transparent • Provides a fairer playing field for longer-term investments • Can contribute to reducing distortions caused by tax exemptions and reduced corporate taxes	• Difficult to administer • Discriminates against longer term and potentially more sustainable investments if provisions to carry forward losses are provided
Exemptions from indirect taxes such as customs duties, VAT, and import tariffs	
• Allows investors to avoid contact with tax administrations (which can be advantageous if administrations are inefficient, corrupt and complicated)	• Many of these payments are usually creditable and can hence be of little benefit • Highly prone to abuse
Special economic/export zones	
• Allows investors to avoid contact with tax administrations (which can be advantageous if administrations are inefficient, corrupt and complications) • Can reduce rollout costs	• Can result in leakage of untaxed goods into the domestic markets and create an unlevel playing field for local investors

The task of formulating "quality" investment policies in the interest of maximising sustainable and equitable development requires a trade-off between competing objectives, as well as intelligence on how prevailing incentives can optimise positive spillovers and enable synergy among national players. As emphasised above, regional investment policies are pivotal here; but they need to take into account not just the process of attracting investors but the overall regulatory, budgetary and development implications of a proposed ITES project.

It is beneficial to both the investor and the host economy if incentives are anchored in polices that also state the objectives to be pursed in each case. This will help investment-promoters appreciate the extent of flexibility with which they can negotiate discretionary incentives, and help policy-makers monitor the efficiency (and indeed the wastefulness) of these incentives over time. Although such monitoring can be difficult, to factor in objectives from the outset creates a baseline on which policy-makers can build programmes to encourage continued investment after incentive periods have ended.

Although foreign investment is no substitute for developing an attractive enabling environment that would lure investors in its own right, all lower-income and emerging economies do need to increase their investment attractiveness—be it in skills, infrastructure or linkages programmes. It is good practice to seek this through wider economic development policies that make foreign investment more likely.

Yet offering too many selective incentives to foreign players will not prompt them to embed their enterprises into the local economy, nor will it prevent them moving away if better deals can be struck elsewhere. More importantly, it will not create a favourable playing field for local entrepreneurs who ultimately form the mainstay of the host economy, and will be key to facing the risks involved in growing sustainable knowledge economies in the longer term.

There are also many low-cost improvements that lower-income and emerging economies can make in any case: establishing more efficient regulatory and administrative processes; reacting more quickly and efficiently to investor inquiries; improving their investment-promotion websites; improving transparency and clarity in communication about investment-qualification criteria. All of these will go a long way to improve the overall investment attractiveness of any prospective location.

REFERENCES

Direct communication with investment-promotion agencies in Botswana, Senegal, South Africa, California (USA), Ontario (Canada), Denmark, India, Singapore, the Philippines, Ireland, Malaysia, Vietnam, Bahrain, Chile, Argentina, Costa Rica, Morocco, Tunisia, Mexico, Sri Lanka, Czech Republic, Guadeloupe (French overseas territory), Hungary and Slovakia

Direct communication with Investment Business Daily, the Outsourcing Centre (Everest Group)

Nagesh Kumar, Globalization and the Quality of Foreign Direct Investment [Oxford University Press, 2002]

A Survey of Support by Investment Promotion Agencies to Linkages [UNCTAD, 2006]

Checklist for Foreign Direct Investment Incentive Policies [OECD, 2003]

H. Christiansen, C Oman & A Charlton, *Incentives Based Competition for Foreign Direct Investment: the Case of Brazil* [OECD Working Papers on International Investment, 2003]

H Lowendahl, *A Framework for FDI Promotion* [UNCTAD Transnational Corporations Journal, Vol 10 / 2001]

K. Omar & W.A. Stoever, *The role of technology and human capital in the EPZ life cycle* [UNCTAD Transnational Corporations Journal, Vol 17 No 1, 2008]

F. Boudier-Bensebaa, FDI-assisted development in the light of the investment development path paradigm: Evidence from Central and Eastern European countries [Transnational Corporations Journal, Vol 17, No 1, 2008]

M.W. Hansen & Schaumburg-Müller, eds., Transnational Corporations and Local firms in Developing Countries – Linkages and Upgrading [Copenhagen Business School Press, 2006]

N. Kumar, *Internationalization of Indian Enterprises: Patterns, Strategies, Ownership Advantages and Implications* [Research and Information System for Developing Countries (RIS), Discussion Paper No. 140, 2008]

S. Chaturvedi, *Emerging Countries as Sources of Investment and Appropriate Technology: Case Study of India* [Research and Information System for Developing Countries (RIS), Discussion Paper No. 137, 2008]

2.2 SMART PHILANTHROPY BPO @ BOP

Base-of-the-pyramid (BoP) entrepreneurship was once hailed as the panacea for sustainable development. Inspired by social entrepreneurs such as Mohammad Yunus, founder of the Grameen Bank, and business gurus such as C.K. Prahalad and Stuart L. Hart, the 1990s saw a rush of efforts to bring products and services to the poor.

Multinationals began to market lower-cost adaptations of their flagship brands; energy companies began to experiment with solar and wind-powered rural-electrification models; mobile operators competed fiercely for rural and pre-paid markets where fixed-line telephony was non-existent; and venture capitalists invested in a bewildering array of rural "opportunities"—from hand-woven textiles to organic produce and indigenous arts.

But except perhaps for mobile telephony, few of these stories survived to tell the tale. Many ventures started off with a poor allocation of resources, labour and capital, and a lack of attention to continued management, up-skilling and technology maintenance. Even when the desired products did get to market, they were unable to yield sufficient returns or attain sufficient scale at which production costs could be absorbed. Indeed, Muhammad Yunus continues to stress that rural-enterprise development needs to remain "non-profit" ventures where the objective is to break even and the focus is tuned to creating livelihoods as opposed to business development.

The early success stories of rural BPO ventures might indeed renew faith in base-of-the-pyramid ventures. For one thing, market conditions amid the severe economic problems of 2009 could not be better. BPO providers will, given the downturn in international business, be increasingly looking to diversify, and seeking work within national boundaries will become a priority. The experience of Gramm Communications—a pioneer of base-of-the-pyramid BPOs in India—is exemplary. The project was founded on the premise that the best way to use ITES to bring new opportunities to poor people is to provide both employment and services targeted at the base of the pyramid. They have focused on developing computer systems to serve the needs of micro-credit, micro-payment and village retail-providers, both for enterprises within the Grameen group and more broadly for other micro-credit providers. On the ground, Gramm also combines its BPO enterprises with broader skills training and distance-information-assistance programmes for farmers. Another successful model has been Source for Change in Rajasthan (see box).

"Many of our clients had little confidence in us until they visited us", explained Karthik Raman from Source of Change, a rural business aiming to provide women work in ITES. "But when they leave, I have to say they are always impressed."

Source for Change, founded in India's North West region of Rajastan, is one of the new BPO providers which are aiming to tap into India's vast rural population. And it certainly has advantages. Building the office space is inexpensive, accessing cheap hardware is not a problem, and there is the potential to leverage India's leadership in attracting BPO. "We have already some new business from an urban BPO in Delhi", explained Raman, "and we are going to do some data imaging and formatting as well as some data entry work for them, but we are also in conversation with several other people in Bangalore."

While training women with no IT skills level is the largest capital expense and a source of skepticism with some of their competitors, Raman says it's not a problem. After their training, workers are productive, completely autonomous and able to work effectively. "A year ago some of our employees had never seen a computer and now they type faster than me!" joked the second-generation Asian-American.

The new business was founded in October 2007, but Raman's has significant plans for the business: "My dream would be to employ maybe 100,000 women in many different locations all across India. We could delivery higher value services like data analytics, database cleansing and even innovate ourselves."

If they ever reached that scale, this type of initiative could have a huge impact on rural India. "If you lend to women, there is a far larger change for the money to be used in way that it benefits the entire family." Raman concluded, "When founding Source for Change, we had the idea that if we employ women and we provide them IT skills, there will be a great chance for this opportunity, this education and this income to spill over into the home and benefit their children."

Similar success stories from base-of-the-pyramid BPOs in countries such as Kenya, South Africa, Chile and Costa Rica abound. And they all appear to follow a similar model for success:

- Focus on low-end data entry and digitisation projects which can be performed in local or vernacular languages and where interaction and reliable super-fast connectivity is not required;

- Concentrate on sourcing clients locally. The cultural ties will enable a strong business relationship straight from the onset;

- Actively canvass business from local governments and non-profit organisations. They are the most likely clients that will actively support socially oriented ventures;

- Scaling up needs to focus on systems on a cluster approached with strong systems to coordinate delivery from dispersed locations;

- Invest in on-site generators to avoid frequent power and connectivity outages which can be disruptive;

- Tailor business models to the costs and benefits of working in rural areas. Lower wages and attrition rates mean that rural BPOs can afford to train employees for longer, without fear of losing them. (For example at GramIT, entry-level employees, all with at least three-year college degrees, earn $800 a year, compared with $2,000 to $5,000 annually for an employee at an urban outsourcing shop. GramIT's centres see just 5% annual turnover— dramatically better than the 60% rate in places such as Bangalore);

- Support other IT4D initiatives. Some, such as Grameen Communications and the rural BPO initiative developed by IIT-Madras have sought BPO enterprises with village IT kiosks offering villagers access to email, government and commercial services, agricultural trade and training. Adding BPO services to kiosk enterprises offers the advantage that additional minimal investment in infrastructure is required, and each kiosk is already run by an entrepreneur who can provide a trusted link between the villages and city-based work providers.

Pioneers of the rural BPO model are also seeking to learn from the development and growth of "fair-trade" in food and textiles products. This has had some success in finding markets for products produced by poor communities, artisans and cooperatives, and created a trusted brand that allows poor and rural producers to benefit from trade.

Samasource and IfPeople are both United States-based social enterprises working to develop a "fair-trade" model for services and software. Samasource works with rural BPO providers to promote "socially-responsible outsourcing" services. It finds small and mid-sized business process and IT-outsourcing companies in poor regions, and helps companies in the US and Europe hire, manage, and pay them securely. As well as developing business opportunities, they are also seeking to establish standards and awareness of the potential for "socially-responsible outsourcing".

Samasource defines "socially-responsible outsourcing" as outsourcing to SMEs located in poor regions and/or owned or employing economically or socially disadvantaged people. They are also developing labour standards criteria, and have been in discussion with Social Accountability International which runs the SA8000 certification program for labour standards in manufacturing, about developing a similar standard for services. IfPeople concentrates on software development and works with suppliers in Latin America. It has created the "fair-source" model as the basis for relationships with key suppliers in Argentina and Chile, based on fair-trade standards.

However, as the early pioneers of fair-trade discovered, demonstrable development benefits are not sufficient for a successful mainstream product; high-quality, and competitive pricing are also critical to a successful "trade not aid" approach. Therefore, Samasource is taking a two-pronged approach: providing training and capacity development for providers, as well as international market development and certification. In India, the Indian Institute of Technology is working on a similar initiative at the national level, identifying and training workers in rural areas in various skills, relevant to the BPO industry, while also liaising with urban clients and ensuring that quality standards are met.

These are very early days, and rural outsourcing, while promising, is still a marginal trend. Scalability and business-development issues, lack of awareness among potential clients, scarcity of fresh capital, infrastructure and exposure are the critical areas where these entrepreneurs require support to sustain themselves.

In economic downturn, there is a real possibility to realise the potential that rural outsourcing can provide. As governments roll out economic-stimulus packages and businesses begin to be more careful with their philanthropic donations, there is a real possibility to scale-up existing initiatives; however, more coherent strategies need to be created to mobilise the actions of ITES in promoting rural development.

2.3: BUILDING TALENT

Rama Bijapurkar, Director Infosys Technology

> "Poor consumers embrace technology because it democratises. As they will tell you, a machine doesn't discriminate against you because you don't speak English or you are a very low-value customer, but people do. Illiterate people find it easier to deal with icons on a machine than with an impatient human being behind a desk. We are well poised to create an inclusive market economy that suppliers benefit handsomely from, financially speaking."

Outsourcing 3.0 is enabling countries around the world to compete for jobs in ITES. Established players like India, China and Brazil battle to attract new jobs and find packages to retain existing opportunities, while countries across Latin America and Africa challenge to build BPO industries. Countries of all sizes are creating strategies to attract jobs. Yet as the United Kingdom's former Prime Minister Tony Blair has said (with regard to Rwanda): "The vision is one thing, to make it happen is another".

In 2009, despite—and in some ways because of—the global economic recession, there are opportunities for many nations to build ITES industries. Jordan is among the countries that are developing a reputation for producing graduates that are particularly innovative, enthusiastic and creative, according to Google's MENA Emerging Market managing director Mohammed Gawdat. Many companies are looking to access the expertise of this new generation. Apple, for instance, has emphasised that their iPods are assembled in China due to better materials-science and packaging technologies, while, more broadly, companies are looking to diversify their supplies across various regions.

As Andrew Groth, European senior vice-president of business development at Genpact, has said: "Selecting just one location will limit the benefits of an outsourcing initiative. It is therefore important to create a global services value-chain linking talent across several countries to tap into the best each location has to offer".
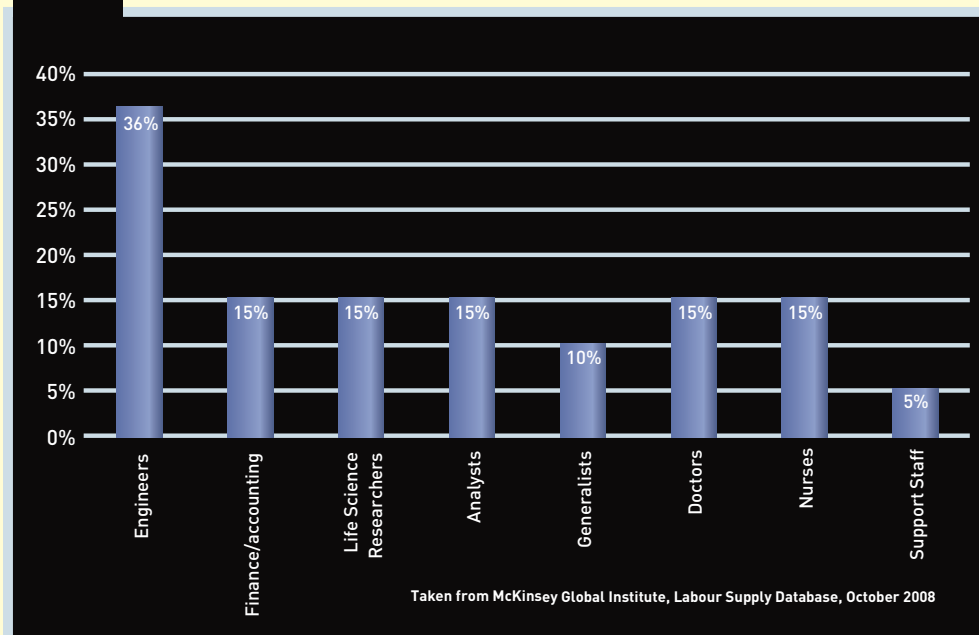
In the "flat" world, retaining, utilising and developing human talent is becoming critical. A 2008 IT-skills survey conducted by Mercer concluded that the most pressing challenge for employers (reported by 92% of the 750 organisations contacted) was to attract and retain the right talent, especially in engineering, sales and marketing. The skills gap is a problem the world over and the shortage of graduates in science, technology, engineering and mathematics, in particular, is often considered to be an important impediment for countries moving to the knowledge economy or up the ITES value-chain. The real challenge is how public policy and business action can work together to deepen the availability of competent graduates.

India and China are producing millions of skilled graduates a year. India ranks fourth in the world for numbers of scientists and engineers, according to INSEAD/WEF's Global Information Technology Report (2006–07). China has a tertiary-education enrolment rate of almost 20%; India a rate of 12%. The percentages may be lower than many of their competitors, but the sheer numbers are daunting.

But do most graduates have the skills needed for Outsourcing 3.0? Raju Bhatnager, vice-president (BPO and government relations) at the Indian trade body Nasscom, thinks not: "India produces 500,000 engineers annually", he told us, "but only a very small percentage is directly employable by the industry." McKinsey casts a critical eye on the readiness of many graduates for a career in ITES (see Figure 7 on page 40). C.K. Prahalad and M.S. Krishnan point out that BPO vendors are reaching the limits of their existing business models, based on screening literally millions of CVs and the recruitment and training of tens of thousands of graduates a year.

Figure 7 The Suitability of Workers in India

Engineers	36%
Finance/accounting	15%
Life Science Researchers	15%
Analysts	15%
Generalists	10%
Doctors	15%
Nurses	15%
Support Staff	5%

Taken from McKinsey Global Institute, Labour Supply Database, October 2008

Moreover, to sustain growth in BPO requires not just a flow of skilled workers into BPO vendors or policies to retain and upgrade their skills as the vendors go up the value-chain; it also needs a step-change in demand for ITES in emerging markets. "Many tech CEOs are disappointed by the fact that emerging markets like Brazil, Russia, India and China don't actually boast the billions of middle-class consumers that they read about in business books with fancy titles like "Billions of Entrepreneurs" and "Three Billion New Capitalists", notes Forrester Research. "Only one-fourth of metropolitan Indians have a personal computer in their home, and more urban Indians go online from an Internet café than from a home computer."

A range of businesses and social enterprises are now working with schools, businesses, government and directly with citizens to enhance IT skills, using a range of approaches. This is a fertile, fast-moving period of innovation; there have been few independent evaluations of the impact, cost-effectiveness and scalability of different approaches.

INDIVIDUAL READINESS: BASIC IT SKILLS IN FORMAL EDUCATION

- One Laptop per Child (OLPC)'s long-awaited XO laptop is now being distributed to children throughout developing countries, partly through a "Give One/Get One" scheme. In Peru, 145,000 have been deployed; in Rwanda, 500 of the child-owned, open-source XOs were distributed in 2008; Rwanda's president, Paul Kagame, has committed his government to distribute 50,000 a year from 2009.

- USAID and Microsoft are working together with the education ministry in Kenya to train teachers on how to integrate technology into the school curriculum. The goal is to give all 8.5 million primary-school students in Kenya technology skills that will allow them to compete in the global knowledge economy.

- Malaysian energy firm Same Darby has adopted 22 schools to ensure that young students are educated in sustainability issues. To maximise shared-education software, Microsoft in India has developed MultiPoint, allowing 50 students at a time to use a single PC by using multiple mice and colour-coded cursors.

$$A_V = \frac{R_1 + R_f}{R_1}$$

$$\frac{10k + 100k\Omega}{10k\Omega} =$$
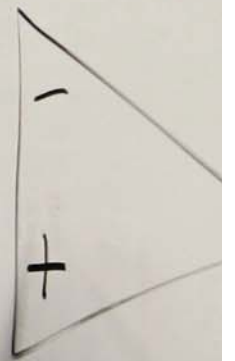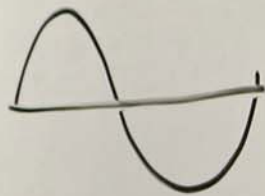
BUSINESS READINESS: ADVANCED IT SKILLS

- IBM has recently reshaped its community volunteering programme to focus US$250 million of staff resources on month-long assignments helping SMEs in target countries like Romania, Turkey, Ghana, Vietnam, the Philippines and Tanzania to help improve business processes.

- Wipro is making useful contributions to thought leadership in the Indian and global BPO sector (Wipro now has operations in 50 countries), partnering with Knowledge@Wharton to study recent trends in innovation sourcing, and publishing a white paper on green IT.

MACRO-ECONOMIC AND GOVERNMENT READINESS: IMPROVING THE BUSINESS CLIMATE

There are many examples of how software companies and other organisations are taking a strategic approach to expansion:

SAP in Saudi Arabia. "Public and private organisations that are able to rapidly innovate, share many common characteristics", says CEO Henning Kagermann. "Firstly, they consolidate their IT to reduce cost and unnecessary duplication. Secondly, they standardise on software and systems. Thirdly, they build their business processes on platforms that allow for interoperability and information sharing along their value networks."

Infosys has proposed that planning applications in India are submitted electronically to planning departments. This enables streamlined, smart and corruption-free urban-planning services in India's fast-growing metropolitan areas.

Nasscom, working with the Indian Ministry of Human Resource Development, has announced its intention to establish twenty Indian Institutes of Information Technology (IIIT) on a public-private-partnership basis in the next five years.

The Yale School of Management—under Joel Podolny, who served as Dean from 2005 to 2008—has overhauled its curriculum, replacing core courses like finance with courses on the customer and the investor that aim to confront real problems holistically. "The problem we've had at [business schools] is we've taught in a functional way", Podolny told *Fortune* magazine in October 2008; "But management challenges don't arrive within functions". These core changes are attracting a lot of attention from other universities and might spur others to reinvest the way they deliver skills for business.

Deepening skills across Europe

Across Europe there are success stories of businesses and policy-makers working together to build the skills base. Just two examples:

- The owner of the Arcadia Group in the UK, Philip Green, has created the Retail Fashion Academy. This specifically aims to deepen the availability of competent workers for their high-street stores, to instill pride in their workforce and to enable employees to seek career opportunities in fashion

- In Portugal, Microsoft has partnered with a local NGO to build skills among 1,700 former textile workers. Jobs in textiles have been particularly vulnerable as companies move towards sourcing to low-cost competitors. It has left many workers, particularly women, out of work and without the skills to re-enter the workforce. This partnership has so far provided IT skills and training, and enabled many to find new jobs with telecommunications companies and call-centres. What is particularly interesting about this case is that it demonstrates how companies can help mitigate the negative impacts of globalisation and provide new opportunities in ITES.

In late 2007, AccountAbility joined nine partners to analyse how the 27 member-states of Europe are anticipating change in their labour market and mitigating the negative impacts associated with these changes. The "Anticipating and Collaborating to Better Understand Structural Transformation (ANCOBEST)" project, co-funded by the European Commission, identified a series of initiatives across the member-states which are operating to build new skills—from government-led training and public-private partnerships to business-led alliances.

GE's Crotonville leadership centre in Ossining, New York, each year hosts 40 senior executives from various industries in China, approved by China's Central Organizational Department, for one- to three-week training sessions. "These are the senior-most people who determine who is going to run which state-owned enterprise, who's going to run the province, who's going to be mayor of the city", says Steve Bertamini, head of GE operations in China. In 2003, GE invited 22 executives from Baosteel. Thereafter, GE built a power plant, a water-reuse facility, and sold lighting and power distribution to the steelmaker.

But the race to win talent is not confined to developing economies. European countries too are trying to preserve and create new jobs. This is particularly challenging in a period of economic recession, but some evidence shows that it is possible. In the UK, for example, an alliance of business, academics, local authorities and regional development agencies has united to increase penetration of high-speed Internet connections, particularly in rural areas. The Actnow programme has protected jobs and opened opportunities for businesses of all sizes. Increased connectivity has enabled employees to work from home, improve their efficiency and allowed companies to access new customers and market opportunities.

It concluded:

- Governments should use public investment offensively to improve the framework conditions for creating new jobs, rather than acting defensively with interventions to prop up failing businesses and enterprises;

- Policy-makers should look for practical ways to encourage companies to "responsibly" restructure in order to minimise the loss of human resources from the workforce. One best practice example is found in many European countries—especially in the Nordic ones like Denmark and Finland—is that companies provide employees with training during the process of restructuring and relocating jobs;

- Denmark has set the standard for ongoing training and policies for the labour market. Its "flexicurity" model enables businesses to hire and fire easily, but offers a well developed system of income support for the unemployed and a high level of social cohesion.

The battle for skills and jobs is intense. With businesses able to locate their supply-chains in nearly all corners of the globe, companies can tap into talent wherever they can find it. Jobs are less geographically fixed and deficits in supplies of appropriate skills can quickly undermine competitive advantage. This is a possible scenario facing India. The trade body Nasscom concluded in January 2008 that the ITES industry faced a shortfall of one million workers in the current BPO market. Raju Batnager explained: "India's biggest problem is that we has a mismatch between the skills the students are graduating with, and the skills required by the industry. And the reason for this is that faculties are themselves not IT and IT service savvy and are not educated on requirements of global delivery businesses."

Several countries in Eastern Europe, Latin America and Africa are hopeful that they can benefit from India's skills deficit. The Ugandan High Commission to India, Nimisha J. Madhvani, explained that she is hopeful of developing her country as a spillover market for India's ITES: "We have a young, literate workforce who are competent to speak in English, but they don't have enough work. Our graduates cannot use the skills they learnt at university. Finding the talent for call-centres, back-office facilities, data-processing centre and the like will not be difficult." Nimisha concluded: "Right now these young people are going to the middle east as construction workers. What a waste—for them and our country".

To match skills with good jobs is a challenge for most countries. To make up for skills-shortages will require concerted effort from policy-makers. To attract and retain jobs will require the right blend of policy, financial packages, talent and green offerings. All this will in turn require universities to become more savvy, creating innovative new partnerships to build business-relevant skills. In order to be effective these efforts will need to move from quantity to quality, and acquire a good understanding of what industry needs.

A case study: learning from India

A contribution by Rafiq Dossani, senior research scholar and executive director, South Asia Initiative, The Walter H. Shorenstein Asia-Pacific Research Centre, Stanford University

India is justly proud of its premier status among countries that are destinations for the outsourcing of a range of Information Technology Enabled Services (ITES) and software services. But other emerging countries searching for the secret sauce of India's success have been disappointed by their findings. Their policy-makers invariably come up against what I've come to call the "AGOBI" factor—As Good as Or Better than India.

Of the important (and interrelated) factors behind India's success, we now know it is not just the English language (AGOBI: Ireland and Philippines); bandwidth (AGOBI: Brazil, China, Korea, Philippines, Taiwan); labour costs (AGOBI: Brazil, China, Pakistan, Philippines, Sri Lanka, Vietnam); undergraduate education (AGOBI: Brazil, China, Ireland, Russia); large educated labour pools (AGOBI: Brazil, China); depth of technical skills (AGOBI: Brazil, China, Ireland, Poland, Romania, Russia); entrepreneurship (AGOBI: Brazil, Ireland, Korea, Taiwan); high general standards of professional practice, such as IP protection (AGOBI: Brazil, Ireland, Korea); on-the-job training (AGOBI: Korea, Taiwan); openness to multinationals (AGOBI: Ireland, Pakistan, Poland, Vietnam); clusters (AGOBI: Zhongguancun, China; Hsinchu, Taiwan) and government support (AGOBI: China, Korea, Taiwan).

Perhaps the secret sauce is made up not of a single ingredient but a mélange. Note that no single country ticks all the AGOBI boxes above, whereas India scores highly in all the above categories. If all the factors above are necessary and substantially so, then we must recognise the great difficulty that other countries are in. Some factors can improve substantially within a decade through state action, such as bandwidth, technical skills and large educated pools; others are more difficult to change even in the long-term. Some of these are difficult to change because of deeply entrenched, nationalist views on the drivers of national development, such as openness to multinationals or learning English (Brazil, China, Korea, Taiwan); others just happen to take decades, such as the maturing of the entrepreneurial mindset, developing high standards of professional practice and deep technical skills.

Yet, if there is a single policy-bullet that should be aimed, which of the above should it target? The answer is probably unsurprising, though its definition might be—building a pool of basic, undergraduate-level technical skills. Before defending this choice, it is perhaps useful to define what is meant. By undergraduate-level technical skills, we mean the skills that bring knowledge to the forefront of received wisdom.

For example, for embedded software work (as of 2009), the undergraduate should be skilled in one or more of the appropriate languages, such as Java2ME, WML and compact HTML; or, for chip design, she should have experience of designing in the relevant current platforms, such as ARM or MIPS, and have practical experience of design and fabrication in newer generation circuitries such as 45 nm. We do not expect the undergraduate to have mature research or project management skills; but a research and project-management orientation should be built into a technical education through projects with industry, and team projects.

The above description would be the standard expectation of a graduate from a typical American or other western university. Even a second-tier state university in America expects such standards. In other words, it is realistic to assume that such skills will be acquired in the course of a typical four-year undergraduate degree in engineering in the west. Yet, none of the emerging countries above (including India) do so in any scale (although their best universities, such as the IITs in India or ITRI in Taiwan might provide such skills).

A common observation in Silicon Valley with regard to hiring engineers from Asia captures the problem: a fresh Asian engineer will typically be one generation behind his American counterpart in technical skills, and will be poor in teamwork. His compatriot five years later will have fallen two generations behind in technical skills; and will not have acquired the project-management skills and documentation skills that his counterpart in Silicon Valley would have acquired as necessary tools of the trade by then. As for an engineer ten years out of college in Asia, Silicon Valley recruiters will not even consider them, as they are likely to be hierarchical, insular and with high risk-aversion.

These observations are captured in Table 5 below. The converse is also visible in Silicon Valley. Many Asian firms have located offices in Silicon Valley, hoping to imbibe its skills. But, usually they fail because of their management culture. Such firms often are forced to recruit their engineers from Asia because engineers trained in the US find it difficult to work for them.

Table 5: Catching up with Silicon Valley		
Experience	Catch-up time (years)	Shortfalls
Fresh	1.5	Team work Tech skills 'one-generation' behind
Five years	3.0	Project management Product marketing Documentation Tech skills '2G' behind
10 years	Never	Hierarchical Insular High risk-aversion

(Source: based on interviews by the author of 20 IT firms in Silicon Valley).

It appears as if some "tweaks" to the existing education systems of Asia can go a long way, such as by introducing courses in project-management and enabling students to work for multinationals overseas for their fourth-year design projects. This thesis has not been tested with success anywhere, so we do not know. Yet, if such an education is achievable, consider its impact on other indispensable factors for success. Three of them are considered below.

Entrepreneurship:

The challenge emerging countries face is not the absence of entrepreneurship in the sense of taking risk and being able to manage risk. Every country has people with such capabilities, but such capabilities don't build great companies, they help run the corner grocery-shop. What is rare is the ability to establish long-term positions with the idea of building great companies.

We may term this the difference between entrepreneurship in the small versus entrepreneurship in the large. This requires adaptability to changing technical environments, teamwork and building on a core technical competence—all of which take time.

Consider, as an example, the last item, core technical competence. In India, company founders like F.C. Kohli and S. Ramadorai of TCS, Narayan Murthy and Nandan M. Nilekani of Infosys and Azim Premji of Wipro represent different entrepreneurial styles that succeeded in the same industry. Where TCS focused on achieving programming competence at scale first (certainly the backing of the Tata Group helped), Infosys focused on understanding financial systems and Wipro on understanding software platforms. When they were building their companies in the 1980s, all three were important aspects of the business, but they realised that long-term success required building a core competence. As a result, these "three pillars" of the Indian IT industry look and feel very different from each other.

One would be hard put to find a parallel in an IT industry outside developed countries. This gives the Indian IT industry an edge. More to the point, the culture of adaptability to technical change, teamwork and focus on core competence came out of the founders' educational background that provided the capacities we listed above—an American education in the case of TCS and Wipro's founders, the IITs in the case of Infosys.

Building capabilities on the job:

The challenges engineers in emerging-country firms face in building capabilities on the job are hierarchy, lack of documentation and inadequate trust within and across teams. The three factors may, at first, appear to be unrelated, but, in fact are closely related to each other and to the lack of adequate education. When a fresh engineer joins a firm, she is usually willing to "learn the ropes". This is best achieved if a project supervisor is open to the engineer and willing to understand her strengths and weaknesses (i.e. if there is a lack of hierarchy), provides historical understanding of the project through proper documentation and training, and trusts that the engineer, while likely to make mistakes, will minimise them through teamwork and consultation—while bringing the advantages of a fresh, educated approach to an engineering problem.

Instead, the typical IT firm in an emerging country imposes a low-trust, high-hierarchy system on the grounds of control; documentation is deliberately kept weak or non-existent to protect received knowledge within a few persons. In most cases, the engineer has not experienced a better system due to lack of research-orientation and project management training in college. Further, because the work that her employee does is most likely beyond the depth studied in college, she does not have the depth of knowledge to challenge received wisdom. Clearly, a better educational system will allow the engineer to challenge the old order and thus build capabilities on the job.

A second aspect of learning on the job is learning through interaction within local and global teams inside the firm and networking with others within the profession. Both are critically important, and are sources of creativity in the west. The example of Google is instructive. A majority of Google's engineers are recruited with the promise that they will be allowed to work in the country of their choice, not just in the country in which they are recruited. They are encouraged to work in small, global teams, typically less than five persons in size. Most of Google's innovations, such as its mapping product and GoogleScholar, came out of three-person teams located globally.

But, in practice, this approach has proven difficult to implement for emerging country firms. If an engineer trained in, say, Vietnam in VLSI design, does not know how to work on the latest platforms, it is going to be hard for her to build the confidence to be part of a global team that is undertaking a design project for, say, a Silicon Valley semiconductor firm. Such an engineer would also have difficulty networking outside the firm, in no small part because her employer might discourage it, but also because she does not have much to contribute.

Clusters:

Governments across the world have tried to duplicate Silicon Valley by creating clusters. Typically, their efforts consist of allocating cheap land for an industrial park and providing cheap and reliable roads, power, bandwidth and other utilities. Such efforts usually fail. The reason is that success in IT comes from clusters of creative people rather than clusters of firms whose profitability is enabled by cheap land and utilities.

Consider Silicon Valley, which like other successful clusters, is a relatively expensive place to set up business. Silicon Valley enables an engineer to progress in her profession rather than just in the firm she works for. Such loyalty is engendered by the presence of large and small firms, the first type providing learning about scalability in production and marketing, while the small ones provide learning on the latest technologies. It is common for engineers in Silicon Valley to work for both small and large firms during their careers. In short, creative persons go to where other creative persons are located and not because the costs of operation are low. The policy implication is that the state should help jump-start creativity in people (through the education process) rather than jump-start firm creation through financial incentives in clusters.

To conclude, what may the rest of the developing world learn from India? India was an unusual case where a limited role of the state (a focus on elite education, primarily) in the early days was replaced in the 1990s with good regulation. Essentially, the state removed itself as an obstacle—from the 1990s onwards, it did not charge high tariffs, it did not insist on localisation of MNC production. The state did not directly provide too much; in particular, it left telecom and education to the private sector; and it regulated public goods, such as telecom, intellectual property, professional services and education with pro-competition models.

The private sector responded—be it in the teaching of English, technical skills, bandwidth, high standards of professional service, on-the-job training and building companies with a long-term perspective. In the process, clusters such as Bangalore were created. The private sector even encouraged the government to be more open to multinationals, which has played a critical role in doing new-generation work in India, leading to the dissemination of skilled persons into the Indian ecosystem.

What India offers as a lesson is that one does not need to get each of the success factors perfectly right. It also teaches that government's role ought to be limited to jump-starting education. Much of the rest can be left to a well-regulated private sector.

2.4 BUSINESS STANDARDS AND COMPLIANCE FOR ITES SUSTAINABILITY

Sachin Joshi, deputy director of the Confederation of Indian Industries' ITC Centre for Excellence on Sustainable Development (October 2008)

> "India has a bit of space to play catch-up by building skills, diversifying energy sources and taking control over the e-waste dilemma. We need to look inwards and bring ITES to our domestic markets and innovate new solutions, solutions which respond to trim, slim and new growth opportunities particularly as we enter tougher economic times".

2008 will be remembered as the year when a major economic downturn began that will continue through 2009 and perhaps beyond. The crisis is impacting on economies around the world, with redundancies at a colossal scale and record falls in consumer spending in the United States and the Eurozone. There have been huge business failures, with international brands like Goldman Sachs, the Royal Bank of Scotland, Lehman Brothers, Merrill Lynch, Fortis and AIG all requesting bailouts from their governments. The impact of these changes is yet to be played out, but it is widely anticipated that jobs will be lost in all major outsourcing hubs.

A major failing in the way our existing institutions are governed has, in part, caused the global economic crisis. As the G20 leaders analyse how best to put the global economy back on track, ITES should be considered to have a major contribution, particularly in creating new ways to connect decision-makers with citizens (see box on e-governance). Yet, there are core challenges which ITES firms face (as illustrated by the recent accounting irregularities at Satyam). 2009 will present an opportunity for the industry—and existing industry associations like the Global e-Sustainability Initiative—to become a spearhead to creating a new generation of effective and trustworthy governance structures.

E-governance for achieving sustainable development: opportunities for ITES

A contribution by Tony Vetter, Global Connectivity Programme, IISD

It has been recently observed that "the ICT-enabled globalization of services is beginning to affect how economies work and the global allocation of resource",[1] further adding to mounting evidence of "the importance of this sector as a potentially powerful engine of economic growth and human development."[2] The addressable market for global sourcing of services has been estimated to exceed US$300 billion[3] with only a fraction of this opportunity having been exploited so far.

This speaks to the magnitude of the opportunities for ITES to demonstrate sustainability as well as to help other sectors achieve sustainable development objectives through four processes examined elsewhere in this report:

- supply-chain leadership
- helping to realise ICT's carbon-abatement potential
- intra-industry collaboration on sustainability initiatives
- sustainable job-creation for the "base-of-the-pyramid" (BoP).

However, yet another avenue for the contribution of ITES to sustainable development can be explored in the significant percentage of the addressable market for global sourcing of services identified as the delivery of e-governance solutions, estimated to be a $35-40 billion market worldwide.[4]

A common perception of e-governance is exemplified by the expectations of the Consulate General of India that "e-governance projects are expected to increase efficiency, enhance effectiveness and improve quality of the government services" and it is the basis of realising these expectations that India launched its National eGovernance Plan (NeGP) "with the vision of making all government services accessible to the common man in his or her locality, through common service delivery outlets and ensure efficiency, transparency and reliability of such services at affordable costs."[5]

But it is through more than the simple enhancement of good governance that e-governance has the potential to significantly influence sustainable development outcomes. The United Nations call to action for sustainable development, Agenda 21, identified as one of its key objectives "to improve or restructure the decision-making process so that consideration of socio-economic and environmental issues is fully integrated and a broader range of public participation assured." [emphasis added][6]

Although there is no unique and agreed to definition of e-governance, many more recent definitions include some or all elements of the following: the concept of using ICT to allow all people, particularly the poor and marginalised, to participate in policy, improve their livelihoods and gain a shared voice in the public decision-making process.

One example speaks to how recent advances in ICTs have provided never-before-imagined "opportunities to transform the relationship between governments and citizens ... bringing forth new concepts on citizenship, both in terms of citizen needs and responsibilities."[7] Other examples talk of e-governance as providing "the opportunity of radical reform of our governing system by transforming it to a truly citizen centric one"[8] or at least supporting a "paradigm shift that can help in bringing authorities closer to the marginalised section, leading to an improvement in their status and resulting in some level of economic, social, legal and political empowerment on a sustainable basis."[9]

There are practical examples of how the application of e-governance has changed, in some small ways, the traditional hierarchal forms of government, to the benefit of sustainable development. For example "there was recognition in the Chinese government that formulation and implementation of sustainable development strategies were hampered by lack of adequate information, and that much of the data underlying this information lay scattered in many different organizations."[10] By creating a network linking a set of key national government, local government and public sector research institutions more information was more rapidly available to the process of strategic environment decision-making.

Yet despite the fact that many governments are pledging to embrace the spirit of e-governance, progress towards transformative results has been slow. External groups and individuals, on an international scale, are working to change this dynamic. But governments are moving at a slower and different pace than groups and citizens who are using the Internet to influence the evolution of government programmes, policy and legislative implementations.[11] This speaks to the observation that "the barriers to greater online citizen engagement ... are cultural, organizational and constitutional, not technological."[12]

There still may be a long way to go before the dream and ideal of e-governance is reached. It is clear, however, that investment in e-governance will continue and that ITES will play an important role in outcomes achieved as well as create the possibility that e-governance eventually takes hold as a global mass movement. Additional research will be needed to better understand where the ITES sector might best coordinate its focus towards ensuring its efforts in e-governance contribute to sustainable outcomes.

While it is clear that technology might not be "the barrier" to greater online citizen engagement, an important ingredient in the foundation for success of e-governance exercises will clearly be the selection of the right mixture of technologies most suitable in a given context. "For instance, in an area with a large number of disadvantaged people due to poverty and illiteracy, radio combined with the Internet will be of greater public value than an Internet access point alone."[13]

At the same time, in much of the developed world, its is *m-governance* that may hold out the promise of more immediate dialogue between public officials and citizens. The statement at a 2007 Aspen Institute Roundtable on Information Technology that "Mobile and the Internet will usher in major changes in the relationship between elected officers and their constituents as well as in how political parties will be organized"[14] has already been confirmed in many recent examples.

Another technical decision worthy of consideration across the ITES sector, that has implications for access and affordability, is the adoption of open source and open standards for e-governance projects. It is an issue of technical sovereignty in the opinion of one industry representative: "(E-governance) projects should be royalty-free for life and even minuscule amount should not be charged for its use as higher volumes mean billions of dollars of tax payers money ... it is the citizen data and should not be lost in interoperability".[15]

In terms of social impact there are many issues which would clearly benefit from coordinated consideration by the ITES sector. Consistent evaluations of the gender sensitivity of approaches taken in the planning and implementation of rural e-governance schemes could make them more beneficial to rural women. It is also important to acknowledge that a by-product of increased interaction between governments and citizens through e-governance initiatives is increased information gathering. This understandably raises concerns regarding the potential for the development of a surveillance society. It has been predicted that "privacy will be harder to maintain in the new order".[16] Should the ITES sector have a code of conduct allowing it to respond to these concerns in e-governance projects?

Finally, it has also been observed that e-governance is more a process about the "how" than the "what"— that "e-governance is a reflective activity in which the way problems are tackled is as important as the result and even to a great extent having an impact on the result."[17] So a final possible area of research might be an examination of standards across the ITES sector for ensuring accessibility, transparency, evaluation and accountability in the e-governance processes they implement.

Attention to some of these issues, and possible coordination on the part of the ITES sector, could play a significant role in achieving the dream and ideal of e-governance, as well as ensure the contribution of e-governance as a global mass movement to achieving sustainable development.

Notes:

1 OECD Information Technology Outlook (2008)

2 Progress Report on the Implementation of Agreed Conclusions and Recommendations of the Commission, Including Post-Doha Follow-up, United Nations Conference on Trade and Development (UNCTAD), GE.06-50054, http://www.unctad.org/Templates/Download.asp?docid=6719&lang= 1&tintItemID=2100 (accessed Feb 8, 2009).

3 Nasscom-McKinsey Report 2005: Extending India's Leadership of the Global IT and BPO Industries.

4 TCS bets big on overseas e-governance market- ITeS-Infotech-The Economic Times, http://economictimes.indiatimes.com/Infotech/Wal-Mart_plans_IT_back_office_in_Bangalore/articleshow/articleshow/3135260.cms

5 Information Technology and IT Enabled Services, Consulate General of India, http://www.indiaconsulate.org.br/html/english/information_tecnology.php (accessed Feb 8, 2009).

6 Paragraph 8.3, Agenda 21 – UNCED 1992.

7 From e-Government to e-Governance: a paradigmatic shift, International Development Research Centre (IDRC), http://www.idrc.ca/en/ev-115662-201-1-DO_TOPIC.html (accessed Feb 8, 2009).

8 e-Governance in Bangladesh: Challenges and Options.

9 India: e-Readiness Assessment Report 2006

10 e-Governance and Development in Manipur.

11 See TweetCongress.org and Tweetminster.co.uk for examples.

12 "Engaging Citizens Online for Better Policy-making", OECD Policy Brief, March 2003, http://www.oecd.org/dataoecd/62/23/2501856.pdf (accessed Feb 8, 2009).

13 India: e-Readiness Assessment Report 2006, http://www.mit.gov.in/download/eready2006/Forewardcontents.PDF (accessed Feb 8, 2009).

14 LASICA, J. D. (2007), The Mobile Generation: Global transformations at the Cellular Level, A Report of the Fifteenth Annual Aspen Institute, Washington, http://www.aspeninstitute.org/atf/cf/%7BDEB6F227-659B-4EC8-8F84-8DF23CA704F5%7D/C&S_The_Mobile_Generation.pdf (accessed Feb 8, 2009).

15 E-Government News, ODF likely standard for e-governance, http://www.egovnews.org/?p=4305 (accessed Feb 8, 2009).

16 Open ICT4D, International Development Research Centre (IDRC), http://www.idrc.ca/en/ev-133699-201-1-DO_TOPIC.html (accessed Feb 8, 2009).

17 From e-Government to e-Governance: a paradigmatic shift, International Development Research Centre (IDRC).

TOWARDS A SUSTAINABLE OFFERING

"Green is the future", Sanjay Hundoo told us. "It holds all the combinations for intelligent money and intelligent living." He should know; Sanjay is the vice-president of marketing at Somani Worsted Ltd, a company working to develop green IT parks across India. He was involved with the development of Silicon City, one of the first special economic zones (SEZ) in India to gain accreditation to LEED India.

Silicon City is a 50-acre site in Bhiwadi, about an hour from Delhi. The development is planned to encompass 464,500 square metres of IT/ITES office space and about 92,900 square metres of social infrastructure comprising of residential and service apartments, shopping-centres and recreation facilities. These facilities aim to promote a community and improve ITES productivity, as well as reducing costs. Sanjay estimates that commuting costs will be reduced by nearly 50%.

Silicon City is setting a new benchmark for how India's regions compete. New regulations come into effect in April 2010 that will outline a package of fiscal incentives for ITES investors setting up offices in SEZs, right as the existing broad income-tax holiday for the ITES industry ends. While there are costs associated with moving, this new incentive is leading to new developments. Sanjay explained: "SEZ are taking off across the India—wherever you go, there is one in the making and everybody that has land, more than 10 hectares, is looking in this direction."

India has been a strong leader in IT services and is gaining expertise in creating management systems and energy efficient buildings. But, Sanjay explained that India has challenges in moving towards Outsourcing 3.0: "We have the technology and we are exporting these services. What we are not doing is using it ourselves".

Progressive policy-makers and ITES industries are seeing the economic downturn as an opportunity to differentiate their offering to attract new jobs and maintain existing industries. Civil society is being mobilised to focus the ITES industry in emerging hubs like the "Business Process Outsourcing – Think Tank Team" in Uganda, which was set up in 2008 to focus the 30 small and medium-sized BPO firms into a coherent and competitive industry. Elsewhere, creative partnerships are building capacity to access ITES, while established players like India and China are creating new sustainable offerings.

This section unpacks progress across three major areas of how infrastructure is "greening": through office buildings, data-centres and e-waste.

"69% of Corporate Real Estate Executives said that energy and sustainability was a critical business issue in their real estate departments. This is a 22% increase since 2007."

OFFICE BUILDINGS

Promoting energy-efficiency in the commercial sector is becoming a priority around the world, as the scale of CO_2 emissions from business— and associated costs—has become clear. US buildings alone have higher emissions annually than any country other than China. One clear trend led by the financial services and IT sectors has been towards consolidation of workers in more efficient flagship headquarters buildings (e.g. Canary Wharf, London; La Défense, Paris; and campuses like Google's Mountainview headquarters in Santa Clara, California).

Older offices have energy requirements as high as 300 kilowatts per square metre (kW/m^2), while new offices use between 8-250 kW/m^2; so there is often a sound business case for such rationalisation. In the USA, UK and elsewhere, green building standards have been developed over the past two decades to support this trend: notably Leader in Energy Efficient Design (LEED, USA) and Building Research Establishment Environmental Assessment Method (BREEAM, UK). There are similar initiatives elsewhere, such as CASBEE (Japan), HK BEAM (Hong Kong) and NABERS (Australia).

Although data is patchy, several thousand office buildings have now been assessed and/or certified to such standards, and the growth rate has been accelerating (with a 40% increased in buildings assessed in the UK in 2008, for example). At the same time, there are a number of prestigious projects planned to create near zero-carbon office developments (such as Energy Plus, planned by architects Skidmore Owings & Merrill for Gennevilliers, Paris, with a projected energy consumption as low as 16kW/m²).

Older offices will remain three-quarters of the entire stock in developed economies, however. Here, progress in retrofitting to enhance efficiency has been slower. Even so, significant improvements are possible and cost effective. Adobe Systems has received the highest LEED rating for its green retrofit in San Jose, California, and reportedly saves US$1.2 million a year from the 35% reduction in electricity use, a 41% fall in natural gas and a 22% drop in water consumption, while employees grew by 35% over the period 2001-07.

BREEAM will be launching "in use" standards in 2009. In sum, progress is being made in greening offices old and new, and it is often led by firms in the IT sector.

DATA CENTRES

There has been little scrutiny—apart from among green-minded bloggers—on the environmental performance of the back-offices of global businesses, including data-centres and web presences. Even environmentally aware companies often overlook the data centre. There are a few notable exceptions, like AISO.net, the California public data-centre with its solar-powered headquarters and a mission to be the leader in green web-hosting. But in general, datacentres have been low-profile.

Rising energy costs coupled with a dramatic increase in the power demanded by new blade-servers are changing that. Businesses need to provide greater storage capacity, enhance computing performance and improve energy efficiency simultaneously. Traditional data-centres would drawdown two-to- three kilowatts per rack; modern blade-servers demand 20-30 kilowatts. The outcome is a major increase in heat generation and, therefore, in demand for cooling capacity. Sometimes extra power is simply not available from the grid; other times, there is no space for additional cooling devices.

Energy-saving measures include the following:

- new systems with variable air conditioning depending on power and computing loads;
- replacing air cooling with chilled-water refrigerants;
- replacing multiple cooling units with a centralised chiller, using a cooling-tower and heat-exchanger;
- switching from electric to ultrasonic humidification; and
- better utilisation of power-management features and culling of legacy servers. Switching off unused servers can cut data-centre energy requirements by 20%, according to Amory Lovins of the Rocky Mountain Institute.

So after a late start, data-centre managers are beginning to take a serious approach to sustainability. In the UK, BREEAM releases a tailored version of its criteria for data-centres in spring 2009. One HSBC data-centre has been certified as excellent under the existing criteria. Half a dozen centres in the US now have received or are in the process of receiving LEED certification, according to the US Green Building Council. Hosting company 365 Main Inc. has undertaken to build all new data-centres LEED certified. Next on the agenda could be a version of the green building standards specifically designed for data-centres—which have quite distinct environmental challenges compared to most commercial or industrial buildings. There are also projects underway to hook data-centres up to district heating schemes.

To achieve more progress will require more commitment from data centre managers and clients. "To have a truly corporate policy, it's got to come from the top down", said Bob Sullivan of the Uptime Institute. "If the CIO doesn't care about efficiency in the data-centre, do you think anybody working for him is going to?"

Nicholas Carr, *Rough Type* blog (2006)

"Your average Second Life avatar consumes about as much electricity as your average Brazilian."

INDIA'S EXPERIENCE

In India, BPO vendors are starting to make rapid progress in green offices. Interestingly, at Infosys it is not the CIO but the chairman that cares about energy efficiency:

Nandan M. Nilekani, co-chairman, Infosys Technologies Ltd.

"Over the next three decades, investment on building new cities is going to be huge. Considering this, we need to address larger issues, most important being energy efficiency. We need to look at energy conservation and sustainability in a new way".

Energy-consumption in India's office buildings has been rising rapidly. BPO vendors based in the main urban centres are responsible for a growing share of that impact. In May 2007, the Minister of Power launched the Energy Conservation Building Code (ECBC), establishing minimum energy-consumption standards for new commercial buildings. The development of the ECBC was assisted by the International Institute for Energy Conservation (IIEC), funded by the United States Agency for International Development (USAID).

The ECBC—initially a voluntary scheme—covers larger commercial buildings (with connected load greater than 500kW). Allowance is made for building location, based on five climatic zones across India, of which Bangalore and Chennai fall into the "warm and humid" zone.

It is easier to have energy-efficient buildings in Bangalore than in many other locations in India, thanks to its micro-climate, according to TERI research associate Minni Mehrotra, who is coordinating the Bangalore component of a study on the scope of high-performance commercial buildings in India which would involve working with architects and developers. The Asia Pacific Partnership on Clean Development (APPCD), the Bureau of Energy Efficiency (BEE) and the Energy and Resources Institute (TERI) are studying the scope of developing high-performance commercial buildings in India.

ECBC covers the following aspects of office buildings:

- The building envelope (walls, roofs, windows);
- Lighting (indoor and outdoor);
- Heating ventilation and air conditioning (HVAC) systems;
- Solar water heating and pumping; and
- Electrical systems (power factor and transformers).

K.K. Chakarvarti of the Bureau of Energy Efficiency (BEE, part of the Ministry of Power) says that over 300 ECBC-compliant buildings are currently under construction. Interim results suggest that compliant buildings consume about 110 kWh/m^2/year, compared to the national benchmark of 180kWh/m^2/year. This makes for typical energy savings of the scheme in the order of 30-40%.

To encourage uptake, an awareness-raising programme, including energy-conservation awards, has been introduced. In the National Energy Conservation Awards for 2008, the second prize in the office-buildings sector went to Bharat Sanchar Nigam for a Regional Telecom Training Centre in Thiruvananthapuram, Kerala. In the Bangalore area, IT operators like AT & S, Bharati Broadband Networks, Digital Global Soft, HP, HTMT, Intel Technologies, Progeaon, Sap Lab India, Tata Elxsi and Tata Teleservices and Wipro have commissioned energy audits. Infosys insists "on the highest level of sustainable design on all our campuses. We have been able to reduce our energy consumption by 40% and have rainwater harvesting systems on all our campuses."

Achieving larger-scale impacts in office energy-efficiency in India will require the ECBC to become mandatory, and the Ministry of Power has signalled its intention to do this. Rolling out the ECBC, with additional action to speed the installation of compact fluorescent bulbs, upgrades in HVAC technology and energy-efficient labelling of appliances can jointly make a major contribution to improving the energy footprint of office buildings.

Research by HSBC finds that improvements in buildings efficiency, including making the ECBC mandatory, could generate potential savings of 60 million tonnes of CO_2 per year from 2013 onwards, out of a total of around 160 million tonnes across the renewable-energy, low-carbon power and energy-efficiency sectors.

Some BPO vendors have the appetite not just to improve their own performance but also have a strong business case in playing a broader role in building urban sustainability in India. Poor planning and rapid growth have seen respiratory disease, congestion, road accidents and a range of other social problems reduce quality of life in recent years. Indian cities are ranked well down many global quality-of-life league tables: Bangalore (140th), Mumbai (142nd), Delhi (145th) and Chennai (153rd) in the 2008 quality-of-life rankings from Mercer. Infosys is promoting technology to enable building plans to be submitted electronically to planning offices instead of hard copies. "This will enable civic authorities to draw a digital database of our cities, make systems transparent and reduce corruption", says Nandan M. Nilekani.

CHINA'S EXPERIENCE

One estimate is that that Chinese office and domestic construction could account for as much as half of the global total in the coming decade. Getting green building right in China is crucial at the global level. "You only learn by doing", says Kevin Hydes, chair of the World Green Building Council; "and China is doing more than anyone else in the world".

Xu Qiang, Shanghai Research Institute of Building Sciences

"Many developers and consumers in China do not have a proper understanding of a building's green standards. Maintaining green lawns and clear swimming pools does not necessarily guarantee a minimum impact on the environment. The certification of a green building should cover the design, construction and operation of a building during its life."

China began by adopting international standards at the margin. More recently it has developed its own green building standard: the Green Building Evaluation System (GBES), launched in late 2007. LEED and other schemes have mainly been used in China for prestige office buildings and upscale apartments, such as Beijing's Olympic Village and the mixed use 148,000-sq metre Prosper Centre or InferfaceFLOR's commercial space in Shanghai. The GBES is adapted from the global sustainability standards, with "Chinese characteristics" meant to be achievable for the mass construction market. On energy efficiency, GBES certification could equate to a silver rating under the relevant parts of LEED.

GBES is a certification and labelling scheme that addresses land-use, energy, water, construction materials, and indoor air-quality. A three-star system is designed to enable developers to differentiate their buildings in what could become an increasingly competitive and discerning market. Based on a 1980 baseline, GBES sets minimum requirements for new buildings in China to decrease their energy use by 50% before 2010 and by 65% before 2020. Some cities, such as Beijing and Tianjin, have accelerated these goals. As with the Indian case, the real test with GBES will be to test its implementation across China, and to resist the temptation to water down the standard as the construction business slows or contracts.

E-WASTE

As large-scale users of ICT equipment, the ITES sector has extended producer responsibility for the increasing volumes of electronic wastes it illegally exports across the world. The United Nations in 2008 found that: "expanding markets and shortening ICT product life-cycles have given rise to a corresponding explosion of electronic scrap. The world's annual volumes of 'e-waste' is expected to exceed 40m tonnes in the near future and only 12 to 15% can be *considered to be responsibly recycled*." The United States Environment Protection Agency and the European Environmental Agency further report that electronics waste makes up over 5% of the municipal solid waste stream and is rising three times faster than all other forms municipal solid waste cross the world.

In Europe, two regulations by the European Commission—the Waste Electrical and Electronic Equipment (WEEE) and the Restriction of Hazardous Substances (RoHS)—are contributing a great deal towards resolving e-waste issues. The key achievements of WEEE and RoHS are that electronics manufacturers are required to handle and bear the costs their own end of life products and must eliminate certain hazardous substances in production. Together with the EU REACH directive (The Registration, Evaluation and Authorisation of Chemicals) they create the world's toughest regulatory framework for chemicals and hazardous substances. Robust legislation on producer responsibility for e-waste have also been passed in Japan, South Korea and Taiwan.

But in the United States, action to resolve this issue at the federal level is largely missing. The states of Washington, California, Maryland and Maine have passed legislation on Producer Take Back and/or Advance Recycling Fees and similar legislation is being considered in several other states. It is however disappointing that unlike the EU directives, the laws in the US do not require producers to organise and bear the costs of dealing with all their end-of-life products. The legislation covers only select e-goods and the state government is left to organise a bulk of the collection and recycling.

E-Waste in India

In December 2007, the Indian Manufacturers' Association for Information Technology (MAIT) and the German Development Agency (GTZ) launched a report estimating the size of India's e-waste problem. They estimated that 3.3 m metric tonnes of e-waste are generated annually, with an additional 50,000 metric tonnes being illegally imported. However, just 19,000 metric tonnes are recycled due to high refurbishing and reuse of electronics and also due to the limited infrastructure to recycle e-waste. Increasing the amount recycled will require better facilities and also a change in consumer behaviour: "Let us face it", Winnie Mehta, executive director at MAIT, told us in late 2008. "If you have a old phone, you give it away, get it fixed or it remains in your drawer. You don't just throw it away, do you?"

Well, a lot of Indian's seem to do the latter. E-waste has spurred a healthy sector in the informal economy. "Collection and segregation is done by individuals, locally known as *kabadiwallas*, who collect various types of used consumer items including electronic devices and sell them to small-time recycling units", explained Ravi Agrawal, founder of award-winning NGO Toxic Link. "These units are again informal, rudimentary and makeshift. Their capacities are very limited and there are serious concerns on health and safety and environmental pollution associated with them".

To formalise these e-waste collection requires two things, said Ravi. "The first is to understand that the *kabadiwallas* need to play a definite in the waste-value chain. The second is about assigning the responsibility for the recycling process. For it become a formal and profitable venture, specific roles have to be assigned to all actors: manufacturers, users, recyclers, and other parties concerned with e-waste".

India has begun responding to these problems with new Guidelines for Environmentally Sound Management of e-Waste. But our interviewees didn't feel they went far enough.

"We worked together with civil-society groups to form a single voice to express concerns that environmental health and safety issues are not adequately addressed and the concept of producer responsibility is not well embedded", complained Winnie. "We now lack the legislative clout to design cost effective collection processes across our membership". And without the buy-in from industry, the chances of moving towards sustainable ITES will nearly be impossible.

2.5 PRODUCT AND SERVICE INNOVATION: COMPETING FOR SUSTAINABLE DEVELOPMENT

ITES is enabling the creation of new innovative business models to harness the power of the masses. "Tribesourcing" refers to how businesses, particularly hi-tech companies like Microsoft, Google, Intel and Sun Microsystems, are providing platforms for "untapped talent" to help them innovate. It sits somewhere in between teamwork and the "wisdom of crowds": long-term collaborations by a dynamic but close-knit group of collaborators. These online platforms—what innovation guru Tim O'Reilly describes as "architecture for participation"—are enabling firms to open up as never before to access ideas in all corners of the globe.

Reliable and affordable access to the Internet is providing new ways to collaborate. *Business Week* described in a 2005 article that there are "nearly 1 billion people online worldwide—along with their shared knowledge, social contacts, online reputations, computing power, and more— [who] are rapidly becoming a collective force of unprecedented power. For the first time in human history, mass cooperation across time and space is finally economical".

Yet, the most effective of these collaborations are firmly based on a strong spirit of competition. In their book, *Mavericks at Work*, the co-founder of Fast Company William C. Taylor teams up with his senior editor Polly LaBarre, to unpack how these competitions work: "Peer-to-peer collaboration…is fuelled by an intense (and intensely personal) spirit of competition. (First,) one of the most powerful ways for lots of people to work together as a group is to compete against one another as individuals. Second, while it's the technology pundits who tend to dominate the conversation about the new logic of creativity, there is nothing that limits these ideas to the virtual space of the Internet or the borders of Silicon Valley".

Today's business climate is being reshaped by tribesourcing. It is enabling businesses to expand their supply chains, access new talent and deepen their available skills base. It provides platforms for talented graduates and workers around the world to improve their personal conditions and access new opportunities. But it also provides another outlet for employees in the ITES sector to use their skills and participate in the broader economy.

Tribesourcing does not mean that intellectual property needs to be open source. There is evidence that some companies are managing to find effective combinations that avoid inhibiting command and

control contracts, while being fun and manageable. First-mover businesses and countries are already finding that results can be significant:

- Over 100,000 people in China earn their living playing massive multiplayer online games seven days a week and selling their profiles to wealthier players. Collectively, according to the *New York Times*, they produce the bulk of all the goods in what has become a $1.8 billion worldwide trade in virtual items.

- TopCoder, a for-profit-business, provides an online platform to pitch freelance computer programmers against one another. TopCoder signs contracts to provide solutions for companies like Merrill Lynch, Philip Morris and Yahoo, then divides up the application into smaller packages and its community of 170,000 programmers are invited to write code. But the twist, according to William C. Taylor and Polly LaBarre, is that programmers compete in head-to-head competitions against a deadline and the winner is decided by other programmers on the website. Winners stand to boost their own profiles on the website and also gain significant sums of money, like Mojito1 who picked up $50,000 for creating an algorithm to predict the outcomes of a collage football game in America.

- Intel's International Science and Engineering Fair is a pre-college science competition which enables students around the world to compete for scientific excellence. In 2008, it brought together over 1,500 leading young scientists—over 20% of whom had patented or applied to patent their work—to compete for more than US$4 million in scholarships and prizes to develop their skills. Applications are received from over 50 countries; in 2004 the president of Intel China, Wee Theng Tan, explained that over 6 million students were trying to get involved with the national affiliate science fairs.

There are multiple obvious advantages of this type of approach. Companies can access better talent, individuals have more opportunities and there is an improvement in the quality of products and services. But the impacts are much greater. Tribesourcing is enabling ITES workers to become more entrepreneurial; there is anecdotal evidence that some of the 16,000 applications to Google's first-ever "India Code Jam" had honed their skills in ITES.

But more broadly, tribesourcing is providing a real pathway for highly-talented programmers to use their skills in more constructive ways. According to *Business Week*, opportunities to participate in platforms like TopCoder and broader efforts by countries to enforce IP rights is helping to reduce the amount of piracy.

Microsoft, one company which has had particular problems with IP violations, has moved to harness emerging talent. Since 2003, it has been running its own tribesourcing programme, the Imagine Cup. Each year this competition aims to connect students' technology applications to real-world opportunities; among the awards made in 2008 were prizes for a new IT application for people with poor hearing or vision and rural innovation.

Students from over 100 countries and regions compete in the Imagine Cup, sending applications to one of nine categories (including game development, short film and algorithm). The applications have increased seven-fold since 2005; there were 210,000 in 2008. The majority of them for the software design award in 2006 came from Brazil. What is interesting about Figure 8 is that it illustrates how these awards are becoming more international, and how the English language is becoming less important.

Figure 8   Applications for the Imagine Cup
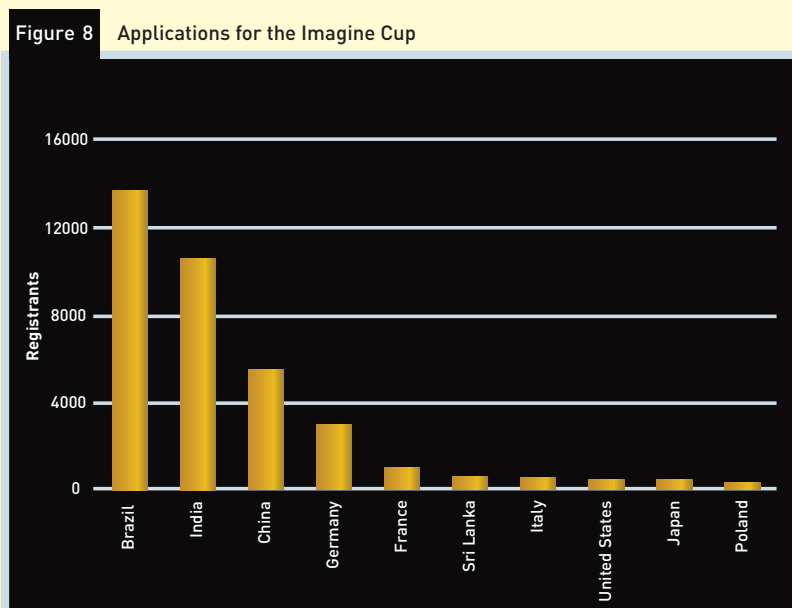
ITES and tribesourcing are together accessing talent regardless of language. They are providing opportunities for countries to bridge analytical skills, in a situation where literacy in maths and programming are more critical for outsourcing than ever before. The challenge for policy-makers and investment agencies is how to provide sufficient skills (particularly in science, technology, engineering and mathematics) and raise enough awareness to enable individuals to access the opportunities of tribesourcing.
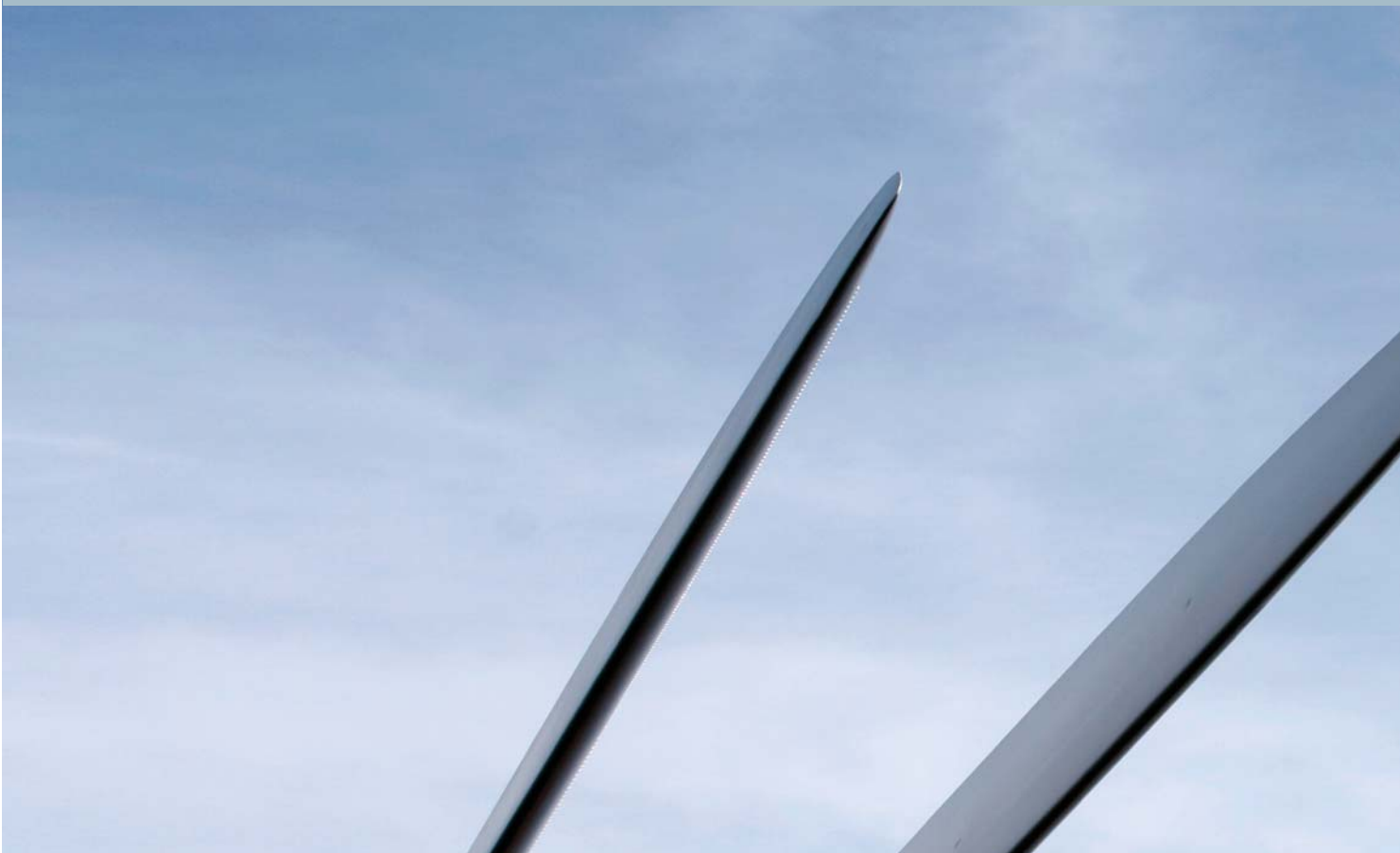
2.6 THE CONTRIBUTION OF ITES TO LOW-CARBON PROSPERITY

The ITES sector can becoming part of the solution to broader societal challenges like energy security, climate change and enable cities, regions and countries to reach the development aims. But these shifts will require policy-makers, investors, industry analysts and civil-society groups and the industry themselves to *take ITES seriously as a new sector*. One way for the sector to make this transition will be to improve how it approaches these issues; another is to innovate coherent solutions that contribute to key challenges. This chapter identifies three main opportunities where ITES can and should be playing a key role: enhancing carbon productivity, the systematic management of the sectors' carbon footprint and helping users transition to improved energy efficiency.

CAN ITES ENHANCE CARBON PRODUCTIVITY?

Increasing carbon productivity, or the ratio of value creation to carbon footprint, is becoming a key issue as companies, cities and countries look to promote low-carbon living and increase energy efficiency. Fluctuations in oil prices throughout 2008 have caused decision-makers to find strategies to promote prosperity in ways that reduce the dependency on natural resources and build environmental security. This is particularly relevant in the largest outsourcing hubs—India and China—where the International Energy Agency predicts that the increases

in energy demand will be highest. ITES can and is helping these societies embrace low-energy, high-IT and ITES intelligence lifestyles which favour hybrid cars, reduced air travel, better energy housekeeping, more efficient grids and the wider use of renewable technologies.

In light of the changing climate, the world needs to stabilise the atmospheric concentration of carbon dioxide (and other green house gases) at 550 parts per million. This will mean a 75% reduction on business-as-usual emission scenarios by 2050; a reduction that research indicates can be achievable with affordable marginal abatement costs.
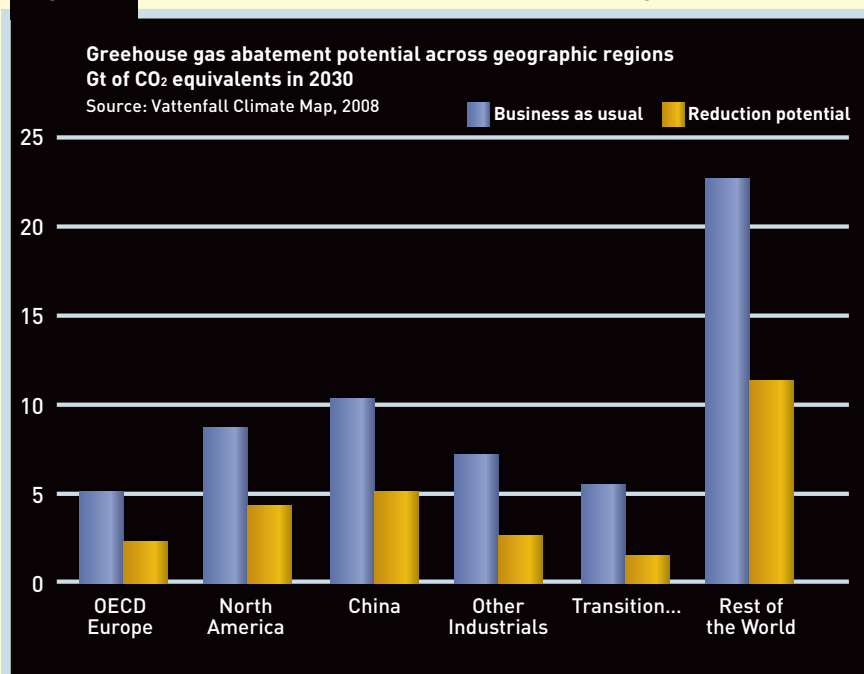
IT and ITES have major opportunities to provide both the architecture and tools for this transformation. But these voices have been largely missing in the climate debate and the ITES sector needs to manage and reduce the carbon footprint of the sector. Recommendations on how to do this are made towards the end of this chapter and throughout this report. Why are they so critical?

If carbon emissions are to be lowered by 75%, global societies have to significantly increase GDP productivity per unit of carbon emitted. It will need solutions that reduce energy use and shift energy generation to low- and no-carbon-dioxide-emitting sources, such as renewable-energy technologies. More importantly, it will need a shared understanding that fossil fuels—oil, coal and natural gas—will continue to be the primary sources of energy into the future; and hence also to lower carbon emissions from fossil fuels as well. In addition, concerns about energy security are increasing with governments looking to control and stabilise supply for national consumers.

Tacking all of these issues calls for:

- a broad range of emission-reduction and sequestration policies which have at their core, fuel and energy prices that internalise the greenhouse-gas externality;

- abatement strategies that are cost-effective and have the least impacts on economic and social progress. Without the focus on both cost-effective abatement and growth, societies—especially those in lower-income countries—will face very difficult tradeoffs between the two. Lower- and middle-income countries have the undeniable right to purse strategies for sustainable growth and prosperity. Emerging economies are contributing a sizable chunk of greenhouse gases emitted today (China surpassed the United States as the largest global net carbon-emitter in October 2008); but it is important to note that this is due not just to more affluent livelihoods but also because a substantial proportion of goods and services consumed in rich countries are produced and assembled within their boundaries;

- capital-market reforms that will send the right price signals and provide the right incentives to finance incremental abatement costs and investment in low-carbon alternatives.
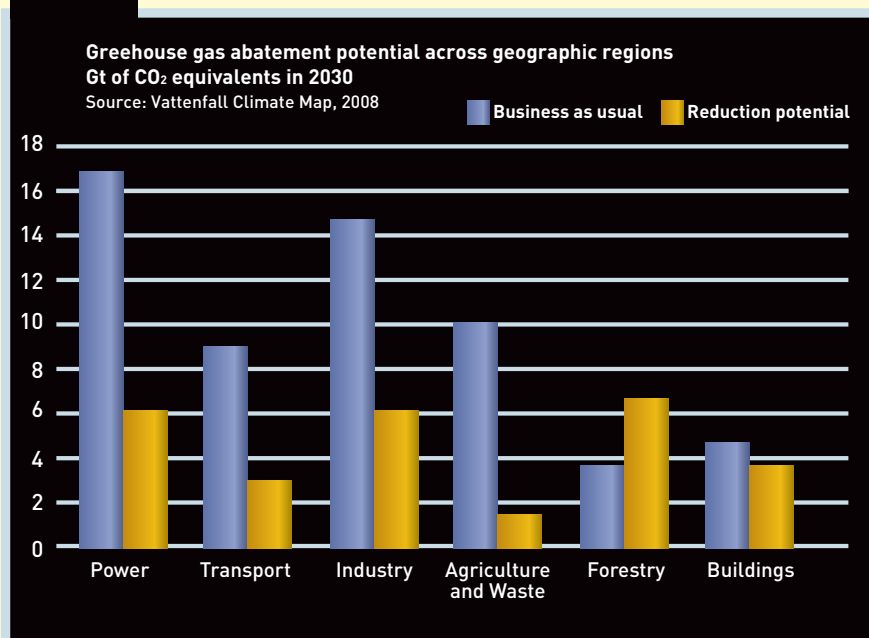
Figure 9 Greenhouse Gas Abatement in Different Regions

Greehouse gas abatement potential across geographic regions
Gt of CO_2 equivalents in 2030
Source: Vattenfall Climate Map, 2008

Business as usual   Reduction potential

There is cutting-edge research on the feasibility and costs of greenhouse-gas abatement—conducted by the European energy company Vattenfall with the McKinsey Global Institute and McKinsey & Company—demonstrating that all of the above are indeed achievable.

The core concept here is carbon productivity. If the G8 is to realise its pledge to lower carbon emissions by 50% by 2050, all the nations involved would need to increase carbon productivity from US$7,40 per tonne of carbon- dioxide-equivalent today to US$7,300 per tonne of carbon-dioxide-equivalent by 2050, a ten-fold increase. More importantly, the Vattenfall models (based on current and future pricing of energy and carbon as well as the carbon content of all current and potentially available energy sources) suggest macro-economic cost of such drastic emissions reduction could be in order of 0.6% to 1.4% of global GDP by 2030 if all abatement opportunities at a cost below US$40/tonne CO_2e are taken.

Figure 10 | **Greenhouse Gas Abatement Potential Across Different Sectors**

Greehouse gas abatement potential across geographic regions
Gt of CO_2 equivalents in 2030
Source: Vattenfall Climate Map, 2008

■ **Business as usual**   ■ **Reduction potential**

ITES: THE "GREEN BRAIN" FOR LOW-CARBON PROSPERITY

The ITES industry has the potential to contribute cost-effective solutions for carbon productivity, which can be loosely categorised in five domains:

- What is the carbon footprint of the ITES sector?;

- Solutions to increase energy efficiency;

- Realising the potential of renewable-energy technologies and carbon capture and storage through ITES;

- A new generation of tools to protect the forests;

- Scalable IT architecture for energy and carbon trading.

WHAT IS THE CARBON FOOTPRINT OF THE ITES SECTOR?

The Global e-Sustainability Initiative and The Climate Group's "SMART 2020 report: Enabling the Low Carbon Economy in the Information Age" points out that the global ICT and ITES sectors accounted for 2% of global carbon emissions in 2007, and predicts this will rise 40% by 2020 due to increased demand for ICT products and services.

As the sector that provides the blueprint for low-carbon economies, are IT manufacturers and service vendors sufficiently engaged in "dematerialising" ICT products and equipment (from mobile phone and PCs to peripherals and data centres) to improve material and energy efficiency and recyclability?

In 2008 Gartner and the World Wildlife Fund (WWF) surveyed over 50 global ICT and ITES providers on their "green IT" practices with the intention to gather date for a "green matrix" for the IT and IT-services industry. It found that only eight companies appear to have well-structured long-term environmental plans to reduce their own impact (as opposed aggressive innovation of solutions to help other industries do just that). The survey also found that many leading brands are yet to have established greenhouse gas reduction targets or even corporate policies on climate change.

SOLUTIONS TO INCREASE ENERGY-EFFICIENCY

ITES is increasing energy-efficiency in many ways. Smart metering, new IT products and services, and improved energy distribution systems are all enabling cities, countries and companies to enhance their carbon productivity. Improving energy-efficiency can lead to immediate cost-savings, but it is often associated with the assumption that the gains involved are too small to make a difference. It is also true that energy tends to become a policy priority only in a crisis.

The United States, the largest per-capita energy user, began a serious rethinking of energy policy-making in 2001 during the California power crisis (which followed the deregulation of the state's energy markets a year earlier). There were daily blackouts, there was no time to build power plants and importing electricity was not variable. As hard times call for innovative solutions, California began to develop innovative incentives for using less energy. Of particular note is the 20/20 programme, which gave consumers a 20% rebate on their electricity bills if they cut electricity use by 20%. According to the US Energy Information Administration, these measures resulted in 11% electricity and 16% peak power-savings in the summer of 2002. The government of California reinvested these gains in more widespread rebates, especially given that the rebate costs were a fraction of the highly inflated supply-costs at the time.

The US experience offers one of the most significant examples of energy-efficiency. "Energy Intensity in the USA, 1949 to 2005" plots energy consumption per unit of gross domestic product (E/GDP), from 1973 to 2005, projecting how energy-intensity would have increased if energy-efficiency measures had not been introduced in 2002 (The outcomes of the reduced energy intensity are shown in "Energy Consumption in the USA, 1949 to 2005").
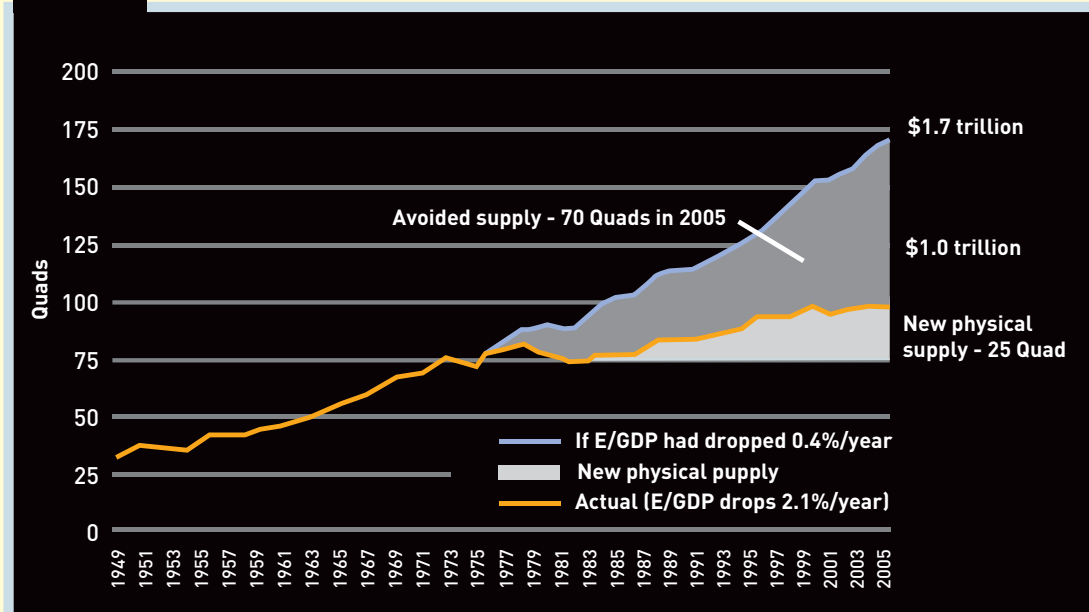
| Figure 11 | Energy Intensity in the United States, 1949–2005 |
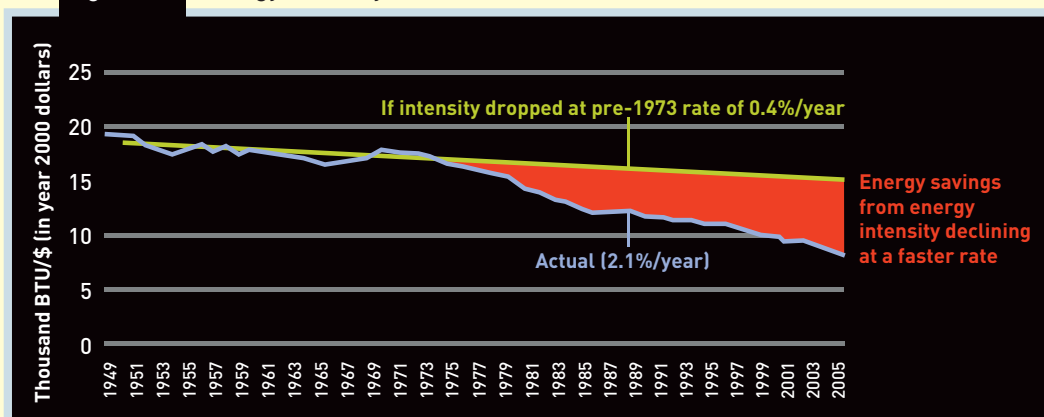
[Note: Quad is an energy unit equal to 1015 BTU. Source: Derived from data at http://www.eia.doe.gov/emeu/aer/overview.html].
Reproduced with permission from the Lawrence Berkeley National Laboratory in California, USA

Figure 12   Energy Consumption in the United States, 1949–2005

Quads

- $1.7 trillion
- Avoided supply - 70 Quads in 2005
- $1.0 trillion
- New physical supply - 25 Quad
- If E/GDP had dropped 0.4%/year
- New physical pupply
- Actual (E/GDP drops 2.1%/year)

Reprinted with permission from the Lawrence Berkeley National Laboratory, California

The structural shift from manufacturing to services has contributed significantly to reduced energy consumption. But the US Energy Information Authority points out that this accounts for only just one third of these gains and the rest can be attributed to energy efficiency. Mark Levine, director of the Environmental Energy Technologies Division at the Lawrence Berkeley National Laboratory in California states: "Energy efficiency has contributed almost four times as much as new energy supply in the United States to meeting demand for energy services during the three decades since the 1973 oil embargo. Now this is rarely addressed in high policy circles".

ITES solutions should be at the heart of supply and demand-side energy management (see Table 6 on page 69). Supply-side solutions include improved "smart grids" which involve fewer distribution and transmission losses through the use of lightweight materials and the potential deployment of nanotechnology solutions. There are also smarter and more transparency platforms and softwares for energy trading in deregulated markets. Demand-side management solutions range from smart metering to integrated energy/business solution software.

Table 6: ITES solutions for energy efficiency	
Demand side solutions	
Commercial and residential	• Building automated systems such as occupancy based lighting and external light regulators • Building management systems that provide for the integrated and central control of heating, cooling, lighting and ventilation • Solutions to integrate building management systems with operations software
Industrial	Platforms and dedicated software for • improved simulation of plant design • Resource and operations planning applications • Wired and wireless centralised control • collection of real time energy data • calculating carbon footprints • assessing carbon content of goods and services
Fuel-efficient vehicles	Solutions and software for • for tooling and streamlines assembly layout • designing heat recovery and electrical systems • re engineering hybrids and 2nd generation biofuel vehicles • assistive low-carbon diving technologies • engine optimisation including high efficiency diesel motors • lower weight and improved aerodynamic design
Supply side solutions	
Smart grids	Solutions, platforms and protocols for: • generators to route power with lower transmission losses, • large scale energy transmission • redistributing excess capacity • real-time power exchange from renewable energy sources • real time energy monitoring • plug-and-play innovation • distributed generation • grid security
Traffic management and traffic routing solutions	

Sources: Modified from World Bank Data and Research Series 'The financial crisis, bailing out the world's poor', December 2008

The use of ITES services in the development of fuel-efficient vehicles is a particular case in point. Prompted by incremental fuel-efficiency standards in all industrialised and emerging economies, ITES industries have been innovating and tailoring a range of software applications for fuel-efficient design. The rollout of the second phase of the Chinese fuel-economy standard in 2008 will heighten global momentum on fuel efficiency as the Chinese standard is now stricter than that in the US.

ITES is also integral to the biotechnology sectors as they innovate on lignocellulosic biofuels which are expected to be commercialised in 2010. (Analysis of current feed-stocks such as corn, palm oil and beet are indicating that these fuels can be net carbon-emitters rather than being carbon neutral as widely supposed). It is also hoped that these new-generation fuels will reduce the competition between food and fuel agriculture, and make biofuels more viable for lower-income countries.

IT intelligence is also enabling individual purchasing and lifestyle decisions. For example, the travel and tourism industries—and more recently, the retail industries—are using dedicated softwares to enabling consumers to calculate their carbon-footprints and offset them with a surcharge that is directly injected to forestation in lower income countries. Similarly, energy-providers, environmental authorities and local authorities are providing customers with applications to calculate and reduce their daily carbon-footprints. For example, the Act on CO_2 advice-line provides advice from the UK Energy Savings Trust to communities and individuals across the UK through dedicated software applications.

REALISING THE POTENTIAL OF RENEWABLE-ENERGY TECHNOLOGIES AND CARBON CAPTURE AND STORAGE THROUGH ITES

ITES has the possibility to help countries develop alternative energy supplies. Accessing new IT products has helped develop nanotechnologies, enable the emergence of renewable-energy, empower researchers to process new algorithms and software, develop fuel-cells and advance computing technologies like quantum computations and artificial intelligence. Each of these has the possibility to contribute directly or indirectly to sustainable development,

- Nanotechnologies are expected to contribute to developing advanced materials and devices which will make renewable energy technology more efficient and costs effective. Early nano applications in the form of "thin" PV systems (which capture 15%-18% of the sun's energy at 50% of today's cost) are already commercially viable.

Advanced computing and software solutions are being employed in alternative PV technologies that use long parabolic mirrors to focus light to heat thin tubes of liquid which in turn drive steam turbines to generate electricity. Prototypes are being installed in North Africa, Spain and the south-west of the US. In a simultaneous effort, demand is expected to take off for new IT solutions for smarter long-distance grids that will deploy this power to distant markets.

- *Wind energy* is one of the most competitive supplies of alternative-energy. Policies like the Renewable Portfolio Standard in the US and the European Union's renewable-energy obligations are likely to increase demand for wind-power, and already Spain and Germany are receiving 20-40% of their electricity from wind.

Wind-technologies are dependent on smart grids—for the intermittency of wind-power requires grids to be able to distribute this surplus to areas where it is most needed. ITES intelligence is central to upgrading and expanding these grids by rolling out new transmission methods and reducing transmission losses.

ITES has untapped potential to contribute to carbon capture and storage (CCS). CCS could play a major role in meeting greenhouse-gas abatement targets around the world, but there are concerns about the feasibility of CCS, including its cost effectiveness. Compared to the cost of burning fossil fuels without capture, CCS would increase the costs of power generation by 40-80%, varying according to location, technology and type of fuel. Advanced IT modelling and analysis could help overcome these challenges and enable investment into the emerging CCS sector.

Despite the promise of renewable technologies, societies will continue to rely on carbon-emitting fossil fuels—coal, gas and oil—for years to come. The box on page 72 presents the argument for nuclear power as a source of energy distribution, highlighting one perspective in this debate.

Why nuclear power is not an option for sustainable ITES industry

A contribution by Peter Wooders, International Institute for Sustainable Development (IISD)

For countries and cities to emerge as competitive providers of ITES, they need to provide reliable, affordable and clean energy supply. As export zones attract more work and shift into the IT-based economy, energy demand increases and policy-makers need to facilitate investment in new generation capacity.

Nuclear power is emerging as a clean, low-carbon, reliable source of electricity, with dozens of countries are planning to develop nuclear power and hundreds of reactions are on the drawing-board. But despite the hype, nuclear will not offer viable solutions for global warming or security of energy supply that its proponents promise. This section of the report explains why.

Nuclear power's attraction to reducing climate change is that it generates electricity with low-lifecycle greenhouse-gas emissions.[1] Its generating costs are highly disputed, with figures used selectively by advocates and critics alike. Financial costs of emissions-abatement (i.e. $ per tonne of carbon dioxide reduced) from nuclear are thus uncertain, but are almost certainly higher than those for end-use efficiency and of a similar order of magnitude to other power sector options (e.g. renewables and switching from coal to gas).

Costs other than direct financial costs must be taken account of. For nuclear, issues around risk of accidents and insuring against them, storage and disposal of waste, potential links between civilian and military nuclear programmes, the implications for civil liberties of securing nuclear installations and the geopolitics of having a nuclear programme are important. For other technologies, emissions of noxious pollutants, the costs of strategic fuel storage and actions taken to secure supply routes, and the reduction in food production caused by growing biomass for fuel are key additional costs.

Nuclear currently generates 15% of the world's electricity, equivalent to 2.5% of energy consumption from all sources.[2] Estimates that nuclear power could contribute up to 6% of necessary reductions in greenhouse-gas emissions worldwide[3] appear to be of the right order of magnitude, but would need a major scaling up of the current nuclear new-build programme. For nuclear to simply maintain its current share of global electricity to 2030, a 1,000 mega-watt reactor would need to be built every 16 days for the next 21 years.

Secure energy supply is that which is reliable and affordable. Precise definitions and quantification are difficult: the energy system is extremely complex and interlinked; consequently there is a wide range of options which can be implemented to improve security of supply). These are internal or external to a country, political, regulatory or economic focus and are highly country-specific. European Union policy has five themes:[4] infrastructure needs and the diversification of energy supplies; external energy relations; oil and gas stocks and crisis-support mechanisms; energy efficiency; and making the best use of indigenous energy resources.

Popular views of energy security of supply options and priorities tend to focus on single options: internationally, securing oil and gas supplies receive much attention; domestically, renewable, nuclear and domestic-fuel industries put forward their option's essential role. Policy aimed at improving energy security of supply should identify the causes of supply failures and their likely economic costs, and then address these in the most cost-effective manner.

Within developed countries, the major sources of supply-failure are electricity grid failures[5] and energy-sector industrial action; external fuel supply shortages are not generally an issue[6]. In developing countries, another key cause is that parts of the energy sector are often under-resourced and cannot fully finance purchases of fuel, maintain the current system or expand it to meet new demand. Under-resourcing is often caused by the use of the energy sector in delivering social and economic policies.

Nuclear power's contribution to security of supply is only to electricity[7], and then only to its generation rather than to its transmission or distribution. If the main SoS concern is electricity generation, then nuclear can have an important role to play, depending on its pros and cons relative to the alternatives. Financially, nuclear is relatively expensive per unit of capacity but has low running costs. All electricity-generation options then have specific non-financial issues, including an assessment of how secure their fuel supply chains are. The nuclear-fuel supply-chain is often portrayed as being highly secure since uranium ore is mined in "friendly" countries such as Australia. Uranium mining is only the first part of the chain: uranium enrichment and fuel rod production are both highly concentrated and highly politicised; the US "GNEP" plan[8] can be interpreted as a policy to establish control over, and access to, worldwide nuclear-fuel supply.

Nuclear appears to have a relatively minor role to play in reducing climate change and in improving security of supply. It is best employed as one of a portfolio of measures.

Notes:

[1] See for example Greenhouse Gas Emissions of Electricity Generation Chains: Assessing the Difference, Joseph V. Spadaro, Lucille Langloisand Bruce Hamilton, IAEA Bulletin 42/2/2000. The paper shows that, per unit of electricity generated, nuclear lifecycle greenhouse gas emissions are of the same order as wind and biomass, and approximately 1.5% of those of coal and 3% of those of natural gas.

[2] World Energy Outlook 2008, IEA, Paris, 2008

[3] Energy Technology Perspectives 2008—Scenarios and Strategies to 2050, IEA, Paris. The "BLUE" Map scenariopostulates a 2050 energy system with 50% less greenhouse gas emissions than current levels. Within this scenario, it envisages nuclear contributing 6% of the required emissions.

[4] Commission of the European Communities. Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions. Second Strategic Energy Review. and An EU Energy Security and Solidarity Action Plan {SEC(2008)2794}, {SEC(2008)2795}. Brussels, Unofficial Version.

[5] See for example the 5 week power outage experienced by the Central Business District of Auckland in 1998 (http://en.wikipedia.org/wiki/1998_Auckland_power_crisis)

[6] Although this reflects at least to some extent the success of policies aimed at securing fuel supplies and emergency storage provisions

[7] Noting that reliable electricity supply is increasing in importance (and hence value) to much of the economy across the world, notably to commerce

[8] http://www.gnep.energy.gov

A NEW GENERATION OF TOOLS TO PROTECT THE FORESTS

ITES can also increase carbon productivity through the preservation of the forests. Forests are the carbon-sinks of the planet: they are critical to realising carbon productivity. According to the World Conservation Union (IUCN), the largest carbon-abatement potential is to avoid-deforestation opportunities. Carbon-productivity studies from Vattenfall, further point out that if reforestation and avoided-deforestation opportunities are not maximised, the marginal costs of abatement could increase by 50% across the world.

IT is creating a new generation of remote sensing tools that contribute to the protection of these forests by enabling more people to access geographical information images and to develop better systems to track changes in canopy coverage. This collecting, analysing and tracking of forestry enables stakeholders and policy-makers to develop effective mechanisms for forestation as a viable means of carbon-abatement, a process which is expected to increase as forestry becomes eligible for credits under the Kyoto Protocol's Clean Development Mechanism. Furthermore, as wide-spread access to IT increases, it is likely that this will spur a great deal of innovation in these domains.

But these monitoring programmes—and in fact the industry—is still immature and marginal. Without significant interventions by policy-makers, the potential benefits of ITES to protect the world's forests can never be fulfilled.

SCALABLE IT ARCHITECTURE FOR CARBON AND ENERGY TRADING

A number of industrialised countries—and Mexico (the first emerging nation to commit to voluntary carbon-reduction targets)—are implementing carbon-emissions trading schemes to innovate and increase their carbon productivity. But these trading schemes have proved to be controversial; the Kyoto Protocol's clean development mechanism has been criticised of providing opportunities for speculators to earn fortunes and for companies to produce more greenhouse gases while delivering little or no benefit for the environment.

ITES is needed to increase the delivery potential of these trading schemes. Effective IT platforms can be deployed to increase trust, improve these trading platforms, track allowances in a more transparent way, improved country allocation and increase the efficiency of trading-exchanges.

Other scalable IT architecture for energy-trading can also include:

- Engineering custom-designed integration backbones;

- Re-engineering and replacing "legacy" applications with multi-tiered, web-enabled and component-filled applications;

- Re-engineer and centralise master data to enable seamless integration with other energy players and futures exchanges;

- Trade capture applications to provide for flexibility and multiple transactions and workflow management.

REFERENCES

Global Climate Impact Abatement Map, VattenFall www.vattenfall.com/climate

McKinsey Global Institute and McKinsey & Company, The Carbon productivity challenge, curbing climate change and sustaining economic growth (June 2008)

R. Shah, Energy Trading & Risk Management—Top 5 IT Imperatives (Infosys Research Papers, March 2005)

S.B. Swaminathan, P. Roy, S. Kumar, Utilizing technology to provide cost effective energy for a sustainable future (Infosys White Paper, 2006)

The 10-50 solution: options for a Low Carbon Future (Pew Centre for Global Climate Change, In Brief, NO 9, 2008)

Enabling the low-carbon economy in the information age (The Climate Group and the Global e-Sustainability Initiative, SMART 2020, 2008)

CHAPTER 3
CONCLUSIONS AND AN AGENDA FOR OUTSOURCING 3.0

Nandan Nilekani

"There is more potential for the future than past achievement—ITES is still being used as a lever to 'manage', rather than 'create'".

The Outsourcing 3.0 agenda is timely because the current model of outsourcing is in disarray—a condition that the serious global economic downturn of 2009 (and perhaps beyond) could accentuate. Recent concerns and scandals are moving beyond the financial and automotive sectors into the ITES sector; consumers are increasingly concerned about their carbon footprint even when using search engines like Google and policy-makers are increasingly pessimistic about securing a serious climate deal in Copenhagen in December 2009.

Yet, against this backdrop, there are reasons to be positive about the future of the ITES sector. 2009 could be recognised as the year that the current outsourcing model is fundamentally reset.

This year-long study by International Institute for Sustainable Development (IISD) and AccountAbility, with support from the Norwegian Agency for Development Cooperation (NORAD), is based on interviews with practioners and thought-leaders. Based on this analysis, the report finds that:

- Emerging-economy leaders must *make the right IT investment decisions*—not just the fashionable ones—if they want to unleash its poverty-reducing potential;

- ITES hubs like Bangalore and Manila must, if they are to migrate from IT destinations to IT innovators, *build sustainability into their development models*—even if this initially raises costs relative to competitors;

- Companies throughout the value-chain need to *upgrade their corporate social responsibility* (CSR) practices, both to manage risk and to identify new profitable opportunities;

- Policy-makers, investors, industry analysts, business schools, consultancies and civil-society groups need to *take ITES seriously as a new sector* that demands as much critical scrutiny and policy-intervention as other industrial sectors.

This report outlines practical strategies for companies, countries and cities to use ITES to promote sustainable development. It presents a new *responsible competitiveness framework* and a welter of evidence and experiences which demonstrate that ITES can play a vital role in contributing to sustainable development through building social cohesion, improving economic efficiency and promoting environmental security.

Specifically, this study identifies practical opportunities for the sector to progress towards sustainability in six interlocking ways:

- Creating a *responsible business climate* through financial packages that deliver real positive externalities from ITES, such as promoting the take-up of environmental-management systems, contributing to better institutions and promoting sustainable development;

- Promoting *smart philanthropy* and scaling up the activities of ITES companies in applying development-oriented "base-of-the-pyramid" (BoP) through intelligent alliances, better leadership and smarter management;

- Harnessing and unleashing *human talent*. The report finds that a number of practical attempts to deepen the skills pool in countries from China to Brazil; but such activities are often fragmented and poorly structured, and thus fail to produce a sufficient number of graduates with the appropriate skills for business;

- Adopting and creating *business and compliance standards* are becoming more important in shaping the ITES sector. There is anecdotal evidence from green building standards to data-centre efficiency that progress towards Outsourcing 3.0 is indeed being made. But there are real opportunities to extend this, and seizing them requires greater ambition in meeting both international and local standards, particularly in regard to investment strategies;

- New *product and service innovations* are being made available to a wider audience. The research here finds evidence that, for example, regions in China are gearing up to co-create the next wave of ITES offerings through "tribesourcing". These models have an enormous potential to provide dynamism in the economy and enable regions to quickly access new high-value jobs;

- Many ITES firms and countries have seen measuring and reporting on sustainability performance as a distraction and headache rather than a core business opportunity. Smart firms (e.g. IBM and Wipro) are now creating user-friendly *communication* add-on and stand-alone tools to enhance their own performance and then to bring to market. There is an opportunity here for a sector-wide initiative to understand, measure and perhaps certify sustainable productivity.

The past decade has seen ITES miss two opportunities to play a proactive role in sustainable development worldwide. 2009 presents a third chance. To map real progress towards "Outsourcing 3.0", IISD and AccountAbility aim to:

- Engage more countries, cities and regions that currently have—or are looking to develop—ITES projects, supporting the integration of environmental stewardship and social progress as a key goal of investment and development strategies;

- Systematically rank progress towards sustainable development—and create a robust responsible competitiveness index—of major ITES locations;

- Work with provincial and local governments, NGOs and start-up entrepreneurs on how best to stimulate and scale-up bottom-of-the-pyramid ITES ventures;

- Support educators and policy-makers to upgrade leading education institutions to meet the demand for global and flexible workforces;

- Explore the impacts of investment in IT and ITES on productivity levels, emphasising that long-term benefits here depend on decision-makers carefully sequencing ITES improvements to specific industry and policy levers, and making complementary adjustments in processes;

- Engage stakeholders to reskill and progress further up the value-chain and prevent a 'race to the bottom' to attract ITES jobs. Many stakeholders have overlooked the fact that even as industrialised economies have been outsourcing jobs, they continued to export far more services than they import. Nonetheless, the conditions of and responses to the global downturn highlight the importance of these concerns and of the larger contribution of ITES in providing solutions.

2009 presents a real opportunity for the ITES sector to move towards Outsourcing 3.0, but this report finds that *this outcome is not inevitable*. Real progress will need a new generation of smart leaders, better governance systems and coordinated action from businesses, policy-makers, investors, trade unions and citizens. It will require the scaling up of existing initiatives, ambitious rollout of new business models and the innovative deployment of ITES.

This report provides an ambitious but practical agenda for businesses and countries to contribute to genuine sustainable development. To finally unlock its potential, the ITES sector will need to adopt the Outsourcing 3.0 agenda.

NOTES

ABOUT THE ORGANISATIONS

The International Institute
for Sustainable Development
www.iisd.org

Established in 1990, the International Institute for Sustainable Development (IISD) is a Canadian-based not-for-profit organisation with a diverse team of more than 150 people located in more than 30 countries. Through our dynamic portfolio of projects, we partner with more than 200 organisations throughout the world.

IISD is in the business of promoting change towards sustainable development. As a policy research institute dedicated to effective communication of our findings, we engage decision-makers in government, business, NGOs and other sectors in the development and implementation of policies that are simultaneously beneficial to the global economy, the global environment and to social well-being.

In the pursuit of sustainable development, we promote open and effective international negotiation processes. And we believe fervently in the importance of building our own institutional capacity while helping our partner organizations in the developing world to excel.

AccountAbility
www.accountability21.net

AccountAbility is an international think tank and advisory group with bases in Beijing, Geneva, London, São Paulo and Washington established in 1995 to promote accountability innovations that advance sustainable development. AccountAbility works with business, government and civil society organisations to advance responsible business practices, and the governance of collaborations between public and private institutions.