BUSINESS MONITOR INTERNATIONAL

Q2 2015

www.businessmonitor.com

IRAN

TELECOMMUNICATIONS REPORT

INCLUDES 5-YEAR FORECASTS TO 2019

ISSN 1748-460X
Published by:Business Monitor International

Iran Telecommunications Report Q2 2015

INCLUDES 5-YEAR FORECASTS TO 2019

Part of BMI's Industry Report & Forecasts Series

Published by: **Business Monitor International**

Copy deadline: February 2015

Business Monitor International
Senator House
85 Queen Victoria Street
London
EC4V 4AB
United Kingdom
Tel: +44 (0) 20 7248 0468
Fax: +44 (0) 20 7248 0467
Email: subs@businessmonitor.com
Web: http://www.businessmonitor.com

CONTENTS

BMI Industry View

BMI View: *Iran's telecoms market is an underperformer in the Middle East as a result of political and economic risks, exacerbated by currency depreciation, which is limiting access to the latest devices. Furthermore, the Iranian government is keen to restrict access to international internet content, creating a national internet network that will bypass international gateways and cut off large swathes of global content. For this, the government began talks with the Chinese government in early 2014. That said, over the medium term there is catch-up potential in Iran, and its large and young population should make it one of the most attractive telecoms markets in the Middle East.*

Key Data

- We estimate that fixed-line connections increased by 3.0% in 2014, and we expect growth to slow down in the forecast period because of fixed-mobile substitution and a greater focus on mobile services from fixed incumbent TCI.
- We estimate that the country ended 2014 with over 111mn subscribers, boosted by MTN's performance in the latter part of the year after it launched 3G services.
- We estimate there were around 9.9mn 3G subscriptions at the end of 2014 and forecast a figure of 18.9mn at the end of 2015, and we expect the rapid growth to continue over the short term as more operators launch advanced services.

Key Trends And Developments

MTN Irancell joined **Rightel** in offering 3G services in the country, launching its network in August 2014. The operator also launched the country's 1st 4G network in December 2014, looking to take a lead in the mobile data market. Incumbent **MCI** has yet to offer either technologies, despite its plans to do so, and may be impeded by government's intervention which sees advanced technologies as inciting rebellion and against Islamic values.

MTN Irancell's operating results for the 2013 gave some insight to smartphone market in Iran. MTN reported a total of 10.3mn smartphone users, which equates to almost 25% of its subscription base. Considering the lack of 3G service availability in Iran, along with import restrictions on electronics and reduced purchasing power due to currency depreciation, this is an impressive rate of adoption. Nonetheless the smartphone opportunity remains large in Iran due to its late-developer status. **BMI** believes vendors will be able to capitalise on retail opportunities in the smartphone market as the economic environment becomes more supportive. Smartphone adoption will also prove a boost for data revenue growth as users become more accustomed to wireless data usage.

Iran and China will partner to control content online and build a 'clean' internet in Iran, according to news in January 2014. The restrictions will apply to the National Information Network (NIN). The news had little impact on our forecasts for broadband subscriptions as the NIN is already factored into the estimates for market expansion. **BMI** notes that China's restricted internet access and blocking of content deemed unsuitable has not stopped consumers in that country getting online and developing a number of home-grown social networking services and platforms. Although we do not expect Iran to follow this path as its population is much smaller.

SWOT

SWOT Mobile

Iran Mobile SWOT Analysis

Strengths	▪ Continued subscription growth despite high mobile penetration rate. ▪ Competition between operators driving growth and innovation. ▪ The launch of 3G and 4G services driving mobile data uptake.
Weaknesses	▪ Average customer spending levels are low. ▪ Mobile data services are subject to government censoring and filtering. ▪ US embargo puts limits on potential network equipment partners for the operators. ▪ Lack of international investments.
Opportunities	▪ Smartphone penetration is low, with Iran a late developer, meaning there are opportunities for vendors over the medium term in smartphone retail and data service up-sell. ▪ The presence of large numbers of inactive prepaid users inflates the penetration rate and masks the potential for further customer growth. ▪ Although in the early stages, the market for mobile value-added and data services is expected to see strong growth over the next few years; the youthful orientation of Iran's population should help to underpin future growth.
Threats	▪ Government controls over mobile data and internet services could limit the growth of this potentially lucrative sector. ▪ Unstable political and security environment could hinder investment in the sector from equipment manufacturers and content providers.

SWOT Wireline

Iran Wireline SWOT Analysis

Strengths	▪ Iran's fixed-line penetration rate is one of the highest in the Middle East region; the number of fixed lines has continued to grow as services are rolled out to rural areas. ▪ Competition exists in the internet access market, with more than 1,200 companies providing internet services, according to reports. ▪ WiMAX services continue to register strong subscriber growth, with four companies offering services in the country. ▪ TCI has developed an extensive backbone infrastructure throughout the country.
Weaknesses	▪ The provision of fixed-voice telephony services remains under the monopoly control of TCI so there is an absence of incentives to invest and improve service quality. ▪ Despite a significant number of companies providing internet access services, the internet market is dominated by TCI. ▪ Residential internet customers are subject to government restrictions on the sort of websites they can access.
Opportunities	▪ Launch of the EGEP fibre cable has improved access to bandwidth and will allow ISPs to offer improved broadband connections. ▪ Demand for internet services is strong, if growth in the number of internet users is accurate. ▪ Fibre-optic deployment plans will allow for more products to be offered including TCI's mooted IPTV platform. ▪ Broadband penetration is low, particularly among residential customers, even official figures - which may be inflated - show low penetration rates. ▪ Business demand for wireline services is expected to grow, especially for internet and data services.

Iran Wireline SWOT Analysis - Continued

Threats

- The continuation of government restrictions with regard to internetcontent will undermine the long-term development of broadband.
- Unstable political and security environment hinders investment in the sector from equipment manufacturers and content providers.
- International sanctions prevent operators from accessing lower priced equipment to roll-out services in a cost-effective way.

Political

Political SWOT Analysis

Strengths	▪ Since the overthrow of the Pahlavi family in 1979, there has been some reduction in the level of political corruption, while wealth distribution has improved marginally. ▪ The Revolutionary Guard and Basij militia are fiercely loyal to the supreme leader, helping to maintain social stability.
Weaknesses	▪ The country has one of the poorest human rights records in the region, and authorities do not hesitate to quell dissidents. A number of journalists and anti-government protesters are being held in custody. ▪ While decision-making ultimately rests with the supreme leader, the regime is heavily fragmented, and consensus is hard to reach. ▪ Widespread perceptions of electoral fraud during the course of June 2009's presidential elections have damaged the regime's legitimacy in the eyes of many Iranians.
Opportunities	▪ The Majlis (parliament) is more than just a rubber stamp; the move by 150 parliamentarians (out of 290) to hold former president Mahmoud Ahmadinejad accountable for his handling of the economy in March 2012 is a positive indication that checks exist. ▪ The victory of moderate cleric Hassan Rouhani in Presidential elections in June 2013 is leading to a significant improvement in relations with the West.
Threats	▪ Despite progress in nuclear talks, the prospect of further US and EU sanctions and the possibility of a military strike by the US or Israel cannot be dismissed. ▪ Youth unemployment is high. ▪ The strong influence of the Revolutionary Guards within the political and economic arena may present a challenge to reform over the long term.

Economic

Economic SWOT Analysis

Strengths	▪ Iran has the world's second largest proven oil reserves after Saudi Arabia, and the world's second largest proven gas reserves after Russia. ▪ Oil and gas aside, Iran is rich in other resources and has a strong agricultural sector.
Weaknesses	▪ Local consumption of hydrocarbons is rising rapidly; this, coupled with ageing technology in the sector, will have a negative impact on its oil and gas exporting capacity. ▪ International sanctions discourage foreign oil companies from bringing much-needed technical knowledge and equipment to maintain oil output levels.
Opportunities	▪ The gas sector remains underdeveloped, and there is considerable room to maximise this source of revenue. ▪ A growing population, combined with a shortage of housing, provides opportunities for investment in residential construction.
Threats	▪ A decline in global oil prices would have a marked impact on the economy. Although an Oil Stabilisation Fund exists to protect the economy at times of weaker oil prices, it has increasingly been used to fund government overspending and could be close to empty. ▪ Capital flight could continue, particularly should negotiations on the nuclear programme fail.

Operational Risk

SWOT Analysis

Strengths

- Iran boasts high numbers of skilled graduates in technical fields such as engineering, construction and science.
- The transport network offers good internal and cross-border connections, and is currently able to meet the country's supply chain needs.
- The banking sector is relatively well developed, allowing extension of finance and credit to citizens.
- A well established intelligence agency and robust counter-terrorist capabilities deter attacks in most areas of the country.

Weaknesses

- Costs of employment are increases because the Iranian Labour Code affords workers a high level of protection and generous benefits.
- The costs of inland transportation, as well as the risk of congestion and traffic accidents disrupting supply chains, is raised due to reliance on the road network as the dominant freight mode.
- There is widespread corruption and heavy handed censorship, which will pose unforeseeable operational costs and limit business activities.
- The expansion of IS in Iraq poses a significant risk to Iran's security.

Opportunities

- The literacy rate of the labour force is increasing as the benefits of investment in primary school education are filtering through.
- The development of road and rail connections with Iran's neighbours highlights the country's potential to develop into key transit point for East-West trade.
- Lack of external demand means that those who can invest in Iran are rewarded with cheap resources.
- Relaxing of sanctions is resulting in greater foreign direct investment inflows.

SWOT Analysis - Continued

	▪ There is potential to combat the drug supply into Europe through programmes in Iran.
Threats	▪ The availability of highly skilled labour is restricted as the brain drain results in an exodus of technically qualified workers.
	▪ The risk of electricity and water shortages will be enhanced due to growth in energy- and water-intensive agricultural, mining and manufacturing industries.
	▪ Lax intellectual property protection carries the threat of patent theft, fraud or infringement, leading to profit losses.
	▪ There is a risk of domestic hostility towards Westerners, triggered by international political events.

Industry Forecast

Mobile

Table: Telecoms Sector - Mobile - Historical Data & Forecasts (Iran 2012-2019)

	2012	2013	2014e	2015f	2016f	2017f	2018f	2019f
Cellular Mobile Phone Subscribers, '000	96,396.5	100,965.7	111,062.3	118,836.7	124,778.5	129,769.6	133,662.7	136,336.0
Mobile Phone Subscribers/100 Inhabitants	126.1	130.4	141.5	149.5	155.1	159.4	162.3	163.7
3G & 4G phone subscribers, '000	1,100.0	1,600.0	9,920.0	18,947.2	27,473.4	34,067.1	39,177.1	41,527.8
3G & 4G market, % of mobile market	1.1	1.6	8.9	15.9	22.0	26.3	29.3	30.5
Monthly Blended ARPU, IRR	47,692.8	49,488.9	47,239.4	45,473.4	44,607.3	44,178.4	44,178.4	44,611.5

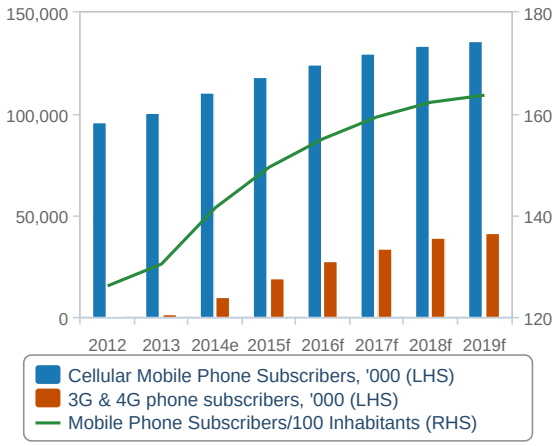
e/f = BMI estimate/forecast. Source: BMI, operators, regulator

New figures and the entrance of **RighTel** has boosted our mobile figures, with penetration around the regional average in 2014. Our outlook still sees growth slowing over the forecast period, through a rationalisation of multi-SIM ownership, and we expect the market to have 136.3mn subscribers by the end of 2019, for a penetration rate of 163.7%.

In the short-to-medium term there remains significant downside to our positive growth outlook. Political and economic turmoil will continue to affect all areas of the Iranian economy, as the Western world's sanctions against Tehran remain in place. This is putting pressure on operators and consumers alike, with inflation cutting into Iranians' spending power, a factor in the sharp drop in mobile handset imports reported in 2013.

Industry Trends - Mobile

(2012-2019)



e/f = BMI estimate/forecast. Source: BMI, operators

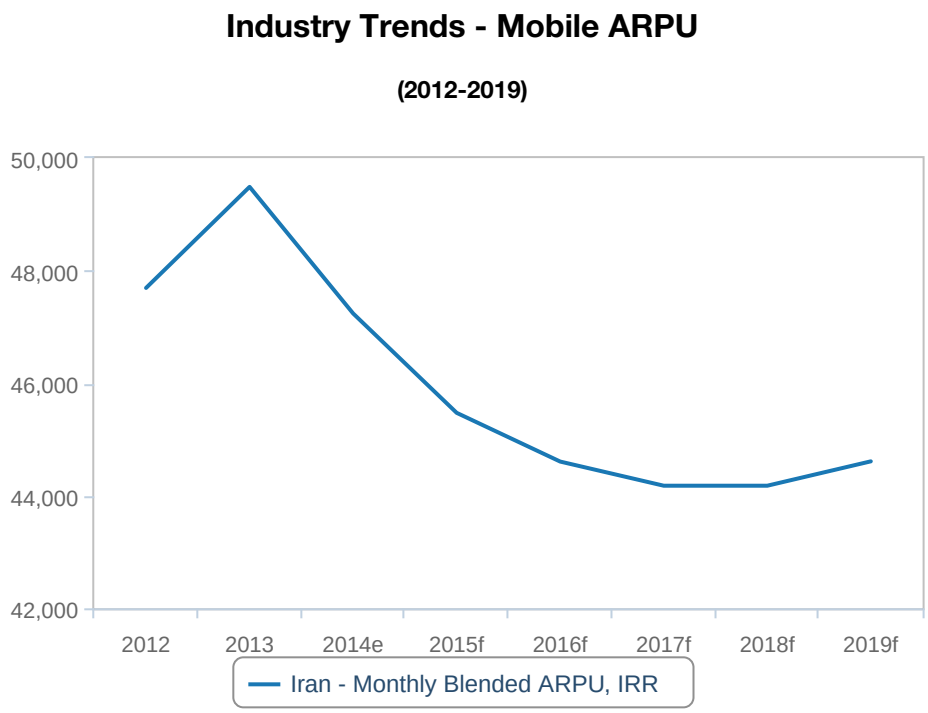
The outlook for Iran's nascent 3G market offers upside potential to growth, and MTN's 3G launch in August 2014, coupled with its 4G launch in December, will help the operator take a lead in the data market.

Our 3G historical data and forecasts reflect RighTel's weaker than expected performance throughout 2013 and the launch of 3G services by MTN, and we estimate there were around 9.9mn 3G subscriptions in Iran at the end of 2014, which will grow to 18.9mn by the end of 2015. We still expect MCI to launch 3G services during 2015, while future launches of 4G services will also help the mobile broadband market.

ARPU

We believe economic sanctions on Iran will continue to keep USD ARPUs low over the short to medium term. MTN's ARPU stabilised at just around USD4 since Q412 a figure that increased in Q314 to USD4.18. However, in Iranian rials MTN has reported rising ARPUs in every quarter in 2014, clearly demonstrating the impact of currency depreciation on USD reported ARPU figures.

We expect ARPU levels in Iran's mobile sector will come under increasing downward pressure because of fierce price competition, even though we do not expect MTN to decline by much, because of its experience in launching advanced mobile data services.



e/f = BMI estimate/forecast. Source: BMI, operators

By 2019, we forecast the operator's average monthly ARPU should drop to about USD1. However, the launch of 3G services, first exclusively by RighTel and then by MTN, alongside MTN's launch of 4G poses an important upside risk to our forecast, as we expect there is significant pent-up demand for more advanced data services.

Wireline

Table: Telecoms Sector - Wireline - Historical Data & Forecasts (Iran 2012-2019)

	2012	2013e	2014e	2015f	2016f	2017f	2018f	2019f
Main telephone lines in service, '000	27,448.4	28,462.4	29,316.2	30,049.1	30,650.1	31,120.1	31,586.8	32,050.0
Main Telephone Lines/100 Inhabitants	35.9	36.8	37.4	37.8	38.1	38.2	38.4	38.5
Internet users, '000	10,674.9	12,525.0	15,090.0	17,715.1	20,683.1	23,868.9	27,395.8	31,075.0
Internet users/100 inhabitants	14.0	16.2	19.2	22.3	25.7	29.3	33.3	37.3
Broadband internet subscribers, '000	3,076.2	3,694.5	4,531.3	5,417.2	6,403.1	7,482.1	8,641.8	9,864.6
Broadband internet subscribers/ 100 Inhabitants	4.0	4.8	5.8	6.8	8.0	9.2	10.5	11.8

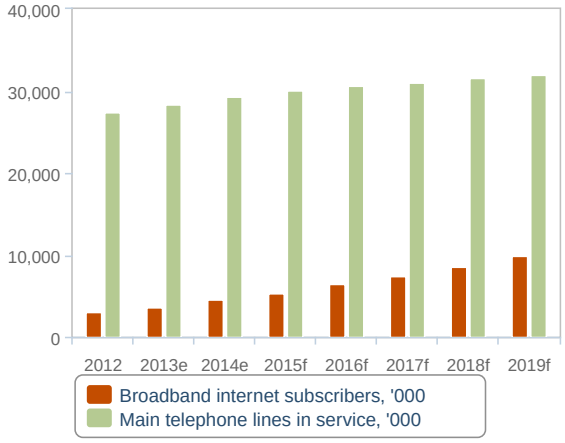
e/f = BMI estimate/forecast. Source: BMI, operators

Fixed-Line

BMI has a bearish outlook for the Iranian fixed-line sector, as increased competition in the mobile market has the potential to lower prices and make mobile voice more competitive. This development could result in a trend of fixed-to-mobile substitution in terms of subscriptions and usage. Continued investments announced by incumbent **Telecommunications Company of Iran** (TCI) and a lack of competition should mean the fixed-line market continues to show some growth in the short term but we believe this trend will reverse over the medium term.

Industry Trends - Wireline Sector

(2012-2019)



e/f = BMI estimate/forecast. Source: BMI, operators

Considering Iran's high mobile penetration rate, the continued growth of the country's fixed-line sector is unusual in a regional and global context, with growth rates higher than 3% since 2011, and we suspect growth has been sustained by incumbent operator TCI's commitment to deploying fixed-line infrastructure in rural areas. However, recent statements have indicated the operator's increasing focus on its mobile

networks, which indicates a slow-down in growth in the fixed-line in line with our forecasts. Over our forecast period to 2019, we expect the market to grow at an average rate of 1.8% and reach 38.5% penetration with 31.1mn fixed lines in service.

In the medium term, the widespread reliance on dial-up internet services using fixed-line infrastructure is expected to continue benefiting Iran's fixed-line market. Over the longer term, regulatory developments to increase the number of fixed-line providers or those authorised to provide VoIP services could see a more significant slowdown in the number of fixed lines.

Broadband

BMI estimates the Iranian broadband market increased by 22.7% in terms of subscriptions in 2014 to reach a total of 4.5mn subscriptions, with growth rates in sharp decline since 2013. We expect growth will remain robust over the medium term, but remain below the level observed in 2011 and 2012, of 84.3% and 74.5% respectively. We forecast average annual growth of 16.2% 2015-2019, with the total number of subscriptions expected to reach 9.9mn and penetration of 11.8% by the end of 2019.

The introduction of 3G and 4G services will boost broadband penetration in the market, especially with the presence of **MTN Irancell** which has experience of bringing advanced data services in emerging markets through stakeholder MTN. **BMI** believes Iran, as with other emerging markets, will see the predominance of mobile services for broadband access.

Our internet user figures remain unchanged after revisions following the release of data by the National Internet Development Center. While our revised forecast does not match these figures - we believe that they are inflated - we have taken them into account in our estimates of market size. Data from the ministry of ICT suggest there were 45.884mn internet users at the end of March 2013. This latest set of figures apparently contradicts these previous estimates, illustrating the difficulties of obtaining accurate data on Iran's broadband market.

Given that the national authorities are likely to inflate subscriber data - not least given the Iranian government's plan to create a proprietary internet system - we have taken these new figures into account only partially. We now estimate that there were 15.1mn internet subscribers in Iran in 2014. By the end of 2019, we expect Iran to have 31.1mn users, with a penetration rate of 37.3%.

One of the reasons for Iran's low broadband penetration rates is the high cost of internet access and the underlying bandwidth. However, Iran also has a highly regulated internet sector and it is possible that

various forms of government control serve to further discourage individuals from acquiring their own internet subscription. In addition to basic telephone infrastructure, Iran's incumbent telecoms operator is also investing in the deployment of a high-capacity fibre network from which broadband services may also be provided. It is hoped that such services as e-education, e-governance and e-health may help to benefit rural communities and would boost broadband penetration rates. The creation of a new national internet network, bypassing the World Wide Web, should also serve to increase broadband user numbers, while also continuing to restricting the spread of outside information within the country.

Industry Risk Reward Ratings

BMI View: *MENA (Middle East and North Africa) telecoms markets are gradually moving from being multiple-SIM and voice-centric towards being more rationalised and data-centric. Differences exist between each market, but the development of advanced data networks, such as 3G and 4G, will drive growth, as they are the main internet access technology in the region. However, the security situation will always pose a threat across the development of the sector.*

BMI's Risk/Reward Index (RRI) Q215 table saw a number of changes this quarter, with only two countries (Israel and Algeria) keeping the same position as a quarter ago. We also added Syria and Yemen to our index, coming in at the bottom at the table, and their low scores have driven down the region's average for the quarter. The overall Telecoms Rating has declined from 51.2 to 48.3, while the score for Industry Rewards has decreased 3 points to 40.2, and Country Rewards 2.4pp to 61.0. A similar trend occurred for our risk indices, with Industry Risks declining 1.9pp to 45, and Country Risks decreasing 4.4pp to 55.5. It is however important to note that both the Country Rewards and Industry Risks indices would have remained the same as a quarter ago without the addition of Syria and Yemen to the RRI.

This means that the main changes came from our Industry Rewards and Country Risks indices, and they had the most impact on the overall rankings. Israel stays at the top, and alongside Iraq and Lebanon was the only country to have its telecoms rating improve this quarter. There is strong competition in both the fixed and mobile market, and while the full launch of 4G services, where the spectrum has just been auctioned, will continue to provide some growth, it is likely to do so through lower ARPU and profitability, as six operators won frequencies to launch LTE services.

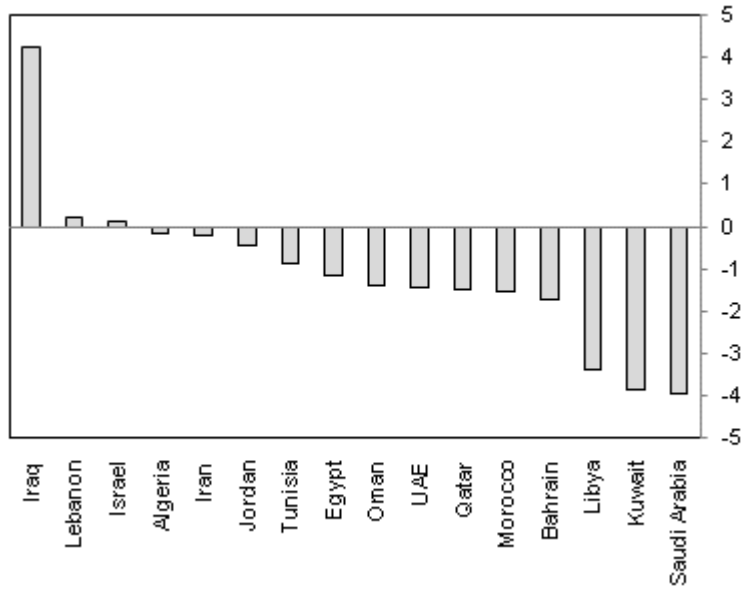
UAE and Qatar complete the podium, overtaking Saudi Arabia which drops to fourth following a 3.9pp telecoms rating decline, the largest of all countries in the index. Bahrain and Kuwait swap places at fifth and sixth, and in seventh comes the largest rise from Iraq, from eleventh a quarter ago thanks to Telecoms Rating increase of 4.2pp, the largest this quarter. While Algeria remains tenth, Oman, Morocco and Jordan all drop places because of Iraq's performance. A similar trend occurred at the foot of the table, where Libya's decline, from twelfth to fifteenth, profits Egypt, Tunisia and Iran, which all move up a place. Lebanon remains sixteenth, but stops being at the foot of the table as Yemen and Syria respectively take the bottom two spots.

Excluding Yemen and Syria, twelve of the sixteen countries have seen their overall rankings move from between 0.2pp to -1.7pp. We will look at the exceptions that are Iraq, Kuwait, Libya and Saudi Arabia in

more details, but we can explain the low declines in the other countries chiefly though lower subscriptions growth going forward, as the markets become saturated and move from a voice-centric to a data-centric paradigm. As internet access will be mobile, we expect most subscribers to access both voice and data services on a single device, as ARPU will be impacted positively by higher usage but negatively by stronger competition. Bahrain has also seen its country risks index decline by 3.4pp this quarter, as civil unrest and a lower economic growth will impact many sectors in the country.

Iraq Outperforms

MENA Telecoms Rating Change, Q115-Q215



Source: BMI

Iraq Outperforms Its Peers

Iraq has seen its telecoms rating increase 4.2 points to 50.9, jumping at the same time four places in the table. While the political situation remains difficult in many regions as it fights the Islamic State, the country also found greater political stability thanks to a new cabinet. But the main reason for Iraq's growth comes from its Industry Rewards index, which increased 10 points to 52.5 in the quarter. Iraq remains an under-penetrated market in terms of subscriptions, and **BMI** believes the introduction of 3G services, launched by **Zain** and **Asiacell** at the beginning of 2015, will drive growth in the country. This should have

a positive impact straightaway, as smartphone penetration is already high, and customers will only need to upgrade their SIM cards in order to access new data services. The greater usage should in turn improve ARPU, unless the operators unleash a price war to improve their market share. The launch of 3G will also improve overall internet access, as fixed broadband penetration remains low at less than 1%.

Libya, Kuwait And Saudi Arabia Show The Largest Declines

Libya, Kuwait and Saudi Arabia are the worst performances this quarter, with their telecoms rating respectively decreasing by 3.4, 3.8 and 3.9pp. However, the reasons for their decline are markedly different for each.

Libya has been impacted by the worsening political situation in the country, which has led to a Country Risk score decrease of 22.5pp to 37.1. The country is on the verge of another civil war as several factions continue to jockey for power following the end of the Gaddafi regime. Such a climate negatively impacts many sectors, including telecoms, and this has led our decision to revise the country's rating, especially as the market is unlikely to be liberalised in the short-term.

On the other hand, the change for both Kuwait and Saudi Arabia has been led by a decrease in their Industry Rewards scores, declining by 8.3pp to 38.5 for the former and by 8.2pp to 46.8 for the latter. Both countries have high mobile penetration led by the number of expatriates and migrant workers present in the country. But the political situation has led to a clampdown against those foreign workers, and **BMI** expects lower subscriptions growth going forward through a decline in that particular segment. Furthermore, competition remains high in both markets between the main mobile operators, and the loss of migrant workers, which were on prepaid plans, is likely to exacerbate that trend as providers switch their focus to higher-value postpaid users. Furthermore, Saudi operators have also hit some financial difficulty recently, with **Mobily** and **STC** reporting lower profits.

Yemen And Syria Start At The Bottom

For the first time this quarter, **BMI** has added Yemen and Syria to its RRI, and it is no surprise to see the two countries having the two lowest rankings, at 36.9 and 30.7 respectively. Both are in the midst of very difficult geopolitical situations, with civil wars raging, and the climate makes developments in any sector difficult at the present. However, Syria has just announced that **MTN Syria** and **SyriaTel** had been awarded long-term licenses in the market, which should enable these operators to plan current and future investments with more clarity. But any upside will be dependent on a strong improvement in the security situation.

Table: Mena Q215 Risk/Reward Index

	Industry Rewards	Country Rewards	Industry Risk	Country Risk	Telecoms Rating	Rank	Previous Rank
Israel	42.5	90.0	80.0	66.2	**63.3**	1	1
UAE	57.8	66.0	50.0	68.1	**60.2**	2	3
Qatar	49.5	72.0	50.0	76.3	**59.1**	3	4
Saudi Arabia	46.8	69.0	60.0	72.7	**58.1**	4	2
Bahrain	38.5	69.0	50.0	62.9	**51.4**	5	6
Kuwait	38.5	78.0	30.0	66.8	**51.2**	6	5
Iraq	52.5	57.0	40.0	47.1	**50.9**	7	11
Oman	38.8	60.0	60.0	62.4	**50.7**	8	7
Morocco	35.0	56.7	70.0	52.4	**48.2**	9	8
Algeria	40.0	53.0	40.0	65.2	**47.0**	10	10
Jordan	37.5	60.0	50.0	49.3	**46.7**	11	9
Egypt	40.0	43.7	55.0	53.9	**45.2**	12	13
Tunisia	32.5	53.3	60.0	50.4	**44.4**	13	14
Iran	45.0	49.7	20.0	57.7	**44.3**	14	15
Libya	40.0	73.3	10.0	37.1	**43.2**	15	12
Lebanon	26.3	63.3	25.0	45.6	**38.1**	16	16
Yemen	34.4	42.7	30.0	42.0	**36.9**	17	New entry
Syria	27.5	42.0	30.0	22.9	**30.7**	18	New entry
Average	***40.2***	***61.0***	***45.0***	***55.5***	***48.3***		

Scores are weighted as follows: 'Rewards': 70%, of which Industry Rewards 65% and Country Rewards 35%; 'Risks': 30%, of which Industry Risks 40% and Country Risks 60%. The 'Rewards' score evaluates the size and growth potential of a telecoms market in any given state, and country's broader economic/socio-demographic characteristics that impact the industry's development; the 'Risks' score evaluates industry specific dangers and those emanating from the state's political/economic profile, based on BMI's proprietary Country Risk Index that could affect the realisation of anticipated returns. Source: BMI

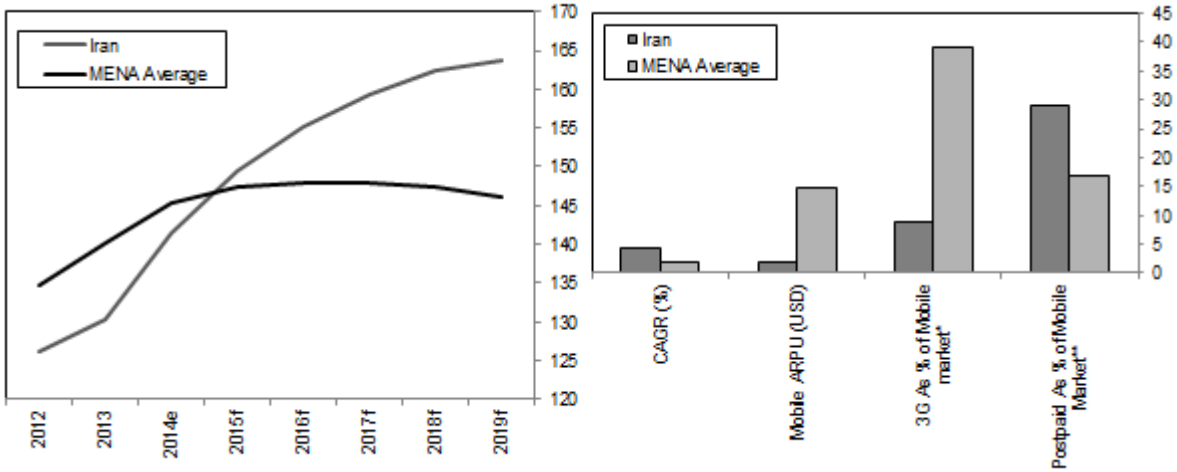
Market Overview

Mobile

Regional Perspective

Regional Perspective Data

2012-2019



e/f = BMI estimate/forecast. Source: BMI, Operators, Regulators

Table: Iran's Mobile Market Regional Comparison, 2013

	Iran	Middle East & North Africa	Rank (Out of 16)
CAGR 2015-2019 (%)	4.2	1.8	1
Mobile Penetration (%)	141.5	145.4	8
Postpaid as % of entire market	28.9	16.7	2
ARPU (USD)	1.9	14.9	16

Source: BMI

Key Developments

- In December 2014, **MTN Irancell** launched the first 4G networks in the country, using its 1,800MHz frequencies. The network was available in nine cities, with the operator stating that 3G services were available in 75 cities. Report suggests that the Ministry will auction LTE licences in the first half of 2015.
- In early August 2014 MTN Irancell received permission from the Ministry of Information and Communications Technology to begin piloting 3G services in some university campuses and government buildings in Tehran. Following technical and financial reviews of the pilot, MTN will be authorised to begin offering commercial 3G services from August 23 2014, marking the end of mobile operator **RighTel**'s period of exclusivity for advanced mobile data services.
- On August 20 2013 the mobile arm of **Telecommunication Company of Iran**, MCI, listed on the Tehran Stock Exchange. There were no financial details of the event, however. This development was the follow-up to an initial offering of 5.5% of MCI's shares on Iran's Over-The-Counter market for USD396mn in December 2010.
- After four years of censorship, internet users in Iran were allowed to access social networking sites **Twitter** and **Facebook** on September 16 2013, but access to the sites was promptly blocked again on September 17 2013. The secretary of the Iranian state committee responsible for filtering web content wrote the incident was written off as a technical problem and denied any government intention to lift the ban on the social networking sites.

Market Growth

Iran has two leading mobile operators, MTN Irancell and **Mobile Communications Company of Iran**. The latter is a state-owned entity, owned by fixed-line incumbent TCI. Irancell is 49% owned by South Africa's **MTN**. A third operator, **RighTel**, launched in 2011 and had 3G exclusivity until mid-2014.

The Newest Player

Data from RighTel is scarce, with no definite subscriber data released on a quarterly or even annual basis. The company states it is the third largest operator in the market, which **BMI** believes is easily achievable as the only other operators aside from Irancell and MCI are regional with limited scope. **BMI** estimates data for **Taliya**, **MTCE** and **Kish Free Zone Organisation**, with the operators controlling less than 1mn subscribers between them. If RighTel has achieved third place in the market - a remarkable feat given its recent launch - **BMI** estimates it must have over 1mn subscribers.

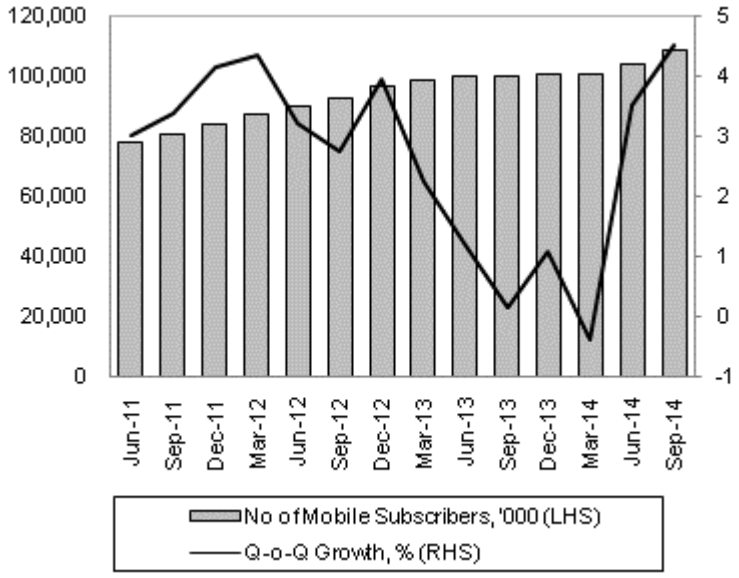
RighTel's position in the market is difficult to ascertain as the company does not release any subscriber figures. However, **BMI** has said several times it believed there was pent-up demand for 3G services, which suggests take-up could easily have been very fast. **Tamin Telecom** was authorised to provide 2G and 3G services in April 2010, the first 3G licence to be granted in the country. However, it was not until late November 2011 that services were launched, under the RighTel brand. In February 2013, Tamin was granted an extension of its exclusive rights to the 3G network for another year - to September 2014. In the

absence of data from the operator, we estimate RighTel to have had around 3.45mn subscribers by the end of June 2013. The news surrounding RighTel remains confused and conflicting. In March 2013 the Tehran Chronicle quoted local SIM card sellers saying that RighTel had a strong subscribership among students. The news agency also reported that the cheapest plan is a data-only plan retailing for IRR200,000 (USD6), while a postpaid contract costs IRR2mn (USD60). TeleGeography referred to local press reports stating that RighTel only began selling 3G SIMs in February 2012 but has faced criticism from the authorities. The Iran Project reported four grand ayatollahs had condemned the company's video calling services in February 2013 saying it would 'jeopardise the public chastity' and inflict damage on the country's religion and political system. With the operator not currently publishing financial or operating performance, and no suggestions in local press or from the regulator, our data for RighTel remains estimated for the foreseeable future.

RighTel's position at the end of 2013 is still impressive, if any of the above stories are true. To reach third position in the market with more limited network coverage than the two leading operators in the market highlights **BMI**'s view of pent-up demand for 3G. Objections to video calling or media messaging could put downside risks on the company's continued growth, but negative press on the subject appears to have subsided for the time being. If criticism resurfaces, however, **BMI** believes the company could mitigate the negative impact with its wide range of new products. The company emphasises on its website that it offers mobile TV, location-based services and mobile internet. The company also indicates it will soon offer mobile banking services.

Mobile Market Growth

2011-2014



Source: BMI, operators

Data from MTN Irancell show 45,533mn subscribers at the end of Q314, up 9.8% year-on-year (y-o-y). According to its half year results, Irancell holds second place in Iran's mobile market with a share of 41.8%. New figures from MCI leads us to believe that it had over 60mn mobile subscribers at the end of September, for a market share of 56.8%, while RighTel stays stagnant at 1.3% as it loses its 3G exclusivity. MTN had taken advantage of having launched 3G and 4G services in the market, as incumbent still awaits authorisation to do so despits its plans to migrate customers onto more advanced networks.

Table: Mobile Market, September 2014

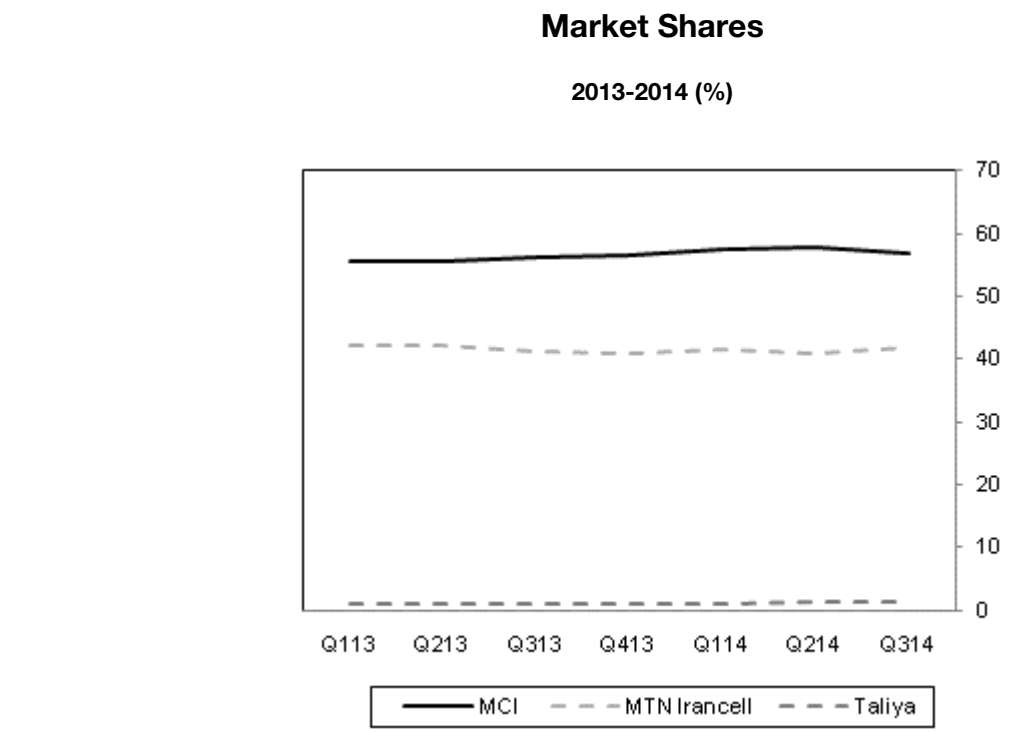
Operator	No. of subscribers ('000)	Market share (%)
MCI	61,812	56.8
MTN Irancell	45,533	41.8
Taliya (e)	1,400	1.3
MTCE (e)	70	0.1
TKC (e)	19	0
Total	**108,834**	**100**

e = estimate. Source: BMI, operators

Market Shares

MCI continues to lead the mobile market with an estimated market share of subscriptions at 56.8% at the end of Q314, up from over 56.3% a year ago. **BMI** believes the company added over 5mn new subscribers in the past year, but the greater share of prepaid users also leads us to believe that some of these customers may be inactive.

As for MTN Irancell, it ended September 2014 with 45,533mn subscribers, a y-o-y growth of 9.8% underpinned by a strong performance in Q3, where it added close to 3mn customers. **BMI** believes the growth was driven by the launch of the operator's 3G network, and that it should accelerate in the next few quarters through the development of its network and the launch of 4G. This should help increase the operator's market share, which stood at 41.8% in September 2014.



Source: BMI, operators

BMI revised its assessment of the number of mobile subscribers served by fourth-ranked operator Taliya in early 2011. The operator provides prepaid services only and we believe this included a significant number of inactive subscribers. This led us to make substantial downward revisions to our estimate for the number of Taliya mobile subscribers. We believe the operator's subscriber base was largely flat during 2012 and 2013, resulting in a contraction in its market share to 1% because of the strong growth recorded by its bigger rivals.

Fourth-ranked MTCE commenced operations in mid-2002 as the first provider of mobile prepaid SIM cards in Iran. It is licensed to operate a GSM 900MHz mobile service, with a capacity of 35,000 customers in Esfahan. Its 15-year licence expires in May 2016. MTCE is 49% owned by Malaysian company **Axiata**, which announced in July 2010 it was possibly looking to sell its stake in MTCE. In May 2011, Axiata entered into an agreement to dispose of its holding in MTCE to **Telecommunication Company of Esfahan**, thought to be its partner in the venture, subject to certain (unspecified) conditions. In Axiata's annual report for 2011, the 49% holding in MTCE was classed as a 'non-current asset held for sale'. Based on market share data provided by MTN and old operating data provided by Axiata, we estimate MTCE had

some 30,000 subscribers by the end of 2013, up from 26,000 at the end of 2012, and 18,000 in 2011, but still an insignificant share of the overall mobile market. There is little change on a quarterly basis.

TKC is owned by the Kish Free Zone Organization and operates solely on the island of Kish. We estimate its subscriber base to be just over 10,000.

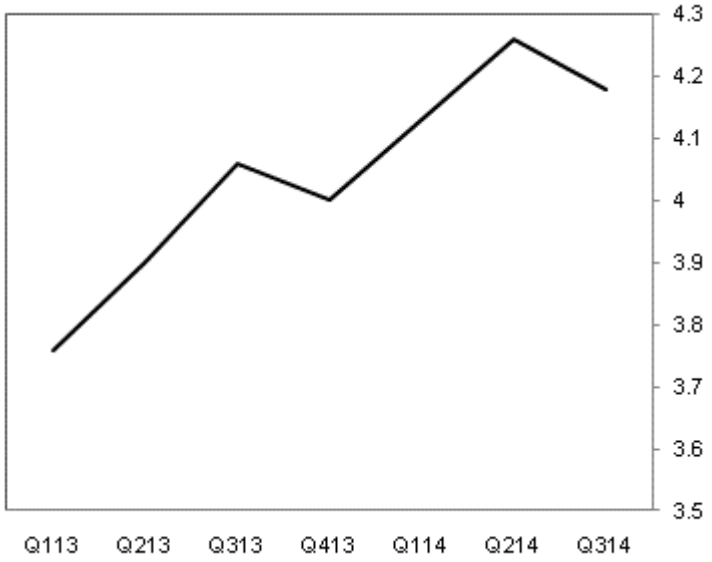
Usage

Irancell is the only operator for which ARPU figures are available. After staying above USD8 for most of 2009, 2010 and the early part of 2011, MTN's ARPU slipped to USD7.9 in Q211 and remained at that level for the remainder of the year. In 2012 it plummeted to USD3.91 - partly a reflection of exchange rate discrepancies, and partly because of Iranians' low purchasing power. This low rate remained in 2013, rising only slightly to USD4.18 in Q314.

The downtrend in MTN's ARPU in USD is due to the depreciation of the local currency following a raft of international sanctions against Iran, as the operator reported increasing ARPU in local currency in every quarter in 2014. It remains unclear whether ARPU will increase with the launch of 3G, as MTN uses promotions to attract customers, and it is likely to face continuous price competition from RighTel and MCI when it launches services.

MTN Irancell ARPU (USD)

2013-2014



Source: BMI, MTN

Networks

3G

Tamin Telecom was the first operator awarded the right to offer 2G and 3G services in April 2010. The company was granted the exclusive right to provide 3G services for a two-year period, and in February 2013, this was extended by a third year - to September 2014. It was not until November 2011 that services were launched, under the RighTel brand.

In early August 2014 MTN Irancell received permission from the Ministry of Information and Communications Technology to begin piloting 3G services in some university campuses and government buildings in Tehran. Following technical and financial reviews of the pilot, MTN will be authorised to begin offering commercial 3G services from August 23 2014, marking the end of mobile operator RighTel's period of exclusivity for advanced mobile data services. MCI is also expected to receive a 3G licence and launch services during H214.

In November 2013 RighTel's managing director stated that nearly two years after launching services the operator had around 1.5mn subscriptions on its network. **BMI** believes weak take-up of 3G is due to RighTel's limited network coverage as well as its hostile relationship with the country's religious leaders, resulting in several of its services being banned.

BMI believes MTN is in a much better position to capture growth in the 3G market, owing to strong financial backing and the vast experience of MTN Group, as well as the ability to rely on existing customers upgrading to 3G services. In its latest results announcement, relating to the six months ended in June 2014, MTN stated there were 12.6mn data users and 13mn active smartphones on its network, accounting for more than 30% of its total subscriber base of 42.7mn. Access to 3G-enabled devices is therefore not expected to act as an obstacle to take-up of 3G services in the country.

BMI has adjusted its 3G historical data and forecasts in order to reflect RighTel's weaker than expected performance and the launch of 3G services by MTN in August 2014. We estimate there were around 9.9mn 3G subscriptions in Iran at the end of 2014 and we forecast this to rise to 18.9mn by the end of 2015, as MCI looks likely to offer services as well

That said, there remains important political opposition to the proliferation of advanced mobile data services. In 2013 RighTel's video calling service faced strong criticism from the country's clerical elite, who argued that it conflicted with traditional values. Iran's Ayatollahs issued a fatwa against video calling in February 2013 and RighTel was forced to suspend the service. MTN may face similar challenges, but **BMI** believes its strong position in the Iranian mobile market and vast experience launching 3G networks in other countries will allow it to overcome them more easily than its newer competitor.

4G

MTN Irancell launched the country's first 4G network in December 2014, using its frequencies in the 1,800MHz band, and the regulator is expected to auction further LTE licences in the first half of 2015. MTN launched in nine cities, and had promised that all provincial centres will be covered by the end of 2014.

Mobile Content

Compared with other regional mobile markets, Iran can be considered to be at an early stage in the deployment of mobile VAS. Although all of the country's mobile operators offer basic voice-based VAS

such as call forwarding, call barring, caller ID (call line identification presentation, or CLIP), conference calling and voicemail, the market for data services has, until recently, been limited to SMS.

SMS

All of Iran's mobile operators, including the smaller regional operators MTCE and TKC, offer SMS services. So-called 'value-added SMS services' offered by MTCE include a mobile dictionary service, which enables customers to translate words in Farsi into English and vice versa, and a 'Mobile Qur'an' service, which enables users to receive verses from the Qur'an in English and Persian by entering the verse and Surah Number.

Mobile Operator Data

Table: Iran Mobile Market Overview

	Jun-12	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14
Total Mobile Subscribers	90,243	92,734	96,396	98,562	99,741	99,885	100,966	100,582	104,120	108,834
Q-o-Q Growth (%)	3.2	2.8	3.9	2.2	1.2	0.1	1.1	-0.4	3.5	4.5
No of Net Additions	2,814	2,491	3,662	2,166	1,179	144	1,081	-384	3,538	4,714
Penetration (%)	118.1	121.3	126.1	127.3	128.8	129.0	130.4	128.2	132.7	138.7

Source: BMI, operators

Table: MTN Irancell

	Jun-12	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14
Subscribers	38,296	39,382	40,502	41,542	42,025	41,295	41,374	41,783	42,697	45,533
Market Share (%)	42.4	42.5	42.0	42.1	42.1	41.3	41.0	41.5	41.0	41.8
No of Net Additions	1,465	1,086	1,120	1,040	483	- 730	79	409	914	2,836
Market Share of Net Additions (%)	52.1	43.6	30.6	48.0	41.0	-507.3	7.3	33.6	25.8	60.2
Minutes of Use/ Subscriber	65	64	65	N/A	N/A	N/A	80	N/A	84	N/A
ARPU (USD)	7.44	7.44	3.91	3.76	3.9	4.06	4	4.13	4.26	4.18
Operating Revenue (IRRbn)	20,125	N/A	21,885	N/A	23,945	N/A	25,599	N/A	27,260	N/A

Source: BMI, MTN

Table: Hamrahe Aval (Mobile Communications Company of Iran)

	Jun-12	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14
Subscribers	51,065	52,465	53,897	54,897	55,467	56,217	57,037	57,692	60,151	61,812
Market Share (%)	56.6	56.6	55.9	55.7	55.6	56.3	56.5	57.4	57.8	56.8
No of Net Additions	1,332	1,400	1,432	1,000	570	750	820	655	2,459	1,661
Market Share of Net Additions (%)	47.3	56.2	39.1	46.2	48.4	521.1	75.8	53.9	69.5	35.2

Source: BMI, Hamrahe Aval

Table: Taliya (Rafsanjan Industrial Complex)

	Jun-12	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14
Subscribers	850	852	861	875	890	899	910	1,050	1,200	1,400
Market Share (%)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.2	1.3
No of Net Additions	12	2	9	14	15	9	11	140	150	200
Market Share of Net Additions (%)	0.4	0.1	0.2	0.6	1.3	6.3	1.0	11.5	4.2	4.2

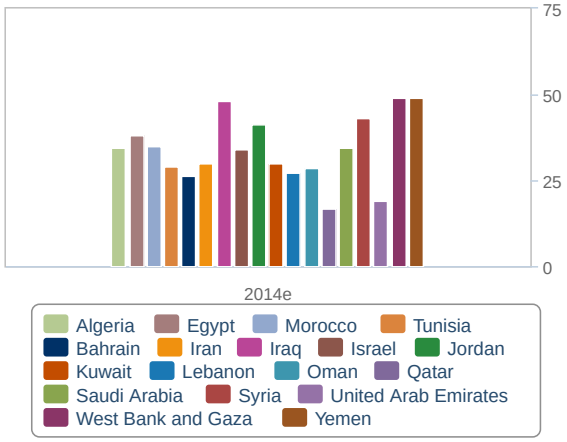
Source: BMI, Taliya

Middle East And North Africa Mobile Content - Q2 2015

BMI View: *Mobile content continues to grow in the region, as more advanced networks and affordable devices are introduced. m-learning and m-education have strong potential for stakeholders because of low public spending and a young population, but these projects must remain in the public interest.*

A Young Population

Population, 0-18 Years (%) 2014



e = BMI estimate. Source: BMI, national sources

In 2014, operators in the Middle East and North Africa have continued to invest in rolling out mobile data networks, as they look to further monetisation outside of voice services. Disparities exist within the region in terms of which type of networks are launched, with **Ooredoo** rolling out commercial LTE-Advanced services (under the banner of 4G+), and Iraq seeing its first 3G networks with **Zain** and **Asiacell**. But in all cases, the uptake of 3G or 4G services has been successful, none more so than in Algeria where the regulator reported 8.23mn 3G subscribers in November 2014, more than an 18% share of all mobile subscriptions, less than a year after launch.

Growth has been driven by operators offering a number of promotions to introduce and attract new customers to data services, looking to improve loyalty and upsell higher-value services in the future. Promotions can include basic time-limited price cuts, introduced by **MTN Irancell** or **Mobily** in Saudi Arabia, shared data accounts, where several SIMs can be bundled into a single account, also introduced by MTN Irancell, or the continuing development of Direct Carrier Billing, where a customer can but a range of services and apps through its mobile phone account without the need for a third party; **Etisalat** and **du** have both introduced Windows Phone carrier billing in the UAE.

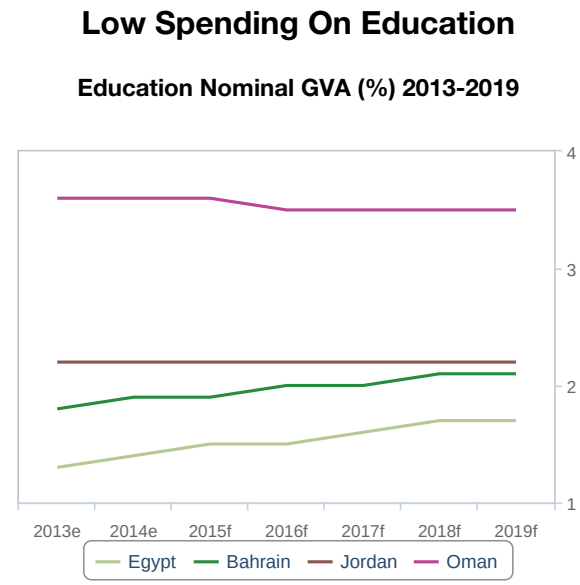
Another trend has been the rise of zero-rated plans, where a customer can access a range of services without the need for a data plan. du has launched such a plan in the UAE for prepaid customers, where they can access **Facebook**, **WhatsApp**, **Twitter** and **LinkedIn** for free. Large multinationals have been at the forefront of this development, with programs such as **Facebook Zero**, **Google Free Zone** or **Wikipedia Zero**, as well as more collaborative initiatives such as the **Alliance for Affordable Internet** or

Internet.org. These do however raise the question of what type of internet is being offered in developing markets, and whether walled gardens are the necessary way forward for operators.

Greater Arabic content will fuel growth going forward, as well as the continuous development of networks and smartphones becoming cheaper and more affordable for low-value customers. But while commercial content, such as video, music or social media, is likely to stay the biggest driver, other type of mobile content, with a greater public service implication, can also make an impact. m-education and m-learning are two potential examples.

m-Education and m-Learning

The use of electronic means to improve access to education and learning is not a new trend, with several global initiatives having been launched by different UN agencies. Commercial stakeholders are usually involved in the provision of services, but success has been difficult to gauge so far. This is why Ooredoo's decision to launch its **Mobile Academy**, which it markets as being the first subscription-based m-learning service, could have a greater impact as it puts the operator at the centre of the scheme.



e/f = BMI estimate/forecast. Source: BMI, national sources

Ooredoo's Mobile Academy will allow subscribers to access up to 50 courses and lectures online, with total flexibility as to when and how they access the service. The company has yet to announce pricing or exact details of the courses, though they will include language courses as well as teaching vocational skills. Ooredoo will leverage its advanced mobile networks to monetise the program, and in the hopes of attracting further content.

The company has been very active in terms of m-Learning initiatives, with its Tunisian subsidiary (recently rebranded from **Tunisiana** to Ooredoo Tunisia) having launched **Najja7ni** in 2010, with a clear focus on education, English language and employability services. It had attracted over 300,000 customers a month after launch, and is still successful thanks to its mobile revisions services prepared with the Ministry of Education, and the ability to use the service on basic 2G phones. But Ooredoo has also launched less

successful services, with its joint-initiative with **Microsoft** in 2010 not appearing to have made much progress.

Other operators are also looking at m-learning and m-education, with Etisalat looking to combine augmented reality with education through its Smart Education initiative, but opportunities are set to grow. **Docebo**, a Cloud Learning Management System, reports that the Middle East has strong potential in terms of mobile thanks to the growing digitisation of relevant content, the growth of local content as well as improved English language skills within the region. The company also expects m-learning to overtake e-learning as a preferred method, a trend not surprising because of the greater penetration and lower costs for smartphones and tablets compared to PCs.

m-learning initiatives have to involve the entire mobile ecosystem (networks, devices, content) to ensure their success, and **BMI** expects more companies to enter the fray. **Qualcomm** has made public its intention to work with different stakeholders in the region in order to develop m-education applications, alongside **Ericsson**, Facebook, **Samsung** and others in Internet.org. The private sector will be involved in the different projects because of the low public spending on education by governments across the region, and there is strong potential as the population remains young. However, it must also be ensured these schemes remain to the public interest and not to the ones of a few companies.

Wireline

Wireline services in Iran are limited to major cities with rural networks undeveloped. Incumbent **Telecommunications Company of Iran** (TCI) remains in state hands, with no competition, limiting incentives for investment and service development. This has been detrimental to the interests of consumers, as well as wider state development goals.

While both TCI and the **Telecommunications Infrastructure Company of Iran** (TIC) continue to invest in networks, long-term demand potential is limited by the government's decision to build out its own internet network, with restricted access to content it deems unsuitable. In addition, wireline broadband faces the threat of dedicated mobile broadband with the expansion of 3G services and the launch of 4G networks.

Fixed-Line

The main drag on the development of Iran's fixed-line market are the comparatively expensive products offered by monopoly provider TCI. There were 27.478mn lines in service at the end of 2012, a figure **BMI** believes grew by 3.6% to reach 28.462mn at the end of 2013. We believe growth will slow as mobile voice

continues to become more attractively priced, which will result in fixed-to-mobile substitution as witnessed in other regional markets and indeed globally. The addition of a new operator to the mobile sector could encourage competition and competitive pricing.

Broadband

Iranian incumbent operator TCI also dominates the internet market through its subsidiary **Data Communication Company of Iran** (DCI). TCI has announced ambitious plans to expand its internet user base but **BMI** believes the market's long-term growth will be held back by the heavy interference from the government on what Iranians are allowed to access. This threat has not diminished, and in January 2014 it was reported Iran was seeking help from China to build its National Information Network (NIN).

BMI estimates there were just under 4.5mn broadband subscriptions in Iran at the end of 2014, a growth of 22.7% for the country's market. However, we note there is considerable downside potential to our forecast outlook as the government adds more restrictions to what consumers can and cannot access. Iranian data for end-March 2013 claim around 6mn people access the internet using fibre-optic connections; **BMI**'s estimate that the actual number of broadband connections stood at about half this figure for end-2012 was on target. The Islamic Republic News Agency also claims that there were 867,000 people using high-speed internet access in Q113.

The launch of 3G operator **RighTel** in 2011 has the potential to bring dedicated mobile broadband options to a wider number of Iranians and catalyse a dynamic of competition that should incentivise the incumbent to improve quality of service. However, RighTel's network is only covering a handful of cities and the company has given little indication of its plans regarding dedicated mobile broadband options. RighTel's website states its dedicated mobile broadband service offers connections up to 21Mbps and 42Mbps, with prices ranging from IRR20,000 to IRR100,000. At these prices, accessing internet services will remain out of reach for many.

BMI believes that Iran's internet market has the potential to follow global emerging market trends whereby mobile internet services drive market growth. The launch of 3G services by **MTN Irancell** in August 2014, expected to be followed by MCI in 2015, alongside the launch of 4G services will drive mobile broadband growth in the market, as internet access will predominantly be on mobile networks. However, political issues may arise as many conservative leaders have argued that new video services were against Islamic values and could lead to profanity.

Infrastructure

Ongoing investments by TCI in the expansion of optical fibre and international bandwidth capacity should go some way towards improving internet service quality. According to a report in March 2010 by news agency Zawya, TCI had announced plans to extend the National Internet Network (NIN) to achieve true national coverage over the next 12 months. It is understood that the expansion project would also increase network capacity fourfold. Mohammad Ali Aryanian, TCI's deputy director of IT, is reported as saying that contractors were in the process of setting up facilities and equipment for the upgrade, which was to come on stream within six months. The national internet network is scheduled to come online during 2013, and could potentially permit the authorities to cut off the entire country from the World Wide Web.

Meanwhile, several Iranian companies, including TCI, have been involved in different initiatives aimed at expanding the amount of international bandwidth capacity. In November 2009, it was reported that privately owned Iranian company **Iran Mobin** had formed a 50/50 equity joint venture with **C-Ring Telecom**, itself a venture of Russian long-distance operator **Synterra** and Azerbaijan's **AzTelekom**. The project aimed to collaborate on the planned roll-out of a new fibre-optic ring around the Caspian Sea to handle Europe-Asia voice and data transmission and improve internet service delivery in the Caspian region. Iran Mobin will connect to the C-Ring network through the backbone of state-owned Telecommunication Infrastructure Company (TIC), the only backbone infrastructure operator in Iran.

For its part, TIC has signed an agreement with another Russian carrier, **Rostelecom**, to share international transmission links. The two companies were reported in April 2010 to have signed a signed a joint memorandum of understanding to act as strategic partners to create a North-South telecommunications transit corridor. The project reportedly aimed to meet growing demand for telecommunications services in the Caspian and Middle East region and would increase the capacity of international backbone links to transit voice traffic and internet access. As the first step the memorandum included the joint modernisation of national networks and relevant international border crossings through installation of DWDM, increasing total capacity of the transit corridor to 100Gbps. TIC is also involved in two new cable systems providing regional and international capacity.

One of them, the Europe-Persia Express Gateway (EPEG) fibre optic cable system, is a 10,000km cable running from Frankfurt, Germany, through eastern Europe, Russia, Azerbaijan, Iran, the Persian Gulf and finishing in Oman, which went live in September 2013. TIC was one of the major investors in the cable system, along with Russian operator Rostelcom, **Omantel** and UK-based **Cable and Wireless Company** (CWC). At launch, the cable reportedly brought Iran's international bandwidth capacity up from 72Gbps to

82Gbps, which Iran's Communications Minister announced plans to increase to 100Gbps by December 4 2013.

WiMAX licences were awarded to four companies in March 2009, with specific provinces per licensee. **MTN Irancell** was licensed to provide WiMAX services in Tehran, East Azarbaijan, Isfahan, Razavi Khorasan, Fars and Khuzestan, however, it has stated that take-up remains slow on account of bandwidth and content limitations. In its H113 results, **MTN** claimed its Iranian subsidiary, Irancell, had 307,000 WiMAX subscribers as of June 2013, up by almost 33% year-on-year (y-o-y) from 231,000 subscribers in June 2012. In December 2013 MTN Irancell extended its WiMAX network to the city of Khorramshahr. The extension has helped the operator expand its WiMAX service to a total of 38 towns, compared with seven cities at the time of the launch of the service in January 2010.

Two other companies, **Espadan** and **Rayaneh Danesh Golestan**, were respectively permitted to offer WiMAX services in Esfahan Province and Golestan Province, while **MobinNet Telecom** was the fourth company to be awarded a nationwide WiMAX licence to offer services in all 31 provinces. The company paid USD107mn for the licence in 2008, launching services in 35 major cities the following year.

In June 2013, **ISP Iranian Net Communication and Electronic Services** (Iranian Net) announced plans to begin deploying a fibre-to-the-x (FTTx) network by the end of August, according to Iran's telecoms watchdog, the Communications Regulatory Authority. Iranian Net has been granted a licence to deploy the FTTx network in Mashhad, Tehran, Shiraz, Karaj, Qom, Isfahan and Tabriz. The company announced its intention to provide services to 400,000 subscribers by the end of August 2013 and gradually increase its subscriber base to a total of 1mn over the next two years.

Iran National Internet Network

The continued concern by the Iranian government relating to the spread of outside information within the country remains at the fore and the regime has pressed ahead with the creation of a separate internet network for domestic use only. Plans for the National Internet Network (NIN) were approved by the Iranian cabinet in May 2007, and the June 2009 presidential election, in which the internet disseminated news and images, convinced the authorities that they urgently needed their own, controllable version of the web. The government also argues the NIN is a matter of national security.

In Q212, Ali Aghamohammadi, the Iranian deputy vice president of economic affairs, announced that the country will be launching a new 'halal' internet that will aim to rid the web of Western influences. 'Iran will soon create an internet that conforms to Islamic principles,' he said, 'to improve its communication and trade

links with the world.' The network would bypass international gateway connections. In early 2014, TIC deputy head Hassan Karimi said that 35% of domestic data consumption in Iran was hosted by Iranian companies.

According to a 410-page report examining freedom on the internet and published by Freedom House, an American NGO, Iran was the least free country, as it has high levels of oppressive policies, such as intimidating and even in some cases jailing people for what they write online.

In September 2012, the halal network was launched, with government agencies and the military initially being migrated to the closed network. The civilian population will be switched to the new network in due course, which banned Google and Gmail at the end of September 2012. Iran has one of the biggest Internet filters of any country in the world, preventing normal Iranians from accessing countless sites on the official grounds they are offensive or criminal.

In January 2014, it was announced that China would provide the Iranian government with support to build the NIN with the aim of controlling content online and building a 'clean' internet. Details of what support China would offer was not divulged but both governments are known to cut access to content they believe to be unsuitable.

Incumbent Investment

TCI announced planned investments in May 2013 amounting to IRR25trn for the current Iranian year (beginning March 21 2013). Head of the board of directors, Mostafa Seyyed-Hashemi, also reported TCI's investment reached IRR17trn (USD1.4bn) in the previous Iranian year, following the privatisation process in 2009. **BMI** believes this large sum may have been provided by the government to be used to expand the country's National Internet Network.

The quoted figure of USD25trn also appears to be a large amount, potentially more than TCI could afford, despite its operations in mobile and broadband services. It is therefore possible that some of the funding for its investment is coming directly from the government. This would allow Iran to increase the number of internet users in the country, while restricting their access. **BMI** estimates that the number of internet users reached 21.528mn at end-2012 and forecasts this total to reach 37.841mn at the end of our five-year forecast period in 2017. This could result in a boost to our forecasts if the investment is confirmed to be for the ININ as we believe.

TCI has not provided any more detailed information regarding the development of its national fibre-optic network, which we believe the operator continues to steadily expand. This was supported by the operator's announcement in May 2013 of plans to invest IRR25trn (USD20.34mn) in its network before the end of the Iranian year, ending March 2014. According to the head of the Board of Directors, Mostafa Seyyed-Hashemi, investment during the Iranian year ended March 2012 was IRR17trn. However, he also stated that the majority of the investment over the last two years has been on revitalising the company's mobile phone network. This is in line with **BMI**'s view of a slowdown in the fixed-line sector, as consumers increasingly favour mobile phone services.

Pay-TV

Iran's ministry of ICT announced in December 2013 that it had launched the first phase of its IPTV project. Six provinces are to be reached, covering 140,000 households. The ministry expects 7mn subscribers to the service over the long-term, but details on the project remain scarce. **BMI** believes there will be considerable restrictions on content, in same way the wider internet is restricted in Iran. This may dampen demand for the service in the long-term and the government's involvement with the network may also put off some potential subscribers.

In April 2013, Iran's government announced that it plans to launch its own communications satellite into space within five years, which will broadcast five local channels. Demand for Pay-TV services is minimal in Iran currently.

Industry Trends And Developments

3G And 4G Launch

The regulator ended **RighTel**'s exclusivity offer period for 3G services, allowing MTN Irancell to offer its first service in August 2014. The operator followed suit by offering 4G services in December 2014 using its spectrum in the 1,800MHz band, with the regulator planning to auction further LTE licences in the first half of 2015.

State Launches First Phase Of IPTV Project

In December 2013 the Ministry of Information & Communication Technology (MICT), in collaboration with national broadcasting and telecoms firms in Iran, is understood to have launched the first phase of an IPTV project. About 140,000 households in six provinces - Tehran, Isfahan, Khorasan Razavi, East Azarbaijan, Yazd and Qazvin - are due to be covered in the first stage of the deployment. MICT expects the service to attract around 7mn domestic subscribers.

MCI Listed On TSE

In January 2014, it was announced that China would provide Iran with help to build the country's long-planned National Information Network (NIN). China will help Iran to control content online and build a 'clean' internet. The policy of internet control is hardly surprising as the NIN was planned as a means of bypassing the worldwide web.

BMI notes that China's restricted internet access and blocking of content deemed unsuitable has not stopped consumers in that country getting online and developing a number of home-grown social networking services and platforms. However, the difference in the size of population does make a difference for China so we do not expect Iran to follow directly in its footsteps. It is also important to highlight that tech-savvy consumers will find ways around national internet restrictions; setting up their own virtual private networks (VPNs) to connect to sites they want to access.

Improving Networks

The Europe-Persia Express Gateway (EPEG) fibre optic cable system, a 10,000km cable running from Frankfurt, Germany, through eastern Europe, Russia, Azerbaijan, Iran, the Persian Gulf and finishing in Oman, finally went live in September 2013. The cable system, which was originally meant to be launched

in March 2013, brought Iran's international bandwidth capacity up from 72Gbps to 82Gbps. In October 2013, Iran's Communications Minister announced the country's goal to further increase its international bandwidth capacity to 100Gbps by December 4 2013.

According to Infrastructure Communications Company deputy head, Mehdi Karimi Neyestani, connection to the EPEG will allow Iran to become an internet service provider to other countries. In March 2013, Neyestani stated that Iran would be upgraded from the Tier3 level (Internet service consumer) to Tier2 level (Internet service provider) after the official inauguration of this project.

Table: Industry Trends And Developments

Date	Details
Jan-15	MTN Irancell has launched a Shared Account service in Iran, which allows prepaid subscribers with multiple Irancell SIM cards to create a single account for all their devices. The service is available in 2GB, 5GB and 20GB packs.
Dec-14	MTN Irancell has reduced its mobile internet costs from IRR5 (USD0.00018) to IRR0.5 (USD0.000018) per KB and IRR0.75 (USD0.000028) per KB for postpaid and prepaid connections. The reductions apply to 2G, 3G and 4G services.
Jun-14	MTN Irancell announced that it would reduce the tariffs on voice calls for postpaid SIM cards. The operator stated that prepaid subscribers could opt for changing their SIM card to a postpaid plan. The tariffs were revised from IRR625 (USD0.024) per minute for off-net calls to IRR499 (USD0.019) for all off-net, on-net and calls to landlines. All postpaid subscribers would receive a detailed copy of their bill after every two months.
Dec-13	MTN Irancell extended its WiMAX network to the city of Khorramshahr. The extension has helped the operator expand its WiMAX service to a total of 38 towns, compared with seven cities at the time of the launch of the service in January 2010. The prepaid and postpaid packages, offering maximum download speeds up to 2Mbps, will be available for business and residential users in Khorramshahr.
Nov-13	Telecommunication Company of Iran reported that the third auction to provide voice-over-internet protocol services will take place, although dates were not announced. Over 100 VoIP service providers in the country were previously deemed illegal, following loss of fixed telephony revenues complaints by TCI. The country will make several investments to improve the Information and Communications Technology (ICT) infrastructure and establish a communication corridor linking whole of Asia, according to Minister of ICT Mahmoud Vaezi.
Sep-13	Internet users were allowed to access social networking sites Twitter and Facebook on September 16 2013. However access to Facebook and Twitter was promptly blocked again by September 17 2013. The secretary of the Iranian state committee responsible for filtering web content wrote the incident was written off as a technical problem and denied any government intention to lift the ban on the social networking sites.
Aug-13	MCI, the mobile arm of Telecommunication Company of Iran, listed on the Tehran Stock Exchange. There were no financial details of the event, however. This development was the follow-up to an initial offering of 5.5% of MCI's shares on Iran's Over-The-Counter market for USD396mn in December 2010.
Jul-13	The Iranian government announced citizens that require an email address will have accounts designated to them by the Communications Ministry. Iranian state television reported the country now has its own domestic email service. The government said that the national system would aid interaction between the state and the people.
Jun-13	Iranian Net Communication and Electronic Services (Iranian Net) will begin deploying a fibre-to-the-x (FTTx) network by end-August, according to Iran's telecoms watchdog, the Communications Regulatory Authority. Iranian Net has been granted a licence to deploy the FTTx network in Mashhad, Tehran, Shiraz, Karaj, Qom, Isfahan and Tabriz. The firm will provide services to 400,000 subscribers by end-August, gradually increasing this to a total of 1mn subscribers over the next two years.

Industry Trends And Developments - Continued	
Date	**Details**
May-13	TCI announced planned investments amounting to IRR25trn (USD2bn) for the current Iranian year (beginning March 21 2013). Head of the Board of Directors, Mostafa Seyyed-Hashemi, also reported that TCI's investment had reached IRR17trn (USD1.4bn) in the past Iranian year, following the privatisation process in 2009.
May-13	The Iranian Net Optic Fiber Operator said the operator plans to offer services to 400,000 people by August and 1mn subscribers within the next two years. The operator aims to attract 8mn subscribers within eight years. In addition, a memorandum of understanding between the Aras Free Trade Zone Organization and Iranian Net Optic Fiber Operator was signed on the launch of the pilot plan of a optic fibre network in Aras Free Zone, East Azarbaijan province.
Feb-13	MTN Group said it has been cleared of accusations that it bribed Iranian officials in a bid to gain a mobile licence for operations in the country. The proceedings against MTN were initiated by Turkish mobile operator Turkcell after a subsidiary of Turkcell failed to obtain Iran's second GSM licence in 2005. The allegations were investigated by a committee, which was led by retired British judge Lord Hoffmann, for more than a year.

Source: BMI

Regulatory Development

Table: Iran's Regulatory Bodies And Their Responsibilities

Regulatory Body	Responsibilities
Ministry of ICT Dr Ali Shariati Avenue Tehran Iran 1631713461 Tel: 9821 811 3355 Fax: 9821 811 3926	▪ Overseeing the implementation of the information and communication technology (ICT) national development plan. ▪ Drafting national telecommunications policy. ▪ Drafting and implementing amendments to existing legislation or new laws, as necessary. ▪ Issuing licences, concessions and general authorisations. ▪ Mediating interconnection agreements between operators, where relevant. ▪ Regulating tariffs for dominant operators and establishment of calculations for setting prices for other operators. ▪ Monitoring of frequencies and interference with use of the frequency spectrum.

Source: BMI

Legislation And Market Liberalisation

Iran has partially liberalised its telecoms sector by allowing competition and numerous private sector operators in the mobile telephony, data services and internet sectors. In contrast, the fixed-line market remains a monopoly under the control of the Ministry of Communications and Information Technology (MICT).

In December 1999, Iran's *majlis*, or parliament, approved Article 122 of the 'third five-year economic plan,' which gave wider powers to the MICT (which at the time was called the Ministry of Post Telegraph and Telephone). In accordance with Article 122, the ministry was granted powers to authorise private sector companies looking to establish communications networks in Iran. These included companies seeking to set up mobile phone networks, low capacity telephone exchanges (with up to 5,000 numbers), data transfer networks, value-added service networks, rural communication networks, postal networks and postal transport networks. Article 122 further allowed the MICT to license private and co-operative telecoms companies to set up communications networks in areas in which no such networks were offered by government-owned companies.

In addition to removing government monopoly control over the provision of telecoms services, Article 122 of Iran's Third Five-Year Plan established the foundations for increased public participation and foreign investment in the country's telecoms sector, and for the eventual creation of an independent regulatory body. In 2003, the ministry established the Communications Regulatory Authority (CRA) as a body to

supervise and promote healthy competition in the telecoms sector. However, the CRA remains under the umbrella of the MCIT, which has retained ultimate control over the sensitive telecoms sector.

In 2007, Supreme Leader Ayatollah Khamenei requested that government officials speed up implementation of the policies outlined in the amendment of Article 44 of the country's constitution and move towards further economic privatisation (the pre-amended Article 44 of the constitution had decreed that core infrastructure should remain state run). Khamenei also suggested that ownership rights should be protected in courts set up by the justice ministry in the hope that this new protection would give an additional measure of security and encourage private investment.

Privatisation Of TCI

Iran's privatisation programme was launched during the government of Mohammed Khatami in the late 1990s. One of the objectives behind selling shares in key state enterprises was the desire to attract greater foreign investment. The government's privatisation programme also forms part of a wide-ranging economic liberalisation programme. Under Iran's Fourth Five-Year Economic Development Plan (2005-2010), the Iranian Privatization Organization, which is affiliated with the Ministry of Economic Affairs and Finance, was charged with the responsibility for setting prices, ceding shares to the general public and listing shares on the stock market of incumbent operator **TCI**.

Repeated preparations to privatise Iran's fixed-line incumbent have been characterised by a mixture of high expectations, disappointment and controversy. In May 2007, a representative from the Iranian Privatization Organization announced that a majority stake in monopoly provider TCI would be sold by the end of September 2007. In mid-June 2007, Supreme Leader Ayatollah Ali Khamenei urged the government and officials to speed up moves to reduce the government's economic role by reviving the privatisation process. TCI's managing director, Saber Feizi, said in late July 2007 that three foreign companies from Asia, Europe and the Middle East had already submitted official requests to buy a stake in the company. One of these companies was reported to be the Russian operator **Altimo**.

Despite the early optimism surrounding the privatisation of TCI, by end-2007, no visible progress had been made towards achieving this goal. In September 2007, Deputy Communications and Information The technology minister, Vafa Ghaffarian, announced 51% of TCI would be privatised before the end of the Iranian calendar year on March 20 2008. Although the privatisation of TCI did not take place by the date set, reports suggested that the Iranian government was still committed to selling the operator.

As a forerunner to the sale of a controlling stake in TCI, a 5% stake in the operator was scheduled to be floated on the Tehran Stock Exchange before the end of December 2007. The floatation finally took place in August 2008.

Meanwhile, in April 2008 TCI Chairman Saber Feizi reportedly suggested that the 31 companies belonging to TCI should be interconnected in such a way as to make it impossible to separate them when the company was eventually privatised. Feizi therefore stressed that TCI would be sold along with all its subsidiaries. However, he also suggested that this would not happen in 2008, as the necessary amendments had been made to TCI's budget.

In November 2008, the government announced that the part-privatisation of TCI would take place before the end of the Iranian calendar year on March 20 2009. However, in January 2009, it was reported that the government had once again delayed the planned sale. Feizi was reported as saying that the documents for the tender would not be available to interested parties until mid-March 2009 at the earliest. According to media reports, the state was expected to offload up to 49% of TCI's shares, with foreign telecoms companies able to hold up to 35%, and local partners the remainder. Another 5% is held by employees and 20% was reserved for poor Iranian families. Local press reports in December 2008 suggested that firms from Russia, Turkey, China and Indonesia were chasing a stake in TCI. The press reports did not name the potential investors. However, in October 2008, **PT Telekomunikasi Indonesia** (Telkom) stated that it was looking to acquire a stake in the company.

In late September 2009, it was reported that local consortium **Etemad Mobin** paid more than USD7.8bn to secure a 50% plus one share stake in TCI. Etemad Mobin comprises three companies, two of which are reportedly controlled by the Iranian Revolutionary Guard. A few weeks after the announcement, it was reported that Iran's General Inspections Organisation (GIO) had launched a probe into the connections between Etemad-e-Mobin and the Iranian Revolutionary Guard.

In November 2009, it was announced by the Mehr News Agency that 50% plus one share of TCI had been offered over the stock market to Tose'e Etemad Mobin consortium for IRR77.985trn.

Competition

In contrast to the monopoly in the fixed-line sector, mobile phone services, based on GSM standard, are offered by TCI and by four private sector companies: **MTN Irancell**, **Taliya**, **MTCE** and **TKC**. A third national operator was licensed in April 2010 but it was not until late November 2011 that **Rightel**, reportedly owned by Iran's Social Security Organization, launched limited services. Iran also has a large

number of privately owned ISPs operating within the country; this is in spite of the high levels of government control over the sector. Iran is also one of the few countries in the Middle East in which development of VoIP has been legalised.

Licensing And Spectrum

The usage and allocation of communications spectrum in Iran is supervised by the country's Radio Communications Administration (Radtel), which is part of the MICT. The MICT has licensed six operators to provide mobile telephony services in the GSM standard. Two of those operators - **MCI**, which is the mobile unit of fixed-line incumbent TCI, and MTN Irancell - offer services using the GSM 900 and GSM 1800 spectrum bands. Three companies - Taliya, MTCE and **Kish Free Zone Organization** (KFZO) - offer services using GSM 900 spectrum only.

In July 2007, the Iranian government revealed plans to offer another national cellular licence sometime in 2008. It was not until 2010 that a third national operator received a mobile licence. Rightel, reportedly owned by Iran's Social Security Organization, launched limited services in late November 2011. It is believed that the Rightel licence contains a provision allowing it to provide the country's only 3G services for a period of two years - an agreement that was extended for a further year in early 2013. However, given the time taken between the award of the licence and the launch of initial services, it is unlikely the company will benefit from being the first to market and it is unlikely to have the necessary resources to swiftly roll-out services.

In January 2007, it was reported that **Laser Company** had become the first privately owned operator to launch a WiMAX wireless network in Iran, based on 802.16 standards. At launch, the WiMAX network provided wireless internet access to the capital Tehran and it was believed that Laser Company would extend its WiMAX network services to other Iranian provincial capitals. Other companies that have been licensed to provide WiMAX internet access services include **Pars Online** and **Datak Telecom**. However in June 2013, the CRA announced that Datak Telecom failed to get authorisation for continuation of its WiMAX, as the one year deadline to finalise a licence agreement with the regulator had passed. At the time of writing, Laser's service was no longer operational either.

Iran's first wireless internet project, based on 802.11 (WLAN) standards, was reportedly implemented in March 2006. The country's first Wi-Fi project ensured the provision of internet services to large areas of the islands of Qeshm, Hengam, Lark and Hormuz.

The regulator is due to auction LTE licences in the first half of 2015 after giving MTN Irancell authorisation to launch 3G and 4G services using its 1,800MHz spectrum.

Regulatory Developments

In January 2013, the government of Iran confirmed it is developing new smart filtering software which will allow Iranians to gain limited access to social networking sites such as **Facebook** and **Twitter**. The government has introduced a national intranet service which contains only approved content, while the conventional worldwide web remains subject to heavy restrictions.

The telecoms industry in Iran is regulated by the Ministry of Communications and Information Technology (MICT, formerly the Ministry of Post, Telegraph and Telephones). The MICT is responsible for all aspects of telecoms sector regulation and for the adjudication of disputes that arise among service providers. Despite long-term plans to establish an independent regulatory body, there appears to have been little progress towards this accomplishment.

Although Iran's telecoms market has been partially liberalised and opened to competition in the mobile, data and internet sectors, the state retains high levels of control over online content and telecoms service usage. Internet usage in particular is subject to strict controls; in October 2006, it was reported that Iran's government had opened a new front in its drive to stifle domestic political dissent and combat the influence of Western culture by banning high-speed internet links. The country's numerous ISPs were ordered to restrict online speeds to 128Kbps and forbidden from offering fast broadband packages. The move by Iran's authorities would make it more difficult for internet users to download foreign music, films and television programmes, which the authorities blame for undermining Islamic culture among the younger generation. It would also impede efforts by political opposition groups to organise by uploading information on to the net. In November 2006, Mahmoud Khosravi, the head of Iran's Radio Communications and Regulations Organization (RCRO), was reported as saying that universities and other academic centres, research institutes, business companies, industrial townships, public libraries and culture houses were exempt from the 128Kbps restriction on the condition that they install the required content filters.

In September 2007, it was reported that Iran would begin regulating and filtering multimedia messaging services (MMS) in order to prevent 'immoral' video and audio messages being sent through mobile phones. Iran's Supreme Council of the Cultural Revolution is understood to have instructed the MICT to acquire equipment that will enable it to filter MMS.

Data Market Held Back By 3G Exclusivity

Tamin Telecom's exclusive rights to 3G network services ended in August 2014, with MTN Irancell being granted the right to offer 3G services. The operator was also the first in the market to launch 4G services in December 2014, with the regulator planning to auction LTE licences in early 2015.

Iranian Internet Controls Grow

Iran would serve as an internet service provider to other countries by March 2013, revealed Infrastructure Communications Company deputy head Mehdi Karimi Neyestani. This development took place after the first phase of the Europe-Persia Express Gateway (EPEG), which is a communications highway connecting Europe with Eastern Asia, that started operations in September 2013. Iran would be upgraded from the current Tier3 level (Internet service consumer) to Tier2 level (Internet service provider) after the official inauguration of this project, Neyestani added.

In January 2014 it was reported that Iran was seeking help from China to build its National Information Network (NIN). While cooperation would usually indicate the presence of Chinese equipment manufacturers to aid build-out, on this occasion the help on offer to Iran is to control content online and build a 'clean' internet. The policy of internet control is hardly surprising as the NIN was planned as a means of bypassing the World Wide Web.

The NIN was first mooted in 2005, creating a network separate from the global internet containing content that is 'compatible with religious and revolutionary values'. It is feared that Iran will have the power to cut off all access to the global internet, with many reports of slowing or declined access to international social media sites and a long history of blocking sites as the government sees fit.

Competitive Landscape

Table: Key Players: Iranian Telecoms Market

Company name	Ownership	Market
Telecommunications Company of Iran (TCI)	Etemad Mobin (50% plus one share), Equity Shares Brokerage Companies (20%), Government (19.9%), TCI staff (5.09%), other entities (5%)	Fixed-line (local, domestic long distance, international), mobile, data operations
Taliya	Rafsanjani Industrial Complex (RIC)	Mobile
MTN Irancell	MTN (49%), Iran Electronic Development Company (51%)	Mobile
Mobile Telecommunications Company of Esfahan (MTCE)	Telecommunication Company of Esfahan Province (100%)	Mobile
Telecommunication Kish Co. (TKC)	LibanCell (100%)	Mobile Internet (dial-up, WLAN)
Pars Online	Private (100%)	Internet (dial-up, ADSL, WiMAX)
Datak Telecom	Private (100%)	Internet (dial-up, ADSL, Wi-Fi, direct fibre), Residential VoIP

Source: BMI

Company Profile

Telecommunications Company Of Iran (TCI)

Strengths	▪ Remains the only fixed-line operator in Iran.
	▪ Investing in fixed-line operations to the country's rural areas.
	▪ Continuing to record steady growth within mobile market.
Weaknesses	▪ Poor growth within its internet sectors, especially broadband, further hindered by governmental control on data access.
	▪ Growing number of ISPs competing for market share in internet sector.
	▪ Delays to privatisation may have limited the scope of expansion and introduction of new services.
	▪ Privatisation failed to bring an international strategic partner with telecoms experience and financial backing.
	▪ Lack of advanced mobile data services through 3G or 4G.
Opportunities	▪ Higher import tax could provide fledgling domestic handset manufacturers with opportunity to grow.
	▪ Looking to converge its fixed and mobile assets into a compelling offer.
Threats	▪ Award of country's second national GSM licence to MTN Irancell coupled with Taliya's growth into a national operator has resulted in loss of mobile market share.
	▪ Possible liberalisation of fixed-line sector following TCI's part privatisation.
	▪ Unstable political and security environment could hinder investment in the sector from equipment manufacturers and content providers.

Company Overview

Telecommunications Company of Iran (TCI) was formed in 1972 out of its predecessor, the Telephone Company of Iran. After restructuring during July 2005, TCI announced it had reformed into a parent company overseeing 33 subsidiaries including data communications, mobile communications and backbone communications.

In early 2007, the Iranian Privatization Organization announced that a majority (51%) stake in TCI was due to be sold by the end of September 2007. However, it was not until September 2009 that privatisation finally took place. It was reported that local consortium Etemad Mobin paid more than USD7.8bn to secure a 50% plus one share stake in TCI. Etemad-e-Mobin comprises three companies, two of which are reportedly controlled by the Iranian Revolutionary Guard. Shares were exchanged through the Tehran Stock Exchange in November 2009.

A few weeks after the announcement, it was reported that Iran's General Inspections Organisation (GIO) had launched a probe into the connections between Etemad-e-Mobin and the Iranian Revolutionary Guard (*see Regulatory Developments*).

On August 20 2013, the mobile arm of TCI, Mobile Company of Iran (MCI) listed on the Tehran Stock Exchange's Second Market. MCI had previously offered 5.5% of its shares on the Iranian Over-The-Counter (OTC) market, for a combined value of USD396mn.

Strategy

As a state-owned operator, TCI's strategy is strongly influenced by the priorities of Iran's governing authorities. Central to the government's telecommunications strategy has been the expansion of the country's national communications infrastructure. Priority areas include the development of the national fibre-optic network and the development of rural communications infrastructures. Within the field of mobile communications, TCI has pursued the deployment of new technologies, such as GRPS, as well as a range of new data-based value-added services.

In March 2014 TCI reviewed its strategic objective of achieving full convergence of fixed and mobile services. Mr. Jurki Markku Runola, TCI Transformation Plan Advisor, stated that 2013 saw TCI focus on the basics and 2014 will see TCI produce practical outcomes, before growth in 2015 and full convergence of fixed and mobile services in 2016.

Financial Results

At the end of 2013, TCI reported total revenue for the year of IRR115,666bn (USD4.2bn), net profit of IRR23,094bn (USD838mn), operating profit of IRR20,480bn (USD743mn) and total investments of IRR39,827bn (USD1.45bn).

Operational Developments

Fixed-Line Network

In a bid to find new avenues for growth, TCI has focused on increasing its rural network coverage. At the end of 2005, a total of 46,764 villages were connected to TCI's fixed-

line infrastructure. The MICT claimed that this figure had risen to 50,173 by December 2006, and 52,522 by December 2007. In December 2008, the figure stood at 53,845. According to the ministry, at the time of the Islamic Revolution in 1978, just 312 of Iran's 100,000 villages had telecoms services.

As well as purchasing capacity on four international submarine cables (FOG, FLAG, SEA-Me-We and ITUR), TCI has also issued a tender for SDH equipment on all main national routes. By the end of 2008, TCI's national backbone comprised 121,000km of fibre-optic cable, of which 44,000km had been installed during the course of the year. A further 6,000km were installed in the first nine months of 2009, raising the total amount of optical figure to 127,000km. The TAE (Asia-Europe) cable system was just one of the projects completed during 2007, connecting Iran to Asia and Europe through a 2,200km optical fibre cable. Other accomplishments in 2007 included the construction of a 150km fibre-optic cable connecting Iran and Afghanistan.

Broadband Network

TCI began offering ADSL-based broadband internet access services early in 2004, but deployment has so far been confined to the larger cities and business centres. By the end of 2005, a total of 514 cities had been covered with a total of 14,270 leased access ports. By the end of September 2009, the number of cities covered had risen to 1,223. There were a total of 60,718 national data access ports at the end of September 2009, supporting a data transmission capacity of 26,728Mbps.

Iran's internet market suffered from poor connectivity during 2006, which led to loss of service occurring on average once a month. This was blamed by some in the industry on a failure to provide back-up capacity, which supports network traffic when the main fibre network fails. While technologically advanced countries have several optical fibre networks around which traffic is directed, in Iran's case, incumbent operator TCI is left to compensate for the failings across other ISP networks. Further, in October 2006, the Ministry of Telecommunications announced that high-speed internet access would no longer be made available to residential users, in an attempt to curb Western media influences, which led to the banning of websites such as the BBC's Persian-language site.

Mobile Network

In April 2008 MCI's chairman, Vahid Sadoughi, reportedly announced that the company planned to increase the capacity of its intelligent network (IN) to double its prepaid SIM card network capacity. Sadoughi is reported as saying that, once the operator's network capacity had been expanded, MCI's prepaid customer base was expected to increase to 10mn by the end of April. Lack of network capacity was reported to have caused a delay in the delivery of prepaid SIM cards and resulted in widespread disapproval among 2.558mn waiting applicants.

According to a May 2011 report by the Fars News Agency, which cites comments from MCI's managing director, Vahid Sadouqi, MCI provides services to all of Iran's cities and 57% of the country's villages. The operator's network also covers 97% of all main

roads in the country and 68% of secondary roads. It also provides rural roaming services in 35,000 villages in 20 provinces. The carrier was looking to migrate customers onto 3G and 4G networks as of August 2014, but has yet to launch either service at the time of writing.

Financial Data

- Revenue (2013): IRR115,666bn
- Net profit: IRR23,094bn

Operational Data

Fixed lines

- 2009: 25.410mn
- 2010: 25.584mn
- 2011: 26.540mn
- 2012: 27,478mn
- 2013: 28.462mn

Mobile subscribers

- 2009: 35.427mn
- 2010: 41.297mn
- 2011: 48.233mn
- 2012: 53.897mn
- 2013: 57.037mn

Company Details

- Telecommunications Company Of Iran (TCI)
- Shariati Avenue
  Tehran

  Iran
- www.tci.ir

MTN Irancell

Strengths	▪ Iran's second largest mobile operator, with an estimated market share of over 40%.
	▪ Has a major strategic backer in the form of South Africa's MTN Group.
	▪ First to market with GPRS and MMS services.
Weaknesses	▪ Subscriber base is understood to be highly dependent on prepaid customers.
	▪ MMS business faces government censoring and filtering.
	▪ Lacks presence in the wireline sector for converged services.
	▪ US embargo puts limits on potential network equipment partners.
Opportunities	▪ Despite the lack of 3G services, smartphone adoption was strong in 2013, with penetration reaching almost 25% in MTN's subscription base.
	▪ Although in the early stages, the market for mobile value-added and data services is expected to see strong growth; the youthful orientation of Iran's population should help to underpin future growth.
	▪ Continuing network roll-out programme will have a positive effect on future growth.
	▪ 3G licences become available in 2014, and the launch of 4G services in December 2014
Threats	▪ The privatisation of TCI could raise the level of competition for MTN Irancell.
	▪ Underdeveloped legal and judicial environment could pose challenges.

Company Overview	In November 2003, the Ministry of Communications (now the MICT) issued a notice of its intention to issue a second GSM licence. In February 2004, Turkish operator Turkcell announced it won the tender, at a cost of USD385mn, over its closest rival South Africa's MTN Group. The Turkcell network was expected to launch within a year of licence issue, but by September 2004 the licence had yet to be formally awarded. The

ongoing licence issue culminated in Iranian authorities limiting foreign ownership in Irancell to 49%. Talks between Turkcell and the government eventually fell apart, leading the MICT to award the licence to MTN on November 21 2005. The remaining 51% stake is held by the Iran Electronic Development Company (IEDC). Irancell is currently managed through a shareholder agreement setting out operational management including key positions nominated by respective shareholders IEDC (chairman and managing director) and MTN (chief operating officer and chief financial officer).

Licence Conditions

Under MTN Group's licensing terms, the operator has a 15-year fixed term, followed by an option to renew its licence for an additional five years, which is allowed twice. Fees incurred by the operator, aside from the EUR300mn licence fee already paid to the Iranian authorities, include an annual fee set at 28.1% of the revenue share, based on gross revenue minus handset sales and net interconnection, with connection fees limited to USD150. Moreover, the operator must also pay a universal service fee of 3% of revenue. Other fees, such as numbering, frequency and regulation fees, are applicable, but altogether will not exceed 5% of revenue. In its 2011 annual report, MTN Irancell said it maintained 'active engagement' with the Iranian authorities as it seeks to clarify whether its licence permits the rollout of 3G services.

Strategy

MTN Irancell aims to drive mobile penetration and market share through the deployment of innovative products and services. It continues to emphasise the development of segmented prepaid and postpaid packages. The operator also aims to improve the level of customer service that is currently offered; the introduction of online registration and activation within 15 minutes was designed to further this goal. A central part of MTN Irancell's strategy is the implementation of a network that supports 3G services and, over the next five years, a network that covers more than 1,000 cities and comprises almost 6,000 BTSs. The operator aims to provide network coverage to 85.0% of the population by October 2020.

Financial Results

In 2013, MTN Irancell recorded revenue of IRR49.544trn, up 11% from 2012, but growth was stronger at 18.3% if the negative impact of hyperinflation is taken into account. MTN's revenue growth was driven by growth in data revenue, which increased 72.7% y-o-y, with SMS revenue up 18% and data 60.2%. Increased adoption of smartphones, which accounted for almost 25% of users at the end of 2013, has driven data revenues. Meanwhile, MTN's EBITDA margin declined 1.4pps to 42.8% in 2014, largely as a result of foreign currency denominated costs following rial depreciation. Finally, capex increased, rising to ZAR758mn. Investment for the period included an additional 746 2G sites and 415km of fibre.

Operational Developments

Irancell launched its network in October 2006, with sales and network coverage initially limited to the cities of Tehran, Mashhad and Tabriz. Further coverage was provided by means of interconnection agreements with Iran's other mobile operators. By February 2007, Irancell was offering network coverage in Tehran, Tabriz, Mash'had, Karaj, Sari, Oroumiyeh, Maraqeh and Qom, with a further two cities to be added: Meshkinshahr and Kermanshah. At the time, reports by Fars news agency suggested that the network was incomplete in parts of Tehran and Karaj - although Irancell stated that it had managed to raise coverage in the capital to 90%. The slow roll-out of its network in the early stages was attributed to the lack of cooperation from municipalities and objections from some of the population to the installation of base stations.

By the end of 2007, 3,356km of the roads in Iran had been put under Irancell network coverage.

In February 2007, Irancell launched Iran's first GPRS services, available to prepaid and postpaid subscribers. At the time of launch, Irancell announced that the service would be free for all subscribers until the end of March 2007.

In January 2011, MTN introduced a new location-based service which can be used in several major cities, including Tehran, Karaj, Tabriz, Esfahan, Shiraz and Mashhad. The new service can be used for identifying the geographical location of a friend and informing them of a subscriber's whereabouts. The friends' location is notified to the subscriber through SMS or MMS.

According to a report by Iran Daily in October 2011, the number of cities covered by MTN was 1,874 by 23 September 2011. This would mean that the telco's network covered 80% of the country's population by that date. MTN's network coverage also includes 22,000 villages and over 20,000km of roads. This exceeds the operator's previously-stated target of 9,000km. In June 2012, MTN revealed it had deployed a total of 7,889 2G and WiMAX sites in the country.

During the second half of the 2013 MTN Irancell began the roll-out of a 3G network with LTE-capable frequency, following approval by the Communications Regulatory Authority. During the period it invested ZAR 1.818 billion, representing 100 percent of the operation, and deployed 274 new 2G sites. The operator also launched 4G networks in nine cities in December 2014, whereas its 3G network covered 75 cities in all 31 provinces.

Financial Data

Revenue

- 2010: IRR26.294trn
- 2011: IRR33.352trn
- 2012: IRR41.980trn
- 2013: IRR49.544trn

Financial Data

Capital expenditure

- 2010: ZAR1.661bn
- 2011: ZAR1.168bn
- 2012: ZAR1.122mn
- 2013: ZAR1.758mn

All financial data reflect MTN's 49% stake in MTN Irancell

Operational Data

Mobile subscribers

- December 2010: 29.743mn
- December 2011: 34.681mn
- December 2012: 40.502mn
- December 2013: 41.4mn
- March 2014: 41.783mn
- June 2014: 42.697mn
- September 2014: 45.533mn

Company Details

- MTN Irancell
- 12 Anahita Alley
  Africa St

  Tehran

  Iran
- www.irancell.ir

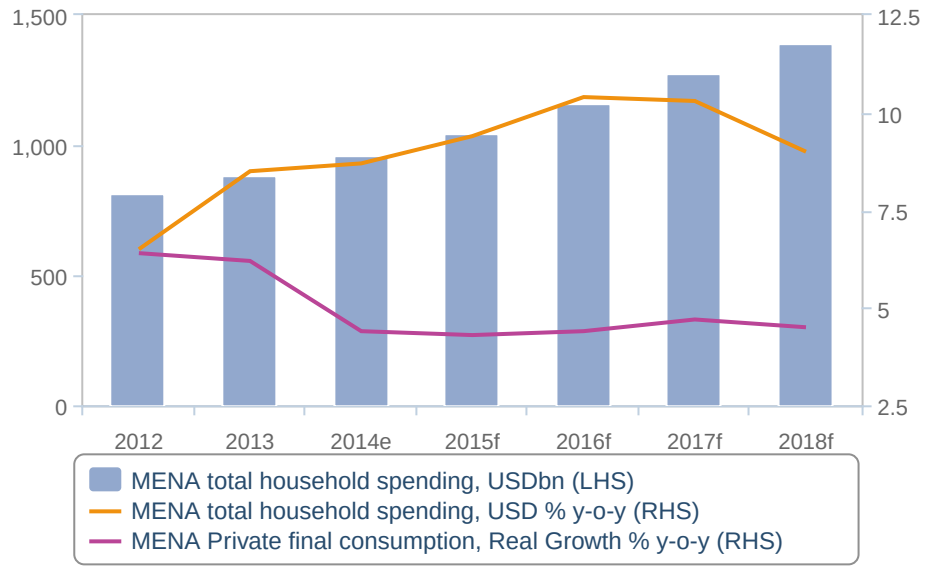
Regional Overview

Souq.com A Well-Established Player

Souq.com claims it is the largest e-commerce site in the Arab world. Founded in 2005, Souq.com is both a retail site and a marketplace for third-party sellers. It has full scale operations in the UAE, Saudi Arabia, Kuwait and Egypt, but also delivers internationally to Qatar, Bahrain, Oman, Jordan and Lebanon. The company sells more than 400,000 products across several categories such as consumer electronics, household good, watches and jewellery and beauty and fashion. Souq.com states that its site has around 23mn visits per month and that it has more than 1,500 employees. In March 2014, the company stated that it aims to reach USD1bn in sales within two years.

E-Commerce To Ride On Rising Spending

Household And Private Consumption Forecasts, 2012-2018



e/f = BMI estimate/forecast. Source: BMI

Souq.com is backed by South African media and internet services giant **Naspers**, which announced a further investment of USD75mn in the company in March 2014. Prior to the latest investment, Naspers already held a 35.8% stake in Souq.com. Since its inception, Souq.com has gathered a total of USD150mn

of funding from Naspers as well as other investors including US-based hedge fund **Tiger Global Management** and **Jabbar Internet Group**.

Souq.com's success in the Middle Eastern e-commerce market hit headlines when it staged a 'White Friday' sale, bringing the famous US Black Friday sales to the Middle East. During its White Friday sale, Souq.com registered 6mn site visits, more than 120,000 orders and sold more than 246,000 items.

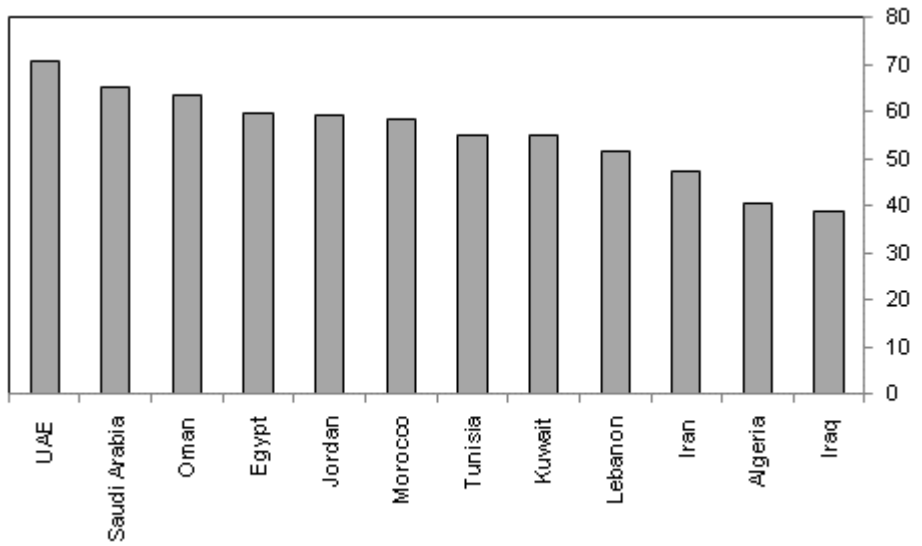
Souq.com's major competitors in the region are **Namshi**, a fashion e-commerce site backed by Germany's **Rocket Internet**, **Jumia** in Egypt, another Rocket Internet venture, and **MarkaVip**, which has operations throughout the GCC and in Jordan and Lebanon.

Souq.com Already Rising Above Industry Challenges

The key challenges to e-commerce business in the Middle East are overcoming consumers lack of trust of online stores and payment systems and poorly developed logistics networks. As illustrated in **BMI**'s Logistics Risk Index below, Souq.com's home market of the UAE has high quality and extensive transport networks which have helped secure its position as regional trade hub for the Middle East. While massive government infrastructure investments will help ease last mile delivery in many GCC countries over the coming years, the quality and reach of transport networks in the Levant and North Africa will remain a key concern for Souq.com as it expands into new markets in the region.

Logistics A Key Challenge Outside GCC

MENA Logistics Risk Index, 2015



Note: Scores out of a possible 100. Source: BMI

However, Souq.com is well on its way to finding solutions to both challenges through its susbsidiary **QExpress**, which specialises in last-mile delivery, and sister company **PayFort**, which provides both online and cash payment solutions to Souq.com and other entities and is also backed by Naspers.

Through Q Express, Souq.com has warehouses in almost every major city in the Persian Gulf and some in Egypt. As well as ensuring quick delivery of items and easier returns, this network of warehouses offers customers the option of returning or collecting items themselves and acts as a physical delivery point for third-party sellers. QExpress also facilitates cash-on-demand payments, operates multi-lingual call centres to field customer enquiries and schedule deliveries, and has delivery tracking tools.

PayFort is one of several secure payment platforms cropping up to respond to low financial inclusion rates and distrust of online payment systems in the Middle East *(see 'Secure Payment Platforms Key To MENA E-Commerce Growth', December 29 2014)*. The company offers several solutions, including secure online payment services, as well as management of cash payment services for businesses, governments and other organisations.

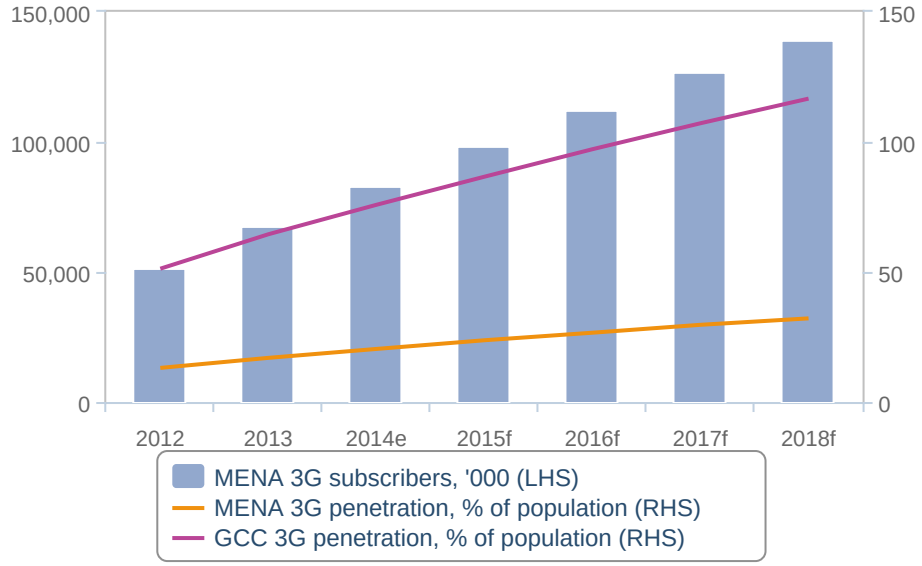
By tackling the main challenges in e-commerce head-on, Souq.com has put itself in a good position to encourage continued growth in its key markets of the UAE, Saudi Arabia and Egypt, while laying the foundation for expansion into more challenging frontier markets such as Algeria, Tunisia, Morocco, Iraq and Iran.

Mobile Data Underpins E-Commerce Opportunity

Souq.com estimates that only 1.5-2% of sales in the Middle East are made online, which indicates enormous room for growth, considering that e-commerce is estimated to account for more than 18% of sales in the US.

Potential Customer Base To Double

3G/4G Growth Forecast, 2012-2018



e/f = BMI estimate/forecast. Source: BMI, operators, regulators

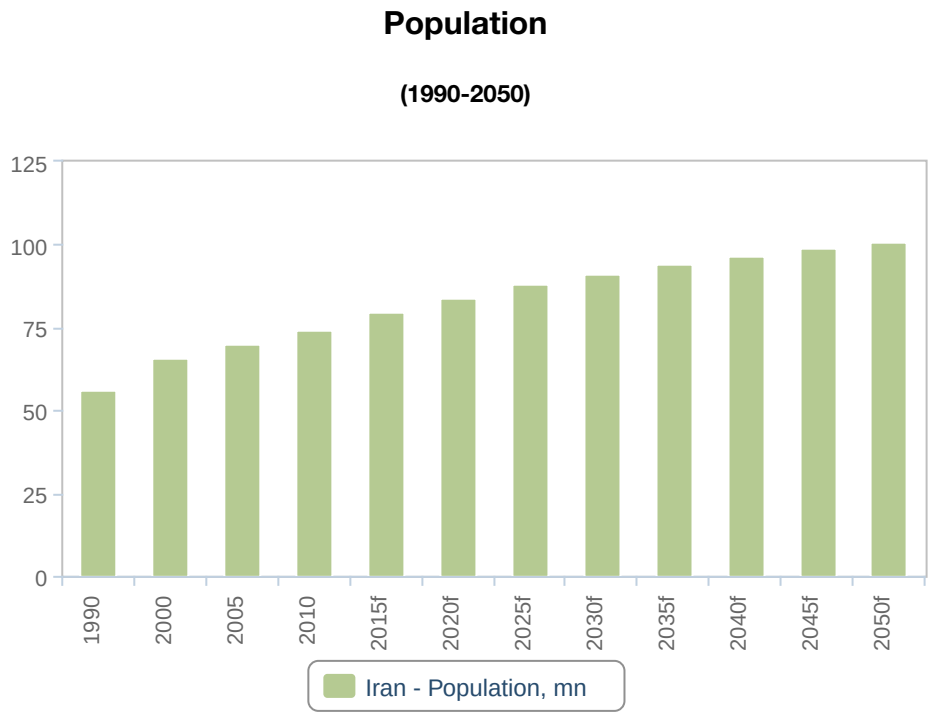
Massive growth in the 3G and 4G mobile data markets across the region will help underpin increased popularity of e-commerce in the Middle East. Algeria, Iraq and Iran have all gained access to 3G for the first time since the beginning of 2014, while in Morocco, Tunisia and Egypt, network investments, falling cost of data services and proliferation of low-cost smartphones are finally pushing faster take-up of 3G

services. Meanwhile, mobile data services will be ubiquitous in the GCC by the end of our forecast period in 2018. **BMI** forecasts the number of 3G and 4G subscribers across the entire MENA region to rise from less than 68mn in 2013 to 140mn by the end of 2018, more than doubling the potential customer base for online retailers.

Demographic Forecast

Demographic analysis is a key pillar of **BMI**'s macroeconomic and industry forecasting model. Not only is the total population of a country a key variable in consumer demand, but an understanding of the demographic profile is essential to understanding issues ranging from future population trends to productivity growth and government spending requirements.

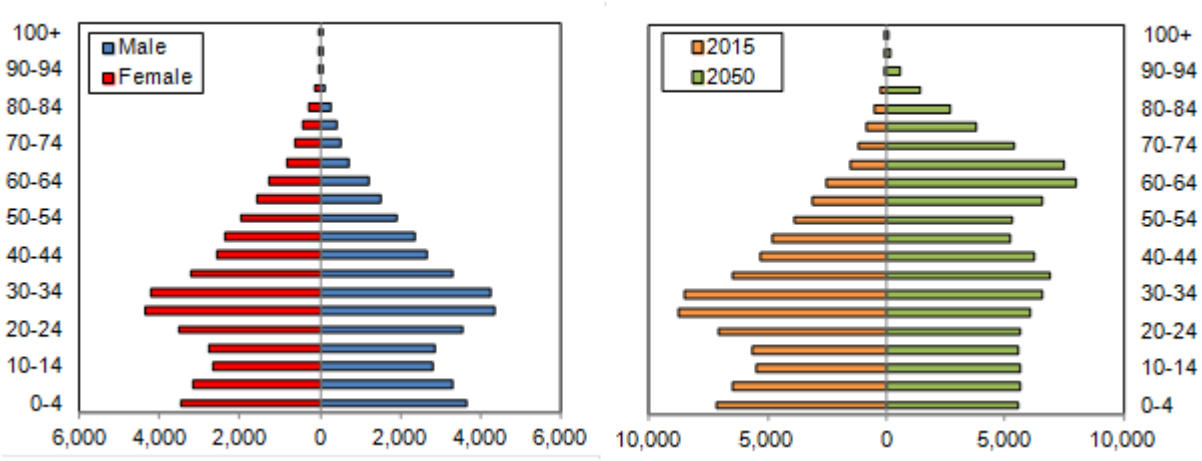
The accompanying charts detail the population pyramid for 2015, the change in the structure of the population between 2015 and 2050 and the total population between 1990 and 2050. The tables show indicators from all of these charts, in addition to key metrics such as population ratios, the urban/rural split and life expectancy.



f = BMI forecast. Source: World Bank, UN, BMI

Iran Population Pyramid

2015 (LHS) & 2015 Versus 2050 (RHS)



Source: World Bank, UN, BMI

Table: Population Headline Indicators (Iran 1990-2025)

	1990	2000	2005	2010	2015f	2020f	2025f
Population, total, '000	56,361	65,911	70,152	74,462	79,476	84,148	88,064
Population, % change y-o-y	na	1.6	1.2	1.3	1.3	1.1	0.8
Population, total, male, '000	28,807	33,504	35,917	37,656	39,915	42,307	44,213
Population, total, female, '000	27,554	32,406	34,235	36,805	39,560	41,840	43,850
Population ratio, male/female	1.05	1.03	1.05	1.02	1.01	1.01	1.01

na = not available; f = BMI forecast. Source: World Bank, UN, BMI

Table: Key Population Ratios (Iran 1990-2025)

	1990	2000	2005	2010	2015f	2020f	2025f
Active population, total, '000	28,945	40,290	48,583	53,034	55,945	58,184	60,945
Active population, % of total population	51.4	61.1	69.3	71.2	70.4	69.1	69.2
Dependent population, total, '000	27,415	25,620	21,569	21,427	23,530	25,964	27,118
Dependent ratio, % of total working age	94.7	63.6	44.4	40.4	42.1	44.6	44.5

Key Population Ratios (Iran 1990-2025) - Continued

	1990	2000	2005	2010	2015f	2020f	2025f
Youth population, total, '000	25,543	22,850	18,115	17,585	19,140	20,362	19,984
Youth population, % of total working age	88.2	56.7	37.3	33.2	34.2	35.0	32.8
Pensionable population, '000	1,872	2,770	3,453	3,841	4,389	5,601	7,134
Pensionable population, % of total working age	6.5	6.9	7.1	7.2	7.8	9.6	11.7

f = BMI forecast. Source: World Bank, UN, BMI

Table: Urban/Rural Population And Life Expectancy (Iran 1990-2025)

	1990	2000	2005	2010e	2015f	2020f	2025f
Urban population, '000	31,748.6	42,210.8	47,393.5	51,332.8	55,362.4	59,374.4	63,078.7
Urban population, % of total	56.3	64.0	67.6	68.9	69.7	70.6	71.6
Rural population, '000	24,613.2	23,700.3	22,758.8	23,129.5	24,113.9	24,774.2	24,985.6
Rural population, % of total	43.7	36.0	32.4	31.1	30.3	29.4	28.4
Life expectancy at birth, male, years	61.2	68.7	70.0	71.3	72.8	74.2	75.5
Life expectancy at birth, female, years	65.8	70.6	73.1	75.1	76.6	78.0	79.2
Life expectancy at birth, average, years	63.4	69.6	71.5	73.1	74.6	76.0	77.3

e/f = BMI estimate/forecast. Source: World Bank, UN, BMI

Table: Population By Age Group (Iran 1990-2025)

	1990	2000	2005	2010	2015f	2020f	2025f
Population, 0-4 yrs, total, '000	9,312	6,316	5,483	6,555	7,146	6,751	6,148
Population, 5-9 yrs, total, '000	8,905	7,552	5,476	5,416	6,507	7,116	6,729
Population, 10-14 yrs, total, '000	7,324	8,981	7,154	5,613	5,487	6,494	7,105
Population, 15-19 yrs, total, '000	5,822	8,800	9,247	7,215	5,643	5,466	6,474
Population, 20-24 yrs, total, '000	4,697	6,932	9,143	8,993	7,067	5,595	5,424
Population, 25-29 yrs, total, '000	4,054	5,315	6,859	8,704	8,726	6,997	5,541
Population, 30-34 yrs, total, '000	3,535	4,442	5,202	6,521	8,484	8,649	6,937
Population, 35-39 yrs, total, '000	3,030	3,886	4,693	5,210	6,497	8,410	8,579
Population, 40-44 yrs, total, '000	2,123	3,372	4,112	4,833	5,262	6,431	8,333
Population, 45-49 yrs, total, '000	1,620	2,857	3,421	4,032	4,757	5,193	6,353

Population By Age Group (Iran 1990-2025) - Continued							
	1990	2000	2005	2010	2015f	2020f	2025f
Population, 50-54 yrs, total, '000	1,526	1,929	2,800	3,244	3,895	4,665	5,101
Population, 55-59 yrs, total, '000	1,393	1,431	1,766	2,637	3,109	3,788	4,548
Population, 60-64 yrs, total, '000	1,140	1,322	1,336	1,639	2,500	2,985	3,652
Population, 65-69 yrs, total, '000	898	1,145	1,257	1,279	1,550	2,340	2,813
Population, 70-74 yrs, total, '000	507	825	1,055	1,129	1,143	1,369	2,090
Population, 75-79 yrs, total, '000	269	508	654	802	876	902	1,105
Population, 80-84 yrs, total, '000	135	203	347	413	528	598	637
Population, 85-89 yrs, total, '000	48	66	112	172	216	290	343
Population, 90-94 yrs, total, '000	10	17	21	38	63	84	119
Population, 95-99 yrs, total, '000	1	2	3	4	8	15	22
Population, 100+ yrs, total, '000	0	0	0	0	0	1	2

f = BMI forecast. Source: World Bank, UN, BMI

Table: Population By Age Group % (Iran 1990-2025)							
	1990	2000	2005	2010	2015f	2020f	2025f
Population, 0-4 yrs, % total	16.52	9.58	7.82	8.80	8.99	8.02	6.98
Population, 5-9 yrs, % total	15.80	11.46	7.81	7.27	8.19	8.46	7.64
Population, 10-14 yrs, % total	13.00	13.63	10.20	7.54	6.90	7.72	8.07
Population, 15-19 yrs, % total	10.33	13.35	13.18	9.69	7.10	6.50	7.35
Population, 20-24 yrs, % total	8.34	10.52	13.03	12.08	8.89	6.65	6.16
Population, 25-29 yrs, % total	7.19	8.06	9.78	11.69	10.98	8.32	6.29
Population, 30-34 yrs, % total	6.27	6.74	7.42	8.76	10.68	10.28	7.88
Population, 35-39 yrs, % total	5.38	5.90	6.69	7.00	8.18	9.99	9.74
Population, 40-44 yrs, % total	3.77	5.12	5.86	6.49	6.62	7.64	9.46
Population, 45-49 yrs, % total	2.88	4.33	4.88	5.42	5.99	6.17	7.22
Population, 50-54 yrs, % total	2.71	2.93	3.99	4.36	4.90	5.54	5.79
Population, 55-59 yrs, % total	2.47	2.17	2.52	3.54	3.91	4.50	5.17
Population, 60-64 yrs, % total	2.02	2.01	1.90	2.20	3.15	3.55	4.15
Population, 65-69 yrs, % total	1.59	1.74	1.79	1.72	1.95	2.78	3.19
Population, 70-74 yrs, % total	0.90	1.25	1.50	1.52	1.44	1.63	2.37
Population, 75-79 yrs, % total	0.48	0.77	0.93	1.08	1.10	1.07	1.26
Population, 80-84 yrs, % total	0.24	0.31	0.50	0.55	0.66	0.71	0.72

Population By Age Group % (Iran 1990-2025) - Continued							
	1990	2000	2005	2010	2015f	2020f	2025f
Population, 85-89 yrs, % total	0.09	0.10	0.16	0.23	0.27	0.34	0.39
Population, 90-94 yrs, % total	0.02	0.03	0.03	0.05	0.08	0.10	0.14
Population, 95-99 yrs, % total	0.00	0.00	0.00	0.01	0.01	0.02	0.03
Population, 100+ yrs, % total	0.00	0.00	0.00	0.00	0.00	0.00	0.00

f = BMI forecast. Source: World Bank, UN, BMI

Glossary

Table: Glossary Of Terms

2G	second generation	GDP	gross domestic product	NGN	next generation network
3G	third generation	GPRS	global packet radio service	Mbps	megabits per second
ADSL	asymmetric digital subscriber line	GSM	global system for mobile communications	MHz	megahertz
ARPU	average revenue per user	HDSL	high-bit-rate digital subscriber line	MNP	mobile number portability
ASP	average selling price	HSDPA	high-speed downlink packet access	MoU	memorandum of understanding
BMI	Business Monitor International	HPSA	high-speed packet access	MOU	minutes of use
bn	billion	HSUPA	high-speed uplink packet access	MPLS	multiprotocol label switching
BTS	base transceiver stations	HTML	hypertext markup language	MSC	mobile switching centre
CDMA	code division multiple access	Hz	hertz	MVNO	mobile virtual network operator
CRM	customer relationship management	ICT	information and communication technology	-	not available
D-AMPS	digital-advanced mobile phone service	IDD	international direct dialling	OIBDA	operating income before depreciation and amortisation
DLD	domestic long-distance	ILD	international long-distance	POP	point of presence
DMB	digital multimedia broadcasting	IPO	initial public offering	R&D	research and development
DSL	digital subscriber line	IP	internet protocol	SaaS	software-as-a-service
DSLAM	digital subscriber line access multiplexer	IPTV	internet protocol TV	SDSL	symmetric digital subscriber line
DSU	digital subscriber unit	ISDN	integrated services digital networks	SIM	subscriber identity module
DTH	direct-to-home	ISP	internet service provider	SMS	short messaging service
DVB-H	digital video broadcasting-handheld	IT	information technology	TDMA	time division multiple access
DVB-SH	digital video broadcasting-satellite handheld	ITU	International Telecommunication Union	TD-SCDMA	time division-synchronous code division multiple access
e/f	estimate/forecast	JV	joint venture	trn	trillion
EBITDA	earnings before interest, taxes, depreciation and amortisation	Kbps	kilobits per second	UMTS	universal mobile telecommunications system
EC	European Commission	KHz	kilohertz	VOD	video on demand

Glossary Of Terms - Continued					
EMEA	Europe, Middle East and Africa	km	kilometres	VoIP	voice over internet protocol
EV-DO	evolution-data optimised	LANs	local area networks	VLAN	virtual local area network
FDI	foreign direct Investment	LEC	local exchange carrier	WAP	wireless application protocol
FTTB	fibre-to-the-building	LTE	long-term evolution	W-CDMA	wideband CDMA
FTTH	fibre-to-the-home	M2M	machine-to-machine	WiBro	wireless broadband
FTP	file transfer protocol	mn	million	WiMAX	worldwide interoperability for microwave access
Gbps	gigabits per second	MEA	Middle East and Africa	WLL	wireless local loop
GPON	gigabit passive optical network	MENA	Middle East and North Africa	WTO	World Trade Organization

Source: BMI

Methodology

Industry Forecast Methodology

BMI's industry forecasts are generated using the best-practice techniques of time-series modelling and causal/econometric modelling. The precise form of model we use varies from industry to industry, in each case being determined, as per standard practice, by the prevailing features of the industry data being examined.

Common to our analysis of every industry, is the use of vector autoregressions. Vector autoregressions allow us to forecast a variable using more than the variable's own history as explanatory information. For example, when forecasting oil prices, we can include information about oil consumption, supply and capacity.

When forecasting for some of our industry sub-component variables, however, using a variable's own history is often the most desirable method of analysis. Such single-variable analysis is called univariate modelling. We use the most common and versatile form of univariate models: the autoregressive moving average model (ARMA).

In some cases, ARMA techniques are inappropriate because there is insufficient historic data or data quality is poor. In such cases, we use either traditional decomposition methods or smoothing methods as a basis for analysis and forecasting.

BMI mainly uses OLS estimators and in order to avoid relying on subjective views and encourage the use of objective views, we use a 'general-to-specific' method. We mainly use a linear model, but simple non-linear models, such as the log-linear model, are used when necessary. During periods of 'industry shock', for example poor weather conditions impeding agricultural output, dummy variables are used to determine the level of impact.

Effective forecasting depends on appropriately selected regression models. **BMI** selects the best model according to various different criteria and tests, including but not exclusive to:

- R^2 tests explanatory power; adjusted R^2 takes degree of freedom into account;
- Testing the directional movement and magnitude of coefficients;
- Hypothesis testing to ensure coefficients are significant (normally t-test and/or P-value);
- All results are assessed to alleviate issues related to auto-correlation and multi-collinearity.

We use the selected best model to perform forecasting.

It must be remembered that human intervention plays a necessary and desirable role in all our industry forecasting. Experience, expertise and knowledge of industry data and trends ensure that analysts spot structural breaks, anomalous data, turning points and seasonal features where a purely mechanical forecasting process would not.

Sector-Specific Methodology

Our Telecommunications industry forecasts are generated using a number of principal criteria, and differ from the regression and/or time-series modelling used in other industries.

- **Average Market Growth**

Indicator takes into consideration the historical growth patterns of the fixed-line, internet, broadband and mobile markets, providing a basis from which to forecast. Using historical data is often the most desirable method of analysis. In most cases, subscriber data are derived from individual operators and/or national regulators.

- **Subjective Indicators**

Indicators look at a number of factors, such as the following:

- Neighbouring/similar states. These types of markets often share similar telecoms markets. For example, Japan and South Korea are both highly developed technophile markets where growth prospects are high in 3G. Meanwhile, China and India both offer high growth in successfully emerging markets.
- Tracking growth. High growth may be more likely to be repeated in the near future, and is unlikely to turn into a significant decline in the short term, although there may be exceptions to this rule.
- Market maturity. Where markets have reached saturation, they are not likely to expand as fast as those that are less developed.
- Competition from alternative technologies, such as VoIP versus fixed-line, ADSL versus mobile broadband.
- Operator behaviour. Operators' corporate strategies and investment behaviour may dictate changes in the telecommunications market. This is similarly the case for regulatory developments, which have been accounted for in our integration of the Telecommunications Risk/Reward Index.

Sources

Sources used in telecoms reports include national ministries and media/telecoms regulatory bodies, officially released company results and figures, national and international industry organisations, such as the CTIA, the GSM Association and the International Telecommunication Union (ITU) and international and national news agencies.

Risk/Reward Index Methodology

BMI's Risk/Reward Index (RRI) provide a comparative regional ranking system evaluating the ease of doing business and the industry-specific opportunities and limitations for potential investors in a given market.

The RRI system divides into two distinct areas:

Rewards: Evaluation of sector's size and growth potential in each state, and also broader industry/state characteristics that may inhibit its development. This is further broken down into two sub categories:

- Industry Rewards. This is an industry specific category taking into account current industry size and growth forecasts, the openness of market to new entrants and foreign investors, to provide an overall score for potential returns for investors.
- Country Rewards. This is a country specific category, and the score factors in favourable political and economic conditions for the industry.

Risks: Evaluation of industry-specific dangers and those emanating from the state's political/economic profile that call into question the likelihood of anticipated returns being realised over the assessed time period. This is further broken down into two sub categories:

- Industry Risks. This is an industry specific category whose score covers potential operational risks to investors, regulatory issues inhibiting the industry, and the relative maturity of a market.
- Country Risks. This is a country specific category in which political and economic instability, unfavourable legislation and a poor overall business environment are evaluated to provide an overall score.

We take a weighted average, combining industry and country risks, or industry and country rewards. These two results in turn provide an overall Risk/Reward Index, which is used to create our regional ranking system for the risks and rewards of involvement in a specific industry in a particular country.

For each category and sub-category, each state is scored out of 100 (100 being the best), with the overall Risk/Reward Index a weighted average of the total score. Importantly, as most of the countries and

territories evaluated are considered by **BMI** to be 'emerging markets', our score is revised on a quarterly basis. This ensures that the score draws on the latest information and data across our broad range of sources, and the expertise of our analysts.

Indicators

The following indicators have been used. Overall, the index uses three subjectively measured indicators, and around 20 separate indicators/datasets.

Table: Risk/Reward Index Indicators

	Rationale
Rewards	
Industry Rewards	
- ARPU	Denotes depth of telecoms market. High-value markets score better than low-value ones.
- No. of subscribers	Denotes breadth of telecoms market. Large markets score higher than smaller ones.
- Subscriber growth, % y-o-y	Denotes sector dynamism. Scores based on annual average growth over our five-year forecast period and also take into account the penetration rate.
- No. of operators	Subjective evaluation against BMI-defined criteria. Evaluates market openness and competitiveness.
Country Rewards	
- Urban/rural split	A highly urbanised state facilitates network rollout and implies higher wealth. Predominantly rural states score lower, with overall score also affected by country size.
- Age range	Proportion of population under 24 years old. States with young populations tend to be more attractive markets.
- GDP per capita, USD	A proxy for wealth. High-income states receive better scores than low-income states.
Risks	
Industry Risks	
- Regulatory independence	Subjective evaluation against BMI-defined criteria. Evaluates predictability of operating environment.
Country Risks	
- Short-term external risk	Score from BMI's Country Risk Index(CRI). Denotes state's vulnerability to externally induced economic shock, which tend to be the principal triggers of economic crises.
- Policy continuity	From CRI. Evaluates the risk of a sharp change in the broad direction of government policy.
- Legal framework	From CRI. Denotes strength of legal institutions in each state - security of investment can be a key risk in some emerging markets.

Risk/Reward Index Indicators - Continued	
	Rationale
- Corruption	From CRI. Denotes risk of additional illegal costs/possibility of opacity in tendering/ business operations affecting companies' ability to compete.

Source: BMI

Weighting

Given the number of indicators/datasets used, it would be inappropriate to give all sub-components equal weight. Consequently, the following weighting has been adopted:

Table: Weighting Of Indicators	
Component	**Weighting, %**
Rewards	70, of which
- Industry Rewards	65
- Country Rewards	35
Risks	30, of which
- Industry Risks	40
- Country Risks	60

Source: BMI