Government of Italy
Ministry for Innovation and Technologies

United Nations
Department of Economic and Social Affairs

Plan of Action
E-Government for Development

May 2002

"The promotion of ICT should not be a substitute for the efforts to ensure the development and modernization of basic sectors of the economy but should complement and enhance these efforts. Access to information and knowledge-sharing, in fact, is largely determined by the capacity to generate and utilize knowledge as well as policy and legal/regulatory frameworks.

National programs for putting ICT in the service of development must be integrated into national development strategies, as defined and implemented on the basis of national priorities and on the principle of national ownership of such strategies. These programs need to enunciate a national vision of challenges and approaches, establish national priorities and, as appropriate, a national focal point, and provide a conducive environment for the rapid diffusion, development and use of information technology."

Ministerial Declaration at the High-Level Segment, ECOSOC 2000

"ICT empowers, benefits and links people the world over, allows global citizens to express themselves and know and respect one another. It also has immense potential for enabling economies to expand further, countries to enhance public welfare and promote stronger social cohesion and thus democracy to flourish."

G8 Communiqué, Okinawa, 2000

"E-strategies should distinguish and recognize the importance of eGovernmment for internal efficiency and effectiveness within government, as well as of eGovernance for institutional capacity building, transparency, accountability and its ability to enhance democratic governance.

The growth of e-government as a means of achieving a critical mass of on-line content and encourage governments to provide widely-available free-of-charge access to state owned information and local content."

DOT Force Report, Genoa, 2001

"The challenges that we confront today are beyond the reach of any State to meet on its own. At the national level, we must govern better, and at the international level, we must learn to govern better together. Effective States are essential for both tasks, and their capacity for both needs strengthening"

Kofi Annan, United Nations Secretary-General

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Foreword by the Italian Government

At the last G8 Summit in Genoa, Leaders endorsed the DOT Force Report, "Digital Opportunities for All: Meeting the Challenge" (www.dotforce.org), which contains a forward-looking Action Plan with nine priority areas as a basis for developing countries to achieve sustainable ICT-enabled development, both economic and social. Together with the endorsement of the DOT Force report, the G8 leaders encouraged, in their final Communiqué '…*the development of an Action Plan on how e-government can strengthen democracy and the rule of law by empowering citizens and making the provision of essential government services more efficient*…'.

G8 Leaders also agreed to continue supporting the DOT Force process and encouraged all stakeholders to build on their successful cooperation and develop concrete initiatives to deliver on each of the nine elements of the Action Plan.

In the first post-Genoa meeting held in October 2001 in Montreal, one Implementation Team was constituted for each of the Priority Areas of the Genoa Plan of Action. Italy assumed responsibility for the initiatives on e-government relative to the Action Plan and to the Genoa Final Communiqué.

This reflects the Government of Italy belief on e-government power to serve and implement good governance, economic growth and human development, though increased efficiency, accessibility, transparency and accountability of government operations, leading to improved country performance, and increased flow of foreign investments and foreign aid.

Given the complexity and sensitivity of the task of drafting an Action Plan on E-Government for Development, the Minister for Innovation and Technologies of Italy, Lucio Stanca, representative of the Italian Government in the DOT Force, decided to call on the assistance of the United Nations Department of Economic and Social Affairs (UN/DESA) and the advise of a High-Level Discussion Group (HLDG) to discuss the rationale and content of this Plan, and share views and expertise.

The HLDG was composed of experts from developed and developing countries drawn from governments, international organisations, the private sector, the civil society, academia and the media. It worked for a one-day session based on a discussion document that was sent to members ahead of the meeting (see Annex for a list of members of the High Level Discussion Group).

The Draft Plan of Action was presented at the International Conference on E-government for Development (**www.palermoconference2002.org**), hosted in Palermo by the Italian Government in collaboration with the UN/DESA, and subsequently amended again to include the discussions and findings of the Conference.

The Italian Government regards this Plan of Action as a benchmark for the planning and implementing its programme and action on e-government for development in a coherent and sustainable manner.

Initiatives of the Italian Government such as the International Conference on E-government for Development, the development of a reference model for a digital public administration, the provision of financial resources for concrete e-

government initiatives in developing countries through dedicated trust funds are nested into the framework established in this Plan of Action.

With this Plan of Action the Italian Government offers an action framework to developing countries, the international donors' community, the G8 partners, for joint efforts towards the awareness, planning, implementation and establishment of e-government in those countries that have not or have only partially exploited the potential that this important tool provides for bridging social and economic divides.

Foreword by the United Nations Department of Economic and Social Affairs

In the Millennium Declaration adopted in September 2000, the United Nations have outlined the vision of the peaceful, prosperous and just world for the 21st century, a world in which "globalisation becomes a positive force for all". To assure progress towards implementation of that vision, the Member States have resolved *inter alia* "to ensure that the benefits of new technologies, especially information and communication technology (...) are available to all".

The United Nations ICT Task Force (www.unicttaskforce.org) is an institution that has been mandated by the UN Secretary-General to implement this goal. Its objective is to "provide overall leadership to the United Nations role in helping to formulate strategies for the development of information and communication technologies and putting those technologies at the service of development and, on the basis of consultations with all stakeholders and Member States, forging a strategic partnership between the United Nations system, private industry and financing trusts and foundations, donors, programme countries and other relevant stakeholders in accordance with relevant United Nations resolutions."

At the same time, the United Nations General Assembly during its special session devoted to "Public Administration and Development" stressed that the quickly globalising world needs efficient, effective, responsive, transparent and accountable governments that derive their legitimacy from the consensus of well-informed citizens. Only such governments can lead societies through the complex time of change and transition. We see the great positive impact that application of ICT in government operations (e-government) can have for enhancing the capacities of governments to live up to this challenge.

It is for these reasons that we consider our co-operation with the Government of Italy to constitute a significant step towards converting ideas and intentions into reality. The International Conference on E-Government and Development (Palermo, April 2002) as well as this Plan of Action build an important framework for international co-operation in the area of e-government. We are looking forward to further development of this partnership and to participation in many follow-up actions, together with the Government of Italy and other international partners.

Introduction

Full and effective participation in the emerging global information network is of fundamental importance for a country that wants to avoid marginalization from the globalization process and is essential for the full participation of its citizens in all spheres of life. Information and communication technology (ICT) can contribute to integration of developed and developing countries in the world economy, and it can create the conditions for information and knowledge exchange and utilization.

ICTs offer tremendous potential to raise standards of living and enlarge opportunities for individuals, communities, countries and regions. While many in the world still remain directly untouched by the information revolution, one cannot deny the transformative effect they already had on our global society.

Governments are confronted with a new reality and changed imperatives as a result of the diffusion of ICT throughout the world and within their nations. At the same time, the international call for governments to respond to standards of accountability, transparency and participatory governance as critical elements for democracy and State legitimacy has become stronger. The recent debate at the international level has highlighted the importance of 'good governance' as an essential ingredient and engine for sustainable development and growth. Both the United Nations Millennium Assembly and the Conference on Financing for Development highlighted its importance in their final conclusions[1].

This demands a fundamental change in the way the State acts internally and interacts with its citizenry, particularly in its function of promoting good governance as a condition for sustainable development. The advent of the information society is creating unprecedented conditions for exercising this function. Through ICT and e-government applications, communication between administrations, citizens and businesses can be enhanced to improve governance and public sector management, access economic and social opportunities and bridge the digital divide within a society and between countries.

E-government can transform the existing government system and consolidate the establishment of an inclusive governance system through digital means that is capable of exercising its powers and functions efficiently and effectively. A governance system that is committed to working with civil society in a transparent and accountable way to reduce poverty, safeguard the environment, redress inequality, foster security and fulfill social, economic, cultural, civic and political rights.

E-government supports broad public sector reforms and good governance through the introduction of innovative and sustainable applications of ICT both within government administrations, as well as in their interaction with citizens and the private sector.

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[1] The United Nations Millennium Declaration in the section 'Human rights, democracy and good governance'; the Monterrey Consensus states that 'good governance is essential for sustainable development' (Section II); and, the World Bank Development Report 2002 reports that 'Good governance matters for growth and poverty reduction' (Chapter 5).

Public sector is increasingly seen as the main engine to bridge the digital divide at country level. Public agencies can start acting as model users of ICT and be catalysts for others to follow. The public sector tends to be the biggest provider of local content and it can nurture and foster the further development of the local ICT industry.

Conventional use of the prefix 'e' suggests that an activity is 'electronic' or digital in nature. By accepting this, e-government would simply refer to the use of electronic information and communication technologies in undertaking all kind of government activities, in education, health, agriculture, governance, customs, etc. However, this does not reflect the value that the use of ICT can actually add to government's ability to foster development.

The key word in e-government is not electronic, but government. E-government should be regarded as an alternative and complementary approach to government administration and service delivery, as well as a means to redefine the way it interacts with citizens and the private sector. In this sense:

- ♦ E means efficiency: Governments should use ICT to minimize transaction costs and streamline their bureaucratic procedures, making their operations more efficient, freeing up resources that enable them to deliver services in a better-organized and economical manner.

- ♦ E means effectiveness: Governments can achieve better results and meet development goals by using ICTs to increase the relevancy of the policy formulation process through increased participation, improve the process of resource allocation, respond timely to citizen's needs and increase coverage and quality of their services.

- ♦ E means empowerment: ICTs can support increased interaction between citizens and their governments, for citizens both to participate in the decision-making process and to become more aware of their personal and community development.

- ♦ E means economic and social development: Beyond the economic benefits that accrue to government due to efficiency and effectiveness gains, the use of ICTs in government and in its interaction with the business community and citizens can create new businesses, attract investments and generate employment.

In other words, appropriate e-government initiatives can lead to strengthened conditions for good governance. Development of e-government is therefore not a technical issue but a political one.

This Plan of Action aims at providing guidelines and a platform to government institutions, non-governmental actors and international organizations, to support building the required capacity of the public service to become more efficient and effective.

Through e-government for development it is hoped that the world will be in a better position to meet the millennium development goals (MDGs) [2],

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[2] The seven Millennium Development Goals agreed upon by the international community are:
- ▪ Reduce the proportion of people living in extreme poverty by half between 1990 and 2015.
- ▪ Enroll all children in primary school by 2015
- ▪ Make progress toward gender equality and empowering women by eliminating gender disparities in primary and secondary education by 2015
- ▪ Reduce infant and child mortality rates by two-thirds between 1990 and 2015
- ▪ Reduce maternal mortality ratios by three-quarters between 1990 and 2015

enabling governments and other development actors to use it as a means to enhance governance, address poverty and foster democracy and development.

The Plan of Action on E-Government for Development is the result of an extensive consultative and participatory process, involving representatives of developing countries, the private sector, non-governmental organizations, academic institutions and international organizations.

In this document, e-government for development is viewed as a complex process, articulated over time, embracing the overall system in which governments operate and interact with individuals, organizations and communities to perform their functions, achieving public ends by digital means.

In the following chapters some necessary steps for governments wishing to engage in e-government for development are identified. Chapter 1 deals with the pre-implementation phase, where governments need to assess the environmental conditions, define their e-government vision and strategic goals and set priorities. Chapter 2 outlines the importance of ensuring an enabling environment for e-government implementation. Chapter 3 looks at the stakeholders and role players. Monitoring and evaluation is discussed in Chapter 4 as a necessary element for reviewing e-government progress and impact. The final chapter discusses how the international community can support e-government for development efforts from a global perspective.

- Provide access for all who need reproductive health services by 2015
- Implement national strategies for sustainable development by 2005 so as to reverse the loss of environmental resources by 2015

In all these areas ICTs can greatly contribute to the realization of these goals, either directly (information and learning) or indirectly.

1. Meeting the Challenge: the pre-implementation phase

Solutions to development often require changes in government processes. Internally derived objectives for change generally tend to focus on economic benefits and on the improvement of effectiveness and efficiency in the provision of services. On the other hand, increased public demands calling for democratic participation, accountability, transparency and quality and speed of service delivery can be an important driving force for change.

To establish an e-government system countries need to embark in a significant transformation process, particularly in those nations where aspects of good governance are yet to be strengthened. A genuine commitment of government leaders, the private sector and other institutions of the civil society is required to create leverages, benefit from synergies and sustain this transformation within the national development process. Experience has shown, in fact, that the introduction of e-government was either a consequence of sound public sector reforms directed towards the improvement of governance conditions or a catalyst for their introduction.

Institutional capacity development in areas such as policy development, public sector reform, legal and regulatory frameworks, strategic planning and change management, as well as coordination of inter-governmental relations will be required to harmonize the transformation process with the existing development objectives and facilitate the exchange of information between the different entities that compose the governance system. Furthermore, building a positive perception about the value of ICT within government and society at large should be regarded as a priority.

Countries should carefully plan their e-government strategic goals, implementation timeframes and resources, vis-à-vis obstacles and risks to be overcome, to ensure the success of this process. Particularly during the start-up phase, lessons learned by other countries that have been at the forefront of e-government should help avoid the costly trial and error approach.

The following initial steps have been identified to guide countries within the framework in which e-government is carried out:

- ♦ Formulation of an environmental analysis (E-government readiness)
- ♦ Elaboration of the long-term vision, including the expected contribution to development foreseen by e-government
- ♦ Formulation of the strategic goals being pursued
- ♦ Identification of the priorities and expected impact

1.1. E-Government readiness: understanding key factors

E-government requires a conducive environment to maximize its potential. Before defining an e-government for development strategy or plan of action, a thorough analysis is required of the existing environment in which e-government will be implemented. Government can pose to itself some key questions in order to assess how strategically prepared it is for e-government.

A country level of "e-readiness" is the degree to which each country is prepared to the introduction of e-government. By assessing the relative

advancement in the areas that are most critical for e-government adoption by different key factors, countries would be in a better position to evaluate opportunities and challenges, as well as their own strengths and weaknesses.

However, as uniformity across the border is impossible, the objective of the e-readiness analysis is to identify specific actions for improvements and potential niches for the initial start up of e-government programs, rather than a positive or negative answer to e-government as a whole.

The following areas and key factors should be carefully analyzed in order to examine the risks and assess the obstacles that may need to be overcome before entering into e-government.

Areas	**Key Factors**
Political conditions Good governance, as a condition for sustainable development, requires genuine commitment from political leaders, the private sector and organizations of civil society. In the same way, the introduction of e-government in society requires strong political will to see through the transformation process it implies to government both in its internal operations as well as with regards to its interaction with civil society.	• Awareness of political value of e-government • Commitment to e-government and good governance • Leadership skills • National identity and perception of government • Legislative framework • Citizens' and civil society's participation in government's affairs • Good governance and rule of law
Regulatory framework A proper regulatory framework is needed in order to enable secure information exchanges within government and between government, citizens and businesses. It is also needed to create the economic conditions for accessible ICT infrastructures, services, and equipment	• Security standards • Privacy legislation • Legal validity of transactions on line • Degree of liberalization of telecommunication market, including the internet service providers market • Positive fiscal environment for acquisition of IT equipment
Organizational conditions International experience shows that the introduction of e-government calls for and causes profound and evolutionary change of the institutional arrangements. To guide this transformation process, appropriate management and coordination mechanisms are needed.	• Administrative structures and legacies • Public administration reforms • Civil service reform • Central coordination and support unit • Policy coordination • Inter governmental relations • Change agents and management

Cultural and human resources conditions

Positive attitudes, knowledge and skills need to be in place – especially within the public sector – to initiate, implement and sustain e-government.

Cultural aspects may cause general resistance to change and information-sharing. Inadequate human resource capacity may lead to lack of customer-orientation and overall commitment.

- Culture, traditions and languages
- Gender inequality
- Educational levels
- IT literacy and number of on-line users
- IT educational facilities and programs
- Culture of information and knowledge sharing
- Prevailing organizational culture
- Attitude and adaptability to change, especially in public administration
- Managerial skills in the public sector
- Service orientation of public administration towards citizens

Financial conditions

The initial costs related to implementing e-government can be considerable and Governments may have limited capacity to bridge the period between initial investments and returns.

Proper resource planning and access to innovative financing mechanisms is critical for e-government sustainability.

- Resource allocation process
- National income structure
- Access to alternative financing mechanisms
- Partnerships with private sector and other role players
- Access to capital markets
- Mechanisms for venture investment
- Available financial resources

Communication environment

In today's world, communicating with citizens is a duty and a necessity for governments.

E-government needs to be accepted and understood by all stakeholders to ensure that its benefits flow to the society as a whole.

- Citizen's awareness and understanding of ICT and e-government
- Communication culture and channels
- Information and knowledge sharing

Technological Infrastructure

Lack of technologies is a major bottleneck for countries aiming to implement and maintain e-government. Legacy systems may also represent considerable obstacles to change.

The demographic and geographic conditions of different areas, accompanied by the distribution of economic activities, may also represent a strong bias in the rollout of ICT infrastructure if left to the market alone.

- (Tele) communications infrastructure
- Penetration rates of telecommunications
- Urban versus rural: demographic/ geographic bias
- Software and hardware (legacy systems)
- IT standards

Data and information systems

Management systems, records and work processes must be in place to provide the necessary data to support the move to e-government.

- Legacy of data processing, management information and decision support systems
- Available and accessible data and information
- Data collection procedures and data and information standardization
- Data and information quality and data security
- Capacity to analyze data and utilize information
- Capacity to direct information flows into decision-making processes
- Information policy

Countries should update the environmental analysis on a regular basis to reassess their readiness against technological progress and ongoing changes in the governance system. At different stages of e-government maturity, the relative importance of environmental areas and key factors may differ.

The stages of e-government maturity allude to:

a) *Full digital data availability*, when all government data processing operations in its multitude of institutions are done in digital form and data can move among different operating platforms

b) *E-publishing*, when all these institutions are posting their relevant information on-line, in an organized and easily accessible way to other government agencies, businesses and citizens

c) *E-interaction*, when all relevant interactions, including participation in policy analysis and formulation, can take place on-line between

government agencies, as well as between government and business and government and citizens

d) *E-transaction*, when all relevant transactions between government agencies and between these agencies and the private sector businesses and citizens can take place on-line.

e) *Transformed government*, when government has gone through the full transformation process, providing fully integrated services requiring broad organizational change, aligning its organizational set-up with the new capacities it has acquired as 'digital state'.

The different stages of e-government maturity are closely linked to the successive phases of ICT implementation at the institutional level. Over time, individual government agencies are expected to go through similar phases.

The speed by which a country will be able to move from one stage of e-government maturity to the other is highly dependent on political leadership and the human and financial resources it can rely on, as well as on the capacity of different institutions to move through their successive phases.

The above does not imply that a country can only move from one phase to the other if all government institutions have met the criteria for that particular phase. On the contrary, to a certain extent, asymmetry will almost by definition occur. Especially in the first phases, individual agencies can move relatively independently although cooperation with an increasing number of other institutions will be required to move into more advanced phases of the e-government process.

1.2. Vision

A clear, strategic vision of what government aims to achieve through e-government has to be generated to guide the transformation process. This may encompass a system-wide perspective, for example at the central government level, or be limited to a specific sector of government administration. This vision has to take into account the national and local development needs and opportunities, as well as the conditions facing the government system or specific sectors.

The vision of e-government for development needs to be aligned with national development strategies and plans, in particular with the national ICT strategy and governance reform goals. As different political contexts and development needs have to be brought together in one vision, leadership should recognize that a consultative process with all stakeholders is necessary to form consensus.

The vision is a medium to long-term statement concerning broad goals, which provides a road map and general guidance for institutional change, allowing systematic issues to be better understood and more coherently addressed. It provides a framework within which the actions and interests of different stakeholders can be brought together to ensure a common orientation that makes increments of action by various stakeholders consistent and compatible with the desired long-term goal of democracy, good governance and sustainable development.

1.3. Strategic Goals

Sound strategic goals must be identified to set the path for e-government and openly expressed to raise public awareness and create new forms of partnerships.

The strategic goals will have to derive from the vision, be context-sensitive and refer to the desired outcomes being pursued through the establishment of e-government.

Strategic goals may include the achievement of:

♦ Government as a catalytic force of social and economic development, empowering its institutions through the use of ICT to work together with civil society to meet the needs expressed by its constituency.

♦ Accountable, efficient and effective processes for performing government administration, reducing transaction costs and enhancing policy coordination between the different government entities.

♦ Effective delivery of public services through efficient administrative and financial systems, ensuring quality, accessibility, affordability and sustainability.

♦ Increased capacity of Government to engage in participatory and consultative decision-making processes, by simplifying and increasing the interaction and transaction between citizens, the private sector and government through the provision of on-line services and channels of participation.

1.4. Priorities

Countries should define e-government priorities within the framework of their national policy goals, e-government vision and strategic objectives by evaluating the way different applications draw on scarce available resources and add different value to and impact on the governance process.

E-government tends to be multidimensional, impacting above all on economic, social and governance dimensions. The prioritization process should focus on these impacts from a people-centered and development-oriented perspective. From the start a participatory approach should therefore be stimulated and guidance provided to ensure that different stakeholders and institutions start discussing the different available options.

Experience has also shown that e-government cannot be introduced through a single major initiative but rather through small, achievable components, which can build success and credibility. Achieving the future as envisaged by the policy-makers necessitates of an incremental and modular basis implementation, a building block approach that allows for greater control and flexibility of the process, particularly during the initial phase. The focus could therefore be placed on priorities that could create an enabling environment for successive stages of e-government maturity. For instance, the ability to facilitate communication and coordination of activities among major partner institutions could be one of the main deliverables that is sought after. This kind of priority may involve initially very little technology since the focus would be more on reaching agreement on standardization of key data sets which could enable linking the information bases of individual partners.

Among the most important criteria to determine their set of priorities, countries should include sustainability, the rate of return in terms of social and economic benefits, and the potential spin-offs that e-government applications can generate. In fact, understanding the 'market' in which institutions operate, the social and economic impact and the potential spin-offs is of critical importance in determining how the required inputs could be met by and for the individual institutions.

Overall, however, the impact of e-government on the economic, social and governance spheres is still considered the main determining factor in the prioritization process and in establishing the level of support that governments will provide to it.

Economic impact	- Alternative, more cost-effective delivery of services - Consolidation of common internal services - Redeployment and rebalancing of the civil service - Reduction of transaction expenditures - Promotion of internal and foreign investments - Increased international trade - Increased economic cooperation - Better financial management in place - Business planning processes in place for all major operations - Integrated development planning capacity linked to financial resource allocation processes - Increased capacity to manage natural resources in a sustainable manner - Improved revenue collection on taxes and service levies - Increase in employment - Economic growth

Social impact	- Increased Gender equality - IT literacy and reduction of the internal digital divide - Increased access to and quality of education - Improved education management capacity - Better delivery of and access to health services - Improved health management capacity - Improved social security - Improved social welfare - Integration and coordination of social and economic policy - Improved public safety and security - Increased capacity for rational distribution of public funds (geographically and among population groups) - Move to development-oriented and people-centered service delivery culture - Improved quality of the environment - Improved environmental management capacity - Poverty reduction
Governance impact	- Greater accountability and transparency in public administration - Better coordination and cooperation between government agencies - Better coordination and cooperation between the different levels of government - Alliances and partnerships with private sector and non-governmental organizations - Improved communications and public relations - Increased awareness of rights of civil society and obligations of government - Greater public participation in governments' affairs - Streamlined government structure and business processes - Decentralization and redefined role of local government - Enabling legal infrastructure - Enabling policy and regulatory frameworks - Promotion, protection and compliance of human rights - Promotion of regional integration of countries - Enhanced capacity to coordinate and cooperate at international level

As e-government applications can differ in the way they impact on and provide benefits to the society at large, governments should review the alternatives at their disposal to optimize the use of their resources according to the country's priorities.

Various criteria can be applied for the selection of a particular application or group of applications. The next table, for example, outlines the possible impact of some e-government applications – classified into applications that affect the interaction and transaction between government agencies (G2G), government and business (G2B), and government and citizens (G2C) – onto three main dimensions of policy objectives: the economic dimension, the social dimension and the governance dimension.

On the economic side, these range from reduced transaction costs, to better capacity to target services, increased coverage and quality of service delivery, enhanced response capacity to address issues of poverty, and increase in revenue.

Other benefits, less often considered in selecting applications, include the intended economic spin-offs that e-government may bring to the business sector, which can become more competitive in the national and international environment. Lower transaction costs and simplified procedures will translate in comparative advantages by the private sector. In the same way, increased interaction or transactionability with government can help create new businesses.

Furthermore, economic benefits may also derive from increased accountability and transparency, which may greatly reduce the risk of corruption and raise the perception of good government among citizens. Citizen's trust in their government may impact on their willingness to invest, and to pay taxes and levies for services.

Social benefits are considerable and range from employment creation in the third sector, to improvements in the education and health system, from better targeting of government's services, to increased capacity to provide safety and security. In the majority of cases these benefits can be evaluated in political terms and quantified in financial terms.

Table 1

Economic, social and governance impact/benefits of possible e-government applications

Interaction Processes	Economic impact/benefits	Social impact/benefits	Governance impact/benefits
Government to Government: G2G	*Efficiency in government administration*	*Effectiveness in service delivery*	*Transparency, accountability*
▪ Computerizing core businesses of government	▪ Reduction of transaction costs ▪ Counter Corruption	▪ Employment opportunities ▪ Speedier processing	▪ Accountability ▪ Counter corruption
▪ Integrated billing systems	▪ Reduction in transaction costs	▪ Ease of single payments	▪ Transparency
▪ Land registration	▪ Income through property tax	▪ Official valuation raises capacity to access the capital market	▪ Rule of (property) law ▪ Transparency in applying tax
▪ Integrated Planning	▪ Coordination in spatial planning, reduction in operating costs	▪ Less disruption through coordinated planning	▪ Increased capacity to inform the public
▪ Information and Knowledge Management	▪ Increased capacity lowering operating costs	▪ Increased sharing of ideas and plans within and between organizations	▪ Decision-making processes become more inclusive
▪ Learning Networks	▪ Increased capacity lowering operating costs	▪ Employee benefit and in some cases family members as well	
▪ E –Procurement in Government	▪ Lower transaction costs	▪ Increased use of existing capacity within government ▪ Competition with private sector service providers	▪ Transparency, accountability, competitiveness in cross agency service delivery
▪ Decentralized data processing with integrated access to virtual data warehouse	▪ Reuse of data can lead to major cost savings ▪ Costs of digital data capturing is low	▪ Ease of access to data, eliminates redundancies, speeds up operations ▪ Electronic record keeping is less demanding on the environment	▪ Security, privacy ▪ Transparency

Interaction Processes	Economic impact/benefits	Social impact/benefits	Governance impact/benefits
Government to Business: G2B	*Economic stimuli through savings / income generation*	*Effectiveness in service delivery and Employee Benefits*	*Transparency, accountability, Rule of Law, participation*
▪ Customs declaration	▪ Lower transaction costs ▪ Timely declarations	▪ Ease of declaration, coupled with on-line help, lowers threshold for small & medium sized firms	▪ Accountability and transparency
▪ E-Procurement	▪ Savings and lower transaction costs	▪ Easier to participate in bidding for smaller firms	▪ Idem
▪ National Revenue on line	▪ Increased income through better coverage and timely payments ▪ Reduced costs for smaller businesses to comply with rules	▪ Easier to comply with tax rules for smaller businesses	▪ Transparent application of taxation
▪ Social contribution for employees	▪ Reduced transaction costs ▪ Timely payments received electronically ▪ Increased coverage	▪ Easier to comply with rules	▪ Transparent application with on-line support
▪ Information and Knowledge sharing facility of doing business in the country	▪ Increased investment attractiveness and potential upside in income	▪ Employment generation and economic diversification	▪ Transparency
▪ Access to socio-demographic and other government databases	▪ New business opportunities ▪ New service opportunities for government	▪ Greater use of information for planning and provision of services both public and private	• Transparency
▪ Land registration on-line	▪ Reduce transaction costs ▪ On-line service may generate income (i.e sale of maps) ▪ Reduced maintenance costs if project developers are requested to file their applications digitally	▪ Easier transfer of properties and lower transaction fees ▪ Greater standardization of geographic information, allowing more users to build their applications on this platform	▪ Greater transparency in valuation / taxation / history of land
▪ Vehicle registration	▪ Reduced transaction costs	▪ Ease of registration and fleet management, leading to reduced costs for firms	▪ Transparency
▪ Virtual job market	▪ New service with possible income stream	▪ Ease of posting jobs and search for candidates at substantially lower costs and reduced time frames	▪ Greater transparency in governmental job market ▪ Posting vacancies in public and private sector in searchable system, can imply higher exchange of personnel between both sectors

Interaction Processes	Economic impact/benefits	Social impact/benefits	Governance impact/benefits
Government to Citizens: G2C	*Income through increased transactions and savings on costs*	*Effectiveness, coverage and quality of services*	*Participation of citizens, Democracy, Transparency, Accountability*
▪ National Revenue on line	▪ Reduced transaction costs	▪ Ease of payment and of applying for tax refunds	▪ Transparency
▪ Land Registration	▪ Reduced transaction costs	▪ Easier to transfer property	▪ Rule of law, transparency
▪ Safety and Security	▪ Reduced transaction costs	▪ Increased capacity to maintain order and fight crime	▪ Rule of law
▪ Telemedicine	▪ Reduced costs in epidemiological controls / reference and counter reference / supply management	▪ Increased capacity to address health issues through epidemiological control /	▪ Human rights
▪ Employment opportunities	▪ Reduced advertisement cost and other communication costs ▪ Less time lost between announcing post and contract extension ▪ Reduced transaction costs in comparison of applications	▪ Easier access to information about job opportunities at Government ▪ Easier (standard) application	▪ Openness, higher degree of fairness
▪ Social Security contributions	▪ Reduced transaction costs	▪ Easier to receive benefits	▪ Transparency
▪ E-voting, polling and referenda	▪ Reduced costs in holding referenda and polling exercises	▪ Easier to participate in voting / polling and referenda irrespective of location	▪ Democracy, inclusiveness
▪ New shapes and forms of democracy (e-Ombudsman, e-town hall)	▪ Reduced costs in seeking public participation. ▪ Speedier process of public partic.	▪ Easier to be kept informed and participate in governance affairs	▪ Democracy, public participation, rule of law
▪ E- citizens	▪ Speedier collection and maintenance of information reducing transaction costs ▪ Better targeting of services possible ▪ New services could be provided (extension of smart cards)	▪ One-stop shop approach for applications and queries ▪ Ease of use of tailor made information services ▪ Re-use of data makes it easier to apply for services ▪ Affordability in accessing services	▪ Democracy, participation, ▪ privacy guarantees (?),secure transactions, ▪ regulatory frameworks for electronic authentication, record keeping, etc. ▪ leading to increased citizen's trust in e-government
▪ Virtual Job market	▪ New service that could generate new income	▪ Ease of finding job opportunities ▪ Potentially better matching and lower unemployment	▪ Participation of all stakeholders

2. From assessment to action: creating the enabling environment

On the basis of the e-readiness analysis, countries should be able to focus on the interventions needed to establish a basic platform on which e-government initiatives will develop and evolve.

Subsequent interventions will be needed to further strengthen the environment to facilitate e-government progress by limiting obstacles and constraints.

Some common elements that countries have to address with care can be referenced to the same areas identified for the e-readiness analysis.

2.1. Political conditions and leadership

The transformation process to e-government is quite complex and requires strong leadership. Research shows that political will, commitment to deliverables and accountability for results are among the issues that appear to have the greatest influence on e-government progress.

A relatively small group of 'e-champions' capable of providing political leadership, understanding the complexities involved in e-government and the organizational changes it implies, seems to be critical for sustainability and success.

Leaders must have the capacity to articulate an e-government vision, define policy goals and desired outcomes, or broadly defined deliverables, set priorities, and mobilize the administrative mechanisms and the necessary human and financial resources. As e-government strives towards an inclusive development, their vision should be people-centered and focus on sound governance for sustainable development. Last but not least they have to take charge of the implementation process and be accountable for its results.

Leaders should be able to measure e-government initiatives by the degree to which they contribute to good governance, empowering people, raising human capabilities and increasing people's access to life choices and opportunities.

Exposure of leadership to e-government practices and to the value that e-government has brought to the governance process can make the difference in the making of e-leaders. In order to drive the inevitable transformation processes of institutions and organizations, these leaders must be able to commit to society, overcoming legacies and resistance to change as e-government must be put in the context of broad government reforms that aim at increasing efficiency, effectiveness, transparency and accountability.

Indeed, the potential of the digital state cannot be realized unless the rigid structures of the contemporary bureaucratic state are pushed to change. A strong coordinating mechanism supported by committed leadership is needed at the centre of e-government to coordinate the process between different agencies and departments, as well as between different levels of government.

E-government leaders must be able to share values, build consensus, enhance strengths and capacities, preserve culture and traditions and maintain a close dialogue with all stakeholders to raise awareness and communicate the

progress made. On the other hand, e-government requires consistency and should not be held hostage to politics. What needs to be achieved by leaders is a compact among stakeholders representing different opinions and political views.

2.2. Regulatory framework

Regulatory reform is one of the critical issues that has often been overlooked. Yet, experience has shown that it is crucial for e-government success, both in terms of affordability and long-term sustainability. Regulatory reform is a "must do" to guide most e-government applications. In cases where these applications were developed outside the appropriate regulatory framework chances of their completion were greatly reduced.

E-government requires the establishment of a range of suitable legal and regulatory measures that are aimed at:

♦ Integrating and sharing data systems within and among administrations
♦ The use of this public information by third parties, especially the private sector, safeguarding privacy and security issues
♦ Enabling digital exchange of information and transactions between government agencies, citizens and businesses.
♦ Recognizing the digital exchange of information and allowing electronic transactions and record keeping
♦ Reaching citizens affordably and enabling citizens to reach government affordably by facilitating availability and access to information and communication services

Throughout the world concerns are raised about the safety of electronic information transfer and storage. Governments must ensure that e-government is preceded by changes in the legal system to protect information and privacy in the digital age. At the same time criminal codes need to be upgraded to incorporate cyber-crime, and the stealing of electronic data. Intellectual property rights legislation must be amended to include the protection of e-content ownership.

Countries should be ready to adapt their legislative framework to apply 'electronic equivalents' of traditional paper procedures, such as personal identification, signing and filing. Legislation should therefore identify types and standards for electronic signatures and electronic authentication and allow, but regulate, electronic record keeping.

In addition, the move towards more intra and inter-government information sharing, required by e-government, necessitates legislation that validates and regulates access to such information and to data matching.

Accessibility to government by citizens and to citizens by government can be facilitated by legal solutions that can affect the availability and accessibility of telecommunication services, such as liberalization of the telecommunication market, the establishment of independent regulators and pro-competitive regulation measures and introduction of fiscal benefits for investment in telecommunication infrastructure, as well as of hardware and software mainly through revision of domestic and import taxation on ICT related equipment, parts and software.

Other reforms may prove to be necessary to regulate the internal organization of government, with the objective to facilitate e-government adoption. In particular the process of simplification of administrative procedures can eliminate barriers that hinder its application.

2.3. Organizational conditions

According to their political, economic and administrative context, countries might adopt two alternative paths towards the implementation of e-government: a centralized approach – whereby a hierarchical, top-down mode of introducing e-government prevails – and a decentralized model – whereby only a coordination role is retained at the central level.

Whichever the approach adopted, it is clear that the key factor for launching and implementing successful initiatives is the design of appropriate management and organizational mechanisms.

In particular the need to establish a high-level central coordination and support unit for e-government that might assume the form of either an agency – that can be independent or nested in a ministry or in the Council of ministries - or of a dedicated ministry, has emerged as crucial.

Analysis of international best practices shows that the central coordination and support unit needs to:

- be strategically placed and empowered to provide guidance at the top, to coordinate the overall implementation of the e-government program, and to ensure that individual initiatives maintain cohesion among each other;

- involve all necessary stakeholders in the elaboration of the national e-government vision, strategic goals and the expected outcomes.

- provide strategic advice on possible public-private partnerships and ensure the involvement of relevant stakeholders –citizens, business and government agencies- in the design and implementation phase of specific e-government applications;

- review the e-readiness status on a regular basis, to propose government legislative and organizational reform as required by e-government and to propose other programs aimed at creating an enabling environment for e-government; together with this, it needs to ensure that e-government initiatives are coordinated with other policies and programs, including civil service reform, public administration reform and education programs;

- coordinate the advocacy and awareness campaigns;

- promote information and knowledge sharing among the different role players and disseminate best practices, both nationally and internationally;

- coordinate and monitor the use of seed funding, especially to co-finance new and innovative pilot initiatives; and

- monitor, evaluate and report on progress made in e-government.

These units will have to find the right balance between coherence and innovation. On the one hand, leadership may be tempted to have one coherent e-government initiative throughout government; on the other hand, it may not

want to stifle innovation, especially at the local government level where government is closest to the citizens and most e-government applications in the area of G2C and G2B will be launched.

The strong coordinating capacity that is needed at the center of government, may need to be coupled with the secondment or appointment of change agents in each of the relevant parts of government, acting as the agent of central administration to ensure that the message is diffused among the different parts of the administration.

2.4. Human resources

One of the main factors affecting the roll out of e-government in a country is the level of human capacity. The issue of human capacity is twofold: on the one hand it refers to the skills and capacities within the public administration needed to implement e-government projects; on the other it refers to the broader community – citizens that need to possess IT literacy to fully benefit from e-government applications; the business sector that has to incorporate IT to take advantage of the G2B applications; and specifically points to the need of a vibrant local IT business community with the skills necessary to partner in e-government.

E-government requires a range of skills that may not be present initially in government agencies. The areas of expertise that governments need to posses to go 'e' can be divided in the following blocks:

- ♦ IT systems development: Although the era of stand alone mainframes requiring specialized personnel capable of writing proprietary software has virtually ended and standardization in programming code and the use of object programming has sped up the development process of new software, which service can be supplied through specialized IT companies, Government does need in-house capacity to define what kind of systems and e-government applications it wants and can engage in.

- ♦ Program management: E-government initiatives tend to be complex as they do not only refer to a particular agency specific IT application to be developed, but include many different agencies and other role players. These e-government initiatives also refer to other interventions needed in the overall system for the applications to work. Managing the implementation of an e-government initiative, coordinating among different agencies and other stakeholders, focusing on deadlines and results while keeping a keen eye on process, requires program management skills that are generally not that abundant in government.

- ♦ Change management: E-government is accompanied by organizational reform and human resources will have to be reskilled and redeployed internally or elsewhere. In this context, resistance to change can be fierce. Change management skills are required to guide government institutions through this process of organizational restructuring.

- ♦ ICT procuring and outsourcing management: Government needs to be an 'intelligent buyer' of ICT infrastructures and services, capable of specifying its needs, managing the procurement process, managing vendors (vendor-driven acquisition are frequent in this field), and

capable of defining the parameters under which public-private partnerships could be engaged in.

♦ IT service maintenance and operation: E-government introduces the need for services that are available on line 24 hours a day, throughout the year. This is a departure from traditional service delivery times and organization. New skills are needed in order to ensure continuity and quality of service.

♦ Customer relations management: E-government offers the ability to bring government closer to its citizens and can offer a personalized approach in the delivery of government services. This requires customer relation management skills.

To face these challenges, the public sector needs to review its recruiting and training and re-training standards. Amongst the practices that have proven successful are the provision of preferential salary schemes to attract and retain IT skilled staff, the revision of bureaucratic recruiting procedures and their modernization towards new standards, such as on-line recruitment, the introduction of staff-exchange and secondment programs with foreign countries and the private sector, training and re-training through innovative tools such as e-learning.

As for community education, e-government programs must be tailored to the broader national educational programs aimed at creating cohorts of e-students that will become e-citizens, e-workers and e-entrepreneurs. This highlights the need, discussed earlier to nest e-government programs into the context of a broader ICT strategy, that needs to address the issue of enhancing IT literacy and preparing IT professionals through the educational system, or through the provision of incentives to professionals to become IT skilled.

Building capacity of the national IT related workforce pays off, especially in the case of e-government for development, which requires tailoring comprehensive solutions to the specifics of a country for which it would be difficult and very expensive to import the necessary expertise. To do the latter could also be conflictive in countries with high levels of unemployment.

However, for the purpose of building up that national IT workforce countries may need to acquire international expertise to transfer skills and knowledge. Some countries have been able to do so through offering competitive packages to highly skilled nationals working abroad to return home and to help build up a national IT industry or manage e-government programs.

Attention should be given to the fact that the IT workforce needs to be balanced. To train only programmers but no system designers, IT project managers, IT business analysts, leaves a country vulnerable still.

2.5. Financial resources

Financial capacity to fund e-government initiatives will determine, to a large extent, the type of projects that government will be engaged in and the speed at which these will be implemented. Although e-government does not cost that much, at least not if compared with road construction or cross cutting issues like health, the financial requirements for e-government may still be substantial.

Even though the political, social and economic benefits of e-government may be clearly understood and political commitment and policies may be in place, some countries may not have the available resources to invest in e-government on a large scale at the expense of other areas. As possible returns on investment may take some time to come, governments may simply lack the financial capacity to start e-government, despite of the potential benefits this would bring.

In these developing countries the private sector is likely to be relatively small and options to engage in public-private partnerships may not be a reasonable alternative. Also, formal local capital markets tend to be poorly developed or non-existent. Moreover, access by government institutions to either these capital markets or credit markets for bridge financing may be extremely difficult to obtain.

Due to the cross-cutting nature of e-government, pooling of resources needs to occur. The value of joint programming is still being underestimated, as individual institutions tend to focus on their own budget rather than looking at the possibility of merging funds from different agencies to have a common product, i.e. a GIS platform or integrated management information service.

The availability of resources is therefore linked to process issues, which is how different actors relate to each other in terms of planning an action. Nevertheless, a major bottleneck could be represented by the different criteria under which government agencies operate.

In order to promote e-government and the accompanying reform among government institutions, the element of reward may have to be looked at in closer detail. Some kind of reward system for management and employees could be thought to stimulate the drive for e-government and ultimately the amount of resources that the institution is willing to pledge to that effort. Similarly, instead of experiencing budget cuts as a result of increased efficiency, institutions should be allowed to retain part of the gains to increase its e-government capacity in other areas.

In many cases, however, a volunteer approach to cooperation will not be enough and the central authority may have to force institutions to start cooperating. In some countries efforts have been made to prepare e-government budgets across agencies with the Ministry of Finance playing the coordinating role for e-government. The resistance to this can be fierce, but the rationale is simple: as e-government cuts across agencies, it should pool resources for the different agencies involved in the process.

When considering the availability of resources, those beyond budgetary resources should be looked at. For some projects governments could partner with the private sector under different modalities, especially when it comes to infrastructure development and maintenance.

Furthermore, when political commitment and sound policies for e-government and good governance are carried out, and domestic resources are pledged to express this commitment, applications from developing countries for external financial and technical assistance will be seriously considered by the international community, as recently expressed in the Monterrey Consensus on Financing for Development.

2.6. Communication

An enabled environment for e-government is one where the key stakeholders have accepted and understood the value that e-government can bring to society as an instrument to strengthen good governance, and overcome the notion that e-government is a luxury tool.

A communication strategy needs to be put in motion to create interest and expectation towards the advantages held by e-government, addressing the interests of politicians, managers, employees, business and citizens. They need to be made aware and become appreciative of the change process that Government and other stakeholders will be engaged in towards creating the desired information based society.

Integrating the message of government reform into the message on the value of e-government may help beneficiaries realize that they have a stake in regulatory reform as well and create the political support for that.

Part of the strategy should be focused on demystifying the technological jargon and complexities involved in the transformation process, spreading a friendly image and constructing a "common culture", where the purpose, advantages, new vocabulary and definitions are understood by all.

The strategy should be an essential part of the long-term e-government plan of action, especially when e-government moves onto the stage of increased interaction between Government and citizens. However, appropriate mechanisms need to be developed to foster citizen participation at the early stage of the decision-making process.

In general, e-citizen participation does not come about by itself and may require special civic e-literacy and awareness campaigns. Even in areas where ICT infrastructure is nearly ubiquitous, there are still marginalized groups who are unable to make use of them because they are not 'e-literate' or 'e-aware'. Issues of class, language, gender, age, location and other concerns tend to lead groups of people being disenfranchised if not properly addressed.

A mix of popular and familiar old and new media channels such as television, radio, newspapers, billboards, etc. could be used for communication campaigns. As with regards to the press, special attention should be given to the e-government awareness of journalists and to the need to keep them updated on national and international advances in information and communication technology and on their application in e-government.

The different stages of the e-government transformation process demand increasing levels of trust from individual government agencies, employees, trade unions, citizens and businesses in interacting with government.

Governments will have to gain that trust by providing transparent interaction services and providing safe, private and secure transaction services with clear benefits to the user. It will also need to focus its communication campaign on building that trust among all stakeholders.

Advocacy for e-government and development through national conferences, workshops and seminars and international conferences[3] can be helpful to raise political awareness and support for e-government for development.

2.7. Technological conditions

The technological requirements and relative backlogs in some countries may prove to be a difficult obstacle to overcome. The fixed line telecommunications infrastructure is not well extended in many countries and although mobile telephony has made impressive inroads, their coverage and pricing still excludes many people from accessing modern communications infrastructure.

Promising new developments are underway, which may increase accessibility and provide for less demanding interfaces for people to connect. Countries may be able to leap frog and start taking advantage of these new technologies at affordable costs.

Many developing countries depend almost exclusively on the importation of relatively expensive technological inputs. Both the national ICT policy and the plan of action on e-government should address these issues.

Technical assistance may be required to provide countries with access to international best practices on addressing the technological constraints, as well as to support the preparation of a national ICT policy and strategic advisory services on alternative ways of attracting private sector support in resolving problems relating to ICT infrastructure.

2.8. Data requirements

There are several aspects related to data or information requirements and they relate to the different phases of the e-government transformation process.

In the first phase, internal automation of systems has proven to be a difficult task requiring substantial transformation. Over time, standards have evolved with regard to data collection, coding and processing within countries and government sectors. At present, in most countries, processing of quantitative data already occurs using computer technology. However, data collected may still be used for the purpose of a single sector or entity. Reporting to other entities in the system only occurs on an aggregated basis. This practice led inevitably to duplication and redundancy in the government system.

Data standardization then becomes a huge issue, as it points to the main source of reduction of transaction costs, that is re-use of information across the system. E-government provides the opportunity to government agencies to have their individual systems talk to each other. The importance is not on the internal standard of the individual authority, but on an agreed

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[3] Such as the International Conference on E-government for Development (www.palermoconference 2002.org) hosted by the Italian government in co-operation with the United Nations in Palermo in April 2002 or the World Bank and Development Gateway conference 'E-government for Development: Achievements and prospects' organized in June 2001 (http://www1.worldbank.org/publicsector/egov/June01conference.htm).

standard across agencies and mandatory posting of agency owned data that can be used by others. This means that they will have to work on a common language to share data. At first, this may simply involve reaching agreement on some key identifiers, like geographic location or personal or institutional identifiers. As the e-government system evolves, more and more information could be shared. The ideal is to be able to depend on as little repetition as possible in the data capturing and maintenance process and re-use the same data as often as possible among different agencies and other users, guaranteeing security and safety issues. This can also enhance the capacity of the private sector in many outsourcing activities to manage services for citizens and companies as well as government agencies.

In this light, standards regarding data collection, coding and processing will have to be reviewed together with the roles and responsibilities of the individual institutions. This is not an easy task, just the issue of identical geographic coding can already pose major challenges, when, over time, different agencies have defined their administrative regions differently on the basis of different geographic, economic or social criteria.

E-government is not just about linking different agencies on a network, it is about transforming existing systems in order to benefit from the networked application. Coordinating this virtual organization composed of networked agencies requires trust among these agencies and demands strong leadership.

Other aspects related to data requirements refer more to the content provision of government information and become highly relevant in the publishing, interaction and transaction phases. This also refers to standards on security, safety and standards on identification or authentication (when issuing smart cards for example).

It is not easy to issue new standards when many organizations already have their own and may feel that after long debate no single agency is completely satisfied with the final result.

These aspects, data standardization, institutional coordination and merging of databases, information provision and the types of interaction and transaction that can take place, tend to be all highly contested by the same public administration, as it may redefine the role of institutions and affects the lives and positions of employees. Again, leadership is critical to push these issues through.

Lessons learned by other institutions on setting data standards and coordination mechanisms for increased interaction will prove to be very useful for future e-government initiatives.

3. Involvement of key stakeholders and identification of role players

An analysis needs to be made of all stakeholders involved in the implementation of a project and those that the project aims to serve. The value that each stakeholder can bring and the requirements a particular stakeholder may have need to be spelled out.

Although the number of stakeholders involved in projects falling within the first phase of e-government tends to be relatively small, as the tasks become more complex and transformation starts requiring organizational realignments and restructuring, this number may increase manifold. This is particularly relevant when projects start cutting across many agencies and involve citizens, private sector, and non-governmental organizations.

The major issue does not revolve around the technical complexity, but around the institutional complexities and political decision-making processes. To ensure proper coordination among the different role players, the institutional framework has to be clearly identified from the start. Roles and responsibilities have to be understood.

The coordination mechanisms through which the different role players and other stakeholders can be kept informed have to be clearly defined. A typical e-government project would include a task force, composed of representatives of different government agencies, civil society and the private sector. This task force would carry the overall responsibility for the inclusion of the different views in society in the project.

The e-government vision and policy goals, coupled with the expected impact, their intended broad timeframes and benchmarks should provide the parameters for all role players to adhere to. The expected impacts should be sufficiently detailed to indicate how the final structure should look like. Discussion should be stimulated and guidance provided to ensure that different stakeholder groupings and institutions start discussing different options that respond to these goals and outcomes.

The identification of the principal stakeholders involved in e-government and the accompanying transformation process of the government system is fundamental to understand their interaction, roles, responsibilities and capacity. Each of them may contribute in different ways to support, or hinder, the process and influence its final outcome.

For the purpose of this document, a stakeholder is any individual or entity that is involved directly or indirectly in the transformation process, including the ultimate beneficiaries. The identification of these entities and their broad roles, within the context of e-government, could be carried out on the basis of the following questions:

- Who makes and influences policies and decisions?
- Who supports and delivers e-government capacity?
- Who provides financial and technical resources?
- Who are the direct and indirect beneficiaries?
- Who are their representatives?
- Who needs special attention?

♦ Who is responsible for the implementation of e-government initiatives?

The following is a sample of stakeholders and role players for e-government purposes:

♦ **Parliament: –** responsible for providing an enabling policy and legislative framework for e-government for development.

♦ **Office of the Presidency and/or Cabinet Cluster on E-government:** - responsible for e-government policy, strategy, planning, coordination and implementation and for providing a framework for intergovernmental co-ordination.

♦ **Government Agencies: National Departments - Provincial Governments – Local Governments – Independent Government Agencies:** responsible for developing and promoting policy and legislation pertaining to ICT and e-government for development; responsible for ensuring integration of government databases and information systems and connectivity among government agencies and between levels of government, as well as accessibility to relevant information to the public and private sector. Among others, national departments also have a major role to play in ensuring IT literacy, universal access, ensuring adequate linking of national resource allocation to development needs. They also represent the central government's ability to commit funding to the e-government process.

♦ **Special public-private sector support units and agencies: -** to assist governmental agencies with access to funding and support in identification, formulation and management of public private partnerships.

♦ **Political parties:** – need to be supportive of e-government process and transmit this to their electorate.

♦ **Unions:** - as representatives of organized labor interests need to be supportive of the e-government for development process.

♦ **Traditional Leaders:** – may have a key role to play in the e-government transformation process as leaders in their communities and of their ethnic groups.

♦ **Non-governmental organizations and Community based organizations, including local government associations:** - as a voice for local community needs and as service providers to communities in a wide range of areas. They might also become providers of potentially new service delivery mechanisms.

♦ **Communities:** – (geographically) as participants in the process in determining priorities at the local level and actively participating entity in the implementation of community development plans. They are ultimate beneficiaries of e-government transformation process.

♦ **Citizens:** - as participants and voters, who express, via different stakeholder associations, their views before, during and after the policy development process; as consumers and end-users who expect value-for-money, available and affordable services and courteous and responsive service.

♦ **Private sector:** - as a beneficiary of increased efficiency, effectiveness, transparency and accountability of government and increased possibilities to interact and conduct transactions with government. It can also be lending to or partnering in investment vehicles for e-government initiatives; it can act as possible intermediary for digital transactions between businesses and government and citizens and government; it can enable access to formal capital markets and venture capital; it constitute an interested party to offer their information and communication technologies and consultancy services; it can also be a partner in development interested to strengthen capacity for e-government following principles of corporate social responsibility.

♦ **Research Institutions:** - can provide support to e-government by participating in policy analysis, curricula development, by providing forums for discussion and technical support services and conduct research, e.g. research on possible e-government applications, technological issues, data requirements, regulatory reform, and how e-government can support sustainable development and economic growth.

♦ **International agencies:** – can play a facilitating role, raising awareness and advocating for e-government, stimulating international debate and exchange of best practices and bringing different partners in development together around the issue of e-government. They can also play a facilitating role for pooling of financial resources, both internationally as well as within countries and provide technical assistance, and coordinate and implement national and international initiatives relevant to e-government.

♦ **Bilateral agencies:** - may provide funds and technical assistance for e-government for development initiatives in line with their strategies and priorities generally discussed with recipient governments.

♦ **Regional Association of States:** - provide fora to consider issues of regional integration and promote exchange of information and cooperation between governments in the region.

4. Monitoring, evaluation and reporting

Monitoring, evaluation and reporting mechanisms have to be implemented at various levels when introducing e-government. They refer to both the performance of the individual entities involved in the government system and affected by the plan and the performance of the individual projects.

At the level of the overall implementation plan, monitoring will focus on tracking the amount of resources committed and provided for the implementation of e-government. Evaluation will measure the impact the implementation of the plan has had against the outcomes and key indicators of progress set forth.

At the project level, monitoring will look at the linkage between inputs used for implementation of activities and the direct deliverables produced. Evaluation would relate these deliverables to the actual impact on the performance of the government institutions where the project was implemented. Monitoring implies the elaboration of a systematic approach to enable quick reviews of the project's performance

Performance indicators can be defined and benchmarks set on the basis of the expected outcomes. A mix of these indicators, taken together, can measure the performance of e-government and its impact on the lives of citizens. However, one limitation is that government progress or regress can not be directly related to the e-government plan of action through the above indicators before discounting the external factors that may have affected their performance, i.e. economic shocks, disruption in the public service, conflicts, etc. Nevertheless, they remain fundamental tools to identify priorities, monitor progress and assess the trends, in the medium and long term.

To measure the impact of e-government initiatives two sets of quantitative and qualitative performance indicators may be identified.

The first set is related to the overall classification of government institutions and it measures the success in transforming the institutions in the

medium term by simply looking at the number of them that have migrated from one phase to the other. This might look like the following:

TIME	MAIN INDICATORS	CLASSIFICATION CRITERIA
After 12 months	Number of government departments that started with digitizing their basic data. Number of local governments that have started with Phase 1	Institutions that still need basic assistance across the board but have infrastructures, personnel and systems for digitization in place
After 3 years	Number of institutions that have entered Phase 2 putting their information on-line. Number of institutions that provide interactive websites to the public and internally to their employees and other institutions (Phase 3). Number that has started with transaction services (Phase 4) Number of local governments that started with Phase 2 and number of those that started with Phases 3 and 4. Outline of government portal visible and a limited number of institutions participating in the same	Limited number of departments and local governments that still need short to medium term support in putting information on-line and providing interactive or transactional services.
After 5 years	Number of institutions that conform the government portal	No further support required, institutions are largely able to continue their advance through cooperation and peer support

The second set is more qualitative in nature, although most performance indicators can be measured. These performance indicators directly relate to the broad outcomes as presented in section 1.4

Economic Dimension

Outcomes	Performance Indicators
Alternative, more cost-effective delivery of services	• % Reduction in transaction and overall operating costs • % Of transactions performed on-line
Consolidation of common internal services	• Organizational streamlining • Clear lines of accountability • % Reduction in operating costs • Reduction in number of staff directly involved in provision of internal services
Redeployment and rebalancing of the civil service	• Number of personnel retrained • Increased number of staff with new required skills • Number of personnel retrenched • Ratio of professional staff vs. general service staff
Reduction of transaction expenditures	• % Reduction in transaction costs • % Of transactions over the Internet
Performance measurement and program evaluation	• Performance indicators established • Number of organizations that introduced IT based performance management systems • Monitoring, evaluation and reporting mechanisms established using IT • Number of organizations that report back on progress achieved using IT
Better financial management in place	• Number of organizations with integrated financial and administrative IT systems in place • Increased capacity of financial planning • Better control over expenditures • Expenditure and income reports and other relevant information available on-line • Better financial controls in place • Better treasury management capacity • Better cash flow management • Better systems of auditing
Business planning processes in place for all major operations	• Systems in place for acquiring information and knowledge for business planning • Systems in place for economic forecasting • Number of institutions using project management systems
Integrated development planning linked to financial resource allocation processes	• Systems in place for acquiring information and knowledge for local development planning • Community development planning systems in place • Local and provincial development planning systems in place tied to the communities and central government • Resource allocation system linked to integrated development planning system
Increased capacity to manage natural resources in a sustainable manner	• Geographic Information systems in place • Better information systems on natural resources (land, water, minerals, forests, etc.) • Better resource management systems
Improved revenue collection on taxes and service levies	• On-line taxation systems in place • % increase in tax coverage • % increase in tax revenue • % increase in service levies
Promotion of internal and external investments	• Business registration system in place • % increase in foreign direct investment • % increase in internal investment • % increase in venture investment
Increased international trade and economic cooperation	• Information systems in place on trade • Customs information system (on-line) in place • % increase in import and export
Increase in employment	• % unemployed • % employed in ICT related industry • Online job market established • Number of on line vacancies filled
Economic growth	• % increase in economic activity • % increase in employment • % increase in new businesses

Social Dimension

Outcomes	Performance Indicators
Increased Gender equality	▪ Gender balance in access to Internet
IT literacy and reduction of the internal digital divide	▪ % IT literate people (sex/age/ethnicity specific) ▪ % IT literacy among disabled people ▪ % of households that can access the Internet
Increased access to and quality of education	▪ E-learning systems in place ▪ Teacher ICT education programs in place ▪ Number of schools with ICT education ▪ % of schools with access to the Internet
Improved education management capacity	▪ Education management information system is in place
Better delivery of and access to health services	▪ Tele medical service system in place ▪ Telemedicine service system
Improved health management capacity	▪ Reference and counter reference systems in place ▪ Epidemiological control systems in place ▪ Number of medical doctors connected online ▪ Integrated hospital information systems
Improved social security	▪ Social security systems in place to manage and deliver the services ▪ Better forecasting and financial planning capacity ▪ Increased effectiveness of financial management ▪ % Reduction in transaction costs
Improved social welfare	▪ Proper information systems in place linked to other governmental agencies to determine eligibility to social welfare ▪ % Increase of coverage of eligible households and individuals entitled to social welfare ▪ % Reduction in transaction costs ▪ % Of children covered by supplemental feeding programs
Integration and coordination of social and economic policy	▪ Executive information systems in place on economic and social situation ▪ Information system in place on legal and regulatory frameworks in the country ▪ Secure communication networks in place ▪ Enhanced capacity for research and policy analysis
Improved public safety and security	▪ National criminal record systems in place ▪ Number of police stations and service personnel that can access this system ▪ Emergency systems in place (911) ▪ Public safety management systems in place ▪ Prison management information system in place ▪ Access to international databases of criminal records ▪ Immigration control systems in place ▪ Regulatory frameworks in place to enforce e-protection of citizens
Increased capacity for rational distribution of public funds (geographically and among population groups)	▪ System in place for measuring relative income distributions and demographic composition of local governments to determine redistributive resource allocations from central government ▪ System of progressive taxation in place
Move to development-oriented and people-centered service delivery culture	▪ % Increase in customer satisfaction ▪ % Increase of people using on-line services ▪ Establishment of generic government portals for citizens and businesses ▪ Availability of personalized portals for citizens and businesses
Improved quality of the environment	▪ Better availability and accessibility of information on environment ▪ Improved waste management ▪ Improved recycling systems
Improved environmental management capacity	▪ Environmental management information systems in place ▪ Enhanced capacity using IT to maintain environmental indicators
Poverty reduction	▪ Improved human development indicators

Governance Dimension

Outcomes	Performance Indicators
Greater accountability and transparency in public administration	% of government business processes open to the public (tendering, procurement, recruitment, etc.) - On-line availability of governments' budgets and expenditure reports. - Accessibility on-line to government reports and documents, organizational structure, contact information, etc.
Better coordination and cooperation between government agencies	- Integrated government information and knowledge sharing network - Sharing of government data and information across agencies
Better coordination and cooperation between the different levels of government	- Integrated government information and knowledge sharing network - Sharing of government data and information across agencies
Alliances and partnerships with private sector and non-governmental organizations	- Accessibility to government information (data, statistics, documents) and ability to interact / transact with governments - Number of IT related public-private partnerships established % increase in private sector contributions to IT related partnerships with governments
Improved communications and public relations	- Availability of on-line interaction with public % of people interacting with government on-line - Timely response by government to queries - Improved perception of government by people and business community
Increased awareness of rights of civil society and obligations of government	- Accessibility to government legislation and regulatory information - Availability of on-line appealing and e-ombudsman - Awareness levels of principles of good governance among citizens
Greater public participation in governments' affairs	- Posting policy drafts on-line for public participation in policy development process - Availability of on-line intervention on government decision-making and policy development (participatory budgeting, participatory legislative processes, etc.)
Streamlined government structure and business processes	% of redesigned government businesses processes % of restructured government entities % of integrated government services available as part of the government portal
Decentralization and redefined role of local government	- Availability of and accessibility to government data and information for local governments - Increased capacity of local governments to manage government administrative processes and service delivery operations, through integrated IT systems - Increased monitoring and evaluation capacity by provincial and central governments on local governments' performance - Increase in number of government operations performed by local governments - Increase in the delivery of services % increase in human development indicators
Enabling legal infrastructure	- All legislation available on-line, with explanatory notes - Legislation in place to deal with e-documentation, e-record keeping, e-authentication, e-signature and e-transactions - Legislation in place concerning e-protection, privacy, and cyber crime
Enabling policy and regulatory frameworks	- Policies and regulations available on-line - Guidelines and regulations available on-line concerning governments' e-interference

Promotion, protection and compliance of human rights	▪ Increased awareness of people concerning their human rights through on-line access to relevant documentation ▪ Communication channel available for people and businesses to enquire and/or appeal on-line concerning their rights ▪ Improved human rights indicators
Promotion of regional integration of countries	▪ Improved communication infrastructure in the region ▪ Availability and accessibility to government information of the countries of the region ▪ Increased communication for policy coordination among countries ▪ Increased number of regional cooperation programs and projects ▪ Increased trade and movement of people and capital between the countries of the region
Enhanced capacity to coordinate and cooperate at international level	▪ Improved global communication infrastructure ▪ Availability and accessibility to international information and knowledge sharing facilities ▪ Increased communication for policy coordination among countries ▪ Increased volume of resources committed to international ICT related programmes and projects ▪ Increased international trade and movement of people and capital

5.   The international community response

In the aftermath of the International Conference on E-Government for Development (ICEGD), held in Palermo on 10 and 11 April 2002[4], there is a growing understanding among the international development community that e-government can foster good governance and promote the use of ICT in developing countries and countries with economies in transition. The benefits of using technology to increase efficiency, effectiveness and accountability in government operations, reduce corruption and enhance transparency, empowering peoples' participation, and raise human capabilities have been acknowledged by representatives of developing and developed countries, the private sector and the civil society at large. In the same way, it has been recognized that e-government applications can imply substantial savings and increased revenue streams for government agencies, as well as social benefits in terms of government's capacity to use and target its resources more effectively.

To complement national efforts, it is expected that additional resources will be pledged to provide technical and financial assistance to e-government initiatives aiming at strengthening good governance, democracy and sustainable development. However, e-government for development requires primary responsibility of each country for political commitment and sound policies geared to public sector reforms and government transformation to ensure full success and the necessary conditions for mobilizing domestic savings and external resources.

Moreover, due to the cross cutting nature of e-government, effective coordination and pooling of resources within countries and among donors and recipients is necessary to maximize official development assistance (ODA) effectiveness. In this regard, the use of development frameworks, such as poverty reduction strategy papers (PRSP) - developed in partnership with the World Bank and the International Monetary Fund - the United Nations Development Assistance Framework (UNDAF) - between the respective government and the UN system of agencies - could be useful to harmonize ICT and e-government initiatives in the development process.

At the ICEGD, the following interventions in support of e-government were recommended as possible action points for the international development community:

♦ Support advocacy through international and national conferences, workshops, seminars and meetings, involving leaders, high-level officials, practitioners and media representatives to raise awareness and national support on e-government for development and keep "e-champions" and leaders in charge of transformation informed and knowledgeable on the progress and advances of ICT and e-government worldwide.

♦ Promote the development of inclusive national action plans on e-government for development within the context of national plans and ICT policies, strategies and legislative frameworks.

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[4] The Conference was hosted by the Italian Government in collaboration with the United Nations Department of Economic and Social Affairs. The conference web site, provides the conference contents and conclusions www.palermoconference2002.org.

- Provide technical tools, assistance and know-how in the design of rational, sustainable, interoperable, data systems/architectures between administrations, needed to implant e-government applications.

- Provide technical assistance to design model policy and legislation to facilitate the introduction of e-government, and support the drafting process of new legislation to create an enabling legal and normative environment for the use of ICT by business, citizens and other institutions, with particular emphasis on government institutions.

- Facilitate the preparation of e-government toolkits and outlines to guide the different phases of e-government introduction and implementation, such as e-readiness studies, e-procurement, etc.

- Support capacity development and institutional building in all aspects related to e-government for development, including, among others, leadership, change management, public sector reforms, communication, IT literacy, technological skills and data standardization.

- Facilitate information and knowledge sharing on e-government for development through:

  - International and regional seminars and conferences bringing together representatives of governments and other stakeholders to exchange and discuss lessons learned and best practices,

  - Supporting an e-government for development portal, linked to other major networks related to ICT for development and public administration,

  - The establishment of a global index on e-readiness and e-government

  - Supporting publications on e-government for development, highlighting examples of successful introduction of ICT in government services.

- Promote competition events for developing countries and countries with economies in transition, such as international e-government awards, where outstanding best practices are recognised and prized at the global level.

- Support research about the links between policy and regulatory reform and e-government to analyze the impact on return on investments in the e-government context.

- Promote the participation of the private sector, both in developed and developing countries, in the developmental process and encourage innovative financing approaches to foster knowledge sharing and partnerships.

ANNEX: Members of the High Level Discussion for the Plan of Action on E-government for Development

The Government of Italy acknowledges the participation and contribution to a fruitful and constructive one-day workshop on the Plan of Action of:

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- Professor Claudio Ciborra, Professor in Information Systems, London School of Economics and ISIMM
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- Mr Alan Friedman, economist and international journalist
- Mr Ugo Guelfi, Advisor to the Italian Ministrer for Innovation and Technology, Responsible for the Italian Reference Model of Digital Government
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- Mr Mahmoud Khasawneh, Chief Information Officer, Head of E-Government, Jordan
- Mr Edwin Lau, Administrator, OECD-Public Management Service (PUMA).
- Mr Giandomenico Magliano, Director General for Development Cooperation, Ministry of Foreign Affairs, Italy
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- Hon. Antonio Palmieri, Member of the Italian Parliament
- Mr David Sawe, Director of Management Information Systems, Civil Service Department, President's Office, Tanzania
- Mr Andrew Weinschenk, Director for Information Policy, U.S. Department of State
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The High Level Discussion Group worked for a one-day session based on a discussion document that was sent to members ahead of the meeting. This Plan of Action reflects the inputs and expertise provided by the members of the Group. This text may not reflect all Members' views or those or their Institutions.