

Sultanate of Oman  
Information Technology Authority (ITA)



**OMAN DIGITAL SOCIETY REPORT**  
January 2007



*Information Technology Authority*

# **OMAN DIGITAL SOCIETY REPORT**

**INFORMATION TECHNOLOGY AUTHORITY**

**JANUARY 2007**

**[www. ita.gov.om](http://www.ita.gov.om)**



*“We always call for the development of human resources, their scientific capabilities, technical skills and technological expertise in order to meet society’s urgent requirements and needs, and to provide opportunities for those resources to fully contribute to the blessed renaissance witnessed by Oman in all walks of life.”*

*Sultan Qaboos bin Saïd  
Sultan of Oman – Royal Speech, November 2002*

## MESSAGE FROM THE CHAIRMAN



The vision for Oman's Economy - 'Oman 2020', is designed to steer the shifting of the oil-based economy through a diversification plan. A vital component of this plan is the creation of a knowledge-based economy with a focus on developing Oman's ICT sector.

The information Society is characterized by the profound impact of information and communication technologies (ICT) across the socio economic, political and

culture areas of society. Economic activities at the supply and demand levels are transformed, giving emphasis to the transmission of information and knowledge. Vast amounts of information are disseminated through ICT worldwide and those who have no access to these technologies are left at a disadvantage, being unable to participate and share fully in the benefits of the information society. Access to ICT is seen as an essential factor for the development and the improvement of the well-being of society.

As a major step forward in the country's ambitious plans to introduce E-government and create a 'digital society' the national IT strategy was devised. Implementation of this strategy is vested upon the Information Technology Authority (ITA) which was set up by the Royal Decree 52/2006 as an autonomous legal body affiliated to the Minister of National Economy.

As stipulated in the Royal Decree, the Information Technology Authority aims at consolidation and activation of government policies to transform the Sultanate into a knowledge-based economy for achievement of social and economical benefits to the Omani society by using this technology "within" the policies of economic diversification and sustained development.

*Mohammed Nasser Al Khasibi*

Secretary General of the Ministry of National Economy  
Chairman, Information Technology Authority

## **EXECUTIVE SUMMARY**

This report has been prepared by the Information Technology Authority (ITA), Sultanate of Oman, to summarise the initiatives taken by the Sultanate of Oman in harnessing Information and Communication Technologies (ICT) for overall progress of the nation within the year 2005-2006. It has been structured based on the agenda for Plan of Action agreed upon at the World Summit for Information Society at Geneva in 2003.

Information and communications technologies (ICT) are transforming economies and societies all over the world. They are also transforming the way government does its business and serves its citizens. It seems likely that a country's economic position in the world will be determined by the effectiveness with which it addresses the opportunities and challenges in moving to a Digital Society. Building on its achievements over three decades, Oman has ambitious plans to capitalise on the enormous opportunities opening up. The vision of the Omani Economy 2020 is to achieve economic diversification to consolidate and expand the economy to be part of the global village.

Beginning with a national level plan the report touches upon the major projects undertaken by the government including the adoption of the 'Digital Oman' strategy and the establishment of its implementation body, the Information Technology Authority.

Various projects under the implementation plan are detailed in this report along with projects undertaken by both public and private sector organisations. Some of these are completed while others are in progress. As penetration of ICT is high in major sectors like education, telecommunication, banking and media more details about these activities have been presented.

Reflecting the online presence of Oman's organisations, all the websites mentioned in the annexure have been selected and presented as a guide to locate important websites which will address some of the initiatives towards the implementation of digital strategy in the progress of the country.

## OMAN DIGITAL SOCIETY REPORT STRUCTURE

Under the directives of the UN General Assembly Resolution (A/RES/56/183) dated 21 December 2001, the World Summit on the Information Society (WSIS), was held in two phases: in Geneva from 10-12 December 2003 and in Tunis in 2005.

The Geneva Summit adopted a Declaration of Principles and an Action Plan to facilitate the effective growth of the Information Society and to help bridge the Digital Divide. It brought together representatives from the highest levels of government, the private sector, civil society and NGOs. It offered a unique opportunity for the world community to discuss and give shape to the Information Society under a common framework.

This report has been structured according World Summit for Information Society – Plan of Action and its themes. A brief on the various initiatives and projects undertaken by various government and non-government bodies of Oman, have been arranged in the same topics and sequence of the Plan of Action themes as follows:

- C1. The role of governments and all stakeholders in the promotion of ICTs for development
- C2. Information and communication infrastructure : an essential foundation for the information society
- C3. Access to information and knowledge
- C4. Capacity building
- C5. Building confidence and security in the use of ICTs
- C6. Enabling environment
- C7. ICT Applications: benefits in all aspects of life
  - E-government
  - E-business
  - E-learning
  - E-health
  - E-employment
  - E-environment
  - E-agriculture
  - E-science
- C8. Cultural diversity and identity, linguistic diversity and local content
- C9. Media
- C10. Ethical dimensions of the Information Society
- C11. International and regional cooperation

## TABLE OF CONTENTS

<b>1.</b>	<b>INTRODUCTION .....</b>	<b>12</b>
1.1.	Country Background .....	12
1.2.	The ruler .....	12
1.3.	Administrative Regions .....	12
1.4.	Seventh Five Year Development Plan .....	13
<b>2.</b>	<b>THE ROLE OF GOVERNMENTS AND ALL STAKEHOLDERS IN THE PROMOTION OF ICT FOR DEVELOPMENT.....</b>	<b>15</b>
2.1.	IT Committee begins .....	15
2.2.	Information Technology Authority formed .....	15
2.3.	ITA Vision and Mission .....	16
2.4.	ITA Policies .....	16
2.5.	Digital Oman Strategy.....	18
2.6.	Communities of Interest .....	19
<b>3.</b>	<b>INFORMATION COMMUNICATION INFRASTRUCTURE: AN ESSENTIAL FOUNDATION FOR THE INFORMATION SOCIETY.....</b>	<b>20</b>
3.1.	Internet usage .....	21
3.2.	Telecommunications Regulatory Authority .....	21
3.3.	Oman Telecommunication Company .....	22
3.4.	OmanMobile .....	22
3.5.	Nawras .....	23
3.6.	Connecting Remote Villages .....	23
3.7.	Wireless Connectivity.....	24
3.8.	Convergent Government Network .....	25
3.9.	Internet Payment Gateway.....	26
3.10.	E-Services Initialisation.....	27
3.11.	ICT Corporate Cluster at KOM.....	27
<b>4.</b>	<b>ACCESS TO INFORMATION AND KNOWLEDGE .....</b>	<b>29</b>
4.1.	Digital Oman Strategy Implementation .....	29
4.2.	Launch of Digital Oman .....	29
4.3.	eOman Road Shows .....	30
4.4.	National Statistics Online .....	30

4.5.	Common Gateway – ‘Ubar’ Portal.....	31
4.6.	GIS from the Ministry of National Economy.....	32
4.7.	Information Communication Technology Survey .....	32
4.8.	Global Gateway for schools.....	32
<b>5.</b>	<b>CAPACITY BUILDING.....</b>	<b>34</b>
5.1.	National IT Training & Awareness.....	34
5.2.	Research and Development.....	34
5.3.	Ministry of Education – ICDL.....	34
5.4.	Ministry of Education - Multimedia Centre .....	36
5.5.	Omanisation in the IT sector .....	36
5.6.	Information Security forum for Public Sector .....	37
5.7.	Global Gateway for Schools.....	37
<b>6.</b>	<b>BUILDING CONFIDENCE AND SECURITY IN THE USE OF ICT .....</b>	<b>39</b>
6.1.	Infrastructure Security .....	39
6.2.	E-Transaction Law .....	39
6.3.	Security Policy Framework .....	40
<b>7.</b>	<b>ENABLING ENVIRONMENT.....</b>	<b>41</b>
7.1.	Online Voter Registration .....	41
7.2.	Domain name .om Regulation.....	41
7.3.	First Information Society Day Celebrations.....	41
7.4.	E-Tendering Project.....	42
7.5.	Innovative Entrepreneurship Competition.....	43
7.6.	SANAD – IT Enabled Service Centres.....	43
7.7.	National PC Initiative.....	44
7.8.	Oman ICT Society .....	45
7.9.	ICT Centre for the Blind.....	45
7.10.	Oman Web Awards.....	46
7.11.	E-Entertainment.....	46
<b>8.</b>	<b>ICT APPLICATIONS: BENEFITS IN ALL ASPECTS OF LIFE .....</b>	<b>47</b>
8.1.	E-Government .....	47
8.1.1.	National Registration System.....	48



8.1.2.	Business ‘One Stop Shop’ registration.....	48
8.1.3.	Online Visa.....	48
8.1.4.	E-Services from the Ministry of Finance.....	49
8.1.4.1.	Integrated Financial System.....	49
8.1.4.2.	Human Resources Management System.....	50
8.1.4.3.	Spin-off Systems.....	50
8.1.5.	E-Services from Ministry of Civil Service.....	50
8.1.6.	E-Services from the Muscat Municipality.....	51
8.1.6.1.	Public Interactivity Services.....	51
8.1.6.2.	mRial Applications.....	51
8.1.6.3.	Muscat Commercial Directory.....	52
8.1.6.4.	SMS Parking Payment.....	52
8.1.7.	E-Services for Environment.....	52
8.2.	E-Education.....	53
8.2.1.	Higher Education Admissions Online.....	53
8.2.2.	Education Portal.....	54
8.2.3.	Research Projects.....	56
8.2.4.	E-Learning in Schools.....	57
8.3.	Gender based ICT Usage Study.....	57
8.4.	E-Healthcare.....	58
8.4.1.	Online Presence.....	58
8.4.2.	Tele-Medicine and Tele-Conferencing.....	59
8.4.3.	E-National Medical Record.....	59
8.5.	E-Banking and E-Payment Systems.....	60
8.5.1.	EFT Strategy of the Central Bank of Oman.....	60
8.5.2.	E-Payment Gateway.....	61
8.5.3.	Commercial Banking.....	62
8.6.	E-Tourism.....	62
8.7.	E-Business.....	63
8.7.1.	E-Procurement and B2B Exchanges.....	64
8.7.2.	Multi-Party Smart Cards.....	64
8.7.3.	E-Cargo and E-Ticketing.....	65
8.7.4.	Muscat Securities Market.....	65
8.8.	Public Industrial Estates.....	66
<b>9.</b>	<b>CULTURAL DIVERSITY AND IDENTITY, LINGUISTIC DIVERSITY AND LOCAL CONTENT.....</b>	<b>67</b>
9.1.	Heritage and Culture.....	67
9.2.	Arabic Language Support.....	67

<b>10. MEDIA</b> .....	<b>69</b>
10.1. Oman Media Online .....	69
10.2. E-Publishing .....	69
<b>11. ETHICAL DIMENSIONS OF THE INFORMATION SOCIETY</b> .....	<b>70</b>
11.1. Intellectual Property Protection.....	70
11.2. Intellectual Property Seminar with WIPO .....	70
11.3. Agreement for Software Licenses.....	70
11.4. Online Content Filtering .....	71
11.5. Software Piracy Control.....	72
<b>12. INTERNATIONAL AND REGIONAL COOPERATION</b> .....	<b>73</b>
12.1. USTDA & ITA Project Forum .....	73
12.2. Cyber Crime Workshop .....	73
12.3. Technology Fair at China .....	73
12.4. Internet Governance Forum in Greece .....	74
LIST OF OMANI WEBSITES.....	75
LIST OF AWARD WINNING OMANI WEBSITES.....	77
OMAN MEDIA ONLINE.....	78
MILLENNIUM DEVELOPMENT GOALS .....	79
REFERENCES.....	86
ICT SURVEY QUESTIONNAIRE .....	87

## 1. INTRODUCTION

### 1.1. Country Background

Oman civilization dates back at least 5,000 years, when the country was inhabited by fishing communities and hunter-gatherer societies. Modern Oman is a flourishing modern, industrial state with a firm base for economic growth. The name Oman is said to originate from Arab tribes who migrated to its territory from the Uman region of Yemen.

Oman is situated in Southwest Asia, nestled amidst the Arabian Sea, Gulf of Oman, and Persian Gulf, between Yemen and United Arab Emirates (UAE). It is considered one of the fifteen states that constitute the famed 'Cradle of Humanity.'

With a land area of about 309.5 thousand Square Kms and a coastline of 1700 kms, it is the third largest country in the Arabian Peninsula. Since the blessed renaissance in July 1970, the country has leaped with progress in overall development of the economy and in the welfare of the country.

### 1.2. The ruler

On the 23rd July 1970 His Majesty Sultan Qaboos bin Said born on the 18th November 1940, inaugurated a new and successful era for Oman. The start of the Sultan's rule commonly referred to as the 'Renaissance' in 1970 was not easy and the subsequent years of that decade were behest with difficulties. But so much has been accomplished in these years by the relentless efforts of His Majesty and his government to empower its citizens, by providing education, healthcare, efficient communication system and the opportunity to work together for common good.

Every effort was made to educate and train Oman citizens and allow them to fulfil their designated roles. It is recognised that the country's greatest and most precious resource is its people and that their potential must be developed to enable them to build their present and prepare for the future. Consequently, the development of human resources has been a corner stone of Oman's development strategy.

### 1.3. Administrative Regions

As per the Royal Decrees 6/91 issued in 1991 and 108/06 issued in 2006, the Sultanate

is divided into nine main administrative Governorates and Regions, divided into four Governorates, and five Regions.

**Table of vital Socio Economic data- 2005**

Indicator	Value
Population (in 1000s) (Mid year estimates - 2005)	2,509
GDP at market price (Million. US\$)	30,834
Average annual rate of growth of GDP	24.6
GNI per capita (US\$)	11,692
Merchandise imports (Million. US\$)	8,970
Merchandise exports (Million. US\$)	18,692
Oil & Gas Revenues as a % of total government Revenue.	78.8

Source: Ministry of National Economy –Statistical Year Book October 2006

### **1.4. Seventh Five Year Development Plan**

In the year 2006, Oman has entered into a new era with the beginning of the 7<sup>th</sup> Five Year Development Plan (2006-2010) which is the third plan for the Vision for Oman’s Economy: Oman 2020.

In line with the Vision for Oman’s Economy 2020, the Seventh Five-Year Development Plan (2006-2010) of the Sultanate lays emphasis on upgrading the Information Technology sector by implementing the national strategy for Oman’s Digital Society, with more concentration on establishing the basis of the e-Government. There is an ambition to expand the scope of research and development activities to include most sectors of the national economy, intensifying and upgrading their capacities through active research and development.

Oman’s GDP for the third quarter of 2006 is approximately 26,187.2 Million US\$, showing a 18.1% increase rate compare to the same period in 2005

(Source: Ministry of National Economy- Monthly statistical Bulletin Nov.2006).

The developmental programme for Civil Ministries within the plan aims to undertake major infrastructure and capacity projects for E-Government and Oman's Digital Society. The most important of these are the following:

- The e-government service portal, is the main portal for all services.
- a Unified Government Network to link all government institutions within the Sultanate
- preparing, upgrading and implementing the security framework for the government network and the Internet, as well as establishing an emergency and backup centre
- implementing an Internet Payment Gateway to move electronic services from interaction to transaction level

## **2. THE ROLE OF GOVERNMENTS AND ALL STAKEHOLDERS IN THE PROMOTION OF ICT FOR DEVELOPMENT**

### ***2.1. IT Committee begins***

Following a Council of Ministers' decision in 1998, the National Information Technology Committee (NITC) was set up to oversee the development of the Sultanate's IT sector and to work towards a e-government initiative. This committee was headed by the Minister of National Economy.

The 'IT Task Force' (ITTF) set up by the high-level National Information Technology Committee in 1998 as the technical action group comprising representatives of the competent departments and bodies. The National IT Strategy was launched in November 2002 followed by a plan of action to be implemented by the IT Technical Secretariat (ITTS). It is the first major step in the country's ambitious plans to introduce E-government and create a 'digital society'.

### ***2.2. Information Technology Authority formed***

Information Technology Authority is set up by the Royal Decree 52/2006 promulgated on the 31st May 2006. This autonomous legal body is affiliated to the Minister of National Economy.

ITA serves as a competency centre on best practices in e-Governance and in harnessing Information and Communication Technologies (ICT), thereby offering efficient and timely services, integrating processes and improving efficiency in service delivery. ITA performs its core functions through its different offices of specialized focus.

ITA is responsible for implementing national IT infrastructure projects and supervising all projects related to Digital Oman Strategy implementation while providing professional leadership to various other e-Governance initiatives of the Sultanate.

eOman the digital society plan of action incorporated a range of initiatives towards provision of government services through electronic channels, building ICT capacity within various segments of corporate sector and the common public.

### ***2.3. ITA Vision and Mission***

ITA works with the vision ‘to transform the Sultanate of Oman into a sustainable Knowledge Society by leveraging Information and Communication Technologies to enhance government services, enrich businesses and empower individuals’.

Pioneering the implementation of eOman is the mission of Information Technology Authority (ITA). eOman comprises of a wide range of initiatives and services that are designed and created to improve the efficiency of government services, enhance the activities of businesses and empower individuals with skills and knowledge, to meet society’s needs and expectations and to direct Oman towards becoming a Knowledge-based Economy.

### ***2.4. ITA Policies***

As stipulated in the Royal Decree, the Information Technology Authority aims at consolidation and activation of government policies to transform the Sultanate into a knowledge-based economy for achievement of social and economical benefits to the Omani society by using this technology ‘within’ the policies of economic diversification and sustained development.

In order to achieve its objectives ITA will undertake the following policies:

- Taking necessary actions to achieve co-operation & co-ordination between state administrative apparatus units the private sector and ITA with regard to IT projects for the benefit of citizens and investors.
- Carry out electronic Oman basic structure projects and supervise implementation of information technology projects of all administrative apparatus units of State and electronic services connected therewith.
- Undertake the preparation of regulations and measures necessary to implement the rules by administrative apparatus units of State for the fulfilment of digital Oman society requirements and realization of integration between these units to electronically deliver their services.
- Carry out the issuance of rules and procedures necessary to safeguard the Systems in case of unexpected events.
- Embark on setting up and implementation of information technology awareness programs to ensure publicity of use of electronic government services to realize the objectives of digital Oman society.

- Conduct periodic survey and evaluate investments in information technology sector to determine future needs to attract foreign capital to invest in this sector.
- Provide consultancy and other services to State administrative apparatus units in the field of information technology.
- Supervise developmental expenditure allocated to information technology in the budgets of State administrative apparatus units in co-ordination with the concerned authorities.
- Approval of reports and statistics related to information technology prepared by state administrative apparatus units before its publication.
- Fixing measures necessary to keep the information to ensure easy sharing and auditing thereof and to preserve its secrecy and the procedures connected therewith.
- Design and develop the regulatory procedures and appropriate measures in the field of information technology to ensure its implementation by State administrative apparatus units.
- Preparation of feasibility studies regarding tenders and consultancy services necessary to conclusion of information technology projects contracts by State administrative apparatus units in co-ordination with the concerned authorities, and participation in evaluation of offers submitted in this regard.
- Preparation of a register for enlisting experts, consultants, contractors and other providers of information technology services to State administrative apparatus units who have satisfied the requirements specified by the Authority.
- Follow - up and evaluation of the following:
  - Human resources plans and training of employees in the field of information technology for the purpose of developing skill and competence.
  - Performance of experts and consultants and contractors and others registered with the authority.
  - Contracts of State administrative apparatus units regarding information technology, including programs and services of international status.



- Represent the Sultanate in the international and regional conferences and forums in the field of information technology in co-ordination with ministries and other governmental authorities.

## ***2.5. Digital Oman Strategy***

The Sultanate of Oman has embarked upon its ambitious journey in transforming Oman by empowering its people, through the eOman initiative, besides opening up thousands of job opportunities for nationals in the IT sector, within the digital society. The goal includes a significant improvement in the quality of services the government provides to its citizens.

In this context the strategy has been prepared according to a collaborative and integrated methodology with the objective to build the Digital Oman society and provide e-government services to all the Omani society sectors with clear definition of policies for a healthy environment to encourage IT industry in Oman and its export, in addition to the development of Communication sector according to international standards and the restructuring of the telecom sector which enables the active participation of private sector and enable free competition.

The implementation of the strategy began in May 2003 with the following focus areas:

- ◆ Streamlining Government services to citizens and business
- ◆ Creating and nurturing knowledge-based industries
- ◆ Developing a local ICT sector
- ◆ Supporting a better competitive environment
- ◆ Providing employment for Omani youth
- ◆ Enabling better healthcare
- ◆ Improving educational opportunities
- ◆ Supporting tourism sector
- ◆ Enhancing social development using IT
- ◆ Making Oman a more attractive destination for foreign investment and conducive for business

The adopted approach of the strategy is that it encompasses e-Government as well as Digital Society issues. It aims to create an effective government-community-citizen infrastructure that provides better public services to people.

## ***2.6. Communities of Interest***

For the purpose of implementation of the Digital Oman strategy, Governments business applications will be grouped into Communities of Interest (COI). COI seek to break away from Ministry 'silos' and use applications to best meet the needs of citizens and businesses in a shared and secured manner. Within a COI, application components are shared by various government entities participating in that particular COI. A community-focused functional grouping was applied in the offering of public services through an interoperable framework delivery model.

A move towards transforming the base of applications from a ministerial focus to 'Communities of Interest' (COI) has been undertaken, to facilitate successful eGovernment implementation. This will shift the focus to the citizen or business user, who will be able to interact with the various ministerial entities in a seamless way. The phase 1 of the One-Stop-Shop is already operational at the Ministry of Commerce and Industry.

The One-Stop-Shop initiative for commercial registration of businesses involves the Commerce & Industry community comprising of Ministry of Commerce and Industry (MoCI), Muscat Municipality, Ministry of Regional Municipalities, environment and water resources, Oman Chamber of Commerce and Industry, (OCCI), Ministry of Manpower and the Royal Oman Police (ROP). All these entities integrate their system to offer the Commercial Registration service to the new business through a single-window in a seamless manner.

### 3. INFORMATION COMMUNICATION INFRASTRUCTURE: AN ESSENTIAL FOUNDATION FOR THE INFORMATION SOCIETY

The success of the Digital-Oman initiatives depends on how well the society is being transformed to move towards being a digital society; and on the successful implementation of the ICT infrastructure and the associated tele-communication projects. The growth of the telecommunication sector has been rapid due to efforts taken by the government towards privatisation and liberalisation.

The General Telecommunications Organisation (GTO), the government agency in-charge of communications in the Sultanate since the early 1970s corporatised into Oman Telecommunication Company which was later privatised in March 2002. Omantel currently provides the countries fixed-line and internet services. The Sultanate’s strategy to fully liberalize the sector has provision to allow a new operator of fixed line and the internet services in the near future. The mobile services sector currently has two license operators namely Oman Mobile and Nawras.

#### Current penetration levels of ICT services in Oman. – November, 2006

	<b>Numbers</b>
<b>1. Number of Fixed Line Subscribers</b>	<b>277,999</b>
- Post paid subscribers	232,233
- Pre paid subscribers	38,924
- Card Pay phone	6,842
<b>2. Number of Mobile Subscribers</b>	<b>1,783,886</b>
- Post paid subscribers	247,053
- Pre paid subscribers	1,536,833
<b>3. Number of internet Subscribers</b>	<b>63,332</b>
- Dial- up subscribers	48,770
- DSL subscribers	13,360
- Leased Line Subscribers	246
-Internet (Others)	956

Source: Telecommunication Regulatory Authority(TRA) - November 2006

### ***3.1. Internet usage***

The number of Internet subscribers in the Sultanate rose to 62,926 individual Internet subscriber accounts by the end of October 2006, according to the above statistics. The increase reflects the keenness of Omani youth to use Internet and benefit from its huge potential.

Concerning Internet penetration and usage, an important factor to bear in mind is that there are multiple users using a single subscriber line. Due to local and other issues, it is common to find large number of employees using their office line for accessing the Internet. Similar situation exists in academic institutions, cyber-cafes and even in the household subscriber connections. So although the subscription number may not be very high, there are far more Internet users in Oman than what the subscription figures suggest.

Omantel is in co-operation with authorities concerned in order to boost Internet connectivity and services in order to make it one of the most important services as the Sultanate is currently moving towards creation of a digital society. Statistics also show that the number of subscribers of fast Internet Asymmetric Digital Subscribers Line (ADSL) rose to 12,900 by the end of October 2006.

These figures while they do not include mobile IP subscribers reflect the extent of growth in the number of Internet service users and surfers in the Sultanate. The new services have led to a marked expansion of the users' base and contributed to attracting new segments of customers, especially young people who are the future generation of Oman's digital society.

### ***3.2. Telecommunications Regulatory Authority***

The Telecommunications Regulatory Authority (TRA) of Oman was established by Royal Decree No. 30/2002 which enacted the Telecommunications Regulatory Act of Oman. The Telecommunications Regulatory Authority (TRA) works to develop the telecommunications sector in the Sultanate by regulating and maintaining the telecom services, promoting the interest of telecommunications service providers and beneficiaries. Establishment of the TRA and its operations ensure that the consumers receive international standards of telecommunication services, with a reasonable range of choices at affordable prices.

### ***3.3. Oman Telecommunication Company***

Oman's key infrastructure provider is the Oman Telecommunication Company (Omantel). In cooperation with other telecom operators it provides telephony services, Internet and email facilities, broadband and wireless connectivity and a range of other services.

Asymmetric Digital Subscriber Line (ADSL) has created a higher bandwidth highway for Internet connection. As an incremental technology this service will enable businesses to offer video-on-demand about their products (or services) or universities to broadcast lectures or even deliver on-demand entertainment or health services.

Omantel has drawn up plans for the rollout of an Asynchronous Transfer Mode (ATM) backbone and a Digital Subscriber Line (DSL) to 'customer' premises, considering satellite and MMDS as strategic alternatives for broadband access in remote areas. Initially broadband access to geographically remote areas should be concentrated on schools, health care centres, businesses and cyber-cafes.

Omantel inked deals with Flag Telecom with the key objectives to transform Oman into a key internet transit point between the Middle East and Africa, by extending the marine cable network. Falcon project is the first self-maintenance marine cables network with high capacity and high quality connectivity in the region.

The project is expected to provide 12 countries with internet services, including the member states of the Arab Gulf Cooperation Council (AGCC). The project will meet the regional demand on the first self-maintenance network of marine cables in the Gulf, including links with Egypt and Hong Kong.

Falcon project is the first cables system that brings fully protected means of communications into the Gulf. It will enable telecom companies to provide high quality, fast, efficient and economic services to their customers which in turn will increase ICT penetration within the country.

### ***3.4. OmanMobile***

OmanMobile the premier mobile operators of Oman has won the Best Wireless Network Integrator in the Middle East award in recognition for its efforts to create a

wireless network connecting remote areas notwithstanding the varying topography of the Sultanate.

With over 1.2 million subscribers the company provides services such as SMS, MMS, GPRS, news and weather forecast services, parking payment through mobile, mini-bill facility, roaming services, translation services, etc. The Secondary School students received their exam results via SMS services of OmanMobile.

Omantel recently commissioned the new wireless Internet service “WiFi Ibhar” for laptop and notebook users. The Ibhar service, which means surfing in Arabic, has been received very well by the market, in addition to the ever-growing demand for the fast ADSL Internet.

### ***3.5. Nawras***

In a move towards liberalisation telecommunications sector entry of the newcomer Nawras ([www.nawras.com.om](http://www.nawras.com.om)) began its operations on the 16th March 2005. Nawras has made the market more competitive while increasing the geographical reach across the Sultanate. Nawras, which covers 82 per cent of populated area in the country, is planning to provide 95-96 per cent mobile coverage by the end of its fifth year of operation.

Nawras the second and new mobile communications provider in Oman has around 440,000 customers as of August 2006. They provide voice and data services through its next generation mobile broadband network with a better voice quality and a fast and reliable mobile data access using EDGE technology. Nawras provides large network coverage through its own broadband network as well as OmanMobile’s network. It offers its customers wireless high-speed Internet access through affordable packages that can be purchased easily and set up within minutes.

### ***3.6. Connecting Remote Villages***

Oman is a relatively vast country with population clusters spread out which poses the challenge of tele-connectivity while balancing the cost factor. Nevertheless there are ambitious projects underway for this. Oman Telecommunications Company (Omantel) has completed several Fibre Optic Projects in the interior regions of the Sultanate via fibre optic links. Omantel has also linked the area between Shannah and Masirah Island with Microwave Link to provide necessary protection to the

submarine fibre optic link and functions as a substitute in case of cut-off in the Fibre Optic Link.

The Fibre Optic Project provides various telecom services including fixed, mobile and internet services across the Sultanate, particularly in rural areas. Additional submarine fibre optic links and microwave links have been added, to act as a substitute in case of cut-off or a failure in the fibre optic link.

The project will cater to the needs of customers, government departments and corporate houses. The transmission capacity was increased to 2.5 Gb which would minimise the congestion in the network. The project would also provide fixed and Internet services in the areas along with the fiber optic link via the Wireless Local Loop system (WLL), which would provide 200 remote villages with telecom services.

### ***3.7. Wireless Connectivity***

Wireless connectivity for broadband services is available for adoption in Oman. Currently both the mobile communication service providers offer a wireless connectivity for accessing the Internet. Such a service connects to the Internet, using a WiFi enabled laptop, PDA or mobile device. The key benefit is the ability to access one's office remotely increasing productivity and offering flexibility. By providing access to the Internet and the corporate network remotely, it is possible to conduct meetings and presentations in public venues as well as turn waiting time into productive time by processing vital emails.

'Ibhar' is a broadband wireless service provided by Omantel enabling access to the internet wirelessly at various public places such as cafes, restaurants, hotels, shopping malls, airports etc. IBHAR Prepaid Card holders can go online to activate their Prepaid Card. To know the IBHAR Username, Password, Activation Date, Expiry Date, Time left and Card Serial Number, one can send their details through a simple SMS to Omantel or use the toll-free line.

Nawras also supports broadband connectivity through a state of the art broadband mobile network based on EDGE technology. One can access all their services from making & receiving calls, sending and receiving SMS and picture messages, downloading games and ring tones to accessing the Internet through wireless

connectivity. Nawras Internet can also be used outside Oman, wherever Nawras provides Data Roaming service in which case Data Roaming tariffs apply. Currently Omantel's IBHAR WiFi hotspots are located mainly in Muscat but will soon be spreading to key locations across the Sultanate.

### ***3.8. Convergent Government Network***

To fully promote an e-government network all Ministries and relevant departments must be connected to each other. They also require Internet connectivity so that citizens can access the services accessible from any place through any device. Deployment of citizen-centric services will require a well orchestrated business processing taking place over a convergent government network.

The Government Network is seen as a comprehensive fully-managed network to carry the data between government organisations as well as the citizens and enable e-government service delivery.

In line with this mission, ITA signed an agreement with Oman Telecommunications Company for the implementation and management of this Convergent Government Network based on pre-defined service levels. The network based on IP/MPLS (Internet Protocol / Multi Protocol Label Switching) network with ATM backbone being a key component for the delivery of public services seamlessly will be the first and foremost comprehensive network in terms of functionality and technicality. All government entities will use this network which will have a unified IP addressing scheme government wide.

Considering the safety of the data transfers, the network is designed to achieve the high standards of security laid by the ITA in accordance with the common security framework.

Such a network will create secure and scalable virtual ministry networks between Communities of Interest (COI). This will lead to reduction of processing costs as the cost will be based on capacity and not on distance. Provision of help desk support for handling requests and problems within government units is yet another benefit of the unified network. There will be constant monitoring of network performance with provisions for appropriate reporting mechanism within the network management system.



The Convergent Government Network agreement has built in Service Level Agreements (SLAs) that define the expected quality of service and support to be delivered by Omantel. Prior to signing this agreement a pilot implementation was undertaken by Information Technology Authority and Omantel involving about 30 different sites across 4 different ministries.

The proposed Convergent Government Network will connect governmental sites across the Sultanate. This network will employ state-of-the-art technologies to deliver a reliable and efficient service. The agreement will ensure a scalable and reliable communication infrastructure for delivering public services in a seamless manner through a unified network. ITA is working with Omantel with a comprehensive migration plan for all ministries.

### ***3.9. Internet Payment Gateway***

Information Technology Authority (ITA) has taken up a strategic initiative to drive the development of e-Payments in Oman with an objective to implement an efficient and effective e-Payment infrastructure to support these e-Government initiatives as well as move the nation to the next level of transactional service oriented e-commerce development.

It is important that citizens use electronic payment means in their daily lives which requires a significant change in people's life patterns and customs. Once the e-services are available with payment settlement facilities adoption by the society comes more naturally.

Government of Oman, in its e-Government strategy has identified electronic payments (e-Payment) and in particular Internet payments, as a critical shared service within the e-Government architecture. It is seen as the main enabler to online delivery of Government Goods & Services.

Through such a robust and secure e-payment gateway, e-Government shared services could be paid for electronically using major credit cards, debit cards and other electronic payment instruments. These payments can be performed both while the Citizen is physically present at one of the Government locations (e.g. at the Ministry of Commerce and Industry's 'One Stop Shop') as well as when using the internet (e.g. via the eGovernment Ubar Portal). A payment gateway provides the

capability to accept payment instructions and access back end payments networks to authorise, clear and settle payment transactions.

The payment gateway which is expected to be operational by the end of 1<sup>st</sup> quarter of 2007 will enable citizen to be able to engage in true e-commerce transactions with both government departments and other business community through a range of electronic channels, primarily the Internet.

In a more advanced phase the e-Payment gateway service will accept a variety of other payment instruments such as mobile phone payments, e-Purse smart cards, Interactive Voice Response System (IVR) order, email order etc. These future phases will aim at developing an efficient e-Commerce environment in Oman.

### ***3.10. E-Services Initialisation***

Arising out of the Oman government's strategy towards a Digital Society and the implementation of e-government, the Ubar portal has been proposed as the main entry point for accessing Government information and services online. The eServices Initialisation Project aims to facilitate the successful implementation of the portal through the identification, review and prioritisation of services to be migrated to electronic delivery.

The e-services initialisation project aims to identify, review and prioritise all current government to business (G2B) and government to citizen (G2C) services offered by Omani government ministries & other relevant agencies and to create a timetable for the electronic delivery of these services.

A structured approach will help in seamless integration of e-services offered by different entities through a life-event model of the Ubar – common portal gateway.

### ***3.11. ICT Corporate Cluster at KOM***

Knowledge Oasis is the Information Technology park of Oman. It is a public-private sector led initiative committed to creating a multi-stakeholder environment. In such an environment, entrepreneurs, small and medium-sized enterprises as well as established multi-nationals can innovate and nourish the ICT sector within the region. KOM has been designed to conform to the latest international standards

and planned so as to become the information and knowledge technology hub of the region, supported by the state-of-the-art technology and aiming to offer a one-stop solution for conducting business activity.

Currently it hosts about 25 ICT based companies including multi-national companies like Hewlett-Packard, Huawei Technologies and NCR Corporation. More global ICT companies such as ORACLE, SAP, Motorola and Microsoft are to locate their offices at KOM soon. KOM already hosts turn-key outsource call centres and customer communication service call-centres like Infocom, GulfAir and Omanline with well trained, multilingual Customer Service Representatives.

The park is envisioned to drive e-commerce within the country and create a wave of new technology capability within this region. The park now hosts two dedicated technical colleges to groom and nurture future talents and upgrade the manpower skills required for various businesses.

The Knowledge Mine (TKM) is an incubator facility for companies wishing to start an office immediately before moving to a bigger space for full-scale operations. It is a community-based catalyst whose mission is to grow knowledge-based businesses. Infrastructural, secretarial and administrative support to the operations would be readily available at the TKM. The government would be providing to business establishments on Knowledge Oasis a package of most attractive and internationally competitive incentives, including up to 100 per cent foreign ownership, duty-free import of hardware equipment and special facilities for immigration with multi-entry visas to IT professionals of companies establishing their presence on Knowledge Oasis.

A substantial potential has been identified in Oman for developing software requirements such as banking, telecommunications, government's programme of e-governance, IT-enabled services and call centres and ultimately providing a source of qualified IT professionals for the entire Gulf region. Clustering IT companies and IT higher education institutions within a single campus, KOM is expanding by attracting ICT companies to base their operations at KOM.

## 4. ACCESS TO INFORMATION AND KNOWLEDGE

### 4.1. Digital Oman Strategy Implementation

The Information Technology Authority (ITA) was entrusted upon with the responsibility of digital strategy implementation. The ITA with its six specialized offices professionalizes project leadership. It serves as a competency centre that provides consultancy to business units as well as a repository of information on best practices and methodology.

Various initiatives have been taken under the umbrella of eOman. Certain projects are considered as flag-ship projects due to relatively easy implementation within a short time period and their wide impact on the public. Such projects are usually self-contained within one / few government entity(s) for processing and show a high degree of readiness for electronic delivery.

In order to enable government entities to work to build their IT systems and work together in coordination, ITA developed an Interoperability Framework. This provides a holistic view of how to facilitate integration of heterogeneous Information Systems across government IT systems. It primarily provides for the exchange of business related data between an e-government system (accessible through a common gateway) and the different ministerial external systems which will result in enterprise-wide integration of service delivery. Services to the citizen and businesses can then happen seamlessly based on tasks.

### 4.2. Launch of Digital Oman

eOman awareness measures include the publication of Digital Oman, a quarterly magazine in association with Knowledge Oasis Muscat and Oman Establishment for Press, Publication and Advertising (OEPPA). The bilingual ICT magazine serves as a premium regional resource presenting the ICT landscape of the region in addition to profiles of innovative IT companies, major contributors to ICT in Oman and other innovative technologies. E-Services offered by both public and private sector enterprises often feature in this periodical. Recently the eighth edition of the magazine has been released.

### ***4.3. eOman Road Shows***

To mark the first Information Society Day the 17<sup>th</sup> of May Oman launched its first Road show. Subsequent to the launch of eOman in the capital, several road shows have been organised in different regions of Oman to reach out to the society. A road map was drawn to reach all major towns of Oman; Muscat, Sohar, Ibri, Nizwa, Salalah, Khasab, Buraimi and Sur over a period from May 2006 to March 2007.

ITA team organised several informative seminars and presentations during the road shows. The event created a forum for direct public interaction which resulted in exchange of ideas and opinions about the public e-services. The tremendous turn out and response to the event indicates the enthusiasm of the public and their eagerness for electronic government in the Sultanate.

Focused group meetings with different public and private sector staff are also held to enable them to understand the vision of digital society and its potential benefits. This has proved to be useful in making the community perceive the benefits of IT, more specifically the result of public services through electronic channels. The forum also showcases the existing e-services in Oman and brings about increased adoption of IT and e-services.

Implementation of e-services involves prioritising the existing services based on their potential impact and their e-readiness. Towards this direction the interactive sessions with the public sector employees, private sector employees and the common public was found very fruitful. It created an opportunity to educate the public about the currently available e-services in Oman.

### ***4.4. National Statistics Online***

Official statistical information is essential for the development in the economic, demographic, social and environmental spheres for all economies. Worldwide, strategies for monitoring progress and development are based on timely and accurate statistical data. The National Statistics Online is yet another flag-ship project which aims to present socio-economic indicators based on various criteria and timeline in a dynamic and graphical manner.

Oman Statistics Online (OSO) is a free-access online database with quality data compiled and published by the Ministry of National Economy (MoNE) periodically.

This data can be used to set baselines, make evaluations and set targets for various developmental activities. OSO system provides valid data anytime and anywhere through electronic media and hence increases the opportunity to access quality data. Its implementation is in complete alignment with the Vision 2020, Five-year development plan and Oman's support to the millennium development goals (MDGs) of the UN. The project is expected to ensure availability of authentic information through electronic channels to promote the quality of research and planning in various economic aspects.

#### ***4.5. Common Gateway – 'Ubar' Portal***

Services will be accessed mainly through the web as progress is achieved in realizing the Digital Society and E-Government. Citizens will access the Government via an Ubar Portal that links to other portals and web sites hosted by the Government entities.

Ubar Portal is designated to be the main gateway to electronic services offered by the government. Named after the ancient Omani city of Ubar, the "Atlantis of the desert" and a main trading gateway into Arabian Peninsula, this modern web portal is designed to provide a rich, personalized, unified, and highly customizable experience to its users. Anytime, anywhere access to the portal can occur through multiple channels such as the web and mobile devices.

To any portal visitor, a click of a button triggers a number of automated, sequenced, and synchronized service delivery steps in a seamless and transparent manner. The visitor authenticated identity will be transmitted to various systems involved in the service delivery and set up the proper authorizations required to complete the service delivery process. The exercise also takes into consideration preparing, upgrading and implementing of the security framework for the government network and the Internet.

The use of electronic forms and digital signatures online through the portal, will eliminate visits to government counters to submit signed paper applications. Payment for online services will occur electronically on the portal and will provide the service requester with a choice of payment instruments.

#### ***4.6. GIS from the Ministry of National Economy***

The Ministry of National Economy (MoNE) wishes to promote and spread out the usage of Geographic Information System (GIS) through the different departments and directorates to become an integral part of its business operations, by consolidating its GIS data resources to improve users data access, provide better data management and data protection and to enhance data quality. This requires restructuring the huge amount of available spatial data sets, developing an Enterprise Geo-database and building GIS user's applications.

#### ***4.7. Information Communication Technology Survey***

Household Expenditure and Income Survey for 2006-2007 will be undertaken all over the Sultanate by the Ministry of National Economy. Part of this survey gathers Information Communication Technology (ICT) vital indicators. The survey aims to calculate the household and individuals' expenditure on goods and services according to their income, to study the wages levels and their reflection on family consumption expenditure including on computers, their training and Internet connectivity.

It is the first time that the ICT Survey is conducted as part of the main survey. This part of the survey questionnaire includes ICT core indicators including computer training and access to Internet connectivity. The list of questions to compile core ICT indicators is included in the annexure.

#### ***4.8. Global Gateway for schools***

The Global Gateway is a one-stop-shop for international partnerships, featuring schools from all over the world. Oman has become a special partner in this global gateway and will its own customised version of the gateway in Arabic with local contents. A workshop to prepare teacher-trainer and to raise their awareness of the international dimension of education and to show them as to how ICT can support and enrich collaborative work between different schools in different countries.

In this regard the Ministry of Education organised a workshop for school teachers at the British Council, Oman. The two main focus areas of the workshop were the Global gateway and e-languages.

E-Languages is a new free-to-use online collaborative programme enabling teachers to work in partnership with other teachers internationally. The workshop gave a hands-on experience to its participants on how to create an international project through the e-languages platform. It is a collaborative tool for teachers worldwide, allowing them to create digital projects and lesson resources in collaboration with a foreign partner.

This project aims to improve the ICT skills of teachers, guide them to create digital resources and involve their students by teaching them to create exciting audio and video presentations that can be shared with other schools. The project is a result of a baseline study undertaken by the British Council among the GCC countries to assess ICT usage in schools and education. One of the recommendations of this study was to create local content involving local expertise. The project will undertake further teacher training and support the production of educational DVD by professional networking.



## **5. CAPACITY BUILDING**

### ***5.1. National IT Training & Awareness***

The National IT Training & Awareness Initiative is a nation-wide initiative aimed at developing ICT skills capability and increasing ICT awareness within the government and the community. In achieving its goals for furthering IT literacy and awareness levels within the society, the initiative also aims to contribute to the development of a local ICT industry and to provide increased employment opportunities for the youth of Oman.

The initiative has been divided into two key projects - Government IT Training and Community IT Training. ITA conducted a preliminary market investigation to evaluate internationally recognised digital literacy programs and vendors to determine which programs and vendors would be suitable for these projects and is currently running a pilot to evaluate two of these programs and vendors. The pilot is also evaluating an implementation model for national government IT training. Based on the evaluation of the pilot a national level implementation plan will be devised as a cost effective model for government IT training and awareness across the nation. The Government IT Training project aims to train and certify all civil service employees during the three year period 2007-2010.

The Community IT Training project aims to set up community technology learning centres (CTLIC) through out the country. The primary purpose of these centres will be to reduce computer illiteracy and bridge the digital divide by providing free or low cost IT education to the community. The impact of this will be felt in technology usage, capacity building and social development. ITA is currently evaluating implementation options and plans to launch pilot programs in the first and second quarter of 2007 in order to prepare a framework for national implementation of community IT training.

### ***5.2. Research and Development***

In continuation of the achievements of the previous sixth Five Year Development Plan (2001-2005) an optimistic look out on the priorities set out in the Seventh Plan (2006-2010) is emphasized on human development, social welfare programmes, enhanced educational opportunities and the development of the investment sectors.

A sustainable development across the country can be attained with progressive plans for encouraging research.

The Royal Decree No. 54/2005, issued in June 2005, established the Scientific Research Council (SRC). This legislation reflects official recognition of the importance of scientific research both for the national economy and the entire society in a sustainable manner.

At the moment, the Research Council is working on developing an effective, efficient, flexible and transparent organizational framework and administrative structure for its management; including the staff and resources required to perform its various activities, and the regulations that facilitate its operations. The latter will eventually be implemented in an e-based management system. The best administrative environment and infrastructure would be established to carry out the activities that are mandated by the Royal Decree.

The Formulation of a Science and Technology Policy that consists of clear strategies and a detailed road map, to ensure its successful implementation, is the second priority on the table for the SRC. This national policy shall also include R&D and innovation strategies for major sectors of the economy such as:

- Education & Human Resources
- Health & Social Services
- Energy & Industry
- Culture, Humanities & Basic Sciences
- Biological & Environmental Resources
- Information Technology & Communications

It is envisaged that the Science and Technology Policy would be ready in approximately 15 months and that the implementation would start in early 2008.

### ***5.3 Ministry of Education – ICDL***

In order to build the Intellectual capital of the country great emphasis is placed on enhancing the capacity of the youth. Information Technology is now taught in schools as a separate subject from Grade 1 to Grade 10 in the new Basic Education

system. In Grade 11 the ICDL – an accredited International Computer Driving License is an essential course and each student of this grade gets an opportunity to learn basic IT skills before entering a collegiate study program.

As of date approximately 370 accredited school-based training centres have been established with ICDL certified teachers. Over 100,000 students have been trained and tested at about 18 ICDL accredited testing centres.

#### ***5.4. Ministry of Education – Multimedia Centre***

As a public-private partnership initiative the Ministry of Education (MoE) in association with the Petroleum Development of Oman (PDO) had set up a multimedia centre for developing educative materials using modern technologies. It is a unit in which Omanis develop and create multimedia educational resources that will benefit all members of the Omani community. It is truly a win-win situation where learning and development benefits young Omanis creating the materials and also benefits those Omani scholars and teachers in the schools and colleges who use those resources in academic environments. Currently the centre hosts interactive materials for Grade 4 and 5 at their website [www.eoman.net](http://www.eoman.net).

#### ***5.5. Omanisation in the IT sector***

Ministry of Manpower has forecasted the need for Omanis trained in ICT and started training programs. It has also recommended the redesign of the curriculum of the Higher Colleges of Technology to include IT specialisations. Knowledge Oasis, the technology park, hosts two exclusive IT colleges within its campus. The presence of multinational companies within this campus provides the students opportunity for hands-on industry experience for projects. Entrepreneurship and employability are two other vital benefits of this set up.

Recommendation from 3rd Symposium of Employment of National Force organised by the Ministry of Manpower have been reflected in the new curriculum of the Higher Colleges of Technology which is under the Ministry of Higher Education. The private sector has reacted to this recommendation by offering international bachelors programs in Information Technology and Masters Programmes through e-learning mode of delivery.

In addition public and private sector establishments are striving to achieve the omanisation targets in the ICT sector by offering training programmes and sponsoring their employees to undertake appropriate higher education study.

Industry oriented certification training programmes are being offered to civil servants on leading IT vendors / technologies such as CISCO, ORACLE and Microsoft.

### ***5.6. Information Security forum for Public Sector***

The Information Technology Authority organised a security forum for representatives of the public sector in September 2006. The forum aims to raise the curtain for the ambitious capacity building programme for security practitioners within the government entities.

Information held within the government network is a valuable asset. Information exchange through electronic network mandates a high level of security and ITA aims to build this competency by creating appropriate opportunities to expand the knowledge base and enhance the skill set.

The security forum marked the start-up session for the creation of 'information security practitioners (ISPs) by walking them through a maturity process in the form of formal training sessions and workshops in the future. ISPs are looked upon as champions in propagating the philosophy of information security within the multiple layers of their organisation. They will be empowered with the requisite knowledge in securing information systems to world-class security standards such as the ISO27001.

### ***5.7. Global Gateway for Schools***

The Global Gateway is a one-stop-shop for international partnerships, featuring schools from all over the world. Oman has become a special partner in this global gateway and with its own customised version of the gateway in Arabic with local contents. Workshops to prepare teacher-trainer and to raise their awareness of the international dimension of education and to show them as to how ICT can support and enrich collaborative work between schools in different countries were organised.

In this regard the Ministry of Education organised a workshop for school teachers at the British Council, Oman. The two main focus areas of the workshop were the Global gateway and e-languages.

E-Languages is a new free-to-use online collaborative programme enabling teachers to work in partnership with other teachers internationally. The workshop gave a hands-on experience to its participants on how to create an international project through the e-languages platform. It is a collaborative tool for teachers worldwide, allowing them to create digital projects and lesson resources in collaboration with a foreign partner.

This project aims to improve the ICT skills of teachers, guide them to create digital resources and involve their students by teaching them to create exciting audio and video presentations that can be shared with other schools. The project is a result of a baseline study undertaken by the British Council among the GCC countries to assess ICT usage in schools and education. One of the recommendations of this study was to create local content involving local expertise. The project will undertake further teacher training and support the production of educational DVD by professional networking.

## 6. BUILDING CONFIDENCE AND SECURITY IN THE USE OF ICT

### 6.1. Infrastructure Security

The transition to e-government raises the level of infrastructure security from a technical to a strategic dimension since communicating with the systems providing the Government services becomes a key success factor and any security breaches to such systems can have a direct impact on the trust and support of the public to the Digital Society initiative.

Towards this mission a national level security framework is drafted for adoption by all entities joining the Government Network. The framework prescribes comprehensive security and audit guidelines and procedures based on the Security and Audit Detailed Report customised for each ministry. The framework also provides for adequate business continuity planning facilities, procedures and processes to be put in place.

In addition a Government Data Centre facility will be established at the Muscat Knowledge Oasis. It is a state-of-the-art, highly secured set-up that will be managed by the Information Technology Authority.

### 6.2. E-Transaction Law

Oman's Digital Society initiatives require substantial legal protection for the various entities in the use of ICT for official and personal communications and transactions. To increase the trust that citizens and businesses have in electronic transactions, ITA has initiated the formulation of e-Legislation for electronic transactions in Oman.

The forthcoming e-law addresses key issues such as: validity of e-transactions, intellectual property protection, taxation and data protection, legal recognition for electronic signatures, admissibility and evidential value of data messages, electronic payment validity, jurisdictional matters, issues of electronic messages and protection for privacy and security.

The law drafted by a professional law firm has been reviewed by the ITA and is being reviewed by the legal authorities. It is expected that a final version of the law would be enacted by the first quarter of 2007.

### ***6.3. Security Policy Framework***

The Security Policy Framework drafted by the Information Technology Authority (ITA) has been derived based on a structured collection of independent guidelines, processes and practices. The framework aims to ensure the protection of information assets from unauthorized access to or modification of information, whether in storage, processing, or transit. The framework is based on existing, accepted standards, guidelines, and collections of practices and reflects the behaviors of an initial community of high performing organizations. Both business and government organizations can implement the framework with practices they choose or are required to use for their market sector and country.

## **7. ENABLING ENVIRONMENT**

### ***7.1. Online Voter Registration***

The Ministry of Interior has launched its website accessible at [www.moi.gov.om](http://www.moi.gov.om) currently available in Arabic only. The website provides a view of the administrative structures within the ministry and gives details of direct telephone contacts of the staff responsible for various internal affairs. Texts of nationality law are posted in the website for information along with procedures for voter registration and details of channels through which such registration shall be accepted.

The Ministry has provided for facilities to register new voters through online registration. They can download application and voting forms and can also send them by email to this ministry. Existing voters can verify their profile online and update their records online as well. For this they have to provide their Identity card numbers. Such a system is available for the first time and it precludes the forthcoming Sixth Shura Council elections.

### ***7.2. Domain name .om Regulation***

According to ISO 3166 standard codes, .om (Sultanate of Oman) is the two-letter country code, referred to as the 'Top Level Domain' (TLD), in Internet terminology, assigned to the Sultanate of Oman by the International Corporation for Assigned Names & Numbers (ICANN).

Registration of domain names under the '.om' TLD is managed solely by the Oman Network Information Centre (OMNIC) under the Ministerial Decree No.44/2001.

The mission of OMNIC is to provide an equitable, just and competent technical and administrative management of domain name registrations and IP address allocations for Internet community in the Sultanate of Oman.

### ***7.3. First Information Society Day Celebrations***

The first phase of the World Summit on the Information Society (WSIS) in December 2003 continued to its Second phase in 2005 at Tunis. It highlighted the importance of ICT infrastructure and applications to overall national development. The first Information Society Day was celebrated by the ITU on the 17th of May 2006.



The Sultanate joined other nations in celebrating the first World Information Society Day premised on the purposes and principles of the Charter of the United Nations, international law and multilateralism, and respecting fully and upholding the Universal Declaration of Human Rights, so that people everywhere can create, access, utilize and share information and knowledge, to achieve their full potential and to attain the internationally-agreed development goals and objectives, including the Millennium Development Goals as part of The World Summit on the Information Society Tunis 2005 plan of action and commitments.

The day was chosen based on the recommendations of the IT Summit held in Tunis. A technology forum was organised by the Information Technology Authority to discuss issues relevant to digital divide, improving accessibility and capacity building for both employees and citizens.

Oman's celebration coincides with the launch for the Digital Oman Awareness and Promotion Campaign which proves Oman commitment towards empowering its citizens. To mark the day an IT campaign was also flagged off to begin a journey through the various important cities of Oman aiming to spread the ICT awareness amongst the citizens.

#### ***7.4. E-Tendering Project***

As part of the e-Oman/Digital Society Initiative, Information Technology Authority (ITA) and Government Tender Board (Oman TB) are working closely to automate all tendering and procurement process in government that will be integrated with Ubar portal as one of the Quick win projects. The primary objective is to establish a centralized state of the art procurement management system & processes to maximize value propositions. This will help in achieving higher efficiency and will also enhance elements of transparency and accuracy in Government Procurement process with considerable cost-reduction.

The system will create a common E-Tendering Portal for all entities with common back-office processes and systems to provide a single and standard point of reference for all vendors. It will have a scalable portal interface for the suppliers for automating the complete tender process, from indent to Award resulting in the reduction of tendering process time and increase in process efficiency. The system will have a completely arabised interface with high level of security features like Secure Socket

Layer (SSL), Digital Signatures and time-stamping. Modern communication and collaboration facilities are built-in for facilitating interaction with suppliers and provide a push mechanism to notify the appropriate registered set of suppliers of procurements through facilities like SMS, E-Mail, E-Fax etc.

### ***7.5. Innovative Entrepreneurship Competition***

The Big Business Idea Competition 2006, the first national business plan competition of its kind in Oman, was launched on the 18th June 2006 at Knowledge Oasis Muscat. In partnership with The Knowledge Mine incubator program, the competition brings together seven of Oman's leading organizations: the Information Technology Authority, Ernst & Young, Ericsson, National Bank of Oman, NCR, Nawras, and Apex Publishing.

The competition aims to give the entrants an opportunity to become entrepreneurs by turning their ideas into viable and successful businesses under the care of the business incubator at Knowledge Oasis Muscat.

All individuals or teams are encouraged to participate by submitting an application form to Knowledge Oasis Muscat. The organisers particularly encourage University staff, researchers, students and entrepreneurs to enter, innovative ideas for a technology-driven business through this competition. This year the competition's prize includes free office accommodation in the Knowledge Mine incubator.

### ***7.6. SANAD – IT Enabled Service Centres***

The prime objective of the SANAD IT Enabled Service (ITES) Centre program is to create gainful employment and business opportunity for the Nation's Youth by delivering ICT Enabled Services from government and corporate to public, electronically.

The Sanad Service Centres program brings together the following elements and hence is considered a highly visible nation-wide initiative.

- Government and corporate services rendered through 'single-window' of 100+ Sanad Service Centres spread across the country
- Launch of ICT Enabled Services as a vehicle for Omani entrepreneurship

- Unique Public-Private-Participation (PPP) model to accelerate the country's march towards delivering e-Services to its constituencies and putting itself on the world map for innovative e-Government programs

The strategic partnership involving various service providers consists of different ministries, government departments, and various corporate bodies or businesses. New Entrepreneurs chosen for the project are the business partners for the program, which is a managed partnership model with the convenience revenue sharing per transaction per service. The technology fee is borne by the government is paid to technology partner. With 5 operational centres within Oman, the program is scaled to more regions within the next year.

With the innovative model of encouraging entrepreneurship involving the use of Technology, the SANAD model has resulted in various benefits. From the government perspective it enhances the infrastructure of the country by increasing the Points of presence for citizen services and improves public service delivery. It supports SANAD objectives of creation of knowledge workers through a unique & innovative business model that is technology driven & scalable as per public adoption rates. This has resulted in self-employment opportunities for Omani youth, supported with professional training and government sponsorship. For both citizen and businesses there is increased convenience in using the ITES centres as a multi-service vending facility.

### ***7.7. National PC Initiative***

The National PC programme aims to address two main issues in ITA's strategy, namely capacity building and ICT sector enhancement. Benefits will be seen on various fronts, with increased PC and internet penetration as some of the most visible changes that will come through from the Programme. The programme intends to build capacity in the general population by creating a PC bundle offer that is affordable, provides value and includes a basic training module. This latter is designed to get the citizen off to a 'fast start' in his ability to use the core system and the internet. This Programme will also contribute to ICT sector enhancement by developing a locally based capability to deliver associated services (hardware, training, others) and software.

The programme is aimed at the population at large. However part of the strategy of roll-out is to focus on different population segments, targeting on their particular needs; and an early focus will be given to those segments that can have a significant and positive impact on the economy as a whole.

This Programme is at the pre-implementation stage where the alternative structures are being refined, and implementation plans being prepared so that a rapid start can be achieved once initiated. The Programme is expected to be launched shortly, and will actively contribute to the development of ICT in Oman.

### ***7.8. Oman ICT Society***

The Oman Information Communication Technology Society will be formalised in 2007 with representatives from the public and private sector. Founder members are from major sectors like IT, Telecommunication, Banking, Oil & Gas and public service organisations. The Society's initial constitution reflects the keenness of the various segments that are currently pioneering ICT adoption and would like to network together for creating more awareness within the society of the potentials of IT.

The main objective of this society is to collaborate and coordinate the efforts of the ICT community within Oman. It emphasizes a cooperative focus in order to create and nurture a technology culture within Oman. The society envisions working along side with national level projects and supporting their implementation in every possible manner. It also aspires to spread around the regions as the network spreads.

### ***7.9. ICT Centre for the Blind***

The Ministry of Education in association with the Petroleum Development of Oman (PDO) are to build an Information and Communication Technology Centre at the Omar bin Al Khatab Institute for the Blind. The centre will help the blind and visually-impaired people of Oman can take advantage of information technology revolution.

The centre addresses the issue that no sections of our society are excluded from the benefits of technology because of disability. The centre will play a vital role in improving the lives of, and provide opportunities to, the blind and visually-impaired of the Sultanate.

### ***7.10. Oman Web Awards***

The Oman Web Awards 2005 was instituted in 2005 to recognise excellence in web designing skills by providing a platform where web companies, freelancers and web owners could showcase their work and improve the recognition they have in the market. The main objective is to promote the spirit of innovation and creativity, raise standards in design and services, advocate proper growth, promote intellectual property awareness and encourage all sectors to become more involved in the digital economy. Subsequently the Oman Web Awards 2007 has been launched and more details are available at [www.omanwebawards.org](http://www.omanwebawards.org).

For the first awards, the overall winners were Bahwan Travel Agencies, The Ministry of Information took second place while Nawras came third. All three automatically qualified for the Pan Arab Web Awards which is a similar competition covering the Arab region. Several web sites from Oman also entered the Pan Arab Award 2006 and won awards for their excellent online presence. For the list of award winning Oman Websites refer Appendix.

### ***7.11. E-Entertainment***

The eGames conference 2005 was held in May 2005, aimed at Gulf-based companies and professionals involved in producing interactive entertainment software and hardware for video game consoles, handheld devices, PCs and the Internet. The event was hosted by Knowledge Oasis Muscat (KOM) in association with Oman Mobile. It gave the Gulf's gaming, new media, animation and marketing professionals the opportunity to take part in a two-day interactive event. Some of the topics covered in this conference are; The Handheld Market, Games & Popular Culture, Middle East Stand in gaming, Innovation & Game Development, Mobile Gaming, Online Gaming and Marketing Games to Middle East Generation Youth. As the event was well received, the event became an annual event and the eGames 2006 international conference on mobile and serious game was held in December in partnership with staff from the De Montfort University in the UK.

## 8. ICT APPLICATIONS: BENEFITS IN ALL ASPECTS OF LIFE

### 8.1. E-Government

#### 8.1.1. National Registration System

National Registration System (NRS) developed and adopted by the Directorate General of Civil Status (DGCS), of Royal Oman Police (ROP) is an integrated computer system with archive of accurate information about social events relating to Birth, Marriage, Divorce, Death, Residency & Nationality for all citizens and residents of Oman.

The system generates a unique civil number for each individual at the time of registration. This civil number will be printed on the ID cards and will be used to verify the individual's identification. The electronic standards-based ID card issued is capable of multiple applications with a high level of security with Biometric recognition allowing the authentication of the holder. The card is capable of storing large amounts of data which can be read at portable terminals and electronically validated.

This NRS project covers the following activities:

- Issue of Omani Identity cards (ID Smart Cards)
- Issue of resident cards for expatriates
- Registration and issue of certificates for birth & death
- Registration of marriage and divorce

The smart ID cardholders are able to use their smart ID card in order to visually and electronically identify themselves at various authorities all over the country and through mobile terminals carried by the members of the ROP.

The Oman National Identity card supports applications such as Driving License, Passport and sponsor details. The same card is expected to host additional applications, such as Public key Infrastructure (PKI) authentication & Digital signatures, E-Purse and also serve as a Healthcare Card.

### ***8.1.2. Business 'One Stop Shop' registration***

One Stop Shop (OSS) is a G2B initiative to support on-line company registration through the Ministry of Commerce and Industry (MoCI). Six Ministries and entities participate in the OSS and enable a single-window service for Commercial Registration of new companies with minimal paperwork.

National IT Council of Oman identified the 'OSS' as a major e-government initiative. The main aim of this initiative is to create 'a favourable investment environment that is conducive to the development and prosperity of the Omani economy'. The entire Business Process Re-engineering was done by the MoCI with External Consultants under guidance of ITA.

The system is now operational and there has been a tremendous response to this service and a huge saving in terms of cost and time.

Access to such vital services has been widened due to their availability online. Public Point-of-access to the OSS is planned to be extended beyond the Web to telephone, self-service kiosks and help desks at the Ministry headquarters and at its regional offices. This e-service has simplified the entire process and combined with investor-friendly policies has brought efficiency into the operations.

### ***8.1.3. Online Visa***

Oman is planning for the provision of visa through the Internet. The proposed E-Visa system is a web-based system that integrates with different entities involved in visa processing by introducing an electronic communication channel between applicants and visa issuing authorities. The objective of the project is to facilitate visa issuance and processing procedure of visa for residents, visitors and tourists by enabling them to apply for visa online and get their application processed and approved in a seamless way. The project is expected to take nine months to be completed.

### ***8.1.4. E-Services from the Ministry of Finance***

The Ministry of Finance (MoF) has pioneered public sector computing in Oman since the mid 1970s. As the financial nerve centre for the public sector, this ministry currently manages a nationwide network of over 45 ministries and independent units with 2500 user accounts, to process the budget, procurement and payment

cycle of all civil entities centrally in accordance with the Omani Financial Law 56/82 and its amendments 9/85, 14/88 and 47/98.

The aim of the Information Technology Department of the MoF is to support the ministry in its primary role of managing and controlling public finance. This function includes facilitating and controlling public expenditure, processing and assisting in the prompt payment of salary to civil employees; oversee servicing of debt and supporting other internal financial operations of the Ministry.

The effective data management and communication facility built-in to the IT systems of MoF, is expected to result in improved quality of the Government's decisions due to the availability of accurate and timely budgetary and expenditure information to the decision-makers.

#### ***8.1.4.1. Integrated Financial System***

Having advanced from the card-based batch-processing systems of the 1970s, the dedicated IT department at the ministry developed a comprehensive real-time online Integrated Finance System (IFS) based on mainframe technology, which perhaps is the first implementation of this magnitude in the gulf countries.

The IFS processes all payments to all suppliers as well as employees across all the civil ministries and also provides for centralized audit and budgetary controls through a bilingual (Arabic and English) interface. With the aid of the system it is now possible to formulate the national budget, consolidate public expenditure accounts and manage public debt efficiently. The entire network is secured and accessible through a structured user authentication and workflow process.

The IFS also produces timely and useful financial reports for multiple and single facility public sector organizations while conforming to internationally accepted accounting principles. This application enables controlled and accurate bookkeeping and assists the Accounting, Budgeting and Treasury Departments with powerful reporting functions.

#### ***8.1.4.2. Human Resources Management System***

The payroll processing of civil employees of the Sultanate is performed by systems



developed in accordance with the Civil Service Law (Royal Decree No: 8/80 with all subsequent amendments up to 120/2004) since the 1980s. This system supports transactions of over 100,000 employees across various civil ministries and may be termed as one of the largest payroll implementations in the Middle East. Various modules of this system facilitate employee appointment, performance evaluation, promotions and increments, leave management, pay calculations and all the way up to the end-of service benefit management. With such automated systems, individual ministries are able to perform their human resources management activities more efficiently and in a timely manner. Having a centralised system also ensures integrity of the accounting and audit mechanisms to enable effective budgetary control.

#### *8.1.4.3. Spin-off Systems*

Backing upon the strength of a professional IT team, the ministry has been actively enabling computerisation of other government bodies since 1979. For example, the Telephone Billing Systems of the General Telecommunication Organisation (Now corporatised as Oman Telecommunication Company) and Commercial Registration System for the Ministry of Commerce and Industry, Systems for different surveys conducted by the Ministry of National Economy were developed at the MoF and handed over to the operational entities for implementation.

#### *8.1.5. E-Services from Ministry of Civil Service*

The Ministry of Civil Service has offered a job enquiry service in association with a local mobile service operator since the 3<sup>rd</sup> quarter of 2006. The system will provide information on the time of publication of job advertisements in the newspapers. Through this system, the ministry aims to provide prompt service to citizens, who are on the hunt for jobs. The system will respond to the enquiries of citizens with respect to jobs without reporting to the ministry.

The citizens now can get the required information by sending the details on the job advertisements to the mobile telephone numbers provided. These subscribers will be notified with the dates of job advertisement as appearing in the local newspapers. The system offers facilities to inform job applicants about the status of their application, date of scheduled interview or tests and their results. Through this service queuing is reduced at the ministry which will result in the employees focus on better service to the public. Applicants benefit by saving their time and effort in physically visiting the ministry for all their enquiries.

### ***8.1.6. E-Services from the Muscat Municipality***

With a number of services being offered through electronic channels Muscat Municipality is building a solid technological base to provide quality services to every citizen regardless of his/her education, location or time. They aspire to adopt Information and Communication technologies for both internal operations and for the provision of their public services.

Muscat Municipality's service strategy includes establishment of new rules and regulations to support e-service delivery. Adoption of e-services by the users is encouraged through bonuses, discounts in penalties and extensions of the grace period in addition to letter of appreciation to frequent users of the electronic system. Laying down a mechanism to facilitate access to the service for the general public and the business sector, and breaking down the technical barriers between them and eGovernment is more important than setting timeframes.

#### ***8.1.6.1. Public Interactivity Services***

The Muscat Municipality has encouraged interactivity through their website at and their new Interactive Voice Response (IVR) system. A discussion forum available in the official web site gives a window of an opportunity for every citizen to express his views.

Users can enter opinion polls and voice their views. Reflection of people and their feedback has helped the municipality to fine tune applications as per their user's requirements. Results of the opinion poll have redesigned the website. Most e-services are tested for user feedback during the trial phase when they are offered through the website and valuable comments from the users are incorporated in the actual deployment of the services.

#### ***8.1.6.2. Rial Applications***

mRial is yet another electronic service from the Muscat Municipality (MM). Corporate entities can register themselves onto the mRial account with their Corporate Civil Registration number. The mRial application enables users to interact with the MM system directly and search for the status of their municipal licenses. Alternatively they could check the status of their rental contract based on the Contract Number and year.

Through this application it is possible to inquire about building permit status whilst suppliers can enquire about the status of their pending payments if a cheque has been issued from the municipality. mRial system allows hotels to file their tax reports online, pay the municipality by registering bank deposit receipt without having to visit the municipality.

Given a car registration number the mRial system can retrieve parking violation details if any. Users can get their violation number, amount, place and time of violation in case there has been a violation.

#### ***8.1.6.3. Muscat Commercial Directory***

Private company data held in the municipality's database is now publicly available for users. The online Commercial Directory is yet another e-Service that answers queries about any enterprise registered with the municipality. One can access the MM website and get details such as address, location, phone, fax and even the email address of any business establishment.

Besides, every organization that registers with the mRial system will get half a page of text describing their business activities along with images for advertising their business free of charge through the Muscat Municipality's portal

#### ***8.1.6.4. SMS Parking Payment***

Residents of Oman can now pay their parking fees by just sending an SMS from their mobile phones. Such fees will be included in their monthly mobile bill or it will be deducted from their credit balance in the case of prepaid connections. The SMS must be sent to 90091 with their car's registration code, number and the parking time they require.

Data entered in the Portable Data Terminals (PDTs) is automatically updated into backend system without manual intervention thus saving time and improving efficiency.

#### ***8.1.7. E-Services for Environment***

The Ministry of Regional Municipalities, Environment and Water Resources (MRMEWR) has been harnessing technology in processing applications for availing

its services. The ministry provides the following services currently through intranet-based applications:

- Environment permit
- Chemical import/export permit and tracking
- Issue of license to shops
- Building permit sanctions

Applications for the above services are available through over 40 smart forms which can be downloaded and submitted along with supporting documents. The status enquiry of the application can be made through interactive electronic channels and once their certificate is ready applicants are sent an electronic message. The ministry proposes to introduce more sophisticated electronic interactive services such as the Interactive Voice Response (IVR) and touch-screen kiosks soon.

All these services are web-enabled and await connection through the government network to be offered through the Ubar portal. The ministry also has a ground water database which is a visual display system with spatial representation that can be located through coordinate mapping. They also have systems to track trans-border movement of hazardous chemicals and waste by awarding formal permits and licenses.

The ministry has pioneered the use of Personal Digital Assistants (PDAs) for collecting data from field inspections for the award and renewal of health certificate licenses. A collection of data and sample from different soil monitoring points in each site, in each Wilayat, in each region is also archived in a structured manner electronically.

## ***8.2. E-Education***

### ***8.2.1. Higher Education Admissions Online***

An Internet-based admission service has been rolled out from the Higher Education Admissions Centre (HEAC) of the Ministry of Higher Education for the student fraternity. This online service will improve the experience of the students seeking admission into over 50 different public and private higher education institutions

(HEIs) in Oman this year. Details of the admission process and procedures are available at all schools and at the HEAC website.

The HEAC system is a unified admission system processing applications to all higher education institutions of Oman for the academic year 2006-07. The system exchanges data electronically and works in close liaison with the Ministry of Education, Directorate General of Scholarships (DGS), Ministry of Social Development (MoSD) Ministry of Health, Ministry of Manpower and HEIs (such as the Sultan Qaboos University, College of law and other public as well as private institutions).

The HEAC service is the first e-service in the Sultanate that has mandated the student community to use only the online channel for seeking admission related services. Apart from increased efficiency in processing student applications, the system will also ensure fair and equal treatment for all applicants while enabling secure electronic data transfer for better accuracy and transparency.

### ***8.2.2. Education Portal***

Oman realises that the opportunities presented by ICTs to change the content of and approach to learning as well as to extend the reach of educational institutions could have a profound effect on its development. The education sector is harnessing modern technologies in offering innovative services to the entire community.

A comprehensive educational portal has been designed by the Ministry of Education and it is currently under development. The system is expected to be implemented by the 2nd quarter of 2007.

The portal will facilitate a centralised electronic archive of information about students studying under the Omani educational system at both public and private schools. Once developed this will be the first portal of the region of this huge functional scope and scale of operations.

Interactivity between parents occurs through the Internet, email and SMS. Students and parents can access published exam time-tables from the school. Learners can enjoy a range of multimedia-based learning materials available from a centralised archive. Due to the integrated data management, students shall be able to transfer

between schools without having to produce paper-based documents and process them manually.

On completion, the portal will support collaborative distance learning mode of education serving all learners of Oman through an eclectic range of communication technologies including the Internet and the mobile phones.

The School Management System implemented by the MoE in 1996 has reached about 900 schools by 2004-05 which is over a 90% reach. This approach is being enhanced with complete connectivity between ministry systems, school systems and the public. This will ensure that the staff can take timely and effective decisions implementing total quality management principles in education management. They are empowered with tools such as the document management system, work-flow systems and collaboration and communication tools for increased interactivity with students and parents.

Besides this the public email systems, chat rooms, public news forums for event and announcement are other sophisticated electronic services planned within the portal. the portal system shall comprise of three main modules: Internal Portal System (IPS), School Management System (SMS) and the Learning Management System (LMS). The portal shall be the gateway with a range of communication links such as mobile phones, interactive voice response systems in addition to the browser based access. The School Management Services (SMS) covering the learner oriented administration activities are covered in the very first phase. The school administration system shall be part of the second phase while the third phase covers financial service activities.

Most of the Omani schools are now resourced with computers either in computer labs or in the learning resource centres. Of these about 35% of the schools are connected to the Internet through either a dial-up line or through ADSL connectivity.

With Omantel providing a subsidised tariff of 52 US \$ per month for ADSL connectivity more schools are now motivated to make use of this opportunity and upgrade to the high speed ADSL line.

The LMS module of the portal framework provides for means and tools to support the learning process within the entire community. This will extend learning outside

the classrooms as well with improved quality of learning experience. There shall be an electronic forum for supporting the creativity of the academic professionals. In order to ensure that the teaching staffs are competent to use modern technology in their teaching environment effectively, the MoE had earlier deployed ICDL certification training for them.

### 8.2.3. Research Projects

The Sultan Qaboos University (SQU) has undertaken a number of research projects based on specialised areas of the ICT sector. The research has been funded by SQU, Private organisation and some external sponsors. SQU has undertaken these projects as either Principal Investigator or Co-Investigator with other research institutions. Some of these projects are listed below:

Development of Distance Learning for Common Courses at Sultan Qaboos University
Development of Information Technology Training and Research Infrastructure
Testability/ reliability knowledge of digital systems through controllability and observability computation
Use of geographical information system and remote sensing to monitor and analyze urban growth in Muscat,
Converged Networking
Solar Electric Vehicle
Development of Multimedia Teaching Tools
Applications of Linear Feedback Shift Registers in Building-up Secure Networks of SQU as Co-Investigator

In addition the Sultan Qaboos University, also hosts the CISCO regional academy for CISCO training programmes. Other higher education universities host such e-learning certification programmes and operate under the regional academy at SQU. This has expanded the opportunities for students and employees to gain vendor based certification through e-learning mode. Apart from this the Ministry of

Education has approved the utilisation of government school computer laboratories after working hours in all the regions. Such campuses have hosted several awareness building sessions and there exists a plan to implement further IT training through these facilities.

#### ***8.2.4. E-Learning in Schools***

Both public and private schools are rapidly adopting technology to create a comprehensive and connected learning community comprising of students, teachers, parents and the school administration. They are modernising their educational process and class room materials in order to improve the learning experience and create IT skilled future generation. The Al Huda Private School is the first electronic school in the Sultanate which is completely networked with about 50 wireless access points. Both the teacher and the students use multimedia laptops which are connected to the school's intranet website and to the Internet.

The school's intranet hosts e-books and other software which enable the students to use their e-pens to write on their monitor and transfer these to their electronic exercise books. Student registrations, attendance recording, exam scheduling, grading, annual results compilations, etc. are centrally managed and information is made available to both teachers and parents. In addition the SMS technology is used send alerts to parents about the progress of the student. The inter-connectivity also enables ministry circulars, Internal bulletins, correspondences between teachers and students and activity photographs are exchanged through electronic networks thus saving time and increasing efficiency dramatically. E-education is increasingly being adopted for its potential benefits within the learning community of Oman.

### ***8.3. Gender based ICT Usage Study***

The Communication and Information Research Center in Sultan Qaboos University in collaboration with the Telecommunication Regulatory Authority (TRA) conducted a study to analyze the digital divide in ICT usage and access between female and male in sultanate of Oman.

The survey questioned females and males from different regions, age groups, educational background and different income level on their usage of ICTs. While conducting the survey it was important to acquire roughly equal response from both



females and males and therefore, 54.8 per cent of questions returned were answered by female and 45.2 per cent of respondents were male. The study revealed that the male-female ratio is almost 1:1. The dominant age group in the population pyramid is between 15 and 64 years of age. It is notable that this is the main income generation segment of the population.

The results of the survey revealed that on an average an Omani individual spends about 17 RO (44.2\$) per month for mobile telephone services. It is observed that in Oman males normally spend more on ICT than females. It was also revealed that approximately 47% of individuals use mobile services for mainly business purposes while 46.8% use it for emergency situations and only 4.4% use it for leisure purposes. Interestingly 57% of the respondents showed that the fax service is most difficult to use. It is considered to be due to that fax service is no longer in high demand and respondents used other means of electronic communication.

According to this study, around 54 and 46 per cent of male and female respectively use internet in the Sultanate. The demand and access to the internet service is much related to the availability of means of access such as computers, fixed line and public access centers such as internet cafes. It was also evident from this survey that on an average an Omani individual spends 3 OR (7.8 US\$) per month for Internet access.

## ***8.4. E-Healthcare***

Ministry of Health (MoH) has enhanced the use of Information Technology in its operations and revolutionized the way health information is collected and processed. Their Al Shifa System, a comprehensive Hospital Information Management System is implemented in about 140 MoH institutions across Oman. The system integrates patient data flow and creates a paperless workplace allowing clinicians and nurses give more quality time to patients rather than for paper work.

### ***8.4.1. Online Presence***

The Ministry of Health (MoH) website offers up-to-date informative content regarding medical statistics and health alerts. It hosts the e-recruitment system for details of job openings which are again processed electronically.

In its penchant to harness the benefits of digital technology, the MoH has also

introduced the automation of reminders for clinic visits and surgical operations by sending SMS messages to patients. Prior to their appointed schedule, patients can request for changes in appointment according to their convenience.

#### *8.4.2. Tele-Medicine and Tele-Conferencing*

In an International Conference on Plastic and Reconstructive Surgery in Oman, the telemedicine workshop session included a live telecast of surgeries by eminent plastic surgeons. Further to this the tele-education project will enable medical professional in Oman access programmes from leading foreign academic institutions online through the Internet to upgrade their knowledge and practice without having to travel or to break their career. The exchange of ideas and sharing of information will help upgrade the quality of healthcare services. Subsequently it might be possible to certify medical and para-medical professionals on a periodical basis for their up-to-date practice.

Telemedicine is the use of electronic information and communications technology to provide and support health care when distance separates the participants. Although it can include conventional telephone use, telemedicine typically refers to more recent telecommunications systems, such as interactive video conferencing, store-and-forward image techniques, remote medical record access, and remote patient monitoring.

E-medical imaging technology is now enabling complete processing and presentation of all medical information thus making e-health care not only paperless but also film-less. The new Ibra Hospital is completely film-less and paperless. All the processes of the radiology department are electronic and clinicians can review patients' information completely electronically. The introduction of electronic imaging in various MoH institutions is underway.

#### *8.4.3 E-National Medical Record*

The current process of registering patients at different hospitals and health care centers will be centralized at a single point of contact with the implementation of e-National medical record system that is being tied up with National Registration System (NRS) activities. With e-National Medical Record, it will become easy to uniquely identify a patient in any healthcare institution he/she is visiting for

treatment and to ensure that there is a proper and safe continuation of treatment. The e-National Medical Record would help eliminate duplication of medication, lab and radiology investigations, facilitate follow-up and ensure appropriate and safe patient care.

Further MoH is developing an e-Notifications Engine that will take care of all health information notifications which then will be functional through the National e-Health Portal. MoH works closely with the National Registration System (NRS) authority in order to integrate the two systems for exchange of information. NRS provides MoH with the subjects' demographic data by way of direct access to the Smart ID Card data. MoH is also enabled to provide the birth and death notifications electronically.

In accordance with the 58th World Health Assembly Resolution on e-Health Ministry of Health is pursuing the development of this comprehensive National e-Health Strategy for Oman. To cap it all, creating an e-Health Information Confidentiality Act, and e-Health Legislation are also in the pipeline.

## ***8.5. E-Banking and E-Payment Systems***

### ***8.5.1. EFT Strategy of the Central Bank of Oman***

The Central Bank of Oman (CBO), the chief banking and financial regulatory authority of Oman, is continuing to implement the National Electronic Funds Transfer (EFT) strategy to create a framework for a modern national payment infrastructure in the Sultanate. As part of the EFT Strategy, CBO has introduced the Real Time Gross Settlement System (RTGS) that is used for the inter-bank transfers clearing and settlement for high value payments. Along the vision of the National Payment Systems Strategy which was issued in April 2003, the CBO has recently also implemented the Automated Clearing House System (ACH) which is used for bulk processing of recurrent electronic credit and debit transfers, such as, monthly payroll transactions, utility payments and car loan instalments.

To support and handle the activities of these payment systems, the CBO has signed an agreement with Oman Telecommunications Company (Omantel) for the establishment of a secure high-speed network for the purpose of creating an advanced communications super-highway among the banking and financial institutions

of Oman, called the “BankNet”. BankNet guarantees secure and confidential operations by connecting the CBO with the participating banks through point-to-point connectivity. In order to assure the stability of banking system, a business continuity plan has been devised and accordingly a disaster recovery centre is also being set up at Knowledge Oasis Muscat (KOM). CBO is continuously promoting the awareness of risk planning and business continuity planning for the banking and financial industry.

In order to upgrade Oman’s banking system to bring it to world-class standards, CBO is continuing to implement and build Electronic Fund Transfer Systems. These systems comprise several components such as the Real Time Gross Settlement System (RTGS was successfully launched in September 2005), the Automated Clearing House System (ACH was successfully launched in September 2006); Electronic Cheque Clearing (ECC) through cheque imaging, a new central ATM & Point of Sale (POS) Switch, Delivery versus Payment (DvP) and Payment versus Payment (PvP).

The effect of the above systems combined with prudent fiscal measures is expected to bring about significant changes in funds management in the Omani economy fuelled by the application of state-of-the-art technologies in the National Payment System.

#### ***8.5.2. E-Payment Gateway***

The Information Technology Authority (ITA) is currently working on an Internet e-Payment Gateway solution to complement the Central Bank of Oman’s overall EFT Strategy. The overall strategy is to encourage the society to move away from cash as the major payment mechanism, by providing alternative, improved, secure and efficient electronic Payment mechanisms for Citizens, Businesses and Government entities.

ITA is likely to outsource the implementation of this internet based Payments Gateway for moving the e-government operations to the next level of transactional phase. Work is in progress to identify a suitable and best of breed solution provider, as per the Government’s defined requirements.

It is also proposed that the Royal Oman Police’s National Registration System (NRS)

initiative be expanded to include an electronic purse on its Multi Purpose Smart ID Card. The ROP introduced this Smart ID card for both Omani Citizens and expatriate residents in Jan 2004 – being the first Country in the region.

### ***8.5.3. Commercial Banking***

Banking and Finance sector has always been a fore-runner in the implementation of Information and Communication Technologies for both its customer-front core banking operations as well as back-end electronic fund transfer systems.

Oman's commercial banks having shown robust and stable growth are now advancing their services new levels. The NBO, National Bank of Oman and Bank Muscat have lead the way to Online banking in Oman. Any of their customers with Internet access can perform most of the routine banking transactions through these websites. It is now possible for customers to check account balances, make credit card payments, transfer funds between their own personal or business accounts of the same bank and pay utility bills (even school fees).

Bank Muscat's e-trade enables business banking online. Oman Arab Bank has a smartcard based full-fledged electronic payment system that can handle small and large payments such as fees to government departments and private outlets like Omantel (for bill payments). It has signed up with the Muscat Municipality for the payment fees and parking fines.

## ***8.6. E-Tourism***

Ministry of Tourism (MoT) is a key government body in the Sultanate of Oman catering to the vital sectors of Tourism. MoT's vision is to promote Oman Tourist regionally and internationally through the provision of all relevant tourist information regarding its fabulous landscaping, authentic Arabic heritage and numerous natural tourist spots which are all considered as a great attraction to tourists worldwide.

MoT has embarked upon an ambitious plan to transform itself into a proactive organization capable of facing the current and future challenges in its domain of activities and to attain high quality standards in serving its customers. With their current website at they are planning a full-fledged portal in association with travel and tourism companies for offering various related services through this portal.

In its core essence the E-Tourism Portal will serve in defining the major blocks of Oman tourism, but in general term it will achieve the following objectives:

- Active contribution of organization and tourist enterprises in the tourist information update of the e-tourist portal content. Through the e-tourist portal the content will be distributed to a number of tourist enterprises chosen based on certain criteria for participating in content amendments and updates and those chosen enterprises will have the right to promote their products.
- No dependence on the developing company as the features of the developing tools allow the users to make changes and amendments on the portal content.
- 24x7 on line interaction with the end users or the international tourist to provide the necessary service and answer their queries.
- Contributing to the promotion of services of Small and Medium Enterprises SME and increasing their tourist investments.
- Online interaction with tourist enterprises and representatives of European Ministries of Tourism providing them with the necessary documents with the ability to do online update.
- Creating a central tourism database that will allow the stocktaking of tourism information from different entities and sharing it with the investors and tourism enterprises allowing attracting more investors in the field.

The ministry has involved the private sector in the design and development of this portal. It has outsourced the operations and management of the portal to a qualified and experienced industry partner.

### ***8.7. E-Business***

Following the technology trend many corporate sector companies are conducting B2B transactions using electronic means. B2C is also being introduced by offering electronic facilities spreading more awareness & building-up of infrastructure as a gradual process. The country's finance community is taking a lead in the regions e-banking revolution.

Many major banks, public sector organizations and private sector are coming forward to launch e – commerce activities. The endeavours are to create a vehicle from which

Oman's business community, particularly the small and medium enterprises (SMEs), can be inducted into the world of e-business.

#### ***8.7.1. E-Procurement and B2B Exchanges***

ITA and Government Tender Board (TB) are working closely to automate all tendering and procurement process in government. ITA provides necessary support to TB in selecting right solution based on best of breed technologies and in selecting world class vendors thus ensuring best practices are followed while implementing the solution.

Oman Telecommunications Company (Omantel) uses Omania E-Commerce Company's (Tejari Oman) electronic purchase solutions known as «Tejari Transact». Tejari Transact is an electronic procurement platform whereby suppliers and buyers transact either in spot purchasing or auctions. By implementing such e-procurement solutions, organizations can reduce transaction costs, increase client base and cut the costs of purchases and brokerage with their business partners. BankMuscat (winner of the country's best Internet bank award) also moved its procurement processes online via Tejari Transact. By becoming a member of Tejari Transact, BankMuscat will be able to make all major purchasing and procurement online. Oman Aviation Services from the aviation sector is already member of this electronic trading platform.

#### ***8.7.2. Multi-Party Smart Cards***

The latest technology in chip-based cards is being used in various applications in Oman. As a first project in the Middle East, Oman's National Identity cards are smart-cards with multi-application capability. Currently they hold driving license information. E-visa and passport details and e-purse capabilities are being considered to be included with the same chip-based, biometrically secure, smart card.

Retailers are adopting the smart cards in cooperation with each other in awarding loyalty points to their valuable customers. 'Basma' is Oman first Smart Card based rewards programme shared and supported by the leading fuel company OmanOil, Bank Muscat, Nawras Telecommunication Company and LULU super market chains.

BankMuscat has launched e-salary cards in association with Ministry of Man Power for enabling ATM and Point of sale operations for salaried employees whose salary when transferred is available through the card.

### *8.7.3. E-Cargo and E-Ticketing*

Oman Air, the national carrier is heralding Technology adoption in its core operations with an aim to reach efficiency and provide sophisticated services to its customers. Oman Air has launched e-ticketing services in Kerala-India, after implementing the use of its own departure control system called Airport Check-in System / International (ACSI).

Oman Aviation Services (OAS) Company has implemented bar-code cargo labelling in Seeb International Airport as part of continuous efforts to provide customers with high class services and in compliance with IATA's regulations on bar-code cargo labels. The new system has established one standard bar-code label format to provide and obtain consignment information, enabling unique piece identification and piece level tracking. The bar-code label application can provide improvement of data accuracy, availability of optional fields for shipper specific information, piece-level identification, availability of more accurate, consistent and timely shipment status information. It also advances warehouse handling processes, including full consignment verification prior to unloading, pre-sorting of shipments for purposes of inventory control; besides reducing paper requirements within the warehouse. In total, all this leads to accuracy, cost-saving and improved efficiency within freight handling systems.

### *8.7.4. Muscat Securities Market*

Financial markets are becoming electronically equipped for their business. Electronic markets have brought new challenges. The customers, a main player in the market, are demanding efficiency, speed, security, privacy and confidentiality to trade electronically. As security increases and payments systems become more user friendly, we will see a major shift from the traditional market place to e-financial market place. The Capital Market Authority (CMA) is an independent organisation to regulate and control the Omani securities market and to participate with other organisations in setting up the infrastructure of the Sultanate's financial sector.



The Muscat Securities Market (MSM) had implemented a highly visual electronic trading system in 1998. In the end of 2004, MSM had proposed to replace the existing electronic trading system with a new system from 'ATOS Euronext'. The new system ensures providing the data and information immediately for the supervisory authorities to enable them to activate the regulatory role in trading. Further, the system broadcasts the trading data immediately to all users and facilitates the market to add many investment instruments in the future as well as to make an easy link with the other stock markets in the GCC and other countries.

### ***8.8. Public Industrial Estates***

The 2006 World Summit on Innovation & Entrepreneurship was organised by Public Establishment for Industrial Estates (PEIE) in April 2006 to develop practical solutions to address the most important issues facing emerging nations and to inspire the development of the next Generation of entrepreneurs and innovators to fully celebrate the opportunities of the 21st century in a climate of global prosperity. The summit consisted of themes that simultaneously address real issues facing entrepreneurs and innovators within the Middle East and North Africa (MENA) region and across the world while providing opportunities for established leaders and entrepreneurs alike to spread prosperity for future generations. As landmark events of the Summit, an Innovation Strategy was set and Oman also planned to establish an 'Innovation Valley' including a network of global enterprise clusters for improving access to, and the application of innovation and innovative models to social, economic, scientific, organisational and technological landscapes.

## **9. CULTURAL DIVERSITY AND IDENTITY, LINGUISTIC DIVERSITY AND LOCAL CONTENT**

### ***9.1. Heritage and Culture***

The Ministry of Heritage and Culture website at has been launched with comprehensive set of information about the rich heritage of Oman. Details of UNESCO approved archaeological sites, forts, water management systems are all featured informatively in this website.

Ancient scripts dating back to the BCs have been restored and an electronic archive has been made available. In addition the rich folklore of music and theatre has been documented informatively in the site. Details about the museums, restoration of traditional forts of Oman, ongoing renovation projects, schedule of exhibitions organised to promote local culture are also made available online. A photo gallery and video gallery are available with media highlighting the rich marine and bio reserves of the country.

The Ministry of Heritage and Culture started collecting Omani manuscripts and was able to collect 4,300 manuscripts in addition to ancient rare archaeological documents and in addition to ancient rare aspects of life in Oman. The manuscripts and documents house attracts several researchers from several educational institutes who use the resources of the house in their higher studies. The hand written manuscripts and documents are stored in microfilm while others are stored in CD-ROMs.

### ***9.2. Arabic Language Support***

Most of the government websites are in Arabic and there is an increasing trend to provide English content as mirror images of the website. The print media is also normally either in English or in Arabic. However newer magazines and journals have mirror image publications in both languages. There has been extensive work undertaken in the distribution of ICT training materials in Arabic language. This begins with text books and other learning materials and also other system training manuals.

Systems developed for use within government organisations have mostly Arabic interfaces and sometimes bi-lingual interfaces. The forthcoming 'Ubar portal' specification lays special emphasis on the Arabisation of interfaces and their ability to handle data in Arabic at the backend systems as well. Use of Unicode has been made mandatory for all government applications.

## **10. MEDIA**

### ***10.1. Oman Media Online***

The media in Oman has been active in observing and guiding the society through modern electronic channels. Currently Oman News Agency (ONA) is the Sultanate's official news agency. Oman Establishment for Press, Publication and Advertising (OEPPA) is the largest press establishment in Oman. It runs several publications including the English daily 'Oman Observer' and the Arabic daily 'Oman Daily'. It also publishes a weekly economic magazine called 'Money Works'. It publishes a pure IT magazine called 'Digital Oman', quarterly in association with Information Technology Authority and Knowledge Oasis Muscat.

All dailies have their respective online versions. Although most of them have replication printed material, some websites have sophisticated content based organisation which is easy to search even from the archives. In addition Oman Television and Radio have their own websites as well. For a list of media websites refer appendix.

### ***10.2. E-Publishing***

Oman has become the first country in the Middle East to be introduced to e-publishing, considered the future solution for viewing electronic content, offline as well as online. Using an IPQ (Intelligent Pixel Query) technology, e-publishing solutions can be used to publish maps, newspapers, multimedia e-books, advertisements, videos, photos, brochures and catalogues, or any other electronic files in two dimensions (2D) or three dimension (3D) format. For example, a newspaper can be published online using e-publishing solutions in a 2D format enabling a reader to read it online as if he is reading a real newspaper with zoom in and zoom out and page flipping facilities. All this in real time without waiting for any downloads.

## **11. ETHICAL DIMENSIONS OF THE INFORMATION SOCIETY**

### ***11.1. Intellectual Property Protection***

Copyrights in Oman are protected under Royal Decree 37/2000. Protection continues for 50 years after the author's death. Financial rights such as royalties are afforded under this law. The authors enjoy the right to have their work published in a pen name. Infringement of copyright is punishable by the Omani law.

### ***11.2. Intellectual Property Seminar with WIPO***

Ministry of Commerce and Industry of Oman in association with World Intellectual Property Organization (WIPO) organised an International Seminar. This seminar discussed the theoretical framework of intellectual property and its role in trade and commerce within the Arab world, in line with the country's commitment to protect intellectual property at International standards.

The seminar aimed to raise the awareness about the importance of Intellectual wealth and its economic benefits to nation. It provided a platform to present research work on intellectual property and exchange views on issues such as intellectual property and technical development, technology transfer, IPR issues in pharmaceutical industry in the Arab world to be presented by experts.

The Intellectual Property Rights (IPR) protection has been stretched beyond its boundaries by science and technology, more notably the software technology. This seminar also addressed this pertinent issue of intellectual property protection for software industry in the Arab world.

### ***11.3. Agreement for Software Licenses***

The Government of Oman represented by Information Technology Authority (ITA) signed an agreement with Microsoft in July 2006. The agreement is for procuring the licenses to use Microsoft Desktop Products and it is valid for three years from the date of agreement. Based on this agreement Oman government will be procuring licenses for Microsoft desktop products. Microsoft shall undertake to re-invest some of this amount in various training and development related project in Oman. The agreement will cover the usage of the licensed Microsoft desktop products in various

Omani Government organizations. It has kept in line with the mission of protecting intellectual property rights in the software industry by working with licensed copies of software.

This agreement will support Digital Oman initiative as a three-pronged approach:

- Accelerate the use of new technologies in the government sector by providing the required products as well as the training to use them
- Expedite the national level implementation of knowledge-based projects for which Microsoft through this agreement will reinvest funds and support the eOman initiative
  - Build capacity within the community to create the knowledge society through the concept of knowledge houses wherein the community has access to modern technologies and all are encouraged to engage in self-paced learning of Information and Communication Technologies.

#### ***11.4. Online Content Filtering***

The Sultanate prohibits pornography from entering Oman. Items subject to confiscation at the airport include compact discs, video and audiocassettes.

For online content, the only Internet Service Provider – Omantel filters any immoral, illegal and undignified material available through their Internet connectivity. In line with many international Internet Service Providers (ISPs), Omantel blocks sites based on site content, in order to blocking pornographic and certain hacking sites that encourage hacking. In case a potentially useful site has been miss categorized, Omantel provides for means to communicate through email and errors are corrected within 72hours.

The Telecommunication Regulation Authority (TRA) regulating the telecommunications sector works in accordance with the Telecom Act (Royal Decree No: 30/2002) which has provisions regarding the use of any electronic means for communication including radio waves. The above act also penalises violations by way of misuse of any telecommunication medium under the control of TRA with high penalties and imprisonment.

Realising the harmful result of spamming and its resulting deterioration in efficiency, TRA undertook a public consultation on SPAM mail (unsolicited emails) issues, the compilations were made available public as a paper.

### ***11.5. Software Piracy Control***

The Sultanate of Oman is committed to protect the rights of copyright owners. Oman joined the World Intellectual Property Organisation (WIPO) in February 1997, which provided valuable assistance in the drafting of Oman's intellectual property laws. In June 1996 Oman implemented laws to protect copyrights under Royal Decree No:47/96 which was repealed by the Royal Decree No:37/00 in June 2000. The copyrighted materials specifically include computer software and databases. Oman's copyright law prohibits reproduction of software without formal permission. If caught with pirated software, either an individual or a company may be prosecuted under the provisions of Omani Copyright Laws. All illegal copies of computer software along with the articles used for illegal duplication will be confiscated under the law and the penalties include a fine up to OMR 2000 (US \$ 5,202) and a prison sentence of up to two years.

## 12. INTERNATIONAL AND REGIONAL COOPERATION

### *12.1. USTDA & ITA Project Forum*

A regional Information and Communication Technology (ICT) Project Forum on “Making Connections in the Middle East and North Africa” was organised by ITA in association with the US Trade and Development Agency (USTDA).

The forum provided an avenue for representatives of 10 governments and many regional organisations to share knowledge and best practices in the adoption of technology for economic progress.

Beyond discussions about ICT growth, the event also provides an opportunity to highlight efforts for further cooperation among the countries involved. As many private companies and national and international organisations participated, the networking opportunities were high for realising projects based on cutting-edge technologies in the ICT sector.

### *12.2. Cyber Crime Workshop*

In association with the International Telecommunications Union (ITU) and the Arab Regional Centre for Excellence (Arab CoE), A Cyber Crime workshop was organised by the Telecommunication Regulation Authority (TRA). Its main objective is to build the requisite professional and technical capabilities in addressing the growing menace of electronic and cyber crimes within the region with global interactions. A wide spectrum of cyber crimes and their combat measures were discussed in addition to regulatory issues. Through such events the Sultanate is taking the lead in a region-wide initiatives aimed at assisting Arab countries in developing their capabilities in combating cyber crime.

### *12.3. Technology Fair at China*

Oman participated in the China Hi-Tech Fair which took place in Shenzhen city, China in October, 2006. During the fair delegates of the event shared plans, experiences and thoughts in e-Governance as well as the Information Technology sector. Several official meetings were conducted between member representatives to explore various ways of cooperation to enhance and strengthen the ICT sector in their countries.



A speech titled “eOman Toward Knowledge Society” was delivered at the conference highlighting Oman Government’s plans, initiatives and efforts to further the Government services offered to organizations and individuals using modern communication channels and building the IT sector to be an influential factor in the development of the National Economy. This exercise proved to be beneficial in witnessing and understanding modern latest technologies and methodologies in implementation of the eGovernment Concept, which in turn will help the eOman initiative of the Sultanate.

#### ***12.4. Internet Governance Forum in Greece***

The 1st Meeting of the Internet Governance Forum (IGF) was convened between the 30th October and 2nd November 2006 in Athens, Greece. Oman’s team comprising of members from ITA and TRA participated in this forum. This forum is an outcome of the World Summit on the Information Society (WSIS) that took place in Tunis in November 2005. A wide range of issues related to Internet Governance are discussed in this event along with appropriate recommendations to the international community. The overall theme of the meeting is “Internet Governance for Development” with the agenda structured along the broad themes of Openness, Security, Diversity and Access.

## LIST OF OMANI WEBSITES FOR REFERENCE

	ORGANISATION	SHORT NAME	WEBSITE
1	Ministry of National Economy	MoNE	<a href="http://www.moneoman.gov.om">www.moneoman.gov.om</a>
2	Muscat Municipality	MM	<a href="http://www.mm.gov.om">www.mm.gov.om</a>
3	Royal Oman Police	ROP	<a href="http://www.rop.gov.om">www.rop.gov.om</a>
4	The Tender Board	TB	<a href="http://www.tenderboard.gov.om">www.tenderboard.gov.om</a>
5	Ministry of Information	MoInf	<a href="http://www.omanet.om">www.omanet.om</a>
6	Ministry of National Heritage & culture	MoNHC	<a href="http://www.mnhc.gov.om">www.mnhc.gov.om</a>
7	Ministry of Social Development	MoSD	<a href="http://www.mosd.gov.om">www.mosd.gov.om</a>
8	Telecommunication Regulatory Authority	TRA	<a href="http://www.tra.gov.om">www.tra.gov.om</a>
9	Information Technology Authority	ITA	<a href="http://www.ita.gov.om">www.ita.gov.om</a>
10	Ministry of Manpower	MoMP	<a href="http://www.manpower.gov.om">www.manpower.gov.om</a>
11	Ministry of Health	MoH	<a href="http://www.moh.gov.om">www.moh.gov.om</a>
12	Ministry of Education	MoE	<a href="http://www.moe.gov.om">www.moe.gov.om</a>
13	Ministry of Higher Education	MoHE	<a href="http://www.mohe.gov.om">www.mohe.gov.om</a>
14	Ministry of Commerce & Industry	MoCI	<a href="http://www.mocioman.gov.om">www.mocioman.gov.om</a>
15	Ministry of Regional Municipalities & Environment & Water Resources	MRMEWR	<a href="http://www.mrmewr.gov.om">www.mrmewr.gov.om</a>
16	Oman Chamber of Commerce and Industry	OCCI	<a href="http://www.chamberoman.com">www.chamberoman.com</a>
17	Ministry of Tourism	MoT	<a href="http://www.omantourism.gov.om">www.omantourism.gov.om</a>
18	Ministry of Agriculture and Fisheries	MoAF	<a href="http://www.maf.gov.om">www.maf.gov.om</a>
19	Muscat Securities Market	MSM	<a href="http://www.msm.gov.om">www.msm.gov.om</a>
20	Public Establishment for Industrial Estates	PEIE	<a href="http://www.peie.om">www.peie.om</a>
21	Public Authority for Craft Industries	PACI	<a href="http://www.paci.gov.om">www.paci.gov.om</a>
22	Knowledge Oasis Muscat – ICT Park	KOM	<a href="http://www.kom.om">www.kom.om</a>
23	Omani Center for Investment Promotion and Export Development	OCIPED	<a href="http://www.ociped.com">www.ociped.com</a>
24	Digital Oman ICT Magazine	DO	<a href="http://www.digitaloman.com">www.digitaloman.com</a>
25	Petroleum Development Oman	PDO	<a href="http://www.pdo.co.om">www.pdo.co.om</a>
26	Ministry of Interior	MoI	<a href="http://www.moi.gov.om">www.moi.gov.om</a>
27	Muscat Security Market	MSM	<a href="http://www.msm.gov.om">www.msm.gov.om</a>
28	Capital Market Authority	CMA	<a href="http://www.cma-oman.com">www.cma-oman.com</a>

## LIST OF OMANI WEBSITES FOR REFERENCE

		SHORT NAME	WEBSITE
	<b>Telecommunication</b>		
29	Oman Telecommunications Company	Omantel	www.omantel.net.om
30	Omanmobile		www.omanmobile.om
31	Nawras		www.nawras.com.om
32	Oman Network Information Center	OMNIC	www.omnic.om
	<b>Banking</b>		
33	Central Bank of Oman	CBO	www.cbo-oman.org
34	Bank Muscat	BM	www.bankmuscat.com
35	National Bank of Oman	NBO	www.nbo.co.om
36	Oman International Bank	OIB	www.oiboman.com
	<b>Educational</b>		
37	Sultan Qaboos University	SQU	www.squ.edu.om
38	Modern College of business studies	BCBS	www.mcbs.edu.om
39	College of banking and financial studies	CBFS	www.cbfs.edu.om
40	Middle east College of IT	MECIT	www.mecit.edu.om
	<b>Tourism</b>		
41	Oman Destination		www.destinationoman.com
42	Birds Oman		www.birdsoman.com
43	Arabian Oryx Project		www.oryxoman.com
	<b>Oil and Gas</b>		
44	Petroleum Development Oman	PDO	www.pdo.co.om
45	Shell Oman	OSHELL	www.shell.com
46	Oman LNG	OLNG	www.omanlng.com
47	Oman Society for Petroleum Services	OPAL	www.opaloman.org
	<b>Port Services</b>		
48	Port Services Company		www.pscoman.com
49	Salalah Port Services		www.salalahport.com

PAN ARAB AWARD - 2006

**LIST OF AWARD WINNING OMANI WEBSITES**

CATEGORY	AWARD / CERTIFICATE WINNER
Banks And Financial	<a href="http://www.bankmuscat.com">www.bankmuscat.com</a>
	<a href="http://www.fincorp.net">www.fincorp.net</a>
Corporate	<a href="http://www.mhdoman.com">www.mhdoman.com</a>
	<a href="http://www.zubaircorp.com">www.zubaircorp.com</a>
Culture And Economics	<a href="http://www.mcbs.edu.om">www.mcbs.edu.om</a>
	<a href="http://www.cce.edu.om">www.cce.edu.om</a>
Directories And Info Services	<a href="http://www.omansm.com">www.omansm.com</a>
Fashion And Art	<a href="http://www.mhdoman.com">www.mhdoman.com</a>
	<a href="http://www.zubaircorp.com">www.zubaircorp.com</a>
Corporate	<a href="http://www.amouage.com">www.amouage.com</a>
	<a href="http://www.avonoman.com">www.avonoman.com</a>
Governmental Organizations	<a href="http://www.omancma.org">www.omancma.org</a>
Health Services	<a href="http://www.nlicgulf.com">www.nlicgulf.com</a>
ICT Services	<a href="http://www.nawras.om">www.nawras.om</a>
	<a href="http://www.integsystems.com">www.integsystems.com</a>
Industries	<a href="http://www.Alsafwahdairy.com">www.Alsafwahdairy.com</a>
	<a href="http://www.omancables.com">www.omancables.com</a>
Non-Governmental	<a href="http://www.bikersoman.com">www.bikersoman.com</a>
	<a href="http://www.omanis.org/qld">www.omanis.org/qld</a>
Personal	<a href="http://www.absoman.com/simplethoughts/index">www.absoman.com/simplethoughts/index</a>
	<a href="http://www.ghannami.com">www.ghannami.com</a>
Real Estate	<a href="http://www.bluecityoman.com">www.bluecityoman.com</a>
Services	<a href="http://www.ideas-consulting.com">www.ideas-consulting.com</a>
Sports	<a href="http://www.sportsoman.com">www.sportsoman.com</a>
Transportation	<a href="http://www.zubairautomotive.com">www.zubairautomotive.com</a>
Travel And Tourism	<a href="http://www.bahwantravelgroup.com">www.bahwantravelgroup.com</a>

## OMAN MEDIA ONLINE

<a href="http://www.omanet.om">www.omanet.om</a>	Ministry of Information's website
<a href="http://www.omannews.com">www.omannews.com</a>	Oman's official news agency
<a href="http://www.oman-tv.gov.om/">www.oman-tv.gov.om/</a>	Oman TV and Radio stations
<a href="http://www.omanobserver.com">www.omanobserver.com</a>	Oman Observer – English daily
<a href="http://www.timesofoman.com">www.timesofoman.com</a>	Times of Oman – English daily
<a href="http://www.omantribune.com">www.omantribune.com</a>	Oman Tribune – English daily
<a href="http://www.omanaccess.com">www.omanaccess.com</a>	A portal for local news
<a href="http://www.alwatan.com">www.alwatan.com</a>	Al Watan - Arabic daily
<a href="http://www.shabiba.com">www.shabiba.com</a>	Al Shabiba -Arabic daily
<a href="http://www.omandaily.com">www.omandaily.com</a>	Oman daily - Arabic daily
<a href="http://www.freetheweek.com">www.freetheweek.com</a>	Free weekly tabloid
<a href="http://www.oeronline.com">www.oeronline.com</a>	Oman Economic Review magazine
<a href="http://www.apexstuff.com">www.apexstuff.com</a>	Oman Business Today magazine

**MILLENNIUM DEVELOPMENT GOALS**

## INDICATORS - 2005

Goal 1:	Eradicate extreme poverty and hunger	Year		
Targets	Indicators	2003	2004	2005
1. Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day	1. Proportion of population whose income below the purchasing power of \$1 a day.	-	-	-
	2. Poverty gap ratio.	-	-	-
	3. Share of poorest quintile in national consumption.	*	*	*
	4. Per capita GDP in US \$.	9319	10258	12255
2. Halve, between 1990 and 2015, the proportion of people who suffer from hunger	1. Prevalence of underweight children under-five years of age.	*	*	*
	2. Proportion of population below minimum level of dietary energy consumption.	-	-	-
Goal 2:	Achieve universal primary education			
3. Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling	1. Net enrolment ratio in primary education.	92.1%	*	*
	2. Proportion of pupils starting grade 1 who reach grade 5.	-	-	-
	3. Literacy rate of 15-24 years old.	98%	*	*

Goal 3:	Promote gender equality and empower women	Year		
Targets	Indicators	2003	2004	2005
4. Eliminate gender disparity in primary and secondary education preferably by 2005 and to all levels of education no later than 2015.	1. Ratios of girls to boys in education stages,			
	Primary	95%	95%	96%
	Secondary	98%	96%	92%
	University	123%	119%	112%
	2. Ratio of literate females to males among 15-24 years old.	98%	*	*
	3. Share of women in wage employment in the non-agricultural sector.	17.9%	*	*
	4. Proportion of seats held by women in national parliament:			
	- Majlis Ash Shura	2.4%	2.4%	2.4%
- Majlis A'dawla	14.2%	14.2%	14.2%	

Goal 4:	Reduce child mortality	Year		
Targets	Indicators	2003	2004	2005
5. Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	1. Under-five mortality rate.	11.1	11.1	11.1
	2. Infant mortality rate.	10.3	10.3	10.3
	3. Proportion of 1 year old children immunized against measles.	98%	98%	99%

Goal 5:	Improve maternal health	Year		
Targets	Indicators	2003	2004	2005
6. Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio	1. Maternal mortality ratio.	23.2	18.5	18.2
	2. Proportion of births attended by skilled health personnel.	95%	97%	98%

Goal 6:	Combat HIV/AIDS, malaria and other diseases	Year		
Targets	Indicators	2003	2004	2005
7. Have halted by 2015 and begun to reverse the spread of HIV / AIDS	1. HIV prevalence among pregnant women 15-24 years old.	-	-	-
	2. Estimates of HIV prevalence among 15-24 years old (per 100,000 people).	3.74	1.92	-
	3. Male Condom use prevalence rate (male) + Contraceptive prevalence use rate.	*	*	*
	4. Number of orphan children due to HIV / AIDS	*	*	*
8. Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases	1. Prevalence of Malaria (reported cases per 100,000 population).	32	25.5	21.8
	2. Mortality rates associated with malaria.	-	-	0
	3. Proportion of population residing in malaria risk areas using effective malaria prevention and treatment measures.	-	-	-
	4. Prevalence of Tuberculosis (reported cases per 100,000 population).	4.78	6.6	8.5
	5. Mortality rates associated with tuberculosis.	0.7	0.6	-
	6. Proportion of tuberculosis cases detected and cured under directly observed treatment short course (DOTS).	0.92	0.95	0.89



Goal 7:	Ensure environmental sustainability	Year		
Targets	Indicators	2003	2004	2005
9. Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	1. Proportion of land area covered by forest.	-	-	-
	2. Land area protected to maintain biological diversity (square kilometres).	29828	29828	29828
	3. Energy use (kg oil equivalent) per \$1000 of GDP (PPP).	-	-	-
	4. Carbon dioxide emissions (Metric tons per capita).	-	-	-
	5. Consumption of the ozone-depleting CFCs gas (ODP tons).	443	463.4	411.85
10. Halve, by 2015, the proportion of people without sustainable access to safe drinking water	6. Proportion of population using solid fuels.	-	-	-
	1. Proportion of population with sustainable access to an improved water source, urban and rural.	75.3%	*	*
11. By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers	1. Proportion of population with access to improved sanitary facilities:			
	- Equipped toilets.	93%	*	*
	- Equipped bathrooms.	95%	*	*
	2. Proportion of households with access to secure housing (owned or rented).	*	*	*

Goal 8:	Develop a global partnership for development	Year		
Targets	Indicators	2003	2004	2005
12. Develop further an open, rule-based, predictable, non-discriminatory trading and financial system	Indicators are being developed.	+	+	+
13. Addressing the special needs of the least developed countries involves:  Tariff and quota free access for least developed countries' exports; enhanced programme of debt relief for heavily indebted poor countries (HIPC) and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction	1. Net ODA, total and to the least developed countries, as a percentage of OECD/DAC donors' gross national income.  2. Proportion of total bilateral, sector-allocable ODA of OECD/DAC donors to basic social services (basic education, primary health care, nutrition, safe water and sanitation).  3. Proportion of bilateral ODA of OECD/DAC donors that is untied	+	+	+
14. Address the special needs of landlocked countries and small island developing States (through the Programme of Action for the Sustainable Development of Small Island Developing States and the outcome of the twenty-second special session of the General Assembly)	1. ODA received in landlocked countries as proportion of their gross national incomes (GNIs).  2. ODA received in small island developing States as proportion of their GNIs.	+	+	+

Goal 8: (contd.)	Develop a global partnership for development	Year		
Targets	Indicators	2003	2004	2005
15. Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term	1. Proportion of total developed country imports (by value and excluding arms) from developing countries, admitted free of duties.	+	+	+
	2. Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries.	+	+	+
	3. Agricultural support estimate for OECD countries as percentage of their gross domestic product (GDP).	+	+	+
	4. Proportion of ODA provided to help build trade capacity.	+	+	+
	5. Total number of countries that have reached their HIPC decision points and number that have reached their HIPC completion points (cumulative).	+	+	+
	6. Debt relief committed under HIPC initiative.	+	+	+
	7. Debt service as a percentage of exports of goods and services	+	+	+
16. In cooperation with developing countries, develop and implement strategies for decent and productive work for youth	1. Unemployment rate of young people aged 15-24 years, according to gender and global total.	-	-	-

Goal 8: (contd.)	Develop a global partnership for development	Year		
Targets	Indicators	2003	2004	2005
17. In co-operation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries	1. Proportion of population with access to affordable essential drugs on a sustainable basis.	All medicines are provided free of charge		
18. In co-operation with the private sector, make available the benefits of new technologies, especially information and communications	1. Telephone lines per 1000 population.	100.9	99.5	100.4
	2. Cellular phone subscribers per 1000 population.	253.5	333.8	533.0
	3. Personal computers in use per 1000 population.	154.0	*	*
	4. Internet users per 1000 population.	61.0	*	*
	5. Internet subscribers per 1000 population.	22.1	20.1	24.5

- Data not available in the report

\*Periodic data available through census & surveys

+ Not Applicable

## REFERENCES

The Royal Speeches of His Majesty Sultan Qaboos bin Said 2002, Ministry of Information, 2005.

Statement by His Excellency the Minister of National Economy on the occasion of the ratification of the Seventh Five-Year Development Plan and the State General Budget for the year 2006 dated January 2006.

Excerpts from the speech by H.E. Mohammed Nasser Al Khasibi, Secretary General of the Ministry of National Economy and Chairman of the Board of Director of the Information Technology Authority

Digital Oman Quarterly Magazine Volume-1 through Volume-7, Available online at [www.digitaloman.com](http://www.digitaloman.com)

Follow-up report on 'Omanisation in IT sector', released at the Third Symposium of Employment of National Labour Force held at Shinas and Ibri in 2005.

Country Background: 1970-2005, Ministry of Information, 2005.

Ministry of Information – Annual Publication 2002-2003.

Monthly Statistical Bulletin – Ministry of National Economy Vol:17 No:10 dated October 2006

National IT Strategy titled 'Digital Oman' strategy, 2002

National Identity Program from the DG of Civil Services available online at <http://www.itweek.co.uk/computing/features/2072457/national-id-program-sultanate-oman>

Oman Economic Review, February 2006 issue available online at [www.oeronline.com](http://www.oeronline.com)

Press reviews from Oman News Agency, Oman Observer, Oman Tribune and the Times of Oman English news dailies.

Press releases from Telecommunications Regulatory Authority (TRA) of Oman, Omantel, OmanMobile, Nawras, Muscat Securities Market, Central Bank of Oman and information posted on to their websites between September and November 2006

Statistical Year Book, Ministry of National Economy (October 2006) 34<sup>th</sup> Issue

The Royal Decree 52/2006 establishing Information Technology Authority - ITA

# ICT SURVEY QUESTIONNAIRE

**Questions for Households owning a computer :**

**1. Write down by order the three important reasons of owning a computer:**

1

2

3

1. For Learning
2. For Entertainment
3. For Work
4. To use the Internet
5. For use in Studying & Learning
6. To Develop family members skills & capacity in computer use
7. Others

**Questions for Households not owning a computer :**

**1. Write down by order the three important reasons for not owning a computer :**

1

2

3

1. Lack of qualified Household members to use the computer
2. Costly / Expensive
3. Waste of time
4. No need for a computer
5. Harmful to health
6. Other

**2. Is the Household planning to buy a computer in the future ?**

1. Yes

2. No.

3. Don't know

If the reply is (yes), answer question (3)

**3. When will the Household buy a computer ?**

1. Less than 6 month
2. 6 month or less than a year
3. One year or more
4. Unspecified

**Computer ( PC ) and Internet Individual Questionnaire**

No. of computer & internet users in the family	
Computer	Internet

Household members serial numbers	Where does ( ... ) use the computer ?			What is the purpose of for using ( ... ) the Computer?			Did ( ... ) Enroll in regular Computer Courses ?	Does ( ... ) Use the Internet ?	What is the average No. of hours per week that ( ... ) uses the computer ?	What is the average No of days per month that ( ... ) uses the computer ?	Where does ( ... ) uses the internet ?		
	Select three by order of Importance			Select three by order of Importance			1. Yes 2. No	1. Yes 2. No ( go to field 14 )	1. 1-7 hours 2. 8 - 14 3. 15 - 21 4. 22 - 28 5. 29 hours & more		Select three by order of Importance		
	1.	2.	3.	1.	2.	3.					1.	2.	3.
1	2			3			4	5	6	7	8		
	First	Second	Third	First	Second	Third					First	Second	Third



**Computer ( PC ) and Internet Individual Questionnaire**

Household members serial numbers	What is the purpose of ( ... ) for using the internet ?  Select three by order of importance			What topics does ( ... ) search for on the Internet ?  Select three by order of importance			Does ( ... ) have an Email ?	For what reasons Does ( ... ) use the E-mail ?  Select three by order of importance			Which of the following options was a reason for ( ... ) for not Using the internet ?  Select three by order of importance		
	10			11			12	13			14		
9	First	Second	Third	First	Second	Third		First	Second	Third	First	Second	Third

# **OMAN DIGITAL SOCIETY REPORT**

**INFORMATION TECHNOLOGY AUTHORITY**

**JANUARY 2007**

**[www.ita.gov.om](http://www.ita.gov.om)**