World Health Organization

Regional Office for South-East Asia

The Regional Strategy for Information Technology and Telecommunication

2008 - 2013

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World Health Organization
Regional Office for South - East Asia
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Informatics Systems Management
Department of Administration and Finance

Executive Summary

Information and communication technologies (ICT) are strategic resources for the World Health Organization (WHO). They:

i) Empower individuals working to improve the health of all people;
ii) Increase the productivity of teams and of individuals;
iii) Facilitate knowledge-sharing and new ways of working within WHO and
iv) Act as a catalyst for providing new and innovative services to Member countries.

In order that ICT is able to achieve its full potential, we a need to change the way it is governed and managed across WHO. Keeping this in view, the Global ICT strategy for WHO has been developed to outline the broad organizational framework for regions to collaborate with HQ on globally-agreed strategic initiatives and a provide framework for ICT governance at the global level.

The strategic role of ICT extends across the Regional Office; WR Offices; WHO field offices, and Member Countries. The Informatics Systems Management (ISM) unit plays a strategic role in providing efficient and effective services to internal staff of the Organization as well as technical advice to Member countries. The regional ICT strategy has been formulated and aligned to the programmatic strategies of the South-East Asia (SEA) Region. The ICT strategy, guided by the regional strategic directions will contribute in achieving the health outcomes as described in this section.

The regional strategy has been aligned with the Global ICT Strategy and is guided by the Regional Director's vision for organizational development. Countries are its main focus, and consideration is given to country-specific requirements, and cost-effectiveness of ICT operations at the Country level.

The strategy is designed to provide both the management and staff in the SEA Region with a clear sense of direction and priorities for ICT and to provide a reference point for decision-making over the next six years (2008 – 2013). It establishes the approaches that the Region will adopt to maximize the benefits from investments made by WHO in ICT. The existing committee for ICT governance established in the Regional office, namely the Informatics Systems Advisory Committee (ISAC), will be further strengthened in its role through guidance provided by this strategy.

WHO's vision regarding ICT aims for *high-quality, responsive, innovative and cost-effective ICT services and solutions to be a credible means for WHO to achieve better health for all peoples.*

The Goal is *cost-effective Information and Communication Technology implemented in order to strengthen collaboration and coordination within the region and globally as well as support member states in application of ICT in health development.*

The mission of the regional ICT strategy is to *offer appropriate ICT services cost-effectively, to all WHO locations and advise member countries, as a valued partner and a broker.*

The objectives of ICT in WHO are two-fold:

- *To make more effective use of ICT across the Organization in order to improve its ability to deliver on its mission of health for all.*
- *To support the initiatives aimed at strengthening health systems and improving health outcomes in countries.*

An analysis was done between the current and future desired state of ICT services. Then, the opportunities and challenges were identified in view of the gap analysis. In order to resolve these challenges, the following strategic ICT initiatives will need to be undertaken:

i) Create a standard ICT package for Country Office administrative functions to empower the decentralization process
ii) Strengthen the infrastructure and communication management of all geographic locations in the region
iii) Improve staff productivity through appropriate tools and techniques across the region
iv) Create a strong "account management" process and customer-oriented services managed through Service Level Agreements (SLAs)
v) Challenge the cost-effectiveness of the ICT services through consolidation and outsourcing
vi) ICT support for Member States
vii) Participate in the Global Management System (GSM) project

The ICT strategy will impact the business of the Regional office by doing more with less, improving the quality of products and services, and providing customer orientation in line with WHO programmes.

The ICT strategy will aim to reduce technical problem-solving at each of the WHO locations in the SEA region. The reliability of ICT infrastructure and service delivery will improve, thereby increasing staff productivity and enabling the Region to deliver WHO's health mandate with a competitive edge.

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1. Introduction

Information and communication technologies (ICT) are strategic resources for WHO. They:

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iv) Act as a catalyst for providing new and innovative services to Member countries.

In order that ICT is able to achieve its full potential, we a need to change the way it is governed and managed across WHO. Keeping this in view, the Global ICT strategy for WHO has been developed to outline the broad organizational framework for regions to collaborate with HQ on globally-agreed strategic initiatives and a provide framework for ICT governance at the global level.

Faced with many challenges and changes, WHO is embarking on a large-scale reform of its administrative and management systems through the Global Management System project (GSM). WHO's dependence on ICT is on the increase. Investment in ICT is increasing at all WHO locations. More electronic data and communication is used by staff. Member countries demand for ICT enabling is increasing. The smooth functioning of GSM will be dependent on WHO staff having access to well-managed ICT services and integrated applications and infrastructure, at all WHO locations. Therefore, the Regional ICT Strategy has been developed jointly by ISM/SEARO and ITT/HQ, in consultation with relevant staff from the Regional Office and WR offices.

The regional strategy has been aligned with the Global ICT Strategy and is guided by the Regional Director's vision for organizational development. Countries are its main focus, and consideration is given to country-specific requirements, and cost-effectiveness of ICT operations at the Country level.

The strategy is designed to provide both the management and staff in the SEA Region with a clear sense of direction and priorities for ICT and to provide a reference point for decision-making over the next six years (2008 – 2013). It establishes the approaches that the Region will adopt to maximize the benefits from investments made by WHO in ICT. The strategy aims to reduce the amount of technical problem-solving at each of the WHO locations in the Region. The reliability of ICT infrastructure and service delivery will improve, thereby increasing staff productivity. Consequently, the region will be able to deliver WHO's health mandate with a competitive edge.

The following Section describes Health agenda of the SEA Region (Section 2) to provide a context for Regional ICT strategy to align with the Programmatic directions of the region. Section 3 identifies the challenges to overcome by the Regional ICT strategy and the opportunities existing. Based on opportunities and challenges, guiding principles for the strategy have been identified. In Section 4, complete strategy has been described including seven strategic initiatives to resolve the identified challenges in the region. Section 5 describes the alignment of human resources with the ICT strategy. Finally, Section 6 provides the next steps to operationalize the regional ICT strategy.

1.1 How this document has been developed

This strategy document has been developed on the basis of regular feedback and ongoing consultations held with users, analysis of help desk queries and A&F survey results, held in March 2007. On the basis of the overall feedback, gap analysis was done between the current and future desired state of ICT services. Then, the opportunities and challenges were identified in view of the gap analysis. In order to resolve these challenges, guiding principles and strategic ICT initiatives were identified.

A staff retreat was organized to obtain the feedback on the draft ICT strategy from representatives of SEARO Departments and WR-India office and subsequently from all staff in WR-Thailand office. The process began with encouraging briefing with the Regional Director which guided the overall process of formalization of Regional ICT Strategy. Further, a second round of review by

retreat participants was organized and suggestions received were included in the strategy. Subsequently, human resources were aligned with the ICT strategy through a staff re-profiling exercise and next steps were identified to operationalize the strategy.

Now, the feedback on the Strategy will be invited from all staff in the Region.

2. Health Agenda of the SEA Region

2.1 Strategic directions

The SEA Region has adopted the following strategies, which set the programmatic context for alignment of the Regional ICT Strategy:

a) The Regional Director's vision for organizational development in the SEA Region;
b) Country Cooperation Strategies-guiding framework;
c) Medium-term Strategic Plan (MTSP) – 2008-2013;
d) Millennium Development Goals;
e) Results-based Management Framework;
f) Programme Budget 2006-2007;
g) Global Information and Communication Technology (ICT) Strategy;
h) WHO Knowledge Management Strategy, and
i) The draft Regional policy and strategy for e-Health Development in the SEA Region.

2.2 Alignment of ICT strategy with strategic directions of the SEA Region

The strategic role of ICT extends across the Regional Office; WR Offices; WHO field offices, and Member Countries. The ICT strategy, guided by the regional strategic directions will contribute in achieving the health outcomes as described in this section.

2.2.1 Regional vision for organizational development

The Regional Director introduced three strategies for organizational development for the Region to respond effectively to the needs of Member countries. The ICT strategy aims to serve as an enabler for achieving the objectives of these strategies as summarized below:

a) **Strengthen country presence, as well as country offices:** The strategy aims at the decentralization of functions, resources and authority to WR offices, as well as horizontal collaboration among WR offices, towards working effectively and in an accountable manner to best serve the countries' needs. ICT would contribute significantly towards the technological readiness of decentralized offices.

   Under the new framework for delegation of authority, the Regional Director has decentralized authority to WRs. In line with the Results-based framework, the responsibility for achieving results must be accompanied by authority and associated accountability. Information systems help in establishing a practical accountability framework and strengthening the country cooperation by providing knowledge for work coordination, monitoring and oversight.

b) **Improve the core functions at the Regional Office :** A set of core functions have been identified, which will be emphasized in the region. These include ICT.

c) **Increase transparency and strengthen communication across the Organization**: Effective collaboration and coordination among all the three levels of the Organization and external partners would be enhanced through the Global Private Network (GPN), collaborative workspaces, discussion forums, video-conferencing and improved telephony. Websites play a crucial role in enhancing the visibility of WHO and increasing the knowledge in countries about WHO's work.

2.2.2 Role of ICT in making a difference to the health of all people

ICT offers great potential to improve the health services and systems as summarized below:

a) **E-health**: ICT provides advice to Member countries on (i) Policy; (ii) Equitable access; (iii) Quality, security and safety, and (iv) Best use of ICT for improving health outcomes.

b) **Health information systems (HIS)**: ICT provides advice to Member countries in designing, development and implementation of health information systems.

c) **The Geographical Information System (GIS)** : The GIS applications play a major role in decision-making by strengthening data analysis, presentation and dissemination of health data. Training on standardized GIS spatial database, and Service Availability Mapping (SAM) is provided to WHO's Technical staff and Nationals.

d) **Disaster Management**: ICT plays a vital role in emergencies by facilitating the timely and reliable flow of information from affected areas to responsible entities at local, national, regional and international levels, thereby permitting a mediated appropriate response.

e) **Knowledge management**: ICT is a key enabler for knowledge management.

2.2.3 Role of ICT in WHO's internal work

Though ICT is not the core business of WHO, it is core to the business of WHO. ICT is a key enabler for staff to manage work more efficiently and improve productivity, and provides WHO with a competitive advantage.

The Organization's dependence on ICT in the conduct of its work has been increasing overtime. Today, technology is a critical success factor for WHO's work, encompassing collection and dissemination of health statistics; providing access to health information; programme planning and monitoring; administering the personnel, financial and procurement aspects of programmes, and communicating within and outside the Organization.

Various ICT systems being used in the Region enable day-to-day processes, better decision-making, connecting people, managing WHO's knowledge assets, and supporting collaborative activities. Any downtime on the central ICT infrastructure impacts the function of the entire Region resulting in inefficiencies and loss of productivity. An error or a lapse in ICT management has the potential of propagating the entire user community and external collaborators, thereby adversely impacting the image of the whole Organization. Therefore, strategic planning of ICT is a must.

3. Opportunities and Challenges

The following sections describe why Regional ICT Strategy has been developed – Internal and External drivers for its development and current regional challenges to be resolved. Regional ICT strategy will use the following opportunities to resolve the identified challenges. Based on opportunities and challenges, guiding principles for the strategy have been identified.

3.1 Internal drivers of ICT

3.1.1 Global ICT Strategy

The Global ICT strategy offers opportunities for regions to participate in the following global strategic initiatives:

SI 1 : ICT governance and funding strategy: Establish a global ICT governance and funding strategy which supports an organization wide decision making process for determining global priorities for ICT and managing the WHO ICT portfolio of assets.

SI 2 : Human Resource strategy for ICT: Building the capacity of all WHO staff in their use and management of ICT products and services.

SI 3 : WHO Country Office ICT Strategy: Planning to meet the needs of WHO Country Offices for information and systems to support their work.

SI 4 : A Standard ICT environment across WHO: Move all WHO locations, over time, to an agreed set of ICT products.

SI 5 : A secure, managed network: meeting the needs of each location with acceptable cost-performance measures.

SI 6 : Global Data Center: Establishment of a consolidated data center for WHO reducing the number of data centers, simplifying the technical environment, and ensuring a higher level of availability, support and service continuity for corporate applications.

SI 7 : Establish a **data quality management programme** (administrative as well technical) across the organization.

SI 8 : e-Health: ICT teams contributing to the success of the global WHO e-Health strategy.

SI 9 : **ICT contributing to WHO use of modern communication tools with its stakeholders (draft)**

3.1.2 Global Management System (GSM):

ISM Unit plays a significant role in the implementation of GSM across SEA Region. In addition to the IT and Telecommunication services, ISM also manages cross-functional GSM issues, which are significantly considerable in terms of volume and complexity. In addition, ISM helps to catalyze individual and organizational change management.

3.1.3 HQ and other regions

Opportunities offered for sharing of knowledge, products and services across WHO offices.

3.1.4 Funding

The Regional ICT Strategy will guide the future Workplans of ISM and level of resources. Strategic ICT planning offers an opportunity to establish an appropriate level and source of funding to cover ICT costs on a long-term basis. (Refer to **Annex-I** for budgetary trends.)

3.2 External Drivers of ICT

It is very essential for the success of ICT strategy to recognize its external drivers such as the latest technological advancements and trends summarized below.

a) **Information-centric collaborative environment**: This focuses on technologies that direct the work processes towards working in a collaborative environment instead of silos. The shift from 'device-centric' to 'information-centric' computing technologies provides central storage and efficient management of data, accessible anywhere.

b) **Rapid advancement in technologies and ICT standards:** The advanced ICT equipment provides higher processing capacity, faster network speed and more security - all at reduced costs. Ensuring compliance to international ICT standards and certifications (ITIL, CMM etc.) has increased acceptance of ICT products and services as users are assured of quality.

c) **Bandwidth availability at reduced cost:** Increased availability of reliable bandwidth at a reduced cost promotes efficient online workflow processes across multiple locations, increase consolidation of applications, optimize hardware and deliver comprehensive information.

d) **Centralization and Decentralization:** With dependable bandwidth, costs for hardware and support can be reduced greatly through centralization of hosting applications. However, decentralization reduces downtime in offices with poor bandwidth. Balancing those options is critical to ensure quality of services, cost-effectiveness and ease of management.

e) **Security requirement:** Increased networking makes the ICT infrastructure more vulnerable to virus and hackers, and therefore requires additional security measures.

f) **Effective content management and business intelligence tools**: Advanced content management tools and techniques add value by improving information accessibility, allowing professionals to focus on information that is pertinent to their needs. Increasingly sophisticated data mining and business intelligence tools are available for informed decision-making.

g) **Outsourcing**: In view of the rapid advancement in ICT, it will be difficult for any organization to keep pace with changes in industry or the skills required to manage emerging technologies. Increasingly, outsourcing is used to allow organizations to focus on core business, and to streamline and economize on non-core functions.

3.3 Current regional challenges for ICT

An analysis was made of the gap between the current (**Annex-II**) and the desired future (**Annex-III)** state of ICT services in the SEA Region. On the basis of this analysis, the major regional challenges for ICT have been summarized as follows:

a) Historically, ICT has been managed more or less independently in each region and HQ leading to duplication of effort and a failure to leverage the ICT skills across all locations. However, over the last two years, ICT has started functioning as a more global community.

b) ICT needs to empower staff in some Country Offices (such as Thailand) to enable cross-regional and horizontal collaboration within the region.

c) There is inequality in the services available at each location. There are a number of impediments by each location: geographic (difficult-to-serve); lack of resources and effective planning

d) A comprehensive architecture of ICT infrastructure and management framework is not available for the entire Region. Rather, fragmented ICT architecture principles and functions have been adopted. Furthermore, there is no Network Operating Centre (NOC) to manage the distributed ICT infrastructure at all WHO locations in the Region. As a result, at times the response to problems is delayed. Also, there is no early warning system in place.

e) Only preliminary version of ICT policies, procedures, guidelines and standards exists in several ICT areas, which needs to be further strengthened. However, a comprehensive standard ICT process framework and policies for its adoption across the entire Regional are lacking. Furthermore, no coordination mechanism is available for capturing and sharing best practices.

f) An ad-hoc disaster recovery plan in place; however a comprehensive plan to be developed. A global ICT security policy approved by the Director-General to be implemented. Awareness of security risks and its impacts is inadequate. No comprehensive security framework in place, while the security compliance monitoring and enforcement are inconsistent.

g) The ICT infrastructure asset inventory is fragmented. Automated processes need to be implemented to enable a more effective management of ICT assets.

h) Preliminary Service Level Agreements (SLAs) are in place; which need to be further developed. A well-defined ICT services portfolio with comprehensive SLAs is lacking.

i) ICT must function as an equal partner with technical health programmes for the success of all ICT-related health projects. The expert body of applied ICT knowledge and expertise in WHO should be further leveraged to provide technical advice to Member countries, when needed.

j) While the potential of ICT to increase the capacity of our Organization to deliver its mandate is universally acknowledged, there is a need for greater visibility in respect of both costs and benefits of ICT projects to ensure that scarce resources are utilized optimally.

k) ICT in SEA Region receives ad-hoc allocations, no sustainable funding is available to cover costs for a long-term. An appropriate ICT funding strategy therefore needs to be developed.

l) Appropriate tools and techniques need to be implemented to empower the user community to utilize ICT more efficiently and effectively in order to enhance its productivity. ICT leadership in educating health programme staff on the optimal use of ICT is therefore vital.

m) Products and services need to be consolidated to improve the return on investments by ensuring maximum re-use and minimum duplication. Currently, printers, photocopiers, scanners and fax devices exist separately. However, some multifunctional devices have been piloted to provide these combined functions. Many users have been provided with desktops as well as laptops; and in some cases with a mobile phone as well as a Blackberry. An attempt is required towards converging various devices.

n) Require a more forward-looking strategy for adoption of wireless and mobile technologies leveraging real-time access to ICT resources and strengthening communications in the Region.

o) During emergencies, lack of redundant telecommunication capacity in the Member States causes delay in relief operations and thus requires prompt intervention from external sources. Absence of an efficient operational platform makes it difficult to track human, financial and logistics resources. ICT needs to be further articulated for preparedness and response services for Member States.

p) Adequate ICT resources in Member States of our Region are not yet available at the most peripheral level. Familiarity with ICT Technology needs to be enhanced for the success of ICT related health projects. Integrated networks are required to be established to deliver updated, relevant, and valid information for knowledge sharing as well as e-Health projects.

3.4 Guiding Principles of ICT Strategy

The following guiding principles direct the regional ICT strategy:

Be a strategic enabler: Empower the user community as a valued partner, aligning its capabilities with essential business processes, across organization units or geographic boundaries. Support Member countries to improve the health outcomes and e-Health development.

Global alignment: Align regional ICT services with global ICT services, keeping into consideration regional priorities, and country-specific requirements.

Think globally-act locally: Ensure that standardized ICT services and processes are deployed across the Region with customizations as per local requirements. Within the constraints of local infrastructure and regulations, deliver services of consistent functionality and performance to all users in a particular category. A balance of centralized management and decentralized operations to ensure that local needs are addressed, while capitalizing on the synergies and economies achievable through standardization and resource-sharing.

Customer-orientation, visibility and accountability: Deliver ICT services through a portfolio of standard services, and Service Level Agreements. ICT investments in line with established priorities, leveraging and protecting existing investments, and ensuring accrual of its optimal benefits. Customer satisfaction is paramount and ICT staff is accountable for its achievement.

Futuristic and forward-looking: Be innovative, evaluate and deploy the new emerging technologies, considering user and technological development needs.

Leverage external expertise: Outsource ICT services on the basis of SLAs and price-performance ratio, while keeping a balance between in-house staff and outsourcing.

Consolidation and simplification: Providing a common essential infrastructure and services to the users, taking forward convergence of technologies to improve the return on investments.

Leveraging low-cost computing: Adopt technologies and incorporate technical solutions that are cost-optimal as measured on a Total Cost of Ownership (TCO) basis.

Knowledge-sharing: Promote the capture, adoption, and sharing of best practices and lessons learnt across the IT and end-user communities.

Apply integrated standards: Apply consistent project management lifecycle methodology, and international standards compliance - ITIL, BS etc.

4. ICT Strategy

4.1 Scope

Provision of Information Technology and Telecommunication products and services to Regional Office, Country Offices and field offices for both administrative and technical work as well as advice to Member states for National capacity building through Information Technology and Telecommunication.

4.2 Vision of ICT' contribution to the work of WHO

The vision regarding ICT's contribution to the work of WHO is for *high-quality, responsive, innovative and cost-effective ICT services and solutions to be a credible means for WHO to achieve better health for all peoples.*

4.3 Goal of ICT

Cost-effective Information and Communication Technology implemented in order to strengthen collaboration and coordination within the region and globally as well as support member states in application of ICT in health development.

4.4 Mission of ICT organization in SEA Region

The mission of ICT in the SEA Region is to **offer appropriate ICT services cost-effectively, to all WHO locations and advise Member countries, as a valued partner and a broker** through:

a) **Contributing to the development of an efficient working environment** that enables decentralization, staff mobility, effective information-sharing and coordination, and availability of information for decision making;

b) **Deliver high-quality and secure ICT services through a customer-oriented approach** both at regional and country levels.

c) **Enable changes** and drive change management to operate in an increasingly collaborative environment, by empowering users in becoming self-reliant in strategic use of ICT.

d) **Equal partnership** with technical health programmes and partner organizations, to help Member countries build ICT capacity as well as harmonize ICT strategies with other related strategies.

e) **Guide IT investments** and resources efficiently across the Region through alignment with programme priorities, driving innovations and adopting new and creative ways of directing ICT.

4.5 Objectives of ICT

a) To make more effective use of ICT across the Organization in order to improve its ability to deliver on its mission of health for all.

b) To support the initiatives aimed at strengthening health systems and improving health outcomes in countries.

4.6 Strategic directions for ICT

The five strategic directions of the Global ICT Strategy are relevant at the Regional level. These are (i) Build capacity (ii) Maximize value (iii) Align ICT investment with WHO's goals and priorities (iv) Protect WHO information and technology assets; and (v) External Communications (Refer to **Annex-IV** for details). In addition, SEA Region has added one more strategic direction on "Country focus" as described below:

Country focus

- Strengthen the performance of country offices, build capacity to improve the use of WHO's resources, and the means of monitoring country programmes, enabling decentralization, staff mobility, and effective information-sharing and coordination ;
- Support the collating of country-specific information by enabling good information flow among three levels of WHO through websites and country intelligence systems, and
  Support Member countries in extending equitable and quality basic health services, strengthening health information systems, advising on policies and investments in ICT and to act as a catalyst to promote innovative ICT products and services for Member countries

Note : The Vision, Objectives and Strategic Directions (first five) are from the Global ICT Strategy.

4.7 Regional Strategic Initiatives

The regional ICT strategy will be implemented through the following seven regional strategic initiatives in addition to the nine global strategic initiatives.

The ICT Strategy intends to provide simple and user-friendly solutions. Cost-effectiveness of ICT products and services should be seen on an overall basis and not product by product. The cost can also be further controlled by automating number of routine processes and services.

For each strategic initiative, the business case, current condition, target condition and actions are detailed in **Annex-V**. While implementing the strategy, comprehensive operational plans will be developed to implement each action enlisted in **Annex-V**.

The success of ICT strategy would equally depend on the users. Therefore, it is important to fully engage the users through capacity building in the use of ICT products and services. Importance of adequate training of users cannot be compromised, in order to fully capitalize on what the ICT Strategy aims to deliver. Capacity Building of all WHO staff in the use of ICT products and services shall be carried out for all the Global and Regional initiatives, through 'Human Resources strategy for ICT' developed under Global Initiative 2, which will be implemented in the SEA Region. Any additional requirements for Capacity Building in the ICT shall be included in the Regional Workplans through the Staff Development and Learning (SDL) programmes.

4.7.1 Regional ICT Strategic Initiatives (SI)

SI 1. Create a standard ICT package for Country Office administrative functions to empower the decentralization process: IT package provided to all WHO locations in SEA Region encompassing GSM, legacy applications, tools, workflow management and standard ICT policies and procedures

SI 2. Strengthen the infrastructure and communication management of all geographic locations in the region: Develop a regional capability to actively measure and manage the infrastructure at all WHO locations in the Region, managed effectively through a regional Network Operations Centre (NOC)

SI 3. Improve staff productivity through appropriate tools and techniques across the region: Increase the productivity of staff through the innovative use of technology, work flow management, collaborative and interactive communication tools and

associated training. Promote capacity development to allow for decentralized web management

SI 4. Create a strong "account management" process and customer-oriented services managed through Service Level Agreements (SLAs) : Create a strong "account management" process and culture within IT to maintain alignment with technical programmes, administration and Country Offices. Implement customer-oriented services managed through Service Level Agreements (SLAs)

SI 5. Challenge the cost-effectiveness of the ICT services through consolidation and outsourcing: Challenge the cost-effectiveness of the ICT services through investigations in the areas of global/inter-regional consolidation and outsourcing opportunities

SI 6. ICT support for Member States: Support member states, collaborating centers and technical programmes with professional advice and leveraging resources within WHO for the member states benefit in both project design and in health emergencies

SI 7. Participate in the Global Management System (GSM) project: ICT to contribute cross-functional requirements and business process re-engineering during the design phase, moving into implementation as the project progress.

4.8 Impact of ICT strategy on the business of the SEA Region

a) Doing more with less resources;
b) Increased reliability of ICT infrastructure;
c) Improved quality of ICT products and services;
d) Customer-orientation and further alignment with WHO programmes;
e) More connected environment;
f) Synergic approach across the Region to provide equitable access to information;
g) Increased staff productivity and Knowledge, and
h) Supporting WHO's competitive edge in e-health

4.9 ICT governance in SEA Region

A governing body – Informatics Systems Advisory Committee (ISAC) – in the Region exists to review and approve appropriate ICT standards, continual alignment of ICT with the needs of the Organization, and prioritization of investments in large ICT projects. The major responsibilities for the ISAC are described in **Annex-VI**.

The ISAC shall be further strengthened to perform its roles, using the ICT strategy. Internal control framework and management of ICT is the responsibility of the Regional ICT Manager. Country-specific ICT initiatives shall be discussed and approved at WRs meeting.

Contributions will be provided to implement Global strategic initiative 1 in the region – 'Governing and funding strategy for ICT'.

A Regional Work Plan will be developed for the implementation of the complete strategy, which will also act as an advocacy tool for resource mobilization. Appropriate provision should be built in the regular budget and AS funds as well as maximum effort to be made for securing voluntary contribution funds, especially to deliver ICT services anticipated by Member States.

5. Alignment of human resources with ICT Strategy

5.1 Core functions

Will be developed after the ISM re-profiling exercise is completed.

5.2 High-level organization plan

Will be developed after the ISM re-profiling exercise is completed.

Guided by the Regional Director, major considerations while planning the Human Resources for ICT shall be:

- Appropriate delegation of authority to WRs and decentralization of ISM operations.
- ICT staff management should be within the structure of Regional ICT organization
- Appropriate ICT staffing should be available at Country Offices administratively reporting to WRs and reporting to Regional ICT head for technical and managerial purposes.

6. Next Steps

a) Validation: the Regional ICT Strategy will be validated through consultation with key collaborators and sample users in the Regional Office, WRs and ISAC. Finally RD's approval shall be requested.

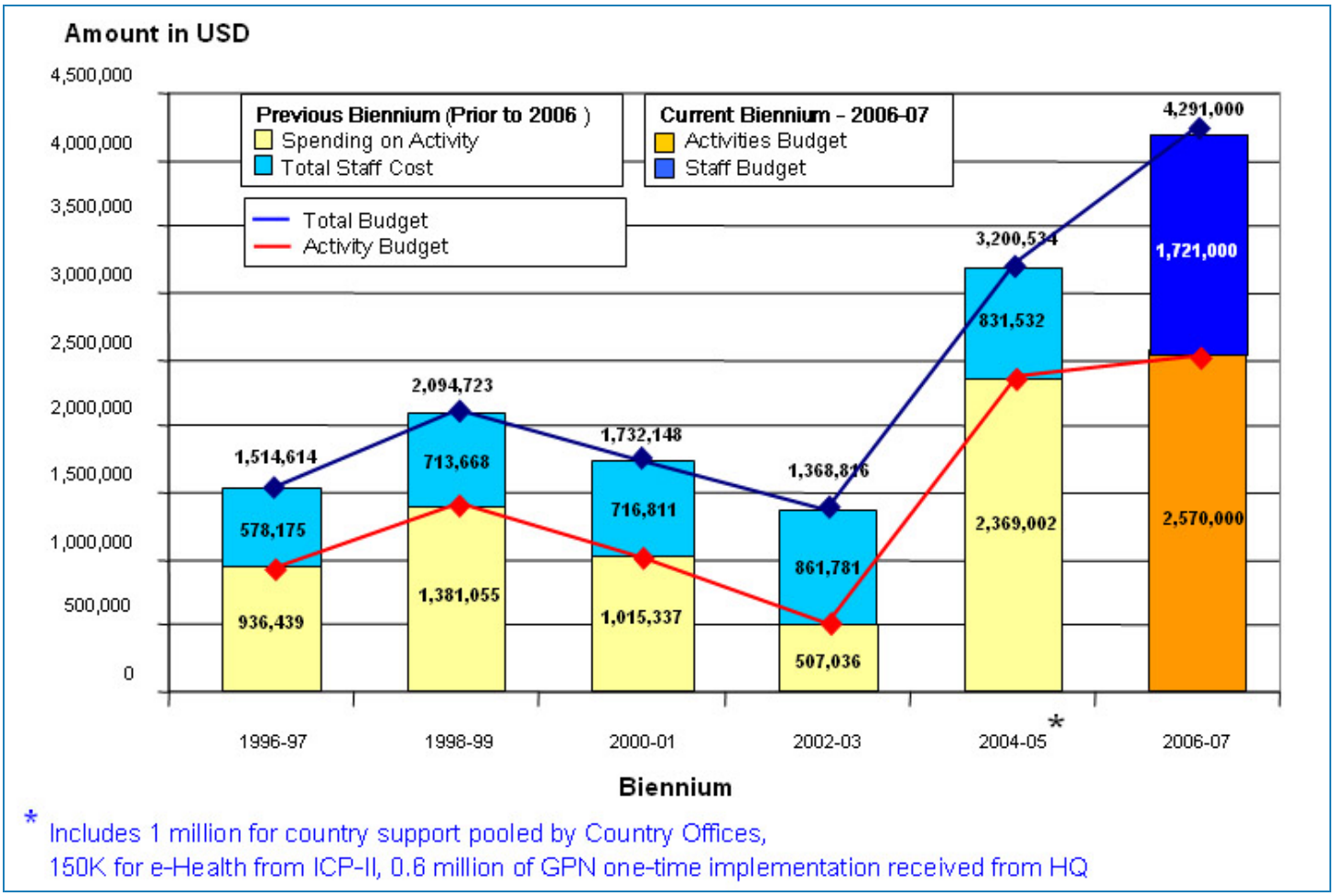
b) Communication: Once the Regional ICT Strategy is approved, it shall be communicated to all users and stakeholders in the Region.

c) Implementation: The Regional ICT Strategy shall be implemented across the Region including the Regional Office and country offices. For implementation of each strategic initiative, plans will be developed and presented to the ISAC.

d) ISM unit re-profiling: Human resource levels and the organizational structure of ISM unit must be realigned with the ever-changing needs of the Region as well as global and regional ICT strategies. An organizational plan will be developed to ensure appropriate staffing levels to accommodate all the current and foreseeable challenges for the ISM unit.

Annex I : Budgetary trends regarding ICT activities in the Regional Office

The Regional Office has been receiving adhoc allocation from AS funds, but no Regular Budget allocation to cover ICT costs on a longer-term basis. The following graph shows the budgetary trends for ICT activities:



The ICT initiatives are funded using the following sources of funds:

a) **Regional Office activities**: The funds for Regional Office-specific activities are budgeted in the Regional office workplan, and funded from AS funds, but there is no Regular Budget allocation to cover ICT costs on a longer-term basis.

b) **Joint regional initiatives**: The central ICT initiatives leveraging benefit to the entire Region, are funded jointly by Regional Office and country offices on cost-sharing.

c) **Country office activities**: Funds for country office-specific activities are budgeted in country office workplans; funded by country office budget.

d) **Global initiatives**: Global initiatives are funded either by HQ or jointly by HQ and regions on cost-sharing basis.

e) **Technical cooperation with Member countries:** Major projects of technical cooperation with Member countries are budgeted in relevant technical areas of work in the Regional Office workplan or country workplan.

Annex-II : Current state of ICT in the Region

The current state of ICT in the SEA Region is enumerated under five domains as under:

1. IT Organization and Budget

a) **Human resources**: ICT capabilities and services are provided by a combination of teams organized centrally and in a decentralized manner, with the majority contained in the following three categories:

i) The Informatics Systems Management (ISM) Unit in the Regional Office has 26 staff - 15 Long-term (58%) and 11 Short-term (42%), organized in four teams –Networking, Application Development, User Support (Software), Outsourcing Management (including Helpdesk). Core activities or centralized ICT services are provided through ISM/SEARO. Outsourcing is used for activities requiring less supervision, allowing the in-house staff to focus on core business. In-sourcing is a specialized type of outsourcing, where the contractor's staff work in the building premises of WHO. In-sourcing will be used for Helpdesk management (customer-service delivery), facility management (management of servers, NOCs), and training.

ii) Some technical programmes in the Region recruit IT persons in the role of data administrators (three persons).

iii) At country offices, level-one user support and ongoing ICT infrastructure services are managed through local ICT support staff and/or outsourced ICT vendors. Most country offices have ICT staff (14 staff/SSA), while some country offices have outsourced ICT infrastructure maintenance services (seven persons) or get support from other UN agencies (equivalent to two staff).

b) **ICT staff capacity building**: Regular training programmes are conducted for ICT staff to enhance their skills and keep them abreast with new and emerging technologies.

c) **Budget**: The Regional Office receives adhoc allocation from AS funds, but no Regular budget allocation to cover ICT costs on a longer-term basis. Some central ICT initiatives funded jointly by Regional Office and country offices on cost-sharing basis. Major projects of technical cooperation with Member countries are budgeted in relevant technical areas of work in the Regional Office workplan or country workplan.

2. Information technology and communication infrastructure

A snapshot of major characteristics of the IT infrastructure in the Region is given below:

a) **Desktops and Laptops:** There are 550 desktops in the Regional Office and around 1000 desktops in WRs offices, and field and project offices. One hundred and fifty laptops are being used across all WHO offices in the Region. Windows 2000/XP Operating System is in use. Typical replacement every four years.

b) **Servers, storage and clustering:** A major reorganization of the Regional Office data-centre is planned to be undertaken in 2007 involving 26 servers in the Regional Office and 36 servers in other WHO offices with Windows 2000/2003 Operating System and Active Directory Services. In the Regional Office, Storage Area Network (SAN) is implemented with clustering solution to render high server uptime. High Availability Solution for email server is implemented in two WR-offices. Typical replacement is every four years.

c) **Server hosting services**: Business applications are centrally hosted at the Regional Office data-centre. Websites for the Regional Offices, country offices and projects are hosted on the central web server outsourced in USA. The common email domain i.e. searo.who.int has been implemented in the Regional Office and most country offices.

d) **Local area network:** The Regional office LAN is equipped with high-end layer of three switches with fiber backbone and certified structured cabling for LAN and telephony. Wireless LAN has been implemented in the Regional Office as backup of wired LAN and to provide network connectivity to

mobile users. In most WR offices, a certified structure cabling has been implemented and two WR-offices also have a wireless LAN. There is no network operating centre to manage the distributed IT infrastructure, which sometimes delays response to problems. Also, there is no early warning system in operation.

e) **Wide area network:** The Regional Office and nine WR offices are connected through the WHO Global Private Network (GPN) and VPN over internet is configured as back-up for the GPN. The remaining two WR-offices are connected through Internet. There are four Internet links in the Region from different ISPs accumulating to bandwidth 3 mbps (approximately). A link load balancing device has been installed to achieve secure, reliable and cost-effective sharing of internet connectivity by the entire user community.

f) **Security**: Devices have been deployed for network security and application-level security. Network and security audits are conducted periodically for vulnerability assessment, Gateway level Spam and anti-virus protection.

g) **Voice and video services:** EPBAX systems and voice services with WR offices and other WHO offices are available over the GPN as well as through local PSTN. The Regional Office has also implemented DID (Direct Inward Dialing) and DOD (Direct outward Dialing) for all users. Video-conferencing facility and telephony has also been configured in the Regional Office, as well as in nine WR offices.

h) **Mobile computing:** In the Region, 100 staff are using Blackberry services for mobile access to email, data, web and telephony. Email and password-protected Intranet are accessible in all offices. Remote access service (RAS) is available in the Regional Office.

i) **Help-desk and facility management services:** The ITIL-compliant help-desk and facility management services have been outsourced. The ITIL-compliant service desk tool (CA Unicentre) deployment is in process. The help-desk operates for extended working hours to support regional users over different time zones. Preliminary SLAs are in place; however, they need to be further developed.

j) **Standard software**: The Regional Office has standardized Microsoft at the desktop level (Windows XP and Office XP) and Server level (Windows 2003, MS Exchange 2003, MS SQL 2000 and Share Point 2003).

k) **Software licensing**: Enterprise agreements with Microsoft have been entered into for Microsoft volume licensing covering the Region, 10 country offices (except DPR Korea) and the polio project in India.

l) **ICT asset management**: There is an infrastructure asset inventory. However, automated processes need to be implemented to enable more effective management of ICT assets.

m) **Capacity building**: Regular training programmes are being organized for users at the Regional Office and country level for standard software and corporate applications.

n) **Multiple end-user devices:** Printers, photocopiers, scanners and fax devices exist separately. These functions are also being provided through some recently deployed multi-functional devices. Many users are provided with desktops as well as laptops and in some cases with mobile phone as well as a blackberry.

3. Process and policy environment

a) A preliminary version of the ICT policies, procedures, guidelines, standards and best practices exist for E-mail, backups, centralized storage of data, web designing, procurement standards, desktop environment, LAN etc., which need further strengthening.

b) The SEARO Policy on Corporate Mobile Telecommunication Devices has been finalized in December 2006.

c) A preliminary disaster recovery plan is in place, however a comprehensive business continuity plan needs to be developed.

d) No network management software is in place. Servers are managed using management software bundled with server hardware.

e) Quality documentation, standards and processes for the development of information systems need further strengthening.

f) ICT services are not formally defined across the Region. Preliminary SLAs are in place; which need to be further developed through systematic approach.

4. Technical cooperation for ICT applications in Health

a) A total of 26 technical information systems have been developed and implemented in the Regional Office, WR offices and Member countries.

b) Increasingly, ICT services are being provided to Ministries of Health and other external organizations on request basis.

c) Services are provided to develop programme-specific applications and technical cooperation for external software applications deployed by the Regional Office or country offices.

d) ICT advice was provided to Member countries in the design, development and implementation of various health information systems as well as ICT infrastructure.

e) Pilot e-Health projects were initiated with WHO's support in three countries of the Region (Bhutan, Maldives and Sri Lanka). Support was provided for e-Health project to strengthen health services and e-Learning in Sri Lanka. A master plan was developed to strengthen the provision of health care services using ICT for the people of Bhutan.

f) Standardized Geographical Information System (GIS) spatial database exist with consistent authoritative GIS data from five Member countries. For the remaining countries, the data are available from other sources. Service Availability Mapping (SAM) implementation has been initiated for three countries in the Region.

g) Effective ICT support is provided to Member States during emergencies. Information systems and collaborative workspace exist for management, coordination and sharing of information during emergency response. Emergency Response ICT field kits, briefing material, guidelines and ICT protocols were also been developed. A well-equipped SHOC Room has been operationalized in the Regional Office.

h) Share Point is being used by some technical programmes. A discussion forum has also been established for Executive Board members.

i) Decentralization of functions to WRs was supported by providing ICT solutions to the CSR unit in New Delhi (NICD) and Bangkok, Thailand enabling them to function as a connected wing of the CSR unit in the Regional Office.

5. Corporate management information systems and websites

a) A total of 38 administrative information systems have been developed and implemented in the Regional Office and WR offices encompassing areas such as Programme Management, APWs, DFCs, Personnel, Budget and Finance, Procurement and Travel, etc., which also facilitate the delegation of authority to WRs.

b) The ISM unit has been providing cross-functional and ICT inputs for the development of GSM.

c) A standard Web Site Builder Tool (WBT) has been developed to strengthen the capacity of WR and Regional Office staff to develop their websites with a coherent and corporate look. Websites are available for all areas of work in the Regional Office and 10 WR offices (one under development).

Annex-III : The desired future state of ICT in the Region

1. IT organization and budget

a) Appropriate staffing levels established and the Regional Office ICT human resource levels and organizational structure aligned with its Strategic Plan and mission.

b) Balanced In-house staff and outsourcing to facilitate the Organization to focus on core business, streamline, economise on non-core functions, and to relieve the need to manage standard functions. Core in-house staff will be responsible for monitoring performance (KPI, KGI), contract management, and quality control.

c) IT projects and systems developed with a focus on maximizing re-use and minimizing duplications.

d) ICT skills development and regular training programmes for ICT staff to keep abreast with advanced technology, based on a standardized skills/competencies classification and alignment with ICT demand projections.

e) User community enabled to be self-reliant and to use ICT in an efficient and cost-effective manner. End-users have convenient access to information and training that enables them to use ICT systems effectively, productively, in tune with the Region-wide objectives.

f) Appropriate ICT sourcing strategy developed to cover ICT costs on a longer-term basis and greater visibility on both the costs and the benefits of ICT projects. ICT projects, technology options and decisions on ICT solutions and investments made in accordance with a comprehensive ICT architecture and a framework of SEAR-recommended ICT standards, well aligned with programme needs.

2. Information technology and communication infrastructure

a) Well managed IT projects and investments aligned with the needs of the Organization and in accordance with established objectives and priorities.

b) Enhanced collaborative environment, coordination and effective information-sharing

c) New technology evaluated and selected on the basis of established procedures, criteria, their stability, security, and minimal or no transition impact for users.

d) A comprehensive security framework and set of policies implemented, and their compliance enforced, across the entire Region.

e) Up-to-date infrastructure asset inventory managed, essential systems and services management tools deployed and integrated; enabling more effective management control over equipment and tools, facilitating performance and service level management, and optimal infrastructure asset utilization.

3. Process and policy environment

a) Strategic and cost-effective use of ICT enabled by developing ICT management framework, including appropriate global and regional strategies, security framework, policies, unified architecture, procedures and guidelines based on collaborative and proactive planning efforts.

b) Comprehensive and well-maintained business continuity plan for the Regional office and all WR offices in developing consistent disaster recovery and business continuity capabilities and processes, implemented in accordance with well-defined business requirements and priorities.

c) International standards and procedures (ITIL compliance, BS standards etc.) applied for ICT infrastructure and services.

d) Standardized, integrated and enforced processes and procedures to facilitate IT management including planning, design, documentation, operation and maintenance of ICT environment.

f) Effective capture and dissemination of best practices related to development projects, technology adoption, and operations.

4. Technical cooperation for ICT applications in Health

a) Increase capability of Country Offices in using the advanced technology of e-Health for transferring knowledge as well as to keep track of fast growing technology.

b) Equal partner with technical health programmes in order to leverage the expert body of applied ICT knowledge and expertise in WHO to form part of the technical advice offered to countries.

c) Deliver an efficient, well-connected, secure and quality working environment and culture enabling public health leadership through effective collaboration and coordination among all three levels of the Organization and external partners.

d) Reliable advice on ICT infrastructure and services provided to Member countries, collaborating centres and technical programmes.

e) Advice provided to Member States on e-Health encompassing (i) Policy; (ii) Equitable access; (iii) Quality, security and safety, and (iv) Best use of ICT.

f) Member states are able to leverage WHO technical expertise in ICT.

g) Strengthened ICT capacity of Member states for Health Information Systems, GIS and SAM.

h) Quick and targeted response to disasters and improved decision making for health outcomes at Member States.

5. Management Information Systems and websites

a) Improved performance and productivity by developing, enhancing and maintaining administrative information systems; integrating with global systems and data-mart in line with system interoperability standards, implementation of global applications including Global Management System (GSM) and WHO Identity Management System (WIMS).

b) Efficient management of applications by re-engineering business processes, automation of required workflows and systematic maintenance of quality ICT documentation, standards, processes and resources.

c) Effective information-sharing and coordination through implementation of collaborative tools.

d) Enhanced visibility of WHO and increased knowledge in countries about WHO's work through decentralization of web content management, strengthening the capacity of WR office and Regional Office staff to develop their websites with a coherent and corporate look.

Annex- IV : Extracts from Global ICT Strategy

i) ***Building capacity*** of WHO staff in their use and management of ICT, and using this know-how and expertise within WHO to help build capacity in member states;

ii) ***Achieving value*** by managing costs, by leveraging the internal knowledge of staff in WHO, by working globally to reduce duplication of effort, by outsourcing services which can be done more cost-effectively elsewhere, by implementing technology solutions appropriate to needs, and by using quality processes to minimize risk of failure and maximize the quality of systems and services;

iii) ***Aligning ICT investment with WHO goals and priorities*** through ICT governance and by though alignment with related WHO strategies including those for Knowledge Management and e-Health.

iv) ***Protecting WHO information and technology assets*** by implementing approaches to defend WHO information assets from harm, as well as mechanisms to identify, and respond to deliberate or accidental damage to WHO information and technology investments.

v) External Communications <details yet to be formulated>

Annex- V : Strategic Initiatives

Strategic Initiative 1

Create a standard ICT package for Country Office administrative functions to empower the decentralization process: IT package provided to all WHO locations in SEA Region encompassing GSM, legacy applications, tools, workflow management and standard ICT policies and procedures

***Scope*:** *Applications, software tools, communication devices, Workflow management, Standard ICT policies and procedures for Country Offices.*

Business Case	Target Condition:
The Regional Director's strategies for organizational development for the Region includes decentralization of functions, resources and authority to WR offices, as well as horizontal collaboration among WR offices, towards working effectively and in an accountable manner to best serve the countries' needs. Under the new framework for delegation of authority, the Regional Director has decentralized authority to WRs. In line with the Results-based framework, the responsibility for achieving results must be accompanied by authority and associated accountability. Information systems help in establishing a practical accountability framework and strengthening the country cooperation by providing knowledge for work coordination, monitoring and oversight. Administrative applications, software tools and communication devices will empower staff with business intelligence and automated processes in cost-effective manner.	• The decentralization strategy of the Regional Director practically supported by IT enabling. • Strengthened accountability framework for decentralization including delegation of authority • Strengthened Country focused operations by empowering staff with business intelligence and providing knowledge for work coordination, monitoring and oversight. • Effective administrative operations enabled at Country level for improved performance and productivity with educed total cost of ownership for country and regional office operations
Current Conditions and Problems	**Actions**
Country Offices are seen as the focus of the work of WHO, yet WHO has never undertaken a holistic, global study of the needs of country offices for information systems and support. Total 38 administrative information systems have been developed and implemented in Regional office and WR Offices. Furthermore, the introduction of GSM for SEAR is planned in 3rd quarter of 2008. With increased decentralization of functions and delegation of authority to country offices, more work will be carried out at country level. As the role of Regional Office is to provide technical advice to Country Offices, increase of work at Country level will require more coordination and collaboration with Regional Office. Therefore, post GSM, a holistic review of the situation is required to identify the information gaps subsequent to GSM rollout and accordingly take the appropriate actions in development of bolt-on systems to meet the country requirements. Enhanced workflow management and communication devices would be required for better coordination across all locations in the region.	• IT management framework with common services approach • Contribute to the implementation of Global ICT strategic initiative 3[1] • Post GSM, identify information gaps at Country level and provide additional information systems linked with the GSM • Cost-effective Productivity tools and communication devices for automating number of routine processes and services

[1] Global ICT strategic initiative 3: The WHO country office information systems strategy

Strategic Initiative 2

Strengthen the infrastructure and communication management of all geographic locations in the region: Develop a regional capability to actively measure and manage the infrastructure at all WHO locations in the Region, managed effectively through a regional Network Operations Centre (NOC)

***Scope**: Standardized ICT infrastructure (Global Strategic Initiative 4,5), deployment of Network Operating Centre (NOC), a comprehensive ICT management framework, all aspects of physical, logical and information security, improve connectivity for access to information (wired and wireless), all forms of telephony (fixed, mobile, satellite & VOIP) and Mobile computing, Video and tele-conferencing, web-based Video Conferencing and streaming media*

Business Case

A secure, reliable, business aligned IT infrastructure at all WHO locations in the region is required for the implementation of tools and systems envisaged as part of the Global and Regional ICT Strategy. Country-focused operations would be strengthened by deployment of standardized IT infrastructure considering country specific requirements to support business needs as well as maintain appropriate levels of performance and quality of IT infrastructure. Network Operations Center (NOC) would be developed to monitor and maintain ICT assets across the region securely and reliably to provide a better network uptime.

The Regional Director's strategies for organizational development for the Region include increased transparency and strengthened communications across the Organization. Leveraging new standardized communication technologies would help in effective collaboration and coordination among all three levels of the organization, external partners and resources spread across different geographic locations.

Management framework with appropriate policies, processes, guidelines and standards will help in implementation of Global and Regional ICT Strategies, best practices approach Unified Architecture, Disaster Recovery plans and protect intellectual property assets.

Target Condition:

- High availability of ICT infrastructure and security across the region
- Prompt response to problems and early warning through regional NOC
- Culture of optimal IT organization aligned with SEA Region programmatic directions by implementing a comprehensive ICT management framework
- Enhanced communication capability for all offices in SEA Region to be connected anywhere at any-time using cost-effective means

Current Conditions and Problems

A comprehensive architecture of ICT infrastructure and management framework is not available for the entire SEA Region. Rather, fragmented ICT architecture principles and functions have been adopted. As a result, at times the response to problems is delayed. Also, there is no early warning system in place. It is difficult to implement automated facility management in cost-effective and timely manner. Network Operating Centre (NOC) is required to manage the distributed ICT infrastructure at all WHO locations in the Region. It will ensure proper and effective control over ICT assets monitoring and management across the region.

Existing communication technologies vary from location to location. The Regional Office and 9 WRs are connected through WHO Global Private Network (GPN). The remaining two WR-Offices connect through Internet. In SEAR, 100 staff using Blackberry services for mobile access to email, data, web and telephony. Email and password protected Intranet are accessible in all offices. EPBAX systems and voice services with WRs and other WHO offices are available over the GPN as well as through local PSTN. There is a requirement for enhanced collaborative environment, coordination and effective information sharing.

A preliminary version of ICT policies, procedures, guidelines and standards exists in several ICT areas and ad-hoc disaster recovery plan is in place. Understanding of security risks and business impacts for critical applications and business processes are inadequate in the region. A set of policies and comprehensive security framework need to be implemented and their compliance enforced across the region.

Actions

- Plan, design and develop Network Operations Center (NOC) and unified architecture in the region to manage appropriate levels of performance and quality of IT infrastructure
- Implement tools and procedures for automated facility management
- Implementation of standardized ICT infrastructure (hardware/software) and periodic upgrade considering country specific requirements.
- New communication technologies adopted as per on-going technology assessments.
- Implementation of Regional Strategies, Policies, Procedures and guidelines across the region
- In consultation with HQ, implement Global security policy for structural integrity and strong security.
- Development and management of Disaster Recovery plan for Regional Office and Country Offices
- Contribute to implementation of Global ICT strategic initiative 4 & 5[2] in the region.

[2] Global ICT strategic initiative 4: A standard ICT environment across WHO
Global ICT strategic initiative 5: A secure, managed network, meeting the needs of each location with acceptable cost-performance measures.

Strategic Initiative 3

Improve staff productivity through appropriate tools and techniques across the region: Increase the productivity of staff through the innovative use of technology, work flow management, collaborative and interactive communication tools and associated training. Promote capacity development to allow for decentralized web management

Scope: *Empowering staff to use technology effectively, provie monitoring and evaluation processes and tools, implement collaboration tools, information sharing tools, discussion forums, list serves, distance learning tool, sharing of best practices, providing appropriate content management tools, guidelines and standards to decentralize the management of websites.*

Business Case	**Target Condition:**
ICT is a key enabler for staff to manage work more efficiently, improve productivity, and provide WHO with a competitive advantage. The technology road mapping is required to provide a way to develop and organize implementation of various productivity tools by certain time frames. It will provide the information needed to make trade-offs among different technology alternatives and will define standards for various technologies. Such innovative use of technology would aid SEA Region in increasing productivity and create an improved work environment by empowering staff through the use technology effectively. The Regional Director's strategy for organizational development includes decentralization of functions and strengthen country knowledge for work coordination. Decentralizing the content management would empower personnel to disseminate quality information in timely manner and access to vast sources of information. It will help in harnessing the efforts and knowledge of content authors in the region. User community would be enabled to be self-reliant and to use ICT in an efficient and cost-effective manner. Capacity building of end-users would enable them to use ICT systems effectively, productively, in tune with the Region-wide objectives.	• More efficient and productive work environment using new and innovative ways of working • Information-centric collaboration environment instead of device-centric silos • Timely web content created at the source leading to enhanced visibility of WHO's work
Current Conditions and Problems	**Actions**
Medium-term technology roadmap is not undertaken today in WHO to enable ICT management to plan and use the appropriate technology or its alternatives based on the cost, benefits and staff needs. A futuristic and forward-looking approach is required to innovative, evaluate and deploy the new emerging technologies, considering user and technological development needs. New technologies and technical solutions need to be adopted that are cost-optimal as measured on a Total Cost of Ownership (TCO) basis. Currently there is limited Decentralization of the Web content management in SEAR making it difficult to harness local content knowledge in a timely manner. Web content management services to WR Office and Regional office staff are provided by central ISM Unit. A standard Web Site Builder Tool (WBT) has been developed A web policy exists providing overall guidelines on designing and updating the web sites. Share Point is used by some Technical Programmes and sharing of information during emergency response. Continued efforts are required to implement appropriate tools and techniques to empower the user community to utilize ICT to manage their work more efficiently and effectively and thereby enhance their productivity. ICT leadership in educating programme units on the optimal use of ICT is a must.	• Technology roadmap to increase productivity of staff by effective use of existing and new collaborative tools / methodologies , workflow management and e-waste reduction • Play a proactive role in disseminating the knowledge on advancement of technologies to users • Automation of work processes including paperless office initiative • Decentralization of web sites management through web content management tools • Develop web content management polices and guidelines in consultation with HQ and Web Coordination Committee • Implementation of collaborative and interactive communication tools • Implementation of distance learning • Capacity building of 'P' and 'G' staff on the basis of best practices approach to increase productivity of staff • Contribute to the implementation of Global ICT strategic initiative 2[3] in the region.

[3] Global ICT strategic initiative 2: Human Resources strategy for ICT

Strategic Initiative 4

Create a strong "account management" process and customer-oriented services managed through Service Level Agreements (SLAs) : Create a strong "account management" process and culture within IT to maintain alignment with technical programmes, administration and Country Offices. Implement customer-oriented services managed through Service Level Agreements (SLAs)

Scope: *ICT Services to Technical Programmes, administration and Country Offices as per their needs, IT enabling for Knowledge Management, well-managed SLAs for ICT service delivery, ITIL compliant regional Help Desk*

Business Case	**Target Condition:**
Account Management is critical to the creation and management of strategic customer relationships. It involves creation of a roadmap to understand, manage and deliver the expected results to the customers. It bridges the gap between the customer and service provider and builds balance between customer focused solution and navigating organization dynamics Customer satisfaction is paramount and ICT staff is accountable for its achievement. ICT services would be delivered through a customer-oriented approach that meets the requirements of internal WHO users both at regional and country levels. Automated facility management using ITIL compliant help desk will further help in improving service level for customer. Delivery of ICT services through a portfolio of standard services, and Service Level Agreements is essential to define the parameters and quality of the service, for the benefit of WHO ICT managers, end-users and the service provider. Equal partnership of ICT with technical health programmes for the development of road map for all health technical applications and knowledge management will ensure success of all ICT-related projects. It will help in optimal utilization of resources by providing common framework for comprehensive data management tools and harness advantages of synergies between programmes.	• Easier ways provided to engage with ICT Organization. • Stronger alignment of ICT activities with SEAR needs to deliver ICT services to technical programmes, administration and country offices as per their needs • ICT products and services delivered at appropriate service levels • Collaborated on development of a road map for all health technical applications and knowledge management
Current Conditions and Problems	**Actions**
The expectation of ICT products and services may vary from customer to customer based on their specific requirements. ICT should be able to provide expected results by applying consistent project management life-cycle methodology. Account Management process needs to be further strengthened by going beyond just creating a communication channel with customers. Account management would help in customized and innovative service delivery. ICT has been functioning collaboratively with technical programmes in the region and country offices for development and implementation of various information systems as per their specific requirements. Also, ICT has been key enabler for various Knowledge Management projects. However, continued equal partnership would further strengthen this collaboration and ensure the success of ICT-related health projects. Well managed SLAs are required to deliver the ICT services as per agreed Service Levels. Preliminary SLAs are in place; which need to be further developed through a systematic approach. Existing help desks and processes are not fully ITIL compliant or based on industry standards. Currently, ITIL compliant Help desk has been outsourced in Regional Office. ITIL compliant Service Desk tool deployment is in progress. The IT help-desks in all WR-Offices are not ITIL compliant and lack technologies for Incident management, Change Management, Problem management and configuration management. ITIL compliant help desk needs to be implemented across the region for applying international standards and procedures for ICT services delivery.	• Strengthen account management process and apply consistent project management life-cycle methodology to deliver ICT products and services as per the requirements of technical programmes, administration and country offices. • Technical Roadmap for all ICT related Projects for Health Technical Applications and Knowledge Management • Develop Management Information Systems (MIS) for health data in collaboration with technical programmes using data mining to provide consolidated information integrating Regional and Country Office data across programmes. • Develop a plan for IT enabling of Knowledge Management • Well managed SLAs with proactive monitoring and measurement mechanisms for ICT delivery developed in consultation with users. Establish systems and measuring mechanism for SLA monitoring and reporting. • Implement regional Help desk (people, process and system) with ITIL compliance. • Contribute to the implementation of Global ICT strategic initiative 7 & 9[4]

[4] Global ICT strategic initiative 7: Establish a data quality management programme (administrative as well as technical) across the organization
Global ICT strategic initiative 9: New initiative – yet to be formulated.

Strategic Initiative 5

Challenge the cost-effectiveness of the ICT services through consolidation and outsourcing: Challenge the cost-effectiveness of the ICT services through investigations in the areas of global/inter-regional consolidation and outsourcing opportunities

Scope: *Global / inter-regional consolidation functions and services, technology convergence / consolidation, outsourcing for services, umbrella agreements for ICT services and products, portfolio management for applications development*

Business Case	Target Condition
IT Infrastructure consolidation is a major step towards designing and implementing a more economical, efficient and flexible IT environment that can support WHO's strategic business objectives. Infrastructure consolidation will reduce the number of servers, databases and applications deployed while running them at their optimum levels and will reduce the management/operations costs with increased availability. It will also reduce the number of end-user devices like printers, photocopiers, scanners & faxes with the use of multifunctional devices, move from mobile phones and PDAs to devices like Blackberry, laptops with docking station instead of users having both a workstation and a laptop. Similarly, portfolio management for applications development will also facilitate re-use and avoid duplications. In view of the rapid advancement in ICT, it will be difficult for any organization to keep pace with changes in industry or the skills required to manage emerging technologies. Increasingly, outsourcing is used to allow organizations to focus on core business, and to streamline and economize on non-core functions. Outsourcing will allow WHO to refocus resources and promote innovation. Umbrella agreements for ICT products and services will be worked out for the entire regions if it maximizes value through economies of scale.	• ICT remains cost-effective and agile by adopting a common base of essential infrastructure platform and services to the user communities, taking forward convergence of technologies to improve the return on investments ensuring maximum re-use and minimum duplication of efforts. • Best practice management is employed for ICT using outsourcing and umbrella agreements
Current Conditions and Problems	**Actions**
Currently, diverse end-user devices and applications are being used in the region, although much work has been done towards servers, database and applications consolidation. Some portfolio management approach is in place for software development & acquisition to applications and databases. Infrastructure consolidation initiative needs to be progressed further to ensure economical operations of ICT infrastructure and improve the return on investments by ensuring maximum re-use and minimum duplication. Enterprise agreements with Microsoft exist for Microsoft volume licensing covering SEARO, 10 Country Offices (except DPR Korea) and Polio project in India. No other umbrella agreements are in place. In Regional Office, outsourcing is used for Help desk management, facility management, applications development and trainings. Some country offices have outsourced ICT infrastructure maintenance services. ICT services need to be outsourced on the basis of SLAs and price-performance ratio, while keeping a balance between in-house staff and outsourcing.	• Comprehensive portfolio management approach across the region for software development and acquisition in order to encourage re-use and avoid duplications. • Outsourcing contracts and umbrella agreements with service providers across the region, wherever found appropriate. • Consolidation of Servers, databases and applications in the region. • Plan and implement Multi Function Devices (MFDs) across the region • Implement laptops with docking stations across the region, wherever found cost-effective • Policy implementation for corporate mobile telecommunicatin devices leading to convergence of mobile phones and PDAs

Strategic Initiative 6

ICT support for Member States: Support member states, collaborating centers and technical programmes with professional advice and leveraging resources within WHO for the member states benefit in both project design and in health emergencies

Scope: *Advise Member Countries on building ICT capacities, development and management of health technical applications, emergency response services, application of GIS and SAM*

Business Case

The potential benefits of advances in ICT on health systems, health care delivery, health promotion, public health, health research and other health related activities are very significant. ICT could be directed to the benefit of improving health status of the member countries of the South-East Asia Region (SEAR). Advice would be provided to Member states on e-Health, Health Information Systems (HIS), and Geographical Information System (GIS) to improve the health services and systems. ICT capacity of Member states would be strengthened.

ICT plays a vital role in emergencies by facilitating the timely and reliable flow of information from affected areas to responsible entities at local, national, regional and international levels, thereby permitting a mediated appropriate response. In the early days of crisis, quick deployment of IT, telecommunications and other resources is essential to save lives, reduce human suffering and minimize damage to property and environment. Effective ICT support to member states during emergencies would facilitate structured, shared and well maintained ICT systems and infrastructure for rapid situational analysis, informed decision making and co-ordination, permitting a quick and targeted response to disasters.

Target Condition:

- Member states are able to leverage WHO technical expertise in ICT
- Quick and targeted response to disasters and improve decision making for health outcomes

Current Conditions and Problems

Increasingly, ICT advice are provided to Ministries of Health and other external organizations on request basis. These services are provided to develop programme-specific applications, technical cooperation for external software applications and ICT infrastructure. The expert body of applied ICT knowledge and expertise in WHO needs to be further leveraged to provided technical advise to member states, when needed.

Pilot e-Health projects have been initiated with WHO's support in three countries of the region (Bhutan, Maldives and Sri Lanka). Support is provided for e-Health project to strengthen the health services and e-Learning in Sri Lanka. A master plan has been developed to strengthen the provision of health care services using ICT for Bhutanese population. e-Health projects need to be further taken forward and national plans to be established on the basis of lessons learnt.

Member states are provided Geographical Information System (GIS) services for analysis of health related data for improved decision making. Spatial database exists with consistent authoritative GIS data from five Member States. For remaining SEAR countries the data is available from other sources. Service Availability Mapping (SAM) implementation initiated for three SEAR Countries. Increased collaborative activities are required to promote the use of GIS by member states.

Effective ICT support is provided to member states during emergencies. However, it has been experienced that lack of redundant telecommunication capacity causes delay in relief operations and thus requires prompt intervention from external sources. Absence of an efficient operational platform makes it difficult to track human, financial and logistics resources. ICT needs to be further articulated for preparedness and response.

Actions

- ICT advice to Member countries on e-Health encompassing (i) Policy; (ii) Equitable access; (iii) Quality, security and safety, and (iv) Best use of ICT
- ICT advice to Member states for ICT infrastructure development in the health sector as well as cross-sectoral
- Strengthen the ICT capacity of member states for Health Information Systems, GIS and SAM
- Collection and maintenance of authoritative GIS spatial data for countries in SEA Region as well as synchronize it with the global data repository.
- Enhance documentation of technical applications using Software Development Life Cycle (SDLC) methodologies
- ICT support to Country Offices and Member States for Emergency Preparedness and Response
- Support establishment of IT enabled Operation rooms at Country Office linked to Regional Office SHOC Rooms and National Disaster Management Programmes
- Contribute to the implementation of Global ICT strategic initiative 8[5] in the region.

[5] Global ICT strategic initiative 9: e-Health

Strategic Initiative 7

Participate in the Global Management System (GSM) project: ICT to contribute cross-functional requirements and business process re-engineering during the design phase, moving into implementation as the project progress

Scope: *Business process re-engineering, contribute to implementation and ongoing refinement of GSM, maintenance of legacy systems, management of other administrative applications*

Business Case WHO is embarking on a large-scale reform of its administrative and management systems through the Global Management System project (GSM). The development of the GSM provides the opportunity, but also drives an urgency, to work on a global basis to understand work processes, and the applications, tools, ICT infrastructure and support needed by WHO staff to do their jobs effectively. The inputs would be provided for the development of GSM in order to ensure that the system meets SEAR business and user requirements. There may be functionality gaps between existing Information Systems and GSM. GSM may not include all the functionalities currently available with SEAR users through existing integrated information systems. Therefore, efficient management of surviving applications would require re-engineering of business processes, automation of workflows and systematic maintenance of applications including quality documentation. This work needs to be undertaken in close collaboration with the GSM project, which will be the platform for defining new business models for administrative support**.** Development and maintenance of administrative applications in all cross-functional areas for the functionalities outside the scope of GSM and management of legacy system by ICT will empower staff with complete business intelligence and automated processes.	**Target Condition**: • SEAR requirements are fully articulated in the GSM solution • The IT requirements for the GSM solution in SEAR are fully met
Current Conditions and Problems IT and Telecommunication plan for GSM implementation in the region has been developed and implementation is in progress. Regular monitoring of the plan is undertaken to ensure timely delivery. Cross-functional collaboration have been undertaken with SEARO Function teams for information gathering and inputs on cross-functional issues for the development of GSM. Contributions have been provided for the development of Global plan for RICE (Reporting, Interfacing, Conversion and Extension) including effort estimation. Regional catalogues system has been rolled-out in SEAR country offices for capturing the baseline information of ICT Infrastructure in the Region. Based on this information, ICT infrastructure upgrade will be planned for the GSM at the county level. More work is required around people readiness and change management.	**Actions** 1. Implementation and monitoring of IT plan for RICE activities of Global Management System (GSM) including database administration for regional instance of Global Data Hub (GDH) and development of interfaces for surviving legacy applications. 2. Subject Matter Expert (SME) support for GSM across the region. 3. IT preparedness for WHO staff by enhancing their ICT skills and knowledge. 4. Implementation of WHO Identity Management Services (WIMS) in SEAR. 5. Efficient management and ongoing support for surviving applications by re-engineering of Business processes and automation of required work flows. 6. Complete technical documentation of surviving administrative applications using Software Development Life Cycle (SDLC) methodologies 7. Contribute to the implementation of Global ICT strategic initiative 6[6]

[6] Global ICT strategic initiative 6: Global Data-centre

Annex- VI : Informatics Systems Advisory Committee (ISAC)

Terms of Reference

The Terms of Reference (TORs) of the ISAC are to:

a) Review the policies, strategies, implementation plan, guidelines, and standards for Information and Communication Technology (ICT) with respect to information requirements of the SEA Region;

b) Review priorities for ICT projects in order to ensure appropriate alignment with the information needs of users;

c) Periodically review the progress report on ICT projects and staff informatics training programmes;

d) Identify service levels to be delivered for various ICT services and report achievements against these periodically, and

e) Exchange information and recommendations of ISAC with other relevant committees, as appropriate, in furthering the development and use of ICT support services, tools and products.

Annex- VII : Glossary

Acronym, Term or Phrase	Definition
Anti-virus protection	Protection of computers from computer viruses and other malicious software
APW	Agreement for Performance of Work
Bandwidth	The amount of data that can be passed along a communications channel in a given period of time. Whether talking of voice or written communication, bandwidth (the size of the "pipe") is a critical factor in an organization's communication lifeline.
Blackberry	A device which provides wireless telephone, e-mail and data to users via a small handset design.
Business continuity	The ability of an Organization to continue normal (or at a minimum, mission-critical) functions following an event that disrupts business operations (such as a fire, flooding, or loss of electrical power). The concept embraces the entire organization, and involves both technical and functional operations. See also disaster recovery.
Business intelligence	A broad category of business processes, application software and other technologies for gathering, storing, analyzing, and providing access to data to help users make better business decisions. It can be described as the process of enhancing data into information and then into knowledge. The presumption is that decisions can not optimally be made without data (individual elements) and information (data intelligently strung together). The more data intelligently strung together and accessible, the better the organization's decisions.
CMM	Capability Maturity Model (CMM) is a process developed by SEI in 1986 to help improve, over time, the application of an organization's supporting software technologies.
Collaborative workspace	A "virtual world" of collaboration. The objective is an interconnected environment in which participants at different points in time and in dispersed locations can access and interact with each other as though they are together.
Data-mining	The essential concept is a means of acquiring relevant information. The process involves sorting through data to identify patterns and establish relationships (such as association, sequencing of events, classifications, clustering, and forecasting.) It is a means of acquiring Business Intelligence.
DFC	Direct Financial Cooperation
DID	Direct Inward Dialing
Disaster Recovery	The ability to recover mission-critical functions following a disaster. A disaster can result from natural causes (hurricane) or sabotage. A disaster recovery plan - sometimes referred to as a business continuity plan - details how an organization will deal with potential disasters, including the precautions taken so that the effects of a disaster will be minimized. Typically, disaster recovery planning involves an analysis of business processes and continuity needs; it should also include a significant focus on disaster prevention.
Distance Learning	Method of learning in which the students are not required to be physically present at a specific location of the course. Students access course materials via the Internet.
DOD	Direct Outward Dialing
e-Health	E-health means the use of Information and Communications Technologies (ICT) for health
EPABX	Electronic Private Automatic Branch Exchange (EPABX) is an in-house telephone switching system that interconnects telephone extensions to each other and to the outside telephone network.
GIS	A Geographic Information System, which involves software programs that manage

Acronym, Term or Phrase	Definition
	spatial data and associated attributes. In a generic sense, GIS is a "smart map" tool that allow users to create interactive queries (user created searches), analyze the spatial information, and edit data.
GPN	Global Private Network. WHO's IT communications network that links WHO Headquarters with each of the Regional Offices and many Country Offices. There are many advantages to a GPN, and many requirements to keep it efficient and effective. The GPN, for example, is the capability which allows a single telephone dialing schema (structure and rules) across the global Organization.
GSM	Global Management System. An enterprise-wide ERP application covering WHO's program planning and administrative processes, and related information systems. The GSM, which is represented by a vendor (Oracle Corporation) and its ERP, is in the process of implementation at this writing. The end result will cover the functions for program management; budget & financial management; human resources administration and management; payroll; procurement; asset management; travel, meeting and conference management; and contract management.
Health Information Systems (HIS)	Computerized solutions to support the management and operation of all technical and administrative data for the health system.
HIS	Health information systems (See Health Information Systems)
ICT architecture	The component parts of a system or network (see Infrastructure) and their defined and documented interrelationships.
Information Technology	A term that encompasses all forms of technology used to create, store, exchange, and use information in its various forms (business data, voice conversations, still images, motion pictures, multimedia presentations, and other forms, including those not yet conceived).
Infrastructure	While infrastructure may be viewed as everything that supports the flow and processing of information, it most often refers to the physical hardware used to interconnect computers and users. Infrastructure includes the transmission media, including telephone lines, cables and satellites and antennas, and also the routers or other devices that control transmission paths. Infrastructure also includes the software used to send, receive, and manage the signals that are transmitted.
ISAC	Informatics Systems Advisory Committee in SEARO
ISDN	*Integrated Services Digital Network (ISDN)* is comprised of digital telephony and data-transport services offered by regional telephone carriers. ISDN involves the digitization of the telephone network, which permits voice, data, text, graphics, music, video, and other source material to be transmitted over existing telephone wires.
ISM	Informatics Systems Management
IT	See Information Technology.
ITIL	Information Technology Infrastructure Library for best practices processes giving guidance on the provision of quality IT services
KGI	Key Goal Indicator
KMS	Knowledge Management Strategy
Knowledge Management	Knowledge Management is a process of institutional change and capacity development that seeks to develop knowledge, share it among practitioners, and apply it to business processes in order to provide the right knowledge, to the right people, at the right time.
KPI	Key Performance Indicator (KPI) are quantifiable measurements, agreed to beforehand, that reflect the critical success factors (of the company, department, project.)
LAN	Local Area Network. A computer network which operates over short distances,

Acronym, Term or Phrase	Definition
	usually at high speed. Typically, LANs are isolated in single buildings but sometimes connect a number of buildings in close proximity.
Listserv	E-mail list management software which allows for dissemination of materials to managed e-mail lists, such as e-mail newsletters, announcement lists and discussion groups.
Metadata	Metadata provides information on other data. For a Word document, it might include fields describing the title, key words, author, associated dates, etc. In the broader sense, metadata is used to target information and improve navigation and management of knowledge repositories.
MFD	Multi Function devices
Mobile computing	A generic term describing the application of small, portable, and wireless computing and communication devices. This includes devices like Laptops with Wireless LAN technology, Mobile phones, and Personal Digital Assistants (PDAs).
MTSP	Medium-term Strategic Plan
NICD	National Institute of Communicable Diseases in India
NOC	Network Operating Centre to manage the distributed ICT infrastructure at all WHO locations in the Region.
Outsourcing	Relative to information technology, outsourcing involves contracting out some or all of an organization's information technology or communications' operations previously executed and managed in-house.
PDA	Personal Digital Assistant. A device which allows for the sending and receiving of e-mail, access the Internet, and organizing calendars, notes and tasks.
Portal	Generically, a portal is a Web site that offers services (as opposed to a Web site that is merely a document or picture one reads/looks at). In the context of this document, Portal refers to Microsoft Sharepoint Portal Services. This product is built on top of Microsoft Windows Server and provides for the targeting of information, knowledge and business process to users based on their membership of one or more thematic, geographic or functional audiences. It also supports robust administrative capabilities for managing SharePoint team-sites across an organization and for supporting organization-wide searches and logins.
Portfolio Management	Generically, this is a process, a portal by which any business unit makes decisions on its various, active projects, staffing and budget that is allocated to each project. Within the context of this document, portfolio management involves management of the full set of software applications (and supporting resources and initiatives) across the entire Organization, both as individual products and explicitly as an interrelated set of products.
Program drivers	The strategic guidelines, objectives, goals, expected results and program of work of PAHO to which the information technology initiatives must be aligned and supporting. In other words, the program of work *drives* the IT initiatives.
PSTN	Public Switched Telephone Network is the world's collection of interconnected voice-oriented public telephone networks, both commercial and government-owned. It's also referred to as the Plain Old Telephone Service (POTS).
RAS	Remote Access Service
Repository	A central place where data is stored and maintained.
SAM	Service Availability Mapping (SAM) is a tool to assess and monitor the availability and coverage of health services.
SDL	Staff Development and Learning
SEA	South-East Asia
Security Framework	The underlying policies, guidelines, resources and monitoring applied to implement levels of information security appropriate to the identified risks in the organization.

Acronym, Term or Phrase	Definition
Server	Computer architectures involve different pieces of hardware and other computing capabilities that work together. The client (e.g., a desktop computer or laptop or Blackberry) depends upon the server (e.g. a computer with the capabilities to accommodate requests for data, e-mail, file transfers, and other network or web services from other clients).
Service Level Agreement (SLA)	Service Level Agreement. A contract between a provider of information technology services and the end user which stipulates and commits the service provider to a required level of service.
SharePoint	In the context of this document, refers to Microsoft SharePoint Portal Services (see Portal) and Sharepoint Team Services - Web application that lets users create and configure their own collaborative work spaces for sharing documents and managing the kinds of information and knowledge useful for teams working together on a project. Comprised of "Web Parts" for listing documents that can be uploaded and downloaded, for entering tasks and tracking their status, for creating event calendars, for posting announcements and arranging meetings, for creating discussion bulletin boards, and for performing many other common collaborative activities. (See Team-sites).
SLA	Service Level Agreement (See Service Level Agreement)
Spam	Acronym of the words Stupid Pointless Annoying Messages. Repeated, undesired messages (electronic junk mail) over the Internet used both as an advertising vehicle and as a means to disrupt normal communication.
SQL	Structured Query Language. A popular computer relational database management system and the language used to create, modify and retrieve data from it.
Storage Area Network (SAN)	A network designed to attach computer storage devices, such as disk array controllers and tape libraries, to servers.
Streaming Video	A one-way video transmission over a data network.
TCO	Total Cost of Ownership (See Total Cost of Ownership)
Total Cost of Ownership (TCO)	A type of calculation designed to help managers assess both direct and indirect costs related to the purchase of any IT component, including costs of purchase, repairs, maintenance, and upgrades as well as service and support, networking, security, user training, and software licensing. The TCO has to be compared to the *total benefits of ownership* to determine the viability of the purchase.
Virtual Private Network (VPN)	A network that uses a public telecommunication infrastructure, such as the Internet, to provide remote offices or individual users with secure access to their organization's network. A VPN works by using the shared public infrastructure while maintaining privacy through security procedures and protocols such as encryption.
VOIP	Voice over Internet Protocol is an IP telephony term for a set of facilities used to manage the delivery of voice information over the Internet. VoIP involves sending voice information in digital form in discrete packets rather than by using the traditional circuit-committed protocols of the public switched telephone network (PSTN). A major advantage of VoIP and Internet telephony is that it avoids the tolls charged by ordinary telephone service.
WAN	Wide Area Network. A geographically dispersed telecommunications network.
WBT	Web Site Builder Tool (WBT) developed by SEARO to strengthen the capacity of Country Offices and Regional Office in developing and maintaining their web site.
WIMS	WHO's Identity Management System, designed to provide secure access by employees to multiple corporate systems through a single logon. WIMS will be utilized by personnel across all WHO offices.
WR	WHO Representative