

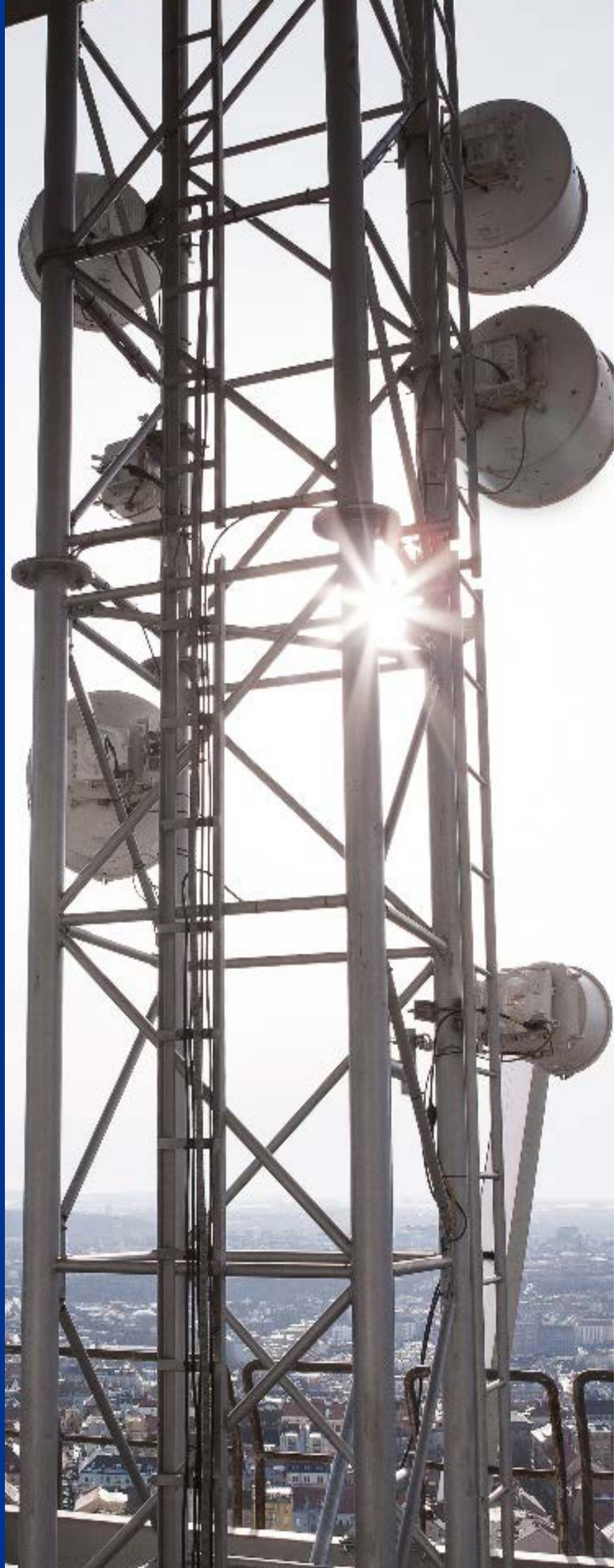


Telenor's Global Impact

A Quantification of Telenor's Impact on the Economy and Society

Final KPMG Report

7 November 2016



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1 Overview of Telenor's socio-economic impact in its 13 markets in 2015



GROSS VALUE ADDED (GVA)

\$20.3 billion

in direct, indirect and induced GVA in 2015.



EMPLOYMENT

1.2 million employees

comprising direct, indirect and induced employees in 2015.



INVESTMENT

\$3.2 billion

of total investment in 2015, including **\$3.1 billion** of capital expenditure.



FISCAL CONTRIBUTIONS

\$11.7 billion

comprising contributions directly, through the supply chain and induced activity, and through employees in 2015.



DIGITAL INCLUSION

\$8.0 billion

estimated net GDP contribution through greater digital access (2G and the shift to 3G and 4G) between 2014 and 2015.



FINANCIAL INCLUSION

11.8 million subscribers

accessed financial transactions via mobile in 2015.

\$27.6 billion

in financial transactions in 2015 using Telenor's network, including **\$1.1 billion** in transactions using Telenor's mobile money services as well as **\$7.8 billion** in Over the Counter financial transactions using Telenor's financial services including Easypaisa.



GENDER

13,000 female employees

directly employed by Telenor in 2015 (approximately 36% Telenor direct employees).

\$3.1 billion

of the estimated \$8.0 billion net GDP contribution across all subscribers between 2014 and 2015 from greater digital access attributed specifically to female subscribers.



SUPPLY CHAIN SUSTAINABILITY

2.1 million employees

benefitting from working for companies with high standards of labour rights and working conditions, following Telenor's supply chain sustainability policy in 2015.

2 Introduction

2.1 Telenor and its role in the global telecommunications market

Telenor is one of the largest 500 companies globally by market value¹.

It was founded in Norway in 1855 when the first Norwegian telegraph line was opened by the Norwegian Telegraph Administration (Telegrafverket)². It is now an international provider of tele, data and media communication services, operating mobile services in 13 markets across the Nordics, Central and Eastern Europe and Asia and fixed telecommunication services in Norway.³

Telenor's international expansion of operations has happened relatively recently in its history. For example, Telenor:

- launched operations in Bangladesh in 1997;
- launched operations in Thailand and Denmark in 2000;
- became the majority owner in Malaysia's Digi in 2001;
- purchased an initial licence in Pakistan in 2004;
- launched in Sweden and Serbia in 2006;
- acquired the second largest mobile operator in Bulgaria, GLOBUL, in 2013; and
- signed an agreement with the Union Government of Myanmar for a nationwide telecommunications licence in 2014.

As of end 2015, Telenor had nearly 203 million connections with over 185 million unique subscribers across its 13 markets, approximately 4% of all global mobile telecoms subscribers.

Its expansion has resulted in a substantial contribution by Telenor to rising global mobile penetration rates and increased coverage of 3G and 4G services. The GSMA⁴ estimates that in Q4 2015 there were 4.6 billion unique subscribers globally, which is expected to rise at a compound annual growth rate (CAGR) of 3.9% between 2015 and 2020 to reach approximately 5.6 billion global unique subscribers (almost 75% of the world's population).

As the largest mobile operator in Norway, Montenegro, Hungary, Malaysia, Myanmar and Bangladesh in terms of connections, the second largest operator in Serbia, Denmark, Bulgaria, Pakistan, and Thailand in terms of connections, and with operations in Sweden and India, Telenor is expected to make a significant contribution to this growth.

Although mobile telephony use continues to grow globally, the growth is expected to slow as many markets, particularly in developed countries, reach saturation. However, the accelerating technology shift towards 3G and 4G and increasing digitisation across most industry sectors is changing the dynamics of the market and connectivity is of increasing importance and value.

Telenor has played a part in this technological movement. In 2015, LTE (a 4G communications standard) network services were launched in Bulgaria and expanded across markets including

¹ Financial Times, Global 500, 2015.

² In 1969 the Norwegian Telegraph Administration changed its name to Norwegian Telecommunications (Televerket), becoming Telenor in 1995 after another name change.

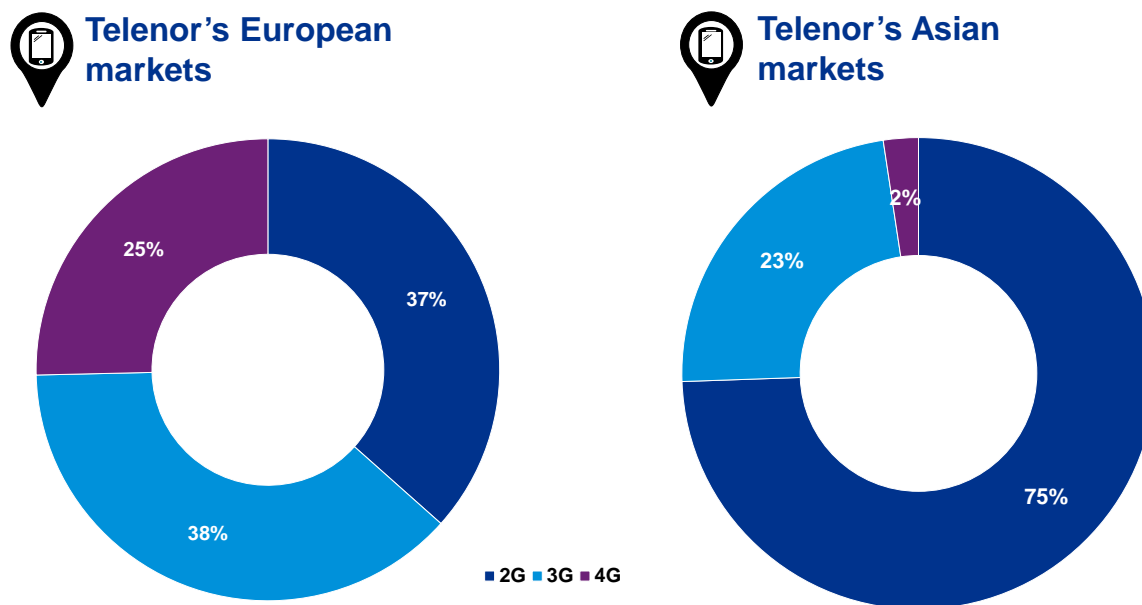
³ Telenor is also present in 14 further markets through ownership of VimpelCom Ltd. Telenor has an interest of 33% in VimpelCom Ltd. VimpelCom Ltd provides mobile services in Russia, Ukraine, Kazakhstan, Uzbekistan, Tajikistan, Armenia, Georgia, Kyrgyzstan, Laos, Algeria, Bangladesh, Pakistan, Zimbabwe and Italy.

⁴ GSMA, The Mobile Economy 2016.

Norway, Malaysia and Thailand. And after launching services in Myanmar in late 2014, Telenor Myanmar experienced a 347% increase in its 3G connections, which is the highest increase across all Telenor markets in 2015.

Across all markets, on average, Telenor's 3G services reach over 40% of the population, with 4G reaching 7%.

Figure 1: Telenor connections split by 2G/3G/4G, 2015



Source: Telenor data

The expansion of 3G and 4G networks and increased smartphone penetration is enabling societies to be more connected and access a wider range of digital services. In 2015, 588,387 terabytes of data was used on Telenor's network in Asia and 256,634 terabytes of data was used on Telenor networks in Europe. This means a total of 845,020 terabytes of data was used across all 13 Telenor markets, giving an average of 1.4GB of data used per subscriber per month.

Data usage is growing exponentially, particularly in developed markets. It is forecast that data traffic volumes will grow by 49% a year between 2015 and 2020⁵. In Europe, the average subscriber will consume 12 GB of mobile data per month by 2020⁶.

Analysis from Cisco suggests that each percentage point increase in 4G adoption leads to approximately a 2% increase in forecast data usage over the next 5 years⁷. Therefore, as Telenor continues to expand its 4G networks across its markets, the value associated with customers' increased data usage is also likely to grow.

In addition to Telenor's telephony and broadcast services, it has substantial activities in the subsidiaries and joint venture operations that form part of the Telenor Group business. These include:

- Telenor Connexion, a global provider of connected business solutions, which develops connected solutions that fully leverage the opportunities of digital technology. These include Machine-to-Machine (M2M) and Internet of Things (IoT) solutions, cloud service solutions and managed connectivity.

⁵ GSMA, The Mobile Economy 2016

⁶ GSMA, The Mobile Economy 2016

⁷ GSMA, Asia Pacific Mobile Economy 2015.

- Telenor Global Wholesale, an international mobile carrier focusing on wholesale voice and data services and mobile and connectivity services such as GSM Roaming Signalling and LTE Roaming Exchange.
- Telenor Maritime, a global maritime telecommunications operator focused on providing communications solutions specially created to fulfil the requirements of the shipping industry. It provides connectivity via personal mobile phones to both passengers and crew on board cruise-ships, ferries and other vessels worldwide.
- Telenor Digital Businesses, a unit that seeks investment opportunities that have synergies with Telenor's existing businesses⁸. Telenor entered the AdTech industry in 2016 through the acquisition of New York-based Tapad Inc., a cross device marketing company.

These additional services help to support and develop the core business of Telenor and expand the range of communication and connectivity services available to its global customer base.

As we continue to move towards a digitised world with greater demand for data connectivity, high speeds and greater capacity, Telenor plans to evolve into an increasingly digital company with a broader set of products and services, rooted in its core telecoms operations.

2.2 About the study

Telenor commissioned KPMG United Kingdom Plc (KPMG) to conduct an independent study assessing a number of the economic and social impacts it has across the 13 markets in which it directly operates.

The economic framework we have applied to assess these impacts captures a wide range of different effects, reflecting the way in which Telenor as a company contributes to the economy, as well as the wider impacts generated through the use of its services by its business and consumer subscribers. The study does not attempt to measure all possible social and economic impacts, positive and negative, of Telenor's business. The environmental impacts of Telenor's activities and services are also not included within the scope of this report.

The socio-economic effects captured in this study were agreed with Telenor at the outset of the project based on the areas where it was possible to quantify its impacts and with a focus on the key areas that Telenor considers it has an important impact. These include⁹:

- **Gross Value Added (GVA) contribution:** the total GVA impact of Telenor's operations, split by direct¹⁰, indirect¹¹ and induced¹² GVA.
- **Employment contribution:** the total employment in full time equivalent (FTE) terms generated by Telenor's operations, split by direct, indirect and induced employment.
- **Investment:** the level of investment, including capital expenditure (capex), made by Telenor and its capex intensity (capex as a proportion of direct GVA).
- **Fiscal contributions:** the total fiscal contributions to governments generated by Telenor in each market, split by the direct fiscal contributions, the fiscal contributions made through the supply chain and induced economic activity and employees' fiscal contributions.
- **Digital inclusion:** the net GDP contribution generated by use of Telenor services through the increase in mobile penetration overall and 3G and 4G penetration.

⁸ Telenor, Telenor Digital Businesses. Accessed at <https://www.telenor.com/about-us/our-business/our-growth-areas/>

⁹ Details of the methodology to estimate each of the impacts is set out in detail in Appendix 1.

¹⁰ Direct GVA measures Telenor's economic output relative to its inputs. It is calculated using the following formula: GVA=Revenues less cost of bought in goods and services

¹¹ Indirect GVA captures the wider economic activity that is generated through Telenor's spending with suppliers.

¹² Induced GVA captures the additional economic activity that is generated as a result of Telenor's direct and indirect employees.

- **Financial inclusion:** the value of mobile money transactions that are enabled by Telenor's network, including Telenor's own mobile money and Over the Counter (OTC) services offered in some of its markets.
- **Entrepreneurship and innovation:** the role Telenor plays in boosting entrepreneurship and innovation in its markets of operation through provision of its services and a range of specific initiatives.
- **Gender equality:** Telenor's own efforts to improve gender equality in its workforce and the net GDP contribution generated by females' use of Telenor services through the increase in mobile penetration overall and 3G and 4G penetration.
- **Responsible supply chain:** the number of employees in Telenor's supply chain working for companies with high standards of labour rights and working conditions, following Telenor's Supplier Conduct Principles.
- **Contribution in emergency situations:** Examples of the role Telenor has played in disaster situations in a number of its markets.

The methodology employed to measure each, and the results of our analysis, are set out in sections 4 to 6 of this report and in Appendix 1.

We report the contributions to the economy and society that Telenor makes in each individual country as well as in aggregate for Telenor as a whole across its 13 markets and for Europe and Asia. We capture the in-market contributions of Telenor in each country, excluding the 'leakage' of contributions to other markets, for example, those arising from purchasing from overseas suppliers. Therefore, the full global impact of Telenor is not captured, only the impact retained in each of the 13 markets in which it operates.

Our analysis primarily relates to the socio-economic impacts generated in 2015. This presents a snapshot in time view of the value that Telenor added within this single year and does not consider the longer term future impacts of any of its activities or the socio-economic contributions realised in previous years and accrued over time.

Our analysis is based on a range of data sources including Telenor internal data, external published data such as from National Statistical Agencies, the International Monetary Fund (IMF), World Bank and GSMA Intelligence and existing published research and analysis. A full list of sources is provided in Appendix 1.

3 Driving macro-economic growth

3.1 Introduction

Promoting sustainable, economic growth is a key goal for virtually all governments and for a wide range of international institutions such as the IMF, the United Nations (UN) and the World Bank. As economies continue to recover from the global financial and economic crises, jobs, growth and investment are priorities in many countries.

For developing countries, economic growth can be a powerful tool for reducing poverty and improving quality of life through the virtuous circles of prosperity and opportunity it can generate. Indeed, one of the UN's Sustainable Development Goals is to promote inclusive and sustainable economic growth, employment and decent work for all¹³.

Telenor plays an important role in contributing to economic growth in each of the 13 markets in which it operates. Its activities generate economic growth both directly and through its supply chain and the spending of its, and its suppliers', employees.

Telenor also supports employment, again both directly in its own company and more widely in the economy, for example, through its supply chain. The creation and safeguarding of jobs is particularly important where there is underemployment, as there is in several countries in which Telenor operates. And the generation of skilled jobs in higher value-adding sectors, such as telecommunications, also helps to support higher levels of economic productivity and growth.

Telenor also adds value in the economies in which it operates by making substantial investments in its business. Investment activity is an important determinant of economic contribution and is recognised as an important driver of growth¹⁴.

And the fiscal contributions Telenor makes, directly and those generated more widely through its, and its employees' spending, support governments' provision of vital public services and infrastructure.

We capture Telenor's economic contributions in each of these four areas:

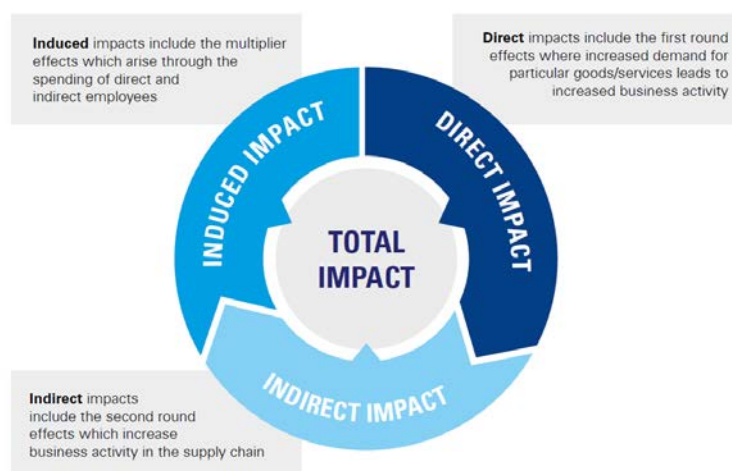
- the total GVA impact of Telenor's operations;
- the total employment generated by Telenor;
- the investment made by Telenor; and
- the total fiscal contributions made to government generated by Telenor.

Our analysis of economic contributions typically quantifies three main categories of impacts – direct, indirect and induced.

¹³United Nations, Goal 8: Promote inclusive and sustainable economic growth, employment and decent work for all. Accessed at <http://www.un.org/sustainabledevelopment/economic-growth/>

¹⁴ Fatás and Mihov 2009, Investment in terms of physical capital, human capital and R&D. The 4 I's of Economic Growth. Accessed at <http://faculty.insead.edu/fatas/wall/wall.pdf>

Figure 2: Direct, indirect and induced GVA impacts



3.2 The contribution of Telenor to GVA

3.2.1 Approach to estimating Telenor's GVA contribution

Gross Value Added, or GVA, is the measure of the contribution to the economy of an individual producer, industry or sector, net of intermediate consumption. It estimates the difference between the value of goods and services produced and the cost of the inputs, such as raw materials, used to create those goods and services.

A nation's gross domestic product (GDP) is the sum of the GVA of all economic agents in any economy, plus taxes less subsidies. Therefore, the more GVA firms contribute, the more output an economy can be expected to generate. GDP growth translates, generally speaking, into higher wages, better returns for investors, and more money for governments to spend on public services. It is a key indicator of economic wellbeing.

We measure three components of the GVA created by Telenor: direct GVA; indirect GVA and induced GVA.

Direct GVA essentially measures Telenor's economic output relative to its inputs¹⁵.

Telenor's indirect GVA captures the wider economic activity that is generated through its spending with suppliers. It is estimated using detailed internal Telenor data on supplier spending and economic multipliers¹⁶ which have been derived from national input-output tables¹⁷ for each market¹⁸.

The induced GVA captures the additional economic activity that is generated as a result of Telenor's direct and indirect employees¹⁹ spending a proportion of their wages in the local economy.

An explanation of how each element of GVA has been calculated is set out in Appendix 1.

¹⁵ GVA = Revenues less cost of bought in goods and services

¹⁶ Economic multipliers capture the wider economic activity that is generated by sector for every \$1 of GVA generated by Telenor. These have been calculated by KPMG using externally sourced input-output tables.

¹⁷ An input-output table provides a detailed analysis of the process of production and the use of goods and services (products) and the income generated in that production. They describe the sale and purchase relationships between producers and consumers within an economy, at industry level.

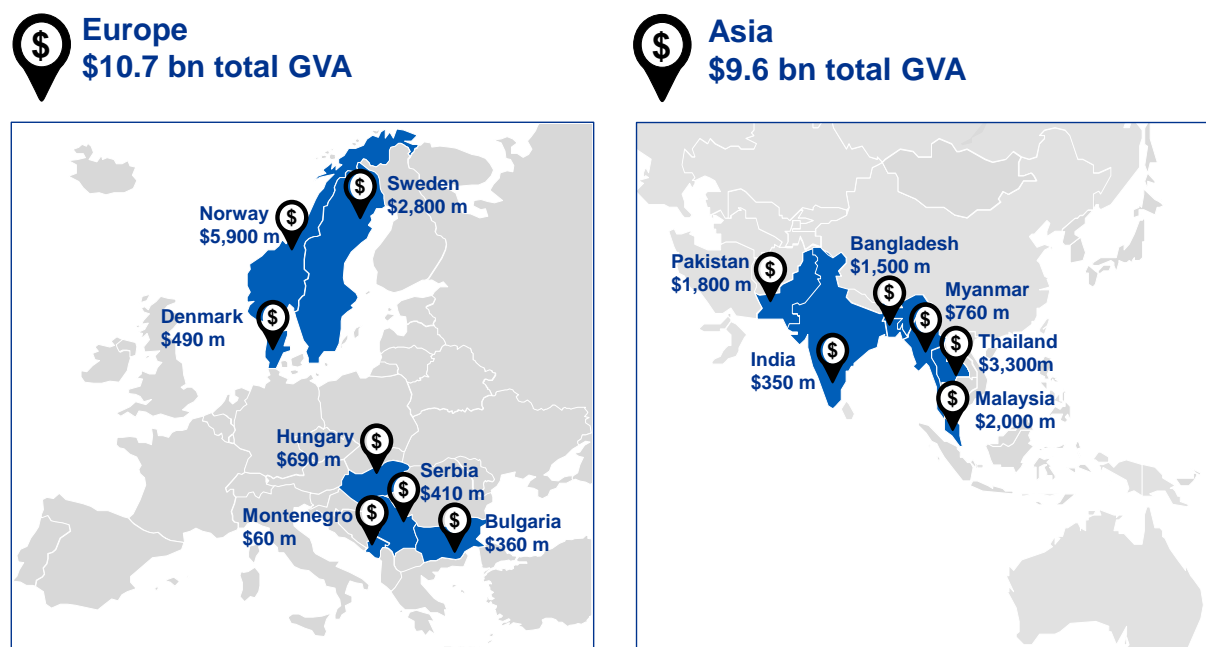
¹⁸ Input output tables were sourced from Eora for Bangladesh, Bulgaria, India, Myanmar, Montenegro, Pakistan, Serbia, Thailand. Input-output tables for Sweden, Malaysia, Denmark, Norway and Hungary were sourced from the relevant country National Statistical Agency.

¹⁹ Indirect employees are those in the supply chain of Telenor.

3.2.2 Telenor's GVA contribution

In 2015, Telenor generated an estimated \$20.3 billion in GVA across its 13 markets. Of this, an estimated \$10.7 billion was generated in Europe and \$9.6 billion in Asia²⁰.

Figure 3: Telenor GVA contribution 2015, US Dollars



Source: KPMG analysis

Of Telenor's GVA contribution across the 13 countries, \$7.0 billion of the total GVA was generated by Telenor directly (i.e. in its own operations), \$7.7 billion was generated indirectly through its supply chain and a further \$5.7 billion was generated through the induced economic activity arising from its, and its suppliers' employees' spending of their wages.

This means that for every \$1 of GVA that Telenor generated directly through its operations, it generated an estimated further \$1.9 of GVA across the wider global economy.

Telenor's largest GVA impact was in Norway where it is headquartered, where approximately \$5.9 billion was generated in 2015. This is nearly a third of Telenor's total global GVA and over half of the total GVA generated by Telenor in Europe.

Telenor Norway is the largest telecommunications company in Norway and in 2015 contributed approximately 1.5% of Norway's total economic output. Telenor is the second largest company in Norway in terms of revenues²¹. It also accounted for over 15% of Norway's total Information and Communication sector GVA for 2015²².

²⁰ The indirect employment figures for India may be conservative as detailed Telenor supplier spending data was not available for the analysis.

²¹ News in English, Statoil still dominates new DN500, July 2016. Accessed at <http://www.newsinenglish.no/2016/07/14/statoil-still-dominates-new-dn500/>

²² Statistics Norway, Value added by kind of main activity at basic values, accessed August 2015

Telenor Case Study: Information and Communication Technology (ICT) as a motor for productivity growth in Norway

A report by NyAnalyse and Samfunnsøkonomisk Analyse estimated that almost 50% of productivity growth in Norway is as a result of investment in ICT.

The report, commissioned by Telenor, estimates that between 2006 and 2014, both direct and indirect ICT investment contributed 47% of the growth in productivity. Prior to this, in the period from 1995 to 2005, the contribution is estimated to be less at 30%, despite faster growth of the ICT sector over this period.

The Head of NyAnalyse, Terje Strøm, said:

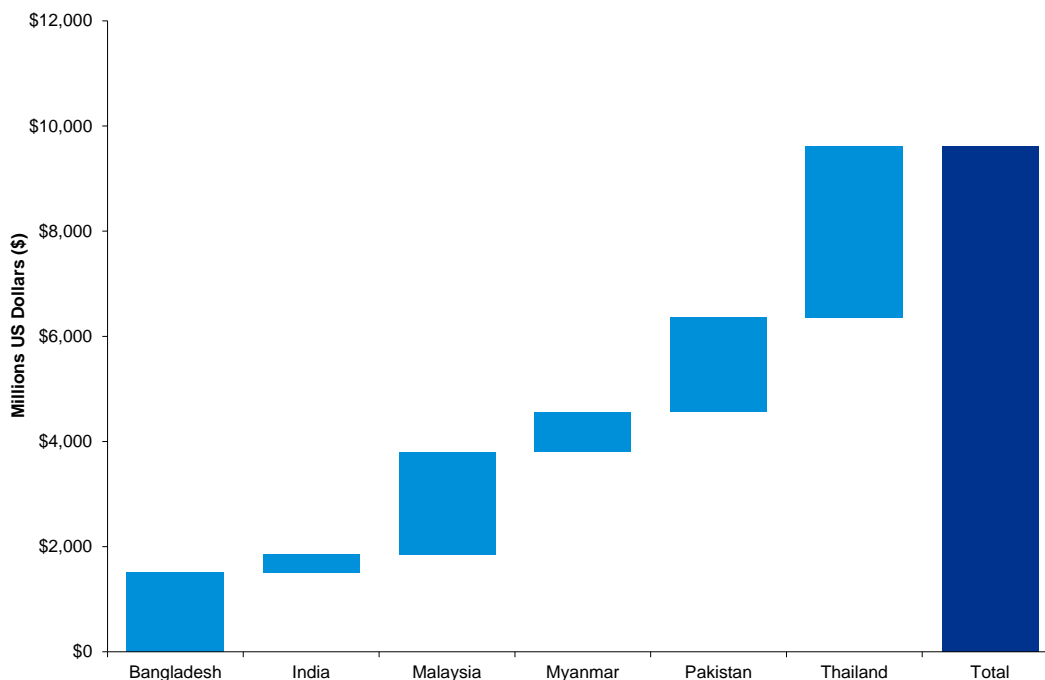
“In a situation [in Norway] where we have an increasing number of elderly people and fewer people in work, while the oil and gas industry is currently in decline, we must better exploit new technology. We must use our heads and hands effectively with new Technology and smarter municipalities. This study clearly shows that ICT investment can be the key to continued growth in productivity in Norway”.

The second highest economic contribution across Telenor's European markets was made by Telenor Sweden, with a total GVA of approximately \$2.8 billion in 2015. This is comprised of a direct GVA of \$694 million, \$1.1 billion of indirect GVA and \$1.0 billion of induced GVA. This represents around 13% of total GVA generated by the Swedish telecoms industry in 2015.

Even in Montenegro, where the GVA contribution was the lowest in the Telenor Group, given the relatively small size of the Montenegrin economy, Telenor's total GVA impact of \$60 million accounted for almost 22% of the total GVA of the Information and Communication sector and 1.9% of the country's total GVA.

Across its Asian markets, Telenor's total GVA impact was \$9.6 billion in 2015. Of this, \$3.3 billion was direct GVA, \$4.2 billion of indirect GVA generated through the supply chain and a further \$2.1 billion of induced GVA through the spending of its and its suppliers' employees earning spending.

Figure 4: Total GVA in Asia by market, 2015



Source: KPMG analysis



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Telenor's largest GVA contribution in Asia was in Thailand where Telenor is the second largest mobile operator by number of connections with 24.7 million connections²³. Its substantial supply chain within Thailand means that the vast majority of its economic impact is retained within the country²⁴. This means that its supply chain contributes \$2.3 billion to Telenor Thailand's total GVA of \$3.3 billion. And Telenor Thailand's total GVA contribution in 2015 accounted for nearly 0.8% of the total GVA generated in the country.

Telenor also added considerable value in other Asian markets. In Pakistan, the vast majority of the economic activity generated by Telenor was retained within the country, as 95% of total supplier spending in 2015 was with suppliers based in Pakistan. Another example is in Bangladesh where, for example, its direct GVA contribution in 2015 of \$802 million, accounted for over 30% of the GVA contribution of the entire Information and Communication sector.

3.3 The employment impact of Telenor

3.3.1 Overview of approach to estimating Telenor's employment contribution

Telenor directly employs people within each of its 13 markets.

Additional employment is also generated by Telenor through Telenor's spending with its suppliers. In many markets, Telenor uses an outsourced operational model, relying more heavily on suppliers. In these instances, it could be expected that its indirect employment creation, relative to direct employment, is more significant.

Finally, Telenor contributes to employment through the additional economic activity that is generated through its direct and indirect employees spending a proportion of their wages in the local economy.

An explanation of how we have calculated these three elements of Telenor's employment impact are set out in Appendix 1.

3.3.2 Telenor's direct employment contribution

Telenor considers that its people and culture are its strongest competitive advantage and seeks to build teams with the skills and means to collaborate and innovate. Aiming to attract talent with a digital mind set and competence is part of Telenor's continued effort to transition in to a more expertise-driven company.²⁵

As at year-end 2015, Telenor directly employed 35,939 full time equivalent (FTE) people across its 13 markets. Its total headcount at year-end 2015 was 37,661 employees.

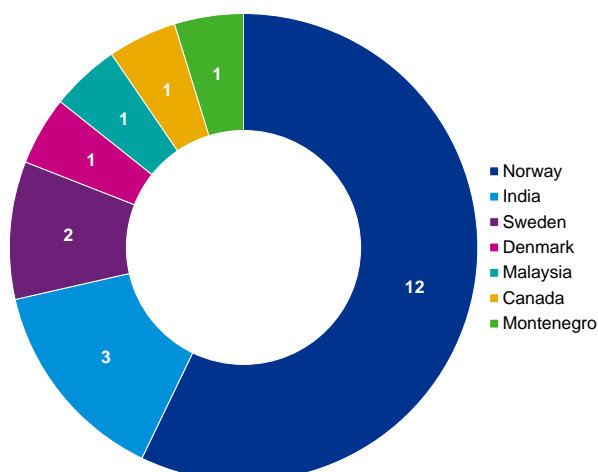
Although a Norwegian company, Telenor recruits locally in each of the 13 markets in which it operates. Approximately 96.8% of employees on average are nationals of the Telenor market in which they are employed. Even at the Executive Management level of Telenor, there is a diversity of nationalities.

²³ GSMA Intelligence, Q3 2016 connections, accessed October 2016

²⁴ 90% of Telenor in Thailand's supplier spending in 2015 was with domestic suppliers.

²⁵ Telenor Annual Report 2015. Accessed at <https://www.telenor.com/wp-content/uploads/2016/04/iPDF-Annual-Report-2015.pdf>

Figure 5: Nationalities of executive management²⁶, by number of people



Source: Telenor Annual Report 2015

Telenor's female employment and contribution toward gender equality through its own employment and the use of its services is explored in Section 5.5 of this report.

A range of initiatives are in place across Telenor aimed at attracting diverse talent. For example, Telenor operates its Telenor Open Mind and Telenor Integration programmes to support people with disabilities and minority groups with higher education to enter employment. These include internship programmes with active coaching and mentoring to support individuals. And in Sweden, Denmark, Norway, Pakistan and Bangladesh, Telenor ran trainee programmes in 2015 targeting top talent among graduate students from diverse educational backgrounds.

Telenor Case Study: Telenor Serbia named as "Best Employer"

According to Serbia's most visited and leading website for employment Infostud²⁷, Telenor has been one of the top three most attractive companies to work for in Serbia for the last three years.

In 2014, Infostud named Telenor as the best employer in Serbia²⁸. Following this, at the end of 2015 the Serbian Association of Managers (SAM) named Telenor as the "Employer of the Year"²⁹. In addition, Telenor received the Talent Management Award from Stanton Chase in 2015³⁰.

Telenor considers that its investment in employees' learning and development is a key contributor to it being considered as one of the country's best employers. In 2015, Telenor Serbia employees spent an average of approximately 30 hours in training in both specific know-how and skills and in soft skills that help them to work together more efficiently.

"These are recognitions for all of us at Telenor, for our way of working and culture. With investments in the development of new competences and nurturing talents, the position of the best employer helps us attract the best digital experts on the market, which will enable us to achieve ambitious transformation goals", says Nevena Stefanović, Chief Human Resource Officer of Telenor Serbia.

Around 32% of Telenor Serbia's employees at the end of 2015 had worked at Telenor Serbia for more than 10 years, almost a third of its total employees.

²⁶ Telenor Annual Report 2015. Accessed at <https://www.telenor.com/wp-content/uploads/2016/04/iPDF-Annual-Report-2015.pdf>

²⁷ Jobboard Finder, Poslovi Infostud Job Site, accessed at https://www.jobboardfinder.net/jobboard-poslovi_infostud-serbia

²⁸ Poslovi Infostud, A lot of research is complete: Who are the most desirable employers in Serbia? Accessed at <https://poslovi.infostud.com/vesti/Veliko-istrazivanje-zavrшено-Ko-su-naipozeljniji-poslodavci-u-Srbiji/51618>

²⁹ Telenor Foundation, Report on Sustainable Business Operations, 2015. Accessed at <https://www.telenor.com/wp-content/uploads/2015/04/Telenor-Serbia-Sustainability-Report-2015-ENG.pdf>

³⁰ Stanton Chase, Executive Newswire, March 2016. Accessed at <https://stantonchasebelgrade.files.wordpress.com/2016/03/newswire-br-12.pdf>

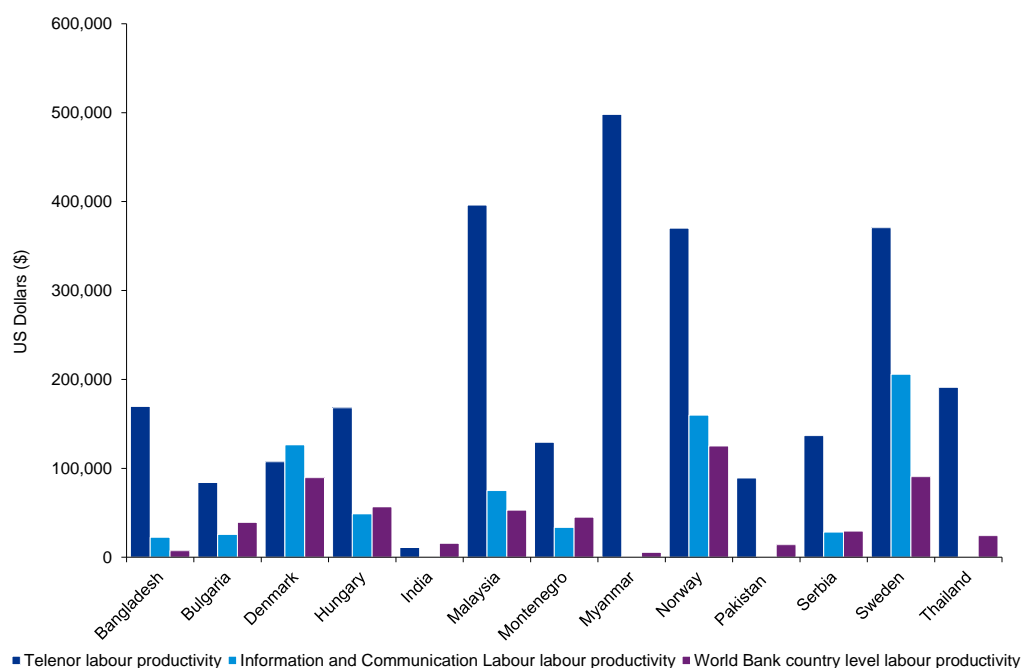
3.3.3 Telenor's labour productivity

By employing skilled workers, Telenor helps to contribute to improved labour productivity in the countries in which it operates.

Skilled workers tend to generate a greater economic output than unskilled ones. By supporting a skilled workforce, Telenor is able to achieve a higher GVA per direct FTE employee than the average in the countries in which it operates. Its workers are also more productive than the Information and Communication sector³¹ average in 8 of its 13 markets in which it operates and sometimes substantially so.

Figure 6 shows Telenor's GVA per FTE employee in its 13 countries, which ranges from \$11,058 in India to \$498,016 in Myanmar.

Figure 6: Telenor productivity and country level productivity³²



Source: KPMG analysis, International Labour Organisation, National statistics

To further enhance the productivity of its staff, Telenor operates a range of learning programmes for its employees. It runs an online learning platform providing all its employees with access to a comprehensive library of learning content. It also has dedicated learning academies for Telenor's leaders and experts.

³¹ Information and Communication sector employment has been sourced from each countries relevant National Statistical Agency. Not all information was available for 2015. The Information and Communication sector employment figures are 2014 for Thailand and Pakistan, and for 2013 for Bangladesh. All employment data is in employee terms, apart from Norway which is reported in FTE terms.

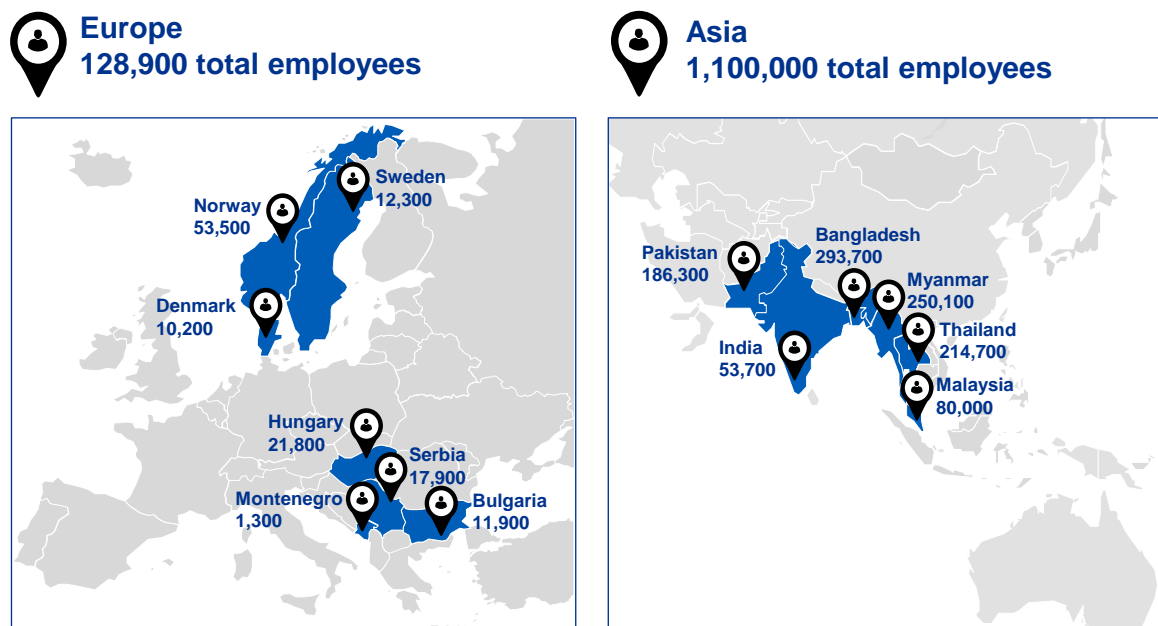
³² The Information and Communications sector GVA figures are 2014 for Montenegro, Serbia and Hungary. The employment data for Malaysia and Serbia are also for 2014, and Bangladesh was 2013. All employment is in employee terms, apart from Norway which is in FTE terms. Data on the Information and Communication Labour productivity was not available for India, Pakistan and Thailand.

3.3.4 Telenor's wider employment contribution

Telenor's employment contribution spans far beyond the people it directly employs in each of its markets. In 2015, Telenor generated an estimated total of 1.2 million jobs in the global economy. Approximately 128,900 of these employees were in Europe and 1.1 million in Asia.

Of Telenor's total employment contribution across both Asia and Europe, 35,939 were direct employees, 695,700 were indirect employees and a further 475,700 were induced employees.

Figure 7: Telenor total employment, 2015



Source: KPMG analysis

This means that for every one job that Telenor generated directly, an additional 33 jobs were generated through indirect and induced mechanisms within the wider economies of its 13 markets. And this does not include employment generated in other markets, for example where Telenor purchased goods and services from non-domestic suppliers.

The additional jobs that Telenor generates within the wider economy in each of its 13 markets varies for a number of reasons. These include: the amount of spending Telenor has with local suppliers in each market; the specific employment multipliers for that market and the specific sectors that Telenor spends with in each of its markets.

This demonstrates how Telenor's economic contribution spans significantly wider than its own direct contribution. Across its 13 markets, Telenor spent approximately \$8.3 billion with domestic direct suppliers in the countries of its operations. On average across its 13 markets, an estimated two thirds of total supplier spending was with domestic suppliers. This spending with local suppliers creates significant additional employment.

Telenor Case Study: Telenor Myanmar, Cluster Distribution

Through developing its mobile telecommunications network in Myanmar, Telenor has sourced a growing volume of supplies from local companies. In 2015, over half of Telenor Myanmar's supplier spending was with suppliers based in Myanmar. At 31st May 2016, Telenor was working with over 160 distributors across Myanmar, providing services for 70,000 points-of-sale across the country.

Through its purchasing of goods and services, it has created further employment opportunities in the country. For example, Ma Ei Theingi became one of Telenor's distribution partners in February 2015 and is the sole distributor of Telenor Myanmar in Kawkareik (a town in Kayin State) where she supplies Telenor related products and services in the town and in the local surrounding areas. She said to Telenor that: "... unlike other firms Telenor Myanmar has more advantages for businesses like mine to grow and that is one reason that I chose to partner with them. Other reasons I like working with Telenor Myanmar is its transparency and they provide timely support to their distribution partners." Telenor reports that since Ma Ei Theingi has started working with Telenor, she has managed a estimated total of over \$500,000.³³

3.4 Capital investment

3.4.1 Investment as a driver of economic growth

Investment activity is recognised as an important driver of growth.

In the context of mobile telecommunications, mobile operators globally have been investing significantly to increase network capacity and to deploy mobile broadband networks. LTE (a 4G communications standard) network rollouts have been driving 4G adoption and the technology shift has been enabling the significant increased data usage seen in both developed and developing countries.

Capital expenditure (capex), the spending by a company to acquire or upgrade physical assets such as property or equipment, is a commonly used measure of the scale of investment activity. It is usually required to undertake new projects and to enhance or expand a company's operations.

In the mobile telecommunications industry, capex can be used to upgrade and rollout networks, as well as to upgrade IT infrastructures and enhance operational efficiency.

Often, the investments made by companies can vary significantly from one year to the next. In the case of the telecommunications industry, variations in capex take place due to, one-off, large-scale investments being made in licences and spectrum, as well as substantial capex associated with network rollout.

According to the GSMA³⁴, over the period 2010-2015, mobile operators globally have invested more than \$880 billion in capex. Capex has been particularly high in developing countries, although across developing and developed countries alike it is expected to decline over the coming years as network improvements, including 4G rollout, are completed.

³³ This is equivalent to MKK 600 million. This was converted to US Dollars using 2015 average exchange rate sourced from the World Bank.

³⁴ GSMA, The Mobile Economy 2016.

3.4.2 Telenor's investment over the last 5 years

In recent years, Telenor has invested significantly in each of its 13 markets: a total of \$14.2 billion between 2011 and 2015³⁵. \$12.2 billion of this was capex and the remainder of it was investments in businesses (for example, in joint ventures and subsidiaries).

The acquisition of additional spectrum in auctions over recent years, including in Norway, Serbia, Myanmar, Hungary and Pakistan, has added to Telenor's 3G and 4G capable spectrum holdings. This spectrum purchase has been a significant investment in itself and is enabling it to expand the coverage and capacity of its LTE networks.

As a result, Telenor's network capex has focused on a combination of network modernisation and expansion of its 3G and/or 4G networks. Approximately half of Telenor's total capex over the last five years was committed to the network.

In many of its Asian markets, Telenor has made substantial investments in its network to increase its service offerings. In Myanmar, the investments made by Telenor meant that by the end of 2015, just over a year after its operations launched, it had a 3G coverage of 62% of the population. And in Pakistan, Telenor has made significant investments in its network over the last 5 years, and in 2015 it witnessed its fastest growth of 3G users³⁸.

Telenor Case Study: Telenor's 4G Launch in Bulgaria

On November 26th 2015, Telenor announced the launch of 4G services in Bulgaria under the LTE standard in the 1800 MHz band with a maximum theoretical data speed of 75 Mbps.

Two weeks later, Telenor reported that its 4G coverage had reached 57% of the population. In April 2016, six months after Telenor Bulgaria's launch of its 4G network, it announced that its coverage had reached 75% of the population and that its 4G network had data speeds of up to 100 Mbps.

Its network has been extended to cover all locations with population over 5,000, including seaside resorts and most of Sofia's subway system. As of Q3 2016 Telenor has the highest 4G population coverage at 79.8%³⁶.

Telenor has completed a major network renovation and upgrade project ahead of schedule in 2015³⁷. Telenor reports that the network swap led to improved mobile data speeds and user experience. Telenor has reported that between November 2015 and April 2016, it has seen over a 30% growth in total data traffic and a more than 20% growth in average individual data usage.

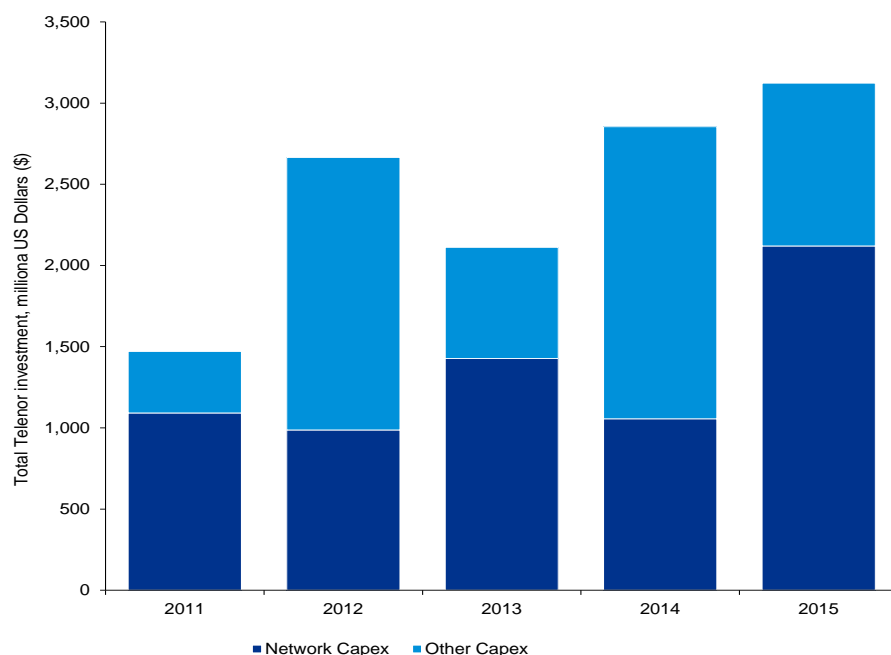
³⁵ This includes licences and spectrum payments, capex and investments in businesses.

³⁶ GSMA intelligence data, 4G Network coverage by population. accessed October 2016

³⁷ Telenor, Telenor presents 4G-ready network after full swap, gives users 500 MB for free to test it, June 2015. Accessed at <http://www.telenor.bg/en/news/telenor-presents-4g-ready-network-after-full-swap>

³⁸ Telenor Annual report 2015. Accessed at <https://www.telenor.com/wp-content/uploads/2016/04/iPDF-Annual-Report-2015.pdf>

Figure 8: Telenor capex across its 13 markets, 2011 - 2015



Source: KPMG analysis

The non-network capex ('other capex') by Telenor from 2011-2015 focused on spending on its IT services, as well as licence and spectrum payments. In 2012, Telenor made \$1.5 billion of licence and spectrum payments across Bangladesh, India and Thailand. In 2014 there was also an increase in non-network capex, which was in part due to spectrum and licence payments made in Myanmar. These spectrum and licence payments are one off payments made by Telenor in each year, and explains why there was significantly more non-network capex investment in 2012 and 2014.

In its Asian markets alone, Telenor has invested \$6.8 billion in capex over the last five years. Its investment has grown year-on-year between 2011 and 2015 by an average of 58%, reaching \$1.8 billion in 2015.

Telenor Case Study: Telenor Pakistan's investment contribution

Encouraging Foreign Direct Investment (FDI) has been one of the Government of Pakistan's priority areas to develop its economy³⁹. The Government has a number of initiatives to increase the levels of FDI, including policy formulation to promote public-private sector conversations.

Since it started its operations over a decade ago, Telenor Pakistan has invested over \$3.5 billion in its Pakistani operations. This investment has contributed to Telenor becoming the second largest mobile operator in the country in terms of the number of connections.

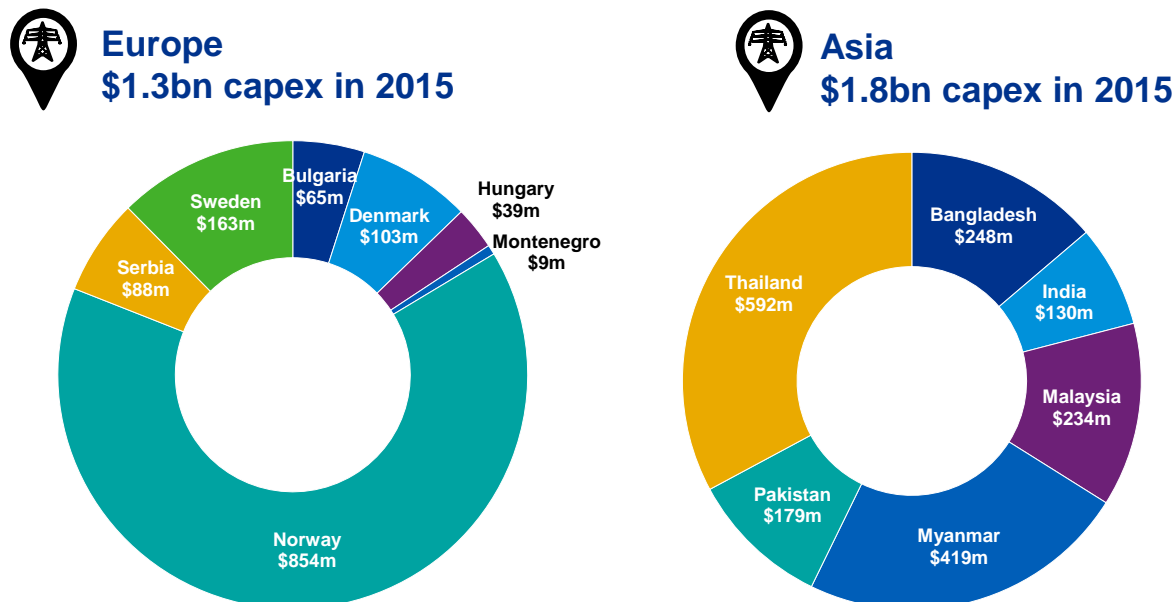
Telenor has also been increasing its capex in Europe over the past five years, although its capex has grown at a lower rate between 2011 and 2015 in its European compared to Asian markets. In total, over the five years, Telenor's total capex was \$5.5 billion in Europe, of which \$1.3 billion was invested in 2015.

Like the wider mobile industry, Telenor continued its investments in Europe in 2015 with the aim of capturing and monetising data growth across these markets. It is focusing on technology shifts to

³⁹ Pakistan Board of Investment, Foreign Direct Investment Strategy 2013-17. Accessed at <http://boi.gov.pk/UploadedDocs/Downloads/InvestmentStrategy.pdf>

higher speed mobile data networks and on securing spectrum and upgrading networks and IT infrastructures. In countries such as Norway, where Telenor also operates a fixed network, Telenor has also invested to increase its total number of high-speed fixed broadband connections (to reach over half a million).

Figure 9: Distribution of total capex, across Telenor's 13 markets^{40 41}, 2015



Source Telenor internal financial data

The ongoing acceleration of data usage means that network investments to handle growing data will continue to be required. While the prevalence of data use is lower at present across Telenor's Asian markets (37% of subscribers are active data users) compared to the Nordics (73% share)⁴², as smartphone penetration in these markets grows, and 3G and 4G coverage increases, the volume of data traffic carried across Telenor's Asian networks will likely also escalate. GSMA⁴³ forecasts that data use in Europe will also continue to grow exponentially.

Increasing and improving network capacity and speeds and migrating technologies is costly. Market trends will require Telenor to continue to invest in its businesses, as it has done in recent years.

This ongoing need to invest heavily in the network means that a large proportion of Telenor's revenue is invested. In Norway, for example, where data traffic more than doubled in 2015, Telenor's capex was \$850 million, including capex on upgrading infrastructure and networks. This capex was 20% of Telenor in Norway's 2015 revenues.

⁴⁰ The capex reported has been provided by Telenor Group from its financial reporting systems. It includes all capex within a country and not solely the Telenor telecommunications business unit. For example, capex in Norway includes the capex of Telenor Norway, Broadcast, and other Group units based in Norway.

⁴¹ Telenor Hungary's capital investment, particularly in networks, fell by approximately 20% between 2014 and 2015. This was, at least in part, due to the network sharing agreement reached with Magyar Telekom.

⁴² Telenor Annual Report 2015. Accessed at <https://www.telenor.com/wp-content/uploads/2016/04/iPDF-Annual-Report-2015.pdf>

⁴³ GSMA, The Mobile Economy 2016

Telenor Case Study: Twenty years of operation in Montenegro

Telenor Montenegro is celebrating the 20th anniversary of the launch of its network.

Telenor started operating as the first mobile operator in the country in 1996.

Starting with only voice services twenty years ago, Telenor has since introduced digital services and made technology more accessible to customers in Montenegro.

To achieve the growth in its scale and in the services it offers, Telenor has invested heavily in the development of its infrastructure, IT equipment and network quality.

After introducing 3G in 2012, Telenor Montenegro covered 97% of the population with fast internet in Q4 2015. Telenor also launched 4G services across four cities in 2012 and expects its 4G coverage to reach 60% of the population by the end of 2016, up from 45% in 2015.

In 2015, Telenor Montenegro built a new data centre, equipped with state of the art technology for maintaining and enhancing network quality. Telenor's long term commitment to developing Montenegrin telecommunications has been recognized by Government officials, including the Deputy Prime Minister, Vujica Lazovic, who said:

"We have been committed to supporting development of ICT infrastructure and electronic services in our country for many years. On that journey we have had cooperation with numerous partners, including Telenor, as a company that strives for continuous improvement of services and quality of its offer, with the aim of simplification and enhancement of communication and lifestyle of Montenegrin citizens".

A means of assessing the significance placed on investment within a company is to look at its capex intensity, measured by capex as a proportion of direct GVA generated.

On average, across its 13 markets, Telenor's capex intensity in 2015 was 45%. However, there was significant variation across markets.

In India, Telenor's capex intensity was over 300%. This means that for every \$1 of GVA it generated in 2015, \$3 was invested. Telenor was putting in three times as much investment as the economic value it generated. As investment is recognised as an important driver of growth, this significant capex will have contributed toward economic growth within India and adds to the telecommunications infrastructure serving businesses and consumers in the country.

And in Myanmar, where there was a substantial rollout of network coverage in 2015 following Telenor's launch of its services there in late 2014, capex intensity was almost 170%. Capex in Myanmar was \$419 million due to the large investments in coverage and capacity required for the surge in traffic volumes and to connect extended parts of the population.

In virtually all of its markets (Hungary and Sweden being the only exceptions), Telenor's 2015 capex intensity was above the national average level. In Hungary, where Telenor's capex in 2015 fell by approximately 20% compared to 2014, this was driven by a fall in capital investment in the network, at least in part, due to the network sharing agreement reached with Magyar Telekom.

Table 1: Telenor and national capex intensity

	Telenor capex intensity (capex as % of direct GVA)	National capex intensity ⁴⁴
Bangladesh	31%	30%
Bulgaria	37%	25%
Denmark	49%	22%
Hungary	18% ⁴⁵	26%
India	307%	34%
Malaysia	28%	26%
Montenegro	24%	28%
Myanmar	168%	21%
Norway	40%	26%
Pakistan	37%	14%
Serbia	48%	22%
Sweden	24%	27%
Thailand	64%	25%

Source: KPMG analysis, Telenor internal data, National Statistics Agencies, CIA Factbook

In addition to the capex spending from 2011 to 2015, Telenor made additional investments in businesses which totalled \$2.0 billion.

3.5 Telenor's role in contributing to public finances

3.5.1 Approach to assessing Telenor's public finance contributions to governments

Telenor's position as a major telecommunications provider means that it makes significant contributions to the public finances of the governments of the countries in which it operates.

These contributions are generated through a number of channels.

First, Telenor pays a wide range of taxes to governments in accordance with local requirements. These include corporation tax, employer social security contributions or equivalent, property related taxes and sales taxes. They also include a series of country and/or sector specific taxes such as SIM taxes in Bangladesh and a telecommunications specific tax in Hungary.

Telenor also makes contributions to public finances beyond tax. Government revenues are derived from a wide range of regulatory related fees levied on operators, such as licence, numbering and frequency fees. Mobile operators, such as Telenor, also contribute to the public finances through paying spectrum fees.

The second route through which Telenor generates contributions to the governments in its 13 markets is through the economic activity it creates in the wider economy through indirect and induced mechanisms.

By stimulating activity through its supply chain by purchasing from domestic suppliers, suppliers' fiscal contributions are higher than they would otherwise be if Telenor did not purchase goods and services from them. Equally, the induced economic activity that its direct and indirect employees generate also is subject to tax contributions.

⁴⁴ Due to data availability national average capex intensity is for 2015 for all countries except Hungary, India, Malaysia and Thailand which are for 2014. Data for Myanmar is the percentage of GDP spent on fixed capital in 2015 as sourced from the CIA Factbook

⁴⁵ As previously mentioned Telenor Hungary's capital investment, particularly in networks, fell by approximately 20% between 2014 and 2015. This was, at least in part, due to the network sharing agreement reached with Magyar Telekom.

The final route through which we assess Telenor's fiscal contribution is the payments made to government made by its employees, linked to their earnings paid directly or indirectly by Telenor.

Telenor's own employees pay income tax and make social security contributions relevant to their relevant country of employment. This government revenue would not be generated to the same extent if Telenor did not employ these individuals.

Equally, Telenor's indirect and induced employees pay income tax and make social security contributions on the earnings they receive as a result of Telenor's operations.

An explanation of how we have estimated each of these elements of Telenor's public finance contributions to government are set out in Appendix 1.

3.5.2 Telenor's contribution to public finances

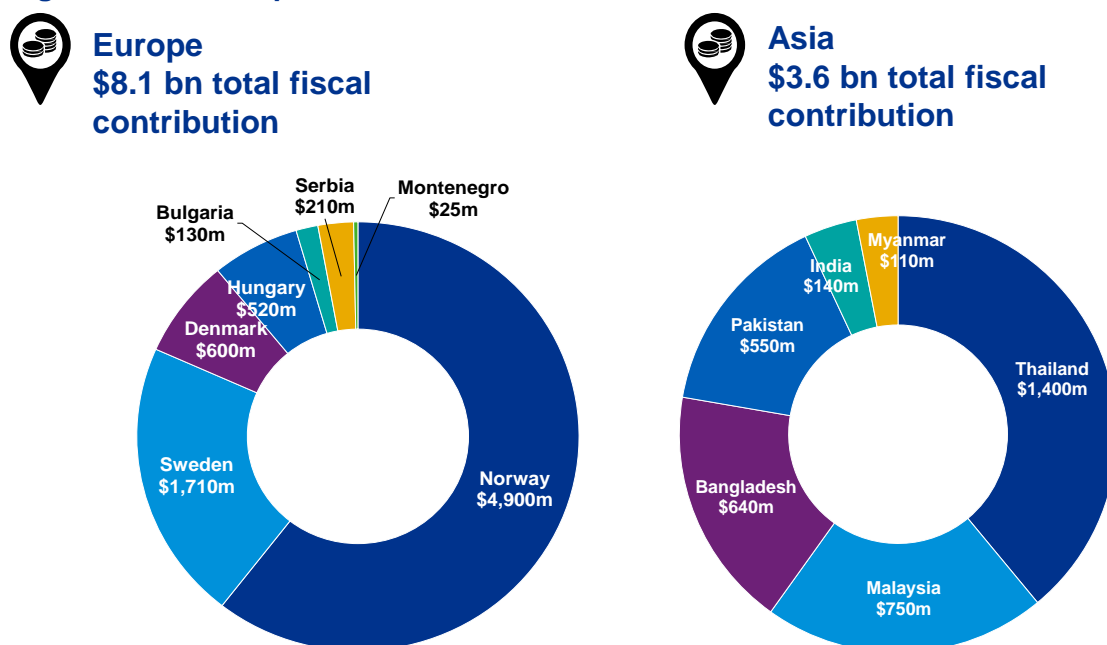
Telenor generated an estimated total of \$11.7 billion in fiscal contributions to governments across its 13 markets in 2015⁴⁶.

Telenor directly paid \$2.9 billion in fiscal contributions to governments in 2014.

It generated an estimated additional \$4.7 billion of fiscal contributions to governments through its spending with suppliers and the induced economic activity created through its employees' spending of their earnings.

And a further estimated \$4.1 billion of fiscal contributions to governments were generated through its direct, indirect and induced employees' earnings-related income taxation and social security contributions.

Figure 10: Telenor public finance contributions 2015⁴⁷



Source: Telenor Internal data, KPMG analysis

⁴⁶ Direct fiscal contributions, included within the total, relate to 2014.

⁴⁷ Direct fiscal contributions, included within the total, relate to 2014.

Telenor's contributions to public finances varied across each of its markets. This is a result of a number of factors including: differences in Telenor's revenues, profits, investments and employment across the countries; variations in local taxation and regulatory fees levied; and differences in the levels of indirect and induced GVA and employment it generated in each market.

In each market, however, Telenor generated significant contributions, supporting government's financing of public services and infrastructure. Its 2015 total fiscal contribution accounted for between 0.1% (in India) and 4.2% (in Myanmar) of total tax revenues in the countries in which it operates.

Table 2: Telenor total tax as a proportion of government taxes⁴⁸

	Telenor total fiscal contribution as a % of Government tax receipts
Bangladesh	3.4%
Bulgaria	0.6%
Denmark	0.3%
Hungary	0.7%
India	0.1%
Malaysia	1.3%
Montenegro	1.4%
Myanmar	4.2%
Norway	1.8%
Pakistan	1.4%
Serbia	1.2%
Sweden	0.6%
Thailand	1.8%

Source: KPMG analysis, CIA factbook

In terms of its direct fiscal contributions, Telenor's effective tax rate, measured as direct fiscal contributions as a proportion of revenues, ranged from 0% (in Myanmar) to 33% (in Hungary). Telenor did not make any direct fiscal contributions to Myanmar's governments between 2010 and 2015 as a result of a 5 year tax holiday granted to foreign companies by the Myanmar Investment Commission. However, through its supplier spending and employment, it contributed \$111 million through indirect and induced mechanisms to the government of Myanmar in 2015.

While the fiscal contributions estimated provide an indication of the scale of the impact Telenor has on public finances, they do not capture the full extent of Telenor's contribution. For example, the wider role that Telenor plays in supporting government tax collection is particularly important in some of the Asian markets in which it operates. The ability to pay wages through mobile financial services, for example, means that there is greater transparency over individuals' taxable earnings compared to when payments were made in cash. This allows government to more accurately and easily collect tax on the payments.

⁴⁸ Direct fiscal contributions, included within the total, relate to 2014.

Telenor Case Study: Contributing to public finances in Bangladesh

One challenge faced by many developing countries is the ability to collect income taxes from citizens. In Bangladesh, this is a pertinent issue. Challenges to tax collection experienced by the Bangladeshi government include: persistent tax evasion; the large size of the informal economy; and a mostly manual tax management process⁴⁹.

Only 11% of Bangladesh's GDP in 2015 was tax revenues⁵⁰, which is low in comparison to the average tax revenues as a proportion of GDP of the Euro area average of 18.5%.⁵¹

In addition to the contributions that Telenor in Bangladesh makes as a business, it also contributes through specific telecoms taxes levied on the industry, which increase government tax revenues. Through its operations as a telecommunications company, it helps the Bangladeshi government collect a tax that is paid upon purchase or activation of a SIM card, which is \$3.8 per SIM⁵².

Telenor Case Study: Contributing to public finances in Pakistan

Similar to many Asian economies, collecting personal income tax is a challenge for the Pakistani government.

The World Bank and the International Monetary Fund (IMF) have set ambitious targets for the government to expand the pool of tax paying citizens and improve revenue numbers with each passing fiscal year. The Pakistani federal government has, therefore, fixed a \$34 billion⁵³ revenue collection target for the Federal Board of Revenue (FBR) for fiscal year 2016-17, to qualify for its latest IMF loan tranche. The level of tax revenues as a proportion of GDP in Pakistan in 2015 was 11%⁵⁴

Only 0.5% of Pakistan's 200 million people pay income tax, compared with 2-3% in India and 20% in China⁵⁵. This is among the lowest rates in the world. In some rural areas of Pakistan the cost of running the local tax offices exceeds the tax they collect, as compliance with income tax payments are so low⁵⁶.

The Telecommunication and Financial Services sectors account for the majority of taxes collected from services sectors of Pakistan. Telenor Pakistan, being the second largest telecommunications operator in terms of connections, makes a significant contribution to the taxes collected from the Telecommunication and Financial Services sectors. One example of the contributions made is the Advance Consumer Tax, which is a tax set at 14% of the mobile phone bill for internet users in Pakistan. Telenor, in its role as a telecoms provider, contributes positively to tax revenues by assisting the government in collecting these revenues.

In 2014, Telenor Pakistan was rated among the top 100 tax paying companies in Pakistan.⁵⁷

Furthermore, Telenor's fiscal contributions are higher still in those years in which it purchases spectrum, a payment it makes to the public purse over and above many of the contributions estimated above. While Telenor acquired additional spectrum in Norway, Serbia, Bulgaria and Myanmar in 2015, paying a total of \$196 million to the respective Governments for this, significant payments for spectrum in other markets were made in previous years, linked to the timing of spectrum auctions. Since 2011, Telenor has spent \$0.6 billion in Europe and \$2.6 billion in Asia to purchase spectrum and licences.

⁴⁹ National Board of Revenue Bangladesh, Enforcement Trends and Compliance Challenges, Bangladesh Perspective, April 2013. Accessed at <https://www.imf.org/external/np/seminars/eng/2013/asiatax/pdfs/bangladesh.pdf>

⁵⁰ CIA Factbook, Tax as a proportion of GDP, 2015

⁵¹ World Bank data, Tax as a % of GDP, 2015

⁵² GSMA, Digital inclusion and mobile sector taxation 2015. Accessed at <http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/06/Digital-Inclusion-Mobile-Sector-Taxation-2015.pdf>

⁵³ This is equivalent to PKR 3.5 trillion. This has been converted using a 2015 average exchange rate sourced from the World Bank.

⁵⁴ CIA Factbook, Tax as a proportion of GDP, 2015

⁵⁵ Financial Times, Mass Tax avoidance chokes Pakistan economy, June 2015. Accessed at <http://www.ft.com/cms/s/0/f8e27d2a-034c-11e5-8333-00144feabdc0.html#axzz4Hn9NOGkl>

⁵⁶ Financial Times, Mass Tax avoidance chokes Pakistan economy, June 2015. Accessed at <http://www.ft.com/cms/s/0/f8e27d2a-034c-11e5-8333-00144feabdc0.html#axzz4Hn9NOGkl>

⁵⁷ Federal Board of Revenue, Top 100 Tax Payers, 2014. Accessed at <http://download1.fbr.gov.pk/Docs/2014228172387408TopTaxpayers28.02.2014.pdf>

4 Enabling the wider economy

4.1 Introduction

Given the transformational power of digital technologies and telecommunications, the value added by Telenor spans far beyond the economic contribution generated by its operations.

Telenor's vision statement: Empowering societies

"We provide the power of digital communication, enabling everyone to improve their lives, build societies and secure a better future for all.

Our vision to empower societies is a clear call to action. We bring vital infrastructure, new services and products that stimulate progress, change and improvement."⁵⁸

Global wide spread coverage of mobile broadband networks and the increased availability and use of smartphones, particularly in developed countries, is enabling digitisation and significantly changing the way in which businesses and consumers participate and interact in the economy.

Mobile telecommunications networks form crucial infrastructure and have become an essential part of the functioning of markets. And mobile connectivity and data consumption is transforming the way in which consumers and businesses operate and communicate.

For businesses, the world is increasingly digital. Connectivity can provide more efficient and productive ways of working and accessing customers by supporting new business innovations. It can enhance competitiveness by reducing barriers to entry for new business start-ups and entrepreneurs. And it can open up completely new markets.

Technological developments in telecommunication products and services have also significantly changed the way in which individuals behave and interact. With the increased availability of 3G and 4G services, people have increasingly shifted their use of mobile services from voice to data. Digital content, services and applications (apps) are widely accessed by subscribers, especially in developed countries, and digital technology is now an integral part of their lives.

Mobile technology also plays a central role in addressing a wide range of socio-economic challenges in developing countries.

The role of mobile technology in improving digital and financial inclusion, in particular, has the potential to transform societies, for example, through driving economic and infrastructure development, raising productivity and employment and improving access to important public services such as education and healthcare. In many developing markets, individuals' first experience of internet access is provided by affordable smartphones running on mobile broadband networks.⁵⁹

The benefits of a connected society are already beginning to be realised. As digital services become increasingly embedded in everyday life, the transformational impacts of mobile communication-

⁵⁸ Telenor, Vision, Mission and Values. Accessed at <https://www.telenor.com/about-us/vision-mission-and-values/>

⁵⁹ GSMA, The Mobile Economy 2016.

enabled services will continue to grow. And as economies move further towards digitisation, mobile networks will increasingly support more consumer time and data traffic⁶⁰.

As part of this study, we assess some of these wider impacts of the use of Telenor's services and the way in which they enable the economies of the 13 markets in which Telenor operates. We focus on Telenor's contributions in terms of its impact on:

- digital inclusion;
- financial inclusion;
- entrepreneurship and innovation; and
- gender equality.

4.2 The socio-economic effects of Telenor's impact on digital inclusion

4.2.1 The role of mobile communications in supporting digital inclusion

Digital inclusion is defined as the availability and affordability, and the ability, skill and knowledge of people to use digital services and to participate in the digital world. Digital inclusion gives people the ability to access and use information and communication technologies.

Telecommunications operators play an important role in promoting digital inclusion. Mobile phones are the most widespread personal handheld device with 4.8 billion unique mobile subscribers in the world⁶¹, almost two-thirds of whom have used mobile internet services.⁶²

Still, in 2016 approximately 2.9 billion people in the world remained 'unconnected'.⁶³ The GSMA cites several reasons for this, including: lack of network infrastructure; taxation levels; cultural and consumer barriers; and the availability of local content. The GSMA found that 1.6 billion people live in areas not covered by mobile broadband networks. In addition 3.7 billion people who are unconnected are in geographies covered by mobile broadband networks but they do not access mobile internet services, or use slower 2G networks to do so.⁶⁴

There is strong empirical evidence from a number of studies that increased broadband penetration raises GDP per capita growth⁶⁵. With the widespread rollout of mobile broadband networks, this increased broadband penetration can be facilitated by mobile operators rather than solely fixed telecommunications network operators. Indeed, in parts of some countries, particularly in developing nations, mobile networks are the only means of accessing internet services.

There is also considerable evidence that increased availability and use of mobile technology more generally has a net positive impact on economic growth (i.e. the positive contributions to the economy from increased mobile telecommunication access outweigh any reductions in economic activity that it may also generate).

A recent study for the GSMA focussed on the impact of mobile technology on economic growth, including the contribution of 3G penetration to GDP per capita growth and the contribution that mobile data services make. This study found that there is a positive correlation between 3G penetration and GDP per capita growth of similar magnitudes to those previously found by studies of the impact of broadband on economic growth⁶⁶. Not only is the provision of 3G and 4G an effective delivery

⁶⁰ GSMA, The Mobile Economy 2016.

⁶¹ As at 19th October 2016, GSMA Intelligence. Accessed at <https://www.gsmainelligence.com/>

⁶² GSMA, Mobile internet subscriber forecasts and assumptions: 2010-2020, 2014

⁶³ GSMA, Digital Inclusion and mobile sector taxation 2016, 2016

⁶⁴ GSMA, Unique Mobile Internet Subscribers: The impact of mobile in bringing people online, 2016

⁶⁵ Czernich, N., Falck, O., Kretschmer T., & Woessman, L., Broadband infrastructure and economic growth, CESifo Working Paper No. 2861, 2009. And Koutroumpis, P., The Economic Impact of Broadband on Growth: A Simultaneous Approach. Telecommunications Policy, 33, 471-485, 2009.

⁶⁶ Deloitte, What is the impact of mobile telephony on economic growth? A report for the GSM Association, 2012

mechanism of the internet, in many developing countries coverage of mobile internet can be preferred as a more cost-effective means of extending the broadband network, particularly to more remote, rural areas.⁶⁷

Increased digital inclusion, in particular through the availability of 3G and 4G mobile broadband services, can lead to:

- increased access to information from the internet;
- increased availability of financial services through mobile banking and payment apps;
- improved access to education through teleconferencing and distance learning, so education no longer has to be constrained by geography⁶⁸;
- decreased costs to government of providing public services whilst increasing citizen engagement and wider socio-economic benefits⁶⁹; and
- increased prospects of employment through, for example, delivering job vacancy information straight to the user and making the user more accessible to (prospective) employers or customers⁷⁰.

Most of these effects are particularly prominent in developing countries where infrastructure is generally less well advanced. Through these channels, digital inclusion can provide significant gains.

Across the Asia Pacific region, by end-2015 around 45% of the population has access to mobile internet. While still markedly below that seen in Europe and America, this figure has almost tripled over a 5 year period. In developing countries, where there is often a lack of alternative access technologies, mobile networks are playing a significant role in digitally connecting societies.⁷¹

4.2.2 Telenor's contribution to driving digital inclusion and the net economic growth this generates

One of the main barriers to digital inclusion is the availability of network infrastructure. Network coverage, and 3G and 4G network coverage for mobile broadband, is critical for consumers to be able to access mobile services.

As explained in section 4.4, Telenor has been investing significantly in its networks across all 13 of its markets and expanding its population and geographic coverage. In a number of its developing markets, Telenor has been expanding its network coverage to reach underserved population groups, often in rural and remote areas. In Myanmar, for example, where internet connectivity was made available over mobile networks only in 2014, Telenor's 2G and 3G geographic coverage reached over 60% in 2015.

On average, across all its 13 markets, at year end 2015, Telenor's 2G network reached over 70% of the population, its 3G network covered nearly 40% and its 4G network, which has yet to be rolled out in a number of Asian markets, reached 7% of the country's populations.

⁶⁷ Frontier Economic, Benefits of network competition and complementary policies to promote mobile broadband coverage, A report prepared for the GSMA, 2015

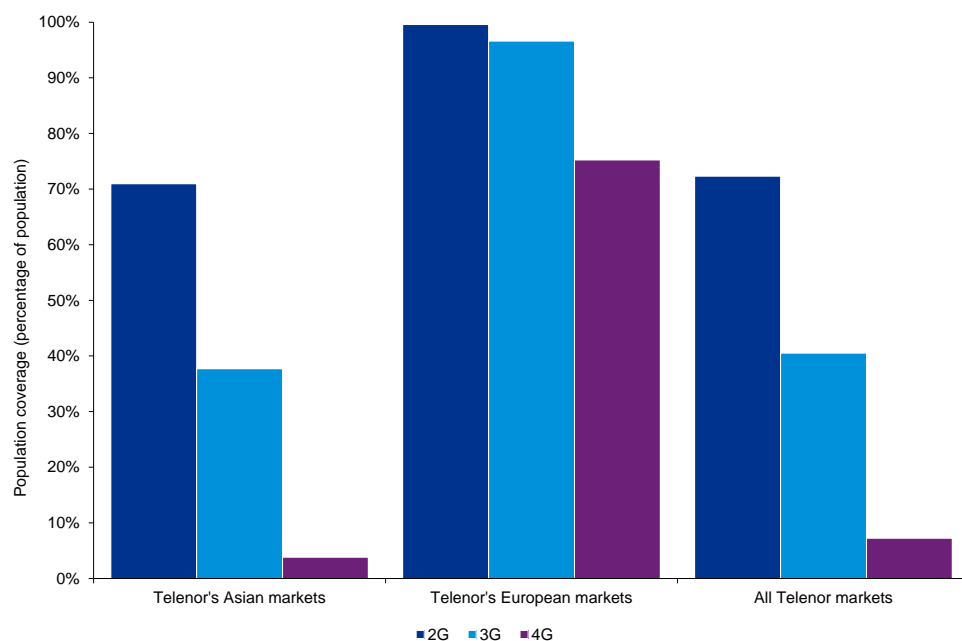
⁶⁸ Victoria L. Tlino, ICT in education, 2003

⁶⁹ London School of Economics, The untapped potential of digital citizen engagement in Morocco: a data-driven approach to online participation. Accessed at <http://blogs.lse.ac.uk/impactofsocialsciences/2014/07/25/digital-citizen-engagement-morocco/>

⁷⁰ Mobi Solutions Ltd, Mobile Government: 2010 and beyond, January 2010. Accessed at [http://grandsorganismes.gouv.qc.ca/fileadmin/Fichiers/Veilles%20strat%C3%A9giques/Prestation%20de%20services%20publics/Mobile/Mobile%20Government%202010%20and%20Beyond%20v100\[1\].pdf](http://grandsorganismes.gouv.qc.ca/fileadmin/Fichiers/Veilles%20strat%C3%A9giques/Prestation%20de%20services%20publics/Mobile/Mobile%20Government%202010%20and%20Beyond%20v100[1].pdf)

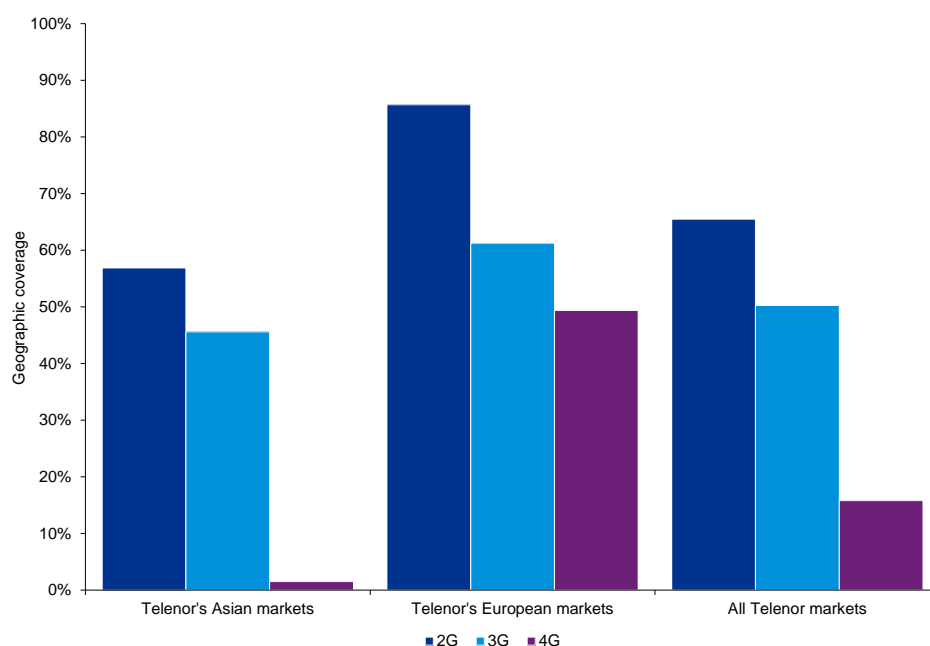
⁷¹ GSMA, Asia Pacific Mobile Economy 2015.

Figure 11: Telenor population coverage across its markets⁷², 2015



Source: KPMG analysis of Telenor internal data

Figure 12: Telenor regional and group geographic coverage⁷³, 2015



Source: KPMG analysis of Telenor internal data

⁷² All figures are as of Q4 2015, except for Bangladesh (2015), Myanmar (February 2016) and Pakistan (Q1 2016). The population coverage for India is based on the populations within the geographies for which Telenor has a licence to operate and not the entire population of India.

⁷³ All figures are as of Q4 2015. The geographic coverage for India is based on the geographic areas for which Telenor has a licence to operate and not the whole geographic area of India.

Telenor has connected an increasing number of people over the last 5 years. While there have been some fluctuations in subscriber growth year on year, between 2011 and 2015 subscribers grew by 13.3% on average in its Asian markets and 2.5% on average in its European markets.

GSMA data⁷⁴ indicates that based on the number of unique subscribers, Europe has the highest mobile penetration globally. With a unique subscriber penetration rate of 84% at Q3 2016⁷⁵, it is near saturation level and forecasts suggest that there is limited scope for further subscriber growth.

This suggests that the scope for further improving digital inclusion in Telenor's European markets is more limited and that the main economic benefits associated with it have already been mostly realised. This is also the case across other developed markets where the initial transformational impacts of raising mobile penetration have already been experienced.

However, the economic benefits of digital service availability and use are linked to the type of services used – 2G compared to 3G and 4G – and the volumes of data consumed⁷⁶. As users migrate to 3G and 4G, and then beyond, and consume ever increasing amounts of data, economic benefits are still likely to be captured even in mature mobile telecoms markets.

Telenor's customers, as all mobile telecoms users, are changing the way in which they are using mobile services and demonstrating an increased appetite to use new technologies and take advantage of the higher speeds and coverage of mobile data services.

Table 3 shows the average monthly voice minutes, data (in terabytes) and SMS messages sent by subscribers in each Telenor market in 2015. The average Asian Telenor subscriber used 266 voice minutes per month in 2015, compared to 282 minutes per month in Europe. However, data usage varied more substantially across the two regions, demonstrating the varying stages of development in mobile networks. In 2015, the average European subscriber used 2.3 gigabytes of data per month, almost 5 times more than the 0.5 gigabytes per month average for Asia.

Growth rates in usage also vary substantially across the regions. Between January 2015 and December 2015, the average data usage per subscriber grew by 80% across Telenor's European markets, whereas the growth in data usage across its Asian subscribers was 92%. This highlights the potential growth of data use across Telenor's Asian markets going forward.

⁷⁴ GSMA, The Mobile Economy Europe 2015.

⁷⁵ GSMA Intelligence data, Europe Market penetration, Unique subscribers Q3 2016. Accessed October 2016

⁷⁶ World Economic Forum, The Global Information Technology Report 2013, 2013, Chapter 1.6 The Economic impact of Next-Generation Mobile Services

Table 3: Telenor monthly usage per connection 2015, by type⁷⁷

	2015 average per month			Average per subscriber per month		
	Minutes (millions)	Data (TB)	SMS (millions)	Minutes	Data (GB)	SMS
Bangladesh	9,022	4,367	1,289	159	0.08	23
Bulgaria	1,172	758	30	327	0.21	8
Denmark	311	3,227	169	156	1.62	85
Hungary	462	1,609	30	146	0.51	9
India	22,987	1,729	1,046	539	0.04	25
Malaysia	2,651	9,049	-	219	0.75	-
Montenegro	58	155	20	242	0.65	82
Myanmar	-	2,711	-	-	0.20	-
Norway	631	3,789	526	199	1.20	166
Pakistan	2,522	5,003	1,362	73	0.14	39
Serbia	463	1,275	260	263	0.72	148
Sweden	323	10,573	153	127	4.15	60
Thailand	4,479	26,173	235	177	1.04	9
Average	3,757	5,417	465	219	0.87	60

Source: KPMG analysis, Telenor data

Increased mobile penetration, and particularly the transition to 3G and 4G services, can have a significant net positive economic effect. While economic activity in some areas of the economy may be displaced through increased digital access and mobile telephony use due to changing consumer and business behaviours (e.g. people may travel less), evidence suggests that the overall impact on economic activity in GDP terms is positive.

A recent study for the GSMA⁷⁸ estimated that for a given level of total mobile penetration, a 10% substitution from 2G to 3G penetration increases GDP per capita growth by 0.15 percentage points.⁷⁹ The results of the study include the impact of growth in both total mobile penetration and the impact of substituting from standard 2G connections to 3G connections.

Since Telenor has a significant share of global mobile telecoms provision, it has played a significant part in the economic growth associated with mobile and 3G/4G penetration growth.

KPMG estimates, building on the earlier analysis for the GSMA, that between 2011 and 2015, Telenor contributed \$87 billion to GDP growth across its 13 markets through both the increase in its overall mobile penetration and its increase in 3G and 4G penetration between 2011 and 2015. In 2014-15, alone it contributed \$8 billion to GDP growth across its 13 markets.

The Asian countries in which Telenor operates benefited most significantly. Using the GSMA 2012 study we estimate that \$38 billion was contributed to GDP growth in Thailand alone between 2011 and 2015 and \$24 billion in Bangladesh. This is due to the number of subscribers that Telenor has in these markets, as well as due to the large increase in Telenor's 3G and 4G penetration across these markets between 2011 and 2015.

⁷⁷ Connection data sourced from Telenor Q4 2015 reporting used for this analysis for all countries apart from Serbia and Montenegro. Data for these two markets was sourced from the local market as the split between the two countries was not available in the Group reporting.

⁷⁸ Deloitte, What is the impact of mobile telephony on economic growth? A report for the GSM Association, 2012

⁷⁹ The impact of 4G connections is not considered within this model. However, we take account of these connections in our analysis by assuming that the impact of a switch from 2G to 3G would be the same as a switch from 2G to 4G. This may underestimate the impacts due to the additional benefits associated with 4G, for example, faster speeds.

Across a number of Telenor's European markets, mobile penetration rates are close to saturation and Telenor has not grown subscriber numbers at the same rate as in Asia. Indeed, in some markets, such as Denmark and Bulgaria, Telenor's overall mobile penetration rate has declined in recent years. This is for a number of reasons. For example, in Bulgaria, Telenor's mobile penetration rate fell by approximately 2% between 2014 and 2015, driven by the decline in multi-SIM usage.

It is important to note that the estimate of the contribution to GDP growth of increased Telenor mobile penetration measures the additional contribution generated from one year to the next, rather than the total contribution overall (i.e. is a flow measure rather than a stock). Therefore, in a number of Telenor markets where the increases to mobile penetration are slowing year on year, or declining, the additional contribution that Telenor can make to GDP through its services, by this quantification measure, is limited. In these markets, however, some of the wider impacts of mobile services such as the broad economic benefits from M2M devices, for example, and increased data usage are likely to be more significant. And these are not captured within the quantification.

Table 4: Telenor's contribution to net GDP growth through increase in overall market penetration and increase in 3G/4G penetration across its 13 markets, 2011-2015 and 2014-2015

	Contribution to GDP from increases in mobile penetration rates, 2014-15 (millions USD)	Contribution to GDP from increases in mobile penetration rates, 2011-15 (millions USD)
Bangladesh	2,000	24,000
Bulgaria	50	60
Denmark	160	650
Hungary	27	590
India	830	1,800
Malaysia	300	2,500
Montenegro	3	27
Myanmar	3,200	3,200
Norway	150	1,100
Pakistan	950	15,000
Serbia	27	290
Sweden	0 ⁸⁰	0 ⁸¹
Thailand	340	37,900
Total	8,000	87,900

Source: KPMG analysis

4.2.3 Wider Telenor initiatives to support digital inclusion

The channels through which Telenor supports economic growth and the societies in which it operates extend beyond its increased network coverage and changes in mobile penetration rates.

Across a number of its markets, Telenor has a range of initiatives to improve digital inclusion and to address consumer barriers which limit mobile phone and internet use. These include barriers such as: fear of technology; lack of self-confidence in using mobile phones; and lack of digital skills.

An example of this is set out below, where in India Telenor has created education hubs to teach customers how to use mobile phones. By addressing these issues, Telenor is striving to increase the ability of consumers to take full advantage of the connectivity available to them.

⁸⁰ Between 2014 and 2015, Telenor Sweden experienced a decrease in subscribers of 3.3%. Between 2011 and 2015 Telenor Sweden experienced a 30.6% decrease in subscribers. Therefore the GDP contribution for these two periods is assumed to be zero.

⁸¹ Between 2014 and 2015, Telenor Sweden experienced a 10.9% decrease in 3G/4G penetration. Between 2011 and 2015 Telenor Sweden experienced a 17.7% decrease in 3G/4G penetration. Therefore the GDP contribution for these two periods is assumed to be zero.

Telenor Case Study: Telenor India's Customer Education Hubs/ Grahak Shiksha Kendras

In 2015, Telenor India transformed 300 of its stores into customer education hubs (Grahak Shiksha Kendras or GSKs) to inform customers of the potential uses of its services and to try overcome perceived barriers to access.

This has been a successful initiative with around 100,000 new customers each month being taught how to use a mobile phone, with particular emphasis on the internet and other useful applications.

Singh Yadav, a 45 year old farmer who took part in the initiative told Telenor about his experience. He said: *"I was curious so went and the visit opened my eyes to a completely new world. The girl at the counter explained about the internet, applications which would be useful to me, and how I can safely browse the Net. The training was short and simple, and now I use WhatsApp to message and watch videos to learn about the world outside my farm"*.

This example demonstrates how in some cases simply providing the services is not enough to overcome the barriers to digital inclusion.

The barriers to digital inclusion are much more significant in developing markets where, for example, significant proportions of the populations still lack basic infrastructure, including internet access, and challenges such as affordability, availability of local content and literacy are more significant.

However, there are also segments of the population in Telenor's developed markets where digital inclusion can be improved. And for the full socio-economic benefits of telecommunications services to be realised, all groups of society must be able to use it. The main challenges in developed countries are often around digital literacy, particularly among older members of society.

In Norway, for example, an estimated one million Norwegians have low levels of digital competency⁸². To address this, Telenor Norway launched an initiative in partnership with the Norwegian Red Cross with the aims to improve accessibility of its services.

Telenor Case Study: Telenor Norway's Red Cross Partnership

In 2015, Telenor Norway collaborated with the Norwegian Red Cross to deliver 500 free bite-size courses about mobile phones and tablets. These courses were offered in two locations, Oslo and Akershus.

The aim of the course was to increase exposure of customers to the capabilities of mobile technology and help to combat digital illiteracy, thereby raising digital expertise amongst the population and contributing to increased social inclusion.

One customer, Astrid Nøkleby Heiberg, the 76 year-old former State Secretary at the Ministry of Health and Care Services, and former president of both the Norwegian and International Red Cross, participated in the first course. She told Telenor:

"I actually just managed to send my first photo by email... We should make the most of the opportunities we are given to get online and learn to master these gadgets. From 2017 all public services will be online, by which time we have to be ready to start using it".

Evidence collected by Norstat on behalf of Telenor, suggests that in encounters with the public sector, 60% of Norwegians over 55 years old prefer contact in person or by phone, while only 35% prefer digital solutions. This suggests that there may be a challenge in terms of accessing public services when they become online.

Telenor's ambition is that the courses it provides will help to raise digital literacy and bring 500,000 more Norwegians online by 2017.

⁸² Norwegian Agency for Public Management and eGovernment, 2014

4.2.4 Telenor's activities to support education

It has been stated by the World Economic Forum that: “no socio-economic factor is a better indicator of a nation's economic success than its investment in education and mLearning. It offers opportunities to systemically redefine the way that individuals and communities can contribute to society.”⁸³

The role of telecommunication providers in improving access to education is particularly prominent in the developing world where barriers to education include lack of infrastructure, lack of qualified teaching staff, large classes and substandard facilities⁸⁴.

Telecommunication services can help to reduce these barriers and expand access to education, particularly in developing countries and rural areas, by providing internet, audio and video teleconferencing, video or television broadcast and digital learning. And, as noted earlier, in many developing countries, particularly in more remote areas, a lack of alternative access technologies means that mobile networks provide the only form of connectivity available.

Telenor contributes to improving access to education primarily as a telecommunications service provider.

It is widely recognised that mobile connectivity provides new opportunities to deliver education to the masses in efficient ways. However, the best way to achieve this is not yet fully understood. Therefore, Telenor is participating in a number of efforts to test the potential uses and benefits of mobile communications in education. It hopes that one of these will be the key that unlocks affordable education for the masses and then will be scaled by governments and NGOs as necessary partners in this important task. Specific initiatives in which Telenor is involved, aiming to provide targeted help in improving access to education, include an online school in Bangladesh, a digital classroom in Bulgaria and the Hipersuli education programme in Hungary. Details of the Hipersuli education programme are included in the Telenor in Hungary section of this report.

In Bangladesh in 2013, 40.3% of the population was illiterate with only 67.6% completing lower secondary education⁸⁵. With 66% of the population living in rural areas, providing access to education is a challenge. The JAAGO Foundation operates 10 online schools with Telenor (Grameenphone) providing internet connectivity and financial support. The schools are free to attend, provide free books, school uniforms, shoes, bags, fruit, medicines and hygiene. The initiative is proving to be successful as the online schools lose only 2% of their students each year⁸⁶, compared to the average dropout rate of 20.4% per year.

In Bulgaria, Telenor has launched a number of programmes to improve access to education.

One example is the Digital Classroom contest operated by Telenor Bulgaria is another initiative that helps to improve access to digital technology to support education. It is aimed at bringing new technologies and new effective study methods into Bulgarian schools. In two of the contest winning schools in 2015, a range of digital technologies were provided, including:

- the “Lyuben Karavelov” school was equipped with 120 tablets and 10 Einstein LabMate devices and sensors for science labs and network infrastructure; and
- the High School of Mathematics “Dr Peter Beron” in Varna was equipped with an interactive panel board and 6 multi-touch tables with virtual keyboards allowing simultaneous work of 24 students. The new multifunctional virtual hall will be used for applying interdisciplinary and project-based learning approaches in science, math and IT classes.

⁸³ World Economic Forum, Accelerating the Adoption of mLearning: A Call for Collective and Collaborative Action, 2013.

⁸⁴ Regency Foundation Network, Telecommunications and Education. Accessed at http://regency.org/t_in_act/pdf/english/educate.pdf

⁸⁵ World Bank data

⁸⁶ Banbeis, Accessed at <http://www.banbeis.gov.bd/new/>

Through Telenor's operations as a telecommunications company, it provides access to information and services that may not otherwise be easily accessed. Through targeted initiatives, Telenor is looking to improve access to education in its markets, providing wider benefits to those taking part as well as the economy more widely.

4.3 Telenor's impact on financial inclusion

4.3.1 The role of mobile communications in promoting financial inclusion

The primary focus of financial inclusion is on giving all members of society access to financial services, at affordable costs.

The relatively disadvantaged or low-income groups within society risk being 'unbanked' i.e. people with no bank account and who are, consequently, unable to participate in the financial network.

Levels of financial inclusion have increased significantly in recent years. But there is still a large proportion of the world's population who remain unbanked. In 2014, 2 billion adults in the world did not have a bank account.⁸⁷

Evidence from the World Bank⁸⁸ suggests that 73% of poor people are unbanked due to costs, travel distances and the often-burdensome requirements involved in opening a financial account.

There are many consequences of a lack of financial inclusion. Access to financial services is a crucial means of both making and receiving payments, including earnings, and for saving, allowing individuals to more easily formally participate in the economy. And access to savings products, for example, has been suggested to have a wide range of positive impacts including empowering individuals and raising productivity, consumption and incomes.⁸⁹

Indeed, given that financial inclusion acts as a catalyst for poverty reduction and for shared prosperity, it forms a key part of the World Bank Group's goals for eliminating extreme poverty by 2030 and boosting shared prosperity⁹⁰.

Telecommunications can promote financial inclusion through access to mobile financial services. These services include branchless banking and mobile money services, such as Telenor's Easypaisa.

The advantages of mobile operators over traditional banks in reaching the unbanked, include:⁹¹

- a wide and inclusive customer base;
- security, where mobile phones allow secure access to financial services; and
- an existing and trusted relationship with the customer through the mobile services already provided.

In 2015, mobile money services were available to almost 2 billion people across the world.⁹² They are playing a pivotal role in increasing financial inclusion among the unbanked, particularly in developing countries.

It is not only unbanked mobile subscribers who benefit from improved mobile financial services. The digital transformation experienced across virtually all industry sectors is also affecting the way in which

⁸⁷ World Bank Group, The Global Findex Database 2014: Measuring Financial Inclusion around the World, 2015

⁸⁸ World Bank, Overview of Financial Inclusion. Accessed at <http://www.worldbank.org/en/topic/financialinclusion/overview#1>

⁸⁹ World Bank, Overview of Financial Inclusion. Accessed at <http://www.worldbank.org/en/topic/financialinclusion/overview#1>

⁹⁰ World Bank, Prosperity for All: Ending Extreme Poverty, April 2014. Accessed at <http://www.worldbank.org/en/news/feature/2014/04/10/prosperity-for-all-ending-extreme-poverty>

⁹¹ GSMA, Digital Inclusion, 2014.

⁹² GSMA, The Mobile Economy, 2016

banking services are provided, accessed and used. A study conducted by KPMG⁹³ suggests that mobile banking is already the largest banking channel for the majority of banks by volume of transactions and mobile banking users are expected to grow exponentially over the next 5-10 years.

The socio-economic benefits of mobile financial services are wide reaching and depend on the specific type of services used and the way in which they affect financial inclusion.

Figure 13: Socio-economic impacts of mobile financial services

Transaction costs	<p>Mobile financial services can significantly reduce the time and cost of financial transactions by eliminating the need to travel to the bank or travelling to pay or acquire cash to/ from agents.</p> <p>Services available can include automated everyday transactions, such as paying utility bills or receiving salaries or social security funds. With automation comes increased security and certainty of timing of transactions which helps individuals with financial planning and reduced coordination and opportunity costs.⁹⁴</p>
Transparency	<p>Mobile financial services allow financial transactions to be formally recorded and monitored. This information can be used for a range of purposes including helping financial institutions to tackle asymmetric information by enabling them to make an informed decision as to whether an individual is a safe investment. This in turn can result in an individual gaining access to a number of other financial products where they may otherwise have been unable to.</p>
Saving	<p>Mobile money accounts enable account holders to store their money in a safer way than they would if they remained unbanked, which may be vulnerable to theft or liquidation. By offering a safer method for saving, mobile money accounts can ultimately increase saving, net of losses.⁹⁵</p>
Risk and insurance	<p>The services can also help communities protect against communal shocks which typically lack formal insurance such as flooding, droughts or natural disasters. This can be done through the creation of informal insurance networks whereby members facilitate risk sharing through periodic transfers.⁹⁶</p>

However, the realisation of these economic benefits clearly relies on the access to these services provided by mobile operators and the ongoing investment in improving network coverage and capacity to meet the growing data requirements of subscribers.

⁹³ KPMG, Mobile Banking 2015. Accessed at <https://www.kpmg.com/FR/fr/IssuesAndInsights/ArticlesPublications/Documents/Mobile-Banking-092015.pdf>

⁹⁴ Aron, Leapfrogging: a survey of the nature and economic implications of mobile money, 2015.

⁹⁵ Jack and Suri, Mobile Money, The Economics of M-Pesa, 2011

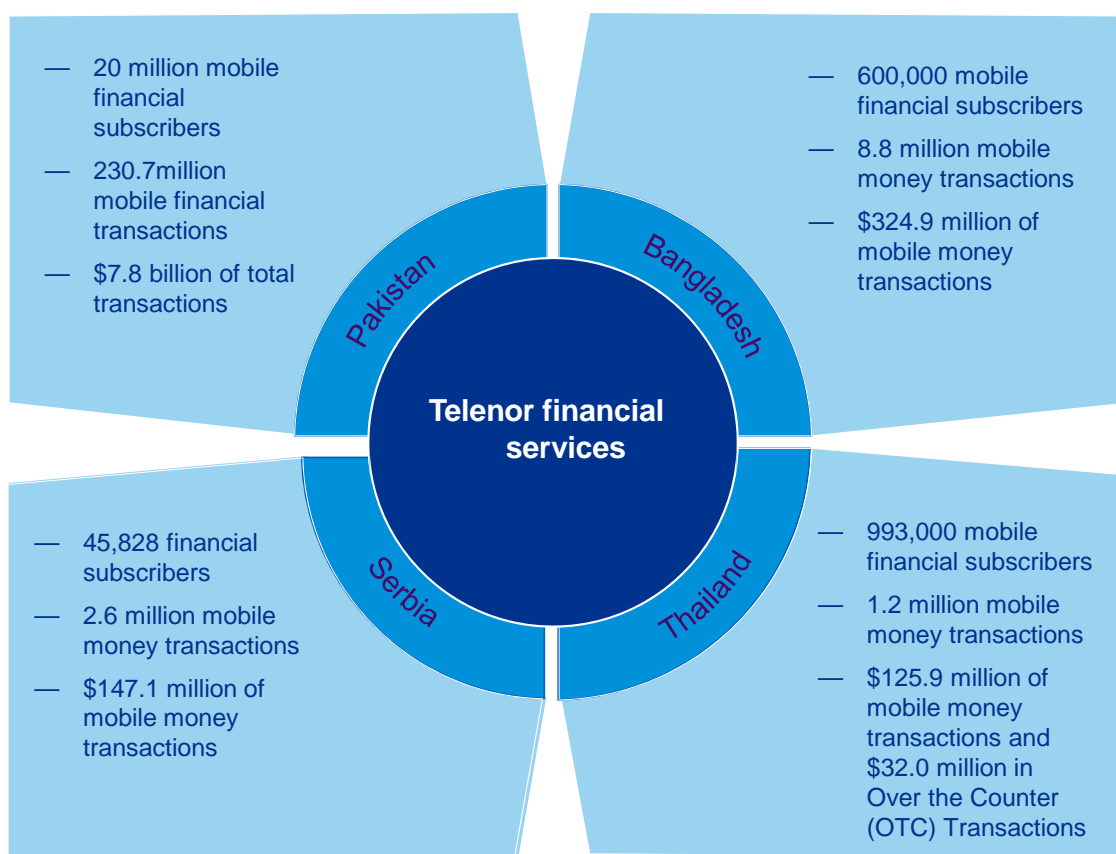
⁹⁶ De Weerd and Dercon, Risk-sharing networks and insurance against illness, 2006.

4.3.2 Telenor's contribution to financial inclusion

Telenor contributes to financial inclusion through the range of initiatives and specific financial services it provides, as well as supporting the delivery of mobile financial services more widely via the access it provides to subscribers through its networks.

Telenor operates its own mobile financial services, enabling its customers to make financial transactions via their mobile phones as well as over the counter at its network of shops and outlets. Telenor mobile financial services were offered in four markets in 2015 (Bangladesh, Pakistan, Serbia and Thailand) and served approximately 3.3 million mobile financial customers, plus many more via Over the Counter (OTC) transactions.

Figure 14: Telenor's own financial services, 2015



These mobile financial services have positively contributed to each of the economies, supporting financial inclusion.

Telenor Case Study: Easypaisa in Pakistan

Easypaisa was launched in Pakistan in 2009 as a joint venture with Tameer Microfinance Bank.

It was the first mobile financial services operator in the country. And now has over 75,000 shops in more than 800 cities across Pakistan, meaning it has the largest financial footprint in the country, and the third largest financial footprint in the world⁹⁷.

Easypaisa offers a variety of services, including mobile money accounts, mobile money transfer and over the counter transaction services. In 2015, there were 230.7 million transactions conducted through Easypaisa, equivalent to approximately 635,000 every day. The total value of these transactions in 2015 was approximately \$7.8 billion⁹⁸, equivalent to 3% of Pakistan's GDP in 2015⁹⁹.

There are 20 million active customers using Easypaisa, of whom 1.6 million have mobile money accounts.

Telenor Case Study: Telenor Banka and mobile banking in Serbia

Telenor Banka started operating in Serbia in September 2014. By March 2016, it had over 162,000 opened current accounts and it is the first fully online, mobile bank in Central and Eastern Europe.

Telenor considers that Telenor Banka is a unique synergy of telecommunications and financial services, contributing to constant innovation in approach to creating services for customers. And that even in a saturated banking market with 29 banks, it considers that Telenor Banka has managed to stand out and that its innovative model is influencing the banking market in Serbia.

During the first year of operation, use of online banking in Serbia rose by 20%, the number of mobile banking users has increased by two and a half times, and in 2015 online transactions surpassed branch transactions..¹⁰⁰

In addition to its mobile financial services, Telenor offers a range of free insurance products in some countries. This provides insurance to some individuals who would otherwise be unable to access these policies. Across all Telenor's Asian markets the consumer insurance offer is underdeveloped¹⁰¹.

Telenor Case Study: Micro insurance Pakistan

For the majority of people living in Pakistan, health insurance is out of reach¹⁰².

A BBC report¹⁰³ highlighted the impact that the provision of mobile insurance services can have on people living in the remote areas of Pakistan.

The BBC report includes the example of Muhammad Khalil, an Easypaisa customer who reported that he does not earn enough to have a traditional bank account. He was involved in a road accident, resulting in a three day stay in hospital. However, Mr Khalil had purchased health insurance from Easypaisa, for a \$6 annual fee. This covered the cost of his hospital stay, which totalled \$30, and meant that he did not have to borrow the money to pay for his hospital bills.

Currently, Telenor Pakistan has 757,288 free micro insurance, and 127,548 paid insurance, customers.

⁹⁷ Ericsson, Pakistan's underbanked get evolved mobile money services from Easypaisa and Ericsson, March 2016. Accessed at <https://www.ericsson.com/news/2009154>

⁹⁸ This is equivalent to PKR 800 billion. This was converted to US Dollars using a 2015 average exchange rate sourced from the World Bank.

⁹⁹ World Bank, Telenor: Financial inclusion is a good sustainability initiative and business opportunity, May 2016. Accessed at <http://blogs.worldbank.org/psd/telenor-financial-inclusion-good-sustainability-initiative-and-business-opportunity>

¹⁰⁰ National Bank of Serbia

¹⁰¹ Telenor, GP launches life insurance to customers, 2013. Accessed at <http://www.telenor.com/media/articles/2013/gp-launches-life-insurance-to-customers/>

¹⁰² BBC, Pakistan's silent banking revolution, April 2015. Accessed at <http://www.bbc.co.uk/news/technology-32491889>

¹⁰³ BBC, Pakistan's silent banking revolution, April 2015. Accessed <http://www.bbc.co.uk/news/technology-32491889>

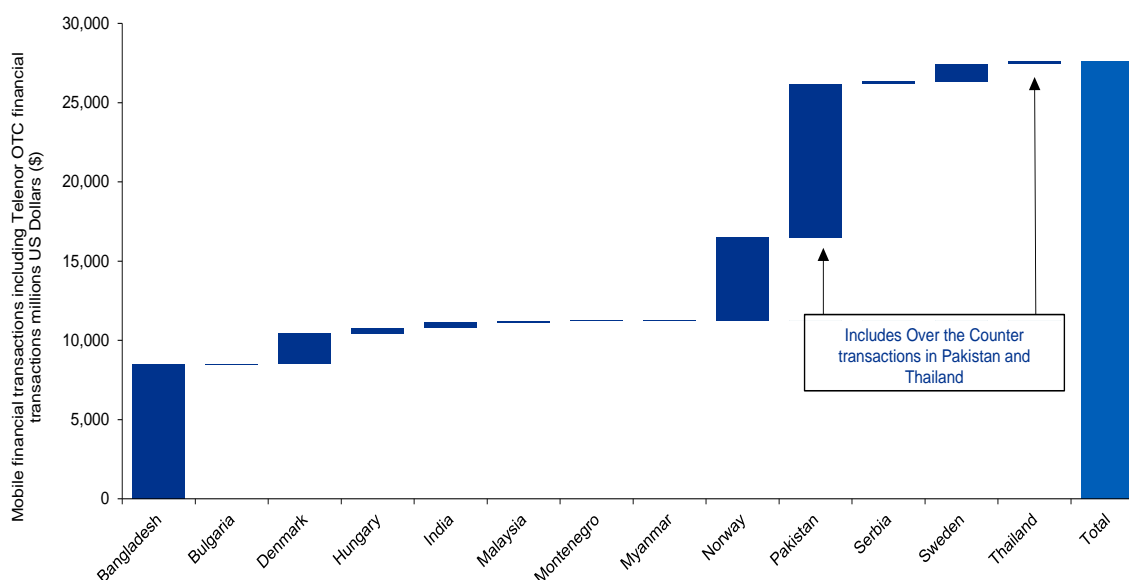
In 2013, in partnership with MicroEnsure, Telenor in Bangladesh launched Nirvoy Life which provides its customers with free life insurance cover based on the airtime used by the customer each month. The service becomes active on the first day of the month following the registration and the total insurance benefit is based on the subscriber's airtime usage the previous month. As of April 2016, Telenor in Bangladesh had 5.7 million free micro insurance customers. It has so far to date paid out a total value of \$135,000, for 285 claims.

Telenor's contribution to financial inclusion spans beyond its own financial services, however, due to the access to financial services it enables for its subscribers via its network.

Drawing on IMF data¹⁰⁴, KPMG estimates that in 2015, Telenor enabled an estimated \$19.8 billion in mobile financial transactions via its mobile networks in 2015. Added to the further \$7.8 billion of financial transactions enabled by Telenor through over the counter transactions in Pakistan and Thailand this takes the total impact to \$27.6 billion.

In Europe, the total value of mobile financial transactions facilitated by Telenor is estimated to be \$8.8 billion in 2015. Across Telenor's Asian markets it is estimated to be \$18.8 billion. These figures include the financial transactions made via Telenor's own financial services in Bangladesh, Pakistan, Serbia and Thailand and the wider financial transactions made by its subscribers over the Telenor network in all 13 markets.

Figure 15: Value of Telenor-enabled mobile financial transactions, 2015



Source: KPMG analysis

One of the largest contributions across Telenor's markets in terms of the value of financial transactions made by its subscribers in 2015 was in Bangladesh. This is, in part, due to Telenor's large numbers of customers and its market share, as well as the high number of mobile money providers and mobile money outlets in this market.

While lower numbers of Telenor subscribers were estimated to have used their mobile to make financial transactions in countries such as Bulgaria and Montenegro, as the prevalence of the mobile

¹⁰⁴ IMF Financial Access Survey includes information on the value of mobile money payments made across each economy for 2014.

financial services use grows, so will the number of financial transactions conducted and the total value, thus increasing Telenor's impact on financial inclusion and access.

4.4 Telenor's contribution to boosting entrepreneurship and innovation

4.4.1 The role of mobile communication services in promoting entrepreneurship and innovation

Connectivity is transforming the way in which societies operate, for businesses and consumers alike.

In an increasingly connected world, and with digitisation being adopted by an increasing number of industry sectors, information and communication technologies are generating new business opportunities. Mobile communications, and in particular mobile broadband services, have the potential to facilitate enterprises to be more productive, access information and bring products to market.¹⁰⁵

Mobile communication can help to boost entrepreneurship and innovation in a number of ways:

- Connectivity can support business in developing innovative ways of working e.g. remote working and virtual meetings can help to significantly improve business efficiency. IDC estimate that the number of mobile workers accessing enterprise systems will have reached 1.3 billion in 2015, accounting for more than a third of the global workforce.¹⁰⁶
- M2M technologies and the Internet of Things can generate significant operational and cost improvements such as:
 - improved detection of machine wear and maintenance requirements improves business productivity and cut costs;
 - smart energy monitoring reduces energy consumption and hence costs; and
 - improved automation and synchronisation of processes and improved logistics and supply chain management, which can raise efficiency and reduce costs.
- Mobile technology can help to expand businesses by opening them up to a worldwide market. Mobile phones can be used as a tool to find new customers and markets and also to forecast future demand.¹⁰⁷ This can benefit both established businesses and new start-ups.
- Mobile technology can also inspire entrepreneurship by reducing the cost of setting up and operating businesses. Lower transaction costs can be achieved through improved information flows between buyers and sellers and result in greater exchange of information.¹⁰⁸
- Mobile phones can improve conditions for entrepreneurship by increasing access to information about market demand and prices. Studies have found that mobile phones can make entrepreneurial ventures less risky, mainly by reducing information search costs.¹⁰⁹
- In developing countries, particularly rural areas, mobile technology can act as a key means for many entrepreneurs to operate their business. Not only to contact customers and access the internet, but also to make financial transactions, establish a client database and co-ordinate supply chains. These vital business functions, allow entrepreneurs to set up and effectively run their businesses and be successful in locations where accessing markets may otherwise be very difficult.¹¹⁰

¹⁰⁵ The Broadband Commission, The state of broadband 2012: Achieving digital inclusion for all, 2012.

¹⁰⁶ IDC, Worldwide Mobile Worker Population Forecast 2011 – 2015, 2012

¹⁰⁷ Rannu, R., Saksing, S., Mahlakõiv, T., Mobile Government: 2010 and Beyond. White Paper, 2010

¹⁰⁸ Rannu, R., Saksing, S., Mahlakõiv, T., Mobile Government: 2010 and Beyond. White Paper, 2010

¹⁰⁹ Andejelkovic, M., Imaizumi, S., Information and Communications for Development 2010, Mobile Entrepreneurship and Employment. Accessed at <http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/IC4D-2012-Chapter-5.pdf>

¹¹⁰ Andejelkovic, M., Imaizumi, S., Information and Communications for Development 2010, Mobile Entrepreneurship and Employment. Accessed at <http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/IC4D-2012-Chapter-5.pdf>

Moreover, the GSMA¹¹¹ has also commented on how the mobile industry continues to drive innovation across the world, allowing individuals, companies and governments to innovate in new ways. New platforms and services have become available and new markets have emerged, such as the app market.

A number of studies have looked at the effects of telecommunication services on global productive efficiency. For example, Thompson and Garbacz (2007)¹¹² assessed the way in which wider access to telecommunication services (measured through penetration rates) impacts business transaction costs, information flow and dissemination and organisational efficiency. It found that penetration rates of telecommunication services both significantly improve the productive efficiency of the world as a whole, and in the subset of low income countries considered in the analysis. However, the developed nations of the OECD, which have near universal service levels of telecommunications, already operate at or near their productive frontier and so show little, if any, response to changes in telecommunications penetration.

A recent study conducted for the GSMA¹¹³ similarly assessed the impact of mobile telephony on business productivity. It found that the contribution of mobile telephony (measured through mobile penetration rates) to total factor productivity, and thereby economic growth, is strong and can be seen across both developed and developing countries. The analysis suggests that a 10% increase in mobile penetration increases Total Factor Productivity in the long run by 4.2 percentage points. Total Factor Productivity measures how efficiently and intensely inputs are used in the production process. It is the part of output growth that cannot be accounted for by the primary factors of production (capital and labour). An increase in Total Factor Productivity, all other things being equal, leads to an increase in economic output, i.e. growth.

4.4.2 Telenor's initiatives aimed at boosting entrepreneurship and supporting innovation

In addition to the positive impacts on entrepreneurship, innovation and productivity through the use of telecommunications services, Telenor also contributes to these through a series of specific initiatives. These include Telenor's business acceleration programmes.

Telenor Accelerate is a programme that invites start-ups in five of Telenor's markets¹¹⁴ to participate in a 3-month acceleration programme with the aim of helping the start-ups gain market traction. The programme is aimed at early stage start-up businesses with either an idea for a product or a product in the early development stage and provides participants with:

- a series of workshops (on topics such as service design, communications training or privacy laws);
- access to a large community of entrepreneurs and investors;
- coaching and mentoring support;
- commercialisation support from Telenor; and
- legal, accounting and financial support.

Business incubation programmes are an established and commonly used mechanism for boosting growth of start-ups and SMEs. They can support the scaling and development of growth-orientated, early stage enterprises, providing entrepreneurs with an enabling environment, helping to reduce business launch costs, increase the skills and confidence of entrepreneurs and link them to resources that are required to start and scale a competitive business.¹¹⁵

¹¹¹ GSMA, The Mobile Economy 2016

¹¹² Thompson, H., Garbacz, C., Mobile, fixed line and Internet service effects on global productive efficiency, 2007.

¹¹³ Deloitte, What is the impact of mobile telephony on economic growth? A report for the GSM Association, 2012.

¹¹⁴ The countries are Hungary, Malaysia, Myanmar, Pakistan and Thailand.

¹¹⁵ World Bank Group, Enabling Innovative Entrepreneurship through Business Incubation. Accessed at http://siteresources.worldbank.org/INFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/ChapterKhalil_Olafsen.pdf

The economic impact of business incubation and acceleration programmes can vary widely dependent on a range of factors such as the type of support provided and the characteristics of the businesses assisted. There is some evidence to suggest, however, that enterprises benefitting from business incubation support had higher survival rates than the general enterprise survival rate and evidence of enterprises achieving better revenue growth outcomes than industry benchmarks.¹¹⁶

Telenor Case Study: Telenor's business incubation programme in Thailand: dtac Accelerate

dtac Accelerate is a business incubator programme in Thailand. It has been ranked by successful Thai startups as the best in Thailand due to its world-class training by top startup experts from Silicon Valley and mentorship opportunity¹¹⁷.

As part of the dtac Accelerate programme, participant companies attend a 4-month boot-camp, receive up to \$290,000¹¹⁸ of funding and commercialisation support to the value of \$1.4 million¹¹⁹. They also receive mentoring support from top Thai startup entrepreneurs, and one year of free access to a co-working space. Telenor has also collaborated with the government and other organisations (e.g. Microsoft Azure, TechInAsia and Galaxy Ventures) to help Thai startups by providing platforms for them to showcase their products at both domestic and international levels.

The aim of the dtac Accelerate programme is to assist Thai start-ups and provide them with an opportunity to reach their potential and assist with access to funding sources, to encourage their success and growth for the benefit of the Thai economy. Since its launch in 2013, dtac Accelerate has helped 11 participating startups. Some of the outcomes for these start-ups reported to Telenor include¹²⁰:

- Start-ups benefitting from dtac Accelerate have grown 3-15 times, reaching a total worth of approximately \$29 million¹²¹.
- 3 out of 6 dtac Accelerate start-ups received venture capital funding during the 4-month bootcamp. Overall 70% of dtac Accelerate start-ups received follow-on funding from Venture Capital in the region. This compares to a market average of 20%¹²².
- Four dtac Accelerate start-ups are ranked within the top-ten in several Thailand's top startup rankings, For example:
 - ClaimDi, an auto insurance industry software company was recently ranked as one of the world top 10 start-ups in insurance. It received \$2 million of Series A funding, which is a company's first significant round of venture capital financing¹²³. It is the largest amount of Series A funding ever received by a Thai start-up.
 - GizTix, an online marketplace for global logistics services, with the aim of bridging the gap between shippers and transporters, was awarded the winner of Startup LaunchPad out of 100 applications¹²⁴.
 - Take Me Tour is a startup company providing an online marketplace for local tours, with 7,500 local experts registered on the app.
 - SKOOTAR was named as "The Rising Startup of the Year 2015" in Thailand's top startup ranking¹²⁵.

¹¹⁶ World Bank Group, Enabling Innovative Entrepreneurship through Business Incubation. Accessed at http://siteresources.worldbank.org/INFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/ChapterKhalil_Olafsen.pdf

¹¹⁷ Telenor, Press conference dtac accelerate 4th batch, March 2016. Accessed at <http://accelerate.dtac.co.th/en/News/Detail/dtacaccelerate4-pressconference>

¹¹⁸ This is equivalent to 10 million Baht. This has been converted to US Dollars using a spot exchange rate on 4th November 2016 sourced from Bloomberg.

¹¹⁹ This is equivalent to 50 million Baht. This has been converted to US Dollars using a spot exchange rate on 4th November 2016 sourced from Bloomberg.

¹²⁰ Telenor, Press conference dtac accelerate 4th batch, March 2016. Accessed <http://accelerate.dtac.co.th/en/News/Detail/dtacaccelerate4-pressconference>

¹²¹ This is equivalent to 1 billion Baht. This has been converted to US Dollars using a spot exchange rate on 4th November 2016 sourced from Bloomberg.

¹²² Telenor, Press conference dtac accelerate 4th batch, March 2016. Accessed <http://accelerate.dtac.co.th/en/News/Detail/dtacaccelerate4-pressconference>

¹²³ Nation Multimedia, Claim Di start-up receives additional \$2m in funding, November 2015. Accessed at <http://www.nationmultimedia.com/news/business/corporate/30273636>

¹²⁴ E27, GIZTIX named winner of Echelon Thailand Startup LaunchPad. Accessed at <https://e27.co/giztix-named-as-winner-of-echelon-thailand-startup-launchpad-20151127/>

¹²⁵ Post Up News, Helps Business grow with digital technology in moving towards Digital Thailand. Accessed at <http://en.postupnews.com/2016/03/dtac-accelerate-batch-4.html?view=timeslide#/2016/03/dtac-accelerate-batch-4.html>

Telenor also has a number of innovation programmes in which it collaborates with third parties and invests in new technologies and processes with the ultimate aim of creating value for its customers.

Telenor Case Study: Telenor Hungary's Smartphone Academy

The Smartphone Academy is Telenor Hungary's educational event series sharing the latest innovations and future trends through a combination of TEDX-like presentations and an exhibition featuring the latest devices and solutions.

The first event was held 5 years ago and was an 'Android Workshop' aimed at drawing opinion formers' and customers' attention to the advantages of Android, at a time when Telenor Hungary did not sell the iPhone. As popularity for the event grew, driven by media coverage and word of mouth, participation increased from 30 to 60 predominantly technology focused individuals to up to 465 participants including wider consumers and professionals. Following the introduction of the sale of Windows phones and iPhones by Telenor Hungary, the event was renamed Smartphone Academy.

Today, the event is held quarterly with 3 to 4 key note presentations and 10 to 15 exhibitors. It is a place to show market leading technology, such as self-driving cars, and many technology companies have chosen Smartphone Academy as the Hungarian launch event for a new product. Due to live streaming, Telenor reports that the event reaches a much wider audience, with the last event being watched by 7,000 people via Facebook.

Since 2011, 15 events have been held with over 2,500 participants, 50 speakers and 100 exhibitors.

In April 2016, the Smartphone Academy won a Global Brand Excellence Award in the Education Sector at the World Brand Congress in Kuala Lumpur¹²⁶.

4.5 Telenor's role in supporting improved gender equality

4.5.1 Telenor's impacts as an employer on improving gender equality

A number of studies have shown that more gender-diverse companies and those that effectively utilise female talent experience improved company performance. For example, a recent Harvard Business Review study¹²⁷ found that gender-diverse companies were 45% more likely to report improved market share, 70% more likely to capture new markets and would enjoy a 144% improvement in the likelihood of new products and services succeeding.

Across its 13 markets, Telenor directly employed 12,445¹²⁸ women (FTEs) at year-end 2015. In headcount terms, this was 13,000 female employees. As a proportion of total employee headcount, it is estimated that 36% of Telenor's workforce at year end 2015 was female¹²⁹.

There are clear differences in the gender split of its employees in each of its markets, however. At year-end 2015, females made up a greater proportion of its workforce than males in Bulgaria, Hungary, Montenegro, Serbia and Thailand. In the other 8 countries in which Telenor operates, females were underrepresented.

In part, this difference across countries reflects the differences in the female participation rate in the national workforce. Although in European countries the gender split of employees at the national level is more even, in countries such as Pakistan only 21% of total national employees are female.

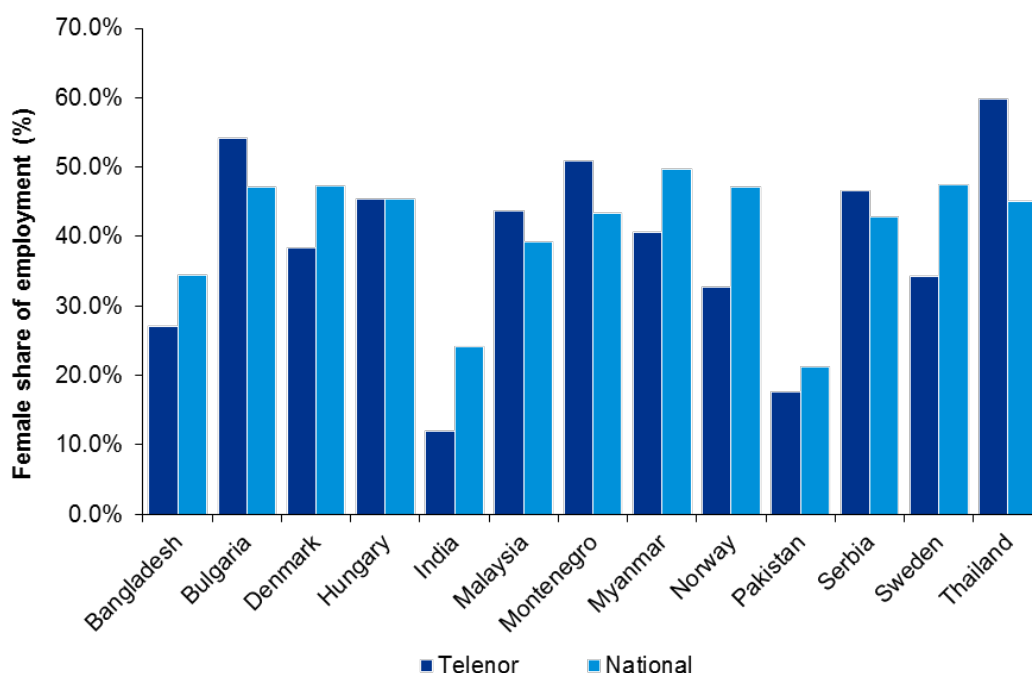
¹²⁶ Telenor, Smartphone Academy wins international award, May 2016. Accessed at <https://www.telenor.hu/en/press/pressreleases/1290>

¹²⁷ Harvard Business Review, How Women Drive Innovation and Growth, 2013,

¹²⁸ This employment figure includes full time equivalent trainees in Bangladesh.

¹²⁹ The proportion of female employees is based on figures included in the Telenor Annual Report 2015.

Figure 16: Telenor female employees compared to the national average, 2015



Source: Telenor internal data, International Labour Force database

Telenor's share of female employees in its workforce is equal to, or higher than, the national average in over half of the countries in which it operates.

This is a significant accomplishment considering the challenge seen more widely across the Information and Communication technology sectors. A report by the World Economic Forum found that the share of women working in the Information and Communication technology industry was 24%¹³⁰. The main barrier faced by the industry to having a more gender balanced workforce is the lack of availability of qualified talent¹³¹. A separate study conducted by the GSMA¹³² assessing gender diversity in the telecommunications sector found that in half of the companies surveyed women made up less than 35% of the total workforce.

With 36% of its employees (in headcount terms) across its 13 markets being female, Telenor's mix of male and female employees is very similar to what is seen across the industry as a whole globally.

And it has developed and participated in programmes to aim to improve its gender diversity performance. The Womentor programme in Sweden is one example of this.

¹³⁰ World Economic Forum, The Industry Gender Gap, Women and Work in the Fourth Industrial Revolution, January 2016.

¹³¹ World Economic Forum, The Industry Gender Gap, Women and Work in the Fourth Industrial Revolution, January 2016

¹³² GSMA, Connected Women 2015, Accelerating the digital economy: Gender diversity in the telecommunications sector, 2015.

Telenor Case Study: Womentor in Sweden

In Sweden, the telecommunications industry is traditionally male dominated, with only 29% of those employed in the industry being female. At senior management level, only 28% of positions are occupied by women.¹³³

To address this, Telenor Sweden is taking an active role in promoting women in the Information Technology and Telecommunication industry.

It has signed up to Womentor, a programme to support companies that want to increase their proportion of female managers and support the promotion of competent women into management positions in the future. As part of the programme, a woman in an existing managerial position is assigned a mentor from Womentor.

Telenor Sweden was acknowledged as the second best for gender balance out of the 26 companies participating in Womentor. While Telenor Sweden still aspires to increase female representation in its workforce, at year end 2015, 34% of its workforce was female.

4.5.2 The role of mobile communications in helping to promote diversity and gender equality

Beyond Telenor's own efforts to improve gender equality within its workforce, the mobile communication services that it provides play an important role in promoting diversity and gender equality in the markets in which it operates.

Women are marginally less likely than men to own a mobile phone and to have access to the internet; only 41% of the online population are women.¹³⁴ More starkly, the GSMA estimates that 300 million fewer women owned mobile phones when compared to men in low-to-middle income countries.¹³⁵ Furthermore, more than half (53%) of the unconnected population are women.¹³⁶

Telecommunications has the potential to empower women in a number of different ways.

— Growing employment and income

- In a GSMA survey, almost two thirds of working women reported that having a mobile means they have, or would have, greater access to business and employment opportunities.¹³⁷
- In another survey, Intel found that nearly half of women surveyed had used the internet to search and apply for jobs, whilst almost a third had used the internet to earn extra income.¹³⁸ Women who use mobile phones are more likely than women without mobile phones to be able to identify job vacancies through increased access to information, increasing access to income opportunities.¹³⁹

— Supporting entrepreneurship

- Information and Communication technologies, including mobile phones, computers and the internet, can promote entrepreneurial activity of women, improving business practices and helping to overcome traditional gender barriers seen in some markets.¹⁴⁰
- The International Centre for Research on Women's (ICRW) study of the impact of connectivity on women's entrepreneurship¹⁴¹, found that in India (the focus for the study) mobile phones in

¹³³ Womentor.se. Accessed at <http://womentor.se/2016/02/it-foretag-skriver-pa-for-jamstalldhet/>

¹³⁴ GSMA, Digital Inclusion, 2015

¹³⁵ GSMA, Bridging the gender gap: Mobile access and usage in low- and middle-income countries, 2015

¹³⁶ GSMA, Digital Inclusion, 2015

¹³⁷ GSMA, Connected Women. Bridging the gender gap: Mobile access and usage in low- and middle-income countries, 2015

¹³⁸ Intel, Women and the Web: Bridging the Internet gap and creating new global opportunities in low and middle-income countries, 2015

¹³⁹ International Centre for Research on Women, Connectivity: How mobile phones, computers and the internet can catalyse women's entrepreneurship, 2012.

¹⁴⁰ International Centre for Research on Women, Connectivity: How mobile phones, computers and the internet can catalyse women's entrepreneurship, 2012.

¹⁴¹ International Centre for Research on Women, Connectivity: How mobile phones, computers and the internet can catalyse women's entrepreneurship, 2012.

particular supported women's entrepreneurial activity and that ICT was most effective at supporting women to save time and access new markets.

- ICT can also promote women's economic advancement by reducing barriers, raising productivity and presenting a wider range of income earning opportunities.¹⁴² For example, as cited in one study¹⁴³, mobile phones have allowed women to develop new careers as village phone owners, which also gives their community access to internet services.
- A recent survey by the GSMA¹⁴⁴ found that four in ten women surveyed across low and middle-income countries reported benefitting from increased economic or professional opportunities due to owning a mobile phone.
- It has also been found that women tend to focus resources on their children. So, when a woman's income is increased or when they are given greater power within the family, which is enhanced through access to mobile services, the quality of life for their children increases as well as for them. This includes receiving more food and education.¹⁴⁵

— Raising skills and knowledge

- Access to the internet via mobile broadband networks enables individuals to access a wide range of sources of information and knowledge. By using the mobile internet, women are able to better engage with current affairs, information on employment, education and health. This can have a significant effect in changing attitudes towards gender roles, especially in areas which previously had limited exposure to the rest of the world.¹⁴⁶
- As discussed in section 5.2, telecommunications can promote and increase access to education for all. In particular, this can benefit females as, for example, in many developing countries girls have less opportunities to go to school than boys, often for cultural, societal and economic reasons. By making education cheaper, more accessible and more flexible, telecommunications can contribute to increasing gender equality and empowering girls through education.
- By having a positive impact on women in this generation and helping them overcome the barriers of gender inequality, the benefits will be experienced for generations to come. Increasing women's access to education through the provision of mobile services also creates wider positive spillover benefits for the family. For example, educated mothers are more likely to ensure that their children go to school.¹⁴⁷ The Inter-American Development Bank (IDB) has found that children of employed mothers have 5% better educational attainment than other children in 13 out of 15 Latin American countries.¹⁴⁸

— Making the world feel safer for women

- A positive outcome from mobile phone ownership by women is feeling safer.
- For example, a recent GSMA survey¹⁴⁹ reported that nine in ten women feel safer and more connected because of their mobile phone.
- Safety is a prevalent issue worldwide, and no more so than in some areas of low and middle-income countries. Mobile phones can provide resources to help handle threats that may not otherwise be available to women in these countries.

¹⁴² Gill et al, Bridging the gender divide: how technology can advance women economically, 2010.

¹⁴³ Gill et al, Bridging the gender divide: how technology can advance women economically, 2010.

¹⁴⁴ GSMA, Women & Mobile, A Global Opportunity, 2010

¹⁴⁵ Onyishi, I.E., Agbo, A. A, Psychological Empowerment and Development of Entrepreneurship among Women: Implications for Sustainable Economic Development in Nigeria, 2010. *Gender & Behaviour*, 8(2), 3049-3068.

¹⁴⁶ Intel, Women and the Web: Bridging the Internet gap and creating new global opportunities in low and middle-income countries, 2012

¹⁴⁷ Lloyd, CB., Young, J, New lessons: the power of educating adolescent girls, 2009.

¹⁴⁸ Inter- American Development Bank, Inequality and the Family in Latin America, 1999. Accessed at <http://www.iadb.org/res/publications/pubfiles/pubwp-393.pdf>

¹⁴⁹ GSMA, Women & Mobile, A Global Opportunity, 2010

- There is also some evidence to suggest that situations that may have previously provoked anxiety for a woman, or her relatives, have in some cases been reduced or eliminated by the connectivity that having a mobile phone in these situations allows.¹⁵⁰

4.5.3 Telenor's role in supporting the economy through its female subscribers' use of mobile communications

Across its 13 markets, Telenor provided mobile services to 59.6 million female subscribers in 2015. This was an 11% increase in female subscribers from 2014.

In the same way in which increasing digital inclusion can promote economic growth, raising the penetration rates of mobile services across the female population of countries contributes to the broader economic benefits of mobile communication.

In order to assess the net contribution to GDP made as a result of Telenor's change in digital access (as measured by 2G, 3G and 4G mobile penetration rates) for the female population in 2014-15, we tailored our digital inclusion analysis shown in Section 5.2 to focus only on female subscribers.

KPMG estimates, building on the GSMA's earlier analysis, that between 2011 and 2015, Telenor contributed \$33 billion to GDP growth across its 13 markets through increased digital access (increasing 2G, 3G and 4G mobile penetration rates) for female subscribers over this period.

In 2014-15 alone, it contributed \$3.1 billion to GDP growth across its 13 markets through the increase in mobile penetration rates between 2014 and 2015.

Table 5: Net GDP growth contribution from changes to digital access for female subscribers, 2011-2015 and 2014-2015

	GDP growth contribution associated with all female subscribers' use of Telenor services 2014 – 2015 (millions US dollars)	GDP growth contribution associated with all female subscribers' use of Telenor services 2011 – 2015 (millions US dollars)
Bangladesh	730	7,500
Bulgaria	27	32
Denmark	73	300
Hungary	0 ¹⁵¹	240
India	200	370
Malaysia	200	460
Montenegro	2	12
Myanmar	1,400	1,400
Norway	72	530
Pakistan	226	3,600
Serbia	13	130
Sweden	0 ¹⁵²	0 ¹⁵³
Thailand	150	18,500
Telenor total	3,100	33,000

Source KPMG analysis

¹⁵⁰ GSMA, Women & Mobile, A Global Opportunity, 2010

¹⁵¹ Between 2014 and 2015 female mobile penetration decreased by 3%, therefore the GDP contribution for these two periods is assumed to be zero.

¹⁵² Between 2014 and 2015, Telenor Sweden experienced a decrease in female subscribers of 0.5% and 3G/4G penetration also decreased by 0.2%. Therefore the GDP contribution for this period is assumed to be zero.

¹⁵³ Between 2011 and 2015 Telenor Sweden experienced a 3% decrease in female subscribers, and 3G/4G penetration rates for female subscribers also decreased by 0.4%. Therefore the GDP contribution for this period is assumed to be zero.

Across a number of Telenor's European markets, mobile penetration rates associated with female subscribers are close to saturation and Telenor has not grown its female subscriber numbers at the same rate as in Asia. Indeed, in some markets, such as Sweden, Telenor's overall mobile penetration rate has declined in recent years.

Like the digital inclusion analysis in Section 5.2, the estimate of the contribution to GDP growth of increased Telenor mobile penetration rates associated with female subscribers measures the additional contribution generated from one year to the next, rather than the total contribution overall (i.e. is a flow measure rather than a stock). Therefore, in a number of Telenor markets where the increases to mobile penetration are slowing year on year, or declining, the additional contribution that Telenor can make to GDP through its services, by this quantification measure, is limited. This explains why the results in some countries are very low or zero.

4.5.4 Telenor initiatives to promote gender equality

In order to increase women's use of mobile technology, helping to bridge the digital divide and address barriers to take-up, Telenor has launched a number of initiatives across its Asian markets.

These include Project Sampark in India and the Digi Wanita Era Digital in Malaysia.

Telenor Case Study: Project Sampark

Project Sampark is an award winning¹⁵⁴ Telenor project in India that aims to address the socio-economic issues caused by the mobile gender gap and increase women's access to mobile phones in the rural areas of India.

It won the Aegis Graham Bell Award 2015 for 'Bringing Fortune at the Bottom of the Pyramid' under the telecom category and won the Exchange4media IPRCC Award 2015 for the most effective CSR and social responsibility campaign under the CSR & not-for-profit category.

In India, mobile penetration amongst women is lower than amongst men, with just 28% of women owning a mobile phone compared to 43% of men.¹⁵⁵

There are many reasons cited as perceived barriers of women's access to mobile phones in India, including¹⁵⁶:

- handset cost;
- network quality and coverage;
- cost of credit;
- technical literacy and confidence; and
- security.

In some areas of India there are also social and cultural barriers that restrict access to mobile for women.

Project Sampark attempts to work around these access barriers rather than challenging them directly. Telenor considers that by increasing mobile penetration amongst women, these barriers will be addressed over time.

Project Sampark is a project involving the development of a new product offering and the testing of a new marketing model. It is an initiative supported by the GSMA under its Connected Women programme.

The 'Bandhan Pack' has been developed which is a pack of two paired SIM cards, one of which must be used by a women and the other by a male household member¹⁵⁷. The tariff plan for the paired SIMs is such that when one SIM is credited, the other SIM automatically receives an equivalent number of free refill minutes.¹⁵⁸

¹⁵⁴ Aegis Graham Bell Awards, Telenor- The Fortune at the Bottom of the Pyramid winner 2015, 2015. Accessed at <http://bellaward.com/telenor-the-fortune-at-the-bottom-of-the-pyramid-winner-2015/>

¹⁵⁵ GSMA, Connected Women 2015

¹⁵⁶ GSMA, Connected Women 2015

¹⁵⁷ Telenor Sustainability Report, 2015. Accessed at http://www.telenor.com/wp-content/uploads/2012/03/Telenor-Sustainability-Report-2015_1.pdf

¹⁵⁸ GSMA, Connected Women, Case Study Uninor: Project Sampark, March 2015. Accessed at <http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/07/Connected-Women-Uninor-Sampark-Case-Study.pdf>

Project Sampark also includes a new distribution model, targeted at women. Telenor has trained women promoters within communities who are then able to create awareness around the product and the benefits of mobile phones, particularly amongst females.

In the first 18 months of the project, 40 female promoters have been trained and employed and 72,000 users have converted to Bandhan packs.

The final component of Project Sampark is an awareness campaign for gender equality and mobile ownership. Trained artists perform plays in project villages to demonstrate how a mobile phone can improve the social and economic status of women and help them connect, be better informed and empower them.

Riya is a 22 year-old graduate who works for Telenor India's Project Sampark as a promoter. She has told Telenor about the impact mobile phones have had in her village.

"The women in my village now feel safer, and are proud of having a mobile connection and a device in their own name. The sense of independence and confidence is unmatched. Maybe this is the first step towards a larger social change."

Telenor Case Study: Wanita Era Digital

In Malaysia, through its Empower Societies initiative, Telenor launched the Digi Wanita Era Digital, or WED (Digital Era Women) programme to "bring the power of the Internet" to more Malaysian women. 48% of the Malaysian population are women¹⁵⁹, yet six million of these women have yet to access the internet.¹⁶⁰

The programme is a nationwide outreach with the objective of inspiring and empowering women in Malaysia through greater Internet adoption and education on basic Internet skills.

WED is a collaboration between Telenor in Malaysia (Digi), the Ministry of Communications and Multimedia Malaysia, the Malaysian Communications and Multimedia Commission (MCMC), and the National Council of Women's Organisations (NCWO).

The Malaysian Government recognises the importance of connectivity and the benefits that this can deliver. At the launch of the WED programme, Dr Sharifah Zarah Syed Ahmad, Secretary General of the Ministry of Communications and Multimedia, said: "Progress towards becoming a digital nation must be an inclusive process...By connecting the unconnected and bridging the digital gender gap, we help ensure all Malaysians can be active participants and contributors to growing our digital economy,"

As part of the WED programme, a series of educational sessions are conducted at Malaysian Internet Centers and NCWO affiliates' offices around the country. During these sessions, women are introduced to basic, safe usage of smart devices and the internet for communicating, sharing, browsing, and entertainment.

¹⁵⁹Department of statistics Malaysia, Current Population Estimates. Accessed at https://www.statistics.gov.my/index.php?r=column/cthemByCat&cat=155&bul_id=OWlxdEV0YlJCS0hUZzJyRUcvZEYxZz09&menu_id=L0pheU43NWJwRWVSZklWdzQ4TihUUT09

¹⁶⁰ Department of Statistics Malaysia and a TNS/ Google study

5 Sustainability in the supply chain

5.1 The positive socio-economic impacts associated with sustainable sourcing

The UN defines Supply Chain Sustainability as “a company’s delivery of long term value creation in financial, social, environmental and ethical terms”¹⁶¹.

It believes that companies should manage their environmental, social and economic impacts, as well as encouraging good governance, in order to create, protect and grow long-term value across these impacts for all stakeholders.

The UN’s Global Compact, to which Telenor is part of the advisory group, has ten key principles covering four broad areas addressing how companies should approach corporate sustainability. These broad areas include:

- human rights;
- labour;
- environment; and
- anti-corruption.

The principles for these areas are outlined by the UN. In addition, the UN Guiding Principles on Business and Human Rights, which Telenor has adopted, set out the role of business enterprises to comply with all applicable laws and to respect human rights.

Telenor’s Supplier Conduct Principles (SCS) on which its Supply Chain Sustainability policy is based draws from the UN’s Global Compact. It includes principles which suppliers must adhere to which cover the four broad areas outlined above, as well as some additional areas such as conflict minerals and privacy.

The socioeconomic benefits the principles confer, are wide ranging.

Human rights

The UN Global Compact considers that business should support and respect the protection of internationally recognised human rights and ensure they are not complicit in abuses. In addition, they can go further by taking steps to support and promote human rights through core business activities, strategic social investment, philanthropy, public policy engagement, advocacy partnerships and collective actions.¹⁶²

Large global businesses, which are very visible, may have an important role in bringing and upholding human rights in countries where protections are currently weak, such as Myanmar, bringing social benefits to their employees and potentially wider society.¹⁶³

¹⁶¹ UN, Supply Chain Sustainability: A Practical Guide for Continuous Improvement, Second Edition, 2015.

¹⁶² UN, Supply Chain Sustainability: A Practical Guide for Continuous Improvement, Second Edition, 2015.

¹⁶³ Oxford Human Rights Hub, A new Role for Businesses in Safeguarding Human Right, September 2013. Accessed at <http://ohrh.law.ox.ac.uk/a-new-role-for-businesses-in-safeguarding-human-rights/>

Indeed, the UN Guiding Principles on Business and Human Rights set out the corporate responsibility to respect human rights and the role that businesses should play, wherever they operate, in taking adequate measures to prevent, mitigate and, where appropriate, remediate adverse human rights impacts.¹⁶⁴

The economic literature, although not in consensus on the issue, has generally indicated that the presence and protection of human rights can be beneficial for economic growth, especially as the presence of basic human rights are a precondition for effective civil and property rights. For instance, a study conducted on the economic effects of human rights found that there appear to be positive effects on both physical and human capital investment and on productivity.¹⁶⁵

Labour

In terms of its labour Supply Chain Sustainability principles, the UN considers that businesses should uphold freedom of association and collective bargaining, eliminate any form of forced labour, abolish child labour and eliminate discrimination.

In addition, it recommends that companies should ensure other abuses of its workers are not observed, such as excessive work hours, unpaid wages and unsafe and hazardous working conditions. The right to safe and healthy working conditions is critically important. Ensuring these labour rights can have a wide range of social and economic benefits.

For example, the effective abolition of child labour is Principle 5 in the UN Global Compact. UNICEF estimated that in 2016, 150 million children worldwide aged 5-14 were engaged in child labour.¹⁶⁶ Abolishing global child labour and ensuring all children up to the age of 14 go to school was estimated to bring net benefits of \$107 billion annually to the world economy according to a 2003 study published by the International Labour Organisation (ILO).¹⁶⁷ The benefits included positive impacts of primary education on small farmers' agricultural output, enhanced entrepreneurship, lower infant and child mortality, lower birth rates and enhanced economic growth driven by increased education. Benefits to children's health of removing child labour have also been found.¹⁶⁸

The UN Global Compact recognises the importance of safe and healthy working conditions and avoiding unsafe and hazardous work. It advises companies to review the ILO International Labour Standards on Occupational Safety and Health when writing and adopting a Supply Chain Sustainability policy.

A British Safety Council report published in 2014 outlined that, annually, 2.2 million people worldwide die as a result of work related ill-health, illness or injury.¹⁶⁹ Estimates of the social and economic cost of these deaths, injuries and ill health put them at 4% of annual GDP.

Ensuring good health and safety conditions in workplaces can, therefore, lead to many benefits including reduced costs and risks for firms, lower employee absence and turnover, fewer accidents, better reputations for companies and increased productivity from healthier, happier and better motivated employees.¹⁷⁰

Along with the ILO International Labour Standards on Occupational Safety and Health, the UN Global Compact also advises companies to apply the ILO Declaration on Fundamental Principles and Rights at Work and the ILO Tripartite declaration of principles concerning multinational enterprises and social

¹⁶⁴ UN, Guiding Principles on Business and Human Rights, Implementing the United Nations "Protect, Respect and Remedy" Framework, 2011.

¹⁶⁵ Lorenz Blume and Stefan Voigt, The Economic Effects of Human Rights, 2004.

¹⁶⁶ Unicef, An estimated 150 million children worldwide are engaged in child labour, June 2016. Accessed at <http://data.unicef.org/child-protection/child-labour.html>

¹⁶⁷ ILO, Costs and benefits of education to replace child labour, 2003.

¹⁶⁸ ILO, Health benefits of eliminating child labour, 2003.

¹⁶⁹ British Safety Council, The business benefits of health and safety, May 2014. Accessed at https://www.britsafe.org/sites/default/files/editor/C058_The_business_benefits_of_occupational_H%26S_update_v12.pdf

¹⁷⁰ Health and Safety Executive, Benefits of good health and safety. Accessed at <http://www.hse.gov.uk/leadership/benefits.htm>

policy. Broadly, the ILO's International Labour Standards have several benefits.¹⁷¹ For employees this includes ensuring jobs and working conditions in which people can work in freedom, safety and dignity. More broadly, it has been linked with improvements in productivity and economic performance with higher wages and working time standards translating into more satisfied workers and lower staff turnover. It can also have positive impacts on reducing poverty through the extension of freedom of association, social protection, occupational safety and health and vocational training, and other measures.

Anti-corruption

Principle 10 of the UN Global Compact covers anti-corruption.

It recommends that businesses should work against corruption in all its forms, including bribery.

Corruption has a large, negative effect on an economy leading to reduced efficiency and increased inequality.¹⁷² Globally the cost of bribery has been estimated at 2% of global GDP¹⁷³, which is equivalent to between \$1.5 and \$2 trillion.¹⁷⁴ The overall economic and social costs are likely to be far larger than this given that bribery is just one form of corruption.

There are numerous economic and social costs to corruption. Corruption has a negative effect on inclusive growth through a variety of mechanisms including:¹⁷⁵

- reduced capacity by central government to fulfil its core functions such as raising taxes and undertaking public spending due to public mistrust which may result in growth reducing fiscal deficits and debt accumulation;
- a negative impact on other government functions such as sound monetary policy and well-functioning financial services;
- reduced public and private investment;
- stifled productivity and reforms as the market mechanism is distorted and businesses focus on 'rent seeking' activities; and
- an increased cost of doing business as a result of bribes and the risk of prosecution, and reputational damage.

Corruption has also been linked with reduced social and environmental outcomes including:¹⁷⁶

- poor education and health outcomes partly as a result of lower spending on education and health as well as inefficient provision of public services as funding suffers 'leakages' and workplace corruption such as absenteeism;
- increased income inequality and poverty as poorer citizens miss out on the provision of key services, cannot afford to pay bribes and do not have the connections of the more privileged in society; and
- increased pollution and natural resource depletion.

¹⁷¹ International Labour Organisation, The benefits of International Labour Standards, Accessed at <http://www.ilo.org/global/standards/introduction-to-international-labour-standards/the-benefits-of-international-labour-standards/lang--en/index.htm>

¹⁷² CleanGovBiz, The Rationale for fighting corruption, 2014. Accessed at <https://www.oecd.org/cleangovbiz/49693613.pdf>

¹⁷³ World Bank, Myths and Realities of Governance and Corruption. Accessed at http://siteresources.worldbank.org/INTWBIGOVANTCOR/Resources/2-1_Governance_and_Corruption_Kaufmann.pdf

¹⁷⁴ IMF, Corruption: Costs and Mitigating Strategies, 2016. Accessed at <http://www.imf.org/external/pubs/ft/sdn/2016/sdn1605.pdf>.

¹⁷⁵ IMF, Corruption: Costs and Mitigating Strategies, 2016. Accessed at <http://www.imf.org/external/pubs/ft/sdn/2016/sdn1605.pdf>. CleanGovBiz, The Rationale for fighting corruption, 2014. Accessed at <https://www.oecd.org/cleangovbiz/49693613.pdf>

¹⁷⁶ IMF, Corruption: Costs and Mitigating Strategies, 2016. Accessed at <http://www.imf.org/external/pubs/ft/sdn/2016/sdn1605.pdf>. CleanGovBiz, The Rationale for fighting corruption, 2014. Accessed at <https://www.oecd.org/cleangovbiz/49693613.pdf>

5.2 Telenor's Supply Chain Sustainability policy

Telenor introduced its Supply Chain Sustainability (SCS) policy in 2009, as part of its wider sustainability initiatives that aim to create shared value and maximise the impact of communication services for the wider society, as well as Telenor's business.

Telenor's Supply Chain Sustainability (SCS) policy requires all suppliers to follow its Supplier Conduct Principles, which draw heavily from those principles outlined in the UN Global Compact. Telenor's suppliers are required to sign up to a contractually binding Agreement on responsible Business Conduct (ABC)¹⁷⁷ as part of its commercial contracting. This agreement commits the supplier to ensuring that Telenor's Supplier Conduct Principles, are met for its employees.

Furthermore, suppliers are also required to do their utmost to cascade the code of conduct to their own suppliers, expanding further the number of employees who will benefit from a good standard of working conditions.

In 2015, Telenor had 20,636 signed ABC agreements with suppliers across all 13 markets; of which 9,768 were agreements with suppliers with an active contract with Telenor in 2015. The majority of these companies, 80% were suppliers in Telenor's Asian markets.

Telenor's Supplier Conduct Principles place specific requirements on its suppliers in the following areas.

Telenor supplier conduct principles

- **Human rights** - In line with the UN Global Compact, suppliers are required to respect internationally recognise human rights as expressed in the United Nations International Bill of Rights.
- **Labour rights** - Suppliers are required to respect recognised rights and principles as set out in the ILO Core Conventions and Declaration on Fundamental Principles and Rights at Work. In line with Principles 3 to 6 of the UN Global Compact, supplier's must also ensure freedom of association and the right to collective bargaining, must not employ or use any form of forced labour, must not employ any person under the age of 15 and 18 for hazardous work, and will promote equality of opportunity and diversity in the workplace. In addition suppliers must, at a minimum, comply with all national laws and regulations on employment and will treat with workers with respect and dignity, not tolerating any degrading treatment.
- **Health and safety** - The UN Global Compact highlights the importance of a healthy and safe working environment. Telenor's principles require suppliers to promote the good health of workers and maintain and safe and secure working environment. They should assess, mitigate and monitor all hazards as well as provide workers with training on health and safety.
- **Environment** - Principles 7 to 9 of the UN Global Compacts are all incorporated in Telenor's Supplier Conduct Principles. It requires suppliers to take a precautionary approach towards environmental and climate challenges, ensure that responsible practices for managing environmental impacts are in place, and encourage the development and diffusion of environmentally friendly technologies. Suppliers must also seek to minimise its environmental impact and implement an environmental management system.
- **Prohibited business practice** - Principle 10 of the UN Global Compact states that businesses should work against corruption in all its forms. Telenor's prohibited business practices covers a range of areas aimed at tackling corruption as well as other negative businesses practices. Suppliers must comply with all laws and regulations covering bribery, corruption and fraud. They must not facilitate bribery and should maintain an effective anti-corruption programme. They must not partake in anti-competitive behaviour and must not offer or give gifts which are beyond a modest value. In addition, suppliers must take reasonable

¹⁷⁷ Some suppliers from particular sectors are waived the need to sign an ABC agreement and Telenor business units are instead required to use common sense and proper judgement in deciding whether to contract them. These sectors broadly include roaming partners, interconnect partners, rental of small spaces and lease of land for technical sites, airlines, insurance providers, banks and other financial services, urgent legal services, health care services/medical support partners, government institutions, membership of local or international organisations, standard off the shelf software licences, lease of existing telecoms infrastructure and public utilities such as electricity and water. If the ABC Agreement is refused by a supplier, it can be waived as long as one of the following three conditions are fulfilled: The supplier is critical to the end market and there are no viable alternatives; the actual risk of non-compliance by the supplier is negligible; or the supplier has a remote relationship to the business unit's core business operations.

steps to prevent illegal forms of payment and to ensure that they do not deal with entities or people subject to UN, EU or other applicable sanctions lists.

- **Other** - Telenor's principles also includes areas not directly covered by the 10 principles of the UN Global Compact. Suppliers are required to have in place a procedure to avoid the use of conflict minerals. In addition, the supplier should recognise and respect privacy and freedom of expression within their operations and take necessary diligence in managing data protection.

The SCS policy is implemented across all 13 of Telenor's markets with each market having its own Supply Chain Sustainability staff along with a group level Supply Chain Sustainability function to oversee implementation and monitoring.

5.3 The impact of Telenor's Supply Chain Sustainability policy

5.3.1 Monitoring of suppliers' compliance with Telenor's Supply Chain Sustainability policy

When companies initially sign the ABC, Telenor conducts a risk assessment of that company to consider the risk of a supplier operating contrary to any of the Supply Chain Principles. Whether and how often follow up monitoring of suppliers and sub-suppliers takes place are based on the resulting risk levels assigned through these assessments.

Monitoring suppliers' conformity with the Supply Chain Principles includes announced and unannounced inspections carried out, by qualified personnel, either by Telenor or external suppliers.

To ensure compliance with its SCS policy, teams in each of Telenor's markets undertake a comprehensive monitoring exercise across their supply chains.

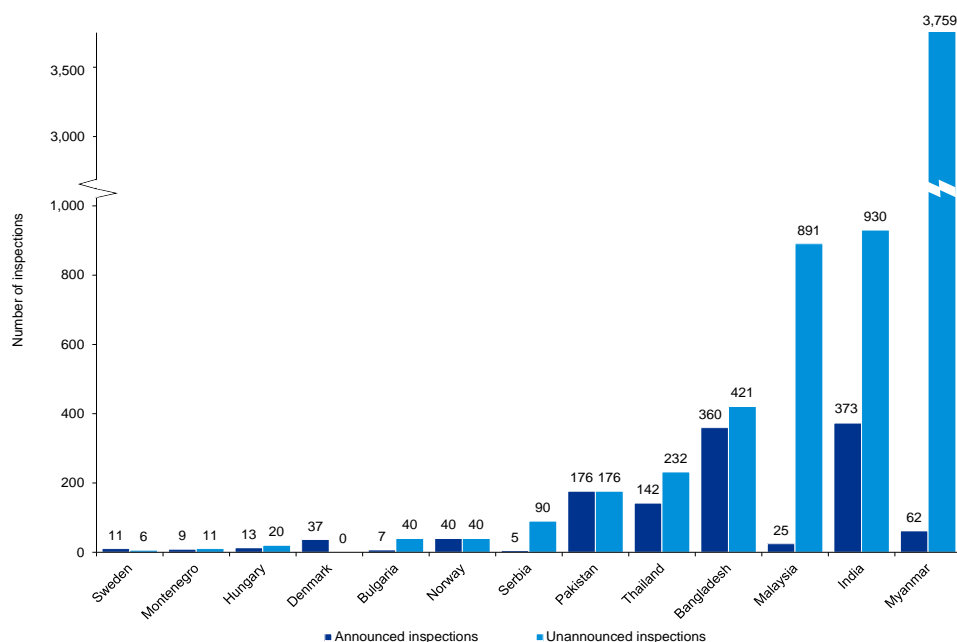
During the course of 2015:

- 7,876 inspections of suppliers were conducted, of which 84% were unannounced inspections and 16% were announced inspections;
- 96% of all inspections were undertaken in Asian markets with 49% of all inspections taking place in Myanmar¹⁷⁸;
- 1,055 companies which employed a total of approximately 285,000¹⁷⁹ employees between them were inspected; and
- 86% of all companies inspected were based in Asian markets, with India accounting for 65% of total employment of inspected companies.

¹⁷⁸ During 2015 Telenor Myanmar conducted 62 announced and 3,759 unannounced inspections on the local supply chain. Telenor Myanmar, which began operation in 2014, is currently in the process of expanding their network through the construction of cell sites. During 2015, 3,240 cell sites began construction and 3,068 base stations went on air. The high number of unannounced inspections in Myanmar is as a result of inspections of these cell sites, some of which were inspected two or more times over the average 2 month construction period.

¹⁷⁹ The total number of employees employed by inspected companies does not include Montenegro as this data was unavailable.

Figure 17: Announced and unannounced inspections by country



Source: Telenor data

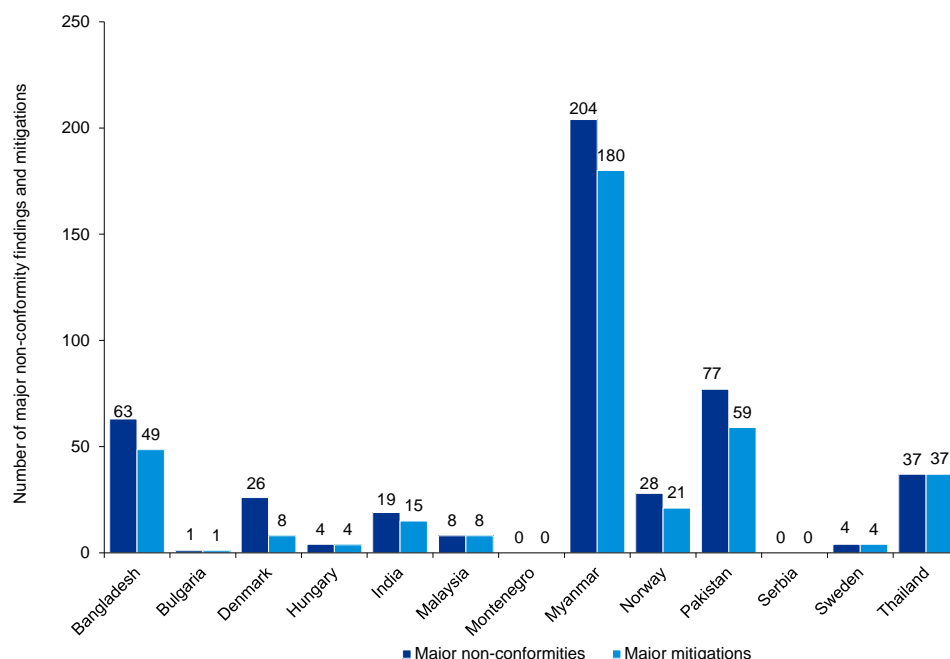
The results of inspections in terms of conformity with the principles and ABC are recorded. Non-conformities can range from observations to major non-conformities which require more urgent mitigation.¹⁸⁰ Where major non-conformities are found and recorded, Telenor generally works with the supplier to agree an appropriate improvement plan and follows up, including through additional inspections, to ensure that the non-conformities have been addressed.

During 2015, 471 major non-conformities were recorded, of which 87% were recorded in Asian markets. And of the findings made during 2015, 386 major non-conformities were mitigated within 12 months, representing 82% of all major non-conformities found in the year.¹⁸¹

¹⁸⁰ Major non-conformities include use of underage labour, use of any form of forced labour, major instances of corruption, bribery and fraud, work related fatal incidents, work related incidents resulting in significant injury and/or illness and actions which pose a significant risk of severe damage to the environment.

¹⁸¹ Serbia and Montenegro didn't mitigate any major findings in 2015, as there were no major non-conformities found amongst their inspections.

Figure 18: Major non-conformities and mitigations by country



Source: Telenor data

The relatively high rates of mitigation of major non-conformities indicates that once a problem is discovered, action is taken to mitigate the problem relatively quickly. This is consistent with Telenor's approach to continuous improvement regarding the Supply Chain Sustainability policy.

Telenor Case Study: Sigma's experience with Telenor's SCS policy

Sigma is a small company which provides warehousing and logistics services to Telenor in India.

As a signatory to Telenor's ABC, the company went through its first Supply Chain Sustainability audit in 2011.

The results of that audit flagged a number of observations and non-conformities, particularly in the area of basic health and safety processes.

Following the assessment, the management of Sigma were intent on meeting the requirements of the agreement and so worked with Telenor to mitigate the non-conformities recorded. This included Telenor carrying out capacity building exercises to improve training and awareness on a variety of company practices.

Above and beyond meeting the requirements of the ABC Agreement, Telenor also supported Sigma in achieving ISO 9001 certification.

Telenor reported to KPMG that Sigma had indicated to Telenor that it considers that it has benefited positively from the support of Telenor. Sigma reportedly also indicated that the improvements it made also helped it to win business from other companies.

Telenor India's work with suppliers to improve standards has also been recognised through award. In 2012 it was awarded the International Safety Award and International Safety Sector Award for the third year running by the British Safety Council and the Greentech Safety Award for the fifth year running by the Greentech Foundation.

5.3.2 Approach to estimating the impacts of Telenor's Supply Chain Sustainability policy

KPMG has undertaken analysis to estimate the number of Telenor's suppliers' employees that benefit from working within a company that adheres to the high standards of Telenor's Supply Chain Sustainability policy.

Drawing on data provided by Telenor across its 13 markets on the number of suppliers who have signed an ABC, the number of inspections, any resulting compliance findings, the number of employees and companies inspected and details on Telenor's wider supply chain, KPMG has estimated:

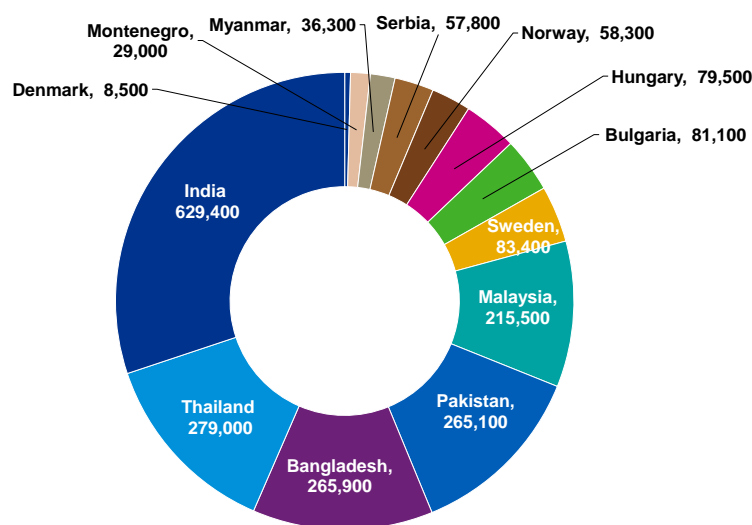
- the total number of employees which are employed by suppliers of Telenor who have signed an ABC; and
- the compliance rate of firms based on inspections and findings data.

Combining these two elements provides an estimate of the total number of people employed by companies who have signed an ABC and are following the Supply Chain Sustainability policy. Further details of the approach to this analysis are outlined in Appendix 1.

The data indicate that, as at 2015, across all 13 of Telenor's business units, a total of 2.1 million employees across 9,768 companies were estimated to be benefiting from working conditions which were following Telenor's SCS policy and the ABC. Of these employees 81% were based in Asian markets and 30% were based in India.

An outline of the number of employees covered by country are outlined below in Figure 20.

Figure 19: Employees covered by the Supply Chain Sustainability policy in Telenor's 13 markets



Source: KPMG analysis of Telenor data

Although the analysis estimates the total number of employees in suppliers who have signed up to an ABC and are following the policy, it cannot directly be interpreted as the number of employees whose conditions have been improved as a direct result of their employer signing up to Telenor's SCS Principles. This is because in some cases the supplier may already have been operating in such a way as to meet Telenor's Supplier Conduct Principles. In these cases, signing the ABC may not have resulted in an improvement in conditions for employees. Nevertheless, signing an ABC with Telenor can act as a check on even these companies' working conditions or business practices in the future.

However, it does provide some idea of the scale of employees and companies potentially positively affected. And for a number of reasons the analysis may underestimate the number of employees benefiting from working for suppliers with practices in line with Telenor's SCS Principles:

- The analysis only includes companies who have signed an ABC with Telenor. As outlined previously, some suppliers are exempt from signing an ABC. This analysis does not estimate the number of employees who work for these companies and whether the conditions of these employees are in line with Telenor's Supply Chain Sustainability policy. However, in these cases Telenor staff must use their judgement in deciding whether to retain the companies as suppliers, and will consider whether the Supplier Conduct principles are met.
- The analysis only includes companies who are direct suppliers to Telenor. It does not account for sub-suppliers of these companies who Telenor's direct suppliers are required to do their utmost to cascade the principles down to.
- The analysis does not account for any mitigating actions undertaken to meet the requirements of the policy following a major non-conformity finding on a first inspection. In these instances although employees were not following the policy at the time of the inspection, conditions may subsequently have improved as a result of the mitigating actions.

Telenor Case Study: Health, Safety, and Labour rights in Myanmar

Myanmar is a developing country with a low level of GDP per capita, \$1,203 in 2015.¹⁸² In 2011, Myanmar launched political and economic reforms which, amongst other things, increased openness to the world economy.

As a result, it faces challenges in meeting international standards on Health, Safety, and labour rights. For example, Myanmar Government statistics from the 2014 census indicated that in that year, almost 20% of 10 to 17 years olds were economically active and employed.¹⁸³

Telenor has been providing mobile voice and internet services in Myanmar since 2014. Through its Supply Chain Sustainability Policy, Telenor is committed to upholding international standards in Myanmar, promoting high labour standards and addressing some challenges such as child labour.

Telenor has recruited and trained a 12 member inspection team in Myanmar to monitor suppliers and ensure its commitments are met. In addition, it has and continues to build awareness and compliance capacity amongst its local suppliers through training.

Over the period 2013-2015, nearly 6,500 inspections have been conducted and there has been a quarter on quarter reduction in findings of major non-conformities, such as child labour and unsafe working practices, of 13%. In 2015 alone, a total of 3,821 inspections were undertaken, of which 98% were unannounced. The vast majority of these inspections were conducted at tower sites which were being constructed.

As the Supply Chain Sustainability policy is encouraged to be cascaded down from Telenor's direct suppliers through the wider supply chain, the benefits can also spillover to improved standards throughout the supply chain. There are examples of this in Myanmar. For instance, Telenor's supplier Eco Friendly Towers has conducted training for all its trainers and contractors and penalises workers and contractors who not follow correct Health Safety Security and Environmental (HSSE) procedures. This has benefitted the company as highlighted by the HSSE Manager:

"As a partner company we strictly follow Telenor's HSSE standards. Local companies that are following the procedures can familiarize themselves with international safety and security standards and they will be ready to do business when more international investors come" Dr Phyoe Thein Naing, HSSE Manager, Eco Friendly Towers

¹⁸² World Bank, 2016

¹⁸³ The Republic of the Union of Myanmar, The 2014 Myanmar Population and Housing Census. Accessed at http://myanmar.unfpa.org/sites/asiapacific/files/pub-pdf/2B_Occupation_and_Industry_EN_1.pdf

6 Telenor's contribution in crisis situations

6.1 The importance of communication infrastructure during emergencies

Fire, flooding and other natural and manmade disasters are hazards faced by the population worldwide.

According to the International Federation of Red Cross and Red Crescent Societies' World Disasters Report, there were 518 reported disasters in 2014 across the globe affecting 107,074,000 people, resulting in 13,847 deaths and causing \$99.1 billion of damage.¹⁸⁴

When these disasters occur, communication networks are often disrupted. However, the ability to communicate is essential in supporting successful disaster relief. Having effective telecommunications services in place can save lives.¹⁸⁵ Mobile networks facilitate both access to information and the coordination between government, NGOs and the international humanitarian community.¹⁸⁶ Robust mobile networks can provide a wide range of services including early warning messages, facilitation and logistical coordination of emergency assessments and responses and can support communication flows between, and to, affected populations. In this respect, operators are uniquely placed to support disaster response, working with other stakeholders.¹⁸⁷

As well as the specific benefits of telecommunications services in disaster relief, telecommunications companies, like other businesses and organisations, are able to provide support through their role in civil society. This includes support for their employees, support to aid institutions or support to government.

6.2 Examples of Telenor's response in times of crisis

There are a wide range of examples, across its markets, where Telenor has played a key role during disaster scenarios, supporting consumers, governments, and wider society.

Five case studies are outlined to demonstrate the role that Telenor has played.

Pakistan's early warning SMS system and network infrastructure in remote areas

In Pakistan, one of the key challenges faced by aid agencies following a natural disaster is that telecommunications systems become congested, making it very difficult for aid agencies to interact with affected communities.

Telenor Pakistan worked with the International Federation of Red Crescent (IFRC) to develop a location-based early warning SMS system. The system ensures preparedness and mitigation of a disaster through emergency response, emergency recovery, rehabilitation and development.

The system allows mobile phone users in disaster hit areas and aid agencies, such as the Pakistan Red Crescent Society (PRCS), to communicate in real time, with the system able to target particular

¹⁸⁴ International Federation of Red Cross and Red Crescent Societies, World Disasters Report, 2015. Accessed at https://ifrc-media.org/interactive/wp-content/uploads/2015/09/1293600-World-Disasters-Report-2015_en.pdf

¹⁸⁵ ITU, Telecommunications Save Lives. Accessed at <https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Documents/Publications/brochure.pdf>

¹⁸⁶ GSMA, Humanitarian Connectivity Charter. Accessed at http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/07/Charter_Principles_document.pdf

¹⁸⁷ GSMA, Disaster Response: Guidelines for Establishing Effective Collaboration between Mobile Network Operators and Government Agencies. Accessed at <http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2013/01/Guidelines-for-Establishing-Effective-Collaboration.pdf>

regions or even neighbourhoods. The early warnings this system can provide to those impacted by disasters allow the effects to be mitigated and for lives to be saved.¹⁸⁸

More than 40 million early warning free SMS were broadcasted in 2015 in close collaboration with the National Disaster Management Authority to help reduce the potential damage to lives and properties.

Additionally, network infrastructure in remote areas provides a vital tool in times of disaster, often serving as the only communication link. Telenor Pakistan has 17 dedicated BTS sites providing coverage to the Chitral and Bomborate regions, which are some of the most remote areas in Northern Pakistan.

In 2015, Pakistan was hit with devastating spells of monsoon rains and subsequent floods that claimed hundreds of human lives and affected around 800,000 people across 2,200 villages throughout the country. One of the hardest hit areas was Chitral in Northern Pakistan where flash flooding destroyed roads, bridges and other infrastructure rendering the region inaccessible for days.

Telenor's Pakistan's Smart Network Operating Solutions like solar power, timely fuel and equipment stocking, preventive maintenance, establishment of special monitoring 'war-rooms' and timely arrangement of vehicles/boats etc. helped keep the network running even in one of the worst natural disasters the country had seen in half a century.

Huma Baig, a philanthropist actively involved in coordinating relief efforts during natural disasters, considers that the efforts to mitigate the impacts of floods in Chitral were strengthened by Telenor Pakistan's strong coverage in the area which was, most of the times, the only communication lifeline. After the returning from her work in Pakistan, Ms Baig wrote to the CEO of Telenor Pakistan:

"I had worked during the floods of 2010, there was great loss of life then but this time, the picture was different. The military intervened timely and sent out an alert to all the population downstream. Their Relief Teams regularly use Telenor in the remote areas along with their own special communication. It was that call on the Telenor number that multiplied on hundreds of Telenor numbers and saved people and families."

Thailand's m-Rescue system

In Thailand, Telenor worked with the Ruam Duay Chuay Kan Foundation and radio station to create the m-Rescue application (app). This app provides real time news on traffic, road conditions and announcements on emergencies or accidents to people in Bangkok and the surrounding area and necessary information such as police station numbers, hospital contact details.

In addition, the app provides an emergency reporting hotline. In case of emergency, users can reach out for help from the 1677 Hotline Centre 24 hours a day by pressing the SOS button. The Centre then coordinates with relevant government agencies and rescue teams or volunteers in close proximity, to provide immediate assistance to the user at any location. There are over 6,000 professional volunteers for rescue and emergency service to stand by and help immediately.

The m-Rescue app has been released through various channels for Telenor customers in Thailand and can be accessed by all subscribers. In 2015, it was downloaded 170,000 times. It dealt with 54,523 cases of individuals reporting problems and asking for help. Of these, 16,338 were traffic related (such as car break downs or accidents), 2,501 were criminal cases, and the remaining 28,170 cases addressed a wide range of problems, including fire incidents, missing people, and reptile catching.

¹⁸⁸ Tribune, Ingenious: Project brings innovation to disaster emergency response, August 2014. Accessed at <http://tribune.com.pk/story/754996/ingenious-project-brings-innovation-to-disaster-emergency-response/>

Telenor's vital support during the 2014 Serbian floods

In May 2014, Serbia experienced some of the worst floods it had seen in decades, resulting in tens of thousands of people being forced out of their homes and more than twenty deaths.¹⁸⁹

Due to heavy rainfall, flooding and interruption of the power supply, most mobile communications in West Central Serbia were impeded or temporarily down.

In response to the disaster, Telenor Serbia undertook a variety of actions in order to fulfil its responsibilities as an integral part of the local community. These included:¹⁹⁰

- Working day and night to deliver proper operation of the network and ensure communications where they were needed most. This involved working closely with the Ministry of Trade, Tourism and Telecommunications and other mobile operators. In the first few days 80% of base stations in affected areas were restored and full network coverage was provided within 5 days.
- Providing free of charge calls, along with other mobile networks, to rescue teams and crisis headquarters.
- Delivering 2.5 tonnes of humanitarian aid, including food, water and hygiene products, to affected citizens.
- Donating, between Telenor Serbia and Telenor Group, over \$225,000¹⁹¹ to the Government of the Republic of Serbia in order to aid flood victims.
- Giving customers in affected areas and the rest of the country an additional 30 days to pay their April bill.
- Telenor customers sending 686,378 SMS messages of donations by March 2015 to the 1003 humanitarian assistance number established by the Serbian government.

Keeping Telenor's network running during the 2015 Bulgarian blizzards

In early March 2015, heavy snows in Bulgaria caused a state of emergency in many areas. Roads were closed and power lines and landline communications were interrupted, effectively cutting off whole cities and municipalities from the rest of the country. A total of 850 communities were without electricity for more than a week in March 2015 as over 200 km of power lines were out of operation following the heavy snow.

The southern Rhodopes mountain range was one of the worst affected areas. Roads to about 200 villages in the region were completely cut off and rescue operations were severely hindered by the lack of communications. Two of the major three mobile operator's networks suffered outages due to cut power lines and limited back-up resources. Only Telenor's network was running for the Municipalities of Ardino, Madan, Rudozem, and Zlatograd.

Telenor Bulgaria considers that its network withstood the heavy snow due to the preparation of the Telenor Bulgaria technology team and the investments made in improving and upgrading the network. The network in the area had been fully replaced and renovated during the months before the snows hit, the remote stations had full back-up diesel fuel supply to be ready to withstand any situation and field teams were prepared, including having hired snowmobiles to reach the sites when the roads were closed.

The mayor of Zlatograd, Miroslav Yonchev, told Telenor Bulgaria:

¹⁸⁹ Telenor, Serbia hit by floods – Telenor doing its part, May 2014. Accessed at <https://www.telenor.com/media/articles/2014/serbia-hit-by-floods-telenor-doing-its-part/>

¹⁹⁰ Telenor, Floods in Serbia – We are Here to Help. Accessed at https://www.telenor.rs/static/file/TF_Report_2014_9.pdf

¹⁹¹ This is equivalent to 20 million Dinars. This was converted to US Dollars using average 2014 exchange rates sourced from the World Bank.

“Communications are crucial in situations like these. There are many people and many teams to coordinate, you have to know where to direct the efforts of the rescue teams and you need constant connection to the rest of the country. Telenor provided this connection when the other operators failed”.

Telenor India’s disaster relief programme with ActionAid

Telenor Rahat is a disaster relief programme that helps to ensure that during disaster, Telenor extends help and support to the affected population. Working with ActionAid, quick arrangements are put in place to ensure the restoration medical assistance, meals and communication needs in affected areas.¹⁹²

In November-December 2015, the Tamil Nadu state of India witnessed its worst floods in the last 100 years. Heavy rains and floods severely impacted people’s life in the state, displacing more than 400,000 people and leaving many homeless. Over 30,000 hectares of agricultural lands were submerged and over 4652 houses destroyed completely in Cuddalore district alone. 470 people lost their lives.

In response to the Tamil Nadu floods, Telenor India supported 61 families to build and repair their homes. Along with ActionAid, Telenor provided support including helping to provide victims with safe and more hygiene living conditions and also helping them to avoid negative coping strategies like begging, health problems and abuse.

One of the beneficiaries of the programme, who had survived the floods but lost her home and living, told Telenor:

“Telenor and ActionAid helped me build my home otherwise I would have died homeless on the streets. My sincere thanks to them.”

Telenor India also provided support during the Uttarakhand landslide in 2013, the Kashmir flood in September 2014, and the Nepal Earthquake in April 2015. For example:

- During the Uttarakhand disaster, Telenor established two helpline numbers providing information. It ensured that there was connectivity in the area and 2,000 subscribers, identified as being in the disaster area for more than 2 days with zero balance on their phones, were provided with free voice call minutes. 91 families were supported with rations and clothes and with the help of a local NGO in Joshimath, two food camps were organised for villager and pilgrims. Furthermore, 103 Telenor India employees donated one day of their salary (approximately \$7,900¹⁹³) to the Prime Minister Relief Fund.
- Telenor India employees contributed approximately \$11,500¹⁹⁴ by donating one day’s salary to the Prime Minister’s Relief Fund to support Kashmir flood victims
- In response to Nepal Earthquake in 2015, Telenor India sent a truck of relief material including blankets, rice, dry food, mosquito nets, and antibiotic medicines to the Nepal Disaster Relief Authority. Telenor employees also collected approximately \$15,600¹⁹⁵ by donating their one day salary for Nepal relief fund.

¹⁹² Norwegian Embassy, CSR in India-2016. Accessed at <http://www.norwayemb.org.in/PageFiles/317491/CSR%20in%20India%202016.pdf>

¹⁹³ This is equivalent to Rs 4.65 lakh. This has been converted to US Dollars using the 2013 average exchange rate sourced from the World Bank.

¹⁹⁴ This is equivalent to Rs 7 Lakh. This has been converted to US Dollars using the 2014 average exchange rate sourced from the World Bank.

¹⁹⁵ This is equivalent to Rs 10 lakh. This has been converted to US Dollars using the 2015 average exchange rate sourced from the World Bank.

Telenor's impacts
in its individual
markets



TELENOR IN BANGLADESH

Introduction



56.7m

Total subscribers as of
Q4 2015

Telenor is the largest mobile telecommunications operator in Bangladesh by revenue, coverage and subscriber base. In 2015, over 15 billion text messages were sent over the network and over 108 billion voice minutes used.

Telenor launched its operations in Bangladesh in 1997 on the anniversary of the country's Independence Day under the operating name of Grameenphone. This move was the first venture by Telenor Group into an Asian market.



2G: 99.4%

3G: 71.0%

Population coverage in
2015

Telenor offers core voice, internet and digital services in Bangladesh as well as a range of value-added services (VAS) such as voicemail, SMS and news alerts to both postpaid and prepaid customers.

The company operates a 2G and 3G network. Its network infrastructure includes 5,487km of fibre and more than 10,068 base station sites¹⁹⁶ in operation which have all been upgraded to 3G technology and were able to provide 4G services as of July 2016.

Mobile data and VAS were significant contributors to revenue growth between 2014 and 2015. Telenor, since the rollout of 3G, focused on driving data growth in Bangladesh with efforts to build internet awareness, offer affordable smartphones and promote content services. As part of its 'Internet for All' ambition, Telenor's mobile data subscribers in Bangladesh increased by 45% between 2014 and 2015 to stand at 15.7 million.¹⁹⁷

\$1,504m

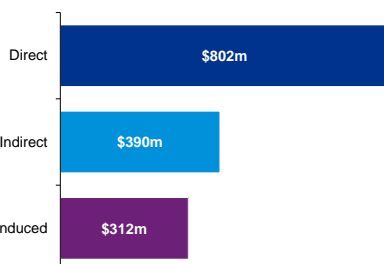
Total contribution to Gross
Value Added (GVA) in
2015

Driving macro-economic growth

Telenor generated a total of approximately \$1,504 million of GVA for the Bangladeshi economy in 2015. This is comprised of \$802 million of direct GVA, \$390 million of indirect GVA and \$312 of induced GVA.

Telenor's total GVA is equivalent to 0.8% of the total GVA generated by the Bangladeshi economy in 2015 and its direct GVA accounted for 30.8% of GVA generated by Bangladesh's ICT sector.

The contribution of the mobile industry to Bangladesh's GVA is expected to increase significantly, particularly in relation to other Asia-Pacific countries, in the period to 2020.¹⁹⁸ As the largest mobile



¹⁹⁶ Grameenphone Company Profile. Accessed <http://www.grameenphone.com/about/investor-relations/corporate-factsheet/company-profile>

¹⁹⁷ Grameenphone Annual Report 2015. Accessed at http://cdn01.grameenphone.com/sites/default/files/investor_relations/annual_report/Full_Report.pdf

¹⁹⁸ GSMA, The Mobile Economy: Asia Pacific 2015. Accessed at <https://www.gsmaintelligence.com/research/?file=fba9efc032061d5066b0eda769ad277f&download>



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TELENOR IN BANGLADESH

telecommunications provider, Telenor should play a significant part in this growth.

Labour productivity is a measure of economic growth in a country. For Telenor, the direct GVA generated by each full-time employee in Bangladesh was \$169,623 in 2015, almost 23 times higher than the national average labour productivity per full-time employee in Bangladesh (\$7,492¹⁹⁹).

Contributing to employment

In 2015, Telenor in Bangladesh directly employed 4,728²⁰⁰ full time equivalent (FTE) staff.

Its total headcount in 2015 was 5,544 employees. Of these:

- 73.0% were male;
- 27.0% were female; and
- 99.7% were Bangladeshi nationals.

Telenor's direct employment accounts for 4.1% of total employment in Bangladesh's Information and Communication sector.²⁰¹

In addition, KPMG estimates that, in 2015, Telenor generated an additional 169,900 indirect jobs through its supply chain in Bangladesh and a further 119,100 induced jobs linked to employee spending. For every job that Telenor generates directly, an additional 61 are created in the wider Bangladeshi economy.

Capital investment

Over the last five years, Telenor has invested \$1,176 million in the Bangladesh economy, of which \$248 million was invested in 2015.

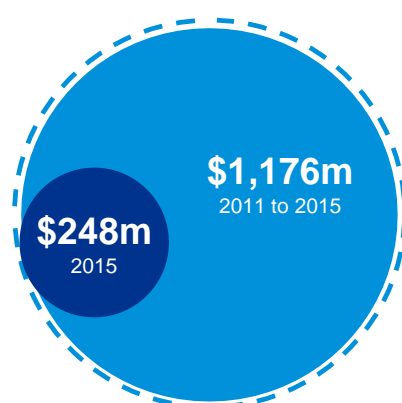
Significant investments have been made by Telenor in Bangladesh in order to transform the company into a 'new generation telecommunications company' which can look beyond just providing voice and SMS services and handle growth in mobile data services. A significant part of these investments, \$202 million in 2015 alone, was spent on improvements to the network. These investments included:

- increased rollout of 3G sites;
- expansion of 2G coverage;

¹⁹⁹ World Bank economy level productivity 2015.

²⁰⁰ This consists of 3,063 full time equivalent employees and 1,665 full time equivalent trainees.

²⁰¹ Based on 2013 employment in the Information and Communication sector sourced from the 2013 Labour Force Survey.



TELENOR IN BANGLADESH

- enhanced capacity to deal with higher data and voice volumes; and
- improving the IT infrastructure to provide better product and service offerings.

In addition, investment is being made in order to fulfil Telenor's aim of being a digital frontrunner in Bangladesh. This includes introducing programmes to provide superior service quality, digitising the value chain, improving the data service and strengthening microcapabilities.

Capex intensity is a measure of the ratio of capex to the GVA generated. In 2015, Telenor's capex intensity in Bangladesh was 31%, slightly above the 30% average for the wider Bangladesh economy²⁰².

Telenor's role in public financing

\$640m

Total fiscal contribution generated by Telenor Bangladesh in 2015



In 2014, Telenor made a direct fiscal contribution of \$385 million to the Bangladeshi government through taxes and other regulatory payments including licence fees, frequency fees and numbering fees.

Telenor faces a telecoms sector specific tax in Bangladesh of 3% supplementary duty on services provided through SIM cards. This was introduced by the Government in Quarter 3 of 2015.

Telenor's fiscal contributions in Bangladesh in 2014 accounted for 29% of its revenues.

Telenor also makes additional fiscal contributions in Bangladesh through the economic activity it generates through spending in the supply chain and that generated by employee spending.

As a result of its activities, a further fiscal contribution of \$255 million was generated by Telenor in Bangladesh in 2015 as a result of:

- the economic activity Telenor generates through spending in Bangladesh in the supply chain;
- spending by (direct, indirect and induced) employees; and
- employees (direct, indirect and induced) paying taxes on their earnings.

The total fiscal contribution generated by Telenor in 2015 of \$640 million accounted for approximately 3.4% of total Bangladeshi Government tax revenues.

²⁰² This has been estimated using the Gross Fixed Capital Formation as a percentage of GDP for the Bangladesh economy sourced from the World Bank.



Enabling the wider economy

In addition to the contributions made directly through Telenor's operations in Bangladesh, it makes a wider indirect contribution through its provision of mobile communication services. These services can drive economic growth through greater digital and financial inclusion and raise entrepreneurial activity and business productivity.

The wider positive socio-economic effects of Telenor's impact on digital inclusion

A number of studies have identified a link between mobile penetration and economic growth. Increasing digital inclusion, through greater availability of services and customer usage, particularly of 3G telephony and mobile data use, can have positive socio-economic benefits.

As the largest mobile provider in Bangladesh, with a subscriptions base of over 56 million subscribers and widespread 2G and 3G coverage, Telenor's services in Bangladesh have positive impacts on the economy.

Using results from an econometric model developed for the GSMA²⁰³, KPMG estimates that the increase in mobile penetration overall and the increased move towards 3G penetration²⁰⁴ of Telenor in Bangladesh between 2011 and 2015 contributed \$24 billion to GDP growth.²⁰⁵ This is in addition to the GVA contribution outlined in the previous section.

The benefits of enhanced digital inclusion are not only economic. Social benefits are also captured. For example, Telenor has taken actions to support digital literacy and to expand the benefits of digital technology in education in Bangladesh. This includes both the online school and i-Genius programmes.

Telenor Case Study: i-Genius

Telenor launched the "*Grameenphone-Prothom Alo Internet Utshab (i-Genius)*" in Bangladesh in association with Prothom Alo, a Bangladeshi daily newspaper.

i-Genius is a mobile-based internet competition where participants are required to answer internet-related questions by browsing the web. The aim of the initiative is to spread awareness of the internet amongst young people in Bangladesh. At the end of the competition, one entrant is chosen as the "i-Genius" of the event and is appointed the 'Local Internet

²⁰³ Deloitte and GSMA, What is the impact of mobile telephony on economic growth?, November 2012

²⁰⁴ Between 2011 and 2015 Telenor in Bangladesh's mobile penetration increased from 23.8 to 35.2 per 100 of the population. Over the same period, 3G penetration increased from 0.0 3G connections per 100 of the population, to 5.5.

²⁰⁵ The estimate of the contribution to GDP growth of increased Telenor mobile penetration measures the additional contribution generated from one year to the next, rather than the total contribution overall (i.e. is a flow measure rather than a stock).

TELENOR IN BANGLADESH

Ambassador⁷, who is then responsible to spread awareness about the benefits of the internet within the community.

Any student in years 8-12 can participate in the i-Genius competition. The competition has covered 4,500 schools since its inception in 2011 and an estimated 1.67 million students across the country have taken part. In 2015 alone, 870,000 students took part in the competition.

One winner was Silma Subah Raisa, who was the fastest person to browse the internet from her mobile handset to discover answers to a series of questions, beating 121 other contestants from around the country in the grand finale. As part of her prize, Raisa was taken on a week-long trip to Norway, where she was given tours of the Telenor Headquarters and Opera Software head office.

Telenor's impact on financial inclusion



\$8,496m

Total value of financial transactions made by Telenor Bangladesh's subscribers,

Including

\$325m

Total value of financial transactions made by Telenor Bangladesh's subscribers,

In many countries, in both the developed and developing world, mobile money can bring financial inclusion to a growing number of unbanked or underbanked individuals.

Telenor in Bangladesh has launched several initiatives which contributed to increased financial inclusion. For instance it launched BillPay in 2006. This is a service that allows its users to pay utility bills through their mobile phones. By 2015, subscriber numbers reached 600,000, with 8.8 million transactions being made in the year. The total value of these transactions in 2015 was \$325 million.

Mobile communications, more generally, support financial inclusion as they give smartphone users the means to access mobile banking, mobile payments and other mobile financial services. KPMG estimates that through Telenor in Bangladesh's provision of mobile services, it enabled \$8,496 million of mobile financial transactions to take place over its network in 2015.

Telenor Case Study: Nirvoy Life Insurance

Nirvoy Life Insurance is a Micro-Insurance product of Telenor in Bangladesh which was launched in June 2013. The product is a free benefit to customers of Telenor in Bangladesh who register for it, where the company pays the insurance premium on their behalf.

Customers who register for the product are eligible to claim on the policy depending on their monthly recharge amount. The product can be provided from a recharge amount of \$2²⁰⁶ which provides a benefit to the claimant of approximately \$130²⁰⁷. Customers are able to receive up to a maximum of approximately \$640²⁰⁸ in claim benefit. Telenor plans to introduce a paid model, where a small additional payment will enhance the claim benefit of the paying customer.

²⁰⁶ This is equivalent to BDT 150. This has been converted to US Dollars using a spot exchange rate on 4th November 2016 sourced from Bloomberg.

²⁰⁷ This is equivalent to BDT 10,000. This has been converted to US Dollars using a spot exchange rate on 4th November 2016 sourced from Bloomberg.

²⁰⁸ This is equivalent to BDT 50,000. This has been converted to US Dollars using a spot exchange rate on 4th November 2016 sourced from Bloomberg.

TELENOR IN BANGLADESH

The product provides access to life insurance to those who may not otherwise be able to afford it and the Nirvoy team works with claimants to ensure they can access the benefit. For instance, Md. Ashaduzzaman, living in Jessore and a Nirvoy client, passed away suddenly leaving his young daughter as the nominee for the insurance policy. As his daughter was a minor, her family members were struggling to open a bank account for her to allow the benefit cheque to be paid. The Nirvoy team talked to the bank manager and helped the family open an account for Md. Ashaduzzaman's daughter, whereupon the settlement cheque of BDT 50,000 was paid into her account.

As of 2016, 5.71 million customers were enrolled on the scheme. Of claims brought, 294 had been settled with a total settlement value of \$140,000²⁰⁹.

Telenor's contribution to boosting entrepreneurship, innovation and productivity

The provision of mobile services can positively impact entrepreneurial activity, business productivity and innovation in a number of ways. These include increasing the ease of access to markets and consumers, lowering the costs of business start-ups and business operation and supporting greater efficiency.

Telenor runs specific initiatives to support entrepreneurship in Bangladesh, in particular through its Accelerator programme.²¹⁰ The Accelerator programme was launched by Telenor in Bangladesh in November 2015. It provides early stage technology start-ups with the resources they need to build and grow their businesses. The support includes, amongst others, seed funding of approximately \$13,000²¹¹ or more, expert mentors, a dedicated workspace, in house development resources and investor access. Five start-ups were chosen as the first batch of participants to benefit from the support offered by the programme, these include:

- Ennovision, a website builder where small entrepreneurs can build their own websites.
- Share, a transport service which enables users to book a rides using a web-mobile application.
- Kandy, a mobile app which provides personalised local news and exclusive offers to a customer's mobile lock screen.

Following the success of the first batch, applications for the second batch of participants opened in May 2016.

²⁰⁹ This is equivalent to BDT 10.96 million. This has been converted using a 2015 average exchange rate sourced from the World Bank.

²¹⁰ GP Accelerator, August 2016. Accessed at <http://www.grameenphoneaccelerator.com/>

²¹¹ This is equivalent to BDT 10 lac. This has been converted to US Dollars using a spot exchange rate on 4th November 2016 sourced from Bloomberg.

TELENOR IN BANGLADESH

Telenor Case Study: GP Accelerator – Ennovision

Ennovision Ltd. was one of the first five start-ups to be accepted for the GP Accelerator programme. It began with Nazmul Ahmed (Najm), a freelance web designer, who believed that the webspace in Bangladesh just didn't hold the allure that he felt it should have.

Around 40% of all businesses in Bangladesh are small businesses without enough cash to afford a website, with around 80% of local businesses without one. However, small businesses grew by 12% in 2014 and 30% in 2015. In addition Bangladeshi consumers are highly loyal to brands²¹² and therefore it is important for businesses to establish an online presence.

Ennovision aimed to target this market in order to ensure that every small business could have a website to be able to reach more clients online. They produced a website builder which allowed businesses to take control and make their own websites. The builder had an easy to use interface so that businesses could build websites which not only looked good but focused on user experience.

Ennovision successfully graduated the accelerator programme and commercially launched their product to paying customers.

Supporting improved gender equality



27.0%
Female proportion
of Telenor in
Bangladesh
direct employment



\$7,478m
Contribution to
GDP between
2011 and 2015
through increased
digital access
(through increased
2G, 3G and 4G
mobile penetration
rates) for female
subscribers in
Bangladesh

Gender equality is seen as a priority across the globe. Across its operations, Telenor has focussed on diversity. It has the objective of attracting and retaining the best leaders and experts from diverse backgrounds and developing more women leaders.

Telenor employed 5,544 people in 2015, equivalent to 4,728²¹³ in full time equivalent terms, of which 27% were women.

Telenor's share of female employment in Bangladesh falls below the national average (34%). However, Telenor is working to increase female participation in its workforce. It has introduced various initiatives including six months paid maternity leave and flexible working hours. In 2015 Telenor launched the first ever Women Professionals Network in Bangladesh²¹⁴.

Through its provision of mobile services, however, Telenor is helping to promote gender equality by enabling women in Bangladesh to access mobile communication services. In a similar way in which mobile penetration more widely contributes to GDP, the use of mobile services

²¹² BCG perspectives, Bangladesh: The Surging Consumer Market Nobody Saw Coming, December 2015. Accessed at <https://www.bcgperspectives.com/content/articles/center-customer-insight-go-to-market-strategy-bangladesh-surging-consumer-market/>

²¹³ This consists of 3,063 full time equivalent employees and 1,665 full time equivalent trainees.

²¹⁴ Telenor, Bangladesh to address Gender Diversity, May 2015. Accessed at <https://www.telenor.com/media/articles/2015/bangladesh-to-address-gender-diversity/>

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by women supports economic growth. KPMG estimates that through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Bangladesh, Telenor in Bangladesh contributed \$7,478 million to Bangladeshi GDP between 2011 and 2015.

This figure does not capture the wider societal benefits that are generated through providing women in developing countries with mobile services, such as:²¹⁵

- improved safety and security;
- enhanced abilities to connect with friends and family; and
- increased independence.

Sustainability in the supply chain

It is estimated that through Telenor's supply chain sustainability policy, 265,900 people are employed at participating businesses that meet the standard.



As of 2015, 1,006 of Telenor's suppliers in Bangladesh had signed an Agreement of Responsible Business Conduct (ABC), thereby agreeing to abide by Telenor's supply chain principles. These 1,006 suppliers accounted for 100% of all suppliers falling within the scope of the requirements.

During the course of 2015, Telenor in Bangladesh conducted a wide ranging monitoring exercise of these suppliers to ensure conformity with the requirements. During the year:

- 781 inspections took place of which 54% were unannounced;
- the inspections covered 361 companies, with a combined total of 14,180 employees;
- 63 major non-conformity findings were recorded; and
- working closely with its suppliers, Telenor mitigated 77% of all non-conformity findings in Bangladesh within 12 months of the inspection taking place.

During the year, Telenor also hosted its 'Annual Supplier Development 2015', a session focusing on the practicalities of sustainability which was attended by 350 of the company's suppliers in Bangladesh. The

²¹⁵ GSMA, Women & Mobile: A Global Opportunity – A study on the mobile phone Gender gap in low and middle-income countries. Accessed at http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2013/01/GSMA_Women_and_Mobile-A_Global_Opportunity.pdf

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company presented its 'Value Chain Excellence Award 2015' award to 4 suppliers.

KPMG estimates a total of 265,900 employees, at the 1,006 suppliers who have signed an ABC, benefit from working conditions which are following the high standards required by Telenor's supply chain principles.

"A few years back in Bangladesh, people didn't know about Occupational Health and Safety Guidelines. Initially, it was hard to adapt Personal Protective Equipment (PPE) as it was uncomfortable to work wearing protective clothing, helmets, goggles etc. But both Ericsson and Telenor in Bangladesh jointly enforced and conducted awareness sessions and site inspections. We are now more conscious about our personal safety. By using PPE, we ensure a safe work place which makes us more confident" Atikur Rahman, GPI Asiatel, sub-contractor of Ericsson (Tier-2 supplier of Telenor in Bangladesh)

TELENOR BULGARIA

Introduction

Telenor is the second largest mobile telecommunications operator in Bulgaria by number of connections. As of Q3 2016, it had a share of approximately a third of all connections.²¹⁶

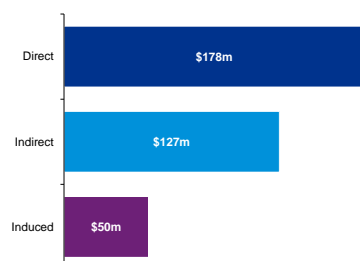
Telenor operated in Bulgaria under the Globul brand until 2013, when it was consolidated in the Telenor Group. As of November 2014, Globul became Telenor Bulgaria.

Telenor provides mobile fixed and data services to its subscribers in Bulgaria. Around 40% of its subscribers were active data users by the end of 2015.²¹⁷

Contributing to economic activity

Contributing to Gross Value Added (GVA)

\$355m
Total contribution to Gross
Value Added (GVA) in
2015



Telenor generated approximately \$355 million of GVA for the Bulgarian economy in 2015. This is comprised of \$178 million of direct GVA, \$127 million of indirect GVA and \$50 million of induced GVA.

Telenor's total GVA accounted for 0.9% of Bulgaria's national GVA in 2015 and its direct GVA accounted for 7.9% of GVA generated by Bulgaria's ICT sector.

Labour productivity is a measure of economic growth in a country. For Telenor, the 2015 direct GVA generated by each full-time employee was \$84,084, over three times higher than the national average GVA per full-time employee in Bulgaria (\$25,692²¹⁸).

Contributing to Employment

In 2015, Telenor Bulgaria directly employed 2,111 full time equivalent (FTE) staff. This is equivalent to the headcount figure for Bulgaria in 2015.

Of these:

- 45.8% were male;
- 54.2% were female; and

²¹⁶ GSMA Intelligence, data accessed October 2016, <https://www.gsmainelligence.com/>

²¹⁷ Telenor Group Annual Report, 2015

²¹⁸ World Bank economy level productivity 2015.

11,811

Total employment in 2015

Direct employment

2,111



Indirect employment

6,100



Induced employment

3,600



– 99.0% were Bulgarian nationals.

In 2015, Telenor Bulgaria's direct employment accounted for 2.4% of total employment in the Information and Communication sector.²¹⁹

In addition, KPMG estimates that, in 2015, Telenor Bulgaria generated an additional 6,100 indirect jobs through its supply chain and a further 3,600 induced jobs linked to employee spending. This means that for every job that Telenor Bulgaria generates directly, 5 additional jobs are created in the wider economy.

Telenor Bulgaria has a Scholarship and Traineeship programme, which provides students in Bulgaria with work experience placements across its business. Over the last 10 years in which the scheme has been taking place, over 400 students have participated in the programme. Telenor estimates that approximately a third of all its trainees and scholars continue their careers at Telenor²²⁰.

Telenor Case Study: Telenor Bulgaria- Open Mind

Following successful launches of the program in Norway, Sweden and Pakistan, in 2015 Telenor Bulgaria launched the Open Mind Program. The program looks to provide people with physical disabilities the opportunity to work on a specific project for two years at Telenor Bulgaria to broaden their skillsets. In Bulgaria, 90% of people with disabilities are jobless.²²¹

Participants in the first edition of the Open Mind program joined the Process Management, Legal Affairs, Finance, Technology and Customer Care divisions. The new employees are working in Telenor's open and accessible working environment, with remuneration package corresponding to the position. After successful completion of the program, Telenor will provide permanent employment or support candidates for securing roles in the market place.

In 2015, Telenor won second place in the Investor in Human Capital Category at the Bulgarian Business Leaders Forum (BBLF)²²².

"Many things have changed for me since I am part of the Telenor Bulgaria team. I became more confident, more opened towards others and I met many new interesting people. Now I have an opportunity to expand my knowledge, to practice my English language skills and to gain experience in an innovative, multinational company." Alexander, Programme participant.

²¹⁹ Based on data from Bulgaria National Statistics data for 2015.

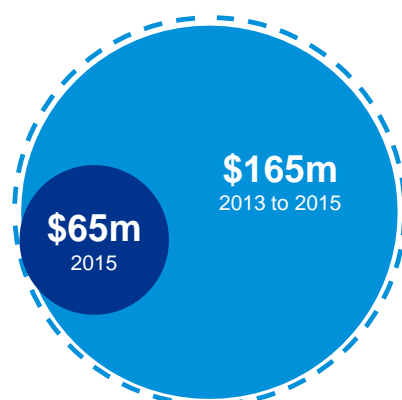
²²⁰ Telenor Bulgaria, Telenor awards ten students with full scholarship, 12 February 2015. Accessed at <http://www.telenor.bg/en/news/telenor-awards-ten-students-full-scholarship>

²²¹ Novinite, Almost 90% of Disabled People in Bulgaria Are Jobless, 22 October 2014. Accessed at <http://www.novinite.com/articles/164257/Almost+90+Of+Disabled+People+In+Bulgaria+Are+Jobless>

²²² Bulgarian Business Leaders Forum, And the Winners Are..., February 2016. Accessed at <http://www.bblf.bg/en/events/720/And+the+Winners+Are+...>

Capital Investment

Over the last three years, Telenor has invested \$165 million in the Bulgarian economy, of which \$65 million was invested in 2015.



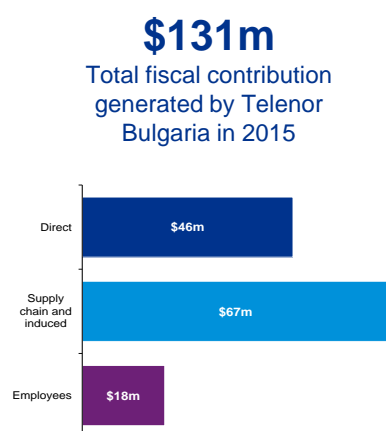
In 2014, \$70 million of Telenor's \$84 million total capex investment was spent on improving its network.

The main cause of this substantial increase in network capex in 2014 was because Telenor Bulgaria undertook an upgrade of its entire 2G and 3G network. This included upgrading the core network equipment, as well as the access and transport network. The outcome of this investment was to ensure better coverage and service quality. It also enabled Telenor Bulgaria to build a network that was 4G ready, enabling the successful launch of 4G services in December 2015²²³.

Capex intensity is a measure of the ratio of capex to the GVA generated. In 2015, Telenor's capex intensity was 37%, 12 percentage points higher than the 2015 average for the wider Bulgarian economy, which was 25%²²⁴.

Fiscal contributions

In 2014, Telenor made \$46 million of direct fiscal contributions to the government through taxes and other regulatory payments including licence fees, frequency fees and numbering fees.



Telenor Bulgaria's direct fiscal contributions in 2014 accounted for 13% of its revenues.

Telenor Bulgaria also makes additional fiscal contributions through the economic activity it generates through spending in the supply chain and that generated by employee spending.

As a result of its activities, a further fiscal contribution of \$85 million was generated by Telenor Bulgaria in 2015 as a result of:

- the economic activity Telenor Bulgaria generates through spending in the supply chain;
- spending by (direct, indirect and induced) employees; and
- employees (direct, indirect and induced) paying taxes on their earnings.

²²³ Telenor's Corporate Responsibility Report, 2014. Accessed at <https://www.telenor.com/wp-content/uploads/2015/08/Telenor-Bulgaria-Corporate-Responsibility-Report-2014.pdf>

²²⁴ This has been estimated using the Gross Fixed Capital Formation as a percentage of GDP for the Bulgarian economy sourced from the World Bank.

The total fiscal contribution generated by Telenor in 2015 of \$131 million accounted for approximately 0.6% of total Bulgarian government tax revenues.

Telenor's impact on local society



As well as the contributions made directly through its operations, Telenor Bulgaria makes a wider indirect contribution through its provision of mobile communication services. These services can drive economic growth through greater digital and financial inclusion and raise entrepreneurial activity and business productivity.

Driving digital inclusion



\$57m

Contribution to GDP between 2013 and 2015 as a result of Telenor mobile penetration (including increased 3G and 4G penetration)

A number of studies have identified a link between mobile penetration and economic growth. Increasing digital inclusion, through greater availability of services and customer usage, particularly of 3G telephony and mobile data use, can have positive socio-economic benefits.

As the second largest mobile provider in Bulgaria, with approximately 1.9 million subscriptions and widespread 2G, 3G and 4G coverage, Telenor's services have positive impacts on the Bulgarian economy.

Drawing on results from an econometric model developed for the GSMA²²⁵, KPMG estimates that the increase in mobile penetration overall and the increased move towards 3G and 4G penetration²²⁶ of Telenor between 2013 and 2015 contributed \$57 million to GDP growth.²²⁷ This is in addition to the GVA contribution outlined in the previous section.

The benefits of enhanced digital inclusion are not only economic. Social benefits are also captured. For example, as well as providing access to data services, Telenor Bulgaria has also taken steps to deliver the safest possible internet user experience. Telenor was the first Bulgarian telecoms company to introduce a filter for materials of

²²⁵ Deloitte and GSMA, What is the impact of mobile telephony on economic growth?, November 2012

²²⁶ Between 2013 and 2015 Telenor Hungary's mobile penetration decreased from 36.0 to 33.2 per 100 of the population. Over the same period, 3G penetration increased from 13.5 3G/4G connections per 100 of the population, to 17.5.

²²⁷ The estimate of the contribution to GDP growth of increased Telenor mobile penetration measures the additional contribution generated from one year to the next, rather than the total contribution overall (i.e. is a flow measure rather than a stock).

child abuse²²⁸. The filter restricts internet access to a list of domains defined by Interpol. This service is active for every mobile data user of Telenor.

Supporting financial inclusion



\$14m
Total value of
mobile financial
transactions made
by Telenor
Bulgaria's
subscribers

Mobile communications generally support financial inclusion as they give smartphone users the means to access mobile banking, mobile payments and other mobile financial services.

KPMG estimates that Telenor's provision of mobile services in Bulgaria enabled \$14 million of mobile financial transactions to take place over its network in 2015.

Encouraging entrepreneurship

The provision of mobile services can impact positively on entrepreneurial activity and long-run business productivity and innovation in a number of ways. These include increasing the ease of access to markets and consumers, lowering the costs of business start-ups and business operation and supporting greater efficiency.

GSMA data ²²⁹ indicates that based on the number of unique subscribers, Europe is the most penetrated region globally. With a unique subscriber penetration rate of 84% at Q3 2016²³⁰, it is reaching saturation level and forecasts suggest that there is limited scope for further subscriber growth.

This suggests that the scope for improving digital inclusion and realising additional gains to the long-run productivity of the economy in Telenor's European markets is more limited and that the main economic benefits associated have already been mostly achieved.

However, Telenor does contribute to entrepreneurship more widely and in 2015 it became the official partner of the leading space science and exponential tech program Space Challenges ²³¹. The aim of the program is to "develop a generation of young scientists and technologists with an entrepreneurial mind set, who have been exposed to the best practices in space research and advanced technologies"²³².

²²⁸ Telenor's Corporate Responsibility Report, 2014. Accessed at <https://www.telenor.com/wp-content/uploads/2015/08/Telenor-Bulgaria-Corporate-Responsibility-Report-2014.pdf>

²²⁹ GSMA, The Mobile Economy: Europe 2015. Accessed at <https://www.gsmainelligence.com/research/?file=06d1c45d0528233e7a9560843d85c8bd&download>

²³⁰ GSMA Intelligence data, data accessed October 2016, <https://www.gsmainelligence.com/>

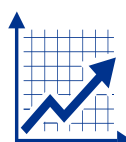
²³¹ Telenor's Corporate Responsibility Report, 2014. Accessed at <https://www.telenor.com/wp-content/uploads/2015/08/Telenor-Bulgaria-Corporate-Responsibility-Report-2014.pdf>

²³² Space Challenges Program. Accessed at <https://www.spaceedu.net/#filter=.about>



54.2%

Female proportion of Telenor in Bulgaria direct employment



\$32m

Contribution to GDP between 2013 and 2015 through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Bulgaria

Supporting gender equality

Gender equality is seen as a priority across the globe. Across its operations, Telenor has focused on diversity. It has the objective of attracting and retaining the best leaders and experts from diverse backgrounds.

Telenor employed 2,111 people in Bulgaria in 2015. Of these 54.2% were women. This is 7 percentage points higher than the national average for Bulgaria, 47.1%.

Through its provision of mobile services, Telenor is helping to promote gender equality through enabling women in Bulgaria to access mobile communication services. In a similar way to which mobile penetration more widely contributes to GDP, the use of mobile services by women supports economic growth. KPMG estimates that through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Bulgaria, Telenor in Bulgaria contributed \$32.0 million to Bulgaria's GDP between 2013 and 2015.

Sustainability in the supply chain

It is estimated that through Telenor's supply chain sustainability policy, 81,100 people are employed at participating businesses who meet the standards.



A Supply Chain Sustainability Function was established by Telenor Bulgaria in 2013. As of 2015, 278 of its suppliers had signed an Agreement of Responsible Business Conduct (ABC), thereby agreeing to abide by Telenor's supply chain principles.

During the course of 2015, Telenor Bulgaria conducted a wide ranging monitoring exercise of these suppliers to ensure conformity with the requirements. During the year:

- 47 inspections took place of which 85% were unannounced;
- the inspections covered 12 companies, with a combined total of 1,938 employees;
- 1 major non-conformity finding was recorded; and
- working closely with its suppliers, Telenor Bulgaria mitigated 100% of major non-conformity findings within 12 months of the inspection taking place.

KPMG analysis estimates that 81,100 employees, across its 278 suppliers that have signed up to the ABC, benefit from working conditions in line with the high standards required by Telenor's supply chain sustainability policy.

TELENOR in DENMARK

Introduction



1.8m

Total subscribers as of
Q4 2015

Telenor is the second largest mobile operator and broadband provider in Denmark. As of Q2 2016, it had a share of approximately 20 % of all mobile connections.²³³

Telenor was launched as a brand in Denmark in 2009 with the merger of Sonofon and Cybercity, following their acquisitions by Telenor Group in 2000 and 2005 respectively.

Telenor Denmark provides mobile telecommunications services, broadband solutions and network-based products such as security and VPN to residential and business customers. It operates a 2G, 3G and 4G network. Denmark is also the home to Telenor IT Partner, an in-house IT supplier which provides services across Telenor Group.



2G: 99.9%

3G: 99.2%

4G: 95.3%

Population coverage as
of Q4 2015

There was a significant increase in mobile data consumption in Denmark of 46% between January and October 2015, largely driven by streaming services such as Netflix, HBO and YouTube.²³⁴

68% of Telenor Denmark's total Danish mobile subscribers were active data users by the end of the year.²³⁵

In order to meet the growing demand for mobile data over the coming years, Telenor will focus on developing its 4G network and offering and is planning to close down its 3G network by 2020/2021.²³⁶

Driving economic growth

Contributing to Gross Value Added (GVA)

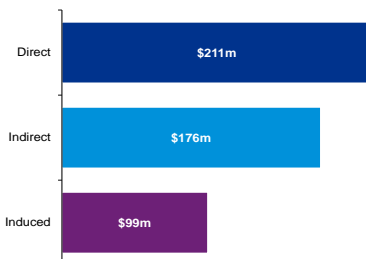
\$486m

Total contribution to Gross
Value Added (GVA) in
2015

Telenor generated approximately \$486 million of GVA for the Danish economy in 2015.

Of its total GVA contribution in 2015, \$211 million of GVA was generated by Telenor Denmark directly.

However, we estimate that Telenor also contributed a further \$176 million of indirect GVA in Denmark and \$99 million of induced GVA



²³³ GSMA Intelligence, data accessed October 2016, <https://www.gsmainelligence.com/>

²³⁴ Telenor, A string of network innovations in Denmark, 22 December 2015. Accessed at <http://www.telenor.com/media/articles/2015/a-string-of-network-innovations-in-denmark/>

²³⁵ Telenor Group Annual Report, 2015

²³⁶ Telenor, A string of network innovations in Denmark, 22 December 2015. Accessed at <http://www.telenor.com/media/articles/2015/a-string-of-network-innovations-in-denmark/>

TELENOR in DENMARK

through its purchasing from Danish suppliers and from the wider economic activity generated through employee spending.

Telenor's total GVA accounted for 0.2% of Denmark's total national GVA in 2015 and 1.8% of GVA generated by Denmark's ICT sector.

Labour productivity is a measure of economic performance in a country. The 2015 direct GVA generated by each full-time Telenor employee was \$107,466, almost 1.2 times higher than the national average GVA per full-time employee in Denmark (\$89,533²³⁷).

Contributing to employment

In 2015, Telenor directly employed 1,962 full time equivalent (FTE) staff in Denmark.

10,162
Total employment in 2015

Direct employment

1,962



Indirect employment

5,300



Induced employment

2,900



Its total headcount in 2015 was 2,213 employees. Of these:

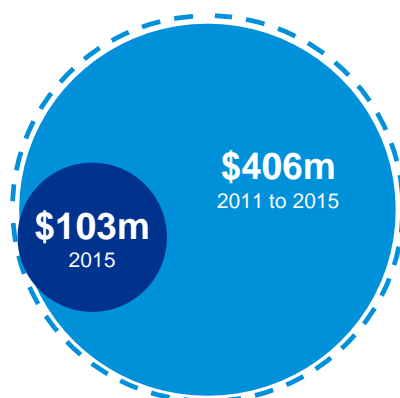
- 61.6% were male;
- 38.4% were female; and
- 99.9% were Danish nationals.

Telenor's direct employment accounts for 2.1% of total employment in the Information and Communication sector.²³⁸

In addition, KPMG estimates that, in 2015, Telenor generated an additional 5,300 indirect jobs in Denmark through its supply chain and a further 2,900 induced jobs linked to employee spending. This means that for every job that Telenor generates in Denmark directly, an additional 4 are created in the wider Danish economy.

Capital investment

Over the last five years, Telenor has invested \$406 million in the Danish economy, of which \$103 million²³⁹ was invested in 2015.



Telenor's network capital expenditure fell 8% between 2014 and 2015. This was due to the effects of a network and spectrum sharing agreement between Telenor Denmark and TeliaSonera which established TT-Netværket P/S in June 2012, a Danish infrastructure company owned by both companies which shared their 2G, 3G and 4G

²³⁷ World Bank economy level productivity 2015.

²³⁸ Based on 2013 employment in the Information and Communication sector sourced from the 2013 Labour Force Survey.

²³⁹ Approximately 40% of this capex was invested in a subsidiary of Telenor: Telenor IT Partner. This company supplies IT solutions within Telenor Group.

TELENOR in DENMARK

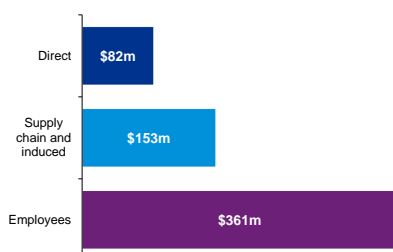
networks.²⁴⁰ The result was efficiency improvements, despite the lower capex, which will have beneficial economic effects.

As a result of the growth in demand for mobile data, Telenor is aiming to build 660 new 4G transmitters in 2016 to increase its 4G coverage. These transmitters will focus on motorways, main roads and the countryside.²⁴¹

Capex intensity is a measure of the ratio of capex to the GVA generated. In 2015, Telenor's capex intensity in Denmark was 49%²⁴². This was 27 percentage points higher than the national average in 2015, which was 22%.

Telenor's role in public financing

\$596m
Total fiscal contribution
generated by Telenor
Denmark in 2015



In 2014, Telenor made a direct fiscal contribution of \$82 million to the Danish government through taxes and other regulatory payments including licence fees, frequency fees and numbering fees.

Telenor's direct fiscal contributions accounted for 11% of its revenues in 2014.

Telenor also makes additional fiscal contributions in Denmark through the economic activity it generates through spending in the supply chain and that generated by employee spending.

As a result of its activities, a further fiscal contribution of \$514 million was generated by Telenor in Denmark in 2015 as a result of:

- the economic activity Telenor generates in Denmark through spending in the supply chain;
- spending by (direct, indirect and induced) employees; and
- employees (direct, indirect and induced) paying taxes on their earnings.

The total fiscal contribution generated by Telenor in 2015 of \$596 million accounted for approximately 0.3% of total Danish government tax revenues.

Enabling the wider economy

As well as the contributions made directly through Telenor's Danish operations, it makes a wider indirect contribution through its provision



²⁴⁰ Telenor Annual Report, 2015; Telenor Denmark, June 2015. Accessed at <https://www.telenor.com/investors/company-facts/business-description/telenor-denmark/>

²⁴¹ Telenor, A string of network innovations in Denmark, 22 December 2015, Accessed at <http://www.telenor.com/media/articles/2015/a-string-of-network-innovations-in-denmark/>

²⁴² This has been estimated using the Gross Fixed Capital Formation as a percentage of GDP for the Denmark economy sourced from the World Bank.

TELENOR in DENMARK

of mobile communication services. These services can drive economic growth through greater digital and financial inclusion and raise entrepreneurial activity and business productivity.

The wider positive socio-economic effects of Telenor's impact on digital inclusion



\$646m

Contribution to GDP between 2011 and 2015 as a result of Telenor mobile penetration (including increased 3G and 4G penetration)

A number of studies have identified a link between mobile penetration and economic growth. Increasing digital inclusion, through greater availability of services and customer usage, particularly of 3G telephony and mobile data use, can have positive socio-economic benefits.

As the second largest mobile provider in Denmark, with approximately 1.8 million subscriptions and widespread 2G, 3G and 4G networks, Telenor's services have positive impacts on the Danish economy.

Drawing on results from an econometric model developed for the GSMA²⁴³, KPMG estimates that the increase in mobile penetration overall and the increased 3G and 4G penetration²⁴⁴ of Telenor between 2011 and 2015 contributed \$646 million to GDP growth.²⁴⁵ This is in addition to the GVA contribution outlined in the previous section.

The benefits of enhanced digital inclusion are not only economic. Social benefits are also captured. For example, in November 2015 Telenor Denmark worked with Save the Children and the Media Council for Children and Youth to publish the guide "There is so much parents don't understand..." This was aimed at parents of 7-12 year olds in order to increase their knowledge of children playing and learning with the internet, as well as to give them guidelines on how to approach a child's online life.²⁴⁶

Telenor's impact on financial inclusion



\$1,912m

Total value of mobile financial transactions made by Telenor Denmark's subscribers

Mobile communications generally support financial inclusion as they give smartphone users the means to access mobile banking, mobile payments and other mobile financial services.

KPMG estimates that through the use of Telenor's services, subscribers made a total of \$1,912 million of mobile financial transactions in 2015.

²⁴³ Deloitte and GSMA, What is the impact of mobile telephony on economic growth?, November 2012

²⁴⁴ Between 2011 and 2015 Telenor Denmark's mobile penetration decreased from 20.5 to 19.1 per 100 of the population. Over the same period, 3G penetration increased from 11.3 3G/4G connections per 100 of the population, to 16.0.

²⁴⁵ The estimate of the contribution to GDP growth of increased Telenor mobile penetration measures the additional contribution generated from one year to the next, rather than the total contribution overall (i.e. is a flow measure rather than a stock).

²⁴⁶ Telenor, Keeping focus on child online safety in Denmark, August 2016. Accessed at <https://www.telenor.com/sustainability/initiatives-worldwide/keeping-focus-on-child-online-safety-in-denmark/>

Telenor's contribution to boosting entrepreneurship, innovation and productivity

The provision of mobile services can impact positively on entrepreneurial activity and long-run business productivity and innovation in a number of ways. These include increasing the ease of access to markets and consumers, lowering the costs of business start-ups and business operation and supporting greater efficiency.

GSMA data²⁴⁷ indicates that based on the number of unique subscribers, Europe is the most penetrated region globally. With a unique subscriber penetration rate of 84% at Q3 2015²⁴⁸, it is reaching saturation level and forecasts suggest that there is limited scope for further subscriber growth.

This suggests that the scope for improving digital inclusion and realising additional gains to the long-run productivity of the economy in Telenor's European markets is more limited and that the main economic benefits associated have already been mostly achieved.

More widely, Telenor has launched initiatives in Denmark to support entrepreneurship and innovation such as Virtuoso.

Telenor Case Study: Virtuoso

In 2015, Telenor joined a consortium supported by the Danish Innovation Fund called VIRTUOSO (VIRTUalized envirOnment for communication System development and Optimization).

Together with researchers at Aalborg University, Intel's Danish division, and British ANITE, utilizing a total budget of approximately \$16 million²⁴⁹ the partnership expect to develop models for future 5G networks.

The aim of the partnership is to become a global leader in wireless systems virtualization, moving the complexity associated with designing and validating such systems from hardware to software.

The result of this will be an improvement in the current development process which reduces the time expenditure associated with modem design, integration, verification and network features rollout.

Supporting improved gender equality

Gender equality is seen as a priority across the globe. Across its operations, Telenor has focussed on diversity. It has the objective of

²⁴⁷ GSMA, the Mobile Economy: Europe 2015. Accessed at <https://www.gsmainelligence.com/research/?file=06d1c45d0528233e7a9560843d85c8bd&download>

²⁴⁸ GSMA Intelligence data, data accessed October 2016, <https://www.gsmainelligence.com/>

²⁴⁹ This is equivalent to 110 million DKK. This has been converted to US Dollars using a 2015 average exchange rate sourced from the World Bank.

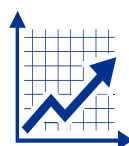
TELENOR in DENMARK

attracting and retaining the best leaders and experts from diverse backgrounds and developing more women leaders.



38.4%

Female proportion of Telenor in Denmark direct employment



\$299m

Contribution to GDP between 2011 and 2015 through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Denmark



Telenor employed 2,213 people in Denmark in 2015 (1,962 full time equivalent terms). Of these 38.4% were women. This is 9 percentage points lower than the national average for Denmark, which is 47.3%.

In order to support the advancement of women in the organisation, Telenor Denmark ran a trainee programme in 2015 which targeted top talents among graduate students from diverse educational backgrounds. 47 per cent of these candidates were women.²⁵⁰

And in a similar way to which mobile penetration more widely contributes to GDP, the use of mobile services by women supports economic growth. KPMG estimates that through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Denmark, Telenor in Denmark contributed \$299 million to Denmark's GDP between 2011 and 2015.

Sustainability in the supply chain

It is estimated that through Telenor's supply chain sustainability policy, 8,500 people are employed at participating businesses who meet the standards.

As of 2015, 161 of Telenor's suppliers in Denmark had signed an Agreement of Responsible Business Conduct (ABC), thereby agreeing to abide by Telenor's supply chain principles.

During the course of 2015, Telenor conducted a wide ranging monitoring exercise of these suppliers to ensure conformity with the requirements. During the year:

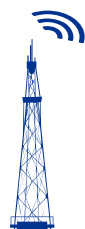
- 37 inspections took place;
- the inspections covered 37 companies, with a combined total of 6,285 employees;
- 26 major non-conformity findings were recorded; and
- working closely with its suppliers, Telenor mitigated 31% of major non-conformity findings within 12 months of the inspection taking place.

KPMG analysis estimates that 8,500 employees, across its 161 suppliers that have signed up to the ABC, benefit from working conditions in line with the high standards required by Telenor's supply chain sustainability policy.

²⁵⁰ Telenor Group Annual Report, 2015

TELENOR in HUNGARY

Introduction



2G: 99.7%

3G: 89.4%

4G: 95.5%

Population coverage as of Q4 2015

Telenor is the largest mobile telecommunications operator in Hungary in terms of number of connections²⁵¹.

Telenor's operations in Hungary were launched in 1994, under the name Pannon. It was rebranded as Telenor Hungary in May 2010.

Telenor Hungary provides voice and non-voice services including SMS, MMS and digital mobile content. It operates a 2G, 3G and 4G network and offers the widest mobile broadband coverage in Hungary. Hungary is also the headquarters of the Telenor Common Operations, a regional shared service centre for Hungary, Serbia, Bulgaria, and Montenegro. The impacts associated with all Telenor operations in Hungary are included in the analysis.

Telenor Hungary also operates 'Hipernet', a super-fast mobile internet service. Telenor Hungary is working to increase the scale of this service from 95.0% geographical coverage at July 2015 to 98.5% coverage by the end of 2016.

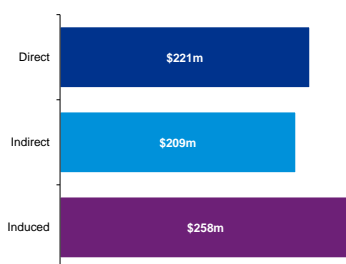
Of Telenor Hungary's total subscribers at end-2015, 47.0% were active data users.²⁵²

Driving macro economic growth

Contributing to Gross Value Added (GVA)

\$688m

Total contribution to Gross Value Added (GVA) in 2015



Telenor generated approximately \$688million of GVA for the Hungarian economy in 2015.

Of its total GVA contribution in 2015, \$221 million of GVA was generated by Telenor in Hungary directly. However, its contribution reached far beyond this through its purchasing from Hungarian suppliers and from the wider economic activity generated through employee spending. In addition to its direct GVA, Telenor contributed a further \$209 million of indirect GVA and \$258 million of induced GVA for Hungary.

²⁵¹ GSMA Intelligence, connections Q3 2016, data accessed October 2016
<https://www.gsmainelligence.com/>

²⁵² Telenor Group Annual Report, 2015

TELENOR in HUNGARY

Telenor's total GVA accounted for 0.7% of Hungary's total national GVA in 2015 and its direct GVA accounted for 4.4% of GVA generated by Hungary's ICT sector.

Labour productivity is a measure of economic performance in a country. For Telenor in Hungary, the 2015 direct GVA generated by each full-time employee was \$168,127, almost three times higher than the national average GVA per full-time employee in Hungary (\$56,728²⁵³).

Telenor Case Study: The Telenor Common Operation (TnCO)

Increasing competition in the telecommunications industry has led to increased pressure to save costs and look for ways to leverage scale. However, when faced with a decision as to whether to outsource some of its operations to an offshore service provider, Telenor Hungary decided to re-invest in its local operations in order to build the business internally and maintain operations within the country.

On 1 October 2013, Telenor established the Telenor Common Operation (TnCO), a technology service provider delivering network and IT services to Telenor markets. The TnCO was established through a common initiative of Telenor's operations in Central and Eastern Europe, including Hungary, Montenegro and Serbia, and later joined by Bulgaria. TnCO is registered in Hungary with branch offices in all the other cooperating countries. It currently has 800 employees distributed across its operations in these countries.

Telenor has aimed to maximise the scale of its operations in Central and Eastern Europe through combining its employees and expertise in the region. This has created a company operating network services, with more than 24,000 base stations and 4,000 servers, for more than 10 million customers across Telenor's operations in Central and Eastern Europe.

21,716

Total employment in 2015

Direct employment

1,316



Indirect employment

7,600



Induced employment

12,800



Contributing to employment

In 2015, Telenor directly employed 1,316²⁵⁴ full time equivalent (FTE) staff in Hungary. This is equivalent number of employees in headcount terms for 2015.

Of Telenor's 2015 employees in Hungary:

- 54.6% were male;
- 45.4% were female; and
- 98.8% were Hungarian nationals.

Telenor's direct employment accounts for 1.3% of total employment in the Hungarian Information and Communication sector.

²⁵³ World Bank economy level productivity 2015.

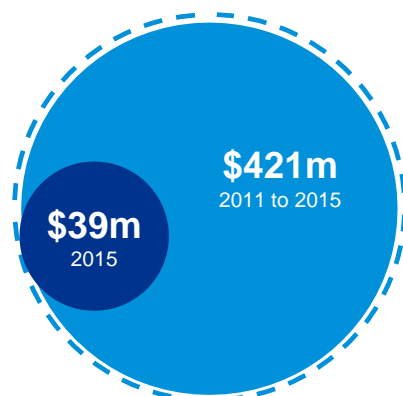
²⁵⁴ Telenor full time equivalent employees in Hungary includes employees from Telenor Common Operations based in Hungary.

TELENOR in HUNGARY

In addition, KPMG estimates that, in 2015, Telenor generated an additional 7,600 indirect jobs in Hungary through its supply chain and a further 12,800 induced jobs in Hungary linked to employee spending. This means that for every job that Telenor generates directly, an additional 16 are created in the wider Hungarian economy.

Capital investment

Over the last five years, Telenor has invested \$421 million in the Hungarian economy, of which \$39 million was invested in 2015.



In 2014, Telenor Hungary acquired, through a tender process organised by the National Communications Authority of Hungary, spectrum licences in the LTE 800 MHz, UMTS 900 MHz and LTE 2600 MHz frequency bands.²⁵⁵ In 2016, Telenor Hungary plans to increase its network investment, with a focus on improving indoor coverage for private users and expanding the 4G+ (LTE advanced) network.

Telenor Hungary's capital investment, particularly in networks, fell by approximately 20%²⁵⁶ between 2014 and 2015. This was, at least in part, due to the network sharing agreement reached with Magyar Telekom. This agreement, for the joint development and operation of their 4G networks in the 800 MHz spectrum band in all parts of Hungary, except Budapest, has the stated goal of providing Telekom and Telenor customers living in rural areas with 4G coverage and access to 4G based mobile internet services as early as possible. The cooperation also aims to improve service quality and availability in areas already covered by the 4G network.²⁵⁷

Another driver was the heavy investment in spectrum and network infrastructure leading up to 2015.

Capex intensity is a measure of the ratio of capex to the GVA generated. In 2015, Telenor Hungary capex intensity was 18%²⁵⁸. This was 8 percentage points lower than the national average, which was 26%. However, this is likely to be a result of the reduced capex in 2015. Average annual capex from 2011-2015 was \$84 million.

²⁵⁵ Telenor Hungary, June 2015. Accessed at <http://www.telenor.com/investors/company-facts/business-description/telenor-hungary/>

²⁵⁶ Telenor Group Annual Report, 2015

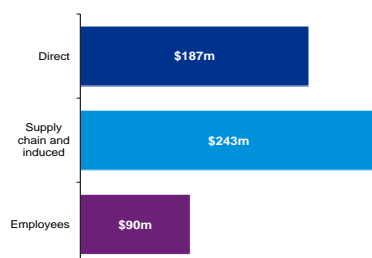
²⁵⁷ Telenor, Customers in Hungary to benefit from 4G network sharing between Magyar Telekom and Telenor, 26 February 2015. Accessed at <http://www.telenor.com/media/articles/2015/customers-in-hungary-to-benefit-from-4g-network-sharing-between-magyar-telekom-and-telenor/>

²⁵⁸ This has been estimated using the Gross Fixed Capital Formation as a percentage of GDP for the Hungary economy sourced from the World Bank.

Telenor's role in public financing

\$520m

Total fiscal contribution
generated by Telenor
Hungary in 2015



In 2014, Telenor made a direct fiscal contribution of \$187 million to the Hungarian government through taxes and other regulatory payments including licence fees, frequency fees and numbering fees.

As part of these direct fiscal contributions, Telenor faced the telecommunications tax levied in Hungary which is a tax charged at a fixed HUF rate per minute of call time and per message sent, with differing rates and monthly limits for consumer and business customers.²⁵⁹

Telenor's direct fiscal contributions in 2014 in Hungary accounted for 33% of its revenues.

Telenor also makes additional fiscal contributions in Hungary through the economic activity it generates through spending in the supply chain and that generated by employee spending.

As a result of its activities, a further fiscal contribution of \$333 million was generated by Telenor in 2015 in Hungary as a result of:

- the economic activity Telenor generates in Hungary through spending in the supply chain;
- spending by (direct, indirect and induced) employees; and
- employees (direct, indirect and induced) paying taxes on their earnings.

The total fiscal contribution generated by Telenor in 2015 of \$520 million accounted for approximately 0.7% of total Hungarian government tax revenues.

Telenor Case Study: Cash Registers in Hungary

From September 2014, in order to improve transparency in payments, a mandatory policy came into effect in Hungary to connect all online cash registers to the tax office via machine-to-machine (M2M) technology, using mobile SIM cards. During the prior two year preparation period, over 170,000 online cash registers were installed with SIM cards, many of which were provided by Telenor Hungary.²⁶⁰

Each connected cash register has a unique code from the tax office. It sends data to a control unit, which can hold data on up to a million

²⁵⁹ Telenor Hungary, June 2015. Accessed at <http://www.telenor.com/investors/company-facts/business-description/telenor-hungary/>

²⁶⁰ Sales Data Controller, Hungary: use of fiscal cash register, 20 September 2014. Accessed at <http://www.salesdatacontroller.com/hungary-fiscal-cash-register/>

transactions. This control unit contains a mobile SIM card which is connected to the tax office and uses a dedicated channel to send information to it. It allows the tax office to receive digitally signed transactions data from all connected cash registers in real time.

Given the year on year increase in turnover for online cash registers of 12.9% in February 2016,²⁶¹ compared to 2015, , the Minister of the Economy Mihaly Varga, praised the policy, stating that *“After nearly two years of preparation an important phase in the fight against the black economy has been completed.”*²⁶²

Enabling the wider economy



As well as the contributions made directly through Telenor’s operations in Hungary, it makes a wider indirect contribution through its provision of mobile communication services. These services can drive economic growth through greater digital and financial inclusion and raise entrepreneurial activity and business productivity.

The wider positive socio-economic effects of Telenor’s impact on digital inclusion



\$521m

Contribution to GDP between 2011 and 2015 as a result of Telenor mobile penetration (including increased 3G and 4G penetration)

A number of studies have identified a link between mobile penetration and economic growth. Increasing digital inclusion, through greater availability of services and customer usage, particularly of 3G telephony and mobile data use, can have positive socio-economic benefits.

As the largest mobile provider in Hungary by connections, with 3.2 million subscriptions, widespread 2G, 3G and 4G networks and the largest geographical coverage of mobile broadband, Telenor Hungary’s services have positive impacts on the Hungarian economy.

Drawing on results from an econometric model developed for the GSMA²⁶³, KPMG estimates that the increase in mobile penetration overall and the increased 3G and 4G penetration²⁶⁴ of Telenor Hungary between 2011 and 2015 contributed \$521 million to GDP.

The benefits of enhanced digital inclusion are not only economic. Social benefits are also captured. Telenor Hungary has taken actions to improve digital literacy. For example, in 2015 the company launched its Hipersuli Education programme. It has also sought to positively impact societies’ use of digital technology through an initiative, with its

²⁶¹ Trade Magazin, Turnover via online cash registers increased significantly, 22 April 2016. Accessed at <http://www.trademagazin.hu/en/hirek-es-cikkek/piaci-hirek/nagyot-nott-az-online-kasszak-forgalma.html>

²⁶² Trade Magazin, NGM: an important phase in the fight against the black economy has been completed, 1 September 2014. Accessed at <http://www.trademagazin.hu/en/hirek-es-cikkek/piaci-hirek/gm-lezarult-a-feketegazdasag-elleni-kuzdelem-fontos-szakasza.html>

²⁶³ Deloitte and GSMA, What is the impact of mobile telephony on economic growth?, November 2012

²⁶⁴ Between 2011 and 2015 Telenor Hungary’s mobile penetration decreased from 35.7 to 34.7 per 100 of the population. Over the same period, 3G penetration increased from 11.7 3G/4G connections per 100 of the population, to 17.7.

TELENOR in HUNGARY

partner, MediaSmart Hungary Kft, to develop a training manual for young children to promote safe and responsible internet use.

Telenor Case Study: Hipersul

i

Telenor Hungary's Hipersuli programme is aimed at addressing both digital education and internet safety in Hungary. It was established as an initiative by Istvan Kutas, Director of Corporate Communications of Telenor Hungary based on his own experience with his son.

"As a parent, I learned that the school takes away my son's smartphone and locks it up during classes as it is considered a toy and a distraction... When helping with his homework, I realised how a smartphone and mobile internet can help his progress, but that he does not have a clue about using the internet for his own education." Istvan Kutas, Director of Corporate Communications of Telenor Hungary.

In 2015, a pilot project was established with classes in 5 schools to help 35 teachers and 350 students develop the skills to learn digitally through Hipernet enabled tablets connected through mobile internet. The schools were selected to reflect the diversity of Hungarian society and included a variety of age groups in order to assess the impact of digital education on different groups of children.

Hipersuli was one of the first education projects in the world to experiment with the use of VR headsets in education.

Telenor has indicated that teachers, parents and children appreciated the initiative and gave positive feedback. However barriers to its effectiveness existed including a lack of content and the lack of digital education skills among teachers, which inhibited the spread of digital education

Based on these findings of the pilot project, Telenor Hungary decided to extend Hipersuli into a new phase with a greater focus on teacher training and content development.

Telenor's impact on financial inclusion



\$371m
Total value of
mobile financial
transactions made
by Telenor
Hungary's
subscribers

Mobile communications generally support financial inclusion as they give smartphone users the means to access mobile KPMG estimates that through the use of Telenor Hungary's services, subscribers made a total of \$371million of mobile financial transactions in 2015.

In February 2016, Telenor Hungary was the first mobile operator in the world to launch a MasterPass enabled mobile wallet for consumers' smartphones. MasterPass is the MasterCard digital payment solution which allows customers to purchase goods on the internet and through the Telenor Wallet application. Telenor Hungary's mobile wallet application has been downloaded to over 250,000 smartphones, making it the most popular mobile wallet in Hungary.²⁶⁵

²⁶⁵ Telenor, Telenor Is the First Mobile Network Operator in the World to Launch a MasterPass Enabled Wallet, 23 February 2016. Accessed at <https://www.telenor.hu/en/press/pressreleases/1266>

Telenor's contribution to boosting entrepreneurship, innovation and productivity

The provision of mobile services can impact positively on entrepreneurial activity and long-run business productivity and innovation in a number of ways. These include increasing the ease of access to markets and consumers, lowering the costs of business start-ups and business operation and supporting greater efficiency.

GSMA data ²⁶⁶ indicates that based on the number of unique subscribers, Europe is the most penetrated region globally. With a unique subscriber penetration rate of 84% at Q3 2016²⁶⁷, it is reaching saturation level and forecasts suggest that there is limited scope for further subscriber growth.

This suggests that the scope for improving digital inclusion and realising additional gains to the long-run productivity of the economy in Telenor's European markets is more limited and that the main economic benefits associated have already been mostly achieved.

More widely, however, Telenor Hungary has launched initiatives to support entrepreneurship and innovation. These include the Smartphone Academy and the recently launched business accelerator program Telenor Accelerate.

Telenor Accelerate, launched in June 2016, is a programme aimed at supporting Hungarian start-ups to grow. The five start-ups who are accepted onto the programme will receive a three month programme which will include:²⁶⁸

- access to testing and marketing opportunities with 200 million customers and 1 million business partners;
- one-on-one mentoring by Telenor senior managers;
- workshops on service design and communications training;
- access to angel investors, funding and potential local and international partners;
- exchange opportunities with Telenor's Asian accelerator programmes; and
- up to HUF 10 million in funding (approximately \$36,000)²⁶⁹.

²⁶⁶ GSMA, The Mobile Economy: Europe 2015. Accessed at <https://www.gsmainelligence.com/research/?file=06d1c45d0528233e7a9560843d85c8bd&download>

²⁶⁷ GSMA Intelligence data, data accessed October 2016, <https://www.gsmainelligence.com/>

²⁶⁸ Telenor, Telenor Accelerate to help Hungarian start-ups grow, 17 June 2016. Accessed at <https://www.telenor.hu/en/press/pressreleases/1293>

²⁶⁹ Using average HUF USD exchange rate from April 2016 to October 2016 sourced from exchangerates.org.uk in October 2016.

Telenor Case Study: Smartphone Academy

The Smartphone Academy is Telenor Hungary's educational event series sharing the latest innovations and future trends through a combination of TEDX-like presentations and an exhibition featuring the latest devices and solutions.

The first event was held 5 years ago and was an 'Android Workshop' aimed at drawing opinion formers' and customers' attention to the advantages of Android, at a time when Telenor Hungary did not sell the iPhone. As popularity for the event grew, driven by media coverage and word of mouth, participation increased from 30 to 60 predominantly technology focused individuals to 465 participants who attended the 'wearables' workshop which included wider consumers and professionals. Following the introduction of the sale of Windows phones and iPhones by Telenor Hungary, the event was renamed Smartphone Academy.

Today, the event is held quarterly with 3 to 4 key note presentations and 10 to 15 exhibitors. It is a place to show market leading technology, such as self-driving cars, and many technology companies have chosen Smartphone Academy as the Hungarian launch event for a new product. Due to live streaming, the event reaches a much wider audience, with the last event being watched by 7,000 people via Facebook.

Since 2011, 15 events have been held with over 2,500 participants, 50 speakers and 100 exhibitors. In April 2016, the Smartphone Academy won a Global Brand Excellence Award in the Education Sector at the World Brand Congress in Kuala Lumpur.

Supporting improved gender equality



45.4%
Female proportion
of Telenor in
Hungary
direct employment



\$237m
Contribution to
GDP between
2011 and 2015
through increased
digital access
(through increased
2G, 3G and 4G
mobile penetration
rates) for female
subscribers in
Hungary

Gender equality is seen as a priority across the globe. Across its operations, Telenor has focussed on diversity. It has the objective of attracting and retaining the best leaders and experts from diverse backgrounds and developing more women leaders.

Telenor employed 1,316 people in Hungary in 2015²⁷⁰, of which 45.4% were women. This is the same as the national average for Hungary.

Through its provision of mobile services, Telenor Hungary is helping to promote gender equality through enabling women in Hungary to access mobile communication services. In a similar way to which mobile penetration more widely contributes to GDP, the use of mobile services by women supports economic growth. KPMG estimates through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Hungary, Telenor in Hungary contributed \$237 million to Hungary's GDP between 2011 and 2015.

²⁷⁰ Telenor full time equivalent employees in Hungary includes employees from Telenor Common Operations based in Hungary

Sustainability in the supply chain

It is estimated that through Telenor's supply chain sustainability policy, 79,500 people are employed in participating businesses who meet the standards.



The Supply Chain Sustainability Function was established in Telenor Hungary in 2008. As of 2015, 485 of Telenor's suppliers in Hungary had signed an Agreement of Responsible Business Conduct (ABC), thereby agreeing to abide by Telenor's supply chain principles.

During the course of 2015, Telenor conducted a wide ranging monitoring exercise of these suppliers in Hungary to ensure conformity with the requirements. During the year:

- 33 inspections took place of which 61% were unannounced;
- the inspections covered 28 companies, with a combined total of 4,309 employees;
- 4 major non-conformity findings were recorded; and
- working closely with its suppliers, Telenor Hungary mitigated 100% of major findings within 12 months of the inspection taking place.

To further support its sustainability aims, Telenor has joined the Supply Chain working group of the Business Council for Sustainable Development in Hungary. The Working Group aims to improve the approach of Hungarian business players in terms of ethics and sustainability.²⁷¹

KPMG analysis estimates that approximately 79,500 employees in Hungary, across its 485 suppliers that have signed up to the ABC, benefit from working conditions in line with the high standards required by Telenor's supply chain sustainability policy.

²⁷¹ Telenor Hungary Sustainability Report, 2014. Accessed at <https://www.telenor.com/wp-content/uploads/2015/04/Telenor-Hungary-Sustainability-Report-2014.pdf>

TELENOR INDIA

Introduction



36.9m

Total subscribers as of Q4 2015

Telenor India began providing services in December 2009. As of Q3 2016, it had a share of approximately 5.4% of all connections in India ²⁷², and an 11.8% share in the geographies in which it is licensed to operate.

Between 2014 and 2015, Telenor signed up another 6 million subscribers, a 16% increase on the prior year. In 2015 26.0% of subscribers were active data users.²⁷³



2G: 50.5%

Population coverage as of Q4 2015

Telenor India originally began offering its services through its subsidiary Telewings Communications Services Pvt Ltd. operating under the brand name Uninor. On 17th October 2014, Telenor acquired 100% of this subsidiary²⁷⁴ and in September 2015 changed its brand name to Telenor.²⁷⁵

There are 22 telecommunication circles in India, covering metro areas and other regions ranked by economic development, in which mobile network operators can attain licences to operate their services. Telenor India has network operations in six of these circles including Andhra Pradesh, Bihar & Jharkhand, Gujarat, Maharashtra, UP East and UP West.

In 2014, Telenor India acquired additional spectrum in four circles in which it operates as well as an additional licence to operate in a seventh circle, Assam, in which it is working towards launching operations.²⁷⁶

Telenor has obtained spectrum capable of supporting more advanced technologies such as 4G/LTE, and it launched 4G services in India in 2016.

\$346m

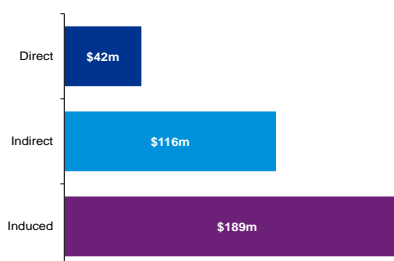
Total contribution to Gross Value Added (GVA) in 2015

Driving macro economic growth

Contributing to Gross Value Added (GVA)

Telenor generated approximately \$346million of GVA for the Indian economy in 2015.

Of its total GVA contribution in 2015, \$42million of GVA was generated by Telenor directly.



²⁷² GSMA Intelligence, data accessed October 2016, <https://www.gsmainelligence.com/>

²⁷³ Telenor Group Annual Report, 2015

²⁷⁴ Telenor India, June 2015. Accessed at <https://www.telenor.com/investors/company-facts/business-description/telenor-india/>

²⁷⁵ Telenor Group Annual Report, 2015

²⁷⁶ Telenor India, Our Circles. Accessed at <https://www.telenor.in/about-us/p/our-presence>

However, in addition to its direct GVA, Telenor contributed a further \$116 million of indirect GVA and \$189 million of induced GVA through its purchasing from Indian suppliers and from the wider economic activity generated through employee spending.

Telenor accounted for 0.02% of India's total national GVA in 2015.

Labour productivity is a measure of economic performance in a country. The 2015 direct GVA generated by each full-time Telenor India employee was \$11,058, which was lower than the national average (\$15,689²⁷⁷).

Contributing to employment

Telenor directly employed 3,825 staff in India in 2015. This is equivalent to the number of headcount employees in 2015.

Of these:

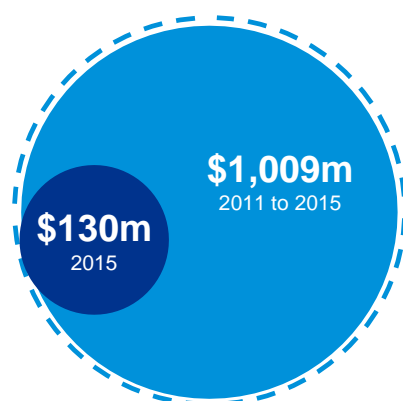
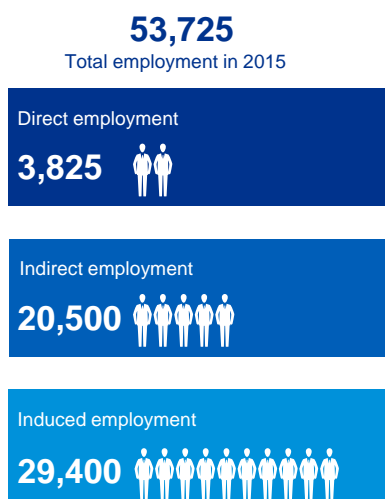
- 88.0% were male;
- 12.0% were female; and
- 99.8% were Indian nationals.

In addition, KPMG estimates that, in 2015, Telenor generated an additional 20,500²⁷⁸ indirect jobs in India through its supply chain and a further 29,400 induced jobs linked to employee spending. This means that for every job that Telenor India generates directly, an additional 13 are created in the wider economy.

Capital investment

Over the last five years, Telenor has invested \$1,009 million in the Indian economy, with \$130 million of investments in 2015.

During 2015, Telenor India announced a programme to modernise its network. Starting in 2015, this involves upgrading and replacing its entire network of 23,625 base stations with new equipment by 2017. This project is aimed at increasing network efficiency and supporting the launch of new technologies. By the end of 2015, more than 5,000 sites had been upgraded.²⁷⁹



²⁷⁷ World Bank economy level productivity 2015.

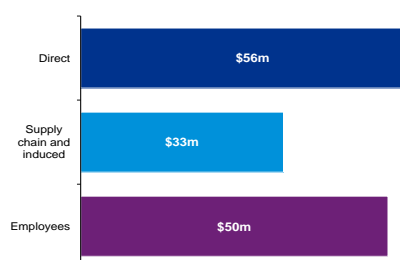
²⁷⁸ Indirect employment is likely a conservative estimate given a lack of detailed Telenor India supplier spending data.

²⁷⁹ Telenor Group Annual Report, 2015

Capex intensity is a measure of the ratio of capex to the GVA generated. In 2015, Telenor India capex intensity was 307%²⁸⁰, 273 percentage points higher than the national average of 34%.

Telenor's role in public financing

\$139m
Total fiscal contribution
generated by Telenor India
in 2015



In 2014, Telenor India made a direct fiscal contribution of \$56 million to the government through taxes and other regulatory payments including licence fees, frequency fees and numbering fees.

Telenor India's direct fiscal contributions in 2014 accounted for 8% of its revenues.

Telenor India also makes additional fiscal contributions through the economic activity it generates through spending in the supply chain and that generated by employee spending.

As a result of its activities, a further fiscal contribution of \$83 million was generated by Telenor India in 2015 as a result of:

- the economic activity Telenor India generates through spending in the supply chain;
- spending by (direct, indirect and induced) employees; and
- employees (direct, indirect and induced) paying taxes on their earnings.

The total fiscal contribution generated by Telenor India in 2015 of \$139 million accounted for approximately 0.1% of total Indian government tax revenues.

Enabling the wider economy



As well as the contributions made directly through its operations, Telenor India makes a wider indirect contribution through its provision of mobile communication services. These services can drive economic growth through greater digital and financial inclusion and raise entrepreneurial activity and business productivity.

The wider positive socio-economic effects of Telenor's impact on digital inclusion

A number of studies have identified a link between mobile penetration and economic growth. Increasing digital inclusion, through greater availability of services and customer usage, particularly of 3G telephony and mobile data use, can have positive socio-economic benefits.

²⁸⁰ This has been estimated using the Gross Fixed Capital Formation as a percentage of GDP for the India economy sourced from the World Bank.



\$1,769m

Contribution to GDP between 2011 and 2015 as a result of Telenor mobile penetration (including increased 3G and 4G penetration)

As a mobile provider in India, with almost 40 million subscriptions and a strong programme of investment in its network, Telenor India's services have positive impacts on the Indian economy.

Drawing on results from an econometric model developed for the GSMA²⁸¹, KPMG estimates that the increase in mobile penetration overall²⁸² of Telenor India between 2011 and 2015 contributed an additional \$1,769 million to GDP growth.²⁸³ This is in addition to the GVA contribution outlined in the previous section.

The benefits of enhanced digital inclusion are not only economic. Social benefits are also captured. Telenor India has taken actions to improve digital literacy in India. For example, it has pioneered its WebWise campaign India which was initially started in February 2014, reaching 15,000 children in its initial phase.²⁸⁴ This programme involves ambassadors from Telenor India meeting children, teachers and parents to help them all better understand the needs and behaviour of young internet users, with a focus of encouraging online safety for children. In 2015, the programme was expanded in order to reach 22,000 children.²⁸⁵

Telenor's impact on financial inclusion



\$359m

Total value of mobile financial transactions made by Telenor India's subscribers

Mobile communications generally support financial inclusion as they give smartphone users the means to access mobile banking, mobile payments and other mobile financial services.

KPMG estimates that through the use of Telenor India's services, subscribers made a total of \$359 million of mobile financial transactions in 2015.

Telenor is expanding its financial services products continually. In 2015, it launched Telenor Suraksha, a life insurance product focused on low and middle-income customers. The initiative had insured more than 6 million customers by December 2015.

During 2015, Telenor was granted a payments bank license in India together with two partners, IDFC and Dilip Shanghvi, which will allow it to further expand its provision of financial services.²⁸⁶

²⁸¹ Deloitte and GSMA, What is the impact of mobile telephony on economic growth?, November 2012

²⁸² Between 2011 and 2015 Telenor India's mobile penetration increased from 2.1 to 2.9 per 100 of the total population.

²⁸³ The estimate of the contribution to GDP growth of increased Telenor mobile penetration measures the additional contribution generated from one year to the next, rather than the total contribution overall (i.e. is a flow measure rather than a stock).

²⁸⁴ Telenor India, Sustainability, Accessed at <https://www.telenor.in/about-us/p/health-safety-practice>

²⁸⁵ Telenor Group Annual Report, 2015

²⁸⁶ Telenor Group Annual Report, 2015

Telenor's contribution to boosting entrepreneurship, innovation and productivity

The provision of mobile services can impact positively on entrepreneurial activity and business productivity and innovation in a number of ways. These include increasing the ease of access to markets and consumers, lowering the costs of business start-ups and business operation and supporting greater efficiency.

More widely, Telenor has launched further initiatives to support entrepreneurship and innovation. For example Digital Winners India is an annual event created by Telenor to recognise young innovators, entrepreneurs and software developers by giving them a platform to explain how the mobile internet can solve social problems. The winner of Digital Winners India gets an opportunity to represent India at the Digital Winners Conference in Oslo to compete with representatives from Telenor's other Asian markets to win a prize of NOK 100,000.²⁸⁷

Supporting improved gender equality



12.0%

Female proportion of Telenor in India direct employment

Gender equality is seen as a priority across the globe. Across its operations, Telenor Group has focussed on diversity. It has the objective of attracting and retaining the best leaders and experts from diverse backgrounds and developing more women leaders.

Telenor India employed 3,825 people 2015, 12.0% of whom were women. This is 12 percentage points lower than the national average for India, which is 24%.



\$366m

Contribution to GDP between 2011 and 2015 through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in India

Through its provision of mobile services, Telenor India is helping to promote gender equality through enabling women in India to access mobile communication services. The use of mobile services by women supports economic growth. KPMG estimates that through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in India, Telenor in India contributed \$366 million to India's GDP between 2011 and 2015.

This figure does not capture the wider societal benefits that are generated through providing women in developing countries with mobile services, such as:²⁸⁸

- improved safety and security;
- enhanced abilities to connect with friends and family; and
- increased independence.

²⁸⁷ Telenor India, Innovations. Accessed at <https://www.telenor.in/about-us/p/innovations>

²⁸⁸ GSMA, Women & Mobile: A Global Opportunity – A study on the mobile phone Gender gap in low and middle-income countries. Accessed at http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2013/01/GSMA_Women_and_Mobile-A_Global_Opportunity.pdf

Telenor India also runs other initiatives to support women's access to mobile telecommunications, such as Project Sampark.

Sustainability in the supply chain



It is estimated that through Telenor's supply chain sustainability policy, 629,400 people are employed in participating businesses who meet the standards.

As of 2015, 2,109 of Telenor India's suppliers had signed an Agreement of Responsible Business Conduct (ABC)²⁸⁹, thereby agreeing to abide by Telenor's supply chain principles.

During the course of 2015, Telenor India conducted a wide ranging monitoring exercise of these suppliers to ensure conformity with the requirements. During the year:

- 1,303 inspections took place of which 71% were unannounced;
- the inspections covered 88 companies, with a combined total of 184,835 employees;
- 19 major non-conformity findings were recorded; and
- working closely with its suppliers, Telenor India mitigated 79% of major non-conformity findings within 12 months of the inspection taking place.

KPMG estimates that 629,400 employees, across its 2,109 suppliers that have signed up to the ABC, benefit from working conditions in line with the high standards required by Telenor's supply chain sustainability policy.

²⁸⁹ This figure only includes suppliers classified as active. The total number of suppliers who have signed an ABC with Telenor India by 2015 was 12,383.

Introduction

Digi launched its services in Malaysia in 1995. Telenor became the majority shareholder in 2001 with 61% of ownership, which was then reduced in 2008 to 49% due to licensing agreements²⁹⁰. As of Q3 2016, it is the largest mobile operator in terms of market share with 28.5% of total connections²⁹¹. It is the third largest mobile operator in terms of revenue market share.²⁹²

Telenor provides mobile data and voice, roaming and value-added services on both prepaid and contract bases in Malaysia. It operates a 2G, 3G and 4G network.

Telenor is currently one of the leading prepaid mobile phone operators, the largest consumer segment in the Malaysian mobile market

There is a strong demand for smartphones and mobile data services in Malaysia. Among Telenor's subscribers, more than 50% are smartphone users and 62% are active data users²⁹³.

As a result, during 2015, Telenor accelerated its 4G LTE network expansion nationwide with significantly improved data network quality and experience. It also strengthened its network capabilities with higher transmission capacities and extended high speed coverage. It now has 6,400km of fibre network.

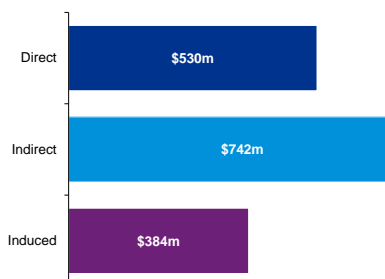
Driving economic growth

Contributing to Gross Value Added (GVA)

Telenor generated approximately \$1,956 million of GVA for the Malaysian economy in 2015.

Of its total GVA contribution in 2015, \$830 million was generated by Telenor directly. We estimate that through its purchasing from Malaysian suppliers and from the wider economic activity generated through employee spending, Telenor generated a further \$742 million of indirect GVA and \$384 million of induced GVA.

\$1,956m
Total contribution to Gross
Value Added (GVA) in
2015



²⁹⁰ Telenor, Digi. Accessed at <https://www.telenor.com/investors/company-facts/business-description/digi-malaysia/>

²⁹¹ GSMA Intelligence, data accessed October 2016, <https://www.gsmainelligence.com/>

²⁹² GSMA Intelligence, data accessed October 2016, <https://www.gsmainelligence.com/>

²⁹³ Telenor Annual report 2015

TELENOR IN MALAYSIA

Telenor's total GVA accounted for 0.7% of Malaysia's total national GVA in 2015 and its direct GVA accounted for 5.2% of GVA generated by the ICT sector.

Labour productivity is a measure of economic performance in a country. In 2015, the GVA generated by each of Telenor's full-time employees was \$396,167, over 7 times higher than the national average GVA per full-time employee in Malaysia (\$52,960²⁹⁴).

Contributing to employment

In 2015, Telenor directly employed 2,095 staff. This is equal to the number of headcount employees in 2015.

79,995

Total employment in 2015

Direct employment

2,095



Indirect employment

48,500



Induced employment

29,400



Of these:

- 56.4% were male;
- 43.6% were female; and
- 99.1% were Malaysian nationals.

Telenor's direct employment alone accounts for 1.0% of total employment in the Information and Communication sector.

In addition, KPMG estimates that, in 2015, Telenor generated an additional 48,500 indirect jobs through its supply chain and a further 29,400 induced jobs linked to employee spending. This means that for every job that Telenor Malaysia generates directly, an additional 37 have been created in the wider economy.

Telenor Case Study: Challenge for Change

Digi Challenge for Change (CFC) is one of Telenor's flagship initiatives. It aims to crowdsource ideas from the public to provide solutions to specific social problems. Since its inception over 4,700 people and organisations have participated producing 4,600 crowd sourced ideas, resulting in 130 solutions.

In Challenge for Change 7 (2015), the focus of the program was to discover mobile application ideas which could lead to sustainable societal benefits.

The winner of the challenge in 2015 was Dialogue in the Dark, a social enterprise. Its idea was for a virtual call centre (VCC) operated by people who were either disabled or visually impaired. These people would be provided with customised screen reader software, accounting for their disabilities, to enable them to operate the call centre system. The project aimed to give accessibility and equal employability opportunities for a sustainable livelihood to some of the 32,910 registered visually impaired persons and 365,677 people with disabilities in Malaysia.

²⁹⁴ World Bank economy level productivity 2015.

TELENOR IN MALAYSIA

By the end of 2015, the VCC was fully operational with 18 call centre agents being paid a fixed monthly salary above the national minimum wage level.

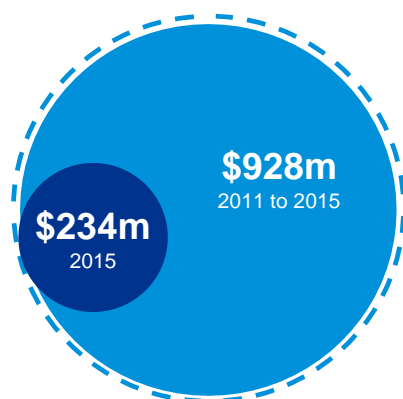
Capital investment

Over the last five years, Telenor has invested \$928 million in the Malaysian economy, of which \$234 million was invested in 2015.

Capital expenditure during 2015 was mainly on expanding network coverage and capacity, backhaul transmission and modernising IT systems.

The result of this investment was to bring 4G LTE access to 191 major cities and towns across Malaysia.

Capex intensity is a measure of the ratio of capex to the GVA generated. In 2015, Telenor's capex intensity was 28%²⁹⁵, 2 percentage points higher than the national average, which was 26%.

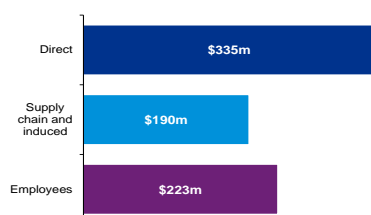


Telenor's role in public financing

In 2014, Telenor made a direct fiscal contribution of \$335 million to the Malaysian government through taxes and other regulatory payments including licence fees, frequency fees and numbering fees.

Telenor in Malaysia's direct contributions for 2015 will also include the Goods and Services Tax (GST) which was made effective on prepaid services as of 1 April 2015.²⁹⁶

Telenor direct fiscal contributions in Malaysia in 2014 accounted for 19% of its revenues.



Telenor also makes additional fiscal contributions in Malaysia through the economic activity it generates through spending in the supply chain and that generated by employee spending.

As a result of its activities, a further fiscal contribution of \$414 million was generated by Telenor in Malaysia in 2015 as a result of:

- the economic activity Telenor generates in Malaysia through spending in the supply chain;
- spending by (direct, indirect and induced) employees; and

²⁹⁵ This has been estimated using the Gross Fixed Capital Formation as a percentage of GDP for the Malaysia economy sourced from the World Bank.

²⁹⁶ Digi, Annual Report, 2015. Accessed at <http://digi.listedcompany.com/misc/ar/ar2015.pdf>

TELENOR IN MALAYSIA

- employees (direct, indirect and induced) paying taxes on their earnings.

The total fiscal contribution generated by Telenor in 2015 of \$749 million accounted for approximately 1.3% of total Malaysian government tax revenues.

Enabling the wider economy



Telenor makes additional wider indirect contributions to the Malaysian economy through its provision of mobile communication services. These services can drive economic growth through greater digital and financial inclusion and raise entrepreneurial activity and business productivity.

The wider positive socio-economic effects of Telenor's impact on digital inclusion



\$2,467m

Contribution to GDP between 2011 and 2015 as a result of Telenor mobile penetration (including increased 3G and 4G penetration)

A number of studies have identified a link between mobile penetration and economic growth. Increasing digital inclusion, through greater availability of services and customer usage, particularly of 3G telephony and mobile data use, can have positive socio-economic benefits.

As the third largest mobile provider in Malaysia, with over 9 million subscriptions, widespread 2G and 3G networks and, following significant investment, the widest 4G network in Malaysia, Telenor's services have positive impacts on the Malaysian economy.

Drawing on results from an econometric model developed for the GSMA²⁹⁷, KPMG estimates that the growth in mobile penetration overall and the increased 3G and 4G penetration²⁹⁸ of Telenor in Malaysia between 2011 and 2015 contributed \$2,467 million to GDP growth.²⁹⁹ This is in addition to the GVA contribution outlined in the previous section.

The benefits of enhanced digital inclusion are not only economic. Social benefits are also captured. Telenor in Malaysia has taken actions to improve digital literacy. For example, Safe Internet workshops have been undertaken across Malaysia in partnership with CyberSAFE Malaysia and UNICEF Malaysia. In 2015 18,279 students across 221 schools received CyberSAFE workshops, taking the total number of students benefitting from the programme over the last 4

²⁹⁷ Deloitte and GSMA, What is the impact of mobile telephony on economic growth?, November 2012

²⁹⁸ Between 2011 and 2015 Telenor Malaysia's mobile penetration increased from 9.9 to 11.7 per 100 of the population. Over the same period, 3G penetration increased from 1.6 3G/4G connections per 100 of the population, to 5.8.

²⁹⁹ The estimate of the contribution to GDP growth of increased Telenor mobile penetration measures the additional contribution generated from one year to the next, rather than the total contribution overall (i.e. is a flow measure rather than a stock).

TELENOR IN MALAYSIA

years to over 100,000. In addition, more than 30,000 new parental guidebooks were distributed.³⁰⁰

Telenor Case Study: Dyslexia Association of Sarawak (DAS)

According to a pilot study, the prevalence rate of Dyslexia is around 6%. In 2012 there were 19,150 children with registered learning disabilities in 2012.³⁰¹

As part of its Empower Societies initiative, Telenor in Malaysia has provided the Dyslexia Association of Sarawak (DASwk) with digital tablets as well as free Internet usage to help them in providing education to children with Dyslexia.

The tablets provided were uploaded with special software and relevant educational mobile applications that can promote enhanced learning experiences for children with dyslexia. These programmes have supported children like Mohd whose dyslexia meant that he had a weak grasp of the sequence of the alphabet, was unable to recognize most phonics and often confused upper and lower case letters. Following a weekly educational programme with DASwk, combined with access to the internet and mobile devices as additional teaching aids, Mohd has been able to improve his literacy skills resulting in him reading and learning independently.

Telenor's impact on financial inclusion



\$84m

Total value of mobile financial transactions made by Telenor Malaysia's subscribers

Including

\$54m

Total value of mobile financial transactions made by Telenor mobile money

Mobile communications generally support financial inclusion as they give smartphone users the means to access mobile banking, mobile payments and other mobile financial services.

KPMG estimates that through the use of Telenor's services, subscribers made a total of \$84 million of mobile financial transactions in Malaysia in 2015.

Telenor Group acquired Prabhu Money Transfer, a licensed money services business based in Malaysia that provides international remittance services.

Telenor considers that, as well as being a commercially attractive proposition, this will help to further support the country's financial inclusion initiatives:

"Financial infrastructure is a vital asset in all societies and through Telenor Group's initiatives on financial inclusion, we will digitalise cash, and help strengthen and develop societies. It is our belief that over time, remitted money will be stored on a mobile wallet, which is in line with our ambition to see more than half of our customers use their mobile phones for financial services in the next five years." Tine Wollebekk, Head of financial services SVP, Telenor.

³⁰⁰ Digi, Annual Report, 2015. Accessed at <http://digi.listedcompany.com/misc/ar/ar2015.pdf>

³⁰² This is equivalent to RM 670,000. This has been converted to US Dollars using an average 2015 exchange rate sourced from the World Bank.

TELENOR IN MALAYSIA

Telenor's contribution to entrepreneurship, innovation and productivity

The provision of mobile services can impact positively on entrepreneurial activity and business productivity and innovation in a number of ways. These include increasing the ease of access to markets and consumers, lowering the costs of business start-ups and business operation and supporting greater efficiency.

More widely, Telenor has launched initiatives to support entrepreneurship and innovation. For example, the Digi 'WWWoW' awards recognise Malaysian internet users for online creativity and entrepreneurship. The top voted entries receive prizes which, over the last five years, have totalled a value of approximately \$170,000³⁰² for 60 winners. In 2015, the theme of "Taking Ideas Further" attracted 750 entries. Following the casting of 14,000 votes, 9 winners were selected.³⁰³

Telenor Case Study: Digital Winners - Rero by Cytron Technologies

Cytron Technologies is a local education start up that focuses on the engineering of robotic products complete with an open-source educational platform for robot enthusiasts to share and learn new ways of robot programming. In 2015, they entered the Digital Winners contest in Malaysia, a scheme which seeks to identify and facilitate promising local technology entrepreneurs.

For the 2015 Digital Winners contest in Malaysia, sponsored by Telenor, Cytron Technologies submitted Rero, short for 'Reconfigurable Robot'. This is a robot construction kit that features easy-to-use hardware design coupled with intuitive programming tools. It is designed and packaged to give teachers and students access to robotics learning tools that can be used in the classroom.

Following their win of the 2015 local Digital Winners contest, they represented Malaysia to the global Digital Winners conference in Norway.

What started as a hobby for a group of engineering students 10 years ago, became a potentially viable business in robotics.

³⁰² This is equivalent to RM 670,000. This has been converted to US Dollars using an average 2015 exchange rate sourced from the World Bank.

³⁰³ Digi, Annual Report, 2015. Accessed at <http://digi.listedcompany.com/misc/ar/ar2015.pdf>

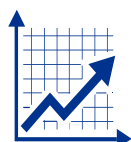
TELENOR IN MALAYSIA

Supporting improved gender equality



43.6%

Female proportion of Telenor in Malaysia direct employment



\$462m

Contribution to GDP between 2011 and 2015 through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Malaysia

Telenor is focused on diversity and aims to attract and retain the best leaders and experts from diverse backgrounds and to develop more women leaders.

Telenor employed 2,095 people in Malaysia in 2015, of which 43.6% were women. This is five percentage points higher than the national average for Malaysia.

Through its provision of mobile services, Telenor is helping to promote gender equality in Malaysia through enabling women in Malaysia to access mobile communication services. In a similar way to which mobile penetration more widely contributes to GDP, the use of mobile services by women supports economic growth. KPMG estimates that through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Malaysia, Telenor in Malaysia contributed \$462 million to Malaysia's GDP between 2011 and 2015.

This figure does not capture the wider societal benefits that are generated through providing women in developing countries with mobile services, such as:³⁰⁴

- improved safety and security;
- enhanced abilities to connect with friends and family; and
- increased independence.

Telenor has sought to improve gender equality through initiatives such as Wanita Era Digital which seeks to empower women through greater internet adoption, education on basic internet skills and supporting women in getting their businesses online.³⁰⁵

Sustainability in the supply chain

It is estimated that through Telenor's supply chain sustainability policy, 215,500 people are employed in participating businesses who meet the standards.

By 2015, 1,244 of Telenor's suppliers in Malaysia had signed an Agreement of Responsible Business Conduct (ABC), thereby agreeing to abide by Telenor's supply chain principles.



³⁰⁴ GSMA, Women & Mobile: A Global Opportunity – A study on the mobile phone Gender gap in low and middle-income countries. Accessed at http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2013/01/GSMA_Women_and_Mobile-A_Global_Opportunity.pdf

³⁰⁵ Digi, Annual Report, 2015. Accessed at <http://digi.listedcompany.com/misc/ar/ar2015.pdf>

TELENOR IN MALAYSIA

During the course of 2015, Telenor conducted a wide ranging monitoring exercise of these suppliers to ensure conformity with the requirements. During the year:

- 916 inspections took place of which 97% were unannounced;
- the inspections covered 45 companies, with a combined total of 2,500 employees;
- 8 major non-conformity findings were recorded; and
- working closely with its suppliers, Telenor mitigated 100% of major non-conformity findings within 12 months of the inspection taking place.

During 2015, to support its suppliers in meeting the supply chain sustainability policy, Telenor delivered 2,500 hours of training to contractors on health, safety, and labour rights.

KPMG estimates the 215,500 employees, from Telenor's 1,244 suppliers, who have signed up to the ABC, will benefit from working conditions in line with the high standards required by Telenor's supply chain sustainability policy.

TELENOR MONTENEGRO

Introduction

Telenor Montenegro, the country's largest mobile operator, representing 39.2%, of mobile subscribers in Q3 2016.³⁰⁶



2G: 99.5%

3G: 97.2%

4G: 40.0%

Population coverage as of Q4 2015

Telenor Montenegro was launched as Montenegro's first mobile operator in 1996, under the name Promonte. A shareholder since 1996, Telenor Group took Telenor Montenegro under full ownership in 2004. The impacts associated with all Telenor operations in Montenegro are included in the analysis.

Telenor Montenegro offers mobile voice, roaming, value-added services and mobile data services in Montenegro. It operates a 2G, 3G and 4G network.

The share of Telenor's subscriber's in 2015 who were active data users was 43%.

Driving economic growth

Contributing to Gross Value Added (GVA)

Telenor generated approximately \$60 million of GVA for the Montenegrin economy in 2015.

Of its total GVA contribution in 2015, \$37million of GVA was generated by Telenor directly.

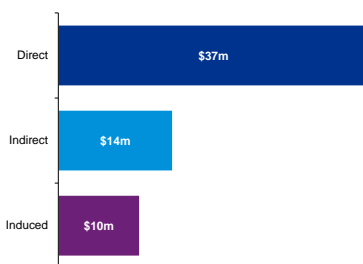
In addition, Telenor contributed a further \$14 million of indirect GVA and \$10 million of induced GVA through its purchasing from Montenegrin suppliers and from the wider economic activity generated through employee spending.

Telenor's total GVA accounted for 1.9% of Montenegro's total national GVA in 2015 and its direct GVA contributed 21.8% of GVA generated by the country's ICT sector.

Labour productivity is a measure of economic performance in a country. The 2015 direct GVA generated by each Telenor full-time employee was \$129,227, almost three times higher than the national average GVA per full-time employee in Montenegro (\$45,174³⁰⁷).

\$60m

Total fiscal contribution generated by Telenor Montenegro in 2015



³⁰⁶ GSMA Intelligence, market share by connections Q3 2016, data accessed October 2016, <https://www.gsmainelligence.com/>

³⁰⁷ World Bank economy level productivity 2015.

TELENOR MONTENEGRO

Contributing to employment

1,324

Total employment in 2015

Direct employment

284



Indirect employment

490



Induced employment

550



In 2015, Telenor Montenegro directly employed 284³⁰⁸ full time equivalent (FTE) staff.

Its total headcount in 2015 was 310 employees. This includes the Telenor employees in Telenor Montenegro, plus employees in Telenor Common Operations based in Montenegro.

Of these;

- 49.1% were male; and
- 50.9% were female.

Telenor Montenegro's direct employment accounts for 5.7% of total employment in the Information and Communication sector.

In addition, KPMG estimates that, in 2015, Telenor Montenegro generated an additional 490 indirect jobs through its supply chain and a further 550 induced jobs linked to employee spending. This means that for every job that Telenor generates directly in Montenegro, an additional 4 are created in the wider economy.

Capital investment

Over the last five years, Telenor has invested \$28 million in the Montenegrin economy, of which \$9 million was invested in 2015.

Telenor's capital expenditure in 2015 was focused on network rollout, transformation of its IT systems and the development of new technical premises to provide adequate space, power and cooling for the telecommunications and IT equipment.

Capex intensity is a measure of the ratio of capex to the GVA generated by a company or a sector. In 2015, Telenor Montenegro capex intensity was 24%³⁰⁹. This was 4 percentage points lower than the national average for Montenegro in 2015, which was 28%.

Telenor's role in public financing

In 2014, Telenor made a direct fiscal contribution of \$11 million to the government through taxes and other regulatory payments including licence fees, frequency fees and numbering fees.

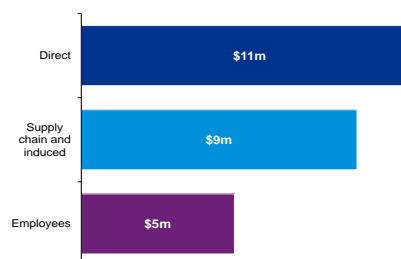
³⁰⁸ Telenor full time equivalent employees in Montenegro includes employees from Telenor Common Operations based in Montenegro.

³⁰⁹ This has been estimated using the Gross Fixed Capital Formation as a percentage of GDP for the Montenegro economy sourced from the World Bank.

TELENOR MONTENEGRO

\$25m

Total fiscal contribution generated by Telenor Montenegro in 2015



Telenor Montenegro's direct fiscal contributions in 2014 accounted for 14% of its revenues.

As a result of its activities, a further fiscal contribution of \$14 million was generated by Telenor Montenegro in 2015 as a result of:

- the economic activity Telenor Montenegro generates through spending in the supply chain;
- spending by (direct, indirect and induced) employees; and
- employees (direct, indirect and induced) paying taxes on their earnings.

The total fiscal contribution generated by Telenor in 2015 of \$25 million accounted for approximately 1.4% of total Montenegrin government tax revenues.

Enabling the wider economy



As well as the contributions made directly through Telenor Montenegro's operations, it makes a wider indirect contribution through its provision of mobile communication services. These services can drive economic growth through greater digital and financial inclusion and raise entrepreneurial activity and business productivity.

The wider positive socio-economic effects of Telenor's impact on digital inclusion



\$27m

Contribution to GDP between 2011 and 2015 as a result of Telenor mobile penetration (including increased 3G and 4G penetration)

A number of studies have identified a link between mobile penetration and economic growth. Increasing digital inclusion, through greater availability of services and customer usage, particularly of 3G telephony and mobile data use, can have positive socio-economic benefits.

As the largest mobile provider in Montenegro, with 0.2 million subscribers and widespread 2G, 3G and 4G networks, Telenor's services have positive impacts on the broader economy.

Drawing on results from an econometric model developed for the GSMA³¹⁰, KPMG estimates that the increase in Telenor's mobile penetration overall together with the growth in its 3G and 4G penetration³¹¹ between 2011 and 2015 contributed an additional \$27 million to GDP in total.

The benefits of enhanced digital inclusion are not only economic. Social benefits are also captured. Telenor Montenegro has taken actions to improve digital literacy. In 2014, it launched the Telenor Foundation, which seeks to develop corporate social responsibility in

³¹⁰ Deloitte and GSMA, What is the impact of mobile telephony on economic growth?, November 2012

³¹¹ Between 2011 and 2015 Telenor Montenegro's mobile penetration decreased from 24.6 to 19.5 per 100 of the population. Over the same period, 3G penetration increased from 4.8 3G/4G connections per 100 of the population, to 9.2.

TELENOR MONTENEGRO

Montenegro. Through the Foundation, Telenor has supported the creation and launch of an app that provides information about objects and locations that are accessible for people with disabilities.³¹²

Continuing their partnership in 2015, Telenor Montenegro and the Wikimedia Foundation have built on their commitment to bring Wikipedia to Telenor customers free of data charges. The partnership also encourages the creation of articles on Wikipedia in the local language.³¹³

Telenor Case Study: Surf Wisely

In order to provide a safe online environment for children, Telenor Montenegro initiated the “Surf Wisely” project. The project aims to educate children in elementary schools and their parents about using the internet safely.

Telenor Montenegro marked the fifth year of the initiative in May 2016, when the final contest about internet safety was organized.

Since Telenor Montenegro first launched Surf Wisely five years ago, more than 20,000 children from 20 municipalities have learnt about safe internet through interactive workshops.³¹⁴

Telenor’s impact on financial inclusion



\$0.3m
Total value of
mobile financial
transactions made
by Telenor
Montenegro’s
subscribers

Mobile communications generally support financial inclusion as they give smartphone users the means to access mobile banking, mobile payments and other mobile financial services.

KPMG estimates that through the use of Telenor’s services, subscribers made a total of \$0.3 million of mobile financial transactions in 2015.

Telenor’s contribution to boosting entrepreneurship, innovation and productivity

The provision of mobile services can impact positively on entrepreneurial activity and business productivity and innovation in a number of ways. These include increasing the ease of access to markets and consumers, lowering the costs of business start-ups and business operation and supporting greater efficiency.

GSMA data³¹⁵ indicates that based on the number of unique subscribers, Europe is the most penetrated region globally. With a unique subscriber penetration rate of 84% at Q3 2016³¹⁶, it is near

³¹² Telenor, Telenor Foundation selects projects to impact society in Montenegro, 9 December 2014. Accessed at <http://www.telenor.com/media/articles/2014/telenor-foundation-selects-projects-to-impact-society-in-montenegro/>

³¹³ Telenor Group Annual Report, 2015

³¹⁴ Telenor, ‘Surfing wisely’ in Montenegro, 25 February 2015. Accessed at <http://www.telenor.com/media/articles/2015/surfing-wisely-in-montenegro/>

³¹⁵ GSMA, The Mobile Economy: Europe 2015. Accessed at <https://www.gsmaintelligence.com/research/?file=06d1c45d0528233e7a9560843d85c8bd&download>

³¹⁶ GSMA Intelligence, accessed October 2016

saturation level and forecasts suggest that there is limited scope for further subscriber growth.

This suggests that the scope for improving digital inclusion in Telenor's European markets is more limited and that the main economic benefits associated with it have already been mostly realised.

Supporting improved gender equality



50.9%

Female proportion of Telenor in Montenegro direct employment



\$12m

Contribution to GDP between 2011 and 2015 through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Montenegro

Telenor aims to attract and retain the best leaders and experts from diverse backgrounds and to develop more women leaders.

Telenor employed 310³¹⁷ people in 2015 (284 on a full time equivalent basis)³¹⁸, of which 50.9% were women. This is 8 percentage points higher than the national average for Montenegro, which is 43%.

As a result of a long-term strategy, in the past ten years Telenor Montenegro has achieved full gender balance amongst its workforce on all levels. Telenor has done this by identifying talented women early in their careers and supporting their development through division rotations and training programs.³¹⁹

Through its provision of mobile services, Telenor is helping to promote gender equality through enabling women in Montenegro to access mobile communication services. In a similar way to which mobile penetration more widely contributes to GDP, the use of mobile services by women supports economic growth. KPMG estimates that through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Hungary, Telenor in Hungary contributed \$12 million to Montenegro's GDP between 2011 and 2015.

Sustainability in the supply chain

It is estimated that through Telenor's supply chain sustainability policy, 29,000 people are employed in participating businesses who meet the standards.

As of 2015, 163 of Telenor's suppliers in Montenegro had signed an Agreement of Responsible Business Conduct (ABC), thereby agreeing to abide by Telenor's supply chain principles.



³¹⁷ Telenor full time equivalent employees in Montenegro includes employees from Telenor Common Operations based in Montenegro

³¹⁸ This includes the Telenor employees in Telenor Montenegro, plus employees in Telenor Common Operations based in Montenegro.

³¹⁹ Telenor, 3 June 2016, Full gender balance in Montenegro & Serbia, <http://www.telenor.com/media/articles/2016/full-gender-balance-in-montenegro-serbia/>

TELENOR MONTENEGRO

During the course of 2015, Telenor conducted a wide ranging monitoring exercise of its Montenegro suppliers to ensure conformity with the requirements. During the year:

- 20 inspections took place of which 55% were unannounced;
- the inspections covered 20 companies; and
- 0 major non-conformity findings were recorded.

KPMG estimates that approximately 29,000 employees, across its 163 suppliers that have signed up to the ABC, benefit from working conditions in line with the high standards required by Telenor's supply chain sustainability policy.

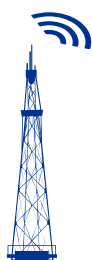
TELENOR MYANMAR

Introduction



13.7m

Total subscribers as of Q4 2015



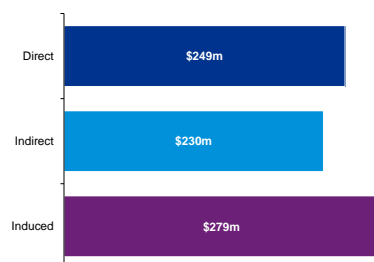
2G: 62.1%

3G: 62.1%

Population coverage as of February 2016

\$758m

Total contribution to Gross Value Added (GVA) in 2015



Telenor Myanmar launched its mobile network in Mandalay on September 2014. By Q3 2016, Telenor Myanmar served 37% of the total market as measured by connections.³²⁰

Telenor offers voice and data services in Myanmar, along with 2G and 3G data services.

During 2015, Telenor expanded its operations in Myanmar. By the end of the year, almost 4,200 base station sites were on air and Telenor's network of retailers covered the whole country, with approximately 68,000 points of sale.³²¹

Currently, over 60% of the population has access to Telenor's mobile services. Telenor aims to grow its network coverage further to provide services for 90% of the country within five years.

Data use amongst Telenor's subscribers has grown rapidly. By the end of 2015, 52% of Telenor's subscribers were active data users.³²²

Driving economic growth

Contributing to Gross Value Added (GVA)

Telenor generated approximately \$758 million of GVA for the Myanmar economy in 2015.

Of its total GVA contribution in 2015, \$249 million of GVA was generated by Telenor directly.

In addition, Telenor contributed a further \$230 million of indirect GVA and \$279 million of induced GVA through its purchasing from Myanmar suppliers and from the wider economic activity generated through employee spending.

Telenor's total GVA accounted for 1.2% of Myanmar's total national GVA in 2015.

Labour productivity is a commonly used measure of economic performance. The direct GVA generated by each full-time Telenor employee in 2015 was \$498,016, almost one hundred times higher than

³²⁰ GSMA Intelligence, data accessed October 2016, <https://www.gsmainelligence.com/>

³²¹ Telenor Group Annual Report, 2015.

³²² Telenor Group Annual Report, 2015.

TELENOR MYANMAR

the national average GVA per full-time employee in Myanmar (\$5,503³²³).

Contributing to employment

In 2015, Telenor directly employed 500 people in Myanmar. This is equivalent to headcount employment for 2015.



Of these:

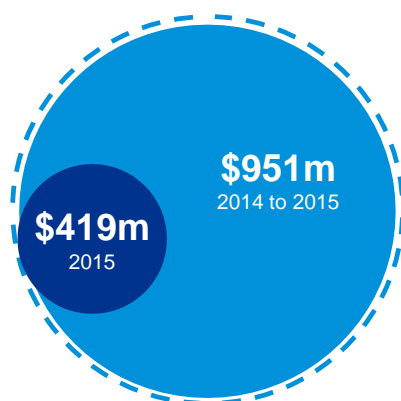
- 59.4% were male;
- 40.6% were female; and
- 91.5% were Myanmar nationals.

KPMG estimates that, in 2015, Telenor generated an additional 109,500 indirect jobs through its supply chain and a further 140,000 induced jobs linked to employee spending.

This means that for every job that Telenor generates directly, an additional 499 are created in the wider Myanmar economy.

Capital investment

Over the last two years, Telenor has invested \$951 million in the Myanmar economy, of which \$419 million was invested in 2015.



In 2015, Telenor Myanmar purchased an additional 2x5 MHz of spectrum in the 2.1 GHz frequency band.

These capital investments were made in order to increase capacity to meet increased consumer demand for data services and to expand the network to cover a larger proportion of Myanmar's population.

Capex intensity is a measure of the ratio of capex to the GVA generated. In 2015, Telenor's capex intensity in Myanmar was 168%³²⁴, 147 percentage points greater than the national average which is 21%.

Telenor's role in public financing

Telenor did not make any direct fiscal contributions to Myanmar's government between 2010 and 2015 as a result of a 5 year tax holiday³²⁵.

³²³ World Bank economy level productivity 2015.

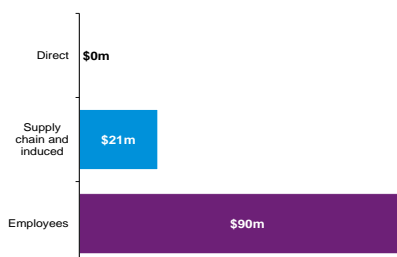
³²⁴ This has been estimated using the Gross Fixed Capital Formation as a percentage of GDP for the Myanmar economy sourced from the World Bank.

³²⁵ As granted to foreign companies by the Myanmar Investment Commission.

TELENOR MYANMAR

\$111m

Total fiscal contribution generated by Telenor Myanmar in 2015



However, it did generate fiscal contributions indirectly of \$111 million in 2015 through:

- the economic activity Telenor Myanmar generates through spending in the supply chain;
- spending by (direct, indirect and induced) employees; and
- employees (direct, indirect and induced) paying taxes on their earnings.

The total fiscal contribution resulting from Telenor's activities in Myanmar accounted for approximately 4.2% of total Myanmar government tax revenues in 2015.

Enabling the wider economy



As well as the contributions made directly through Telenor Myanmar's operations, it makes a wider indirect contribution through its provision of mobile communication services. These services can drive economic growth through greater digital and financial inclusion and raise entrepreneurial activity and business productivity.

The wider positive socio-economic effects of Telenor's impact on digital inclusion



\$3,215m

Contribution to GDP between 2014 and 2015 as a result of Telenor mobile penetration (including increased 3G and 4G penetration)

A number of studies have identified a link between mobile penetration and economic growth. Increasing digital inclusion, through greater availability of services and customer usage, particularly of 3G telephony and mobile data use, can have positive socio-economic benefits.

As the second largest mobile provider in Myanmar, with 13.7 million subscribers and growing 2G and 3G networks, Telenor's services have positive impacts on the country's economy.

Drawing on results from an econometric model developed for the GSMA³²⁶, KPMG estimates that the increase in its overall mobile penetration and Telenor's increased 3G penetration³²⁷ contributed an additional \$3,215 million to GDP between 2014 and 2015 in total.

The benefits of enhanced digital inclusion are not only economic. Social benefits are also captured.

For example, Telenor Myanmar initiated the Lighthouse programme to improve digital literacy and realise Telenor's "Internet for All" agenda. The programme empowers social entrepreneurs to conduct outreach

³²⁶ Deloitte and GSMA, What is the impact of mobile telephony on economic growth?, November 2012

³²⁷ Between 2014 and 2015 Telenor Myanmar's mobile penetration increased from 6.4 to 25.4 per 100 of the population. Over the same period, 3G penetration increased from 1.5 connections per 100 of the population, to 6.6.

smartphone and computer-based digital literacy training aimed at rural smartphone users and underprivileged prospective office workers. Since its inception, Lighthouses have trained over 10,000 people in smartphone and computer literacy skills.

Telenor Case Study: Community Outreach Program

Before Telenor entered the Myanmar mobile telecoms market in Q2 2014, total unique subscriber market penetration was 12.0%.³²⁸

Since its operations began, Telenor has remained committed to bringing mobile connectivity to 90% of Myanmar within 5 years.

Each of the states in Myanmar have, to an extent, a self-governed structure and some states still face ongoing internal conflicts. These conflicts can hinder Telenor's access to certain areas.

Telenor has set up a Community Outreach Program as a solution to this problem.

Since 2014, Telenor has employed State Liaison (SLO) to introduce locals to the benefits of mobile communications. All SLOs are local people who know local culture and practices well. They are the ambassadors of Telenor in each state to represent the company and to engage with stakeholders, including community members, government and local authorities, local leaders and civil society organisations.

During 2014 and 2015, over 48,900 people were met through outreach meetings across Myanmar.

Telenor's impact on financial inclusion

In many countries, in both the developed and developing world, mobile money can bring financial inclusion to a growing number of unbanked or underbanked individuals.

Mobile communications generally support financial inclusion as they give smartphone users the means to access mobile banking, mobile payments and other mobile financial services.

Telenor has introduced a mobile money service, Wave Money.

Wave Money services went live in 2016 with financial services being offered through 800 point-of-sales.³²⁹ Telenor Myanmar aims to reach 40% of the population with financial services by 2020, this is in comparison to the current low proportion of the population who are currently served by financial services. Success in reaching these aims could result in a large increase in financial transactions across Telenor Myanmar's network.

³²⁸ GSMA Intelligence, data accessed August 2016, <https://www.gsmainelligence.com/>

³²⁹ Telenor Group Annual Report, 2015.

Telenor's contribution to boosting entrepreneurship, innovation and productivity

The provision of mobile services can impact positively on entrepreneurial activity and business productivity and innovation in a number of ways. These include increasing the ease of access to markets and consumers, lowering the costs of business start-ups and business operation and supporting greater efficiency.

More widely, Telenor Myanmar has launched initiatives to support entrepreneurship and innovation.

Telenor Case Study: Lighthouse

The Lighthouse digital literacy programme was created under Telenor's "Internet for All" agenda and was adapted to suit Myanmar.

The Lighthouse programme encourages social entrepreneurs to conduct smartphone and computer-based digital literacy training. Training is aimed at rural smartphone users and underprivileged prospective office workers.

One such Lighthouse entrepreneur is 37 year-old Mi Mi Kyaw from Kyaukse in Mandalay state. When she heard about the Lighthouse program from a colleague, she decided to apply and attending training. Mi Mi subsequently opened her own 'Lighthouse'.

Mi Mi's Lighthouse provides other services such as printing, copying, typesetting and photo services. These other services enable Mi Mi to offer digital literacy training for free. Training includes digital literacy training in smartphone basic functions, finding information online and how to use social media, email and chat applications safely.

Her Lighthouse has trained 350 users in digital literacy and is committed to training at least 800 more in the next year.

Across Myanmar there are now 58 Lighthouses spanning 12 states. Almost 500 people have been trained as outreach trainers, who have subsequently taught over 10,000 people in digital literacy.

Telenor Myanmar aims to have at least 25,000 digital literacy students by the end of 2016. By the end of 2018 they plan to have 200 Lighthouses.

Supporting improved gender equality



40.6%

Female proportion of Telenor in Myanmar direct employment



\$1,382m

Contribution to GDP between 2014 and 2015 through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Myanmar

Telenor aims to attract and retain the best leaders and experts from diverse backgrounds in Myanmar and to develop more women leaders.

Telenor employed 500 employees in Myanmar in 2015, of which 40.6% were women. This is 9 percentage points lower than the national average for Myanmar, which is 50%.

From 2016, Telenor Myanmar is offering female employees in Myanmar 6 months paid maternity leave.³³⁰ This is nearly twice the minimum length of time of 14 weeks currently mandated by national law.³³¹

Through its provision of mobile services, Telenor is helping to promote gender equality through enabling women in Myanmar to access mobile communication services. In a similar way to which mobile penetration more widely contributes to GDP, the use of mobile services by women supports economic growth. KPMG estimates that through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Myanmar, Telenor in Myanmar contributed \$1,382 million to Myanmar's GDP between 2014 and 2015.

This figure does not capture the wider societal benefits that are generated through providing women in developing countries with mobile services, such as:³³²

- improved safety and security;
- enhanced abilities to connect with friends and family; and
- increased independence.

Sustainability in the supply chain



It is estimated that through Telenor's supply chain sustainability policy, 36,300 people are employed in participating businesses who meet the standards.

As of 2015, 361 of Telenor's suppliers in Myanmar had signed an Agreement of Responsible Business Conduct (ABC), thereby agreeing to abide by Telenor's supply chain principles.

During the course of 2015, Telenor conducted a wide ranging monitoring exercise of these suppliers to ensure conformity with the requirements. During the year:

³³⁰ Telenor Group Annual Report, 2015

³³¹ World Bank Group, Doing Business: Myanmar. Accessed at <http://www.doingbusiness.org/data/exploreeconomies/myanmar/labor-market-regulation>

³³² GSMA, Women & Mobile: A Global Opportunity – A study on the mobile phone Gender gap in low and middle-income countries, http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2013/01/GSMA_Women_and_Mobile-A_Global_Opportunity.pdf

TELENOR MYANMAR

- 3,821 inspections took place of which 98% were unannounced;
- the inspections covered 29 companies, with a combined total of 2,820 employees;
- 204 major non-conformity findings were recorded; and
- working closely with its suppliers, Telenor mitigated 88% of major non-conformity findings within 12 months of the inspection taking place.

KPMG analysis estimates that approximately 36,300 employees, across its 361 suppliers that have signed up to the ABC, benefit from working conditions in line with the high standards required by Telenor's supply chain sustainability policy.

TELENOR in NORWAY

Introduction



2G: 99.6%

3G: 96.2%

4G: 93.0%

Population coverage as of Q4 2015

Telenor Norway is the largest mobile telecommunications operator in Norway, with a 49.4% share of all mobile connections in Q3 2016.³³³

Telenor first began its operations in Norway in 1855 as a telegraph provider.

Until 1994, its operations were based exclusively in Norway. However, since then it has expanded into 12 additional markets across Europe and Asia.

Telenor provides mobile fixed and data services to its Norwegian subscribers. The company operates extensive 2G, 3G and 4G networks, as well as a fixed network and broadcast company including satellite operations. As Telenor Group is headquartered in Norway, the statistics in this section also include those activities that support the Group's international operations.

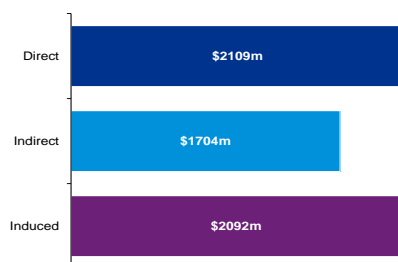
Data use is extensive in Norway. Between 2014 and 2015, data traffic in Norway more than doubled³³⁴ and now around three-quarters of Telenor's customers are active data users.³³⁵

Driving economic growth

Contributing to Gross Value Added (GVA)

\$5,905m

Total contribution to Gross Value Added (GVA) in 2015



Telenor's Norwegian operations generated over \$5,905 million of GVA for the Norwegian economy in 2015.

In 2015, Telenor's activities in Norway (excluding all of its overseas businesses) generated over \$2,109 million of direct GVA.

In addition, Telenor's activities in Norway contributed a further \$1,704 million of indirect GVA and \$2,092 million of induced GVA through its purchasing from Norwegian suppliers and from the wider economic activity generated through employee spending.

The total GVA generated by Telenor in Norway accounted for over 1.5% of the country's total national GVA in 2015 and its direct GVA accounted for 15.2% of GVA generated by Norway's ICT sector.

³³³ GSMA Intelligence, data accessed October 2016, <https://www.gsmaintelligence.com/>

³³⁴ Telenor Group Annual Report, 2015

³³⁵ Telenor Group Annual Report, 2015

TELENOR in NORWAY

Labour productivity is a measure of economic performance in a country. The 2015 direct GVA generated by each full-time Telenor employee in Norway was \$370,110, almost three times higher than the national average (\$125,114³³⁶).

Contributing to employment

In 2015, Telenor directly employed 5,698 full time equivalent (FTE) staff in Norway.

53,498

Total employment in 2015

Direct employment

5,698



Indirect employment

11,400



Induced employment

36,400



Its total headcount in 2015 was 6,047 employees. This includes the employees in Telenor Norway, as well as employees in Telenor Global Shared Services, Telenor Broadcast, Telenor Group, Telenor Real Estate and Datamatrix.

Of Telenor's 2015 headcount employees in Norway:

- 67.4% were male;
- 32.6% were female; and
- 81.7% were Norwegian nationals.

Telenor's direct employment in Norway accounts for 6.6% of total employment in the Information and Communication sector.³³⁷

In addition, KPMG estimates that, in 2015, Telenor generated an additional 11,400 indirect jobs in Norway through its supply chain and a further 36,400 induced jobs in Norway linked to employee spending. This means that for every job that Telenor generates directly, an additional 8 are created in the wider Norwegian economy.

Telenor Case Study: Open Mind

Telenor Norway initiated the Telenor Open Mind program in 1996, a program which has since been implemented as a Telenor Group wide program for inclusion and diversity.

Open Mind seeks to make it easier for people with mental or physical disabilities and minority groups with higher education to gain employment. The programme offers internships and coaching and mentoring to participants.

In 2015, 375 people were inducted through the programme globally.

³³⁶ World Bank economy level productivity 2015.

³³⁷ Based on 2013 employment in the Information and Communication sector sourced from the 2013 Labour Force Survey.

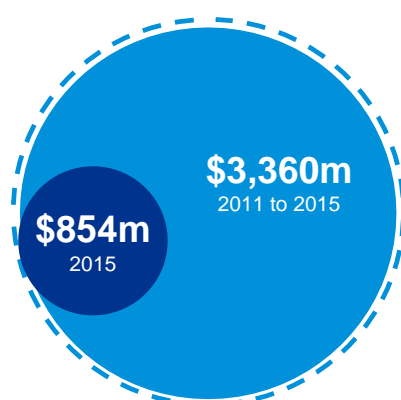
TELENOR in NORWAY

Capital investment

Over the last five years, Telenor has invested \$3,360 million in the Norwegian economy, of which \$854 million was invested in 2015.

Data traffic in Norway more than doubled in 2014 and Telenor Norway is continuing to invest in upgrading its infrastructure and networks.

In 2015, Telenor Norway focused its Norwegian capital investment on the continued rollout of its 4G network, which covered over 93% of the Norwegian population by the end of 2015. Also in 2015, Telenor Norway launched 4G+, which was expanded to cover over 330 municipalities by the end of the year.



Investments were also made in developing Telenor Norway's fixed telephony infrastructure. Upgrade works on this infrastructure will continue throughout 2016.

Additionally, Telenor Norway has invested heavily in cyber security, in a move to ensure that its customers are safe and protected whilst using Telenor data services.

Capex intensity is a measure of the ratio of capex to the GVA generated. In 2015, Telenor's capex intensity in Norway was 40%³³⁸. This was 14 percentage points higher than the national average for Norway, which was 26%.

Telenor's role in public financing

In 2014, Telenor made a direct fiscal contribution of \$758 million to the Norwegian government through taxes and other regulatory payments including licence fees, frequency fees and numbering fees.

Its direct fiscal contributions accounted for 18% of its revenues in 2014.

Telenor also generated additional contributions to the Norwegian government purse of over \$4,137 million in 2015 through the economic activity it generates from:

- the economic activity Telenor generates in Norway through spending in the supply chain;
- spending by (direct, indirect and induced) employees; and
- employees (direct, indirect and induced) paying taxes on their earnings.

³³⁸ This has been estimated using the Gross Fixed Capital Formation as a percentage of GDP for the Norway economy sourced from the World Bank.

TELENOR in NORWAY

The total fiscal contribution generated by Telenor in 2015 of \$4,895 million accounted for approximately 1.8% of total Norwegian government tax revenues.

Enabling the wider economy



As well as the contributions made directly through Telenor's operations in Norway, it makes a wider indirect contribution through its provision of mobile communication services. These services can drive economic growth through greater digital and financial inclusion and raise entrepreneurial activity and business productivity.

The wider positive socio-economic effects of Telenor's impact on digital inclusion



\$1,077m

Contribution to GDP between 2011 and 2015 as a result of Telenor mobile penetration (including increased 3G and 4G penetration)

A number of studies have identified a link between mobile penetration and economic growth. Increasing digital inclusion, through greater availability of services and customer usage, particularly of 3G telephony and mobile data use, can have positive socio-economic benefits.

As the largest mobile provider in Norway, with 3.2 million subscriptions, widespread 2G, 3G and 4G networks and the largest geographical coverage of mobile broadband, Telenor Norway's services have positive impacts on the Norwegian economy.

Drawing on results from an econometric model developed for the GSMA³³⁹, KPMG estimates that its increase in mobile penetration overall and in its 3G and 4G penetration³⁴⁰ meant that Telenor Norway contributed, in total, an additional \$1,077 million to GDP in Norway between 2011 and 2015.

The benefits of enhanced digital inclusion are not only economic. Social benefits are also captured. For example, Telenor has taken several actions to improve digital literacy in the country including:

- through its Internet for All program, Telenor held 500 courses across Norway to educate senior citizens in mobile and internet technology;
- partnering with the Norwegian helpline Kors på halsen (Cross your Heart), which assists children who have had a negative online experience; and
- the Use Your Head programme, under which 200,000 Norwegian pupils have received training in how to stop cyberbullying.

³³⁹ Deloitte and GSMA, What is the impact of mobile telephony on economic growth?, November 201

³⁴⁰ Between 2011 and 2015 Telenor Norway's mobile penetration decreased from 57.8 to 56.6 per 100 of the population. Over the same period, 3G penetration increased from 32.3 3G/4G connections per 100 of the population, to 41.3.

Telenor Case Study: Be Smart Use Heart (Bruk Hue)

Bruk Hue is Norway's biggest school tour against online bullying. Since 2009, Bruk Hue has visited more than 700 schools engaging with 200,000 pupils and spoken about digital bullying and general online know-how to almost an entire generation of young people and their parents.

A new presentation for upper primary school pupils was launched at the Telenor Arena in 2015. The event was attended by 7,300 11 and 12 year olds.

In a survey of 49 teachers who have attended Bruk Hue, 100% believed Bruk Hue was useful for pupils. Additionally, 96% of teachers believed that Bruk Hue presentations can prevent instances of online bullying. Furthermore, after the event, 90% of pupils were reported to have shown interest in the topics included in the talk. More than 30% of pupils sought out their teachers to talk about cyber bullying after attending Bruk Hue.

Telenor's impact on financial inclusion



\$5,261m
Total value of
mobile financial
transactions made
by Telenor
Norway's
subscribers

It is increasingly recognised that mobile communications can help to support financial inclusion of people in society who otherwise have had inadequate access to financial services by giving smartphone users the means to access mobile banking, mobile payments and other mobile financial services.

KPMG estimates that through the use of Telenor's services, subscribers made a total of \$5,261 million of mobile financial transactions in 2015.

Telenor's contribution to boosting entrepreneurship, innovation and productivity

The provision of mobile services can impact positively on entrepreneurial activity and long-run business productivity and innovation in a number of ways. These include increasing the ease of access to markets and consumers, lowering the costs of business start-ups and business operation and supporting greater efficiency.

GSMA data ³⁴¹ indicates that based on the number of unique subscribers, Europe is the most penetrated region globally. With a unique subscriber penetration rate of 84% at Q3 2016³⁴², it is reaching saturation level and forecasts suggest that there is limited scope for further subscriber growth.

This suggests that the scope for improving digital inclusion and realising additional gains to the long-run productivity of the economy in Telenor's

³⁴¹ GSMA, The Mobile Economy: Europe 2015, <https://www.gsmainelligence.com/research/?file=06d1c45d0528233e7a9560843d85c8bd&download>

³⁴² GSMA Intelligence data, data accessed October 2016, <https://www.gsmainelligence.com/>

TELENOR in NORWAY

European markets is more limited and that the main economic benefits associated have already been mostly achieved.

More widely, Telenor has launched various initiatives to support entrepreneurship and innovation. One such initiative is the Nordic Internet of Things (IoT) Challenge, which was launched in 2015 to recognise innovation in the development of the IoT. Innovators and entrepreneurs in the Nordics were invited to submit design, projects or concepts related to IoT and smart devices. Winners are awarded approximately \$28,000³⁴³ and access to Telenor Connexion's advisory team for six months.

Moreover, Telenor's innovation program in Norway has initiated partnerships with the largest start-up communities in Norway; Startuplab, Mesh and Norwegian technical and science institute (NTNU). Telenor is now collaborating with a range of innovative new start-ups in Norway with distribution and special offerings to mobile customers. In 2016, Telenor launched a competition amongst start-ups where the winner was awarded approximately \$12,000³⁴⁴, as well as support from Startuplab on the Catalyst Accelerator.

Additionally, Telenor Norway together with its partner ZERO arranged a green innovation competition at the NTNU, where students were educated about opportunities in the sustainable development arena (green shift) and could pitch their ideas.

Supporting improved gender equality



32.6%

Female proportion of Telenor in Norway direct employment



\$535m

Contribution to GDP between 2011 and 2015 through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Norway

Telenor aims to attract and retain the best leaders and experts in Norway from diverse backgrounds and also to develop more women leaders.

Telenor employed 6,047 employees³⁴⁵ in Norway in 2015 (5,698 in full time equivalent terms) of which 32.6% were women. This is 15 percentage points lower than the national average for Norway, which is 47%.

In a similar way to which mobile penetration more widely contributes to GDP, the use of mobile services by women supports economic growth. KPMG estimates that through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Norway, Telenor in Norway contributed \$535 million to Norway's GDP between 2011 and 2015.

³⁴³ This is equivalent to €25,000. This has been converted to US Dollars using a 2015 average exchange rate sourced from the World Bank.

³⁴⁴ This is equivalent to NOK 100,000. This has been converted to US Dollars using a spot exchange rate on 4th November 2016 sourced from Bloomberg.

³⁴⁵ This includes the employees in Telenor Norway, as well as employees in Telenor Global Shared Services, Telenor Broadcast, Telenor Group, Telenor Real Estate and Datamatrix.

Sustainability in the supply chain

It is estimated that through Telenor's supply chain sustainability policy, 58,300 employees are employed by businesses meeting these standards.



As of 2015, 407 of Telenor's suppliers in Norway had signed an Agreement of Responsible Business Conduct (ABC), thereby agreeing to abide by Telenor's supply chain principles.

During the course of 2015, Telenor conducted a wide ranging monitoring exercise of these suppliers to ensure conformity with the requirements. During the year:

- 80 inspections took place of which 50% were unannounced;
- the inspections covered 25 companies, with a combined total of 21,061 employees;
- 28 major non-conformity findings were recorded; and
- working closely with its suppliers, Telenor mitigated 75% of all non-conformity findings within 12 months of the inspection taking place.³⁴⁶

KPMG analysis estimates that 58,300 employees, across its 407 suppliers that have signed up to the ABC, benefit from working conditions in line with the high standards required by Telenor's supply chain sustainability policy

³⁴⁶ The number of mitigations was greater than the number of total findings, so we have assumed that 100% of findings were mitigated. Mitigation data was not split by minor and major mitigations.

TELENOR PAKISTAN

Introduction



30.8m

Total subscribers as of
Q4 2015

Telenor is the second largest mobile operator in Pakistan by connections, accounting for 28.5% of the total Pakistani market.³⁴⁷

Telenor began providing telecommunication services in Pakistan in March 2005, following the award of a GSM licence in 2004.³⁴⁸

It offers a full multimedia platform for commercial mobile services.

Telenor's subscribers in Pakistan are increasingly adopting 3G services, with 2015 seeing faster growth in 3G users than in previous years. Over one third of Telenor Pakistan's subscribers were active data users in 2015.³⁴⁹



2G: 83.2%

3G: 55.2%

Population coverage as
of Q1 2016

At the start of 2015, all telecoms operators in Pakistan were required to biometrically verify their entire customer base. Any customers that were not verified had to be disconnected.

During the same period, new restrictions on SIM sales through retail channels came into force.

Driving macro economic growth

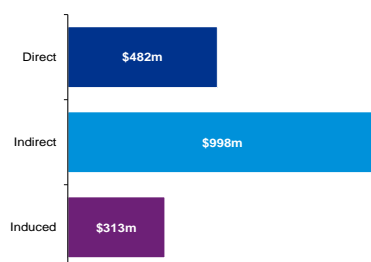
Contributing to Gross Value Added (GVA)

\$1,793m

Total contribution to Gross
Value Added (GVA) in
2015

Telenor generated over \$1,793 million of GVA for the Pakistani economy in 2015.

We estimate that Telenor's direct GVA contribution in 2015 was \$482 million.



In addition, Telenor contributed a further \$998 million of indirect GVA and \$313 million of induced GVA to the economy through its purchasing from Pakistani suppliers and from the wider economic activity generated through employee spending.

Telenor's total GVA accounted for 0.7% of Pakistan's total national GVA in 2015.

³⁴⁷ GSMA Intelligence, data accessed October 2016, <https://www.gsmainelligence.com/>

³⁴⁸ Telenor Pakistan, June 2015. Accessed at <http://www.telenor.com/investors/company-facts/business-description/telenor-pakistan/>

³⁴⁹ Telenor Group Annual Report, 2015.

TELENOR PAKISTAN

Labour productivity is a commonly used measure of economic performance in a country. The direct GVA generated by each Telenor full-time employee was \$89,203 in 2015, six times higher than the national average GVA per full-time employee in Pakistan (\$14,225³⁵⁰).

Contributing to employment

In 2015, Telenor directly employed 5,405 staff in Pakistan. This is equivalent to the number of headcount employees in 2015.

186,305
Total employment in 2015

Direct employment

5,405



Indirect employment

134,300



Induced employment

46,600



Of these:

- 82.3% of employees were male;
- 17.7% were female; and
- 99.8% were Pakistani nationals.

Telenor Pakistan's direct employment accounts for 2.3% of total employment in the country's Information and Communication sector.³⁵¹

In addition, KPMG estimates that, in 2015, Telenor generated an additional 134,300 indirect jobs in Pakistan through its supply chain and a further 46,600 induced jobs linked to employee spending. This means that for every job that Telenor generates directly, an additional 33 are created in the wider economy.

Telenor Case Study: Open mind

Telenor supports access to education and employment in wider society through its participation a Telenor Group initiative, Open Mind. Open Mind seeks to make it easier for people with mental or physical disabilities and minority groups with higher education to gain employment. The programme offers internships and coaching and mentoring to participants. In 2015, 375 people were inducted through the programme globally.

Capital investment

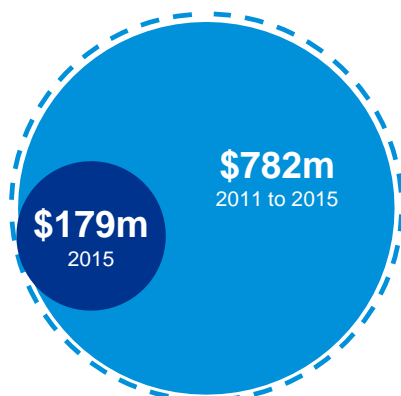
Over the last five years, Telenor has invested \$782 million in the Pakistani economy, of which \$179 million was invested in 2015.

Telenor's 2015 capital investment focused on continuing the rollout of its 3G network which, by the end of the year, had increased 3G coverage to 55.2% of the population.

³⁵⁰ World Bank economy level productivity 2015

³⁵¹ Based on 2013 employment in the Information and Communication sector sourced from the 2013 Labour Force Survey.

TELENOR PAKISTAN



In June 2016, Telenor acquired a new 850 MHz spectrum licence in Pakistan through the 'Next Generation Mobile Services' auction. The spectrum is technology neutral and can be used for 3G and 4G services.³⁵²

In August 2016, Telenor began to rollout 4G services to its subscribers across Pakistan. Initial rollouts will take place in six urban areas including Peshawar and Islamabad, after which the services will be expanded to new areas. Subscribers in these areas will be able to use 4G services at no extra cost.³⁵³

Capex intensity is a measure of the ratio of capex to the GVA generated. In 2015, Telenor's capex intensity was 37%³⁵⁴. This was 23 percentage points higher than the national average, which was 14%.

Telenor's role in public financing

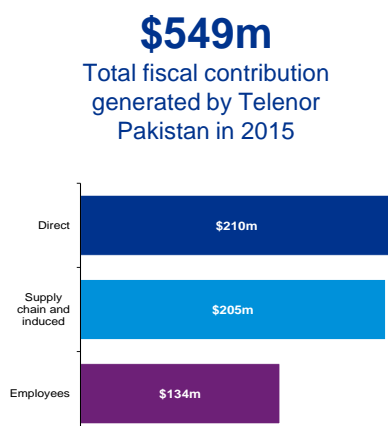
In 2014, Telenor made a direct fiscal contribution of \$210 million to the government through taxes and other regulatory payments including licence fees, frequency fees and numbering fees.

The telecoms sector in Pakistan faces several sector specific taxes which are applied to both mobile consumers and operators. For instance, Pakistan levies a fixed fee tax levied on the sale of SIM cards. Other general taxes are applied at a higher rate for the telecoms sector including customs duty paid on network equipment and SIM cards and Provincial Sales Tax (PST) levied on voice/SMS, mobile broadband and m-Money usage.³⁵⁵

Telenor Pakistan's direct fiscal contributions in 2014 accounted for 21% of its revenues.³⁵⁶

As a result of its activities, a further fiscal contribution of \$339 million was generated by Telenor in Pakistan in 2015 as a result of:

- the economic activity Telenor generates through spending in the supply chain;
- spending by (direct, indirect and induced) employees; and
- employees (direct, indirect and induced) paying taxes on their earnings.



³⁵² The Express Tribune, Telenor wins 850MHz spectrum licence, 2 June 2016. Accessed at <http://tribune.com.pk/story/1114816/next-generation-mobile-services-telenor-wins-850mhz-spectrum-licence/>

³⁵³ Telenor, Telenor Pakistan begins rolling out 4G, August 2016. Accessed at <https://www.telenor.com/media/articles/2016/telenor-pakistan-begins-rolling-out-4g/>

³⁵⁴ This has been estimated using the Gross Fixed Capital Formation as a percentage of GDP for the Pakistan economy sourced from the World Bank.

³⁵⁵ Deloitte for GSMA, Digital inclusion and mobile sector taxation in Pakistan, 2015.

³⁵⁶ Based on 2013 employment in the Information and Communication sector sourced from the 2013 Labour Force Survey.

The total fiscal contribution generated by Telenor in 2015 of \$549 million accounted for approximately 1.4% of total Pakistani government tax revenues.

Enabling the wider economy



As well as the contributions made directly through Telenor Pakistan's operations, it makes a wider indirect contribution through its provision of mobile communication services. These services can drive economic growth through greater digital and financial inclusion and raise entrepreneurial activity and business productivity.

The wider positive socio-economic effects of Telenor's impact on digital inclusion



\$14,996m

Contribution to GDP between 2011 and 2015 as a result of Telenor mobile penetration (including increased 3G and 4G penetration)

A number of studies have identified a link between mobile penetration and economic growth. Increasing digital inclusion, through greater availability of services and customer usage, particularly of 3G telephony and mobile data use, can have positive socio-economic benefits.

As the second largest mobile provider in Pakistan, with over 30.8 million subscriptions, a widespread 2G network and a growing 3G network, Telenor's services have positive impacts on the Pakistani economy.

Drawing on results from an econometric model developed for the GSMA³⁵⁷, KPMG estimates that the increase in mobile penetration overall and the increased 3G penetration³⁵⁸ of Telenor Pakistan between 2011 and 2015 contributed \$14,996 million to GDP.

The benefits of enhanced digital inclusion are not only economic. Social benefits are also captured. Several Telenor initiatives have helped in this area.

For example, Telenor's collaboration with Facebook on the Free Basics project, have contributed to improving internet usage. Free Basics was launched in June 2015 as a collaborative initiative by Telenor and Facebook to offer free internet services to the people of Pakistan. Through the initiative, Telenor's customers have access to unlimited browsing of 35 websites covering a diverse range of interest areas including education, health information, ecommerce, news, sports, and entertainment. As of April 2016, 2 million Telenor Pakistan customers used Free Basics on the network every month.

In addition, Telenor has been working in Pakistan in conjunction with UNICEF and local authorities to pilot a project in two provinces where cellular technology is used to assist in birth registrations. Evidence from

³⁵⁷ Deloitte and GSMA, What is the impact of mobile telephony on economic growth?, November 2012

³⁵⁸ Between 2011 and 2015 Telenor Pakistan's mobile penetration increased from 16.2 to 18.6 per 100 of the population. Over the same period, 3G penetration increased from 0 3G/4G connections per 100 of the population, to 3.4.

the pilots showed that registration rates in the pilot areas increased from 30% under the conventional process in 2014 to over 90% during the pilot period.³⁵⁹

Telenor's impact on financial inclusion



\$9,672m
Total value of mobile financial transactions made by Telenor Pakistan's subscribers

Plus an additional
\$7,784m
Total value of Over the Counter (OTC) and money transfers through Easypaisa

It is increasingly recognised that mobile communications can help to support financial inclusion of people in society who otherwise have had inadequate access to financial services by giving smartphone users the means to access mobile banking, mobile payments and other mobile financial services.

KPMG estimates that through the use of Telenor's services, subscribers made a total of \$9,672 million of mobile financial transactions in 2015.

In 2009, Telenor in partnership with Tameer Micro Finance Bank introduced Easypaisa, the first branchless banking service in Pakistan.

Since its introduction Easypaisa has grown into the third largest branchless banking service in the world. Easypaisa services are used by 20 million active customers at the end of 2015, conducting nearly 650,000 transactions every day. In 2015, the value of transactions through Easypaisa was \$7.8 billion, equivalent to nearly 3% of Pakistan's GDP.

In addition Easypaisa also offers insurance products, such as its Sehat Sahara health insurance. By the end of 2015, Sehat Sahara had over 100,000 subscribers and had settled 1,400 claims with an average claim value of approximately \$50³⁶⁰.

Telenor's contribution to boosting entrepreneurship, innovation and productivity

The provision of mobile services can impact positively on entrepreneurial activity and business productivity and innovation in a number of ways. These include increasing the ease of access to markets and consumers, lowering the costs of business start-ups and business operation and supporting greater efficiency.

More widely, Telenor has launched initiatives in Pakistan to support entrepreneurship and innovation. For example, every year Telenor runs Appportunity, a national competition for the best mobile applications designed and produced by Pakistanis.

³⁵⁹ Telenor Group Annual Report, 2015

³⁶⁰ This is equivalent to PKR 5,000. This has been converted using 2015 average exchange rate sourced from the World Bank.

Telenor Case Study: Telenor Velocity

Telenor Velocity is Telenor Pakistan's start up accelerator. For those start-ups that successfully apply they receive a 6 month programme aimed at supporting them go to market and scale up their business. Support from the programme includes access to:

- Telenor Pakistan's customers;
- Easypaisa's digital payments solutions;
- Telenor Pakistan's customer profiling data analytics;
- Telenor Pakistan's retail network; and
- experts and mentors.

In 2015, the Apportunity competition was won by Arusha Imtiaz for her idea "Edjunction". Her vision was to redefine the way schools, parents, teachers, and students interact with each other, by bringing them together on one platform where a student's educational progress is visible in real-time. As a result, Arusha represented Pakistan at the Global Digital Conference in Oslo in 2015 and won a cash prize. She used the prize money to turn her idea into a viable product.

Following this, Arusha successfully pitched her idea to be included in the first cohort of Telenor Velocity. As a result she has received support Arusha such as access to market intelligence, a wide sales and distribution network, financial services solutions, and access to go-to-market capabilities.

Today, Edjunction has 6 paying schools in Dubai using the platform, as well as 5 pilot schools in Pakistan.

Supporting improved gender equality



17.7%

Female proportion of Telenor in Pakistan direct employment



\$3,581m

Contribution to GDP between 2011 and 2015 through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Pakistan

Telenor has the objective of attracting and retaining the best leaders and experts from diverse backgrounds in Pakistan and developing more women leaders.

Telenor Pakistan employed 5,405 employees in 2015 of which 17.7% were women. This is three percentage points lower than the national average for Pakistan, 21%.

However, measures are in place to address the gender inequality. For example, in 2015, Telenor's operations in Sweden, Denmark, Norway, Pakistan and Bangladesh, ran trainee programmes targeting top talents among graduate students from diverse educational backgrounds. Of the candidates, 47% were women.

Telenor Pakistan's scheme is called Naya Aghaaz (New Beginnings). It is aimed at encouraging female participation in the labour force and offers 9 months of experience to those who are selected. In 2014 Telenor Pakistan hired 14 Naya Aghaaz associates of which 9 were given a permanent position. In 2015 the programme expanded, hiring 22 trainees.

Through its provision of mobile services, Telenor is helping to promote gender equality through enabling women in Pakistan to access mobile communication services. In a similar way to which mobile penetration more widely contributes to GDP, the use of mobile services by women supports economic growth. KPMG estimates that through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Pakistan, Telenor in Pakistan contributed \$3,581 million to Pakistan's GDP between 2011 and 2015.

This figure does not capture the wider societal benefits that are generated through providing women in developing countries with mobile services, such as:³⁶¹

- improved safety and security;
- enhanced abilities to connect with friends and family; and
- increased independence.

More widely, Telenor is promoting gender equality in Pakistan by working with the government to distribute the Sindh Education Reform Programme (SERP) through Telenor's Easypaisa network. Telenor has helped over 430,000 girls to receive the education stipend in 2015, enabling them to go to school.

Education Stipends Disbursements

In Pakistan, a number of factors such as social attitudes and financial constraints mean that girls are less likely to go to school.

Between 2008 and 2012, the female primary school enrollment rate was 65% compared to 79% for males.³⁶²

For secondary school, these enrollment rates fell to 39.7% for males and 29.2% for females.³⁶³

The government introduced the Sindh Education Reform Program (SERP) to address gender disparity in education for girls from low-income families. The programme provides education stipends to the families.

When the program was initially started, the education stipends often did not make it to the intended recipient, or the cost of disbursement was more than the stipend itself. Working with the Sindh government, the stipends are now distributed through Telenor Pakistan's Easypaisa mobile financial system and are paid directly into mobile accounts. In 2015, a total of approximately \$12 million³⁶⁴ was transferred to families through the project. These stipends supported 430,000 girls to stay in school.

³⁶¹ GSMA, Women & Mobile: A Global Opportunity – A study on the mobile phone Gender gap in low and middle-income countries. Accessed at http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2013/01/GSMA_Women_and_Mobile-A_Global_Opportunity.pdf

³⁶² Unicef, Pakistan statistics. Accessed at http://www.unicef.org/infobycountry/pakistan_pakistan_statistics.html

³⁶³ Unicef, Pakistan statistics. Accessed at http://www.unicef.org/infobycountry/pakistan_pakistan_statistics.html

³⁶⁴ This is equivalent to PKR 1.2 billion. This has been converted using 2015 average exchange rate sourced from the World Banks.

Sustainability in the supply chain



It is estimated that through Telenor's supply chain sustainability policy, 265,000 people are employed in participating businesses who meet the standards.

As of 2015, 1,617 of Telenor's suppliers had signed an Agreement of Responsible Business Conduct (ABC), thereby agreeing to abide by Telenor's supply chain principles.

During the course of 2015, Telenor conducted a wide ranging monitoring exercise of these suppliers to ensure conformity with the requirements. During the year:

- 352 inspections took place of which 50% were unannounced;
- the inspections covered 118 companies, with a combined total of 2,650 employees;
- 77 major non-conformity findings were recorded; and
- working closely with its suppliers, Telenor mitigated 77% of major non-conformity findings within 12 months of the inspection taking place.

KPMG estimates that 265,000 employees, across its 1,617 suppliers that have signed up to the ABC, benefit from working conditions in line with the high standards required by Telenor's supply chain sustainability policy.

TELENOR SERBIA

Introduction



2G: 98.7%

3G: 89.6%

4G: 6.5%

Population coverage as of Q4 2015

Telenor is the second largest mobile operator in Serbia in terms of connections, accounting for more than a third of the total market in Q3 2016.³⁶⁵

Telenor entered the Serbian market in 2006 when it acquired Serbia's first mobile provider, Mobi 063. The company was rebranded and the name changed to Telenor Serbia.

Telenor Serbia now provides voice and data services to subscribers on both prepaid and contract terms. It also operates Telenor Banka, an online bank. The impacts associated with all Telenor operations in Serbia are included in the analysis set out in this section.

In March 2015, Telenor Serbia was the first mobile operator to roll-out 4G services in the urban areas of Belgrade, Niš and Novi Sad.

By the end of 2015, Telenor Serbia had extended 4G coverage to 6.5% of Serbia's population whilst its share of active data users reached 48%.³⁶⁶

Driving economic growth

Contributing to Gross Value Added (GVA)

Telenor Serbia generated approximately \$413 million of GVA for the Serbian economy in 2015.

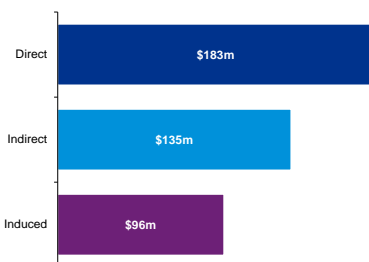
Of its total GVA contribution in 2015, \$183 million of GVA was generated by Telenor directly.

In addition, Telenor Serbia contributed a further \$135 million of indirect GVA and \$96 million of induced GVA through purchasing goods and services from Serbian suppliers and from the wider economic activity it generates through employee spending.

Telenor's total GVA accounted for 1.4% of Serbia's total national GVA in 2015 and its direct GVA contributed 11.8% of GVA generated by Serbia's ICT sector.

Labour productivity is a measure of economic performance in a country. For Telenor Serbia, the 2015 direct GVA generated by each full-time

\$413m
Total contribution to Gross Value Added (GVA) in 2015



³⁶⁵ GSMA Intelligence, data accessed October 2016, <https://www.gsmainelligence.com/>

³⁶⁶ Telenor Group Annual Report, 2015.

TELENOR SERBIA

employee was \$136,923, almost five times higher than the national average GVA per full-time employee in Serbia (\$29,513³⁶⁷).

Contributing to employment

In 2015, Telenor Serbia directly employed 1,333 full time equivalent (FTE) staff.

17,933
Total employment in 2015



Its total headcount in 2015 was 1,415 employees. This includes the Telenor employees in Telenor Serbia, plus employees in Telenor Banka and Telenor Common Operations.

Of these:

- 53.4% were male;
- 46.6% were female; and
- 98.9% were Serbian nationals.

Telenor Serbia's direct employment accounts for 2.4% of total employment in the Information and Communication sector.³⁶⁸

In addition, KPMG estimates that, in 2015, Telenor Serbia generated an additional 7,100 indirect jobs through its supply chain and a further 9,500 induced jobs linked to employee spending. This means that for every job that Telenor Serbia generates directly, an additional 12 are created in the wider economy.

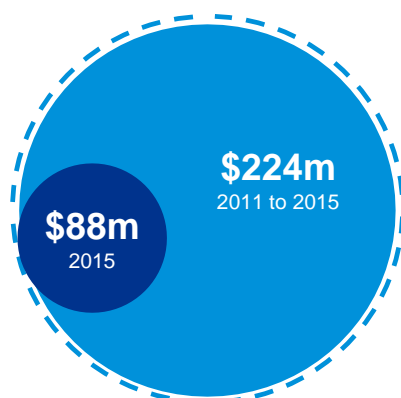
Capital investment

Over the last five years, Telenor has invested \$224 million in the Serbian economy, of which \$88 million was invested in 2015.

Telenor Serbia's capital expenditure in 2015 was primarily related to network rollout and transformation of IT systems.

In addition, Telenor Serbia purchased two licences; one for 2x10 MHz in the 800 MHz spectrum, and the other in the 1800 MHz frequency band.

Network investment in Serbia focused on expanding the 3G population coverage, which reached 89.6% population coverage by the end of 2015. There was also investment in the provision of 4G, launched in March 2015.



³⁶⁷ World Bank economy level productivity 2015.

³⁶⁸ Based on 2013 employment in the Information and Communication sector sourced from the 2013 Labour Force Survey.

TELENOR SERBIA

Capex intensity is a measure of the ratio of capex to the GVA generated. In 2015, Telenor Serbia capex intensity was 48%³⁶⁹. This was 26 percentage points greater than the national average, which was 22%.

Telenor Case Study: Telenor's investment in Serbia

Telenor began operations in Serbia in 2006. The company started with an initial \$1.9 billion³⁷⁰ investment and has since invested over \$400 million³⁷¹ into Serbian telecoms services, infrastructure, spectrum and a further \$36 million³⁷² in the launch of a new bank; Banka.

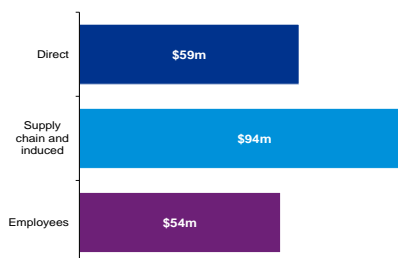
Over the past 10 years, Telenor Serbia has invested \$2.6 billion³⁷³ primarily in the development of the internet, with the goal to impact the quality of people's lives in Serbia and contribute to the development of society.

Telenor Serbia continues to upgrade technology, capacity and coverage of their network. They were the first to offer 4G internet to their subscribers as well as introducing other digital services such as Deezer and Capture. In 2015, Telenor Serbia enabled 26 TB of data through its 3G and 4G services.

Telenor's role in public financing

\$549m

Total fiscal contribution generated by Telenor Serbia in 2015



In 2014, Telenor Serbia made a direct fiscal contribution of \$59 million to the government through taxes and other regulatory payments including licence fees, frequency fees and numbering fees.

Telenor Serbia's direct fiscal contributions in 2014 accounted for 14% of its revenues.

Telenor Serbia also makes additional fiscal contributions through the economic activity it generates through spending in the supply chain and that generated by employee spending.

As a result of its activities, a further fiscal contribution of \$490 million was generated by Telenor Serbia in 2015 as a result of:

- the economic activity Telenor Serbia generates through spending in the supply chain;

³⁶⁹ This has been estimated using the Gross Fixed Capital Formation as a percentage of GDP for the Serbia economy sourced from the World Bank.

³⁷⁰ This is equivalent to €1.53 billion. This has been converted to US Dollars using a 2006 average exchange rate sourced from the World Bank.

³⁷¹ This is equivalent to €445 million. This has been converted to US Dollars using a spot exchange rate on 4th November 2016 sourced from Bloomberg.

³⁷² This is equivalent to €40 million. This has been converted to US Dollars using a spot exchange rate on 4th November 2016 sourced from Bloomberg.

³⁷³ This is equivalent to €2 billion. This has been converted to US Dollars using average exchange rate from 2006-2015 sourced from the World Bank.

- spending by (direct, indirect and induced) employees; and
- employees (direct, indirect and induced) paying taxes on their earnings.

The total fiscal contribution generated by Telenor in 2015 of \$549 million accounted for approximately 1.2% of total Serbian government tax revenues.

Enabling the wider economy



As well as the contributions made directly through Telenor Serbia's operations, it makes a wider indirect contribution through its provision of mobile communication services. These services can drive economic growth through greater digital and financial inclusion and raise entrepreneurial activity and business productivity.

The wider positive socio-economic effects of Telenor's impact on digital inclusion



\$290m

Contribution to GDP between 2011 and 2015 as a result of Telenor mobile penetration (including increased 3G and 4G penetration)

A number of studies have identified a link between mobile penetration and economic growth. Increasing digital inclusion, through greater availability of services and customer usage, particularly of 3G telephony and mobile data use, can have positive socio-economic benefits.

As the largest mobile provider in Serbia, with 1.8 million subscriptions and widespread 2G, 3G, and 4G networks, Telenor's services have positive impacts on the Serbian economy.

Drawing on results from an econometric model developed for the GSMA³⁷⁴, KPMG estimates that the increase in mobile penetration overall and the increased 3G and 4G penetration³⁷⁵ of Telenor Serbia between 2011 and 2015 contributed \$290 million to GDP growth.³⁷⁶ This is in addition to the GVA contribution outlined in the previous section.

The benefits of enhanced digital inclusion are not only economic. Social benefits are also realised.

The Telenor Foundation was established in 2007 in order to help the development of Serbia's society by supporting projects that bring digital solutions to certain social challenges. The Foundation initiated and supported more than 150 projects and established partnership with more than 300 organisations. For example, the "Stop digital bullying", project started in 2012. As a part of this project, Telenor Serbia in

³⁷⁴ Deloitte and GSMA, What is the impact of mobile telephony on economic growth?, November 2012

³⁷⁵ Between 2011 and 2015 Telenor Serbia's mobile penetration increased from 13.2 to 13.8 per 100 of the population. Over the same period, 3G and 4G penetration increased from 1.6 3G/4G subscribers per 100 of the population, to 6.0.

³⁷⁶ The estimate of the contribution to GDP growth of increased Telenor mobile penetration measures the additional contribution generated from one year to the next, rather than the total contribution overall (i.e. is a flow measure rather than a stock).

TELENOR SERBIA

partnership with the Ministry of the Education and UNICEF has implemented numerous initiatives to raise awareness on child online safety.

Telenor Serbia has also taken actions to improve digital literacy. For example, Telenor Serbia Foundation's Cyber dictionary event in March 2016, where 4,000 children were educated on digital safety. The Cyber dictionary event was part of its long term 'Stop digital bullying' project, under which over 10,000 children have been educated on how to stay safe when using the internet and social media.

Further digital inclusion projects include a long term collaboration (2010-2017) with UNICEF and the Ministry of Health to promote the social inclusion of the Roma population in Serbia. This was achieved through health outreach services spanning 59 municipalities. The project has to date meant that 145,000 of the Roma population (estimated to be 500,000 which is 14% of Serbia's population) have been registered, 30,000 children vaccinated and a further 8,000 children enrolled in school. Telenor considers that the work of Roma Health mediators has helped bring about significant improvements in the lives of Roma families. Access to health services has drastically increased and child mortality rates in Roma settlements have reduced by 50%.

Continuing their partnership in 2015, Telenor and the Wikimedia Foundation have built on its commitment to bring Wikipedia to Telenor customers free of data charges. The partnership also encourages the creation of articles on Wikipedia in the local language. Telenor has made Wikipedia free for its subscribers to access.

Telenor's impact on financial inclusion



\$151m
Total value of
mobile financial
transactions made
by Telenor
Serbia's
subscribers

Including
\$147m
Total value of
mobile financial
transactions made
through Telenor
Banka

Mobile communications generally support financial inclusion as they give smartphone users the means to access mobile banking, mobile payments and other mobile financial services.

Telenor launched Telenor Banka in Serbia in September 2014. It is the first fully online, mobile bank in the region and has changed the banking industry in Serbia. In 18 months, 162,000 Telenor Banka current accounts have been opened.

Telenor reports that during the first 12 months, use of online banking in Serbia increased by 20%. For the first time, in 2015 online banking transactions surpassed transactions in bank branches by a million. And that trend continues to grow. In August 2016 there were 9 million more online transactions than transactions made in branch. In 2016, 10% of the banking population in Serbia is using mobile banking.

KPMG estimates that through the use of Telenor Serbia's services, subscribers made a total of \$151 million of mobile financial transactions in 2015.



Telenor's contribution to boosting entrepreneurship, innovation and productivity

The provision of mobile services can impact positively on entrepreneurial activity and long-run business productivity and innovation in a number of ways. These include increasing the ease of access to markets and consumers, lowering the costs of business start-ups and business operation and supporting greater efficiency.

GSMA data ³⁷⁷ indicates that based on the number of unique subscribers, Europe has the highest mobile penetration globally. With a unique subscriber penetration rate of 84% at Q3 2016³⁷⁸, it is reaching saturation level and forecasts suggest that there is limited scope for further subscriber growth.

This suggests that the scope for improving digital inclusion and realising additional gains to the long-run productivity of the economy in Telenor's European markets is more limited and that the main economic benefits associated have already been mostly achieved.

More widely, Telenor has launched initiatives to support entrepreneurship and innovation, such as their Moja Firma website.

Telenor Case Study: Moja firma portal for small business support

Small businesses are the driving force of the Serbian economy³⁷⁹. Small and medium sized enterprises make up 99.8% of all businesses in Serbia, and contribute 54% of total value added³⁸⁰.

Telenor identified that Serbian entrepreneurs were not able to access all information needed to start and develop a business in one place. Moja Firma was created by Telenor to provide this information.

Moja Firma is made up of approximately 15 consultants and experts from different industries, as well as the editor-in-chief who is an entrepreneur and founder of one of the biggest regional forums in Serbia; burek.com. As well as information, the website published interviews with successful entrepreneurs, sharing those experiences with site visitors.

Within the first 10 days of the sites launch, more than 40,000 people visited the Moja Firma website, with more than half of these visits being from mobile phones. Now Moja Firma receives on average 130,000 visits a month, of which 105,000 are unique visitors.

³⁷⁷ GSMA, The Mobile Economy: Europe 2015. Accessed at <https://www.gsmainelligence.com/research/?file=06d1c45d0528233e7a9560843d85c8bd&download>

³⁷⁸ GSMA Intelligence data, data accessed October 2016, <https://www.gsmainelligence.com/>

³⁷⁹ European Commission, 2014 SBA Fact Sheet Serbia

³⁸⁰ European Commission, 2014 SBA Fact Sheet Serbia

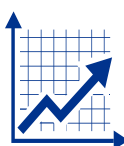
Supporting improved gender equality

Telenor Serbia focuses on attracting and retaining the best leaders and experts from diverse backgrounds and developing more women leaders.



46.6%

Female proportion of Telenor in Serbia direct employment



\$133m

Contribution to GDP between 2011 and 2015 through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Serbia

Telenor Serbia employed 1,415 employees³⁸¹ (1,333 in full time equivalent terms) in 2015. Of these, 46.6% were women. This is 4 percentage points higher than the national average for Serbia, 43%.

Through its provision of mobile services, Telenor Serbia is helping to promote gender equality through enabling women in Serbia to access mobile communication services. In a similar way to which mobile penetration more widely contributes to GDP, the use of mobile services by women supports economic growth. KPMG estimates that through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Serbia, Telenor in Serbia contributed \$133 million to Serbia's GDP between 2011 and 2015.

Telenor Case Study: Gender Equality

As a result of a long-term strategy, in the past ten years Telenor Serbia has achieved full gender balance amongst its workforce at all levels. The proportion of women leaders in the firm has more than doubled, going from 20% in 2006 to 44% in 2015.

Telenor Serbia appointed a female CEO for the first time in 2016.

Within Telenor Serbia talented women have been identified early in their careers and supported in their development through division rotations and training programs.

Externally, Telenor Serbia has built a good reputation for gender equality within the corporate world and further in Serbian society. Additionally, through engagement with government and civil stakeholders, Telenor Serbia plays an active role in empowering young girls to pursue education and careers in ICT.

Sustainability in the supply chain

It is estimated that through Telenor's supply chain sustainability policy, 57,800 people are employed in participating businesses who meet the standards.

³⁸¹ This includes the Telenor employees in Telenor Serbia, plus employees in Telenor Banka and Telenor Common Operations.

TELENOR SERBIA



As of 2015, 432 of Telenor's suppliers in Serbia had signed an Agreement of Responsible Business Conduct (ABC), thereby agreeing to abide by Telenor's supply chain principles.

During the course of 2015, Telenor Serbia conducted a wide ranging monitoring exercise of these suppliers to ensure conformity with the requirements. During the year:

- 95 inspections took place of which 95% were unannounced;
- the inspections covered 14 companies, with a combined total of 2,005 employees;
- there were no major non-conformity findings.

KPMG analysis estimates that 57,800 employees, across its 432 suppliers that have signed up to the ABC, benefit from working conditions in line with the high standards required by Telenor's supply chain sustainability policy.

TELENOR in SWEDEN

Introduction



1.0m

Total subscribers as of
Q4 2015

Telenor is the third largest mobile operator by number of connections and third largest provider of fixed broadband services in Sweden. Its total mobile market share was approximately 17.2% in Q3 2016.³⁸²

Telenor launched its Swedish operations in 2001. It currently operates under 7 different brands in the country:

- Telenor;
- Bredbandsbolaget;
- Glocalnet;
- Canal Digital Kabel-TV;
- OpenNet;
- Ownit; and
- Connexion.



2G: 99.9%

3G: 98.7%

4G: 99.5%

Population coverage as
of Q4 2015

The impacts associated with all Telenor operations in Sweden are included in the analysis.

Its growth was substantially boosted by Telenor's 2014 acquisition of Tele2's Swedish residential fibre and cable TV business. As part of the acquisition, Telenor Sweden took on 370,000 connected households, with 125,000 fixed broadband subscribers, 75,000 digital TV subscribers and 220,000 analogue TV households.

Across its 6 brands, Telenor now offers a range of services to both personal and business customers, including fixed and mobile voice services, fixed and mobile broadband services and digital TV.

The Swedish telecoms market has one of the largest smartphone penetration rates in the world, close to 90% for Telenor's Swedish customers in 2015, of which 76% were active data users.

³⁸² GSMA Intelligence, data accessed October 2016, <https://www.gsmainelligence.com/>

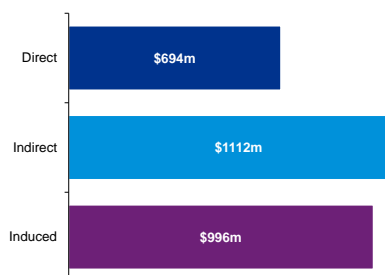
TELENOR in SWEDEN

Driving economic growth

Contributing to Gross Value Added (GVA)

\$2,802m

Total contribution to Gross Value Added (GVA) in 2015



Telenor generated approximately \$2,802 million of GVA for the Swedish economy in 2015.

\$694 million of its total GVA contribution in 2015 was generated by Telenor Sweden directly.

However, its contribution reached far beyond this through its purchasing from Swedish suppliers and from the wider economic activity generated through employee spending. In addition to its direct GVA, Telenor Sweden contributed a further \$1,112 million of indirect GVA and \$996 million of induced GVA.

Telenor Sweden's total GVA accounted for 0.6% of Sweden's total national GVA in 2015 and 13% of GVA generated by Sweden's ICT sector.

Labour productivity is a measure of economic performance in a country. Telenor's direct GVA generated by each full-time employee was \$370,696 in 2015, over four times higher than the national average (\$90,770³⁸³).

Contributing to employment

12,371

Total employment in 2015



In 2015, Telenor Sweden directly employed 1,871³⁸⁴ full time equivalent staff.

Its total headcount in 2015 was 2,050. This includes the Telenor employees in Telenor Sweden, plus employees in Bredbandsbolaget, Glocalnet, Canal Digital Kabel TV, OpenNet, Ownit, Connexion, 3GIS and Net4Mobility.

Of Telenor Sweden's 2015 headcount employees:

- 65.8% were male; and
- 34.2% were female.

Telenor Sweden's direct employment accounted for 8.5% of total employment in the Information and Communication sector.

In addition, KPMG estimates that, in 2015, Telenor generated an additional 6,100 indirect jobs in Sweden through its supply chain and a further 4,400 induced jobs linked to employee spending. This means

³⁸³ World Bank economy level productivity 2015.

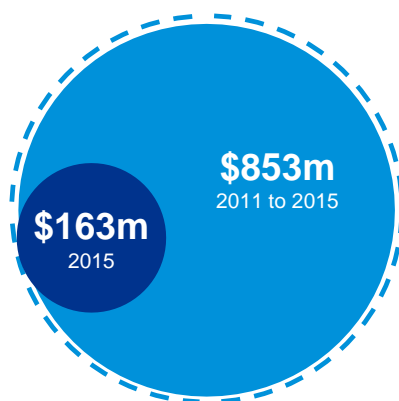
³⁸⁴ Telenor full time equivalent employees in Sweden includes employees in Bredbandsbolaget, Glocalnet, Canal Digital Kabel-TV, OpenNet, Ownit, Connexion, 3GIS and Net4Mobility

TELENOR in SWEDEN

that for every job that Telenor generates directly, an additional six are created in the wider Swedish economy.

Capital investment

Over the last five years, Telenor has invested \$853 million in the Swedish economy, of which \$163 million was invested in 2015.



In 2015, Telenor's capital expenditure in Sweden focused on domestic network improvements and upgrades, as well as expanding 4G coverage through the joint operation Net4Mobility.

Capex intensity is a measure of the ratio of capex to the GVA generated. In 2015, Telenor Sweden capex intensity was 24%³⁸⁵. This was 3 percentage points lower than the national average, which was 27%.

Telenor's role in public financing

In 2014, Telenor Sweden made a direct fiscal contribution of \$225 million to the government through taxes and other regulatory payments including licence fees, frequency fees and numbering fees.

Telenor Sweden's fiscal contributions in 2014 accounted for 13% of its revenues.

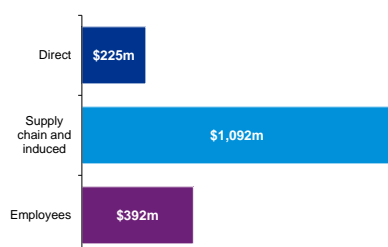
Telenor Sweden also makes additional fiscal contributions through the economic activity it generates through spending in the supply chain and that generated by employee spending.

As a result of its activities, a further fiscal contribution of \$1,484 million was generated by Telenor Sweden in 2015 as a result of:

- the economic activity Telenor Sweden generates through spending in the supply chain;
- spending by (direct, indirect and induced) employees; and
- employees (direct, indirect and induced) paying taxes on their earnings.

Telenor's total \$1,709 million fiscal contribution in 2015 accounted for approximately 0.6% of total Swedish government tax revenues.

\$1,709m
Total fiscal contribution
generated by Telenor
Sweden in 2015



³⁸⁵ This has been estimated using the Gross Fixed Capital Formation as a percentage of GDP for the Sweden economy sourced from the World Bank.

Enabling the wider economy



As well as the contributions made directly through its operations, Telenor makes a wider indirect economic contribution through its provision of mobile communication services. These services can drive economic growth through greater digital and financial inclusion and raise entrepreneurial activity and business productivity.

The wider positive socio-economic effects of Telenor's impact on digital inclusion

A number of studies have shown how increasing digital inclusion, through greater availability of services and customer usage, particularly of 3G telephony and mobile data use, can have positive socio-economic benefits.

The benefits of enhanced digital inclusion are not only economic. Social benefits are also captured. For example, Telenor Sweden recently launched "Safe on Internet", a multi-faceted programme aimed at helping parents ensure their children are safe whilst browsing the internet and using social media. Currently, the programme provides a guide to help parents talk to their children about their digital habits. In the future, the programme intends to help educate parents about the digital life of children through 'parent gaming', as well as developing further to tackle a number diverse topics in the long-term.

Telenor's impact on financial inclusion



\$1,135m
Total value of
mobile financial
transactions made
by Telenor
Sweden's
subscribers

It is increasingly recognised that mobile communications can help to support financial inclusion of people in society who have otherwise had inadequate access to financial services by giving smartphone users the means to access mobile banking, mobile payments and other mobile financial services.

KPMG estimates that through the use of Telenor's services, its subscribers made a total of \$1,135 million of mobile financial transactions in Sweden in 2015.

Telenor's contribution to boosting entrepreneurship, innovation and productivity

The provision of mobile services can impact positively on entrepreneurial activity and long-run business productivity and innovation in a number of ways. These include increasing the ease of access to markets and consumers, lowering the costs of business start-ups and business operation and supporting greater efficiency.

TELENOR in SWEDEN

GSMA data ³⁸⁶ indicates that based on the number of unique subscribers, Europe is the most penetrated region globally. With a unique subscriber penetration rate of 84% at Q3 2016³⁸⁷, it is reaching saturation level and forecasts suggest that there is limited scope for further subscriber growth.

This suggests that the scope for improving digital inclusion and realising additional gains to the long-run productivity of the economy in Telenor's European markets is more limited and that the main economic benefits associated have already been mostly achieved.

Supporting improved gender equality

Across its operations, Telenor aims to attract and retain the best leaders and experts from diverse backgrounds and to develop more women leaders.

Telenor employed 2,050 employees³⁸⁸ (1,871 in full time equivalent terms) in Sweden in 2015. Of these, 34.2% were women.

In 2015, Telenor Group ran training programmes in several of its markets which targeted top talents among graduate students from diverse educational backgrounds. Almost half of these candidates were women.

Sustainability in the supply chain

It is estimated that through Telenor's supply chain sustainability policy, 83,400 people are employed in participating businesses who meet the standards.

As of 2015, 558 of Telenor's suppliers had signed an Agreement of Responsible Business Conduct (ABC), thereby agreeing to abide by Telenor's supply chain principles.

During the course of 2015, Telenor conducted a wide ranging monitoring exercise of its Swedish suppliers to ensure conformity with the requirements. During the year:

- 17 inspections took place of which 35% were unannounced;
- the inspections covered 12 companies, with a combined total of 10,976 employees;
- 4 major non-conformity findings were recorded; and

³⁸⁶ GSMA, The Mobile Economy: Europe 2015, <https://www.gsmainelligence.com/research/?file=06d1c45d0528233e7a9560843d85c8bd&download>

³⁸⁷ GSMA Intelligence data, data accessed October 2016, <https://www.gsmainelligence.com/>

³⁸⁸ This includes the Telenor employees in Telenor Sweden, plus employees in Bredbandsbolgat, Glocalnet, Canal Digital Kabel TV, OpenNet, Ownit, Connexion, 3GIS and Net4Mobility.



TELENOR in SWEDEN

- working closely with its suppliers, Telenor mitigated 100% of major non-conformity findings within 12 months of the inspection taking place.

KPMG estimates that 83,400 employees, across its 558 suppliers that have signed up to the ABC, benefit from working conditions in line with the high standards required by Telenor's supply chain sustainability policy.

TELENOR IN THAILAND

Introduction

Telenor is the second largest mobile operator in Thailand in terms of number of connections. As of Q3 2016, it had a share of approximately 27.7% of all connections.³⁸⁹

Telenor in Thailand trades under the name of Total Access Communication PCL (DTAC).

DTAC was established in 1989 and the Telenor Group became a shareholder in it in 2001. By 2015, Telenor held a 42.6% ownership stake in the company.³⁹⁰

Telenor in Thailand offers mobile voice, roaming and value-added services to its customers through both postpaid and prepaid tariffs. It operates a 2G, 3G and 4G network with the 4G network launching in 40 metropolitan areas around Thailand during 2015.

During 2015, Telenor in Thailand responded to the demand for high speed data through accelerating its 3G and 4G investments. As well as launching 4G, it also substantially expanded its 3G network.

By the end of 2015, Telenor in Thailand had 15 million smartphone users, a 15% increase from 2014.³⁹¹ More than 56% of subscribers were active data users.³⁹² By 2015, for the first time, data revenues surpassed voice revenues.

Driving economic growth

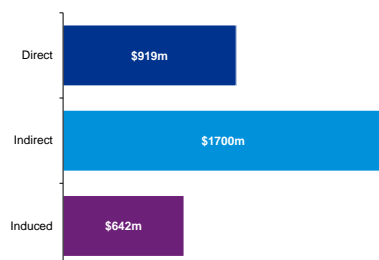
Contributing to Gross Value Added (GVA)

Telenor in Thailand generated approximately \$3,262 million of GVA for the Thai economy in 2015.

Of its total GVA contribution in 2015, \$919 million of GVA was generated by Telenor in Thailand directly.

In addition, Telenor in Thailand contributed a further \$1,700 million of indirect GVA and \$642 million of induced GVA through its purchasing from Thai suppliers and from the wider economic activity generated through employee spending.

\$3,262m
Total contribution to Gross
Value Added (GVA) in
2015



³⁸⁹ GSMA Intelligence, data accessed October 2016, <https://www.gsmainelligence.com/>

³⁹⁰ DTAC, June 2015, <https://www.telenor.com/investors/company-facts/business-description/dtac-thailand/>

³⁹¹ Total Access Communication PLC, Annual Report 2015, <http://dtac.listedcompany.com/misc/AR/20160226-dtac-ar2015-en.pdf>

³⁹² Telenor Group Annual Report, 2015

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Telenor in Thailand's total GVA accounted for 0.8% of Thailand's total national GVA in 2015.

Labour productivity is a measure of economic performance in a country. For Telenor in Thailand, the 2015 direct GVA generated by each full-time employee was \$191,051, almost eight times higher than the national average GVA per full-time employee in Thailand (\$24,431³⁹³).

Contributing to employment

In 2015, Telenor in Thailand directly employed 4,811 full time equivalent (FTE) staff.

214,711
Total employment in 2015



Its total headcount in 2015 was 4,841 employees. Of these:

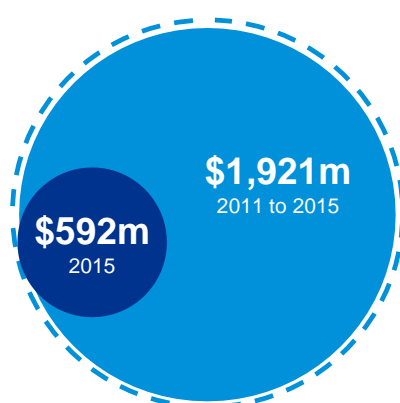
- 40.2% of employees were male; and
- 59.8% were female.

Telenor in Thailand's direct employment accounts for 2.2% of total employment in the Information and Communication sector.³⁹⁴

In addition, KPMG estimates that, in 2015, Telenor in Thailand generated an additional 168,900 indirect jobs through its supply chain and a further 41,000 induced jobs linked to employee spending. This means that for every job that Telenor in Thailand generates directly, an additional 43 are created in the wider economy.

Capital investment

Over the last five years, Telenor in Thailand has invested \$592 million in the Thai economy, of which \$1,921 million was invested in 2015.



Telenor in Thailand increased capital expenditure on its network substantially during 2015 with the aim of expanding coverage and improving network perception. This investment included the expansion of the current 3G network as well as the rollout of its 4G network to Bangkok and more than 40 other cities throughout Thailand. Between 2014 and 2015, Telenor in Thailand added 12,100 base stations, taking its total to 30,700 in 2015.³⁹⁵

Telenor in Thailand plans to continue this strong level of network investment in 2016, budgeting 20 billion Baht for network investment over that year.³⁹⁶

³⁹³ World Bank economy level productivity 2015.

³⁹⁴ Based on 2014 employment in the Information and Communication sector sourced from the 2013 Labour Force Survey.

³⁹⁵ Total Access Communication PLC, Annual Report 2015. Accessed at <http://dtac.listedcompany.com/misc/AR/20160226-dtac-ar2015-en.pdf>

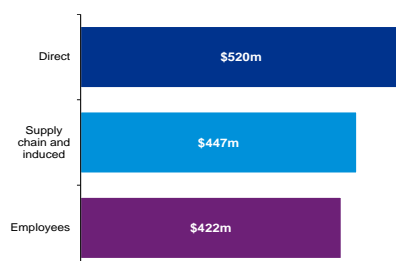
³⁹⁶ Total Access Communication PLC, Annual Report 2015. Accessed at <http://dtac.listedcompany.com/misc/AR/20160226-dtac-ar2015-en.pdf>

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Capex intensity is a measure of the ratio of capex to the GVA generated. In 2015, Telenor in Thailand's capex intensity was 64%³⁹⁷. This was 39 percentage points more than the national average in 2015, which was 25%.

Telenor's role in public financing

\$1,390m
Total fiscal contribution
generated by Telenor in
Thailand in 2015



In 2014, Telenor in Thailand made a direct fiscal contribution of \$520 million to the government through taxes and other regulatory payments including licence fees, frequency fees and numbering fees.

Telenor in Thailand's direct fiscal contributions in 2014 accounted for 20% of its revenues.

Telenor in Thailand also makes additional fiscal contributions through the economic activity it generates through spending in the supply chain and that generated by employee spending.

As a result of its activities, a further fiscal contribution of \$870 million was generated by Telenor in Thailand in 2015 as a result of:

- the economic activity Telenor in Thailand generates through spending in the supply chain;
- spending by (direct, indirect and induced) employees; and
- employees (direct, indirect and induced) paying taxes on their earnings.

The total fiscal contribution generated by Telenor in Thailand in 2015 of \$1,390 million accounted for approximately 1.8% of total Thai government tax revenues.

Enabling the wider economy



As well as the contributions made directly through Telenor in Thailand's operations, it makes a wider indirect economic contribution through its provision of mobile communication services. These services can drive economic growth through greater digital and financial inclusion and raise entrepreneurial activity and business productivity.

The wider positive socio-economic effects of Telenor's impact on digital inclusion

A number of studies have identified a link between mobile penetration and economic growth. Increasing digital inclusion, through greater availability of services and customer usage, particularly of 3G

³⁹⁷ This has been estimated using the Gross Fixed Capital Formation as a percentage of GDP for the in Thailand economy sourced from the World Bank.

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\$37,869m

Contribution to GDP
between 2011 and
2015 as a result of
Telenor mobile
penetration (including
increased 3G and 4G
penetration)

telephony and mobile data use, can have positive socio-economic benefits.

As the second largest mobile provider in Thailand, with over 25 million subscriptions, widespread 2G and 3G networks and significant investment in a growing 4G network, Telenor in Thailand's services have positive impacts on the Thai economy.

Drawing on results from an econometric model developed for the GSMA³⁹⁸, KPMG estimates that Telenor in Thailand's increase in mobile penetration overall and its increased 3G and 4G penetration³⁹⁹ between 2011 and 2015 together contributed \$37,869 million to GDP growth.⁴⁰⁰ This is in addition to the GVA contribution outlined in the previous section.

The benefits of enhanced digital inclusion are not only economic. Social benefits are also captured. Telenor in Thailand has taken actions to improve digital literacy. For example, it has partnered with the Wikipedia Zero Foundation to launch Wikipedia Zero, a project whereby access to Wikipedia is free for three years for Telenor in Thailand customers who choose to use it.⁴⁰¹ In addition, it has also provided training courses to over 100,000 children on how to safely use the internet through its "Safe Internet" initiative.⁴⁰²

Telenor Case Study: Smart farmer

The agricultural sector is a significant sector in Thailand with 13.5 million employees, accounting for 35% of the working population⁴⁰³. In order to support sustainable development for farmers, Telenor in Thailand has developed initiatives to encourage the exchange of knowledge and information by "Smart Farmers," role models for all farmers.

These activities include:

- Farmer Information Application; an application which allows farmers to share knowledge on areas such as prices, weather conditions and techniques for improving the quality of yields.
- "Internet Changes Lives" Activity; a capacity-building and technology training programme participated in by 1,500 farmers nationwide which educated Thai farmers in the use of smartphones and online applications in order to access agricultural information.
- Telenor in Thailand Net Asa; Internet Volunteers; 75 volunteers who targeted 150,000 elderly farmers, enterprises and local volunteers in order teach them how to use the internet on their smartphones.

³⁹⁸ Deloitte and GSMA, What is the impact of mobile telephony on economic growth?, November 2012

³⁹⁹ Between 2011 and 2015 Telenor in Thailand's mobile penetration increased from 35.9 to 37.2 per 100 of the population. Over the same period, 3G penetration increased from 0.8 3G/4G connections per 100 of the population, to 36.1.

⁴⁰⁰ The estimate of the contribution to GDP growth of increased Telenor mobile penetration measures the additional contribution generated from one year to the next, rather than the total contribution overall (i.e. is a flow measure rather than a stock).

⁴⁰¹ DTAC, dtac and Thai Wikipedia community join forces to offer Wikipedia Zero free of charge on mobile phones for 3 years, 14 December 2015. Accessed at <https://www.dtac.co.th/en/pressroom/news/free-wiki.html>

⁴⁰² Total Access Communication PLC, Annual Report 2015. Accessed at <http://dtac.listedcompany.com/misc/AR/20160226-dtac-ar2015-en.pdf>

⁴⁰³ ILO Stat, Number of employees in Agriculture, forestry and fishing industry for 2014. Accessed October 2016

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Telenor's impact on financial inclusion



\$123m

Total value of mobile financial transactions made by Telenor Thailand's subscribers

Plus an additional

\$126m

Total value of mobile financial transactions made by Telenor Thailand's subscribers using Telenor mobile money services

And

\$32m

Total value of Telenor Thailand's Over the Counter (OTC) and money transfers

In developing countries, mobile money can bring financial inclusion to a growing number of unbanked or underbanked individuals.

Telenor in Thailand has launched initiatives which will help address problems of financial inclusion. For instance, Paysbuy, a Telenor in Thailand subsidiary company, provides online payment processing with a variety of payment channels including credit cards, direct debits and cash at counters (at 7-Eleven and Tesco Lotus) and e-wallet.⁴⁰⁴

Mobile communications, more generally, support financial inclusion as they give smartphone users the means to access mobile banking, mobile payments and other mobile financial services. KPMG estimates that through the use of Telenor in Thailand's services, subscribers made a total of \$123 million of mobile financial transactions in 2015.

Telenor's contribution to boosting entrepreneurship, innovation and productivity

The provision of mobile services can impact positively on entrepreneurial activity and business productivity and innovation in a number of ways. These include increasing the ease of access to markets and consumers, lowering the costs of business start-ups and business operation and supporting greater efficiency.

More widely, Telenor in Thailand has launched initiatives to support entrepreneurship and innovation. For instance, similar to other Telenor markets, Telenor in Thailand has introduced a start-up accelerator programme, Telenor in Thailand Accelerate, which provides a range of support from mentoring and funding to working spaces to successful applicants. Since the programme was established 3 years ago, 11 participating start-ups have succeeded in completing the programme and entering international markets. 70% of start-ups who have been through the programme have achieved fund raising, compared to 20% overall and have a combined worth of approximately \$29 million⁴⁰⁵.

Supporting improved gender equality

Gender equality is seen as a priority across the globe. Across its operations, Telenor in Thailand has the objective of attracting and retaining the best leaders and experts from diverse backgrounds and developing more women leaders.

Telenor in Thailand employed 4,841 employees in 2015 (4,811 in full time equivalent terms), of which 59.8% were women. This is 14

⁴⁰⁴ Telenor, Mobile Financial Services for Everyone, accessed August 2016, <https://www.telenor.com/innovation/financial-services/>

⁴⁰⁵ This is equivalent to 1 billion Baht. This has been converted to US Dollars using a spot exchange rate on 4th November 2016 sourced from Bloomberg.

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percentage points higher than the national average for Thailand, which is 45.1%.



59.8%

Female proportion of Telenor in Thailand direct employment



\$18,531m

Contribution to GDP between 2011 and 2015 through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Thailand

Through its provision of mobile services, Telenor in Thailand is helping to promote gender equality through enabling women in Thailand to access mobile communication services. In a similar way to which mobile penetration more widely contributes to GDP, the use of mobile services by women supports economic growth. KPMG estimates that through increased digital access (through increased 2G, 3G and 4G mobile penetration rates) for female subscribers in Thailand, Telenor in Thailand contributed \$18,531 million to Thailand's GDP between 2011 and 2015.

This figure does not capture the wider societal benefits that are generated through providing women with mobile services in developing countries such as:⁴⁰⁶

- improved safety and security;
- enhanced abilities to connect with friends and family; and
- increased independence.

Sustainability in the supply chain

It is estimated that through Telenor's supply chain sustainability policy, 279,000 people are employed in participating businesses who meet the standards.

As of 2015, 1,505 of Telenor in Thailand's suppliers had signed an Agreement of Responsible Business Conduct (ABC), thereby agreeing to abide by Telenor's supply chain principles.

During the course of 2015, Telenor in Thailand conducted a wide ranging monitoring exercise of these suppliers to ensure conformity with the requirements. During the year:

- 374 inspections took place of which 62% were unannounced;
- the inspections covered 266 companies, with a combined total of 31,387 employees;
- 37 major non-conformity findings were recorded; and
- working closely with its suppliers, Telenor in Thailand mitigated 100% of major non-conformity findings within 12 months of the inspection taking place.

Telenor in Thailand supports its suppliers in adhering with and meeting the obligations of the supply chain sustainability policy. For instance,

⁴⁰⁶ GSMA, Women & Mobile: A Global Opportunity – A study on the mobile phone Gender gap in low and middle-income countries, http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2013/01/GSMA_Women_and_Mobile-A_Global_Opportunity.pdf

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in 2015 it invited 257 suppliers and partners to access and utilise a self-learning tool for health and safety, called the “HSSE Virtual Learning Program”.⁴⁰⁷

KPMG analysis estimates that 279,000 employees, across its 1,505 suppliers that have signed up to the ABC, benefit from working conditions in line with the high standards required by Telenor’s supply chain sustainability policy.

⁴⁰⁷ Telenor, Mobile Financial Services for Everyone, accessed August 2016, <https://www.telenor.com/innovation/financial-services/>

Appendix 1



Approach to the analysis

The analysis in this report draws on a range of data, information and wider evidence gathered from Telenor and external sources.

In this appendix we set out a more detailed description of the approach taken to the analysis included within our report. It is structured in the order in which the analysis appears in the report

Approach to estimating Telenor's GVA contribution

GVA is a measure of the contribution to the economy of an individual producer, industry or sector, net of intermediate consumption. Our estimates of GVA capture only the GVA linked to Telenor's operations in each market, and not the additional economic contributions generated through subscribers using its telecommunications services.

The GVA impacts are assessed in gross terms i.e. the analysis does not take in to account how the resources would otherwise have been used if Telenor did not exist.

The approach used to assess Telenor's impact in terms of GVA is based on a methodology sourced from the United Kingdom's Office for National statistics, and is a widely recognised approach to undertaking impact assessments⁴⁰⁸.

Direct GVA

Direct GVA has been estimated based on Telenor data using the production approach.

*Direct GVA = Revenues – cost of bought in goods and services – change in inventories*⁴⁰⁹

Indirect GVA

Three approaches were used to estimate the indirect GVA impacts.

The first approach was used where detailed supplier data were not available (Denmark and Sweden), the following approach was used:

*Indirect GVA*⁴¹⁰ = *Direct GVA* × (*sector specific Type I GVA multiplier*⁴¹¹ – 1)

The second approach was used for countries where detailed supplier data were available (Bangladesh, Bulgaria, Hungary, Malaysia, Montenegro, Myanmar, Norway, Pakistan, Serbia and Thailand) where the indirect GVA was estimated using the following formula:

*Indirect GVA = Tier 1 supplier GVA*⁴¹² + *wider supply chain GVA*

⁴⁰⁸ Methodology based on ONS Report, "Measuring the economic impact of an intervention or investment", December 2010. Available at <http://webarchive.nationalarchives.gov.uk/20160105160709/http://ons.gov.uk/ons/rel/regional-analysis/measuring-the-economic-impact-of-an-intervention-or-investment/measuring-the-economic-impact-of-an-intervention-or-investment/index.html>

⁴⁰⁹ For the purposes of this analysis the inventories are assumed to be zero

⁴¹⁰ The indirect GVA captures the impact that Telenor has in each market, and therefore excludes the economic activity generated through the purchase of imported goods and services outside that market. This means that the impact is potentially underestimated, as these imported goods and services could generate additional economic activity in the country they are being imported from but impacts are not captured as part of this analysis. For example, if Telenor Norway buys inputs from a supplier in the US, it generates positive economic impacts to the US economy, but this is captured as a leakage to the economic impact generated by Norway as the economic benefit is not generated within the market.

⁴¹¹ Type I GVA multiplier is expressed as the ratio of the direct and indirect GVA changes to the direct GVA change, due to a unit increase in final demand. In other words, if you have the change in GVA for the industry, the GVA multiplier can be used to calculate the change in GVA for the economy as a whole.

⁴¹² Tier 1 suppliers are those suppliers which provide products or services directly to Telenor (the Original Equipment Manufacturer (OEM)).

Where:

Tier 1 supplier GVA =

$$\sum_{i=1}^n \text{Spending with suppliers in sector } i \times \text{average GVA as a proportion of output for sector } i$$

Note: Where n is the number of sectors in the input output table

Wider supply chain GVA =

$$\sum_{i=1}^n \text{Tier 1 supplier GVA for suppliers in sector } i \times (\text{Type I GVA multiplier for sector } i - 1)$$

Note: Where n is the number of sectors in the input output table

The third approach was used for India where only partial supplier information was available. Spending and employment data for a small number of suppliers was available, but this did not cover all non-payroll costs (supplier spending).

Where the supplier spending data were available, approach two, set out above, was taken.

Where only Telenor specific supplier employment data were available and not the associated level of supplier spending, spending was estimated using the following formula:

$$\text{Supplier spend} = \frac{(\text{Telenor specific supplier employees} \times \text{sector average GVA per FTE})}{\text{Sector average GVA as a proportion of output}}$$

Approach two was then taken using this estimated level of supplier spending.

Where supplier spending data were not available for India, the direct GVA this related to was estimated using the following formula:

$$\text{Direct GVA not accounted for} = \text{Direct GVA} \times \left(\frac{\text{Supplier spending for which data were available}}{\text{Non - payroll costs}} \right)$$

The indirect GVA associated with the direct GVA not accounted for by the detailed supplier spending data was then estimated using approach one.

Induced GVA

For countries where the detailed supply chain data were not available, the following approach was used to estimate the induced economic impacts:

$$\text{Induced GVA} = \left[\frac{(\text{Direct GVA} \times \text{sector specific Type II GVA multiplier}^{413}) - (\text{Direct GVA} \times \text{sector specific Type I GVA multiplier})}{\text{Tier 1 supplier GVA for suppliers in sector } i \times \text{Type I GVA multiplier for sector } i} \right]$$

Where detailed supplier data were available, the induced GVA effects were then estimated using the following formula:

$$\text{Induced GVA} = \sum_{i=1}^n \left[\frac{(\text{Tier 1 supplier GVA for suppliers in sector } i \times \text{Type II GVA multiplier for sector } i) - (\text{Tier 1 supplier GVA for suppliers in sector } i \times \text{Type I GVA multiplier for sector } i)}{\text{Tier 1 supplier GVA for suppliers in sector } i \times \text{Type I GVA multiplier for sector } i} \right] + \text{induced Telenor GVA}$$

Note: Where n is the number of sectors in the input output table

⁴¹³ Type II GVA multiplier is expressed as the ratio of the direct and indirect and induced GVA changes to the direct GVA change, due to a unit increase in final demand. In other words, if you have the change in GVA for the industry the GVA multiplier can be used to calculate the change in GVA for the economy as a whole.

Where:

Induced Telenor GVA =

$$\sum_{i=1}^n \left[(GVA \text{ from Telenor payroll costs} \times \text{Type II GVA multiplier for sector } i) - (GVA \text{ from Telenor payroll costs} \times \text{Type I GVA multiplier for sector } i) \right]$$

Note: Where n is the number of sectors in the input output table

GVA from Telenor payroll cost = *Telenor payroll cost* × *sector average GVA as a proportion of output*

For India, where detailed supplier data were available, the induced GVA effects were then estimated using the second approach above. For the proportion of direct GVA associated with supplier spending where detailed data were not available, the induced GVA was estimated using approach one above. These were then summed to give total induced GVA for India.

Approach to estimating Telenor's employment contribution

The total employment generated by Telenor is comprised of direct, indirect and induced employment.

Direct Employment

The direct employment is the number of Telenor full time equivalent (FTE) employees in each market.

Indirect Employment

Three approaches were taken to estimate the indirect employment impacts.

For countries where detailed supplier data were not available (Denmark and Sweden) the following approach was used:

$$\text{Indirect employment}^{414} = \text{Direct employment} \times (\text{sector specific Type I employment multiplier}^{415} - 1)$$

The second approach was used for countries where detailed supplier data were available (Bangladesh, Bulgaria, Hungary, Malaysia, Montenegro, Myanmar, Norway, Pakistan, Serbia and Thailand) where the following formula was used to calculate indirect employment effects:

$$\text{Indirect employment} = \text{Tier 1 supplier employment}^{416} + \text{wider supply chain employment}$$

Where:

$$\text{Tier 1 supplier employment} = \sum_{i=1}^n \frac{\text{Tier 1 supplier GVA for suppliers in sector } i}{\text{sector average GVA per employee for sector } i^{417}}$$

Note: Where n is the number of sectors

Wider supply chain employment =

$$\sum_{i=1}^n \text{Tier 1 supplier employment for suppliers in sector } i \times (\text{Type I employment multiplier for sector } i - 1)$$

Note: Where n is the number of sectors

⁴¹⁴ The indirect employment captures the impact that Telenor has in each market, and therefore excludes the employment generated through the purchase of imported goods and services outside that market. This means that the impact is potentially underestimated, as these imported goods and services could generate additional employment in the country they are being imported from but impacts are not captured as part of this analysis. For example, if Telenor Norway buys inputs from a supplier in the US, it generates positive employment impacts to the US economy, but this is captured as a leakage to the employment generated by Norway as the employment benefit is not generated within the market.

⁴¹⁵ Type I supplier employment multiplier is expressed as the ratio of the direct and indirect employment changes to the direct employment change, due to a unit increase in final demand. In other words, if you have the change in employment for the industry the employment multiplier can be used to calculate the change in employment for the economy as a whole. In the estimation of the multipliers sector level FTE employment figures were used where available. Due to data availability headcount employment figures were used for Denmark, Hungary, India, Malaysia, Montenegro, Myanmar and Pakistan.

⁴¹⁶ Tier 1 suppliers are those suppliers which provide products or services directly to the Original Equipment Manufacturer (OEM), which in this case is Telenor.

⁴¹⁷ Sector average GVA per employee is calculated based on data sourced from the input output tables

A third approach was used to estimate the indirect employment effects for India. For India we were provided with partial supplier spending data and data on the associated number of Telenor specific employees at these suppliers.

Where we were provided with data on Telenor India specific supplier employees, these were treated as Tier 1 supplier employment and were input into the formulas outlined in approach two above to estimate the corresponding wider supply chain employment.

Where detailed supplier data were not available for India, we estimated the proportion of direct employment not accounted for by the detailed supplier data and applied the sector specific Type I multiplier to this to derive indirect employment, as in approach 1.

The results of these two approaches were then summed to give total indirect employment for India.

Induced Employment

For countries where the detailed supply chain data were not available, the following approach was used to estimate the induced employment:

$$\text{Induced employment} = \left[\left(\text{Direct employment} \times \text{sector specific Type II employment multiplier}^{418} \right) - \left(\text{Direct employment} \times \text{sector specific Type I employment multiplier} \right) \right]$$

Where detailed supplier data were available, the induced employment effects were then estimated using the following formula:

$$\begin{aligned} \text{Induced employment effects} = & \sum_{i=1}^n \left[\left(\text{Tier 1 supplier employment for suppliers in sector } i \times \text{Type II employment multiplier for sector } i \right) - \left(\text{Tier 1 supplier employment for suppliers in sector } i \times \text{Type I employment multiplier for sector } i \right) \right] \\ & + \text{induced Telenor employment} \end{aligned}$$

Note: Where n is the number of sectors in the input output table

Where:

$$\text{Induced Telenor employment} = \sum_{i=1}^n \left[\left(\text{Employment from Telenor payroll costs} \times \text{sector specific Type II GVA multiplier for sector } i \right) - \left(\text{Employment from Telenor payroll costs} \times \text{sector specific Type I GVA multiplier for sector } i \right) \right]$$

$$\text{Employment from Telenor payroll costs} = \frac{\text{GVA from Telenor payroll cost}^{419}}{\text{sector average GVA per employee}}$$

Note: Where n is the number of sectors in the input output table

For India, where the detailed supplier data were available, the induced employment effects were estimated using the second approach above. For the proportion of direct employment associated with supplier spending where detailed data were not available, the induced GVA was estimated using approach one above. These were then summed to give total induced GVA for India.

Approach to estimating Telenor's investment over the past 5 years

Our estimates of Telenor's total investment is based on internal Telenor capex data for each market for 2015. Capex data for 2011 to 2015 is also reported.

⁴¹⁸ Type II employment multiplier is expressed as the ratio of the direct and indirect and induced employment changes to the direct employment change, due to a unit increase in final demand. In other words, if you have the change in employment for the industry the employment multiplier can be used to calculate the change in employment for the economy as a whole.

⁴¹⁹ The calculation of GVA from Telenor payroll cost is set out in the GVA methodology section of the appendix.

Capex intensity estimates the ratio of a company's capex to the GVA it generates and has been calculated using the following formula:

$$\text{Telenor capex intensity} = \frac{\text{Telenor capex}}{\text{Telenor direct GVA}} \times 100$$

This can then be compared to national average capex intensity using national Gross Fixed Capital Formation as a proportion of national GVA:

$$\text{National capex intensity}^{420} = \frac{\text{Gross Fixed Capital Formation}}{\text{National GVA}^{421}} \times 100$$

Approach to assessing Telenor's public finance contribution

The total fiscal contribution generated by Telenor comprises of: the fiscal contributions made by Telenor; those generated through the supply chain and by companies benefitting from induced economic activity; and those made by direct, indirect and induced employees from their earnings.

Direct fiscal contribution

The direct fiscal contribution is the total paid by Telenor in each market in 2014.

Fiscal contribution through the supply chain and induced economic activity

The fiscal contribution through the supply chain and induced economic activity estimates the additional fiscal contributions generated through Telenor purchasing goods and services from its suppliers, the economic activity generated through the wider supply chain; and the additional economic activity (induced) generated through employee spending.

The supply chain and induced economic activity fiscal contribution is estimated using the following formula:

$$\text{Supply chain and induced economic activity fiscal contribution} = \text{Tier 1 supplier fiscal contribution} + \text{induced economic activity fiscal contribution}$$

Where:

$$\text{Tier 1 supplier fiscal contribution} = \text{Indirect GVA}^{422} \times \text{national average tax as \% of GDP}$$

$$\text{Induced economic activity fiscal contribution} = \text{Induced GVA}^{423} \times \text{national average tax as \% of GDP}$$

Employee fiscal contribution

The employee fiscal contribution estimates the total fiscal contribution generated through Telenor's direct employees, as well as the contributions made by the indirect and induced employees that Telenor generates in the wider economy. This was estimated using the following formula:

$$\begin{aligned} \text{Employee fiscal contribution} = \\ \text{Telenor direct employee contribution} + \text{Telenor indirect employee contribution} \\ + \text{Telenor induced employee contribution} \end{aligned}$$

⁴²⁰ Due to data availability national capex intensity is for 2015 for all countries except Hungary, India, Malaysia and Thailand which is for 2014. The figure used for Myanmar is the percentage of GDP spent on fixed capital in 2015 as sourced from the CIA Factbook.

⁴²¹ National GVA was unavailable for Malaysia, so for this country national GDP was used.

⁴²² Indirect GVA has been estimated by KPMG using Telenor internal data. Details are set out in the GVA methodology section of the appendix.

⁴²³ Induced GVA has been estimated by KPMG using Telenor internal data. Details are set out in the GVA methodology section of the appendix.

Where:

Telenor direct employee contribution =
(Telenor total payroll costs x income tax rates) + (Telenor total payroll costs x social security rates)

Telenor indirect employee contribution =
Telenor indirect employees⁴²⁴ x [(country average wage⁴²⁵ x income tax rates)
+ (country average wage x social security rates)]

Telenor induced employee contribution =
Telenor induced employees⁴²⁶ x [(country average wage x income tax rates)
+ (country average wage x social security rates)]

Approach to assessing Telenor's contribution to driving digital inclusion and the economic growth this generates

Telenor's contribution to GDP per capita growth

The digital inclusion KPI captures the impact on economic growth of the overall provision of mobile services, including of 3G and 4G technologies through Telenor's network.

We estimate these impacts drawing on the results of a study for the GSMA⁴²⁷. This estimates the impact of the substitution from a standard 2G connection to a 3G connection. This research looks at the overall level of market penetration as well as the 3G market penetration. As this report was written in 2012 there is no additional impact of 4G connections included. For the purpose of this analysis, the impact of 4G connections has been assumed to be the same as 3G. This may underestimate the impact of this due to the additional benefits associated with 4G compared to 3G, e.g. faster speeds. The model specified in the study is as follows:

$$\ln(GDPpercap_{i,t}) - \ln(GDPpercap_{i,t-1}) = \alpha_1 \ln(GDPpercap_{i,t-1}) + \alpha_2 \ln(GDPpercap_{i,t-2}) + \beta \ln(MobPen_{i,t}) + \delta \ln(3GPen_{i,t}) + X'_{i,t} \Gamma + \eta_{i,t} + \varepsilon_{i,t}$$

Where $X_{i,t}$ includes: $\ln\left(\frac{GovExp}{GDP}\right)_{i,t}$, $\ln\left(\frac{Trade}{GDP}\right)_{i,t}$, $\ln\left(\frac{Investment}{GDP}\right)_{i,t}$, $\ln(Labour_{i,t})$ and η_i is the county specific effect.

To isolate the effect of the growth⁴²⁸ in 3G and 4G penetration, from 2011 to 2015 through substituting from standard 2G connections, the coefficients of interest are β and δ . These were estimated as 0.0651293 and 0.0150549 respectively. To assess the impact on GDP growth of mobile services, the model can be simplified to:

$$\ln(GDPpercap_{i,t}) = 0.065 \ln(MobPen_{i,t}) + 0.015 \ln(3GPen_{i,t} + 4GPen_{i,t})$$

Note: Where n is the number of sectors in the input output table

⁴²⁴ Telenor's indirect employees has been estimated by KPMG using Telenor internal data. More details are set out in the employment section of the appendix.

⁴²⁵ Country average wages have been used as industry specific wages were not available for all countries. This may underestimate the indirect employee contribution if the sectors in which the indirect and induced employees work have wages above the national average wage.

⁴²⁶ Telenor's induced employees has been estimated by KPMG using Telenor internal data. More details are set out in the employment section of the appendix.

⁴²⁷ Deloitte, What is the impact of mobile telephony on economic growth? A report for the GSM Association, 2012

⁴²⁸ To calculate growth rates for all variables the following formula was implemented: $\frac{Variable_{2015} - Variable_{2011}}{Variable_{2011}}$

In order to estimate the impact of Telenor specifically, rather than the mobile market as a whole, the following formula was used:

$$\text{Telenor's contribution to GDP per capita growth} = [0.065 \ln(\text{MobPen}_{i,t}) \times \text{Telenor's contribution to MobPen}] + [0.015 \ln(3\text{GPen}_{i,t} + 4\text{GPen}_{i,t}) \times \{\text{Telenor's contribution to 3GPen and 4GPen}\}]$$

Where:

$$\text{MobPen}_{i,t} = \frac{\text{Total number of subscribers}_{i,t}}{\text{Total population}_{i,t}} \times 100$$

Note: Where i is the country and t is the year

$$\text{Telenor's contribution to MobPen}_{i,t-n} = \frac{\text{Absolute change in Telenor MobPen}_{i,t-n}}{\text{Absolute change in MobPen}_{i,t-n}}$$

Note: Where i is the country and t is the year

$$3\text{GPen}_{i,t} + 4\text{GPen}_{i,t} = \frac{\text{Total number of 3G and 4G subscribers}_{i,t}}{\text{Total population}_{i,t}} \times 100$$

Note: Where i is the country and t is the year

$$\text{Telenor's 3G subscribers}_{i,t} \times \text{Telenor's 4G subscribers}_{i,t} = \text{Number of Telenor subscribers}_{i,t} \times \text{Proportion of 3(4)G subscribers}_{i,t}$$

Note: Where i is the country and t is the year

Where:

$$\text{Proportion of 3G subscribers}_{i,t} + \text{Proportion of 4G subscribers}_{i,t} = \frac{\text{Total number of 3G subscribers}_{i,t} + \text{Total number of 4G subscribers}_{i,t}}{\text{Total number of subscribers}_{i,t}}$$

Note: Where i is the country and t is the year

$$\text{Telenor's contribution to 3GPen and 4GPen}_{i,t-n} = \frac{\text{Absolute change in Telenor 3GPen} + 4\text{GPen}_{i,t-n}}{\text{Absolute change in Total 3GPen} + 4\text{GPen}_{i,t-n}}$$

Note: Where i is the country and t is the year

Telenor's contribution to GDP

For each country the percentage change in GDP per capita was converted to a monetary GDP figure by using the following formula:

$$\text{Monetary value of GDP per capita} = \text{Telenor's contribution to GDP per capita growth} \times \text{GDP}(\text{LCU}^{429})_{i, 2011}^{430}$$

Note: Where i is the country

To estimate the value of Telenor's contribution to GDP the following formula was used:

$$\text{Value of Telenor's contribution to GDP} = \text{Monetary value of GDP per capita} \times \text{Population}_{i, 2015}^{431}$$

Note: Where i is the country

Approach to assessing Telenor's contribution to financial inclusion

To reflect Telenor's impact in terms of financial inclusion it enables through use of its network, we estimate:

⁴²⁹ LCU stands for local currency unit.

⁴³⁰ GDP for 2011 was used as the formula measure the growth of GDP per capita and therefore the value is the growth in GDP between 2011 and 2015.

⁴³¹ Population for 2015 was used to calculate the value contribution to GDP. The GDP contribution measures the change in mobile penetration between 2014 and 2015, therefore the per capita GDP is for 2015 and the population figures are also for 2015.

- the number of Telenor subscribers using its mobile services for financial transactions; and
- the value of these financial transactions.

Where available, Telenor's internal data of Telenor's mobile money services is used. This was available for Bangladesh, Malaysia, Pakistan, Serbia and Thailand only.

The total number of Telenor subscribers using their mobile to make financial transactions

2014 World Bank Financial Index data⁴³² measures the proportion of all subscribers using mobiles in each country who make financial transactions. We use this index to apply to Telenor data as follows:

$$\text{No. of subscribers using their mobile for financial transactions} = \text{Telenor mobile subscribers} \times \% \text{ of subscribers using mobiles for financial transactions}$$

Where internal data is available regarding subscribers to Telenor's mobile money services, we remove these users from the above.

The total value of mobile transactions enabled by Telenor's services

IMF mobile transaction value data was available for four of the 13 markets being considered (Bangladesh, Malaysia, Myanmar, Norway and Pakistan). The data includes both mobile banking and mobile payment transactions.

We estimated the value of mobile transactions using results from the IMF Financial Access Survey (FAS) on the total value of mobile money transactions in the country.

$$\text{Total value of mobile financial transactions}_{i,t} = \text{Telenor mobile subscribers}_{i,t} \times \text{average transaction value per subscriber (per year)}_{i,t}$$

Note: Where i is the country and t is the year

For the remaining nine markets, no IMF data is available. An approach is taken, based on available data from the IMF, to proxy for and estimate the value of financial transactions in these nine countries.

We estimate the Asia and Europe average transaction value per subscriber (per year) using all IMF available data within these regions.

We then apply a weighting to this average for the nine countries where data is not available. This weighting is based on available data on mobile payments only (sourced from Statista):

- Statista has data on the average mobile payment transaction value per subscriber (per year).
- We assume the following ratio is the same in a country for mobile payments as it is for all mobile financial transactions (mobile payments and mobile banking):

$$\frac{\text{Mobile payments in country per subscriber per transaction}}{\text{Average of mobile transactions covered by IMF data per subscriber per transaction}}$$

- Making this assumption, the following formula is then applied to estimate the average transaction value per subscriber (per year) for the nine countries without data.

⁴³² The mobile network was only introduced in Myanmar and Pakistan in 2014, therefore the World Bank data does not cover these countries. Nepal was used as a proxy for Myanmar, with the mobile network only being introduced in 2013 – therefore, it was assumed this would be representative of how quickly mobile payments would proliferate in this market. Bangladesh was used as a proxy for Pakistan.

$$\text{Total value of mobile financial transactions}_{i,t} = \text{financial transactions in Europe and Asia per subscriber (per year)}_{i,t} \times \left[\frac{\text{Europe or Asia average transaction value per subscriber (per year)}_t \times \text{Mobile payments in country per subscriber}}{\text{Mobile payments Europe or Asia per subscriber}} \right]$$

Note: Where i is the country and t is the year

Approach to assessing Telenor's role in supporting the economy through its female subscribers' change in digital access

This KPI captures the GDP growth impact of increasing mobile penetration amongst female subscribers. It does not capture the wider enabling impacts of increased digital access specifically for female subscribers in terms of gender equality in each of the markets.

Telenor's contribution to GDP per capita growth

The gender KPI captures the impact on economic growth of the provision of mobile services, including 3G and 4G technologies, through Telenor's network amongst female subscribers.

We estimate these impacts drawing on a study for the GSMA⁴³³. This estimates the impact of the substitution from a standard 2G connection to a more advanced 3G connection. This research looks at the overall level of market penetration as well as the 3G market penetration. As this report was written in 2012 there is no additional impact of 4G connections included. For the purpose of this analysis, the impact of 4G connections have been assumed to be the same as 3G. This may underestimate the impact of 4G due to the additional benefits associated with 4G compared to 3G e.g. faster speeds. The model specified in the research is as follows:

$$\begin{aligned} \ln(\text{GDPpercap}_{i,t}) - \ln(\text{GDPpercap}_{i,t-1}) \\ = \alpha_1 \ln(\text{GDPpercap}_{i,t-1}) + \alpha_2 \ln(\text{GDPpercap}_{i,t-2}) + \beta \ln(\text{MobPen}_{i,t}) + \delta \ln(3\text{GPen}_{i,t}) \\ + X'_{i,t} \Gamma + \eta_{i,t} + \varepsilon_{i,t} \end{aligned}$$

Where $X_{i,t}$ includes: $\ln\left(\frac{\text{GovExp}}{\text{GDP}}_{i,t}\right)$, $\ln\left(\frac{\text{Trade}}{\text{GDP}}_{i,t}\right)$, $\ln\left(\frac{\text{Investment}}{\text{GDP}}_{i,t}\right)$, $\ln(\text{Labour}_{i,t})$ and η_i is the county specific effect.

Note: Where i is the country and t is the year

To isolate the effect of the growth⁴³⁴ in 3G and 4G penetration, from 2011 to 2015 through substituting from standard 2G connections, the coefficients of interest are β and δ . These were estimated as 0.0651293 and 0.0150549 respectively. To assess the impact on GDP growth of mobile services for female subscribers, the model can be simplified to:

$$\ln(\text{GDPpercap}_{i,t}) = 0.065 \ln(\text{MobPen}_{i,t}) + 0.015 \ln(3\text{GPen}_{i,t} + 4\text{GPen}_{i,t})$$

Note: Where i is the country and t is the year

In order to estimate the specific impact of Telenor, rather than the mobile market as a whole, the following formula was used:

Telenor's contribution to GDP per capita growth =

$$\begin{aligned} [0.065 \ln(\text{FemaleMobPen}_{i,t}) \times \text{Telenor's contribution to FemaleMobPen}] \\ + [0.015 \ln(\text{Female3GPen}_{i,t} + \text{Female4GPen}_{i,t}) \\ \times (\text{Telenor's contribution to Female3GPen and Female4GPen})] \end{aligned}$$

⁴³³ Deloitte, 2012, What is the impact of mobile telephony on economic growth? A report for the GSM Association

⁴³⁴ To calculate growth rates for all variables the following formula was implemented: $\frac{\text{Variable}_{2015} - \text{Variable}_{2011}}{\text{Variable}_{2011}}$

Where:

$$\text{Female MobPen}_{i,t} = \frac{\text{Total number of female subscribers}_{i,t}}{\text{Total female population}_{i,t}} \times 100$$

Note: Where i is the country and t is the year

$$\text{Telenor's contribution to Female MobPen}_{i,t-n} = \frac{\text{Absolute change in Telenor Female MobPen}_{i,t-n}}{\text{Absolute change in Female MobPen}_{i,t-n}}$$

Note: Where i is the country and t is the year

$$\text{Female 3G Pen}_{i,t} + \text{Female 4G Pen}_{i,t} = \frac{\text{Total number of female 3G and 4G subscribers}_{i,t}}{\text{Total female population}_{i,t}} \times 100$$

Note: Where i is the country and t is the year

$$\begin{aligned} &\text{Telenor's female 3G subscribers}_{i,t} + \text{Telenor's female 4G subscribers}_{i,t} = \\ &\text{Number of Telenor female subscribers}_{i,t} \times \text{Proportion of 3(4)G subscribers}_{i,t} \end{aligned}$$

Note: Where i is the country and t is the year

$$\begin{aligned} &\text{Proportion of 3G subscribers}_{i,t} + \text{Proportion of 4G subscribers}_{i,t} = \\ &\frac{\text{Total number of 3G subscribers}_{i,t} + \text{Total number of 4G subscribers}_{i,t}}{\text{Total number of subscribers}_{i,t}} \end{aligned}$$

Note: Where i is the country and t is the year

$$\begin{aligned} &\text{Telenor's contribution to Female 3G Pen and Female 4G Pen}_{i,t-n} = \\ &\frac{\text{Absolute change in Telenor Female 3G Pen} + \text{Absolute change in Telenor Female 4G Pen}_{i,t-n}}{\text{Absolute change in Total Female 3G Pen} + \text{Absolute change in Total Female 4G Pen}_{i,t-n}} \end{aligned}$$

Note: Where i is the country and t is the year

Telenor's contribution to GDP

For each country the percentage change in GDP per capita was converted to a monetary GDP figure by using the following formula:

$$\begin{aligned} &\text{Monetary value of GDP per capita} = \\ &\text{Telenor's contribution to GDP per capita growth} \times \text{GDP}(\text{LCU}^{435})_{i,2011}^{436} \end{aligned}$$

Note: Where i is the country

To estimate the value of Telenor's contribution to GDP the following formula was used:

$$\begin{aligned} &\text{Value of Telenor's contribution to GDP} = \\ &\text{Monetary value of GDP per capita} \times \text{Female population}_{i,2015}^{437} \end{aligned}$$

Note: Where i is the country

Approach to estimating the impacts of Telenor's Supply Chain Sustainability policy

The supply chain sustainability KPI measures the total number of employees whose companies are signed up to and following Telenor's supply chain sustainability policy and benefit from the high standards of labour rights and working conditions this upholds.

⁴³⁵ LCU stands for Local Currency Unit

⁴³⁶ GDP for 2014 was used as the formula measure the growth of GDP per capita and therefore the value is the growth in GDP between 2014 and 2015

⁴³⁷ Population for 2015 was used to calculate the value contribution to GDP. The GDP contribution measures the change in mobile penetration between 2014 and 2015, therefore the per capita GDP is for 2015 and the population figures are also for 2015.

The methodology outlined below provides an estimate of the number of employees whose companies have signed up to an Agreement of Responsible Business Conduct (ABC) and who benefit from conditions which meet Telenor's supply chain sustainability policy.

Using data on companies inspected and the estimated average employee size of a supplier company, an estimate of the total number of employees whose companies have signed up to an ABC is estimated for each market by applying the following formula:

$$\begin{aligned} \text{Total number of employees of companies who have signed an ABC} = & \\ \text{Total number of people employed by inspected companies} & \\ + (\text{Total number of companies who have signed an ABC} & \\ - \text{Total number of companies inspected}) \times \text{Average employee size} & \end{aligned}$$

For Bangladesh, Bulgaria, Hungary, Malaysia, Montenegro, Myanmar and Serbia, where relevant data on the market's supply chain were available, average employees per supplier was estimated as:

$$\text{Average employees per supplier} = \frac{\text{Total employees of companies in the market's supply chain}}{\text{Total number of companies in the market's supply chain}}$$

For Denmark, India, Norway, Pakistan, Sweden and Thailand wider supply chain data were not available. Average employees per supplier is therefore estimated as the average employees per supplier of markets in the region where the data available has allowed for the calculation above.

The average employees per supplier in Denmark, Norway and Sweden is estimated as the average employees per supplier of Telenor markets in Europe where data were available (Bulgaria, Hungary, Montenegro and Serbia).

The average employees per supplier in India, Pakistan and Thailand is estimated as the average employees per supplier for Telenor Markets in Asia where data were available (Bangladesh, Malaysia and Myanmar).

The exception to this is Montenegro where data on the number of employees employed by inspected companies is unavailable. In this instance the following calculation is used:

$$\begin{aligned} \text{Total number of employees whose companies are signed up to and in compliance with an ABC} & \\ = \text{Total number of employees of companies who have signed an ABC} \times \text{Compliance rate} & \end{aligned}$$

Where:

$$\begin{aligned} \text{Total number of employees of companies who have signed an ABC} & \\ = \text{Number of companies who have signed an ABC} \times \text{Average employees per supplier} & \end{aligned}$$

$$\text{Compliance rate} = 1 - \frac{\text{Major noncompliant findings}}{\text{Total number of inspections}}$$

Table of sources

Data	Country	Source	Year
Revenues	All 13 Telenor markets	Telenor internal data	2015
Cost of bought in goods and services	All 13 Telenor markets	Telenor internal data	2015
Sector specific Type I GVA multiplier	Bangladesh, Bulgaria, India, Myanmar, Montenegro, Pakistan, Serbia, Thailand	KPMG analysis of Eora ⁶ input output tables	2012
Sector specific Type I GVA multiplier	Sweden	KPMG analysis of Statistics Sweden input output tables	2012
Sector specific Type I GVA multiplier	Malaysia	KPMG analysis of Department of Statistics Malaysia input output table	2013
Sector specific Type I GVA multiplier	Denmark	KPMG analysis of Statistics Denmark input output table	2010
Sector specific Type I GVA multiplier	Norway	KPMG analysis of Statistics Norway input output table	2012
Sector specific Type I GVA multiplier	Hungary	KPMG analysis of Hungarian Central Statistical Office input output table	2013
Spending with suppliers	All 13 Telenor markets	Telenor internal data	2015
Sector average GVA as a proportion of output	Bangladesh, Bulgaria, India, Myanmar, Montenegro, Pakistan, Serbia, Thailand	KPMG analysis of Eora ⁴³⁸ input output tables	2012
Sector average GVA as a proportion of output	Sweden	KPMG analysis of Statistics Sweden input output tables	2012
Sector average GVA as a proportion of output	Malaysia	KPMG analysis of Department of Statistics Malaysia input output table	2013
Sector average GVA as a proportion of output	Denmark	KPMG analysis of Statistics Denmark input output table	2010
Sector average GVA as a proportion of output	Norway	KPMG analysis of Statistics Norway input output table	2012
Sector average GVA as a proportion of output	Hungary	KPMG analysis of Hungarian Central Statistical Office input output table	2013
Sector specific Type II GVA multiplier	Bangladesh, Bulgaria, India, Myanmar,	KPMG analysis of Eora ⁴³⁹ input output tables	2012

⁴³⁸ Lenzen, M., Kanemoto, K., Moran, D., Geschke, A. Mapping the Structure of the World Economy (2012). Env. Sci. Tech. 46(15) pp 8374-8381. [DOI:10.1021/es300171x](https://doi.org/10.1021/es300171x)

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⁴³⁹ Lenzen, M., Kanemoto, K., Moran, D., Geschke, A. Mapping the Structure of the World Economy (2012). Env. Sci. Tech. 46(15) pp 8374-8381. [DOI:10.1021/es300171x](https://doi.org/10.1021/es300171x)

	Montenegro, Pakistan, Serbia, Thailand		
Sector specific Type II GVA multiplier	Sweden	KPMG analysis of Statistics Sweden input output tables	2012
Sector specific Type II GVA multiplier	Malaysia	KPMG analysis of Department of Statistics Malaysia input output table	2013
Sector specific Type II GVA multiplier	Denmark	KPMG analysis of Statistics Denmark input output table	2010
Sector specific Type II GVA multiplier	Norway	KPMG analysis of Statistics Norway input output table	2012
Sector specific Type II GVA multiplier	Hungary	KPMG analysis of Hungarian Central Statistical Office input output table	2013
Telenor payroll costs	All 13 Telenor markets	Telenor internal data	2015
Telenor FTE employees	All 13 Telenor markets	Telenor internal data	2015
Sector specific Type I employment multiplier	Bangladesh, Bulgaria, India, Myanmar, Montenegro, Pakistan, Serbia, Thailand	KPMG analysis of Eora ⁴⁴⁰ input output tables	2012
Sector specific Type I employment multiplier	Sweden	KPMG analysis of Statistics Sweden input output tables	2012
Sector specific Type I employment multiplier	Malaysia	KPMG analysis of Department of Statistics Malaysia input output table	2013
Sector specific Type I employment multiplier	Denmark	KPMG analysis of Statistics Denmark input output table	2010
Sector specific Type I employment multiplier	Norway	KPMG analysis of Statistics Norway input output table	2012
Sector specific Type I employment multiplier	Hungary	KPMG analysis of Hungarian Central Statistical Office input output table	2013
Tier 1 supplier GVA	All 13 Telenor markets	KPMG analysis (details set out above)	2015
Sector average GVA per employee	Bangladesh, Bulgaria, India, Myanmar, Montenegro, Pakistan, Serbia, Thailand	KPMG analysis of Eora ⁴⁴¹ input output tables	2012
Sector average GVA per employee	Sweden	KPMG analysis of Department of Statistics Malaysia input output table	2012

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⁴⁴⁰ Lenzen, M., Kanemoto, K., Moran, D., Geschke, A. Mapping the Structure of the World Economy (2012). Env. Sci. Tech. 46(15) pp 8374-8381. [DOI:10.1021/es300171x](https://doi.org/10.1021/es300171x)

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⁴⁴¹ Lenzen, M., Kanemoto, K., Moran, D., Geschke, A. Mapping the Structure of the World Economy (2012). Env. Sci. Tech. 46(15) pp 8374-8381. [DOI:10.1021/es300171x](https://doi.org/10.1021/es300171x)

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Sector average GVA per employee	Malaysia	KPMG analysis of Statistics Denmark input output table	2013
Sector average GVA per employee	Denmark	KPMG analysis of Statistics Norway input output table	2010
Sector average GVA per employee	Norway	KPMG analysis of Hungarian Central Statistical Office input output table	2012
Sector average GVA per employee	Hungary	KPMG analysis of Statistics Sweden input output tables	2013
Sector specific Type II employment multiplier	Bangladesh, Bulgaria, India, Myanmar, Montenegro, Pakistan, Serbia, Thailand	KPMG analysis of Eora ⁴⁴² input output tables	2012
Sector specific Type II employment multiplier	Sweden	KPMG analysis of Statistics Sweden input output tables	2012
Sector specific Type II employment multiplier	Malaysia	KPMG analysis of Department of Statistics Malaysia input output table	2013
Sector specific Type II employment multiplier	Denmark	KPMG analysis of Statistics Denmark input output table	2010
Sector specific Type II employment multiplier	Norway	KPMG analysis of Statistics Norway input output table	2012
Sector specific Type II employment multiplier	Hungary	KPMG analysis of Hungarian Central Statistical Office input output table	2013
Telenor capex	All 13 Telenor markets	Telenor internal data	2011 - 2015
Telenor direct GVA	All 13 Telenor markets	KPMG analysis	2015
Gross Fixed Capital Formation	Bangladesh, Bulgaria, Denmark, Montenegro, Norway, Pakistan, Serbia, Sweden	World Bank	2015
Gross Fixed Capital Formation	Hungary, India, Malaysia, Thailand	World Bank	2014
National GVA	Bangladesh, Bulgaria, Denmark, Montenegro, Norway, Pakistan, Serbia, Sweden	World Bank	2015
National GVA	Hungary, India, Thailand	World Bank	2014
Percentage of GDP spent on fixed capital	Myanmar	CIA Factbook	2015
GDP	Malaysia	World Bank	2014

⁴⁴² Lenzen, M., Kanemoto, K., Moran, D., Geschke, A. Mapping the Structure of the World Economy (2012). Env. Sci. Tech. 46(15) pp 8374-8381. [DOI:10.1021/es300171x](https://doi.org/10.1021/es300171x)
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Direct tax payments	All 13 Telenor markets	Telenor internal data	2014
Indirect GVA	All 13 Telenor markets	KPMG analysis of Telenor internal data	2015
Induced GVA	All 13 Telenor markets	KPMG analysis of Telenor internal data	2015
National average tax as a % of GDP	All 13 Telenor markets	CIA Factbook	2015
Telenor total payroll costs	All 13 Telenor markets	Telenor internal data	2015
Income tax rates	All 13 Telenor markets	KPMG Individual income tax rates table	2015
Employee social security tax rates	All 13 Telenor markets	KPMG Employee Social Security Tax rates table	2015
Telenor indirect employees	All 13 Telenor markets	KPMG analysis	2015
Country average wage	Bulgaria, Hungary, India, Malaysia, Montenegro, Norway, Pakistan, Serbia, Sweden Thailand	International Labour Organisation (ILO)	2012-2015
Country average wage	Denmark	OECD	2015
Country average wage	Bangladesh	Labour Force Survey 2013	2013
Country average wage	Myanmar	KPMG calculation, average of Bangladesh, India and Pakistan	
Telenor induced employees	All 13 Telenor markets	KPMG analysis	2015
Total number of subscribers	All 13 Telenor markets	GSMA Intelligence	2011 – 2015
Total population	All 13 Telenor markets	World Bank	2011 – 2015
Number of Telenor subscribers	All 13 Telenor markets	Telenor internal data	2011 – 2015
Total number of 3G and 4G subscribers	All 13 Telenor markets	GSMA Intelligence	2011 – 2015
GDP	All 13 Telenor markets	World Bank	2011 – 2015
Data on Telenor's mobile money services	Bangladesh, Malaysia, Pakistan, Serbia and Thailand	Telenor internal data	2015
Number of Telenor subscribers	All 13 Telenor markets	Telenor internal data	2015
Number of unique subscribers	All 13 Telenor markets	GSMA Intelligence	2015

Proportion of subscribers using mobile to make financial transactions	All 13 Telenor markets	The World Bank Financial Index (Findex) data	2015
Average value of mobile money transactions per subscriber	Bangladesh, Malaysia, Myanmar, Norway and Pakistan	IMF Financial Access Survey (FAS)	2015
Average value of mobile money transactions per subscriber	Bulgaria, Denmark, Hungary, India, Montenegro, Serbia, Sweden and Thailand	Statista, IMF and KPMG analysis	2015
Percentage of Telenor mobile subscribers who are female	All 13 Telenor markets	Telenor internal data	2011 – 2015
Percentage of Telenor mobile subscribers who use 3G and 4G	All 13 Telenor markets	Telenor internal data	2011 – 2015
Population	All 13 Telenor markets	World Bank	2011 – 2015
Percentage of population who are female	All 13 Telenor markets	World Bank	2011 – 2015
GDP per capita	All 13 Telenor markets	World Bank	2011 - 2014
Mobile penetration	All 13 Telenor markets	KPMG analysis	2011 – 2015
Telenor contribution to mobile penetration	All 13 Telenor markets	KPMG analysis	2011 - 2015
Monitoring data including number of inspections, findings, number of companies inspected and total employment by these companies	All 13 Telenor market	Telenor internal data	2015
Supply chain data including suppliers and their employment level	All 13 Telenor market	Telenor internal data	2015

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