

Management Summary and Contents

Middle East Satellite Communications and Internet via Satellite

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About this Report

Middle East Satellite Communications and Internet via Satellite is the latest in a series of market research reports from DTT Consulting which cover the latest trends in satellite communications and associated technologies.

It focuses on the two main areas we believe are of interest to the industry, satellite broadcasting and Internet via satellite.

We have chosen to cover the Middle East because it is of an area of major success for DTH broadcasting, a major market for Internet via satellite and an area of intense topical interest. We have, within the report, identified a long-term major market for military broadband and narrowband communications.

The report is a regional follow-on and update to our annual Internet via Satellite reports published in 1998, 1999, 2000 and 2001.

We have, though, made substantial changes to the nature of our research on Internet via Satellite, opting for a series of regional reports looking at the issues in a much greater depth, providing a general overview of all forms of satellite communications within each region.

The geographic coverage of the report is the Arabic-speaking countries of the Middle East and North Africa, Iran, Afghanistan, Israel, Cyprus and Turkey.

The primary topics covered are DTH satellite broadcasting, satellite operations, point-to-point satellite links for ISPs and hybrid and two-way satellite-based broadband services. It also covers mobile satellite communications and military communications, with an overlap into cable, MMDS and thin route rural satellite coms.

It details major players in the region and current trends in satellite communications and provides a comprehensive database of key satellite players and ISPs in the region.

Author Profiles

The principal author of this report is Roger Stanyard. However, considerable credit must be given to his colleague, Chris Forrester, for input on both satellite communications in the region, and an understanding of the economics, politics and culture of the region. Chris is editor of Satcoms Insider, a world-class industry newsletter also published by us. He is a recognised expert on the Middle East, having worked for the Middle East Economic Digest in its heyday. He has lived in the Middle East and is a frequent visitor there. In recognition of his expertise, he is an honorary professor at the American University in Cairo. In the course of research behind this report, Chris visited a number of countries in the Middle East, and talked with leading satellite communications industry players there.

Like Chris, Roger Stanyard has many years experience in satellite communications, both as a publisher and consultant. He established the industry newsletter Interspace in 1982 after having cut his teeth on the computer industry and insuring satellites. Chris later went on to edit Interspace.

Roger holds a degree in economics from University College London, a post-graduate qualification in finance from the Southbank University, London, and an MBA from Cranfield University.

Over recent years, he has specialised in broadband satellite communications and Internet via Satellite, producing the Ka-band Report in 1997 and the annual Internet via Satellite reports in 1998, 1999, 2000 and 2001. In 1996 he undertook a major multi-client contract on the market for digital satellite communications in Western Europe.

He has extensive experience as a consultant in such diverse areas as spectrum management, DTH television, digital terrestrial television, conditional access, STBs, satellite operations and satellite service provision. He is a regular speaker at conferences on satellite communications.

At some time or other he has researched on satellite communications in every sovereign state in the world with the sole exception of North Korea.

Steve Roberts, our technical consultant, reviewed the report for us and provided the technical support. Steve started his career in satellite communications engineering in the UK before working on military and civil satellite ground systems in North America, Europe and the Far East. He joined DTT Consulting in 1989.

Overview of Satellite Communications in the Middle East

The Middle East has a substantial satellite communications sector based on regional satellites and DTH broadcasting. Its development reflects economic modernisation. The market consists of a core Arabic-speaking sector surrounded by a periphery of Iran, Turkey, Cyprus and Israel. Indeed, Turkey has developed as a regional satellite communications node. In North Africa there is considerable overspill of satellite broadcasting from Europe.

Our key conclusion is that DTH satellite broadcasting in the Middle East is that it is the primary distribution platform for commercial TV, either advertising or pay-TV financed. We have come to this conclusion because, overwhelming, terrestrial TV broadcasts in the Arabic-speaking sector and Iran are those of basically turgid state-owned public service broadcasters.

There is little evidence to suggest that politicians in the region are willing to let go of their control over domestic terrestrial broadcasting. The only true commercial terrestrial broadcasts in the region are in the Lebanon, Israel, Turkey and Cyprus.

The penetration rate for DTH in the region is a staggeringly successful 24% of TV households – rising to 92% in Algeria. It is less than a decade ago that French channel TV5 was telling us that its Algerian viewers were having their throats cut for owning satellite dishes.

The only two countries with an alternative delivery platform of any significance, cable, are Israel and Turkey and even in Turkey, DTH has already won the battle for audiences. MMDS in the region has long failed as a significant alternative.

The core demand for DTH is from free-to-air television. The Middle East follows the German model. Arab consumers are used to having some 55-60 free-to-air Arabic language services, often available through cheap analogue DTH receivers. They have proved unwilling consumers for pay-TV even where disposable incomes are high.

The core advertising support pan-Arabic DTH advertising supported sector consists of four channels, LBC, Future TV, MBC and Al Jazeera. At rate card, they have a potential advertising income of around US\$1 billion a year but the Arabic advertising sector is under-developed and deep discounting means their actual income is around US\$ 200-250 million a year.

We expect in the medium term this will change. The advertising agencies are losing a lot of potential revenue through the deep discounting. DTH TV is getting closer to its customer base with an increasing local production base and the consolidation of the industry around four regional broadcasting nodes in Egypt, Dubai, the Lebanon and Jordan.

Politicians in the region are increasingly regarding satellite TV as a major driving force behind modernisation of the regions economies and are sponsoring its development.

Hitherto it has been seen as somewhat of a political pariah, been perceived as a source of troublesome news and opinion and a Western threat to Islamic values.

However, attempts at control through dish bans and the development of MMDS (allowing filtering of content at national level) have largely ceased and now only remain of significance in Iran and marginalized Iraq.

We believe that a really big success of the DTH sector has been Al Jazeera. It is not a problem that this Arabic all-news channel is still loss-making. The losses are peanuts to its Qatar backer.

Al Jazeera is center-stage in the modernisation of Arab-language broadcasting. At present it probably has an audience of around 35 million viewers – an extremely healthy figure for an all-News service, and is expected to launch another two channels.

Al Jazeera, though, offers what no terrestrial broadcaster in the region does - a world-class, free, uncensored, professional source of news and opinion provided by Arabs and targeted at Arabs.

That is it doing its job brilliantly is evidenced by the widespread criticism of its content by regimes in the region, Israel, the United States and Britain's deeply conservative middlebrow newspaper, the Daily Telegraph. Of course it is sometimes biased – so are CNN, the BBC and the Daily Telegraph. *“All news is something, someone, somewhere, doesn't want publishing – the rest is advertising.”* But its strength is that it isn't covered into self-censorship and it allows dramatically opposing views to be aired. It is a slick and professional operation.

Yet Al Jazeera alone is not responsible for the deep changes taking place in the control of Arab broadcasting. In the 1990s Arab satellite broadcasters were clearly scared of operating from within the core region. MBC opted to operate out of London to avoid censorship and control and the pay-TV services ART and Orbit operated out of Italy for much the same reasoning. It is probably no coincidence that two of the big four free-to-air Arabic services, LBC and Future TV, are based in the relatively uncensored Lebanon.

Arab broadcasters are being induced back into the region by guarantees of freedom from governments who see satellite broadcasting as a key economic driver. ART has moved its operations from Italy to Amman in Jordan and MBC from London to Dubai. The spin-off is the growth of local production capabilities and the infusion of commercially oriented management into a region where state-owned and often badly run and over-staffed broadcasters have been the norm.

There are now four broadcasting nodes for satellite television in the Middle East – Dubai, Cairo, Amman and the Lebanon. Amman is probably the outsider – it is too politically risky for US broadcasters to use as a base. We believe that the front runners are Dubai and Cairo. Dubai is the more expensive base and the United Arab Emirates lacks both a strong production base and a broadcasting infrastructure. On the other hand, it is a fabulous city-state where everything works. It is aiming to be a regional Singapore – a comment that should be carefully noted. Not for Dubai is the scruffiness of that other great city-state, Hong Kong. But it doesn't have its own regional satellite system.

The alternative is Cairo – cheaper to operate in, with extensive production facilities, a satellite system (Nilesat) and a long history of programming and film production. Moreover, Egypt is undoubtedly the media, cultural and political centre of the Arab-speaking Middle East.

However, Middle East satellite broadcasting faces a big problem. The core Arabic market for pay-TV is only around 400,000 households with growth expectations no higher than 500,000. Yet there are three pay-TV operations – ART/ADD, Orbit and Showtime. Probably the most financial strong of these is Showtime because it recycles Western programming and has minimal origination costs.

The pay-TV sector has been subject to numerous reports and rumours about impending mergers, closures or refocusing on free-to-air services. The market is clearly only big enough for one player, a problem for the region's two DTH satellite platforms, Arabsat and Nilesat.

Likewise, in Turkey, there are two pay-TV platforms, Star and Digiturk. Again, we expect a merger, a problem for Turksat and its affiliate Eurasiasat, who provide the country's orbital hot bird slot.

The Israeli YES DTH pay-TV service claims to have almost 345,000 subscribers, making it as large as the entire pan-Arabic pay-TV marketplace. We put its success down to public perception in Israel that cable TV is downmarket and YES' ability to serve uncabled areas, mostly on the West Bank.

Satellite DTH in the Middle East looks to be in a powerfully entrenched position. Outside of Israel, Turkey and the Lebanon, cable is almost unknown. We do not think conditions are right in the Middle East for the widespread and successful deployment of digital terrestrial television. That is distinctly different from our view of DTT in Western Europe where we believe in the medium to long term it will be the main platform for broadcasting.

We have come to our conclusion about the Middle East because we fail to see where the revenue gains are from DTT. The only thing it has available to re-transmit are existing public service broadcasters. Nobody wants to watch them if they have an alternative.

One might argue that it could be used to re-transmit existing satellite TV services but this could, but hasn't been, done in analogue form. There is also the big risk that local politicians will meddle in programming content issues, as was the case with the terrestrial retransmissions of French public service broadcaster FR2 in Tunisia.

Moreover, pay-TV operators are unlikely to want to let go of control of revenues streams to local operators. It proved a disaster when tried in Morocco. The local operator ran off with the cash.

Overall, and despite some immediate problems, we expect continued long-term growth in DTH in the region. We see no reason why penetration rates, in terms of the percentage of households with DTH receivers, should not grow substantially.

There is considerably room for growth in the number of specialised TV channels, aimed, for example, at expats from the Indian sub-continent and elsewhere in Asia living in the Gulf region. The Iranian (Farsi) market is seriously under-served. There is also a market in North Africa for European language services.

Internet in the Middle East

The second area our report looks at in some depth is Internet in the Middle East. Whilst enthusiasm for Internet amongst investors has considerably waned over the last two years, our long-standing view remains that Internet rollout is a twenty-year process. Given that commercial Internet started around 1995, we estimate that it still has well over a decade before rollout is completed. It is about one-third of its way through rollout.

The continuing development of Internet centres on broadband infrastructure and content. No one doubts that it is a difficult business model to crack at present. It is a chicken-and-egg problem. Without broadband access there is no broadband content but without broadband content there is no demand for broadband access.

Moreover, Internet has yet to make the jump into convergence with broadcast technologies. Yet, given that broadcasting is so driven by technology, the belief remains widespread that it will do so. Indeed, this is a view held by Eutelsat.

The Middle East is not going to be left behind. Most administrations in the Middle East have relaxed their media strangleholds when it comes to Internet. They perceive it as a necessary tool for modernisation.

Whilst, in general, the Middle East was late taking up Internet (of the last four countries in the world without conventional commercial dialup ISPs, three were in the Middle East – Afghanistan, Iraq and Syria), its availability is now near-ubiquitous. The number of users grew 88% between April 2001 and September 2002.

Part of the growth has been facilitated by heavy investment in fixed telephony in the region, again part of a general regional trend towards modernisation. That has also been associated with big changes in public policy towards communications.

The region has, over the last ten years, been moving away from a model of communications that has almost been universally shared amongst member states.

This involved a monopoly, state-owned, radio and television broadcaster under the control of a Ministry of Information or government department with the same function. This was to use the broadcaster as a governmental mouthpiece and to stop broadcasting of opinion or facts critical of or which threatened the regime. Commercial TV was absent.

Likewise, other elements of the press were heavily controlled by either direct censorship or through control of journalists, and by such devices as mandatory membership of state-controlled journalists' unions. Dissenting opinion meant exclusion and therefore loss of livelihood.

In the telecoms sector, state-owned monopoly PTTs were obligatory. International communications were through PTT-owned Intelsat or Arabsat international gateway stations. The arrangement helped the security agencies monitor telephone calls. Dissidents could have their telephone lines cut.

Over the last decade, the degree to which this model has been breaking down has been substantial but is still far from complete. PTTs are increasingly subject to control by an independent regulator. With few exceptions, they have been opened up to competition, mostly, we must say, in the form of GSM. Privatisation has started but is currently stalled by the depressed state of the TMT financial markets. Both under state and private ownership, the telephone companies have been investing massively.

Approximately a quarter of households in the region now have a fixed telephone line. Mobile penetration is still a bit behind at 113 lines per 1,000 people (fixed is 142 lines per 1,000).

However, the Internet access market is significantly different from Europe and the USA. Heavy use is made of pre-paid cards and access through Internet cafes.

Moreover, there remain patches of considerable control of content. Saudi Arabia has probably the most comprehensive screening and blocking of access to web sites of any country in the world and Syria is adopting the same model. Tunisia has a particularly pernicious set of controls which extends to cutting telephone lines of those that "misuse" Internet – a euphemism for controlling political dissidents.

One might expect that the environment would lead to a demand for Internet access that bypasses political control. However, Internet users can usually find a way round the controls without resort to bypass technologies.

The latter includes the new generation of shared bandwidth low-cost two-way satellite terminals. However, takeup has been slow in the region and in some countries the authorities detest them for another reason. They fear loss of international switched circuit revenues to VoIP through Internet cafes and public access centres using them.

The ISP sector in the Middle East is following international trends. It is clear that there is considerable market concentration going on. The number of ISPs has fallen from 393 to 360. This hides, though, the increasing degree of concentration.

As is the case elsewhere in the world, the trend is towards some 3-5 ISPs in each national market taking around 75-80% of the market in terms of number of subscribers. The rest are either niche market players or are expected to either close or be swallowed up by their bigger competitors. There is also a trend towards consolidation across national boundaries with Orascom Telecom of Egypt, Batelco (Bahrain's PTT) and the Kuwaiti PTT buying ISPs outside of their home-base country. France Telecom is almost unique amongst European companies in purchasing ISPs in the region, through its ISP arm Wanadoo.

In a few countries the number of ISPs is expected to increase. This development has been occurring where a hitherto domestic PTT monopoly on ISP operations has, or is, being opened up to competition. This is particularly the case in the Gulf region, the Yemen and, for different reasons, Afghanistan. Syria may also take this route.

The prime use of satellites for Internet in the Middle East remains in the form of point-to-point links connecting ISPs to backbone in Europe, and, to a decreasing extent, the USA.

The demand for bandwidth for satellite ISP links in the region has been falling since a peak in 2000. The primary reason for this has been the switch of traffic to new submarine fibre links. The fall has almost entirely been accounted for by two countries, Israel and Egypt, which are now almost satellite-free. There are now virtually no ISP satellite links in North Africa. The prime users of satellite links are now Turkey and Iran.

Satellite-Based Internet Access

Satellite-based Internet access has largely, so far, proved to be a big disappointment for the satellite industry. The region is home to one of the two major suppliers of two-way satellite access terminals, Gilat, but its foray into this sector has near-on bankrupted the company. At the time of writing its share price stood at US\$0.55, down from an all-time high of US\$181.

We estimate that the current installed base of hybrid access terminals in use in the region is no greater than 10,000 units. Given that these are available now at prices starting from US\$60, there is unlikely to be a substantial demand for two-way satellite broadband terminals, prices for which start at about US\$2,000 after shipment but before installation.

Given that it took five years for hybrid penetration to reach its current levels, we see no prospect for two-way terminals in the consumer sector, apart, perhaps, from one or two rich people.

Indeed, our market research suggests that the demand for satellite broadband access in the region has come from very specialised circumstances.

One clear area of demand has arisen where there is absolutely no alternative in the form, say, of normal fixed telephony dial-up access. This has been the case until relatively recently in Syria and remains the case in Northern Iraq (Kurdistan) and Afghanistan.

A second area of demand has arisen in the form of governmentally-sponsored networks intend to keep political control over Internet access. Our research suggests that in other sectors the demand for broadband satellite access is likely to emerge in the corporate sector (trading houses in the Gulf, for example), government departments and the oil and gas sector. De facto regulation of VSATs in the latter sector tends to be fairly liberal in the region whatever national rules might say otherwise.

We expect the installed base for broadband satellite terminals to be no more than 5,000 units by the end of 2003. At the time of writing there were only three manufacturers with a

significant presence in the region – HNS, Web-Sat and Gilat. The latter, though, is largely blocked out of the market except within Israel and Turkey.

Mobile Satellite Communications

We consider there to be only two serious players in the mobile satellite communications sector, Thuraya and Inmarsat.

Thuraya is a voice service and we think the jury is still out on whether it will be a success. Its business plan envisages a need for some 235,000 handsets to be in use for breakeven. By mid-2002 this stood at around 65,000 but average use in minutes per day stood at about twice expectations.

We seen no significant competition from Iridium and do not expect Globalstar to last much beyond the end of 2002.

Inmarsat is a different case altogether. It has put a figure on mobile satellite services revenues in the Middle East, claiming that in 2002 they would total US\$61 million, presumably largely divided between Inmarsat and Thuraya.

Inmarsat is extremely bullish about its market prospects in the Middle East, forecasting that the total market for mobile satellite services there would grow to US\$571 million by 2006. Over 90% of the growth would come from data rather than voice. It claimed that high-speed data traffic showed a growth of 348% in the region in 2001, although, presumably, from a very small base. Inmarsat attributes the high forecasted growth rates to a lack of alternative terrestrial high-speed data offerings, either in the fixed or mobile environment.

As an aside, it expects mobile voice via satellite to grow, but much more modestly.

Inmarsat is due to launch a 144 MBit/s packet data service towards the end of this year. Its next generation satellite system will offer 432 KBit/s from 2004.

Military Satellite Communications

We see military satellite communications as a major growth area in the Middle East. There appears to be an immediate and significant demand for capacity on existing commercial satellites for military broadband requirements. We also believe that in the medium term, there is significant demand for dedicated military payloads in the region, possibly carried on the back of conventional commercial communications satellites.

The Gulf region, including Iraq, is politically unstable but an essential part of the global economy. States such as Saudi Arabia and the UAE have, and will continue to, procure advanced and sophisticated weapons and defence systems that are increasingly dependent on advanced command, communications and control networks. The defence forces of the region need to cooperate and coordinate not just with each other but with the US defence forces.

Table 2.8: US Military Satellite Bandwidth Needs in the Gulf

Desert Storm Allied Force Operation Enduring Freedom	70 MBit/s 170 MBit/s 470 MBit/s
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Data: Intelsat/US Space Command/JCS

General Overview of Satellite Communications in the Middle East

The key satellite player in the Middle East remains Intelsat but much of its traffic is voice and data. The region is not fully connected by submarine fibre, leaving a significant market for voice through international PTT-owned satellite gateway stations and point-to-point satellite links. As PTTs in the region have been or still are shareholders in Intelsat. Likewise, Arabsat is a preferred operator but it is heavily dependent on broadcast traffic.

Indeed, all four of the regionally owned satellite operations, Turksat, Amos, Arabsat and Nilesat, are predominantly used for broadcast traffic. Turksat is now long-established within its language region but the Turksat 2a spacecraft, operated within the framework of Eurasiasat based in Monaco, has struggled in the broadcast market, having made up part of the shortfall in expectations through Internet traffic. The Spacecom Amos system is squarely targeted at the Israeli market but is arguably a marginal operation in Middle East terms.

Our report looks at some of the issues in consolidation of satellite operations that affect the region. A merger of Intelsat and Eutelsat could result in the combined operation having a market share close to 50% in the region, although we believe that Intelsat's bid for Eutelsat will be hotly contested in Europe.

We believe it likely that highly profitable Arabsat and more financial squeezed Nilesat will, in the near term, each order a further satellite. Nilesat is looking for a partner.

It is possible that other orders may emerge from the region in the near term, particularly from the Gulf region. However, the market is somewhat crowded and any new entrant may find it hard to attract DTH business. The report considers the Hellas-Sat system to fall into this category. We dismiss almost out of hand the commercial prospects of the Iranian Zohreh regional satellite system, at least under the current political regime in the country. Commercial broadcasters will not touch it with the end of a barge pole.

One of the surprise successes in the Middle East market has been PanAmSat, with a market share of about 13%. It is only a few years back that this company complained bitterly how it was locked out of much of the area by PTT monopolies on provision of satellite services. They tended to use space segment of satellite operators in which they had a shareholding – meaning Intelsat and Arabsat.

Country-By-Country Details

Saudi Arabia is the economic leader of the Arab world with a GDP of US\$173 billion – only Turkey, with a GDP of US\$203 billion is in the same league. However, Egypt is undoubtedly the political and media centre of the region. It is a country we think should blossom.

Saudi Arabia's role in satellite communications has largely been one of financing, firstly Arabsat, and, in the 1990s, MBC, Orbit and ART. For its size, its domestic investment in satellite communications is modest but the country remains the key market for satellite TV in the region.

Egypt has long taken over the initiative in satellite communications from Saudi Arabia, having a vertically integrated industry encompassing programming production, satellite TV channels and a satellite platform.

We believe that Kuwait is emerging as a regional satellite communications node which is also becoming influential in Africa. Whilst it is out of the running as a broadcasting centre, it has become probably the primary node for Internet via satellite. It is the base of two regional broadband satellite communications companies, Shownet and Falconstream and Verestar appears to have bought up a venture there, possibly connected to military communications.

Cyprus has also established itself as a major communications node at the Eastern end of the Mediterranean, through a major teleport operation and extensive submarine fibre optic connections.

Despite an extremely troubled economy, the Turkish satellite communications market has now extensively been opened up to competition. With its heavy reliance on satcoms for Internet traffic, this has resulted in the emergence of a number of new satellite service providers bypassing Turk Telekom's unpopular grip on the market.

Indeed, the region has recently seen the emergence of a number of new satellite service providers, primarily in conjunction with the new media cities in Dubai, Amman and Cairo. These are offering data and IP as well as video services.

Political Uncertainty in the Region

The report considers the possible impact of current political uncertainties on communications in the region. These are likely to result in a slow-down of privatisation of state-owned telcos, market liberalisation and foreign inward investment.

The report concludes, though, that most regimes in the region, for better or worse, are remarkably stable and long-lived. The real problem of political instability is not, in our opinion, Iraq, but Saudi Arabia.

We are not convinced that Islamic fundamentalism will de-stabilise the region. Indeed, arguably it has been on the wane for years. Iran largely failed to export it (except to the Lebanon), most regimes in the region are hostile towards it (Saudi Arabia is dangerously ambiguous, though) and the middle classes realise its dangers. Secularism has a long and powerful history in modern times in the region.

We have a separate paper detailing US attitudes towards international. It is free of charge. Our main conclusion is that the European Union is approaching its Middle East issues by trade rather than belligerency and this may, in the long term, favour European companies trading in the Middle East.

However, a post-sanctions environment in Iraq is likely to result in a substantial demand for satellite communications there. At the moment it is using satellites to connect its tiny Internet sector to backbone but has, by all accounts, a minimal DTH sector. Yet Iraq is traditionally one of the most sophisticated countries in the region. We also believe there may be a significant market there for thin route rural satellite communications – generally a poor business opportunity in the Middle East.

In Iran, though, the modernisers, with public opinion on their side, have lost, for the time being, the upper hand to conservatives. Consequentially, this very large country remains a backwater for satellite communications. Policy making is just too capricious to provide a stable investment climate.

The report identifies Libya, no longer quite a pariah state, as a potentially significant opportunity for satellite communications. Like many republics in the region, it is moving towards a dynastic form of rule.

The report also details some of the problems relating to communications arising from the current Intifada in Israel.

To order the report, contact Spotbeam Communications by e-mail at sales@spotbeam.com or visit www.spotbeam.com

