INFORMATION DYNAMICS IN DEVELOPING COUNTRIES

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ABSTRACT

Revolutionary advances in information and communication technology (ICT) with reinforcement in economic and social climates are transforming the global communities. A new kind of dynamism - the information dynamics - is emerging where communities are global and becoming competent with knowledge, networking and versatility on a global basis. A new society is emerging with pervasive information capabilities, substantially different from an industrial society; more competitive, better able to address individual needs, and steady to the environment.

The information revolution creates both the challenge and the means for the developing world to adjust to the newly developed action plans and to put in place the needful infrastructure of telecommunications and information systems. The information revolution also opens up opportunities to tackle the problems of poverty, inequality, and environmental degradation.

Concept of sustainable development has arises in the emerging societies, which is the process of achieving a standard of living and a quality of life with a degree of dignity and a measure of control over their lives, including respect for the environment and the natural resources. This process demands investment, in infrastructure, in human capital, and in productive capacity.

Information infrastructure comprised of the cross-country telecommunications network, the user-friendly computing tools and easy-access information warehouses. Information backbone has the characteristics of easier transportation, manipulation, storage and dissemination by creating the "knowledge tank" an essential element for the management of the new economy. And because the new economic development is about knowledge networking, the information revolution holds inestimable promise for downtrodden population in the developing countries.

BACKGROUND

Radical advancement in ICT information technology reinforced economic and social changes by transforming community and society. From this advancement emerges a new kind of economy, the information economy, where information is the critical essence. Traditional ways of doing business has been drastically modified and sometimes, the old ways has been replaced by new means and methods.

Information technology is changing throughout the world. Information and communication technologies (ICTs) are generating a new industrial revolution already as significant and far-reaching as those of the past century. This revolution is based on information dynamics, within itself the human knowledge content.

Technological progress now enables us to process, store, retrieve and communicate information in whatever form it may take, unconstrained by distance, time and volume. This revolution adds huge new capacities to human intelligence and constitutes a resource which changes the way we work together and the way we live together (Bangemann, 1994]

In developing countries, access to information infrastructure remains always inadequate, and progress on telecommunications policy

reforms are lagging behind. Yet there is an opportunity for leapfrogging the new technology can provide better, cheaper links to the grass root level stakeholders, while competing global operators can provide low-cost long distance communications. Adopting new technologies, developing countries can deploy telecommunications for lower costs per capita than the industrial world and rapidify poverty alleviation processes.

The following issues need to be resolved with greater context; issues of accessibility, intellectual property protection, fair competition, content regulation, and cultural preservation. However, due to many unintended factors, still the access to the global information infrastructure by developing countries remains inadequate and dependent on major telecommunications policy reforms yet to be implemented.

KEY FACTORS TO UPHOLD THE INFORMATION DYNAMICS

Information technology has become a potent force in transforming social, economic, and political life globally. There is little chance for countries or regions to develop without their incorporation into the information age. More and more, development strategies see the need for developing countries to embrace information technology both as a way to avoid further economic and social mobilization as well as to offer opportunities for both growth and diversification of their economies (Hafkin, N. & Taggart, N. 2001).

Advancement in information and communication technology (ICT) offers unprecedented promise for social and economic development on a global perspective. As the primary means of communication and performance in the networked society, ICT has become a fundamental instrument for both the developed and developing countries.

To harness information and communication technology for its mission of poverty alleviation and sustainable economic development, the following objectives to be set at the national level:

- Easy access to communication and information services through accelerated deployment of national information infrastructure and integration into international communication and information backbone;
- Systemic improvements in the functioning and competitiveness of key sectors of the national economy through strategic policies and implementation plans;
- New ways to use ICT to assist in solving the most prevailing problems of human and economic development - education, health, poverty alleviation, rural development, and reinforced environmental awareness; and
- Increased motivation at the national level for economic development through inclusion of information contexts in each level of administration hierarchy.

EVOLVING PARAMETERS

Information technology can offer significant opportunities in developing countries for virtually all societies, including marginalized communities in rural areas. In considering diversified entrepreneurial ventures associated with information technology, the following parameters need in depth study to ensure equitable participation of all societies in the information age.

Concept of society needs to be re -thinked:

Societal control based on closely-held information is no longer possible when information is ubiquitous and inexpensive. Uncontrolled and easy flows of information increase create opportunities for social manipulation.

Environmental awareness to be raised:

Due to faster information dissemination and knowledge development, the preservation of the environment has become a prime concern of a well-informed public society. Economic growth cannot be pursued at the expense of the environment, lest such growth become unsustainable and threaten the environment of the entire globe, though environment has

significantly different connotations in developed and developing countries.

Definition of developing countries needs to be adjusted:

With the rapid advancement of the developed world, and unbalanced participation of the developing world in the global economy, developing world is in the competitiveness of their goods and services. They are threatened with a new form of information poverty that could further extend the "digital divide" and widen the gap in economic status and competitive issues. Necessary fine-tuning is essential, though extremely complex, for total diffusion of information technology, which may result in social fragmentation.

Information revolution!:

In real sense, to keep up with the developed world, the term "Information revolution" need to be retorted. This will assist to create new paradigm to encounter problems of poverty, inequality, and environmental degradation with the potential to achieve unprecedented gains in social and human development.

Developing world need rapid transformation:

Information and communication technology in developing countries need transformation to overcome the dynamic challenges and create unprecedented possibilities for sustainable economic development.

Strategies for information dynamics to be recapitulated:

Strategic information systems for developing countries should primarily include sector-wise information systems for education, health, governance, and communication at the first phase. E-commerce, knowledge networks, e-business, environmental awareness, disaster prevention and management, and national statistical databank may be treated as the next phase strategic systems.

Sectoral information networks need to be developed:

Social networks based on computer based communications are needed to improvise to connect institutions working in diversified sectors, like, agriculture, education, health, banking, industry, and others. Interconnected networks offer multi-dimensional opportunities in technical cooperation, research, coordination, information and resource sharing.

Social and technical aspects are needed to be simplified:

Design, development and deployment of information systems and telecommunications capabilities are socially and technically complicated, even in the face of technological advancement and sometime not completely understandable to developing communities. Countries need to depend on the substantial resources, often from abroad, to accomplish this task. They need to establish means and management schemes to facilitate adoption and effective utilization of new systems through adaptive methodologies.

State Patronization:

Government action is a pre-requisite, but epoch making adjustments are required at the state level in the developing countries to participate in the newly emerged global economy. Governments should establish broad partnerships with the private and corporate sectors, local communities, small and medium enterprises, non-governmental agencies, international and development partners.

Government intervention to harness information for development is necessary on several fronts: as policy makers, as major users of information technology, and as compensating influences against market failures. Also, governments must supervise and coordinate education - the key to human and economic development (Talero, E. & Gandette, P., 1996).

Telecommunications reformation is a must:

Reformation in the telecommunications sector are a primary requisite to increase the efficiency and availability of services. Policies and regulations are needed to create the conditions for faster private sector entry, for national integration into global information infrastructure, and for efficient use of the existent infrastructure.

ICT Policies need to be revisited: National information strategies and action plans need to be deployed by identifying the parameters leading to based an information based economy. The policy, institutional, legal, and regulatory changes need to be utilized to create an information-friendly environment. Performance, competitiveness and governance of all sectors of the economy can be improved through de-regulated information policies and systems.

Priorities needed to be identified:

Information systems with important and catalytic capacity to national economic activity should be considered strategic and put forward as part of national information infrastructure. Sector-wise information systems for education, health, financial management, communication and transportation fall in this category. Similarly some other generic value-added information facilities, like e-commerce, environmental awareness, disaster prevention and poverty alleviation can be added to the priority categories. Each country should define its own set of guideline as part of the national information strategy.

Nation-wide networks can also accommodate:

- Network of the financial institutions, and the information industries;
- Cross-country studies on ICTs and e-readiness;
- Accumulation and dissemination of best practices; and
- Establishment of a national databank.

Similarly, strategies need to be taken to mobilize financial sector for development:

- of national information infrastructure projects.
- in project financing guarantees.
- with technical cooperation.

THE GLOBAL CHALLENGE

An information system provides a societal capability based on the use of information that encompasses its full context of people, institutions, policies, processes, incentives, data, information technology, and infrastructure. A strategic information system provides a fundamental capability of such importance that it can enhance the scope and efficiency of an entire sector and economy (Talero, E. & Gandette, P. 1996).

In this context, the Millennium Development Goals are an ambitious agenda for reducing poverty and improving livelihoods that world leaders have agreed on at the Millennium Summit in 2000. They have been stated with slight modification for ready reference:

- *To halve the proportion of people living in extreme poverty and hunger;*
- *To ensure that all boys and girls complete primary school;*
- *To eliminate gender disparities in primary and secondary education;*
- *To reduce by two thirds the mortality rate among children under five;*
- *To reduce by three-quarters the ratio of women dying in childbirth;*
- *To reduce the level of HIV/AIDS and the incidence of malaria and other major diseases;*
- *To ensure environmental sustainability; and*
- *To develop a global partnership for development.*

http://www.undp.org/mdg/

CONCLUSIONS

The tremendous opportunities offered by the emerging information technology often come in packages with remarkably high payoff potential and at the same time impart high risk. However, these sort of projects should not divert resources from efforts to address the basic needs of common communities and should be driven to be well-established, low-risk, and easily adaptable.

Community information centers are a good fit. This multisectoral concept can common citizens, non-governmental organizations, and businesses in poor rural and urban areas with economical, easy, and ready access to needed information. The centers could be a powerful

engine of rural development and a preferred instrument in the fight against poverty. They could be the hub, at the community level, through which a large number of information services can be dispensed - telephone and fax, local bulletins, document searches on demand, video libraries for entertainment and knowledge development, health and nutrition training, government utility services, market prices, self-paced learning, and more. The centers would be multisectoral facilities and eventually self-sustaining through fees and contracts. The Bank is exploring this idea through a study conducted by an NGO, and should move forward with design and pilot testing of the concept (VITA, 1995).

At the social context, a new society is emerging with pervasive information capabilities, thus making it substantially different from an industrial society. It is more competitive, able to address individual needs, and environment friendly, dictating a major agenda of structural adjustment. The adjustment, therefore, is needed within the information arena to tackle uncontrolled information flows, global competition, trade unbalance, and investment opportunities.

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