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NATIONAL PROFILE FOR
THE INFORMATION SOCIETY IN OMAN

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Oman relies significantly on its oil wealth for its economic well-being. The gross domestic product (GDP) of Oman was estimated to be 24 Billion USD in 2004 (Table 1), 40% of its GDP and 75% the country's export earnings are from oil revenues[1]. Non-oil exports of Oman looked very limited accounting for only 6% of its total export earnings. According to the Energy Information Administration (EIA), Oman's oil reserve will last only the next 16 years.

Realizing the importance of the need to diversify its economy away from its oil and gas resources, the government of Oman has a vision and strategy for a 'Digital Oman' by the implementation of e-government and a Digital Society during a 3 year (2002-2005)[2] road map (see Table 2).

A vision conference was convened in 1995 to identify policies necessary to realize the goals of Oman's vision 2020. The main objective of the vision is to ensure a stable and increasing income per capita by two-fold by the year 2020.

Table 1. Basic Country Indicators

	2001	2002	2003	2004
Total population[3] (M)	2.478	2.538	2.341	2.4*
Population density (per km2)	9	9	11	11.3
Total GDP (USD Billion)	20.2	20.6	21.1[4]	24.5
GDP per capita (USD)	8,144	8,097	8,085[4]	10,511

Source: ITU Data, 2005, *Madar Research Estimation

2. *Policies and Strategies*

ICT objectives have been incorporated in the sixth Five-Year Plan (2001-2005)[5]. The government believes that development of the Information Communication Technology (ICT) sector would have a positive impact to accelerate economic growth and diversify its economic program away from the reliance on oil revenues through its development strategy for Digital Oman. A National Committee for Information Technology (NCIT) was formed with the responsibility to formulate national policies and strategies to set up an Information Technology (IT) technical Secretariat for the committee in the Ministry of National Economy.

Oman has expressed interest through the national IT vision towards an Omani Digital Society[2] with strategies of streamlining Government services to citizens and business, enabling knowledge-based industries, supporting a competitive environment, complementing Achieving the Vision of Oman's Economy 2020 and making Oman a more attractive destination for foreign investment.

The government announced major projects aimed at creating a digital environment for e–governance and e–commerce. Its policies are focusing on the development of IT applications and products, opening telecommunications for privatisation (Royal Decree No. 46/99), and offering opportunities for key players in the IT sector, thus ultimately enable the creation of an Information Society. The following table

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[1] Energy Information Administration (EIA) country Analysis Briefs http://www.eia.doe.gov/emeu/cabs/oman.html

[2] Oman IT Executive Committee. Government of Oman, Digital Oman Strategy. http://www.itec.gov.om/

[3] Actual results of General Census of Population, Housing and Establishment. http://www.omancensus.net/fer/Figures-Indecators.htm

[4] Budde Paul, Communication Pty Ltd, 2004. http://www.budde.com.au

[5] bin Said, 2001. Sixth Omani Development Plan (2001-2005). http://www.moneoman.gov.om/developmentplan.htm

summarizes the key tasks to be undertaken by the Government during the coming 3 years outlined on a timeframe with main strategy blocks.

Oman has plans to upgrade its national infrastructure of applications, databases, legal and regulatory frameworks in line with global standards and adopting best practices to increase liberalization and competition.

Table 2. Road Map suggested Implementation plan

	Jan03	Jul03	Jan04	Jul04	Jan05	Jul05
Implementation Structure Setup	■					
National Telecommunications Upgrade	■	■	■			
Telecom Liberalization & Introduction Of Competition	■	■	■	■	■	■
Implement Applications Architecture		■	■	■	■	■
Implement Service Delivery Model		■	■	■		
Implement E-Government Technical Architecture		■	■	■	■	
Ministerial Process Re-Engneering		■	■	■	■	
Introduce Basic E-Government Legislation		■	■	■		
Implement Digital Society Measures		■	■	■	■	
Marketing & Awareness		■	■	■		
Quick Wins	■	■				

Source: ITEC

Sectorial plans for building the information society

The Communication Law was issued in 2002 to outline policies that should be followed to develop the ICT sector. The ministry of Transport and Communications formulated the general policies based on the Royal Decree No.30/2002 to ensure the telecommunication sector met the requirements as per the government's economic and social policies, and that it encourages competition, coordination and investment interests with concerned authorities as well as international and regional organizations.

In the framework of the National ICT Vision, the main sector objectives in the Sixth Five Year Development Plan are represented in the following:

Communication area
- Connect Oman via an electronic information network by creating communication channels between government, academic research and private companies in ICT;
- Achieve the knowledge based economy by linking local information resources, centers and global infrastructure.

Commerce
- Create an e-commerce environment, infrastructure, ensure that e-business transactions are secure;
- Provide e-government services by forming government databases of national characteristics;
- Plan project 'Digital Oman' to facilitate fast delivery of public utility services to the public,
- Set-up standards and guidelines for National Networks and systems, security, audits and business continuity plans.

Education area

- Create ICT awareness and making ICT accessible to the majority of the population and to develop human resources by formulating study plans and program.

3. *Legal and Regulatory Framework*

Table 3. Status of Oman on Intellectual Property Rights

WTO member	Paris Convention	WCT	PCT	Madrid Agreement	Hague Agreement	TLT	PLT	Nairobi Treaty	TRIPS
✓	✓(1999)	✗	✓(2001)	✗	✗	✗	✗	✓(1986)	✓(2000)

Source: WIPO[6]

National Intellectual Property Rights, Privacy status and status of freedom of expression

Oman was placed on the watch list in 1997 recommended by the International intellectual property alliance (IIPA)[7] efforts to modernize Oman's copyright laws. In 1998 and 1999, IIPA recommended that Oman be kept on the Watch List, as Oman's market was "dominated by piracy," and was "a haven for pirates fleeing less hospitable neighbouring states". Oman joined the WTO in 2000.

In the 2001 Special 301 submission, the IIPA recommended that Oman be placed on the Watch List, to ensure the market would be cleaned up, and encourage enforcement against corporate end-user piracy of business software. USTR decided to remove Oman from the Watch List, and they remained off the list in 2002.

Telecom regulatory framework

The Ministry of Communications conducted all regulatory tasks until in 2002. A Telecommunication Regulatory Act was then issued to form the Telecommunications Regulatory Authority (RTA). The RTA is an independent administrative and financial public body that regulates the establishment, operation and maintenance of telecommunication services. Its mandate also includes promoting the interest of telecommunication service providers (ISPs) and beneficiaries[8].

Consistent with its long-term plan to liberalize the telecom sector, Oman's Telecommunication Regulatory Authority (TRA) last year awarded Nawras Telecom a license to operate the country's second GSM network. The company reported signing up 16,844 customers at end of first quarter this year (March 2005).

Regulating the Internet

Oman has still the need to amend current laws to regulate the Internet and better reflect the potential of Internet-based service delivery.

Privacy and security laws and regulations for applications

The Oman Ministry of National Economy began to draft laws in 2003, for authentication, open records, e-procurement, privacy, e-payment and liability. However, there is currently no legal framework to cover the transmission and use of electronic data. Personal privacy on the Internet is still not guaranteed.

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[6]World Intellectual Property Organization; http://www.wipo.int/directory/en/details.jsp?country_id=135 WCT: WIPO Copyright Treaties; PCT: Patent Cooperation Treaty; TLT: Trademarks Low Treaty; PLT: Patent Law Treaty

[7] International intellectual property alliance (IIPA). historical summary of selected countries' placement for copyright-related matters on the special 301 lists February 2005, www.ustr.gov/assets/Document_Library/Reports_Publications/2005/2005_Special_301/asset_upload_file195_7636.pdf

[8] Arab Advisors Group, Oman Communications Projections Report, February 2004

Moreover, Oman has started shifting towards the establishment of a legal framework to cover transmission and use of electronic data, such as, authentication, open records, procurement, privacy, secure e-payments, and jurisdiction laws.

Other ICT-related laws ad regulations

Oman became a WTO member in October 2000, and has signed WIPO's Paris Convention in 1999. It is also party to one interim treaty.

4. *ICT Infrastructure*

Telephone penetration

Table 4. Telecom Indicators

Telecom indicators	2001	2002	2003	2004
Total telephone subscribers (K)	555	692.5	823.2	1049
Total telephone subscribers per 100	22.4	27.29	31.67	43.69
Main lines telephone (K)	230.5	227.6	229.7	236.4[4] 242.74
Main lines per 100	9.3	8.97	8.84	10.11
Cellular Subscribers	324,5	464.9	593.5	806.280
Cellular subscribers per 100	13.10	18.32	22.83	33.58
Pay Phones				6,530
Internet Users (K)	120	180	175	201
Internet Users 10,000	484.26	709.22	747.54	837.18
Internet Subscribers[4] (K)	40,676	48,232	51,769	52.862[4] 48.4
Personal Computers (K)	85	95	111	130
Personal Computers per 100	3.43	3.74	4.74	5.41
Internet Host computers		676	726	2,495
Internet Host per 10,000 pp		2.66	2.79	10.39
ISDN Lines	0	0.695	2.339	
ISDN Subscribers	0	600[4]		

Source: ITU data 2005
Source: Oman Telecommunications Regulatory Authority & Madar Research.

Table 5. …………………..

Proportion of ICT users	2003
Household proportion for fixed telephone (%)	43.9
Proportion of households with a mobile phone (%)	71.7
Proportion of households with a computer (%)	24.4
Proportion of household with internet access (%)	6.1%
Proportion of computer users	6.2%
Proportion of individual using the internet	3%

Source: 2003 census ICT Indicators of Oman. Presentation in Workshop in Capacity building IS measurement: (ESCWA) Beirut, 1-10 June 2005.

Table 6. Telecommunication Infrastructure

	2004
Fixed Lines subscribers	242,745
Mobile Lines subscribers	806,280
Pay Phones	6,530
Internet Subscribers	48,400
Dial-up	47,732
ADSL	490
Leased-Line	178
Internet hosts	2,495*

Source: Oman Telecommunications Regulatory Authority * Source: www.ISC.org

Government-owned OmanTel is still currently the sole provider for fixed and Internet services. As part of Oman commitments to the WTO, OmanTel's privatisation is still ongoing.

Oman has a low fixed-line teledensity with 9% (10.11%) in 2004. The number of mobile subscribers remains high with mobile penetration rate 29% (33.58%) in 2004. This is more than triple of the fixed line rate. In March 2005, Nawras Telecom launched their GSM mobile services as the second GSM mobile provider[9]. The new network will provide coverage of 60% of the population with 160 base stations. Nawras is a joint venture of a fixed and mobile operator in Qatar (Qtel), a leading European telecom operator in Denmark (TDC).

OmanTel is a shareholder in the Thuraya Satellite Telecommunications Co Ltd based in UAE. Thuraya owns and operates a mobile satellite system spanning 106 countries, with ability to switch its services through satellite transmission when users travel outside GSM network.

Internet backbone

Oman was connected to the Internet since 1997. Other telecommunication services available in Oman include: Digital data network, mobile fax and data service, SMS, Value added services, ISDN, ATM, WLL, VSAT, SDH. OmanTel is currently investing in the new telecommunication projects (2002-2007), with ADSL broadband Internet-service launched in 2004. Oman has also expressed interest in joining Falcon, a new cable system to link Middle East and India.

ISPs and ASPs

There is no private Internet Service Provider (ISP) in Oman. OmanTel is the sole access provider and is currently acting as the register for domain names.

PowerNet is a broadband high speed ADSL Internet service based on targeted on small or medium business or enterprises. PowerNet enables access the Internet at various speeds.

Table 7. ………………………

Type	Installation	Monthly Rental	Usage charges/ GB RO	Speed in Kbps Upload/Download	Maximum Amount (capping) – RO / Month*
Residential	25	12	1	128/384	39
Business	25	120	1	128/1024	Pay as per the use.
Cyber Cafe	25	75	1	128/1024	250
Gov.Schools	25	20	Unlimited	128/512	20

Source: ADSL Service OmanTel http://www.omantel.net.om/services/business/internet/adsl.asp

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[9] ARAB advisors group strategic Research Service. March 21, 2005, June 22, 2004, January 28

Access

There are approximately 726 Internet hosts in Oman in 2003, which is about 2.79 host per 10,000 inhabitants[10]. A national toll-free number allows dial-up access from anywhere in Oman and users can access the Web from a number of local Internet cafes. Prices to end-users remain comparatively high. The ITU estimated the Internet penetration rates at 7% in 2002 with 180,000 users[10]. According to Madar Research, Internet penetration reached 8.37% in 2004, with 201,000 users.

In 2001, Siemens commissioned by OmanTel developed an ADSL broadband network. The service was launched in mid-2002, but there was no indication of what services were offered in early 2004.

The government does not allow the establishment of privately owned radio or television companies. Satellite dishes are abundant in Oman's major urban areas and the only TV network is the state-owned Oman TV.

PC Dissemination

There is about 95,000 PC in 2002, estimating 3.74 computers for 100 inhabitants[10]. According to Madar Research, PC installed base in 2004 is estimated at 130,000, leading to PC penetration rate of 5.41%.

5. *ICT Capacity Building*

Awareness and dissemination

Many steps are being taken to increase ICT awareness to ensure community understands the potential benefits of IT. Efforts include awareness campaigns, public announcements, publicity, Internet access points and an integrated campaign for 'Quick Wins'. Other avenues in ICT awareness are through the Knowledge Oasis Muscat (KOM), seminars, conferences, special interest group presentation, Omani Computer Society and Omani ICT trade association.

The Ministry of National Economy is responsible for the processing, analysis and dissemination of Economic and Social Statistics. One of the major tasks is to establish the Social Economic Database (SED) and Geographical Database (NGDB) and their publication on the Internet.

One example of an awareness program of using ICT has been carried out in connection with the introduction of handheld devices during the 2003 national census. This Omani breakthrough experience was based on using handheld devices, Geographical Information Systems (GIS), Global Positioning Systems (GPS), computers and associated software and databases, the Internet and Intranet, Communication devices to carry out its national census. A review11 points out the advantages and challenges of using such a novel methodology for collecting national statistical information.

Computers in schools

Education reform places new importance on information technology training even at basic level. The Ministry of Education[12] has currently lengthened the ten years of basic education (3,907 additional hours) to allocate computer time of 264 hours to strengthen computing knowledge. Computer education is now being introduced in almost all the prominent schools and government colleges. Government is working to provide PCs to all secondary schools with software and Internet facilities ultimately covering over 1,100 schools.

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[10] International Telecommunications Unit (ITU). Information Technology indicators 2005

[11] Modern Means and Technology Used in the Oman Census Programme
http://unstats.un.org/unsd/demographic/ meetings/egm/CensusEGM04/docs/AC98_8.pdf

[12] The Ministry of Education, http://www.moe.gov.om/

Vocational training

Consistent with the government's "Omanization" policy, the current sixth five-year plan place high priority to vocational and technical training. The government has adopted the "General National Vocational Qualification" scheme but it lacks standards necessary to develop skills that apprentice system can offer. Sanad Fund offers low-interest loans for young Omani entrepreneurs to start their own businesses towards entrepreneurship. A number of leading Omani firms have expressed interest in partnering with private US IT educators to establish IT institute in Oman.

University education

Sultan Qaboos University (SQU) offers IT bachelor degree courses along with other private colleges including the National College for Science and Technology. KOM is expected to contribute towards education include private Middle East College of Information Technology (MECIT), and Waljat college for Birla institute of Technology and Ranchi.

Research, Development and Innovation in ICT

One of the basic objectives of the TRA is to encourage research and development in the telecommunications field[1].

The Sixth Five-Year Plan gives attention to research and evolve regulatory regime with regional and international centers. $ 4.5 million US has been allocated to research activities in Sultan Qaboos University. One example of an IT project from these research activities employ IT oriented geographical information systems (GIS) and remote sensing to monitor, analyse and predict urban growth.

KOM's mission is to be a hub to create an environment for research, and cultivate knowledge through its technology park. It establishes incubator programmes towards Entrepreneurship. KOM accommodates every size of business, from a single entrepreneur to major international research facilities, call centres and business headquarters. Indeed, KOM is totally committed to creating an environment in which entrepreneur, researchers, and small and medium sized enterprises (SMEs) as well as Academics are established at one place.

6. *Building the ICT Sector*

ICT Firms

Oman government has plans and initiatives to build the ICT sector and encourage Private Public Partnership (PPP) and facilitate e-business and e-commerce activities. It invites global ICT players to set up "centers of excellence" and provides local entrepreneurship and self-employment schemes.

KOM is a public–private sector-led technology park, which plays an important role to foster the development of ICT. It creates an environment to introduce and distribute innovative models of management and entrepreneurship for entrepreneurs, researchers, small- and medium-sized enterprises and established multi-nationals.

KOM is also involved in the production and assembly of PC. It establishes customer contact and service centers for Arab countries, and provides arabization of products. KOM envisage the design and production of advance computers and software products.

Investment in ICT

As part of its WTO accession in 2000, automatic approval of majority foreign ownership up to 70% is available. Oman is expected to allow 100% foreign investment and ownership in IT sector[13].

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[13] Country commercial guide for OMAN FY 2005. http://strategis.ic.gc.ca/epic/internet/inimr-ri.nsf/en/gr126289e.html

Government facilitation

Through Oman Information Technology Executive Committee, the government has plans to facilitate and develop the ICT sector, in supporting link between ICT business community and educational and government entities[2].

Export of ICT

Oman has no known ICT exports.

7. *Applications in Government Establishments*

Computerization of public administration

Even though low on the e-government readiness ranking of 0.355[14], according to the World Public Sector 2003 report, Oman makes great effort to provide an impressive amount of useful information, services and links on its official e-government site. It features from exchange rates, bus times, and links to important sites, live TV and weekly news releases. Oman dropped 29 positions in its world ranking in the UN E-Government Readiness Report, from 98 in 2003 to 127 in 2004.

The Information and Publication Center[15] is one of the Ministry of National Economy directorates and is the main center for database processing and storage. It is also the main focal center for the dissemination of Economic and Social Statistics in the Sultanate. It acts as a hub between the data collection and analysis relating to data processing, maintenance and publication.

As part of the government's initiatives, there are a few Flagship/Quick-Wins projects targeting public administration applications. There are government portals, online payment, e-tendering sites[16], suppliers' websites, and statistics online. Government forms online (e-forms) and One-Stop-Shop for company registration are also available.

Digitization of Information

A long-term e-government program called Digital Oman, is planned to facilitate fast delivery of public utility services to the public.

One of the first major tasks of the Information and Publication Center was to establish and develop two main databases the Social Economic Database (SED) containing statistical data from 1970 in all major social & economic sectors. The second database is the National Geographic Data Base (NGDB) for all geographic levels of geo-based data in digital and analogue forms.

The second major task of the center is designing, developing, and programming of systems for census, household survey, consumer price index, and other major surveys.

- *Government-to-Citizens (G2C)*: Build easy to find, easy to use, one-stop points-of-service that make it easy for citizens to access high-quality government services;

- *Businesses*: Government-to-Business (G2B): Reduce government's burden on businesses by eliminating redundant collection of data and better leveraging E-business technologies (for example, the current one-stop shop initiative) for communication;

- *Intra-governmental*: Internal Efficiency and Effectiveness (IEE): Make better use of modern technology to reduce costs and improve quality of government administration, by using industry

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[14] United Nations, Economic and Social Affairs. World Public Sector Report 2003, E-Government at the Crossroads

[15] Oman's Information and Publication Center http://www.moneoman.gov.om/info.htm

[16] Oman's e-tendering site. http://www.tenderboard.gov.om

best practices in areas such as supply-chain management, financial management and knowledge management. Ministries will be able to improve effectiveness and efficiency, eliminating delays in processing and improving employee satisfaction and retention;

- *Intergovernmental*: Government-to-Government (G2G).

The National IT and e- government strategy has been extended to cover a range of digital society issues. Its plan of action includes:

- *Implementing a flexible government-wide network linking all Ministries Government Nervous System (GNS);*

- *Move to focus on citizen and business users "Communities of Interest" to develop applications;*

- *Introduce a primary government portal (UberPortal) with collection of all government sites.*

The Muscat Municipality and the Royal Oman Police has initiated work towards e-government. The former provide electronic portals to computerize their administration, and in January 2004, the latter introduced a smart card machine to store thumbprint for the country's first personal identity card.

Figure 1. The Oman IT Executive Committee
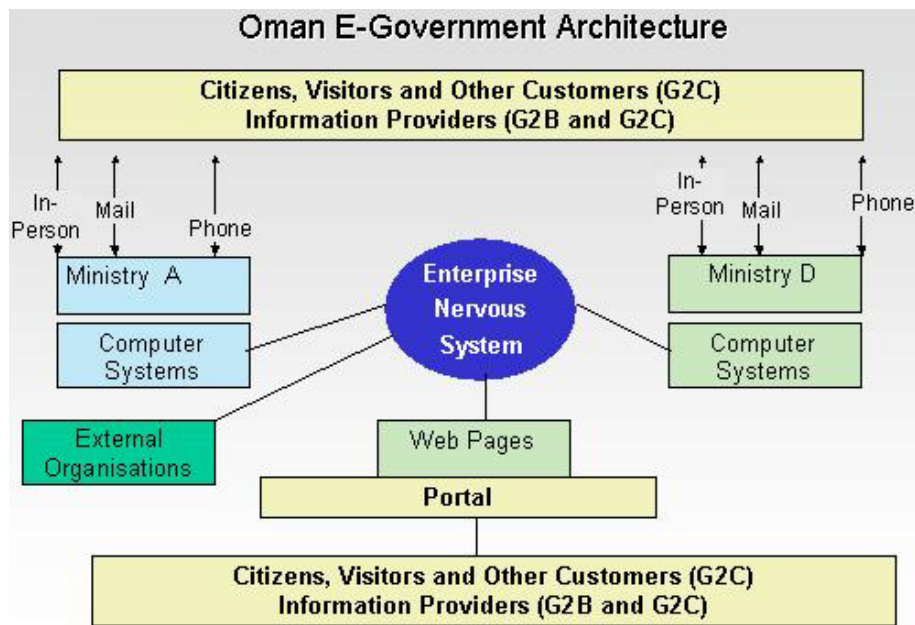
Source: The Oman IT Executive Committee

e-procurement applications

The uptake of e-government in Oman will be heavily dependent on the degree of trust that citizens and businesses have in electronic transactions. The main legislative areas are yet to be addressed by the Oman government. Authentication Law Open Records Law, Procurement Law, E-Payment Law Liability Law.

Computerization of customs processing

No information found currently.

Computerization of taxation and revenue management systems

No information found currently.

8. *Applications in Education*

e-learning

The Omani Ministry of Education announced in early 2005 that it has finalized its visionary plans for developing the educational process in the sultanate. The plan is part of major projects for modernizing the ministry's infrastructure.

Sakhr Software Co being a pioneering Arabic software company has executed several large strategic projects for the sultanate's schools. The most recent project was the execution of Sakhr's School Management System (SMS) at 500 schools throughout Oman, this included automating and developing school systems. Sakhr was also in charge of training a large segment of the ministry's employees qualifying them to efficiently use Sakhr's SMS.

'The Education Portal project[17] involves electronically linking-up approximately 1200 schools. In addition to providing the SMS, the project aims to provide two other major services: e-learning and an Internet Portal System which will establish communication between students, teachers, parents and the administration. The portal's data interface as a means of training, providing cultural and educational information, in addition, will allow administrative employees to access the tools to design and generate reports and support the decision making process.

The ministry's IT department has been working with Microsoft to complete the deployment of Active Directory, based on Windows 2003, at its headquarters and regional offices. The initial phase of the project involves migrating the ministry's current Windows NT server to Windows 2003. Other components of the system include Management Suite, Microsoft Systems Management Server 2003 and Microsoft Operations Manager, which will help the ministry's IT personnel to handle a wide range of network administration and management tasks. More than 900 ministry staff is currently accessing the network, which will eventually be extended to 11 administrative regions for use by a total of 2,000 staff.

In another major project the ministry recently deployed Cisco's Wireless Local Area Network (WLAN) solutions to enable up to 100,000 students access high-speed Internet and e-learning applications. The ministry says the wireless system has boosted the schools' ability to teach sciences and other laboratory based curriculum, as well as having allowed students increased mobility in the classrooms.

The WLAN solution incorporate Cisco Aironet 1200 Series Access Points and Linksys WMP546 Wireless PCI Network Cards, which offer 11 and 54 Mbps connectivity and optimizes secure encryption for security. The ministry is in the process of implementing the solution on its own quarters in order to facilitate access to a central information store from the ministry's conference and meeting rooms.

Sultan Qaboos University

Some faculties at SQU are currently using WebCT. A study on the implementation and perspectives of the early adopters has been conducted[18].

Following a recommendation by the Center for Educational Technology (CET), the university officially adopted e-learning as one of the new teaching technologies to be incorporated in the curriculum. CET is responsible for improving the teaching and learning process in SQU. SQU started to implement an e-

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[17] Oman's Education and Reference Guide. http://www.arabji.com/Oman/edu.htm

[18] Akinyemi, A., Omen, M. T. and Al Kindi, M. (2002) Implementation and Perspectives of WebCT at Sultan Qaboos University. Unpublished CET Research, Sultan Qaboos University, Sultanate of Oman

learning platform from global e-learning solution provider WebCT, which is undergoing the last phase of implementation. The e-learning platform is already in use and over 50 courses are now available on the university's homepage.

The WebCT server was initially running on Intel platform, using Windows2000, but due to performance hitches it was moved to Sun Enterprise 450. After the successful transfer of WebCT to Sun in 2002, CET upgraded the system and boosted its performance to four 400 MHz processors, 2 GB memory. The system now runs on Sun Solaris8 and is connected directly to HP Procurve 9308 core routing, using a 1 Gb/second Ethernet card. The system can now support up to 5,000 users running 1,000 courses.

e-school projects

No known pilot project been implemented.

Virtual universities

Oman does not have a virtual university. No known data found to show its implementation or plan.

9. Applications in Commerce and Business

Extent and maturity of e-commerce and e-business applications

Many corporate sector companies are conducting B2B transactions by offering electronic facilities, spreading awareness and building-up e-commerce infrastructure.

Active organizations of E-Commerce are Petroleum Development Oman, Omantel, Muscat Municipality, Bank Muscat, Oman Arab bank, Oman Aviation, the Public Establishment for industrial Estates, Oman Establishment for Press, News, Publication and Advertising.

The government of Oman has placed an emphasis on developing electronic payments and for citizens to use electronic payments to facilitate government and businesses.

Availability and quality of e-banking

OmanTel plans to increase bandwidth for Internet connectivity to support fast and efficient transactions. OmanTel is also looking at ways to provide the infrastructure necessary for issuing digital certificates and also Electronic Payment Gateway.

National Bank of Oman was the first bank to offer online banking services, Netb@nk in 2002. National Bank of Oman offers only retail Internet banking services. Among the nine foreign banks operating in the country, only HSBC offers retail e-banking services to its clients.

Bank Muscat[19] being one of Oman's largest commercial banks and has their Electronic Banking Center. The bank offers online banking, Mobile Banking Services with any of the recognized service providers in the country. The Bank does not charge its customers for this service. Bank Muscat launched its Mobile Banking services 2004. Other services in the pipeline include Arabic text messaging and Fund Transfers. The facilities available through BankMuscat Mobile Banking include both push messages and pull services.

Bank Muscat has ran Training Programme on their Business Continuity Plan after it has completed its testing of Its 'Fully Equipped' Disaster Recovery Center. The business continuity plan (BCP) helps safeguard the bank from any contingent disasters to minimizing disruption of the bank's operations.

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[19] BankMuscat (SAOG) http://www.bankmuscat.com/

Electronic Payment Gateway, e-banking, including Micro payments, Business Continuity Plan and payment devices like Smart Cards are some of their e-banking activities.

Bank Muscat launched a new service for its corporate clients in the last quarter of 2003, eTrade, which provides the bank's corporate clients with accurate and real time information on their ongoing trade finance transactions.

Table 8. Omani Banks Offering Internet and Phone Banking Services

Bank	Website	Retail E-Banking	Phone Banking	Mobile Banking
Bank Muscat	www.bankmuscat.com	Yes	Yes	Yes
National Bank of Oman	www.nbo.co.om	Yes	Yes	Yes
Bank Dhofar Al Fransi Al Omani	www.bdof.org	No	No	No
Oman International Bank	www.oiboman.com	No	Yes	No
HSBC	www.oman.hsbc.com	Yes	Yes	No
Standard Chartered Bank	www.standardchartered.com/om	No	No	No
Oman Arab Bank	www.omanab.com	No	No	No
Habib Bank Ltd	* N/A	No	No	No
Bank Melli Iran	* N/A	No	No	No
National Bank of Abu Dhabi	* N/A	No	No	No
Bank Saderat Iran	* N/A	No	No	No
Bank of Baroda	* N/A	No	No	No
Banque Banorabe	* N/A	No	No	No

Source: Madar Research

* N/A: Dedicated bank website not available for Oman

Maturity of regional ATM and banking networks

ATM machines were first deployed in Oman in 1988-1989. They were later interconnected via Oman Switch, the country's sole ATM network. More than 500 ATM units are now (end 2004) installed in the country, with a density of around 1.5 ATMs per 10,000 of population.

The National Bank of Oman (NBO) NBO has an extensive network of 76 ATMs in the Sultanate. Of these, 48 are located at the bank's service centers and 28 in other locations. Through its link the OmanSwitch (formerly known as Shamel and Al Watani) network, there are around 300 ATMs in Oman.

Oman's banking system consists of commercial banks, specialized banks and other financial intermediaries. Out of the 14 commercial banks, five are locally incorporated, nine are local branches of foreign banks and three are specialized banks. The Central Bank of Oman, which was established in 1974, supervises the banking sector and acts as the depository agency for the government.

Local banks in Oman are apparently turning to advanced banking and Internet-based technologies to shore up for anticipated overseas competition as the country prepares to meet WTO membership requirements. They also perceive increased competition from other GCC banks once a GCC common market is established.

Table 9. ………………..

Finance & Banking	2002	2003
Number of Banks	18	17*
Number of ATMs	420	470
Density per 10,000 inhabitants	1.65	2.00
Number of P.O.S.	1,900	2,200
Density per 1,000 inhabitants	0.75	0.94
Number of Payment Cards	950,000	1,100,000
Density per 100 inhabitants	37.43	46.98
Average IT Spending per Bank		

Source: Madar Research, GCC Central banks, Union of Arab Banks and other Sources

* Majan International Bank merged with Bank of Dhofar in March 2003, thus the number of banks decreased to 17: Five Local Banks, nine Foreign Banks and three Specialized Banks

Table 10. Maturity of bank-to-bank financial transfer system

Payment and Clearing System in Oman

Brief Description of option available	Future Changes
Cheque clearing system with one clearing zone. Cheques lodged before 10am cleared on same day basis. Normal clearing cut-off time at 12pm, for which value is received on T+2 basis.	CBO (Central Bank of Oman) is currently implementing an inter-bank RTGS system.

Source: The Middle East Payment Structure, Standard Chartered Bank 2005.

10. *Applications in Healthcare*

Databases for national healthcare

Oman has allocated only 7% expenditure to health from 1992-2004[20]. The sultanate has total of 56 hospitals and 118 health centers making 200 locations. At present 9 hospitals are connected to the headquarters, Oman has plans to connect all sites by 2005. In mid-2003 the Omani Ministry of Health launched the 'Al Shifaa' integrated electronic hospital information system at 78 government healthcare institutions and aims to cover all hospitals.

Certain amount of data is available for healthcare to organize data into proper databases.

Telemedicine and medical use of teleconferencing

Telecommunications and teleconferencing for medical-use are not yet introduced. The Ministry is making strategies to enhance the Continuous Medical Education with National Telecom operator to build large tele-education infrastructure using IP over ATM. Pilot projects will include 5 hospitals and the Ministry's head quarters.

Maturity and implementation of Health care Information technology

The Ministry of health aims at computerizing all the health institutions by 2005. The applications cover all aspects of activities in healthcare including administration, finance, clinical engineering and support. Currently IT resources are used to maintain in-house development of Hospital Information System and related applications such as Tele-Medicine.

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[20] UNICEF at a glance Oman statistics http://www.unicef.org/infobycountry/oman_statistics.html

11. *Digital Arabic Content*

Arabic vs. English content on the web for national use

There is currently no statistics on contents of arabized information on the web. The Department of Publication and Documentation also runs a Library that is fully automated in Arabic and English. The information in the library consists of Ministry of National Economy Publications, Government Projects Studies and other government offices publications, including Arabic and English economic magazines.

Oman's National IT Strategy emphasizes on the need to localize/Arabize information for the common citizen. Website contents and downloadable documents are published both in English and Arabic. These also include government websites, Economic and Social Statistics, census, household and other surveys, geographical indicators.

Local creation of software products in Arabic

Generally, there is no software industry in Oman. Some in-house software development is taking place in few of the large government/semi-government organizations, in addition to website development.

Obstacles for its development and ways for removing them

Lack of local experience in software development, low demand on Arabic software in the region and piracy are the main obstacles for the development of software. Enforcing the existing copyright law can reduce the piracy problem. The other two obstacles can be minimized on the long term only, with education and training, coupled by healthy growth in PC penetration over the coming years.