Internet Penetration in 18 Arab Countries

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Bahrain's eGovernment Initiatives and Development

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DIC Community Profile

Dubai Internet City companies breakdown by nationality and type of business, community growth rate, development trends.

PC Penetration vs. Internet User Penetration

In GCC Countries
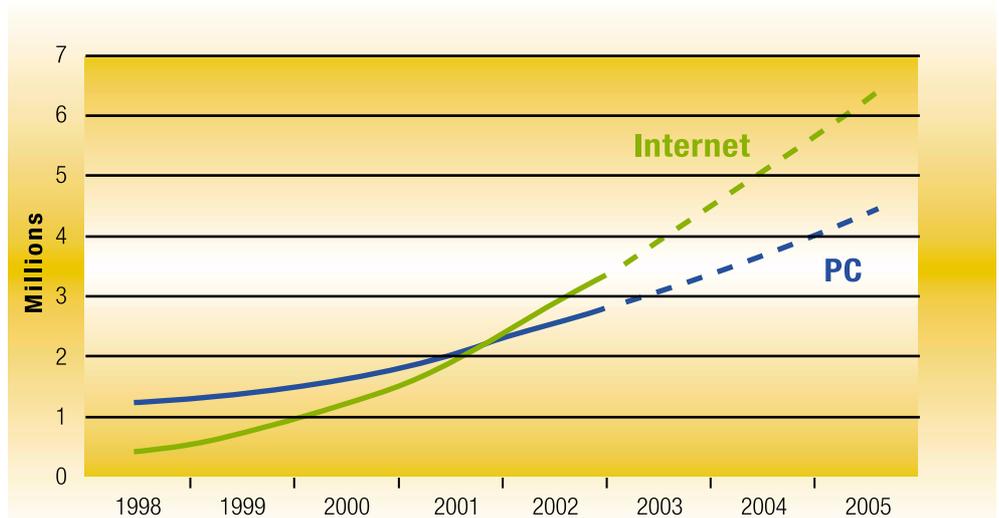
◆ PC Installed Base – Country by Country Comparison

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Saudi Arabia eLandscape

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Madar Research Group Profile

Madar Research Group is a Dubai Media City based company established in June 2002 to conduct primary and secondary B2B research on the Knowledge Economy in the Middle East.

While the Middle East is one of the fastest growing information and communication technology markets in the world, this growth is hampered by the lack of relevant market data and research that is in-depth, reliable and timely.

Madar Research Group aims to fill the void in the Middle East for primary and secondary research by creating a unique source of authoritative information through its research center, publications, events and online presence.

Madar Research team comprises the best talent in the region with over 20 years of experience in the fields of information technology, research, media/journalism and publishing.

Vision
To enhance eBusiness development in the region by building an eMarket research culture.

Mission
To provide companies in the region with vital e-market data and analysis, giving them a competitive edge by improving their eBusiness planning and hence decision-making and business performance. Additionally, to attract new international clients who are, due to lack of accurate information, not committed to venture out in the region.

C O N T E N T S

Building a Research Culture in the Arab World

As Arab ICT markets mature, the lack of relevant research and information forms a real obstacle in the path of regional and international companies. Investors' needs for vital information are not met in many important business sectors. It is this void in information that has prompted us to launch a specialized market research publication to cover the ICT industry and knowledge economy. We see it as a small contribution towards fostering a much-needed research culture in the Arab world. Our task is hindered by many challenges:

Absence of transparency: Many organizations in both public and private sectors still shy away from disclosing information related to their businesses, even when this information has no negative impact on their activities. Most of them either refuse to respond to queries posed by research companies, or drag their feet before they respond. They apparently do not realize the importance of transparency to the prosperity of businesses in the region.

Bureaucracy: Bureaucracy is especially prevalent in the public sector, where obtaining even the simplest of information requires weeks if not months, until the relevant approvals are obtained from the top of the organizational hierarchy.

Inadequate databases: Despite the availability of databases at many Arab organizations, information is usually unstructured or dispersed, which creates countless difficulties -- even for top management within the organizations themselves -- in extracting useful information.

Lack of respect for numbers: Officials often quote incorrect or inconsistent numbers. Sometimes the numbers are downright contradictory. It is quite common to come across a quote by a top manager who, for example, will quote a figure for mobile phone subscribers one day, and a completely different figure the next.

When we conceived this journal, we were aware of these issues. We hope that with time, both the public and private sectors will realize the value of research, and the importance of cooperating with research firms, for the establishment of a real research culture in the area that will shed light on Arab ICT markets and the region's Digital Economy. A better understanding of these markets will encourage both global and Arab investors to become more engaged in the region, and will help existing companies map out properly-prepared business plans for the future.

We are therefore treading an uncharted path. The business of research and publishing in this region is brand new. We accordingly invite readers to share with us their candid feedback on our editorial content, and we welcome your reactions, so as to better serve this demanding and information-hungry market.

Abdul Kader Kamli
President & Research Director

# Internet users outnumber installed PCs in most GCC countries

The number of Internet users in the region has increased almost 10 fold since 1998, while PC penetration only doubled during the same period; today's figure of 121 users per 100 PCs is set to rise to 163 users by end 2005

Internet penetration has been increasing at a substantially higher rate than PC penetration in the Gulf Cooperation Council (GCC) region, with the ratio of Internet users to the PC installed base now revolving around 1.21:1. Madar Research forecasts show that the number of Internet users in the GCC will continue to increase faster than the PC installed base – though at a slower pace – over the coming three years with the ratio of Internet users to the PC base rising to 1.63:1 by the end of 2005. This projection is founded on likely Internet penetration of almost 20 percent, and PC penetration of around 12 percent, in the GCC in 2005.

Looking back few years, a large difference between the two growth rates is observed. In 1998, GCC countries listed 330,000 Internet users and a total of 1.2 million installed PCs, leading to the ratio of one Internet user per 3.6 PCs. By fourth quarter 2001, these countries featured an equal number of users and PCs, which stood at 2.09 million – while today statistics point to about three million users and 2.5 million PCs.

The Internet has been a driving force for many people to buy home PCs. But stronger factors, such as the forceful entry of the Internet into education and business sectors in most GCC countries in recent years, are contributing to the relatively strong jump in Internet use. Other reasons include the trend for multiple users per PC – as in the case of Internet cafés – and the move to connect more of the installed PCs to the Internet.

Overall Internet penetration and PC penetration in the GCC now stand at 9.23 percent and 7.64 respectively. However, when

Internet User Penetration vs PC Penetration in the GCC – August 2002
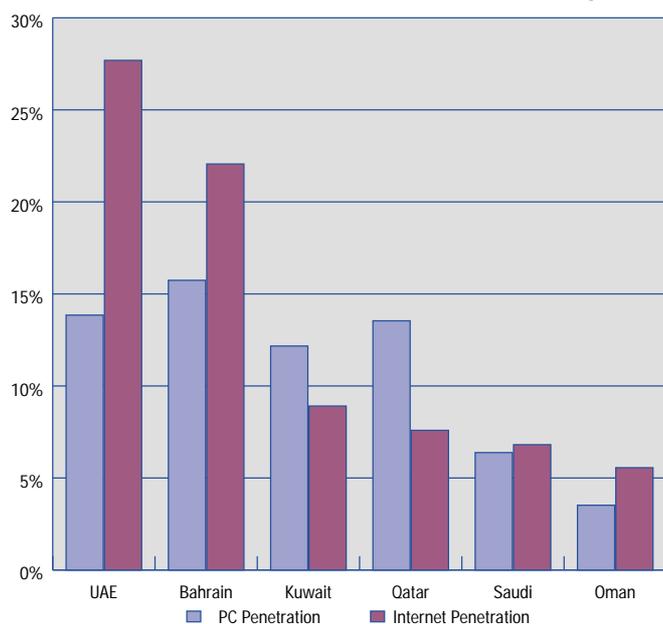
These figures are based on calculations that take into consideration the average life cycle of PCs in the GCC countries, assuming it to be around 3.5 years. They are also generated with the assumption of a compound average growth rate (CAGR) of 20% in PC unit sales over the years 2002-2005. Furthermore, the forecast which is generated through a combination of mathematical and statistical techniques and experts' opinions takes into account the possible population growth during the forecast period.

Source: Madar Research Group

Growth in Ratio of Internet Users to PC Base in the GCC		
	End of August 2002	End of 2005
Internet Users to PC Base	1.21:1	1.63:1
		Source: Madar Research Group

Growth in Overall Internet & PC Penetration in the GCC		
	Internet Penetration	PC Penetration
By end of August 2002	9.23%	7.64%
By end of 2005	19.76%	12.15%
		Source: Madar Research Group

Growth of Internet & PC Penetration in the GCC
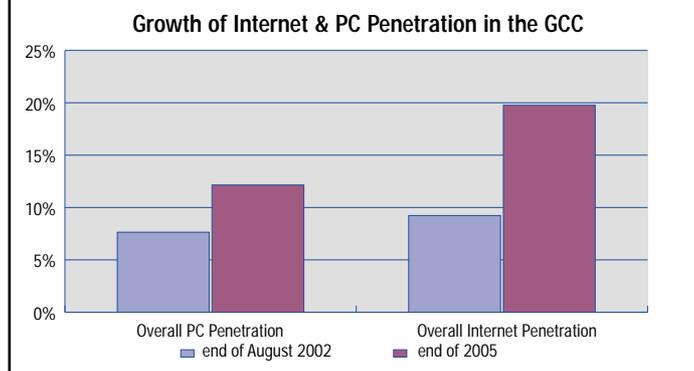
Source: Madar Research Group

GCC Countries Ranked by PC Penetration - August 2002					
Country	PC Installed Base	PC Penetration	Internet Users	Internet Penetration	Internet Users per PC
Bahrain	107,000	15.74%	150,000	22.06%	1.40
UAE	450,000	13.85%	900,000	27.69%	2.00
Qatar	107,000	13.54%	60,000	7.59%	0.56
Kuwait	280,000	12.17%	205,000	8.91%	0.73
Saudi Arabia	1,500,000	6.38%	1,600,000	6.81%	1.07
Oman	95,000	3.52%	150,000	5.56%	1.58
Total	**2,539,000**	**7.64%**	**3,065,000**	**9.23%**	**1.21**

Source: Madar Research Group

compared to North America and even Europe, GCC rates are still well behind. Internet penetration and PC installed base in North America are 57 percent and 62 percent respectively, while in Europe they have an almost equal penetration of around 24 percent. Accordingly, the Internet-to-PC ratio is about 1:1 for Europe and it moves to the other side of the scale in North America at 0.91:1,

> *Bahrain leads the GCC in PC penetration of around 16% while the UAE leads in Internet penetration of almost 28%*

where there are more installed PCs than Internet users – 109 PCs for every 100 Internet users. This is explained by different dynamics and growth patterns in the Western world, which include a mature PC base that preceded the Internet thrust.

When broken down by country, GCC statistics vary considerably among each other. The United Arab Emirates and Bahrain both have high Internet penetration and high PC penetration when compared to other GCC countries.

This can be understood, given that the Internet is widely used in these two countries by certain government departments, businesses and educational institutions, in addition to home use. The ratio of Internet users to the PC base in each of the two countries is 2.00:1 and 1.40:1, respectively.

PC & Internet Penetrations Across Select World Regions			
Region	Internet User Penetration	PC Penetration	Internet Users per PC
North America	57%	62%	0.91
Europe	24%	23%	1.04
GCC	9.23%	7.64%	1.21
Latin America	5%	7%	0.71

Source: Madar Research Group

Qatar and Kuwait are characterized by relatively high PC penetration ratios, close to those of Bahrain – which ranks first among GCC countries in terms of PC penetration of almost 16 percent. However, Internet penetration in Qatar and Kuwait is way below the high levels prevailing in the United Arab Emirates and Bahrain. This leaves Qatar and Kuwait with PC penetration ratios noticeably higher than their Internet penetration ratios, and thus with ratios of Internet users to PC base that are significantly below one.

Saudi Arabia, home to the GCC's largest population, and Oman have the lowest scores in the GCC. PC penetration stands at 6.38 percent in Saudi Arabia and 3.52 percent in Oman, while the Internet – which has recently found its way into business and education in the two countries – has a penetration rate of 6.81 percent in Saudi and 5.56 percent in Oman.

> *Qatar and Kuwait are the only two GCC members that have more installed PCs than Internet users, with user to PC rates of 0.56 and 0.73 respectively*

The entire PC installed base in the GCC is now over 2.5 million, while the number of Internet users has crossed the three million mark. As home to only 11 percent of the total Arab population, the GCC region has more than 40 percent of all Internet users in the Arab world.

Due to advanced telecommunications infrastructure, high purchasing power and a strong drive towards the digital economy, the GCC is expected to maintain its lead over the rest of the Arab world in both PC and Internet penetration for the foreseeable future.

Internet coming of age in Arab world with advent of the Third Wave

The 'one-account, one-PC, one-user' Internet access model is making way for a mass-use scheme of 'one-account, multiple-user' where users access the Net through subsidized or free connections and public centers

Much analysis has been made on the direction and shape the Internet is taking. This is decided to a certain extent by breakthroughs in the Communication and Information Technology that trigger phases, or turning points, in the overall development of the Internet.

While these phases are global in essence, they vary from region to another as they become subject to local cultural, economic and other factors that affect the Internet's growth and direction. Taking the case of the Arab world, three overlapping phases, or waves, are discernible starting with the introduction of the Internet to the regional academia.

The First Wave started with the first Internet access in the Arab world in 1991 when the Tunis-based Regional Institute for Computer Sciences and Telecommunications set up an IP connection on X.25 leased line with the French Institute for Research in Computer Science and Control.

Commercial or public use of the Internet between 1994 and 1996 was a turning point, ushering in the Second Wave – when access was offered initially to businesses, or simultaneously to both businesses and home users depending on the country. Kuwait was the first to offer the public Internet access in 1994. It was followed by UAE, Bahrain, Lebanon, Palestine, Morocco and Algeria in 1995. Except for Kuwait and Saudi Arabia, the GCC moved straight into the Second Wave without having their academia connected first.

Despite widespread Internet use at home and office in the GCC and growing use in the rest of the Arab world, the Internet remains available to only small portions of Arab populations.

A trend towards mass use is now being led by educational institutions and some government initiatives. This trend heralds the start of the Third Wave, which will see all students connected to the Internet, whether from schools, universities or vocational institutions. More layers of Arab society will also gain free – or heavily subsidized – Internet access through dedicated government facilities or public kiosks. Rural areas, which are home to a large slice of Arab society, will have their first exposure to the Net at this stage.

The first clear signs of the advent of the Third Wave to the region can be seen in Tunisia. In line with a government decree, all high-schools in Tunisia were connected to the Internet this year, and plans are underway to connect all the nation's intermediate and primary schools.

In a separate move, the state has replaced the concept of Internet cafes with Public Internet Centers, which are rigorously licensed as training and educational institution. There are 300 of these centers operating in cities and big towns.

To expose the entire population to the Internet, the government this year launched a unique project which takes a bus transformed into an Internet lab to the rural areas. Tunis also launched the Family PC project in April 2002, which offers families with limited income the chance to own a PC and peripherals at reduced prices divided on monthly installments.

The governments of Egypt, Jordan, and the UAE have also placed the Internet high in the education agenda. After connecting 500 schools to the Internet in September 2002, Jordan Telecom will have all schools in the kingdom connected by Q3/2004. Egypt's education minister in July announced a plan to provide Internet access to all public schools in September 2002. To provide Internet access to the underprivileged, who constitute the majority of the population, Egypt this year founded 300 Technology Access Community Centers and will raise the figure to 600 by end 2002.

The trend of making the Internet accessible to the masses is still a long way from crossing the barriers of poverty, illiteracy and lack of infrastructure, which characterize much of the Arab world. However, there are more initiatives yet to be seen to speed up the pace the Third Wave.

Internet Introduction and Commercial Use in Arab States		
	Introduced	Commercial
Tunisia	1991	1997
Kuwait	1992	1994
Morocco	1992	1995
Egypt	1993	1996
Lebanon	1993	1995
Algeria	1993	1995
Palestine	1994	1995
UAE	1995	1995
Jordan	1995	1996
Bahrain	1995	1995
Yemen	1996	1996
Qatar	1996	1996
Oman	1996	1996
Saudi	1996	1999
Libya	1997	1998
Sudan	1997	1998
Syria	1998	1999
Iraq	1999	2000

Source: Madar Research Group

Net cafés mushroom to over 9,000 across Arab world

But growth in some countries will be stunted within a year, as home Internet access rates become cheaper

Internet cafés have flourished in the Arab world over the last two years, and their number has reached 9,081, including public centers, as of September 2002. They are expected to continue increasing in number through 2004.

However, in countries like Egypt, Saudi Arabia and Qatar, Internet cafés have started to face an uncertain future, primarily because connection and operating tariffs remain high while the subscription rates and telephone charges for individual subscribers are dropping.

More Internet users are turning to individual subscriptions while Internet cafés are set to decline in numbers if telecom providers fail to reduce their charges.

Meanwhile, some countries are coming

Country	Number of Internet Cafés (including public centers)	Number of Internet Cafés per 100,000 persons
Iraq	50	0.21
Palestine	60	1.76
Qatar	80	10.13
Oman	80	2.96
Bahrain	90	13.24
Saudi	110	0.47
Yemen	120	0.63
Sudan	150	0.44
UAE	191	5.88
Lebanon	200	4.88
Kuwait	300	13.04
Tunisia *	300	3.00
Egypt **	400	0.56
Jordan	500	9.43
Syria ***	600	3.16
Libya	700	13.21
Morocco	2,150	6.94
Algeria	3,000	9.52
Total	**9,081**	**3,12**

Source: Madar Research Group

* In Tunisia, public Internet access centers fulfil the role of traditional Internet cafés.

** Figure includes 300 TACCs. Another 300 centers will be launched by year-end.

*** In early 2002, there were 600 Internet cafés in Syria but many stopped operations in May 2002 following the issuance of a government decree regulating Internet cafés.

up with cheaper access to encourage widespread Internet use. In Egypt, for instance, more people are turning to Technology Access Community Centers (TACCs) that provide individuals with Internet access through government facilities, clubs and community centers.

Public Internet access centers are also popular in Tunisia, as is a new government-funded project to provide Internet access to rural areas through specially equipped mobile vehicles.

Country	Number of Operating ISPs
Bahrain	1
Iraq	1
Oman	1
Qatar	1
UAE	1
Yemen	1
Syria	2
Sudan	3
Libya	6
Palestine	10
Jordan	12
Tunisia	12
Lebanon	14
Saudi Arabia	21
Kuwait	21
Algeria	32
Egypt	80
Morocco	150
Total	**369**

Source: Madar Research Group

Arab countries served by more than 350 ISPs

The number of Internet Service Providers (ISPs) in the Arab world has increased to 369. Their distribution varies from the nationwide monopoly model, as is the case in most GCC countries, to the 150 ISPs that serve Morocco.

The number of ISPs reported by media and industry sources varies by a wide margin among Arab nations because many figures include ISPs that are licensed, but not yet operational. Also, some media figures include small 'sub-ISPs' that fold up as soon as they get started.

Such is the case in Morocco, where the number of ISPs is reported by different sources to stand anywhere between 130 and 1000. Excluding sub-ISPs with marginal volume of clients and small cyber cafés that claim to provide Internet services, the more realistic number becomes 150.

Among the 21 Kuwaiti ISPs, two obtain Internet access through marine cable while the third ISP is connected through its own earth station. The majority of the remaining ISPs are small and sub-ISPs.

In Saudi Arabia, the year 2002 saw the merger of seven ISPs into two large companies. The official number of licensed ISPs is greater, but only 21 ISPs provide actual Internet services.

In the case of Palestine, it is worth noting that the majority of Palestinian ISPs go through Israeli providers. Egypt's 80 ISPs include 67 small and sub-ISPs.

Over 4,700 IT professionals in Arab world certified last year by major US institution

Almost a third of online IT certificates awarded by Brainbench went to UAE residents, thus ranking the country at position 33 globally; Palestine and Iraq had a share, despite extreme politico-economic hardships

Brainbench, a leading information technology training provider, has certified 4,781 IT professionals in the Arab world last year. The organization, which delivers its courses via the Internet, claims to run about one quarter of the global IT training market in "major courses", with the rest being shared by other leading providers such as Novel, MCSE, Cisco and CompTIA.

Brainbench issued more than 700,000 IT certificates worldwide to unique test takers in 200 IT-related categories in 2001, while other major programs catered to a further 1.987 million unique test takers.

The United Arab Emirates topped the list in the Arab world, both in terms of the number of IT certificates awarded, and their ratio to the country's population. According to Brainbench, 1,485 UAE IT professionals were certified last year, which translates to 45.69 certified professionals per 100,000 of the country population.

Egypt came second with 632 certificate holders. However, the most populous Arab country had less than one professional certified (0.89) per 100,000 of its population. Though only 220 IT professionals were certified in Bahrain last year, the country came second in the Arab world with 32.35 people certified per 100,000 population.

Saudi Arabia, Jordan, Kuwait and Algeria respectively followed Egypt in terms of certification numbers.

The countries of the Gulf Cooperation Council generally dominated the list, with a large number of professionals getting certified relative to population, outranking other regional economic powerhouses like

Turkey and Iran, whose scores were 1,221 and 522 respectively.

Only three people in Yemen received a Brainbench certificate in 2001, the lowest in the Arab list. Despite tumultuous political and economic conditions, 19

Palestinians received IT certification during the year, as did 10 Iraqis.

Statistics from Brainbench covered only 15 Arab countries since apparently no professionals were certified by the institution in the rest of the Arab world such as Tunisia and Sudan.

The calculations were based on the certification provider's 30 most popular tests for 2001, such as JAVA, Unix and XML. The results for each test were sorted by country, to determine the numbers of certified IT professionals in all 30 categories.

The UAE, ranked 33rd on the global list, but it outranked countries like New

Numbers of IT Professionals Certified by Brainbench in Arab Countries in 2001

UAE 1,485; Egypt 632; Saudi Arabia 592; Jordan 574; Kuwait 335; Algeria 302; Bahrain 220; Qatar 204; Lebanon 168; Oman 140; Morocco 56; Syria 41; Palestine 19; Iraq 10; Yemen 3
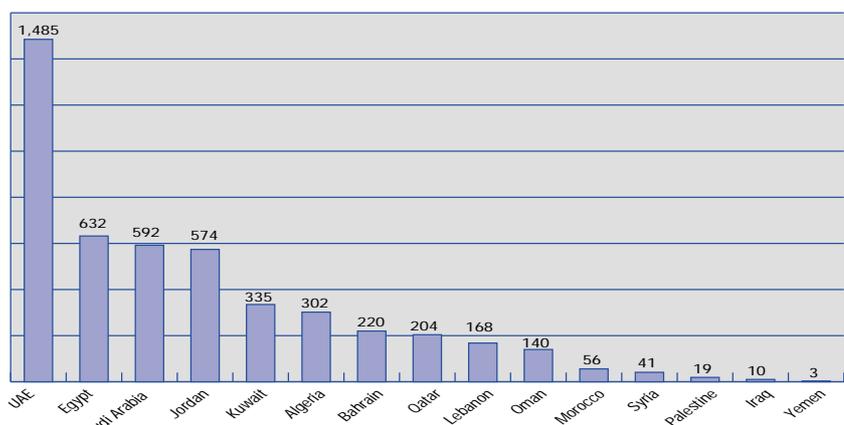
Source: Brainbench

Number of IT Professionals certified by Brainbench in Arab Countries in 2001 per 100,000 of Population

UAE 45.69; Bahrain 32.35; Qatar 25.82; Kuwait 14.57; Jordan 10.83; Oman 5.19; Lebanon 4.1; Saudi Arabia 2.52; Algeria 0.96; Egypt 0.89; Palestine 0.56; Syria 0.22; Morocco 0.18; Iraq 0.04; Yemen 0.02
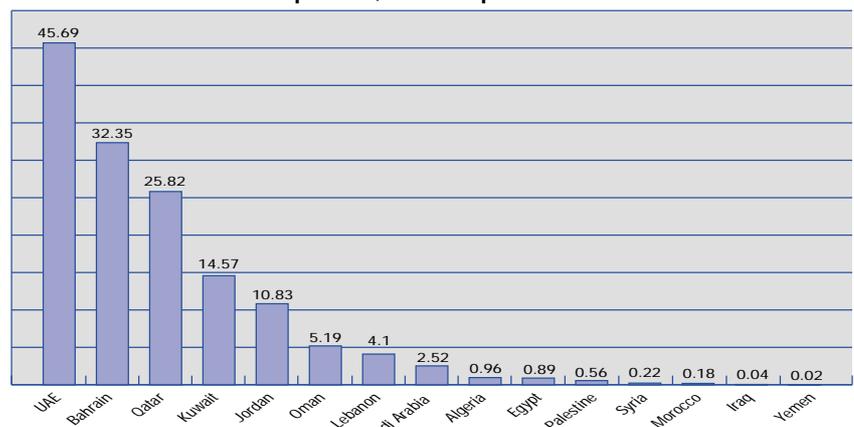
Source: Madar Research Group and Brainbench

Zealand, China and Greece.

Singapore, which compares to the UAE in terms of population size and interest in becoming a regional IT hub, outranked the UAE in achieving the 17th global position with 3,559 IT professionals certified in 2001.

The United States topped the list with 194,211 IT professionals certified by Brainbench, followed by India (145,517) and the Russian Federation (68,050).

Egypt, Saudi Arabia and Jordan, which ranked second, third and fourth in the Arab world, were in 51st, 56th and 57th positions respectively in the global list.

Taking the Middle East region as a whole, Israel achieved the highest score of 3,164 certified professionals and the highest ratio of 52.45 to 100,000 population.

Among the interesting Brainbench findings was the strong drive for IT

Top 30 Most Popular Certifications, according to Brainbench users (listed alphabetically):		
Active Server Pages	Javascript	Unix Administration (AIX)
C	Linux Administration (General)	Unix Administration (General)
C++	Linux Administration (Red Hat)	Unix Administration (HP)
Computer Technical Support	Linux Administration (SuSE)	Unix Administration (Solaris)
HTML 3.2	Linux Programming (General)	Unix Korn Shell Scripting
HTML 4.0	MS Windows 98 Administration	Unix Programming (General)
Java 1	MS Windows NT 4.0 Administration	Visual Basic 5.0
Java 2	Network Technical Support	Visual Basic 6.0
Java 2 - GUI	Oracle PL/SQL	XML
Java 2 - Non-GUI	RDBMS Concepts	XSL

Source: Brainbench

certification in eastern European and former Soviet states. Leading Europe, for instance, was Romania with 16,122 professionals certified, holding sixth position globally.

The United Kingdom came second (14,642), and Bulgaria third (8,844). Ukraine was fourth globally – with 23,349

IT professionals certified in 2001.

Around the Asia-Pacific Rim, Australia had the highest number (6,800), followed by Indonesia (5891).

Brazil topped the South America list (2,340) and South Africa led the African continent with 2,663 to become number 21 worldwide.

Uncensored, low-cost Internet accessed by over two million Iranians

Internet penetration in Iran is still low, but the government expects the Net to generate 800,000 jobs by the first quarter of 2007

Political reforms in Iran have started to pay off on the Internet scene. The young and professionals, eager to be part of the "digital age", have inflated the number of Internet users to over two million in Q3/2002, according to media sources.

The figure is a hundred percent increase on Q3/2001, but constitutes only 2.7 percent of Internet penetration nationwide. However, most observers agree that national Internet use will more than double in the next 12 months for many reasons, including increased use in education and government support.

The government recognizes that businesses associated with the Internet are beginning to emerge on a substantial scale.

The government expects the Internet to help create 800,000 jobs by Q1/2007 and to reduce a double-digit rate of unemployment, from which the economy has been suffering for many years.

In education, nearly every university student in Iran has an email address, and is subsidized for the purchase of a PC. There are also now 1500 Internet cafes in the capital, Tehran, and hundreds more in other major cities.

High quality Internet services and cheap access rates are also important factors contributing to growth.

Iranian ISPs offer Internet services that are much more sophisticated than those available in developing countries.

Connecting to the Internet throughout much of Iran is extremely easy, and prepaid cards offering several hours of Internet access are widely available. Full Internet access can be obtained at the rate of $0.79 per hour. There are also "unlimited access" plans, with monthly open usage costing as little as $39.25, or even less ($7.85) for monthly night usage.

Asymmetric Digital Subscriber Line (ADSL) connections have a speed of 2 Mbps, while home use access is available at a quarter speed of this. Those outside ADSL coverage areas can get wireless links at a speed of 5 Mbps – a level unmatched in some industrialized nations.

Unlike most countries in the Middle East, the Internet in Iran is uncensored. This fact will greatly assist in nourishing an Internet culture of tolerance, with unhindered access to information.

The above article is based on reports published between February 2002 and August 2002 by the Associated Press, The Guardian and Hambastegi (Morning Daily).

Number of Internet users in Arab world to cross 25m mark by end 2005

User numbers in the region are increasing at a relatively high rate, but projected Internet penetration lies below world average, except for GCC countries and Lebanon – Egypt will lead with the single largest Arab Internet community of over 6.5 million, while Saudi Arabia will follow with almost 4.5 million users

The Internet has made headway in the Arab world as it has more than doubled the penetration rate since March 2001. Driven by a high growth rate, the relatively small Internet community in the region is forecast to swell to over 8.2 million users by the end of 2002, and to exceed the 25 million mark by end 2005.

The Arab world is now home to almost five percent of the world population – but it has less than 1.3 percent of the world's Internet users' community. The penetration rate varies widely from one country to another. The difference is most noticeable in the econo-political aggregation of the Gulf Cooperation Council whose population constitutes scarcely 12 percent of the entire Arab population, but groups 42 percent of all Internet users in the Arab world.

Internet penetration in the Arab region, which stood at 1.20 percent in Q1/2001, has surged to 2.54 percent by the end of Q3/2002.

The United Arab Emirates retains the lead, with a current penetration rate of

Internet Penetration
August 2000 - End of 2005

Source: Madar Research Group & Nua.com

27.69 percent, followed by Bahrain with 22.06 percent.

Saudi Arabia has the single largest Internet community among all Arab countries, totaling 1.6 millions. It is followed by Egypt and the United Arab Emirates with Internet communities totaling 1.5 million and 900,000 respectively. However, Internet penetration in both Saudi Arabia and Egypt is much lower than in the United Arab Emirates, standing respectively at 6.81 percent and 2.11 percent.

Internet users in all Arab countries now totals 7.378 million, and are forecast to surpass 8.233 million by end 2002 - then jump to 25.262 million by end 2005. Taking into account population growth and major telecommunication expansion projects, Arab Internet penetration in expected to reach eight percent by the end of 2005.

| Rank	Country	Internet users by end of 2005 (Million)	Penetration by end of 2005 (Percent)
	Internet Penetration Rates in the Arab World by end of 2005		
1	UAE	1.346	38.00
2	Bahrain	0.237	32.00
3	Kuwait	0.463	18.50
4	Qatar	0.155	18.00
5	Lebanon	0.804	18.00
6	Saudi Arabia	4.482	17.50
7	Oman	0.471	16.00
8	Jordan	0.867	15.00
9	Tunisia	1.308	12.00
10	Libya	0.520	9.00
11	Egypt	6.578	8.50
12	Morocco	2.872	8.50
13	Palestine	0.297	8.00
14	Algeria	2.404	7.00
15	Syria	0.828	4.00
16	Iraq	0.657	2.50
17	Yemen	0.417	2.00
18	Sudan	0.556	1.50
	Total	**25.26**	**8.00**

Source: Madar Research Group

Overall Internet penetration in the six GCC nations is expected to grow from the current 9.23 percent to 19.76 percent by end 2005. Penetration in other Arab countries is foreseen to register a much higher growth rate – rising from 1.67 percent to 6.40 percent. This can be partly explained by the fact that the GCC countries – with their more open and vibrant economies and exceedingly higher levels of per capita income – have been able to go through the "initial boom-stage" much faster than the rest of the Arab world.

The United Arab Emirates and Bahrain will maintain the lead, with their Internet penetration rates climbing to 38 percent and 32 percent, respectively, by end 2005. Lebanon and Jordan, which are currently the only Arab countries outside the GCC exhibiting Internet penetration rates comparable to the GCC, are also expected to continue to show relatively strong Internet penetration levels.

Tunisia, which has aggressive short-term plans to develop its IT sector, is seen making a significant move from current 4.6 percent penetration towards double digits. In the remaining countries, which are generally much more heavily populated, penetration will register healthy to strong growth rates over the forecast period, but from low initial threshold.

Syria, Iraq, Yemen and Sudan will continue to trail behind with low penetration rates, despite two- and threefold increases in Internet users numbers.

GCC Internet users – taken as a percentage of total Internet users in the Arab world – will be only 28 percent by the end of 2005, compared to the current level of 42 percent. This can be understood given the large population levels by which Arab countries outside the GCC are characterized (almost nine fold the GCC population) – also given that many of these countries have started to realize the economic importance of the Internet and are poised to go through the "initial boom stage" of Internet adoption.

Growth of Internet Penetration in GCC

Source: Madar Research Group

Growth of Internet penetration in Arab Countries outside the GCC
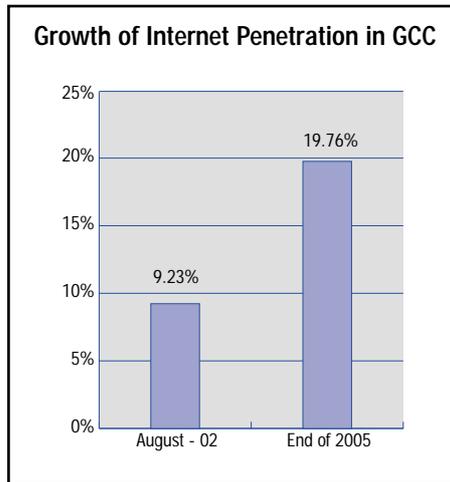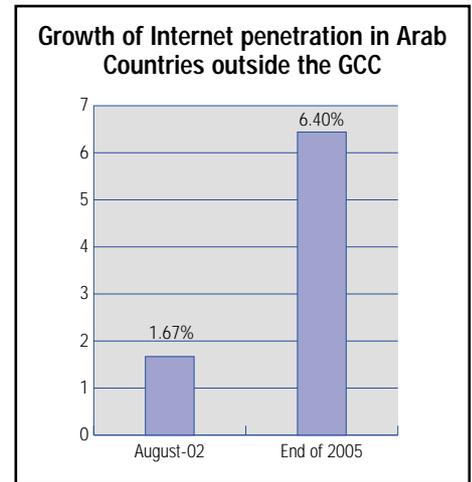
Source: Madar Research Group

Arab Countries Ranked by Internet Penetration				
Rank	Country	Population 2002	Internet Users by end of August 2002	Internet Penetration
1	UAE	3,250,000	900,000	27.69%
2	Bahrain	680,000	150,000	22.06%
3	Lebanon	4,100,000	460,000	11.22%
4	Kuwait	2,300,000	205,000	8.91%
5	Qatar	790,000	60,000	7.59%
6	Saudi Arabia	23,500,000	1,600,000	6.81%
7	Jordan	5,300,000	320,000	6.04%
8	Oman	2,700,000	150,000	5.56%
9	Tunisia	10,000,000	460,000	4.60%
10	Palestine	3,400,000	103,000	3.03%
11	Libya	5,300,000	125,000	2.36%
12	Egypt	71,000,000	1,500,000	2.11%
13	Morocco	31,000,000	510,000	1.65%
14	Algeria	31,500,000	500,000	1.59%
15	Syria	19,000,000	200,000	1.05%
16	Yemen	19,100,000	40,000	0.21%
17	Sudan	34,000,000	70,000	0.21%
18	Iraq	24,100,000	25,000	0.10%
	Total	291,020,000	7,378,000	2.54%

Source: Madar Research Group

Estimates relating to current Internet use are based on official figures released through newspapers and regional/international ICT conferences, as well as on interviews with major Internet Service Providers (ISPs) in the Arab world. They also take into consideration a wide range of factors including the number of Internet accounts (dial-up, leased lines, ADSL, etc.), prepaid Internet availability, Internet cafes, and student communities gaining Internet access through universities. Experts were also consulted.

Internet users in GCC as percentage of total Arab Internet users - August 2002

GCC Countries 42%

Other Arab Countries 58%
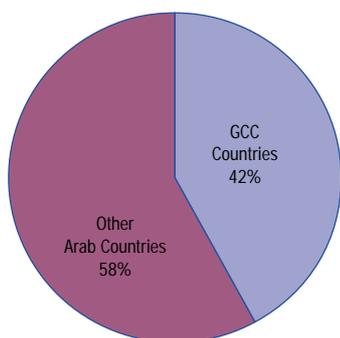
Source: Madar Research Group

Internet users in GCC countries as percentage of total Arab Internet users by end of 2005

GCC Countries 28%

Other Arab Countries 72%
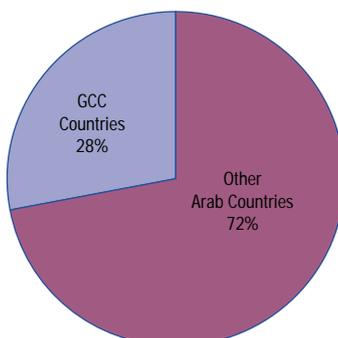
Source: Madar Research Group

Internet Penetration & Growth Rate Arab Region vs. World

| | Penetration | | |
	August 2002	End 2005	CAGR (2002-2005)
World Average	10.00%	15.70%	18.5%
Arab World	2.54%	8.00%	50%
GCC	9.23%	19.76%	37%

Source: Madar Research Group & Nua.com

Arab Countries Ranked by Number of Internet Users

Rank	Country	Population 2002	Internet users by end of August 2002	Internet Penetration
1	Saudi Arabia	23,500,000	1,600,000	6.81%
2	Egypt	71,000,000	1,500,000	2.11%
3	UAE	3,250,000	900,000	27.69%
4	Morocco	31,000,000	510,000	1.65%
5	Algeria	31,500,000	500,000	1.59%
6	Lebanon	4,100,000	460,000	11.22%
7	Tunisia	10,000,000	460,000	4.60%
8	Jordan	5,300,000	320,000	6.04%
9	Kuwait	2,300,000	205,000	8.91%
10	Syria	19,000,000	200,000	1.05%
11	Bahrain	680,000	150,000	22.06%
12	Oman	2,700,000	150,000	5.56%
13	Libya	5,300,000	125,000	2.36%
14	Palestine	3,400,000	103,000	3.03%
15	Sudan	34,000,000	70,000	0.21%
16	Qatar	790,000	60,000	7.59%
17	Yemen	19,100,000	40,000	0.21%
18	Iraq	24,100,000	25,000	0.10%
	Total	**291,020,000**	**7,378,000**	**2.54%**

Source: Madar Research Group

The forecasts presented in this report are of a hybrid nature. They were generated using multiple tools and are based on numerous country-specific factors such as: historical growth in Internet use, current levels of Internet use, available IT infrastructure, and major Internet-related initiatives within both private and public sectors. Madar Research will revise and publish the forecasts periodically as relevant new information becomes available.

Major Challenges

The Arab world is incoherent in terms of the growth of its Internet user community. The richer countries of the GCC are well equipped technologically and have the resources to help them achieve a growth in Internet penetration that is higher than world average. Yet, there are a number of less acknowledged factors, mainly demographical, which contribute to hindering or shaping the progress of the Knowledge Economy in most other Arab countries.

One of the important factors that limit widespread use of the Internet in many Arab countries, including the largest GCC country, is illiteracy. This still reaches alarming levels, ranging between 20 percent and 40 percent of the population of the largest states, such as Saudi Arabia and Egypt.

Another factor, whose influence will weaken as demographics change, is the high ratio of youth to adult population, most noticeable in the GCC. About 42 percent of Saudi population, for instance, is at the age of 14 and below. This factor may turn positive if children are exposed to the Internet. Poverty, on the other hand, is firmly entrenched for a large portion of the overall Arab population, where a telephone line is unaffordable luxury.

While adequate ICT infrastructure and resources are basic for the development of a Knowledge Society, much greater demographic challenges have first to be dealt with.

Saudi Arabia's ICT market set for high growth over next three years

Annual IT growth in the kingdom will surpass the overall growth of the economy by many folds throughout the next three years - boosting the total value of the Saudi IT market to $4.7 billion by end 2005

Overview

The Saudi ICT industry is maintaining its position as one of the largest, fastest growing markets in the Arab world. During the past few years, Saudi Arabia has embarked on major mega-projects aimed at expanding the ICT infrastructure. The entire telecommunications network, for instance, is expected to be digital by the end of this year. This report maps the topography of the Saudi eLandscape by covering a wide range of statistics and forecast on the kingdom's economy and ICT industry. It aims to provide better understanding of a market that is critical for regional and international ICT service and product suppliers targeting GCC and Arab markets.

Saudi Macro-economic and Demographic Fundamentals

Official Saudi sources put Real GDP at $168.8 billion by Q4/2001. Real growth that year averaged 1.5 percent, while real per capita income was $7,185. Unemployment, which remains a major problem facing Saudi economic planners, is estimated at 15 percent.

Major Conclusions

- Overall annual economic growth in Saudi Arabia is expected to be around 2.2 percent in 2002 and 2003, while IT sector growth is projected to record a much higher rate of 8.3 percent annually over the period 2002-2005.
- Mobile subscribers grew by a dramatic 57 percent during the first eight months of 2002, from 2.55 million to 4 million.
- Internet users jumped by 68 percent during the first eight months of 2002, from 950,000 to 1.6 million.
- The PC installed base grew by only seven percent during the first eight months of 2002, from 1.4 million to 1.5 million.
- The size of the Saudi ICT market – defined as the market for software, Computer Equipment, IT services and data communications – is expected to reach $4.7 billion by end 2005.
- B2B eCommerce value stands currently at $1.5 billion and is expected to reach $8 billion end 2005.

Economic Indicators

	2001	2002f	2003f
Real Gross Domestic product (Billion, US$)*	168.85	169.86	176.32
Real GDP Growth (%)	1.5	0.6	3.8
Real Per Capita Income (US$)**	7,185	6,977	6,991
Consumer Prices (% Change)***	-0.4	1.0	1.5
Unemployment Rate (%)****	15	-	-
Exchange Rate (Riyal/US$)	3.745	-	-

Source: Madar Research Group

*   The 2001 Real GDP figure was obtained from the Saudi Ministry of Finance website. Madar Research calculated 2002 and 2003 figures on the basis of Real GDP growth forecasts provided by international 'country risk service' companies.
** Calculated by Madar Research from data of the Saudi Ministry of Finance, plus international and regional independent economic/business organizations.
*** Saudi Arabia's Ministry of Finance website.
**** International sources including Country Reports on Economic Policy and Trade Practices, Bureau of Economic and Business Affairs, US State Department (Madar Research believes the figure represents only the unemployed male workforce).

Saudi Demographics

Saudi Demographics	2002
Total Population	23,500,000
Population Growth Rate (citizens)	3.7%
Population Growth Rate (expatriates)	1.0%
Citizens	16,450,000
Expatriates (30%)	7,050,000
Arabic Expatriates (40% of above)	2,820,000
Other Expatriates (60% of above)	4,230,000
Age Structure	
0-14 years	42.52%
15-64 years	54.80%
65 years and over	2.68%

Source: Madar Research Group

The Saudi economy will register moderate growth over 2002 and 2003, with average real GDP growth rate for this period hitting 2.2 percent. Combining this forecast with the high population growth rates characterizing Saudi demographics, real per capita GDP is forecast to register a slight decline, reaching $6,991 by end 2003.

The total Saudi population stands at 23.5 million (Q3/2002) with expatriates numbering around 30 percent and citizens of Arab countries constituting 40 percent of this. The Saudi population is overwhelmingly young. Some 43 percent are below the age of 14.

Saudi IT Market: Opportunity Evaluation (2002-2005)

Expectations regarding Saudi ICT market growth are extremely high. The overall size of the market is expected to register a compound average growth rate of 8.3 percent over 2002-2005, rising from its current size of $3.7 billion to $4.7 billion.

Opportunity Evaluation 2002 – 2005			
	2002 (US$) (Millions)	2005 (US$ (Millions)	CAGR (2002-2005)*
Software Products	1,000	1,295	9%
Computer Equipment	850	1,041	7%
IT Services	1,300	1,592	7%
Data Communications	550	772	12%
Total	3,700	4,700	8.3%
Source: Madar Research Group			

Compound Average Growth Rate over the period 2002-2005

Compound average growth rates for the different market segments vary between seven percent (IT services and computer equipment) and 12 percent (data communications). These 'high end' forecasts take into consideration – among other factors – the Saudi government's aggressive short-term plan to bring about a major shift in the use of technology, especially ICT, throughout the economy. By year end, the Saudi IT market is expected to expand by over eight percent, with the fastest growing segment being data communications – driven by developments related to the Internet and mobile networks.

Telephone Use Indicators & Forecast

The rate of mobile phone penetration in Saudi Arabia is currently 17 percent, with some four million mobile devices in use. Mobile phone penetration is already higher than fixed line penetration by a margin of three percent, and the government expects mobile phone penetration to rise to 37 percent by 2006.

This expectation is directly linked to plans for opening up the market to private investors. However, there are other factors that support such a development, e.g. the steps taken this year by Saudi Telecom Co. (STC) to reduce charges and offer special services including prepaid mobile chips.

In fact, STC announced in September 2002 record sale of 1.2 million prepaid mobile chips (SAWA) since their launch this April. Finally, it is important to note that current capacity of the Saudi mobile network – 5.5 million lines – makes achievement of projected figures possible, only if current ambitious expansion plans

Telephone Use Indicators - end August 2002				
Mobile Phones (million)	Mobile Phones (penetration %)	Fixed Lines (million)	Fixed Lines (penetration %)	No. of Telephone Cabins
4	17%	3.3	14 %	3000
				Source: Madar Research Group

Telephone Market Forecast - Year 2005			
Mobile Phones (in millions)	Mobile Phones (penetration %)	Fixed Lines (in millions)	Fixed Lines (penetration %)
8 *	31.3%	5 **	19.5%
			Source: Madar Research Group

* 2002-2005 Compound Average Growth Rate (CAGR) of 26%
** 2002-2005 Compound Average Growth Rate (CAGR) of 15%

are implemented in timely fashion.

Internet Indicators

The Saudi Internet market, which is made up of 1.6 million users, is currently served by 21 operating ISPs. The year 2002 has witnessed significant improvements in service and reductions in price. Nonetheless, the number of ADSL subscribers is still relatively small, since the monthly subscription fee is high (SR 500-1000) compared to rates prevailing in neighboring countries. There is also a one time set-up fee (SR 2000-3000), which is also expensive by world and regional standards. Madar Research forecast that Internet users in Saudi Arabia will expand over the period 2002 to 2005 at a compound average growth rate close to 50 percent, to reach 4.482 million. The table below illustrates recent figures on several variables related to Internet access and use.

Internet Indicators - end of August 2002	
Number of operating ISPs	21
Number of dial-up accounts*	500,000
Number of Leased Lines	1,400
Number of ADSL lines	500
Number of Internet Cafes	105
Number of Internet Users	1,600,000
Internet Penetration %	6.81%
Number of Internet Hosts **	10,492
Number of web sites registered under Saudi TLD (.sa)***	4,481
	Source: Madar Research Group

* Exclusive of tens of thousands of personal dial-up accounts ARAMCO makes available to its staff
** Source: Internet Software Consortium (http://www.isc.org), July 2002
*** Saudi Network Information Center

Note: Internet access prepaid cards are available but not widely used.

PC Indicators

Saudi PC indicators show 1.5 million PCs in use at end August 2002, with a PC penetration rate standing of 6.38 percent. Branded PC unit sales held 64 percent market share of Saudi PC sales in 2002, which are estimated to reach 450,000 units. Available data on
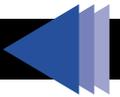
the share of assembled PC sales out of total PC sales for 2001 indicates a 10 percent drop in that share between January and end August 2002. However, it is estimated that PC unit sales throughout 2002 will register healthy growth of around 20 percent – a level

PC Penetration End August 2002	
PC Installed Base	1,500,000
PC Penetration	6.38%
PC Penetration per Household	25%
	Source: Madar Research Group

PC Unit Sales Year 2002 Estimation	
Branded PCs (64%)	288,000
Assembled PCs (36%)	162,000
Branded and assembled PCs	450,000
	Source: Madar Research Group

slightly below the figure estimated for 2001. Notebook PC sales should show stronger growth than desktop PC sales, at around 25 percent.

B2B and B2C eCommerce

Saudi B2B and B2C eCommerce will total some $1.5 billion and $170 million, respectively, in 2002. Both types of eTransaction are expected to register unmatched growth over the next three years, rising by compound average growth rates of 75 percent in the case of the first and 40 percent in the case of the second. In 2002, total

value of Saudi B2B eCommerce is expected to grow by a staggering 300 percent, since several major international companies are now requiring dealers and distributors in Saudi Arabia to utilize the Internet for ordering through their B2B Private Exchanges.

Two of the largest Saudi corporations – Saudi Aramco and Sabic – also now require their local suppliers to deal with them over the Internet. Growth of B2C eCommerce in 2002 is also expected to be high, but will not exceed one sixth of the growth anticipated for B2B transactions. Growth in B2C eCommerce will be driven by a substantial jump in the number of Internet users.

B2B and B2C eCommerce (2002-2005)			
	2002	**2005**	**CAGR (2002-2005)**
B2B eCommerce (US$ millions)*	1,500	8,000	75%
B2C eCommerce (US$ millions)**	170	470	40%
			Source: Madar Research Group

* Business-to-Business Electronic Commerce - refers to all forms of wholesale commercial transactions conducted over an exclusive computer-mediated network or an open computer-mediated network, but the payment and ultimate delivery of the good or service may be conducted on or off-line.
Exclusions: Foreign exchange, futures, derivatives, bill payments, unsuccessful online bidding, GIRO, inter-bank transfers and other financial instruments trading.

** Business-to-Consumer electronic Commerce - refers to all forms of retail commercial transactions occurring over an open network, which include online selling of goods and services directly to consumers.
Exclusions: Online bill payments (or fund transfers) for transactions performed off-line, and unsuccessful online bidding.

Bahrain to spend over $150 million to have eGovernment by end of 2005

The current modest online presence by the Bahrain Government belies a strong drive to institute model electronic government within three years; the challenging task is backed by legislators, consultants and major ICT players, though it still has to crystallize into a detailed and centrally coordinated project

Bahrain has emerged as the freest economy in the Arab world, ranking the fifteenth most liberalized economy on global level, according to the 2002 Index of Economic Freedom, published by *The Wall Street Journal* and the Heritage Foundation.

The island kingdom possesses most major elements conducive to the rise of an e-government and a "knowledge society". These include a healthy economy (which is moving towards yet more diversification of resources and foreign investment), a strong currency pegged to the US dollar, an advanced telecommunications infrastructure, and a government that is undertaking far-reaching political reforms.

It also has a young population and a reasonably skilled workforce, a relatively high Internet penetration, and a leadership that is strong on the adoption of information and communications technology (ICT) so as to join the New Economy.

The drive for an eGovernment and an outline for its establishment, however, have yet to mature into a thoroughly researched, comprehensive and well coordinated project.

Bahrain Government's overall online presence is currently weak, with the majority of websites still at Stage One (one-way communication of information). A number of ministries and major government institutions do not yet even have a homepage. However, according to Brown University in Rhode Island, US, which published a global eGovernment survey in October 2001, the Bahrain Government has a fair standing in terms of eGovernment progress when compared with 195 other countries. The university graded each country's online presence against 28 different criteria – including availability of contact information, publications, databases, portals and the number of online services. The survey found that 11 percent of Bahrain government websites were offering services online. A total of 32 percent of public websites were offering publications online, with 58 percent having databases. Overall, Bahrain even outperformed the United Arab Emirates which scored consecutively 7 percent, 43 percent and 50 percent. The US scored 34 percent, 98 percent and 90 percent. An indicator of eGovernment readiness in the same survey gave Bahrain a global ranking of 26.2 percent – with the United States ranked the highest at 57.2 percent.

Bahrain had an early start in information technology among the Gulf states, by being one of the first to install a mainframe, plus a government intranet for sharing of information between various public institutions. But the pace of further

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Major Findings

- The establishment of eGovernance in Bahrain, through separate ICT projects undertaken by various government departments, is expected to cost between US$150 and $200 million
- There is no dedicated eGovernment committee. However, an eCommerce panel of ministers, headed by the crown prince, and the Central Statistics Organization at the Ministry of Cabinet Affairs and Information, are the two bodies overseeing the digital transformation of the government
- An infrastructure phase and an applications phase, each lasting for two years will focus on four areas of architecture: security, data, applications and management
- A draft eCommerce law is expected to be passed before the end of 2002 to lay the legal foundation for – and enhance the development of – eBusiness and eGovernment
- The Ministry of Health is building a Strategic Health Information System at the cost of US$53 million to facilitate communication and exchange of data and information between all hospitals and healthcare centers, and to provide access to a national database of medical records
- The government has signed up Batelco and Cisco to upgrade a Government Data Network into the one-gigabit per second Metro Ethernet connection. This will link all major government departments and their various applications on a unified platform that acts as the "nervous system" of the forthcoming e-government

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development remained generally slow. Until recently, the use of PCs in many key government departments was too limited to significantly reduce paper work and the time required to process it. The processes, requirements and implications of the digital transformation were undergoing initial consideration at the end of 2000, especially in terms of network security.

Thanks to the scalability of the government intranet, however, the so-called GDN (government data network) is now becoming the backbone of a project that was officially launched in November 2001 to set broad lines and timeframe for the development of an eGovernment.

The Bahrain eGovernment blueprint is highly decentralized, and the various ministries and government departments and agencies are required to plan, budget, execute and coordinate their eGovernment projects in line with directives from the king and the cabinet. The e-government project consists of two phases that extend over four years – until the end of 2005. But, as yet, there is no publicly disclosed document which details the approach, strategy and blueprint, or which draws the guidelines for the project.

eGovernment Strategic Goals

There are no officially announced strategic goals embraced by the Bahrain Government. Senior government officials, however, generally stress the following: proximity of fixed and wireless access points

to eGovernment users, single gateway to full eServices, and fully bilingual (Arabic, English) eServices.

eGovernment Leaders

Bahrain has not yet founded a specialized committee dedicated to supervising concerted efforts by all public institutions to ensure unified standards and compliancy of systems for an integrated eGovernment.

Strategy emphasis: proximity of fixed and wireless access points to eGovernment users and single gateway to fully bilingual eServices

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There are several government bodies involved in the overall project and it is not clear how much coordination is taking place. The closest setup to an eGovernment committee, or eGovernment project leadership, is the high profile eCommerce Panel, which consists of cabinet ministers and is headed by Bahrain's crown prince. The panel, founded in January 2001, is charged with two primary tasks. These are creating the necessary legislation to allow eCommerce to flourish, and attracting prominent players in the field. Being entrusted with the development of eCommerce, which is one of the main components for eGovernment, the panel also looks into the overall migration of the respective ministries towards an integrated eGovernment.

Another key government body contributing to the project is the Ministry of Cabinet Affairs and Information. The ministry's Central Statistics Organization (CSO) takes credit for developing and hosting the nucleus of an eGovernment Web portal (www.bahrain.gov.bh), and for Arabizing the international content management system (CMS) from PostNuke, then customizing it for online referenda. The CSO houses a good portion of the government's databases and IT infrastructure, and it has traditionally played a role in improving government IT infrastructure.

Bahrain's Economic Development Board (EDB) was established in April 2000 as an autonomous semi-private agency – to lure foreign investment in six key 'economic clusters' including IT and telecommunications. The EDB has also been increasingly assisting in the creation of the eGovernment. It is charged with formulating and overseeing an economic development strategy for Bahrain, which seeks to turn the island into a hub for global business and investment.

With assistance from other government bodies, the EDB has drafted an eCommerce law to govern online transactions starting this year once approved. The EDB has set a target of US $600-800 million in foreign investment this year for all sectors, and the ICT sector is expected to attract a good portion of this investment – especially after the government's recent decision to end the telecommunications monopoly and open up the market for multiple players, whether from the region or overseas.

Other government institutions which are more active in their own digital transformation include the Ministry of Commerce and Industry, the Ministry of Health, Department of Ports and Customs and the electricity company.

Country Datasheet	
Population:	680,000
Arabic speakers:	About 70% of population (nationals & Arab expats)
Age structure:	60% of population under 25
Adult literacy rate:	Male: 87%, Female: 73%
National GDP:	US$8.5 billion
GDP per capita:	US$12,500
Fixed telephone lines:	200,000
Mobile phones:	340,000
Mobile penetration:	50 per hundred people
PC penetration:	16.00 per 100 people
Internet users:	150,000 (August 2002)
Internet penetration:	22% of population
E-banking adoption:	17% of Internet users (2001)

Source: Madar Research Group

- Network security features are a top priority for the government
- Consultation for eGovernment will primarily be resourced internally and locally, as well as from international consultancies such as EDS and PriceWaterhouse Coopers
- Government websites are at an early stage of development, lacking in basic features
- One third of government departments still rely heavily on paperwork
- Using a Central Population Registration number to facilitate the creation of an eCitizen, Bahrain is gaining early experience in eVoting in the region
- The Economic Development Board, the key organization behind drafting Bahrain's eCommerce law, is seeking over US$100 million from foreign investors in the IT and telecommunications sector
- Smart cards and widespread Internet kiosks are among the tools planned to develop future eCitizens in Bahrain

Consultancy

The Bahrain government has a senior in-house eGovernment consultant with international experience who is based at the Central Statistics Organization, which handles much of the infrastructure and technical consultancy for the eGovernment through the Ministry of Cabinet Affairs and Information. The consultant has been since early 2001 advising on projects like network and data security. To ensure high protection for the future eGovernment network (a major concern for Bahraini officials), the government also recruited the global consultancy house EDS throughout 2001, in an attempt to use best solutions of firewalls, encryption, digital signature and other technologies. Design services from other international consultants such as Arthur Andersen and PriceWaterhouse Coopers were outsourced on a tender basis by various government ministries and institutions.

eCommerce Law

A draft eCommerce law, which lays down the legal foundation for electronic transactions, is under review by a special committee before submission to the cabinet for approval. The law follows the advanced law guidelines from North America, European Union, Hong Kong and Singapore and adapts them to the Bahraini environment. It will recognize digital signature and other means of electronic verification and identity authentication. It will also establish the framework for conducting eBusiness and other forms of contracting and transacting over the Internet, while preserving contractual rights and obligations. The law, which will build confidence and boost eCommerce in Bahrain, and help speed up the eGovernance process, is expected to be passed before year end.

e-Government Outline

The eGovernment outline covers four areas of concern to the government: security architecture, data architecture, application architecture and management architecture. Among these, security architecture has so far been determined and largely executed. The outline simply sets two phases for the digital migration, each lasting for two years, with eGovernment fully in place by the end of 2005.

Phase One

This is the infrastructure building stage, which officially began in the last quarter of 2001. Phase One will see purchase and installation of main computer systems by all major government institutions. Security systems constitute an important feature at this stage. Many government institutions that still largely depend on paper work will witness increased automation. As government departments are at different levels of online development, some advanced online services will already appear on individual websites before the final integration of eGovernment services through a single gateway by the end of Phase Two.

Phase Two

Following deployment of IT systems and creation of a unified platform over a high-speed intranet in Phase One, Phase Two focuses on applications. Applications, including business solutions, CRM, administration software and other

STAGES OF E-GOVERNMENT

For the purpose of research that looks into the relatively new area of ICT development in the Arab world, a simple, four-stage reference model was devised, to act as a tool for general comparison and assessment of government websites' development of eGovernment. It is worth noting that while the development of e-government follows the general pattern described below, features distinctive of particular stages may overlap or be delayed.

STAGE ONE: Informational; one-way communication of government information with basic website features such as search capabilities and contact details.

STAGE TWO: Transactional; the start of two-way communication between government and user, where submission of forms and payment of fees can be made online. The website becomes more dynamic, with added layers of information and services.

STAGE THREE: Portal; individual government websites are accessible through one gateway. Personal assistance is offered to individual users, who could have real-time communication or set an appointment with a civil servant when required.

STAGE FOUR: eServices; seamless integration of services, where individual government departments become invisible to users as they are replaced by sets of related services through customizable interface.

e-government solutions, will be procured and implemented through an architecture that makes them work smoothly with existing applications. The eGovernment portal will be further developed to carry an advanced user-interface. This will provide a single gateway, which will start to offer a number of full eServices during the first few months of the two-year phase. These include services for citizens – such as traffic payments – and eProcurement facilities for companies bidding for government contracts.

Senior government officials say that by the end of this stage a true eGovernment is envisioned – with the elimination of bureaucracy and paperwork, and maximum efficiency and speed in delivering services. Individuals and business users will not have to seek individual government departments to receive the services they need. Instead, an intuitive, user-friendly and customizable user-interface will offer them a range of classified services that cover all potential dealings with the government.

The Bahraini government is looking into the smart-card model used in Malaysia as a main tool for the digital government platform. The government consultants see big value in the practical multi-purpose use across various platforms which the smart card can offer. They say there are invaluable uses for smart cards – such as online micro-payments for government services, access to personal information, instant identification, and a handy storage and retrieval of various kinds of personal data. Additionally, the card can be swiped or have its number keyed in for online use. The government also plans to build eGovernment access kiosks in key locations.

Cost of eGovernment

There is no official figure on the total cost of creating an eGovernment in Bahrain. Government institutions are left to prepare their own plans, and draw from their own coffers and resources, to raise their IT infrastructure to the same level – while bringing their online services towards final integration with the eGovernment portal

being developed by the Ministry of Cabinet Affairs and Information. Depending on the size of their operations, number and sophistication of their services, and their present level of automation, most public institutions are expected to invest several millions of dollars. One of the exceptions is the Ministry of Health's $53 million project. As many of the government institutions have not yet finalized their plans and budget, it is difficult to estimate the total cost of the Bahrain e-government. Between the 18 ministries and the rest of

By the end of the eGovernment project, eCitizens will no longer have to seek individual government departments. These will be invisible to users and will instead become replaced by groups of related services on a single, user-friendly interface

government organizations, however, eGovernment spending should exceed $150 million.

Case in Point: eVoting

Bahrain held the first Arab national referendum online when the Central Statistics Organization devised a solution based on technologies from PostNuke and Symbol and put it to the test in February 2001. The e-referendum was successful in terms of its accuracy and time-saving when polling more than 200,000 voters. This was partly due to the assignment of a unique number (Central Population Registration number) to every Bahraini and resident of Bahrain. The CPR was incorporated into a card with encrypted computerized information about the user in the form of a two-dimensional barcode. The CPR card, which was inspired by a Scandinavian model, allows its holder to swipe it at polling stations for instant identity verification.

The card now facilitates all kinds of interaction between the electronic government and the people. The government is also looking into the use of

the CPR number in smart cards to allow wider range of electronic use by cardholders.

Health & Education

Health and education are among the most important sectors for ICT development in an eGovernment and eSociety. Bahrain in particular has been investing heavily in these sectors, especially on health development programs, which won a citation from the World Health Organization for dramatically raising life

expectancy for both sexes from 58 years in the late sixties to 73 years in 2001.

The health and education ministries are in the planning or execution stage of major ICT projects.

Health

The Ministry of Health is spearheading the single most ambitious and costly project in the eGovernment drive in Bahrain. Running at a cost of BD20 million ($53 million) and approved in September 2001, the Strategic Health Information System will allow clinics, physicians and health officials to share healthcare related information and have instant access to tens of thousands of updated medical records over an internet-linked intranet. The project, launched in April 2002, will pass through four phases over a period of six years.

Phase One, for completion by end 2003, focuses on setting up a new infrastructure and basic health information services. Existing legacy systems will be replaced in Phase Two – after historical data is retrieved and new applications installed. Subsequent phases will deal with electronic

patient records and other end-products before the entire medical information system is made available online.

The Ministry of Health already has a Stage-Two website (www.moh.gov.bh) where forms can be completed and submitted online, in addition to online directories.

Education

Bahrain has more than 115,000 students in some 200 public schools. Being a major area for ICT development as part of the eGovernment and eLearning environment, the public education sector in Bahrain is bound to draw substantial government funds – once the Ministry of Education formulates a strategy and develops a plan of action. So far, the ministry has arranged for all public intermediate and secondary schools in Bahrain to be connected to the Internet, and the process of upgrading PC labs and improving on Internet use is ongoing. The ministry, however, is carrying out further studies and is looking into the experience of other nations before it decides

on its approach and priorities. Meanwhile, ICT development in the tertiary education sector is taking place in two institutions; the University of Bahrain and the nascent Arab Open University.

The University of Bahrain has boosted its use of the Internet from mere dissemination of information to a two-way communication (stage 2). Students can select their courses, and apply for admission and registration using online forms – but the university's bilingual (Arabic, English) website does not offer online payment facility for courses.

The university, however, is planning further ICT development and Internet integration to bring more of the learning and administrative processes online, such as eCourses: which the university is currently developing.

The Arab Open University is another significant factor in the digital migration of education in Bahrain – since it is based on distance learning. Here, students use the Internet as the main channel for accessing teaching material and assignments, as well as for interacting with instructors and holding discussions with their classmates. The university is headquartered in Kuwait, but it will have a campus in Bahrain, which will be ready to accept distance learners in four initial study areas as of this month, October 2002.

The project is funded by the Arab Gulf program for the support of United Nations Developmental Organizations (AGFUND) and accredited by the Open University of London. The cost of the university in its first phase will reach $32 million and it will have offices in six Arab countries. Much of the cost will go on ICT infrastructure which will initially handle about 4,000 students from around the Middle East.

IT Players

A key government policy is to attract major international and regional IT companies to play a bigger role in the Bahrain economy (as well as the eGovernment). Government consultants are looking for the best computer systems and eSolutions in terms of costs and applicability. The general

Website Language August 2002

Only Arabic 3%
Bilingual 48%
Only English 49%
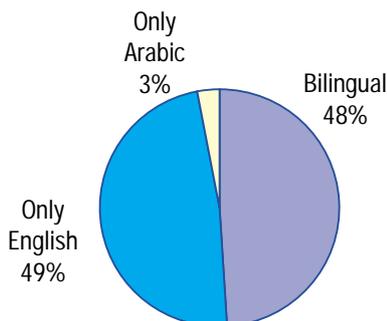
Search Engine Availability August 2002

Yes 34%
No 66%
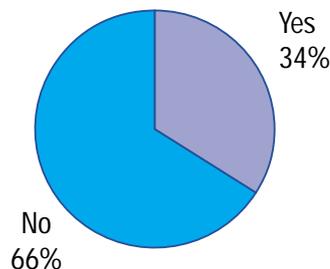
Websites of Ministries are all bilingual, while the majority of other government sites are available only in English, such as those in the financial, academic and tourism sectors, whose main target audience are either non-Arabic speakers or Arabs who are expected to be proficient in English. As Arabic is the only official language in all Arab countries, all government websites will eventually offer Arabic pages.

Source: Madar Research Group

practice for government procurement is to offer tenders for public contracts. All major software and hardware companies have dealings with the government, and among the companies that are winning contracts related to eGovernment and IT training of civil servants are Microsoft, IBM, Cisco and Oracle.

Microsoft signed an enterprise agreement with the Central Statistics Organization in March 2002 to deploy its products and technologies, including Windows 2000, Office 2000 and the BackOffice suite of server as a standard for the eGovernment platform. Microsoft's Arabic language functionality was cited by government officials as one main reason why its products were selected. The agreement is intended to reduce the overall cost of technology acquisition, software asset management, deployment and ongoing upgrades for government departments.

Last year, the Ministry of Labor and Social Affairs signed an agreement with IBM to develop local IT expertise in Bahrain. The agreement will see IBM training and graduating 2000 people in various IT domains such as e-business over

set up in 1997 in cooperation between the CSO, Bahrain Telecommunication Company and Cisco, as the IT 'nerve center' for government internal communication and information sharing, and to link 20 ministerial websites. The network's bandwidth will be upgraded to one gigabit to handle the speed requirement and the high volume of files and data

implementation or planning stage of developing websites beyond the mere provision of information (one-way communication) and into more interactivity, while others are still working on automation of their daily processes. Some 25 to 35 percent of Bahrain's public institutions still rely heavily on paperwork with no electronic databases available and

Development of eCivil Servants – IBM will over the next four years complete the training of 2000 Bahrainis on Knowledge Economy skills for the Ministry of Labor and Social Affairs

accessed and communicated on the intranet via the Internet.

The CSO has been implementing all security requirements for the GDN. Meanwhile, the decentralized eGovernment project is seeing government departments, public agencies and associated organizations allocating parts of their own budgets to carry out IT development. This varies in sophistication from simple, general office automation to highly advanced projects.

insufficient number of PCs installed. The few well-developed government and semi-government websites in Bahrain are in the second stage of eGovernment development, offering two-way communication and online submission of applications and, occasionally, a payment platform.

eGovernment Portal
A bilingual Arabic-English e-government web portal (www.bahrain.gov.bh) is in place, but it is still in Stage 2 of development, allowing online submission of surveys and user feedback. The portal, whose copyright belongs to the CSA, currently provides a few layers of Web pages and offers links to ministries' homepages. The process of integrating government departments into the portal is still at an early stage.

Some 25 to 35 percent of public institutions still rely heavily on paperwork, lacking electronic databases and PCs

a period of five years. IBM will also train and certify 40 Bahraini instructors as specialist IT trainers.

Current State of Affairs
Bahrain is investigating an IT architecture that makes best use of the existing government data network (GDN), which will become the backbone for the entire eGovernment infrastructure. Government officials say they plan to minimize losses due to replacement of legacy systems by upgrading them whenever possible or reassigning their use, while maintaining high specifications and capabilities for the whole government platform. The GDN was

Individual projects are expected to be developed independently – until the formation of a dedicated, authoritative eGovernment committee recruited from all major government departments and institutions.

So far, public institutions have been selecting different international eGovernment consultants such as Arthur Andersen and PriceWaterhouse Coopers, and deciding on their IT projects without necessarily consulting a higher government IT authority.

The evolution of eGovernment in Bahrain at present depends on the efforts of individual departments: some are in the

Search and Language
There are 37 main government websites in Bahrain but only half of them have Arabic versions. The drive for Arabization would pick up momentum with the eGovernment project and the need to reach the largest portion of the population, who are largely Arabic-speakers – over 70 percent of the total.

Of 37 government websites reviewed, 22 had no search engine and an additional six had search facilities that were not functional (total of over two thirds). There

was one site that offered only English search. Four websites offered search (2 of them bilingual search) limited to one directory. Search functions in another four websites could not be determined, either because the site was under construction or it could not be accessed. Finally, only one

Internet banking has made headway in Bahrain, with an adoption rate of 20 percent among Internet users – equivalent to the rate in many Western countries

website had a bilingual search engine that was functional and able to search the whole site (Ministry of Labor & Social Affairs).

Ministries

The Bahrain Government has 18 ministries. Only six of them have a website, providing only one-way communication, and two more website are under construction. Five of these sites are bilingual, and one offers only Arabic pages.

Ministry of Commerce & Industry

With a two-way communication infrastructure and online payment facility, this ministry's website (www.commerce.gov.bh) is currently the strongest among its counterparts, though its content is offered only in English.

Ministry of the Interior

This ministry still lags behind, without even a website to its name, though the Traffic Police department is currently developing a website where online registration and traffic fine payments could be made. The immigration department is also considering online applications for visas.

Other Government Institutions

Bahrain Duty Free: This is a well-developed stage-two level website where travelers can buy goods online and participate in raffles. Content, however, are provided only in English.

Bahrain Customs: A bilingual website (www.bahraincustoms.gov.bh) is undergoing development of online transactions and payment of customs duties and taxes through online banking facilities (I-Net) and an Electronic Data Interchange (EDI) system.

Telecommunications

Bahrain's national telecommunications provider, Batelco, has been a regional leader in providing the latest technology, including high-speed data connections, which can meet the challenging requirements of an eGovernment.

Batelco has just signed an agreement with the Central Statistics Organization to raise the GDN's speed to broadband and link around 200 government sites to the new generation network. Cisco will be involved in the project, which will see the first batch of 38 sites going live by the end of January 2003. The project will incorporate the Metro Ethernet broadband technology.

Online Banking

Internet banking has made real headway in Bahrain, with adoption rate standing at around 20 percent of all Internet users –

equivalent to the rate in many Western countries. Several Bahraini – or partly Bahraini – banks are now offering eBanking, while most other banks are planning or implementing online services.

The Internet banking thrust, spearheaded by a number of national banks such as Al Ahli Bank, the Bank of Bahrain and Kuwait (BBK), TAIB Bank, and ABC (a joint Libyan, Kuwaiti, Bahraini venture), has come at the right time. It will support eGovernment efforts in establishing transaction channels and gateways so as to enable online payment of taxes, fees and other government charges.

With government departments as main potential clients, BBK has just launched an online payment method based on a solution from ACI Worldwide's Commerce Gateway. The Ministry of Commerce, Ministry of Traffic and Bahrain University are also considering using this gateway.

Conclusion

The eGovernment initiative in Bahrain has yet to mature into a concerted effort based on a clear plan and strategy that will ensure smooth deployment and universal standards across the digital platform. However, the initiative already offers numerous opportunities for ICT companies, in providing software, hardware, applications, systems and eSolutions and Arabization.

ICT providers and consultancies mentioned in this report

Microsoft
IBM
Cisco
Oracle
EDS
PriceWaterhouse Coopers
Arthur Andersen

Methodology used in this report
Comprehensive field and desk research was carried out, including a review of all government and quasi-government websites. Telephone interviews were made with senior government officials involved in individual department projects or overall e-government planning. Bahrain media and IT sources also contributed to this research, and views of experts were taken into account for comprehensive assessment of the e-government drive in the country.

Government and quasi-government websites surveyed in this study:

Name	URL	Site Language	Search Engine
Bahrain E-Government Portal	http://www.bahrain.gov.bh	Bilingual	No
Ministry of Commerce and Industry	http://www.commerce.gov.bh/	Bilingual	Bilingual
Ministry of Finance and National Economy	http://www.mofne.gov.bh/	Bilingual	No
Ministry of Health	http://www.moh.gov.bh/	Bilingual	Bilingual
Ministry of Education	http://www.education.gov.bh/	Bilingual	No
Ministry of Labour and Social Affairs	http://www.bah-molsa.com/	Bilingual	Bilingual
Ministry of Information	http://www.gna.gov.bh	Bilingual	No
Ministry of Housing and Agriculture	http://www.mohme.gov.bh/	Under construction	Under construction
Ministry of Works	http://www.works.gov.bh/	Under construction	Under construction
General Directorate of Immigration and Passport	http://www.immigration.gov.bh/	Bilingual	No
Bahrain Economic Development Board	http://www.bahrainedb.com/	English	Yes
Chamber of Commerce and Industry	http://www.bahchamber.com	Bilingual	Down
Bahrain Stock Exchange	http://www.bahrainstock.com/	English	No
Bahrain Monetary Agency	http://www.bma.gov.bh/	English	No
Bahrain Promotion & Marketing Board	http://www.bpmb.com/	English - Japanese	Yes
Bahrain Tourism Authority	http://www.bahraintourism.com/	English	Yes
Bahrain Institute of Banking and Finance	http://www.bibf.com/	English	Yes
Civil Service Bureau	http://www.csb.gov.bh/	Bilingual	No
Pension Fund Commission	http://www.pfc.gov.bh/	Arabic	No
Bahrain Training Institute	http://www.bti.com.bh/index.htm	English	Down
Bahrain Centre for Studies and Research	http://www.bcsr.gov.bh/	English	No
General Organization for Social Insurance	http://www.gosibahrain.org	Bilingual	No
Parliamentary Elections Committee	http://www.bahraintoday.net/	Bilingual	Bilingual
Bahrain Customs	http://www.bahraincustoms.gov.bh	Bilingual	Bilingual
Mina Salman (Bahrain Ports)	http://www.bahrainports.gov.bh	English	Yes
Bahrain International Airport	http://www.bahrainairport.com/index.asp	English	Yes
Bahrain Airport Services	http://www.bas.com.bh	English	No
Bahrain International Airport Media	http://www.bhiam.com/	English	No
Bahrain Duty Free	http://www.bdutyfree.com/ecomm/index.cgi	English	Yes
Embassy of Bahrain in the US	http://www.bahrainembassy.org	English	No
Bahrain International Exhibition Center	http://www.bahrainexhibitions.com/	English	No
Bahrain National Museum	http://www.bnmuseum.com/	Bilingual	No
Bahrain National Gas Company	http://www.banagas.com.bh/	Bilingual	No
Hawar Islands	http://www.hawar.gov.bh/	Bilingual	No
Muharraq Governorate	http://www.muharraq.gov.bh/first.asp	Bilingual	No
University of Bahrain	http://www.uob.edu.bh/	English	No
Bahrain Horses in the Amiri Stables	http://www.bahrainhorses.com.bh/	Bilingual	No

Kuwaiti banks raise IT budgets to $25m to accommodate eBanking

Five of Kuwait's 10 banks are now planning or developing information and communication technology infrastructure to raise the number of banks offering Internet banking services to nine before the end of next year, serving practically the whole corporate and retail community. This study explores the fast-changing landscape of Kuwaiti electronic banking

The banking sector in Kuwait has always been seen as the mere by-product of a major oil producing state, instead of a revenue generator in its own right that genuinely contributes to economic diversification.

But the power of Internet banking technology, and related innovative financial services, are set to cast Kuwait's banks in a dynamic new economic role. They can now expect to be active players in both regional and global financial and investment markets.

Much of the Internet banking development taking place in Kuwait over the past two years is triggered by concerns of diminishing market share. However, some bankers have started to consider the bigger worries and higher goals of a country that is negotiating its entry into the global economy through trade liberalization and lifting protection of economic sectors. There is growing awareness that technology is a crucial factor in maintaining competitiveness against the regional and international rivalry.

For the time being Kuwaiti banks are still highly regulated by the Central Bank, and they also enjoy a high degree of protection from the state, which bans foreign banks from setting up on its soil.

Four out of the country's 10 banks now offer Internet banking, collectively serving more than 65 percent of Kuwait's total banking clientele, while five other banks are at different stages of planning and implementation. By the end of 2003, nine banks will be offering Internet banking services, in combination with related technologies such as mobile banking. The information and communication technology drive, which started to pick up momentum in the last two years, will likely see all commercial banks offering e-banking services by mid 2003.

Kuwait has six commercial banks, two specialized, one Islamic and a savings and credit bank, in addition to the only overseas incorporated bank that has a branch in Kuwait - the Bank of Bahrain and Kuwait, a joint venture based in Bahrain.

With the exception of a couple of the more technology-oriented institutions, Kuwaiti banks have yet to formulate a clear strategy and direction concerning their technology development – a matter that could be aided by eBanking consultancies.

IT Spending

Though Kuwait's financial sector was an early user of technology by global standards, Kuwaiti banks have been allocating much smaller budgets to information technology than their Western counterparts. Collectively, Kuwaiti banks' annual IT budgets amount to about $4,100 per staff member. This compares with the low-end budget of $6,000 per head in the US retail banking sector, as measured by Compass Management Consulting.

With combined assets of about $50 billion and combined profits of around $1.3 billion in the past 12 months, Kuwaiti banks are operating on annual IT budgets totaling a mere $25 million plus.

> ### Major Findings
> - Kuwaiti banks' IT budgets surge to around $25 million per year
> - IT budgets still below US standards, amounting to about $4,100 per employee annually – compared to the low watermark of $6,000 in the US; but this rate is increasing by 15 to 30 percent annually
> - Banks are spending 25 to 35 percent of their IT budgets on Internet banking and Web related banking technologies, with average budget growth of five percent
> - First B2B banking platform will be launched before the end of this year; B2B drive expected to grow
> - About seven percent of all business clients and 15 percent of retail clients have online accounts
> - 55 percent of registered Internet banking clients are active users
> - Four to six percent of all banking activities are now taking place online, with projected annual growth of 80 to 130 percent

This figure, however, constitutes a substantial increase over previous years, and IT spending is set for more growth, which could eventually match the Western average within a three years' period. The increase in spending is mainly to fuel Internet banking.

Banks have increased their IT budgets to upgrade computer systems in addition to creating or improving on Internet offerings. Small banks as well as large ones are each spending between $1 million and $3 million annually on hardware, software, computer systems, networks, solutions and IT staff and maintenance. The bill is further inflated with banks undergoing full system overhaul – as is the case with one Kuwaiti bank currently migrating from a legacy mainframe platform to the PC-based Unix and Windows NT.

As the banks leverage technology, they keep increasing their IT budgets by 15 percent to 30 percent every year. Internet banking and related Web technologies and services are consuming between 25 percent and 35 percent of total IT budgets, and their overall share of IT spending is growing at an average rate of five percent.

Kuwaiti banks are expected to sustain a steady growth in their IT development for the coming two years despite the general world economic slump. The outlook for the Kuwait banking sector is thus generally healthy, with banks continuing to post positive results for the first half of 2002 and to achieve good growth in profits and capital assets.

High credit ratings and substantial deposits will also equip the financial sector with the right tools which – along with the technology edge – should see the banking sector through imminent deregulation and competition from international financial institutions. Kuwait's leading banks continue to receive high ratings from global agencies

Fitch, Moody's and Standard & Poor's.

e-Banking Adoption Rates

Internet banking was introduced in Kuwait by the country's largest bank, National Bank of Kuwait, almost three years ago – a relatively early start for countries in the region. Kuwait has a high Internet banking adoption rate by global standards. There are over 80,000 eBanking accounts in Kuwait, which has a 205,000 strong Internet community (about nine percent of the population) that is growing at the relatively high annual rate of 29 percent. This leads to a theoretical adoption rate of about 39 percent of the country's Internet community – one of the highest among Arab countries.

This rate, however, does not represent the actual number of unique eBanking users – since an estimated 12 to 15 percent of eBanking clients will have Internet accounts in more than one bank. Eliminating this duplication, the adoption rate ranges between 31 percent and 34 percent.

A report released in March 2001 by *The Economist Intelligence Unit (EIU)* stated that 29 percent of Internet users in Kuwait were registered Internet banking

clients – a rate higher even than that of the US, which stood at 17 percent at that time. The overall eBanking penetration in GCC countries was reported to stand at 14 percent. The figure, however, will have surged to around 20 percent this year, especially in Kuwait's retail banking, which has been the target of strong eBanking campaigns.

The rate of Internet banking adoption by bank clients and their growth rate obviously varies from bank to bank, despite overall similarity of services on offer. While one bank has less than 10 percent of its retail clients and around five percent of its business customers registered for the Internet banking channel, another has about 18 percent of its retail clients and around eight percent of wholesale clients registered for the service.

The average rate among the four banks currently offering Internet banking is about 7 percent for business clients and around 15 percent for retail. Their annual growth rate in eBanking business community varies by a large margin, from a low of 15 to 20 percent in one bank to a high of 100 percent in another. Meanwhile, the four banks' combined eBanking retail community is increasing

Report Highlights

- Five banks are now developing Internet banking (some including mobile banking), with the likelihood of all commercial and specialized banks offering the service before the end of 2003 – a total of nine out of Kuwait's 10 banks
- More than 80,000 Internet banking accounts exist today from among a 205,000 strong Internet community; Internet banking adoption rate ranges between 31 and 34 percent
- Banks are offering B2C channels to clients
- Two banks now offer eBrokerage with New York Stock Exchange and NASDAQ; a third bank will soon offer eBrokerage with international non–US based stock exchanges
- Volume of stock traded via eBrokerage exceeds $60 million per month, and is doubling in value every six to eight months
- Growing focus on innovation in online banking services as competitive edge
- Microsoft OS and Servers dominate online banking platform
- Main Internet banking applications in use: CR2, iFlex and Globus

within a range of 30 to 50 percent annually. However, a steep surge in the number of registered Internet banking users is expected by mid 2003 when the vast majority of Kuwaiti banks will have the service up and running.

More than half the Internet banking population in Kuwait accesses accounts mainly to view transaction details. The number of active eBanking users – those who executed at least one fund transfer or

to gain real volume, with the number of transaction carried out by eBanking retail clients averaging at between four and six percent of all banking activities. This rate is expected to grow by an annual rate of 80 to 130 percent over the next two years.

Banks with Internet banking services in operation are NBK, Gulf Bank, Burgan Bank (which are all commercial banks), in addition to the country's sole

made their services available through a mobile banking channel. Burgan Bank, however, does not see much added value, nor enough security, in today's WAP technology to warrant its use, and accordingly dropped mobile banking from its current development plan. Three banks offer Short Messaging System (SMS) alerts, while Burgan Bank plans to incorporate an SMS channel before year-end.

Only NBK has an integrated CRM application, but two more banks will soon follow suit

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bill payment transaction within the past 90 days – currently averages 55 percent of registered clients. Active users were as high as 65 percent for the National Bank of Kuwait (NBK), the largest bank in the country.

Profiling online users among its 'core customer segments', NBK found that 35 percent of online clients were professionals, 33 percent were university students, fresh graduates, and young employees, 10 percent teenagers, seven percent children, and 15 percent expatriates.

Funds being transacted today through Internet banking in Kuwait have started

Islamic banking institution, Kuwait Finance House (KFH). With the exception of the KFH, which so far offers funds transfer merely between accounts within the bank and only through an Arabic interface, banks are offering all the popular Internet banking informational and transactional services for both retail and corporate clients. These services include viewing 'historical' data, transferring funds between bank-controlled and external accounts, applying for loans, requesting letters of credit, payroll deposits and paying utility bills.

NBK, Gulf Bank and KFH have also

Software and Consultancy

In planning their IT infrastructure and Internet offerings, Kuwaiti banks seek consultation primarily from their IT and Internet banking solution providers, such as Microsoft, IBM, Compaq, International Turnkey Solutions (ITS), Hasibat, Arabesque Systems and Gulf Web International. To outline Internet strategy and prioritize development, they occasionally use the services of overseas consultants such as UK-based Akma.

Internet banking packages in use include CR2, iFlex and Globus from the UK-based Temenos; payment gateways are provided by ACI and Trintech. Among the dominant network security software providers are Verisign, Symantec and Altavista, while commonly used databases come from Microsoft (online banking) and Oracle (core banking activities). Operating systems and servers used are largely Windows 2000 and Microsoft IIS/5.0.

Only one bank, the National Bank of Kuwait (out of the four banks that offer Internet banking), has a Customer Relationship Management (CRM) application integrated into the bank system, which was developed by the bank's own IT department. To ensure best marketing results and customer satisfaction, NBK has carried out thorough research on its clients and their needs and behavior, before designing the CRM package. Realizing the benefits of

Country Datasheet	
Population:	2.3 million
Arabic speakers:	About 78% of population (nationals & Arab expatriates)
Age structure:	52% of population under 30
Adult literacy rate:	Male: 82%, Female: 75%
National GDP:	US$35 billion (2002 est.)
GDP per capita:	US$15,200
Telephone lines:	500,000
Mobile phones:	1,100,000
Mobile penetration:	48 per 100 people
PC penetration:	12.17 per 100 people
Internet users:	205,000
Internet penetration:	8.9% of population
E-banking adoption:	31%-34% of Internet users

Source: Madar Research Group

CRM for both the individual client's specific needs and satisfaction on the one hand, and the bank's marketing scheme, on the other, two more leading banks are planning to have CRM modules in place within the coming 10 months.

Newcomers

Five Kuwaiti banks currently plan to introduce Internet banking, thus raising the number to nine out of 10 by end 2003, though four of these plan to launch the service by the middle of next year. The five are Bank of Kuwait and the Middle East (BKME), Al-Ahli Bank of Kuwait (ABK), Commercial Bank of Kuwait (CBK), Industrial Bank of Kuwait and Kuwait Real Estate Bank (KREB).

BKME, however, is already one step ahead of the others in electronic banking. Last year, it launched "PC banking" – the predecessor of Internet banking. Despite being a highly secure banking channel, this is giving way to Internet formula because of its limitations. The bank has also been offering clients WAP-based banking and SMS alerts.

Drivers and Challenges

Two thirds of bank officials interviewed in this study said the primary factor that made them launch - or plan to launch - Internet banking was retention of clients.
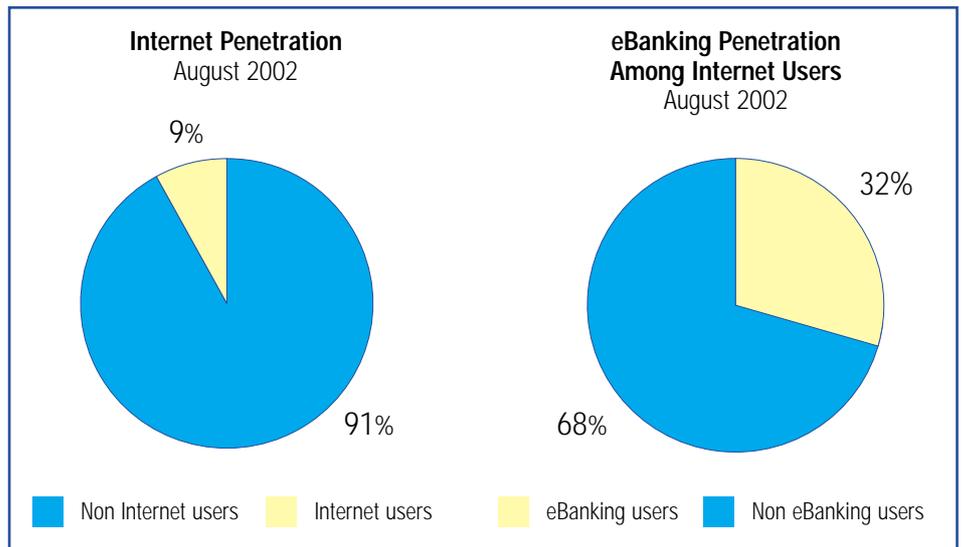
Source: Madar Research Group

Concern over losing clients to competitors, because of eBanking, was triggered by a report published by the Institute of Banking Studies (IBS) in Kuwait. This found that close to 20 percent of banks clients would move accounts to another bank if their current bank failed to offer them Internet banking services in the near future.

The report said that an additional 58 percent of the sample would open another account with a bank that offered banking services over the Web. The IBS study was made more than a year and half ago. As other studies have shown that the younger generation is keen on using the Internet in their daily lives, there will be a much higher demand for Internet

banking services in any new poll.

Among secondary reasons for Kuwaiti banks to introduce eBanking is recognition that sooner or later information and communication technology will be a deciding factor in competition – because of convenience, long-term savings, scope of innovation and other advantages. There is also another perception: while at present Internet banking is seen as 'another distribution channel' that adds value, it will swiftly become the channel of choice for a majority of clients.

Budgetary constraints, setup infrastructure, low speed of Internet connection, clients' lack of awareness, and high pressure for innovation were

Bank (ranked by assets)	URL	Internet Banking	Server/Operating System
National Bank of Kuwait	www.nbk.com	Full Internet and mobile banking	Microsoft IIS/5.0 on Windows 2000
Gulf Bank	www.gulfbank.com.kw	Full Internet and mobile banking	Microsoft IIS/5.0 on Windows 2000
Burgan Bank	www.burgan.com	Full Internet banking	Microsoft IIS/4.0 on NT4/Windows 98
Bank of Kuwait & the Middle East	www.bkme.com	PC and mobile banking. Internet banking planned before end of 2003	Microsoft IIS/4.0 on NT4/Windows 98
Commercial Bank of Kuwait	www.cbk.com	Launch in second half of 2003	Apache/1.3.19 on Linux
Industrial Bank of Kuwait	www.ibkuwt.com	Launch by mid 2003	Microsoft IIS/4.0 on NT4/Windows 98
Kuwait Real Estate Bank	www.akaribank.com	Launch by end of 2003	Microsoft IIS/5.0 on Windows 2000
Al-Ahli Bank of Kuwait	www.abk.com	Launch in first half of 2003	N/A
Kuwait Finance House	www.kfh.com	Only internal Internet and mobile banking	Microsoft IIS/5.0 on Windows 2000
Savings and Credit Bank	N/A	N/A	N/A

Source: Madar Research Group and Net Craft

perceived as the major challenges by the banks' senior Internet banking executives.

e-Brokerage

Stock market trading is a popular business in Kuwait, both among top businessmen and young entrepreneurs – despite the severe 1982 crash of Kuwait's unofficial Souq Al Manakh, which has left its mark even today. However, the Kuwait Stock

full online real-time brokerage in future, once the KSE upgrades its infrastructure and acquires the software solutions to go online.

The estimated volume of stock traded via eBrokerage is in excess of $60 million per month, and is doubling in value every six to eight months.

Sensing that the local market is big enough for a third player, especially one

Conclusion

Kuwait's banking sector is still healthy, still growing and possessing solid fundamentals. But establishments are being forced to reinvent themselves, to face up to a changing environment based on imminent deregulation, privatization, liberalization and the lifting of protection, as Kuwait tackles its entry into the World Trade Organization.

Banks are becoming increasingly aware of the importance of Internet and related technologies in this harsh new environment. However, the sector must embark on bolder initiatives, and be more aggressive in acquiring and deploying new technology to ensure a competitive edge – especially as tough decisions are in the offing (including potential acquisitions and mergers).

eBrokerage service with international non-US financial markets will soon be launched, thus opening new stock opportunities for Kuwaiti traders

Exchange (KSE) has now probably the highest volume of trade in the region.

Sensing the strength of demand (which can be well served through the timeliness and convenience of the Internet), the National Bank of Kuwait took the lead in launching eBrokerage 18 months ago, allowing clients to trade stocks and equities on the New York Stock Exchange and NASDAQ. The success of the project is evident from the volumes of stock traded over NBK's online brokerage channel. This averaged $50 million per month during the first half of 2002, based on an average of 60 million shares. NBK expects the volume of trade to double by the end of this year.

Gulf Bank followed suit, establishing an e-brokerage facility to trade stocks on the New York exchange. An arrangement was also made between the Kuwait Stock Exchange and the three top Internet banking establishments – NBK, Gulf Bank, Burgan Bank – to allow traders to settle payments through their banks' Internet channels at the end of a day's trading. This process is far from being defined as eBrokerage. But it could turn to

that has new and distinctive offerings, a third bank will soon launch eBrokerage with international non-US financial markets, opening new venues for stock traders in Kuwait. This bank is targeting 10 percent of the market.

e-Business

Currently, none of the banks in Kuwait is carrying out procurement or investment via the Internet, nor are they offering business-to-business facilities for their clients.

One bank, however, is planning to launch a B2B platform for corporate clients before the end of 2002. Other banks are expected eventually to follow suit, especially since the government, which is working on its own digital transformation, is backing eCommerce.

B2C facilities have been introduced by NBK and Burgan Bank, offering online shopping for consumers using credit or debit cards, or even ATM cards – as is the case with Burgan Bank, but activity is still marginal. It is expected to pick up momentum as discount prices and variety in products attract more shoppers.

If Kuwait follows the growth rate for emerging economies forecast by the United Nations Conference on Trade and Development (UNCTAD) held in November 2001, around 30 percent of all banking activities in the country will go online by 2004. Using the same study as a guideline, some 40 percent of Kuwait's stock brokerage activities will also be carried via the Internet. This rate may even be attained before 2004, judging by the development pace and success of eBrokerage in Kuwait and the popularity of the stock market among Kuwaitis.

ICT providers and consultancies mentioned in this report	
Microsoft	Altavista
IBM	Akma
Compaq	Arabesque Systems
Oracle	Verisign
ACI	Hasibat
Temenos	Trintech
Symantec	ITS
Gulf Web International	

Dubai Internet City community grows by five percent during first half of 2002

US companies constitute by far the largest national group, followed by companies from the UAE, UK and India; software companies, solution providers and system integrators make up almost 50% of businesses

Dubai Internet City is currently home to several hundred information and communications technology (ICT) companies from over 35 countries, and is determined to become the leading hi-tech community and hub in the region.

Large multinationals and small start-ups alike have been encouraged by new ownership laws in the Dubai Technology, eCommerce and Media (TECOM) Free Zone. These allow 100 percent foreign ownership of companies and 50-year renewable lease contracts on land and buildings, as well as provide a tax-free environment. The TECOM free zone also boasts a world-class communications structure, not to mention the advantage of being at the center of a market covering 1.6 billion people.

Madar Research's study covers two main aspects of the Dubai Internet City community – nationality and nature of business. The supporting information was obtained from secondary material published in the various media sources, on the Dubai Internet City web site, and on the web sites of the DIC partner companies, and also through direct contact with these various partner companies.

The DIC web site publishes two separate directories of DIC partners, where one list includes 325 and the other 115 companies. At a June 2002 business function, Dr. Omar bin Sulaiman, CEO of Dubai Internet City, stated that DIC partner companies numbered 315. In the course of our research of the DIC community, conducted between August 15 and September 15, Madar, however, were able to identify only 303 companies that actually have offices at DIC and are currently conducting business from the free zone. It must be noted that some DIC partner companies are physically located at Dubai Media City, the sister community with the TECOM free zone, but this is largely due to office space issues at DIC itself.

Major Findings

- US ventures form the largest national grouping at DIC, with 68 companies.
- Arab countries, excluding the UAE, form only 10.6% of non-DIC registered companies.
- The top four countries – US, UAE, India and UK – constitute some 70% of all non-DIC registered companies.
- Solution providers and system integrators – 69 in total – make up the bulk of businesses operating at DIC.
- B2B eCommerce at DIC is undertaken by 14 companies, as opposed to only 3 in B2C eCommerce.
- Only 6 dot coms (excluding eCommerce) remain at DIC, in line with the global demise of dot coms.
- Most local development is in the form of localization, systems integration and web development.

Non-DIC Registered Companies by Country of Origin		
Country of Origin	**Number of companies**	**Percentage Share**
USA	68	30.09%
UAE	34	15.04%
UK	28	12.39%
India	27	11.95%
Saudi Arabia	7	3.10%
Jordan	6	2.65%
Germany	5	2.21%
Canada	4	1.77%
Egypt	4	1.77%
France	3	1.33%
Holland	3	1.33%
Japan	3	1.33%
Singapore	3	1.33%
South Africa	3	1.33%
Switzerland	3	1.33%
Norway	3	1.33%
Austria	2	0.88%
Bahrain	2	0.88%
Finland	2	0.88%
Australia	1	0.44%
Hong Kong	1	0.44%
Ireland	1	0.44%
Italy	1	0.44%
Kenya	1	0.44%
Korea	1	0.44%
Kuwait	1	0.44%
Lebanon	1	0.44%
Liechtenstein	1	0.44%
Malaysia	1	0.44%
Oman	1	0.44%
Portugal	1	0.44%
Qatar	1	0.44%
Sri Lanka	1	0.44%
Sweden	1	0.44%
Turkey	1	0.44%
Total	**226**	**100.00%**

Source: Madar Research Group

DIC Companies by Country of Origin

DIC Companies by Country of Origin

Arab Countries
(excluding UAE) 11%

All Other Countries
(including UAE) 89%

Source: Madar Research Group

In addition to the 303 companies we identified as members of the DIC community, and have analyzed below, we found reference to another 51 firms, listed in one or both of the DIC partner directories, which could not be directly linked to it. These could either be future tenants, already registered but not yet occupying offices at DIC, or companies that are actual tenants at DIC – but provide no mention of DIC offices or contact addresses.

Of the 303 DIC partner companies, the nationality or business nature of 11 companies could not be determined: either because they had no online presence, their web sites were under construction or they offered only vague information about country affiliation or business nature. Furthermore, these companies could not be reached by telephone. They seem to be mainly small to medium sized businesses.

Two hundred and twenty six of the remaining 292 companies in the DIC community are registered abroad or in the United Arab Emirates, with branch offices registered at DIC. The other 66 have set up their offices in DIC as DIC-registered companies. These make up 22.6 percent of the 292, the origin of which was determined in the study. DIC-registered companies include a number of companies that were previously registered elsewhere – either abroad or in the UAE and have moved their operations exclusively to DIC, or businesses that are headquartered at DIC and maintain branch offices elsewhere. We noted that these companies were predominately made up of Indian or Arab teams of ICT entrepreneurs, as well as a small number of Europeans.

The 226 companies with branch offices

DIC Companies by Country of Origin

Other Countries 31%
USA 30%
UAE 15%
India 12%
UK 12%
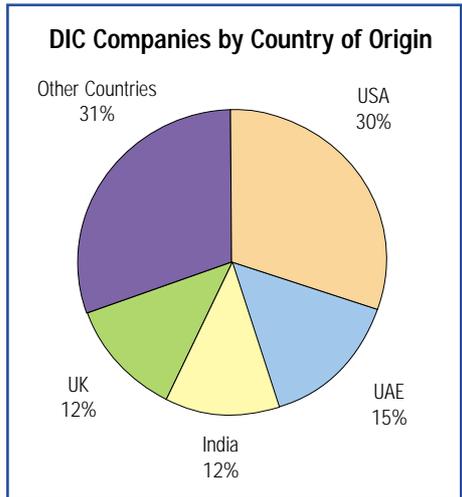
Source: Madar Research Group

at DIC offered no surprises in terms of nationality. US firms made up the bulk of the community, with 68 companies, or about 30 percent, of all non-DIC registered companies.

Companies from the Middle East and North Africa region formed the next largest block, with a total of 58 (25.6 percent of non-DIC registered companies). However, when the 34 firms from the United Arab Emirates are excluded, Arab countries were poorly represented, making up only about 10.6 percent of non-DIC registered tenants. Among these, Saudi Arabian, Jordanian and Egyptian companies predominated.

European presence at DIC is mainly British, with 51.8 percent of the 54 European ventures operating at DIC originating from the UK. This indicates that the presence of non-English speaking European companies at DIC is very limited.

Meanwhile, companies from South-Asia, namely India and Sri Lanka, made up some 12.4 percent of the total non-DIC registered occupants, whereas the Asia-Pacific region laid claim to only 4.4 percent.

Noteworthy is that almost 70 percent of all non-DIC registered companies came from only four countries – the United States, United Arab Emirates, India and United Kingdom.

However, we note that a small number of companies did pull out of DIC or are in the process of doing so. These include IslamiQ, CSFBdirect-eUnion and Arabia.com. In an interview published on August 24, 2002 in UAE local newspaper, *Al-Bayan,* Ahmad Bin Bayat, director general of the Dubai TECOM Free Zone, stated that only about one percent of tenants had withdrawn from DIC, although TECOM had anticipated a withdrawal rate of five percent. Companies pulling out were mainly small to medium sized ventures that had gone out of business altogether, or were companies for whom a DIC presence was no longer feasible or necessary due to changing business strategies. On the other hand, according to Bin Bayat, DIC is witnessing a solid overall growth rate of around 25 percent.

DIC Companies by Region

32%
24%
26%
12%
4%
2%

- North America
- Europe
- Middle East & North Africa
- South Asia
- Asia Pacific
- South & Subsaharan Africa
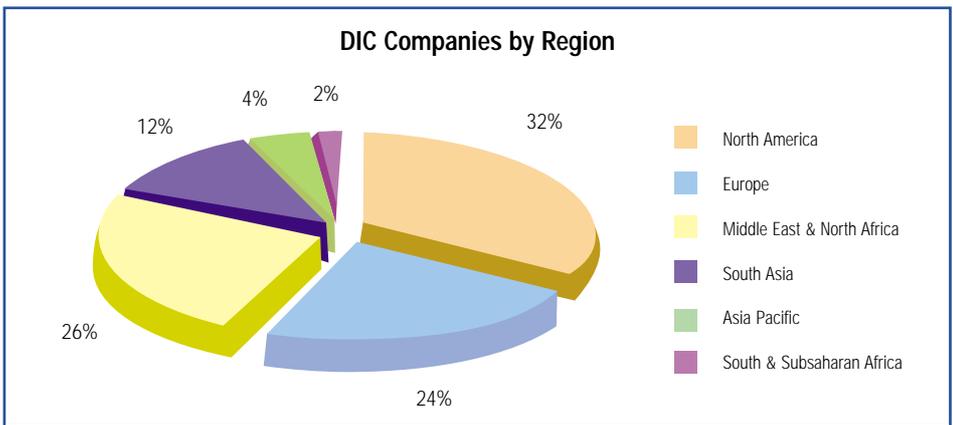
Source: Madar Research Group

Dubai Internet City has clearly witnessed explosive growth in the number of registered companies during the first year following its launch in October 2000. According to official figures, there were 300 companies at DIC by the end of 2001. The first half of 2002 witnessed a significant slowdown in the rate at which new partners were joining DIC. Official DIC sources place the number of companies operating at DIC during this period at around 315. This five percent growth rate naturally takes into consideration companies which have withdrawn from DIC – i.e. it reflects 'net growth' over only six months. If this trend continues, DIC should witness about 10 percent growth for 2002.

DIC Companies by Business Type

Madar Research's survey of Dubai Internet City companies also focuses on the different business activities of the 292 DIC partners

under review. The large, medium, and small-sized firms in the DIC community cover a broad spectrum of business activities, which we classified under 18 major categories.

The classification of business types was based on a detailed review of individual companies and their web sites. In order to simplify the classification system, we took into consideration the companies' main line of business, as many of the small to medium sized ventures carry out a diverse range of activities, usually in the form of solutions development, training, consultancy work and business services.

Solution providers and system integrators make up the largest category among the DIC partners, with 69 companies carrying out various levels of development and integration. DIC-registered companies carry out the main bulk of solution development and system integration at DIC with some 40 percent of the market. Indian companies form 17.4 percent of this segment.

Software companies are also well represented at DIC, with 68. We define these as firms that develop proprietary software. Software companies at DIC are of

two types - the large industry players who maintain representative offices at DIC, and medium to small sized businesses which – in addition to maintaining representative offices in the high-tech complex – also carry out sales activities. Software companies at DIC include big names in the industry, such as Microsoft, Oracle, Sybari and Sakhr Software, as well as a large number of small and medium sized operations. While many of the large corporations have moved regional headquarters to DIC from other locations in the area, some are first time entrants. Unsurprisingly, US companies in this segment represent 30.8 percent, while Indian companies make up 19.1 percent.

Similarly to software organizations, networking and telecommunications equipment and services include only providers of proprietary equipment and solutions. Providers of non-proprietary equipment and solutions have been classified under solution providers and system integrators. Networking and telecommunications companies form the third largest group at DIC, with a total of 25. US ventures again make up the bulk of the networking and telecommunications category, with a share of 56 percent.

Software companies, solution providers and system integrators, and networking and telecommunications companies are the top three business categories at DIC, with over 55 percent of the 292 registered organizations.

The remaining 45 percent are distributed over 15 categories. The 23 business service companies, for the most part, provide financial, marketing and other services to the region. They maintain offices at DIC in the form of regional branches or headquarters.

On the other hand, 23 community service companies provide the DIC community with auxiliary support, such as legal services, food and beverage, travel and banking. UAE companies make up 60 percent of these, and US companies 22 percent.

DIC-registered companies dominate the web site design and development category at DIC, making up 66.6 percent of

| Breakdown of DIC Companies by Business Type		
Type of Business	Number of companies	Percentage Share
Solution Providers/ System Integrators	69	23.63%
Software Companies	68	23.29%
Networking & Telecom Equipment and Services	25	8.56%
Community Services	23	7.88%
Business Services	23	7.88%
Website Design / Development / Administration	15	5.14%
B2B eCommerce	14	4.79%
eLearning	14	4.79%
Resellers / Distributors	8	2.74%
Dot com (excluding eCommerce)	6	2.05%
Peripheral Equipment and Storage Devices	6	2.05%
Handheld and Wireless Devices	4	1.37%
Computers	4	1.37%
B2C eCommerce	3	1.03%
ASP	3	1.03%
Hardware Components	3	1.03%
Consultancies	3	1.03%
Market Research	1	0.34%
Total	292	100.00%

Source: Madar Research Group

the 15 ventures.

A surprising 14 B2B eCommerce companies operate in DIC. Some are general-purpose B2B ventures dealing with DIC. This indicates that the B2B eCommerce model is gaining ground in the region with B2C eCommerce witnessing a decline, both regionally and globally.

DIC and eCollege), Zayed University and the Center of Excellence for Applied Research and Training at the UAE Higher Colleges of Technology.

Dot coms have witnessed a downfall at DIC, in line with worldwide trends. Only six pure dot coms have held out there, with most former dot coms shifting their lines of business to other markets – or closing down altogether.

DIC Companies by Type of Business

- Software Companies — 23.29%
- Solutions Providers/System Integrators — 23.63%
- Networking &Telecom Equipment & Services — 8.56%
- Community Services — 7.88%
- Business Services — 7.88%
- Website Design/Development/Administration — 5.14%
- B2B eCommerce — 4.79%
- eLearning — 4.79%
- Other Activities — 14.04%
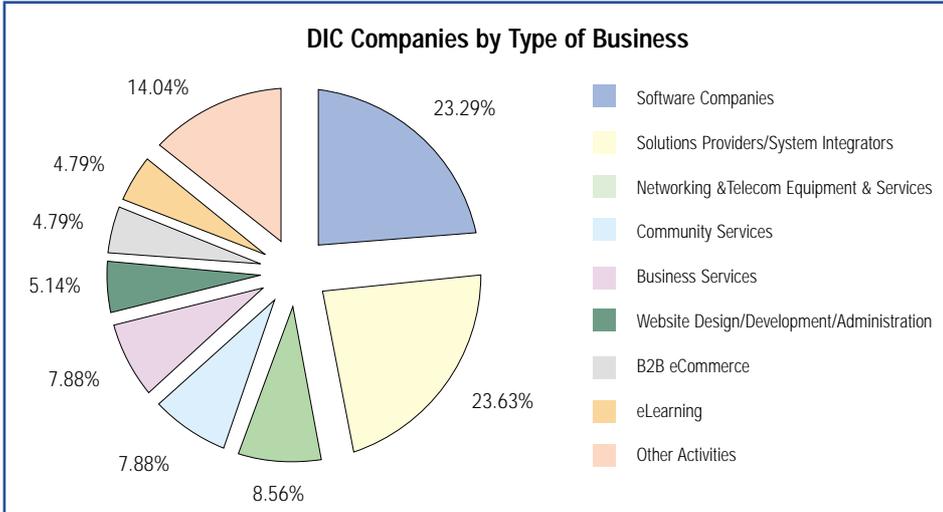
Source: Madar Research Group

a broad range of eCommerce activities, while others facilitate trade in specific sectors such as oil & gas and paper. They include online recruitment agencies that provide both employers and potential employees with the ability to transact online. On the other hand, only three B2C eCommerce companies are represented at

With the Knowledge Village project yet to be completed, 14 eLearning companies have joined the DIC community as partners. These include leading international online training and certification companies, as well as a number of local eLearning ventures such as Knowledge Access (a joint venture between

Though Dubai Internet City aspires to be more than a regional hub for the ICT industry, software development is still in its infancy at DIC, with very little actual development work taking place. Most local development is in the form of localization and integration, while the bulk of software development is being carried out in the US, Europe and India. Of course, some development is also taking place at DIC among web developers, solution providers and system integrators.

English language sites dominate Saudi Web by sheer numbers; Arabic prevails in size of content

An extensive survey by MADAR Research, focusing on Saudi websites carrying the Top Level Domain (TLD) dot-sa, has revealed that the majority of these sites are English-language based. A close look into content, however, showed that the number of documents offered in the Arabic language surpassed by far the number available in English.

Websites using only the English language constitute almost 42 percent of the total surveyed. Bilingual sites, using both English and Arabic, come in second place with 34 percent, while sites offering only Arabic content make up 24 percent.

While English websites outnumber Arabic sites by a large margin, the overall Arabic content – taken from both Arabic and bilingual sites – outweighs the English more than twofold. Using unique methodology devised specifically for this survey by Madar Research, Arabic proved to be the language of 70 percent of all documents available on the Saudi websites, with the rest in English.

There are several factors behind this discrepancy – particularly that Arabic pages in general are more multilayered, and deal in depth with rich cultural content. Online media in the kingdom, which features extensive content, is also available mostly in Arabic. Meanwhile, English language sites are mostly business-oriented, thus carrying fewer documents than the Arabic ones.

The survey revealed that most dot-com sites are currently under construction. Dot-coms represent almost 83 percent of all Saudi sites, whereas the ratio of 'under construction dot-com sites' to total available dot-coms is around 65 percent.

Overall Distribution of Saudi Websites per Language

Arabic 24%
Bilingual 34%
English 42%

Source: Madar Research Group

Share of English and Arabic Documents on Saudi Websites

English 30%
Arabic 70%
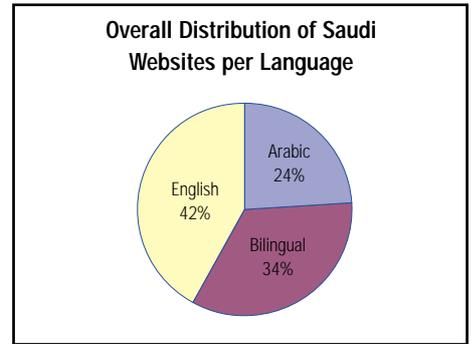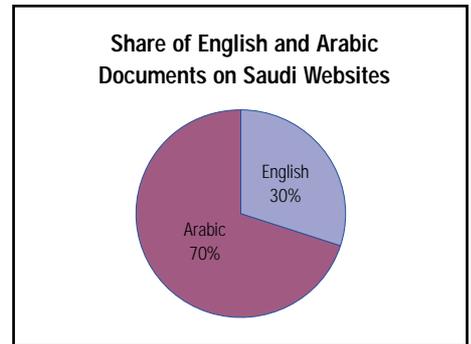
Source: Madar Research Group

Since languages used by sites under construction cannot yet be determined, they are not represented in these results. (Our sample size was 300 sites out of a total of about 4,481 registered under the dot-sa TLD).

An important observation in this study is that while the website language of Saudi schools (sch.sa) is overwhelmingly Arabic (over 95%), English is regularly incorporated in vocational and tertiary education sites (edu.sa) – in about 50 percent of cases. In high qualification professions such as medicine, Saudi sites (med.sa) are almost all (97%) English based.

Bilingual online offerings, which are the general trend for the region's websites, dominate in the net.sa (70%) and the org.sa (about 67%) categories.

Having among its population one of the highest ratios of Arabic speakers to non-Arabic speakers in the GCC, the Saudi government has incorporated English into only a third of its websites. However, some eight percent of gov.sa sites are English-based, targeting such audiences as non-Arabic speaking Muslims planning a pilgrimage, and overseas trade and business communities.

Saudi Websites: Percentage Distribution as per Language

Legend: Arabic, Bilingual, English Sites
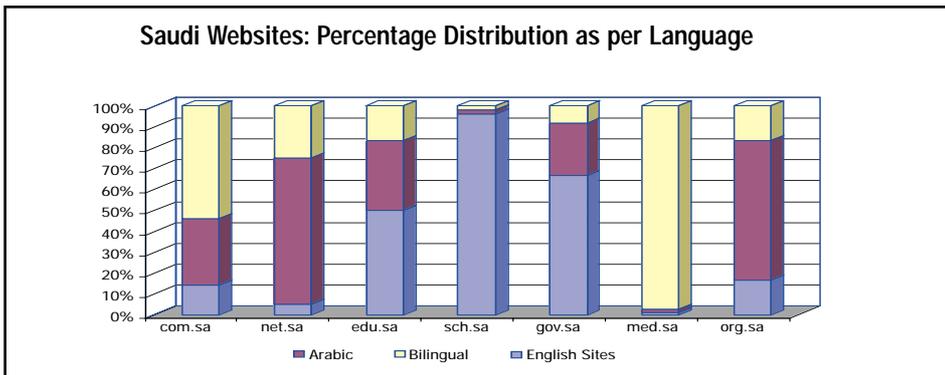
Source: Madar Research Group

Percentage Distribution of Saudi Websites by Language use				
Site Domain	Numbers	Arabic Sites	English Sites	Bilingual Sites
com.sa	3,700	14.00%	54.00%	32.00%
net.sa	85	5.00%	25.00%	70.00%
edu.sa	97	50.00%	16.67%	33.33%
sch.sa	72	96.00%	2.00%	2.00%
gov.sa	260	66.67%	8.33%	25.00%
med.sa	47	1.00%	97.50%	1.50%
org.sa	216	16.67%	16.67%	66.67%
Total	**4,477**	**24.16%**	**41.67%**	**34.17%**

Source: Madar Research Group

* The figures above are based on calculations excluding four existing pub.sa sites which could not be accessed at the time of surveying

CRM market to grow exponentially in ME

"Customer Relationship Management (CRM) in the Middle East (including Turkey and other regional countries) is shifting towards the Business Process Outsourcing (BPO) model, and the region's entire CRM market – inclusive of software, hardware, call centers, marketing, management and related services – will grow to $4 billion in the next three years."

– Alakh Varma, general manager, strategy and business development, Gulf Computers, quoted by Madar Research Group on October 8, 2002

$150 million is the value of the software market in Lebanon, inclusive of related services such as consultancy, training and implementation. Software development has grown between 10 and 20 percent over the last five years and exports are currently about $50 million.

– Lebanon's Professional Computer Association, quoted by TradeArabia.com, August 26, 2002

$310 to $650 million is the value of B2C eCommerce in the GCC. Assuming that the number of Internet users will double in three years, the B2C market size will range between $620 million and $1.3 billion by 2005.

– Ernest & Young, quoted by Al-Bayan, October 5, 2002

155 megabits per second is the new speed upgrade for the Internet link in Qatar – from 45 mbps. The higher bandwidth will boost the number of Internet subscribers in Qatar, which currently stands at 19,000.

– Nasser Marafih, Q-Tel general manager quoted by the Gulf Times, August 26, 2002

$130 million is the value of Jordan's software market in 2001. Another $38 million was generated from software exports to Arab countries (70%) and the rest of the world (30%). The same year also witnessed direct foreign investments totaling $60 million in Jordan's IT sector.

– Marwan Juma, chairman, Information Technology Association of Jordan, quoted by Al-Bayan, October 5, 2002

11,592 online transactions were carried out by Visa Card holders in the United Arab Emirates in February 2002. This represents a 1,200 percent increase over March 2001 figures. The value of the February transactions reached $1.6 million – about 30 fold increase over the March 2001 figure.

– Brian Huckett, executive vice president market development, Visa International, quoted by Khaleej Times, July 11, 2002

350,886 mobile phone lines have been leased in Bahrain, representing 52 percent penetration rate.

– Sheikh Ali bin Khalifa Al Khalifa, chairman, Bahrain Telecommunications Company, quoted by Akhbar Al-Khaleej, July 29, 2002

$100 million is the estimated value of the Middle East enterprise storage market in 2002.

– Peter Aubrey, chairman, STME, quoted by PC Magazine (Arabic Edition) Online, September 11, 2002

120,000 units is the PC installed base in Yemen in June 2002. The number corresponds to 250,000 PC users. Growth in PC sales over the last three years reached 40 percent annually.

– Mohammed Abdul Qader, manager, commercial products, TeleYemen, quoted by Al-Quds Al-Arabi, July 17, 2002

* Quotes reported in this section have been rephrased unless they appear inside quotation marks.

International

217 Internet companies in the United States were acquired in Q3/2002 in merger-and-acquisition (M&A) deals worth $4.8 billion. This represented a drop in both spending and deal volume, compared to Q2/2002. A plunge of almost 50 percent was registered in Internet M&A spending over the first nine months of 2002 as compared with the same period in 2001.

– Webmergers, quoted by Nua.com, October 3, 2002

62 percent is the drop in the number of seven-digit deals involving Enterprise Resource Planning (ERP) and Supply-Chain Management (SCM) that were made between the Q4/2000 and Q2/2002.

– Yankee Group, quoted by Business2.com, October 4, 2002

20 percent is the increase in the number of dial-up Internet subscribers in Africa in the past 18 months. Only one in every 40 African residents have a telephone line, while one in 160 have Internet access.

– UN Information and Communication Technology Task Force, quoted by ITworld.com, October 1, 2002

20 percent is MS Windows XP's global market share on the Internet, less than a year after the Operating System was launched. XP is now the second most popular OS after Microsoft Windows 98, which has nearly 37 percent of the market.

– WebSideStory's StatMarket, quoted by StatMarket.com

15 percent of India's Internet users use online banking. This corresponds to 2.2 million online banking customers.

– IDC India, quoted by the Times of India, July 16, 2002

$3.1 billion is the estimated revenue from website localization worldwide in 2007. This is based on a Compound Average Annual Growth of 36 percent from 2001, when the revenues were estimated at $499 million.

- Allied Business Intelligence, quoted by WorldLingo, September 19, 2002