

IT for {MISSION-ORIENTED INFORMATION}
Society

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Goa Chamber of Commerce and Industries and Institute for Change Research

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**IT FOR {MISSION-ORIENTED INFORMATION}
SOCIETY**

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The Goa Agenda was created to address the IT needs of society in ‘tough-times’ for the IT industry. This Direction Paper will play the role of a provocateur, an outline, and a direction for discussion at the Goa Agenda on December 1st and 2nd 2002.

TEN QUESTIONS FOR LEADERS

1. Why does society need information technology?
2. How does technology satisfy society's information need?
3. What critical information need does IT enable?
4. What clarity is compromised by IT?
5. What complexity does IT offer to harness?
6. What change in rates of activity result from IT?
7. How does society build its information trade?
8. How does the IT service trade overlap with information trade?
9. How can we align society's IT needs with IT service trade?
10. What is appropriate Information Technology?

INTRODUCTION

Information Technology does not exist for its own sake. It is not a fashion; it is not a lifestyle statement. Industry delivering IT products and services does not exist for its own sake either. IT cannot survive as an export, fashion or lifestyle statement.

IT is used to meet societal *needs*. As long as IT meets the societal needs, IT industry will thrive and so will the society.

Information contributes to more than 40 percent of the GDP. When the economy gears up to service more than a billion Indians information, and not material, drives its key success. Information technology can thus contribute enhance the GDP and revive the slumped economy while benefiting the sagging IT industry.

The contribution of IT to the information needs is not IT enabling of services, nor is this business process outsourcing. IT *for* society drives the key processes that service society's needs.

This Direction Paper is a perspective on the IT needs for society. A perspective does not see different things. If done well a perspective sees the known things differently. By looking at known things differently can help new markets to emerge as well as provide new directions to move ahead.

This Direction Paper will play the role of a provocateur, an outline, and a direction for discussion at the Goa Agenda.

OPERATIONS

Hundreds, even thousands, of organisations contribute to the shape and nature of operations within society. These operations deliver the needs of societies and enable or disable their vibrancy, liveability, resilience, stability, and sustainability.

Each society has operations that provide food, energy, land, and water. It has operations that produce and deliver goods, transport people and material, facilitate communication and coordination, and create entertainment and learning. Each operation therefore addresses a societal need.

Each operational process is designed and driven by information. A mission is the prime information that aligns the actions within the operational process to fulfil the needs of the society. Each operational process is designed and driven by information.

**INFORMATION TECHNOLOGY
ENABLES A PROCESS THAT
DELIVERS A SOCIETAL NEED.
INFORMATION TECHNOLOGY
MARKETS IGNORING THIS
ROLE OF IT IN SOCIETY WILL
BRING IN TOUGH TIMES.**

Consider the public transport system: the purpose of the public transport, the routes, the frequencies, the ticketing, and the pricing are all designed and driven by information. Consider the electricity delivery system: its purpose, its access, its downtime, its ability to deliver quality power, its pricing are designed and driven

by information. Consider housing: its purpose, its quality, its effectiveness, its audience and distribution, its pricing are all designed and driven by information. Consider the food systems: the quantity and mix of production, distribution, pricing of food are designed and driven by information, as also is the case of consumer goods.

Information Technology used to define the mission, design or drive the process critically affects the quality and nature of services and products we obtain. IT used also enables or disables the ability to orchestrate processes that give society its vital character and the security of satisfying its needs.

**BOX 1. INFORMATION TOOLS AND TECHNOLOGIES FOR MEETING THE
INFORMATION NEEDS OF OPERATIONAL PROCESSES IN SOCIETY.**

PROCESS AND PROCEDURE SIMPLIFICATION

Tools and technologies to reduce complexity, especially in processes offer to increase the quality and throughput of transactions or reduce costs of operations. For example: process mapping and process reengineering.

RESTRUCTURING

Tools and technologies to create operational structures (information channels and information processors) capable of addressing the operational *mission* to ensure success. For example: organisational design and reporting structures.

MERGER AND RATIONALISATION

Tools and technologies to combine processes and structures that pursue common or shared missions. For example: organisational redesign.

DECISION SUPPORT

Tools and technologies to enable rapid decision at all levels of operation. For example heuristic models, expert systems, and other aids that warn of high risk in decision or support decisions that further the mission.

PUBLIC INTERFACE

Tools and technologies to create a responsive and mission focused interaction with citizens or other operational processes. For example digi-card based identification, authentication and access systems, single window systems or procedures, forms, shared databases, web sites, portals, or tools that interface to the outside world.

P2P MISSION SUPPORT

Tools and technologies that enable different processes to promote each other's missions or common missions. For example intranets, shared databases.

MONITORING AND MANAGEMENT

Each process, delivering a societal need, must be accomplished in a fixed time, the respite time, to be able to pursue the mission. Each process takes a certain time to respond, the response time, to produce change. To ensure mission success the manager or supervisor has to ensure that the time that is available to deliver societal needs, or respite time, is longer than the ability of the process to respond to the need, or response time. The key role of a manager is to keep response time shorter than respite time.

**INFORMATION TECHNOLOGY
HAS TO INCREASE RESPITE
TIME AND REDUCE RESPONSE
TIME OF PROCESSES
DELIVERING SOCIETY'S NEEDS**

Dozens or even hundreds of activities drive operational processes. Often the activities are grouped as projects or programs. Each activity utilises different resources: people, money, energy, water, material, and land. It

is the co-ordination of these activities and resources across different projects, programs and strategic units that alter the respite and response time of processes delivering society's needs.

To monitor and increase respite time and reduce response time information technology needs to track the different activities, projects and resources. Discrepancies, delays, resource overruns need to be identified, communicated and highlighted through information.

BOX 11. INFORMATION TOOLS AND TECHNOLOGIES FOR MEETING THE INFORMATION NEEDS OF MANAGEMENT OF PROCESSES IN SOCIETY.

DECISION SUPPORT

Tools and technologies that enable rapid and mission focused management decisions. For example: scenario explorer for alternate project management decisions, scenario explorer for respite and response time comparisons.

PROJECT MANAGEMENT

Tools and technologies to manage the projects and track their schedule and mission focus. For example: project scheduling and allocation software.

RISK MANAGEMENT

Tools and technologies to reduce project and decision risks. For example: look-ahead simulation software that alerts through email, sms, phone or other alerts in advance of critical project risks.

RESOURCE MANAGEMENT

Tools and technologies to manage and track resources (renewable and non-renewable). For example: sustainable yield estimation software, carrying capacity models, and resource utilisation tracking software.

PROCESS AND TRANSACTION MONITORING

Tools and technologies to track transactions, throughput and cycle-time within processes. For example: transaction audit software.

DOCUMENT STORAGE AND SECURITY

Tools and technologies to ensure the availability of documents, their authenticity and their safety. For example: archival and authentication software.

INFORMATION SYSTEM

Tools and technologies to ensure mission critical information to manage projects and activities. For example: indicator development and periodic reports.

Consider the public transport system: the people who need to be transported in a schedule time, the time it takes to schedule transport, the purpose of the public transport, the buses that plied today, the routes that were operational, the revenues, and the passenger outreach are all monitored and steered by information. Consider the electricity delivery system: the time within which the electricity demand must be met, the time to build capacity of plants required to deliver electrical demand, the status of the projects to deliver electricity, the brownouts or blackouts of the day, the transmission and distribution losses controlled during the week, the revenues are audited and controlled by information.

Consider Housing: the time within which housing needs must be satisfied, the time it takes to deliver the housing demand, the projects, the resource (water, land, electricity, gas, transportation) allocations, the bookings or allocations per week are all tracked and co-ordinated by information. Consider food systems: the time within which food requirement must be met, the time it takes to meet the food demand, the land use, crop allocations, crop care, harvest, distribution and storage, delivery and sales, pricing are all co-ordinated and steered by information.

PLANNING AND GOVERNANCE

Each process delivering a societal need relates to and impacts several other processes delivering some other societal need. These impacts strengthen or undermine the processes ability to deliver a societal need. The resulting impact of different processes that co-exist also exposes each process to risk of inability to meet the societal need.

**INFORMATION TECHNOLOGY
NEEDS TO PROVIDE
EXPERIMENTAL
LABORATORIES TO EXPLORE
IMPACT AND REDUCE RISKS**

The processes delivering societal needs themselves undergo changes with time due to restructuring, reorganisation, and technology. The good governor understands the changes as well as the impacts that will result from the changes in the processes delivering societal needs. The governor explores ways to reduce risks in altered processes through policy, planning and process redesign.

Consider the public transport system: the processes of land-use, the processes of traffic and transportation and the processes of manpower development are a few of the processes that impact each other strengthening or undermining each others ability to deliver a societal need.

Consider the electricity delivery system: the processes of land-use, traffic and transportation, food and goods production are a few of the processes that impact each other and drive the ability of each of these processes to deliver a societal need. Consider Housing: the land use processes, traffic and

transportation processes, energy processes, water and waste removal processes are a few of the processes that impact each other and determine the rate and ability of each of the processes to deliver a societal need. Consider food systems: land-use, traffic and transportation, energy, water are a few of the processes that impact each other and determine the ability of each of them to deliver a societal need.

BOX 11I. INFORMATION TOOLS AND TECHNOLOGIES FOR MEETING THE INFORMATION NEEDS OF GOVERNANCE OF PROCESSES IN SOCIETY.

MISSION DEVELOPMENT AND MISSION FOCUS

Tools and technologies to establish mission-oriented governance and mission as the context for all projects, programs and activities that are undertaken. For example: missioning.

INTEGRATED PLANNING

Tools and technologies to focus on relevant programs, projects and activities, long-term, medium-term, and annual planning, projects and activities in line with the mission. For example computer based simulation models that enable integrated long-term plans than meet clear planning objectives¹.

IMPACT ASSESSMENT

Tools and technologies to rapidly explore and experiment with alternate departmental projects and activities. For example computer based simulation models that facilitate the assessment of the impact of their projects and activities.

RISK CONTROL

Tools and technologies to facilitate experimentation of alternate plans for risk containment. For example computer based simulation models that assess risks posed by the systems and processes.

INFORMATION TECHNOLOGY MARKETS

Most of the conventional Information Technology market is dictated by the needs outside India to service software and hardware, not information. The domestic market is largely an application of the available expertise for services or products demanded by the rest of the world in India. The Indian society's need for *information* and consequently Information Technology has therefore been largely un-addressed.

SOCIETAL NEEDS MUST BE THE PRIME DRIVER OF IT MARKETS

For the IT industry to have sustained growth the prime mover of IT markets must be societal need. Unless the IT industry aligns with the societal information need the economy and consequently the IT industry will continue to face 'tough times'.

IT markets need to be classified according to the IT need of the society, not according to the skill or technology sold to an export community. Unless these are clearly identified and addressed, these emerging areas will not find the attention of IT businesses addressing expansion of existing niches.

BOX IV. POSSIBLE ALTERNATE CLASSIFICATION OF IT MARKETS**OPERATIONAL INFORMATION**

Process enhancement market

Public interface market

MANAGEMENT INFORMATION

Co-ordination and attention market

Audit and control market

GOVERNANCE INFORMATION

Impact and planning market

Policy and design market

Risk control market

END NOTE

If this perspective has been the conventional one, it is unlikely that we will cover new ground. Less likely will new markets emerge and even lesser likely is it that we will choose new directions.

If this perspective has been different from the territory you are familiar with we have covered useful ground. We may be able to chart out new waters, evaluate their strengths, weaknesses, opportunities and threats. We may be able to steer course to new directions and revive the sagging economy and the industry with it. We may even be able to build a new India.