# COMMUNICATIONS MARKET OPPORTUNITIES IN KIRIBATI

September 2015

## Foreword

The Communications Commission of Kiribati (CCK) is publishing this *Communications Market Opportunities in Kiribati* in order to draw investors' attention to the business opportunities offered by our country. Although Kiribati is one of the World's most isolated nations with relatively low income levels, there are real commercial opportunities in the communications sector. Demand for services from businesses, the Government, international organisations and the public is unmet and growing fast. Penetration of mobile services is only about 17% and Internet usage is low due to limited access points and the high costs of service.

Physically, much of the market is not challenging to address as about 65,000 people live on or within microwave link distance of Kiribati's economic centre, South Tarawa. As these pages show, even our more remote islands offer feasible business opportunities.

The CCK has developed its regulatory framework to make it easy to understand, in line with international best practices and to facilitate market entry. Our licencing framework allows investors to choose where they will invest, the services they want to provide, and what technology they want to use. They are not obligated to build networks in areas they prefer not to cover, and the greater the population they cover with public mobile communications services, the lower the licence fee that will apply. The solution under consideration for reaching Outer Islands that are uneconomic to serve is a public private partnership with the telecom operators, supported by public investment.

Whether you are an international telecom operator or a local Kiribati family business looking to get into the telecommunications business, we invite you to consider the investment opportunities presented here and to find your home in our growing market.

This booklet is the product of work funded with the assistance of the World Bank. We thank the World Bank, which has supported and guided Kiribati as we introduced the Communications Act 2012, set up the CCK, and began issuing licences and rules.

This booklet is not a business plan. It does not promise that an investor will succeed. The CCK does not guarantee the business opportunities it describes. Interested investors will need to do their own due diligence to assess these. However, we hope that this booklet encourages the investment community both here and abroad to consider business opportunities in our communications sector.

Tangitang Kaureata, Chairman, CCK

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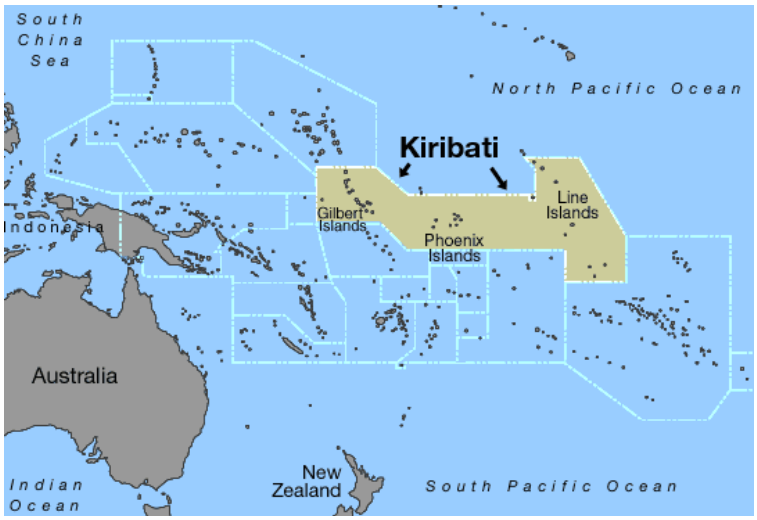
# INTRODUCTION

## A concentrated and underserved market

Kiribati (pronounced "Kiribas") is a country of over 100,000 inhabitants located in the central Pacific Ocean, about 2,500 km east of Papua New Guinea and 4,000km southwest of Hawaii.

*Figure 1 Kiribati's location*

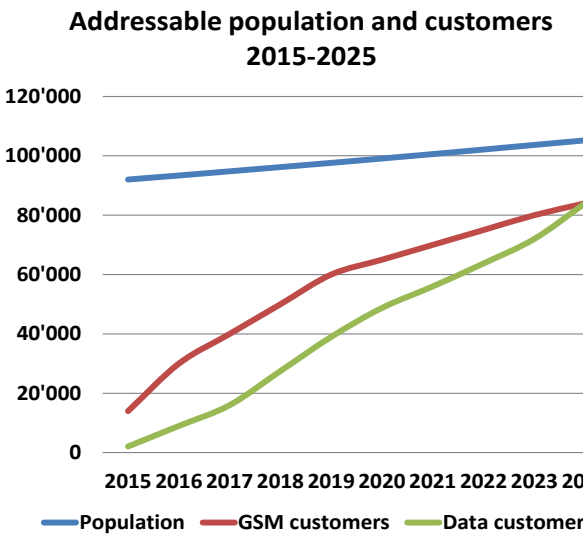



Kiribati's population is relatively concentrated, with about 65,000 people (65%) of the population living on the largest island or on three islands within microwave link distance from it.

Until recently, State-held Telecom Services of Kiribati Limited (TSKL) was the incumbent operator in Kiribati. In May 2015, Amalgamated Telecoms Holdings Kiribati Limited (ATHKL), which is owned by Amalgamated Telecoms Holdings (ATH) of Fiji, took over TSKL's business and acquired its assets on the islands of South Tarawa, Betio and Kiritimati for a purchase price of AUD 7.2 million. ATHKL is also operating assets that TSKL retained on the Outer Islands. (See "*Privatisation and the Outer Islands*" on page 32.)

Kiribati's telecom market is very underserved, having very low penetration and high prices in all markets. According to the most recently available information, Kiribati has less than 10,000 GSM mobile subscribers and (separately) about 8,000 3G subscribers, representing a penetration rate of mobile services of about 17%. The number of fixed line subscribers as a percentage of population was 6.5%. The percentage of Internet users was estimated at 12%.

*Figure 2 Projected growth with competitive investment*




These are extremely low rates and represent a real and immediate market opportunity for competitive providers to a severely underserved country. Countries with similar levels of gross national income (GNI) per capita have mobile penetration of at least 55%

and many with lower GNI per capita than Kiribati have mobile penetration rates exceeding 100%. The level of mobile subscriptions is compared to other countries in Figure 4, and Internet usage is shown in Figure 5. Kiribati's low levels are not explainable by its location or population spread – as noted above, it actually has a substantial concentrated population. The explanation is in the historical and current management of network and services, limited and expensive international connectivity, and lack of competition.

*Figure 3 GDP and GNI per capita*

| | |
|---|---|
| GDP per capita | USD 1,670 |
| GNI per capita | USD 2,280 |

*Source: IMF 2014 Staff Report*

There is also clear behavioural evidence of strong unmet demand for telecom services. For example, many customers have in the past bypassed TSKL's international capacity and Internet service to acquire their own satellite earth stations and subscribe to relatively expensive services from satellite service provider Speedcast. Since liberalisation began, there has also been some significant local innovation in providing wireless ISP services.

## Limited competition

Kiribati and its economy is described more below under "*OVERVIEW OF KIRIBATI*" on page 10. The Kiribati market clearly has potential for substantial profit. For instance, historically free of competition, TSKL (ATHKL's predecessor) enjoyed a 37% EBITDA in 2013. More information about TSKL and ATHKL is provided under "*THE TELECOMMUNICATIONS MARKET*" on page 32.

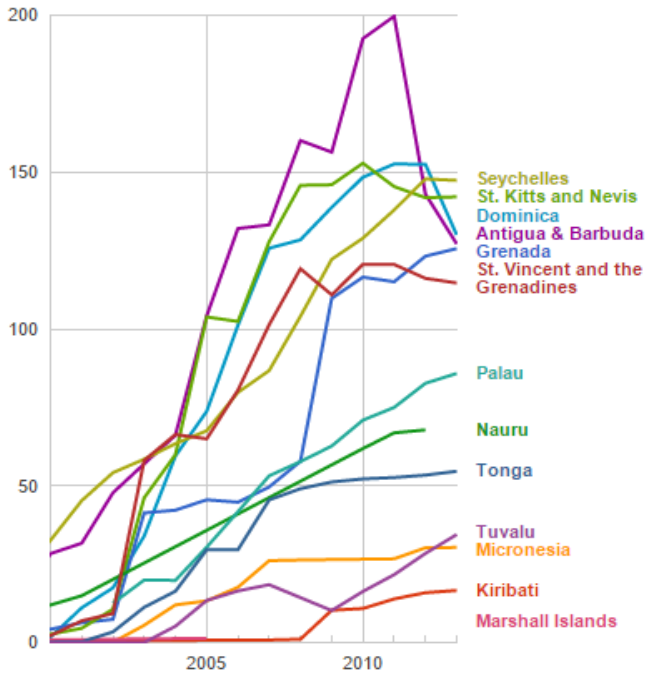
There are a few wireless ISPs in the market providing services to businesses, hotels and through Internet cafés. None has yet achieved a substantial distribution network or penetration of services.

## International connectivity

Kiribati does not currently have access to a submarine cable. It uses geostationary satellite for international (and inter-island) connectivity. The high prices for and latency of these services has held back development of the telecom market. As mentioned above, Speedcast currently provides international satellite connectivity to ATHKL as well as directly to many high-end customers who have resorted to acquiring their own VSAT earth stations.

The HANTRU-1 submarine cable to Guam has an

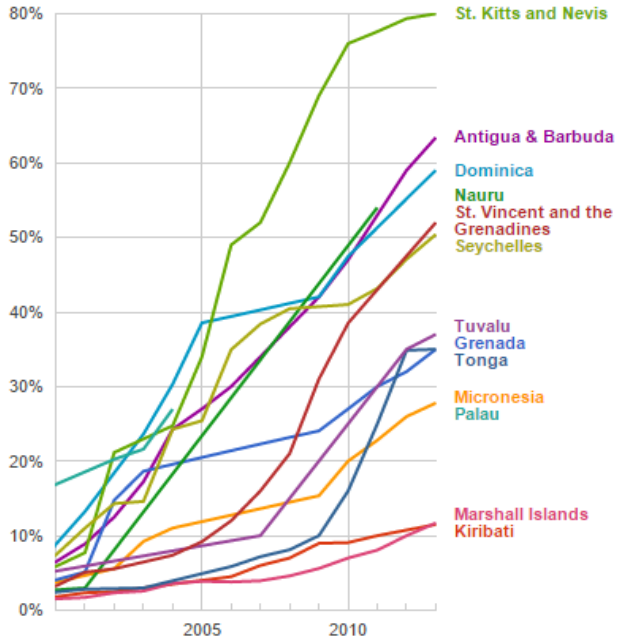
*Figure 4 Mobile subscriptions per 100 inhabitants*




*Source: ITU http://www.itu.int/net4/itu-d/icteye/*

extension to a landing point on Majuro in the Marshall Islands, 666 km northwest of Kiribati's most populated island, Tarawa. The World Bank is currently studying the cost of connecting Kiribati to a submarine cable. (See "*International access alternatives*" on page 42.)

*Figure 5 Percentage of individuals using the Internet*




*Source: ITU http://www.itu.int/net4/itu-d/icteye/*

## Simple and low cost licensing

Kiribati's telecom regulatory regime is simple and easy to navigate, with licences available on application at low prices. Telecom sector liberalisation began with World Bank support for the enactment of the Communications Act 2012 and establishment in 2013 of the Communications Commission of Kiribati (CCK), an independent sector regulator. The CCK is an autonomous statutory body, having a Board of 5 and 13 employees. It has issued rules for licensing, type approval, radio communications, numbering and universal access and is currently preparing rules on interconnection and access, and consumer protection. It also issued a Spectrum Plan, largely based on the Australian Plan, in 2014. The CCK's rules and consultation processes are available on its website. The CCK's contact details are provided at the end of this booklet.

The Act provides for licensing of new entrants, requirements for interconnection and access, prohibitions on anticompetitive practices, procedures for resolution of inter-operator disputes, and other matters that customarily arise in a competitive market. The regulatory regime is light. Licences are readily available at low prices and with minimum administrative requirements.

Radio spectrum is available in all bands, including the 700MHz, 900MHz, 1800MHz, 1900MHz, 2.1 GHz and 2.5 GHz bands.

Licenses for communications networks and services are only 1.5% of annual gross revenues, except for cellular mobile services which range from 3% to 1% of annual gross revenues depending on network coverage.

*Figure 6 Road rehabilitation project.*

## Market oriented regulation

Licences include an incentive to extend coverage as described above but do not include an obligation to do so. Instead, the

applied policy is to allow the market to show what is commercially feasible through competition and to fund areas that the market does not willingly reach through a subsidy mechanism.

*Figure 7 Shopping mall under construction*

The Government is considering establishing a public private partnership (PPP) with the country's telecom operators for coverage of Outer Islands that would otherwise be uneconomic to serve, and expects to make public investment available for infrastructure for such purpose. The new licensee along with other licensees will be expected to participate in negotiations with the Government regarding the establishment of such a PPP.

Further information on the regulatory environment is provided under "*TELECOMMUNICATIONS REGULATION*" starting on page 25.

# OVERVIEW OF KIRIBATI

## Political system

Kiribati is a peaceful democracy. It is a sovereign country, member of the United Nations and republic within the Commonwealth of Nations (also known as the British Commonwealth). It became independent from Great Britain in 1979.

*Figure 8 Kiribati Parliament House, Tarawa*

The executive branch consists of a President (the Beretitenti), the Vice-president and a Cabinet. The President is also Prime Minister and chief of the cabinet and must be a Member of Parliament. The Constitution requires that the President be nominated from the elected legislators, and limits the holder of the office to three four-year terms. The cabinet is composed of the President and Vice-president, the Attorney General and 11 ministers (appointed by the President) who are members of the legislature.

The legislative branch consists of a unicameral parliament or House of Assembly (Maneaba Ni Maungatabu). It has 46 seats with 44 members elected by popular vote, 1 ex-officio member (the attorney general), and 1 nominated by the Rabi Council of Leaders representing Banaba Island (former Ocean island). The House of Assembly is located on the island of Tarawa.

Legislators serve a four-year term and elections will be held in the coming months. The Assembly nominates the presidential candidates from among its members following elections for the legislature. The legislature is required to put forward not less than three and no more than four candidates for president. The President is the elected by popular

vote for a four-year term. Presidential elections were held on 13 January 2012 (next to be held in 2016); the Vice-president is appointed by the President.

The judicial branch is described further below under "*The legal system*" on page 24.

*Figure 9 Tuna catch in Kiribati's waters*

*After PNG, Kiribati waters are the world's largest source of Tuna*

Local government is administered through the Island Councils with elected members. Island Councils are relatively autonomous from central government controls. Each inhabited island has its own council. Usually businesses require licences from local Island Councils, but the Communications Act exempts telecom operators from this requirement.

## Geography

### Location and physical features

Kiribati is part of the division of the Pacific islands that is known as Micronesia. It consists of 33 coral islands divided among three island groups: the Gilbert Islands, the Phoenix Islands, and the Line Islands.

The capital of Kiribati is Tarawa, an atoll in the Gilbert Islands. Bairiki, an islet of Tarawa, serves as an administrative centre.

Kiribati has a total land area of 811 square kilometres$^2$ (313 square miles). Almost all of the islands are atolls, i.e., ring-shaped islands with central lagoons. The islands extend about 3,900 km (about 2,400 miles) from east to west. From north to south they extend about 2,100 km (about 1,300 miles), straddling the equator. Kiritimati (also called Christmas Island), one of the Line Islands, occupies 609 km$^2$ (235 square miles) and has the largest land area of any atoll in the world. Kiribati's exclusive economic zone (area of the ocean in which it controls fishing and other rights) covers more than 3 million square km (more than 1 million square miles).

*Figure 10 Air Kiribati*

Kiribati's topology is very flat. Most of the atolls are barely more than six metres above sea level and surrounded by barrier reefs creating picturesque lagoons for fishing, snorkelling, scuba diving, swimming and other water sports. A recent expert survey

suggested that sea levels may rise about a metre by 2100[1] and some predict the land becoming uninhabitable half a century from now. For present purposes, however, Kiribati's flat topology presents an opportunity because of the minimal physical challenges to line of site backhaul networks.

*Figure 11 The Gilbert, Phoenix and Line groups of islands*

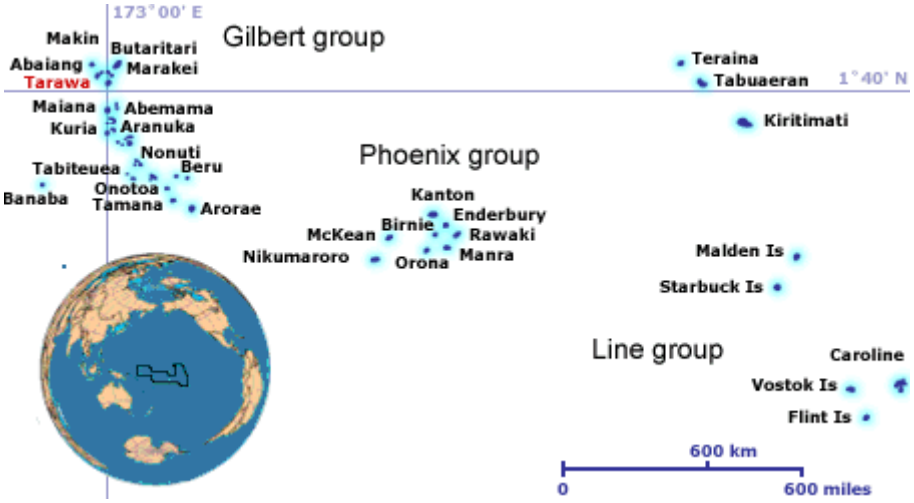
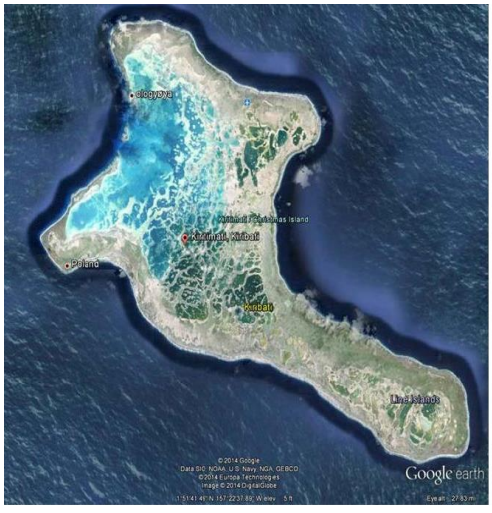



*Figure 12 North Tarawa, South Tarawa and Betio*


*Figure 13 Kiritimati, also known as Christmas Island*

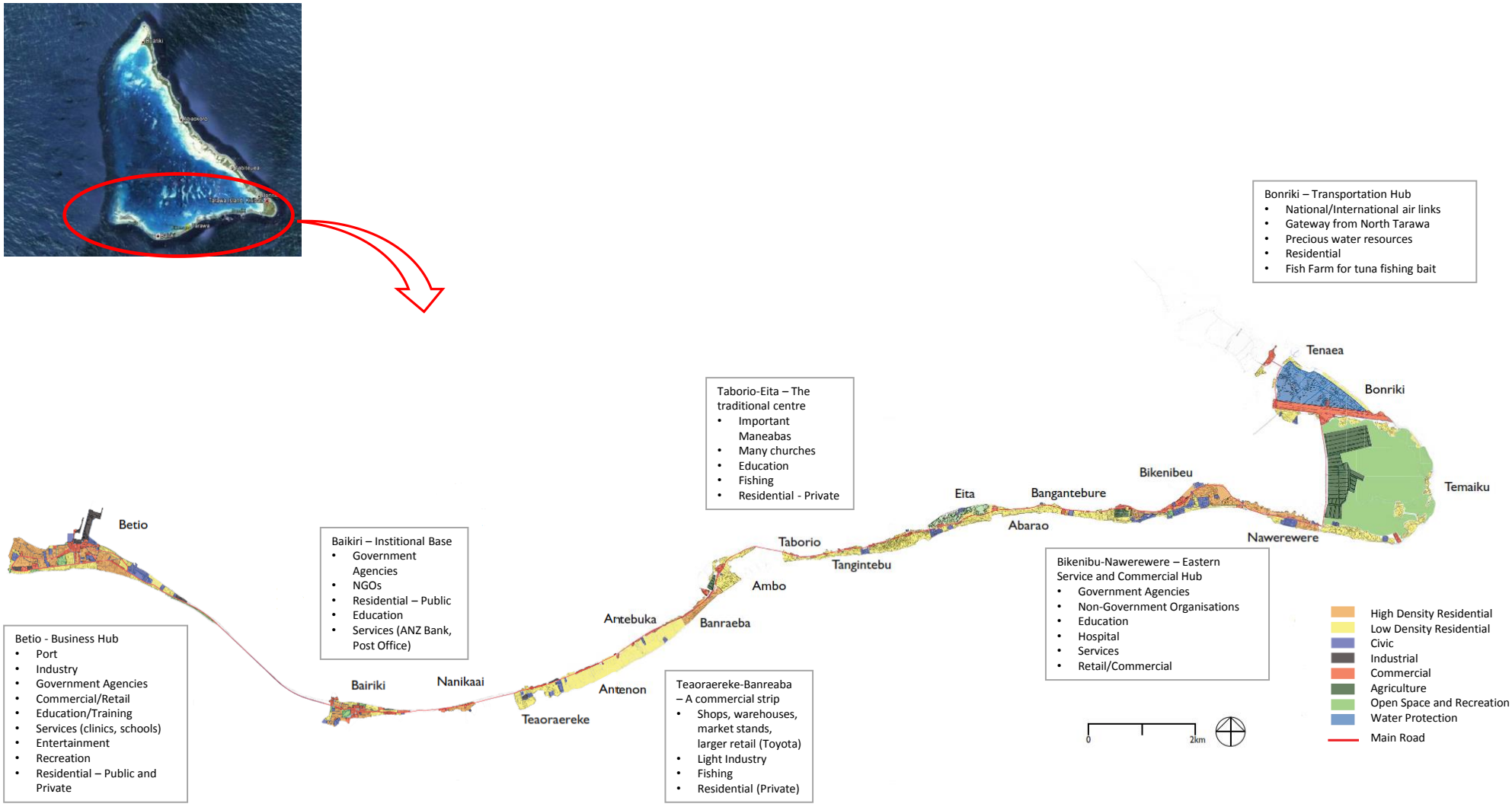



## Time zone

Kiribati is 12 hours ahead of GMT - 2 hours ahead of Tokyo and 22 hours ahead of Honolulu (on the other side of the international dateline).

[1] *Expert assessment of sea-level rise by AD 2100 and AD 2300*, Benjamin P. Horton, Stefan Rahmstorf, Simon E. Engelhart and Andrew C. Kemp.

*Figure 14 South Tarawa and Betio*




*Source: General Land Use Plan, prepared by Andrew Bishop, Issana Burhan, Tamara Lowen, Zhu Minjie Snow, Melbourne School of Design*

### Climate

The climate varies from maritime equatorial (central islands) to tropical in the north and south. There is little temperature variation: from an average 29°C in the southern Gilberts to 27°C in the Line Islands, dropping by less than 1°C in the coolest months. Humidity is constant at 70–90 per cent. From November to April, there are occasional heavy rains, and strong to gale force winds, though Kiribati is outside the cyclone belt. Rainfall patterns vary considerably from year to year. Kiribati does not suffer regular hurricanes, cyclones or extreme weather events.

## Population

### Geographically concentrated, young population

The census of 2010 counted 103,058 inhabitants. Over 90% of the people inhabit the Gilbert Islands. Of these, the physically connected islands of Betio and North and South Tarawa are home to over 55,000 (about 54%) of the country's population and the country's main political and commercial hub. This high concentration of the country's population and wealth resides largely on a thin 30km strip running along a road from the airport to the sea port at sea level with numerous businesses, shops, government offices, international organisation offices hotels, restaurants and other potential customers along the way. Urbanisation of the population is estimated at 43.9% (2011).[2]

*Figure 15 The highest point on South Tarawa*


Within short, medium and long-haul microwave hop distance from Tarawa are another 10,000 people: Abaiang with more than another 5,500 people is about 10km from the tip of North Tarawa; Maiana is home to another 1,800 and about 40km from Betio; and Marakei has a population of over 2,800 about 70km away from Tarawa. (See Table 1.)

Of the 33 islands of Kiribati, 21 are inhabited. Only one of the islands in Phoenix Group (Kanton Island) is inhabited and three of the Line Islands are permanently inhabited.[3]

[2] CIA World Factbook

[3] Five of the Line Islands are uninhabited (Malden Island, Starbuck Island, Caroline Island, Vostok Island and Flint Island). The Phoenix Islands are uninhabited except for Kanton. Banaba itself is sparsely inhabited now.

*Table 1 Population Census Results 2010, population per Islands and main Towns*

| | Total | | | Living in households | | | Living in institutions | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | Male | Female | Total | Male | Female | Total | Male | Female |
| Total | 103,058 | 50,796 | 52,262 | 99,960 | 49,182 | 50,778 | 3,098 | 1,614 | 1,484 |
| Banaba | 295 | 155 | 140 | 295 | 155 | 140 | - | - | - |
| Makin | 1,798 | 912 | 886 | 1,798 | 912 | 886 | - | - | - |
| Butaritari | 4,346 | 2,248 | 2,098 | 3,546 | 1,765 | 1,781 | 800 | 483 | 317 |
| Marakei | 2,872 | 1,420 | 1,452 | 2,856 | 1,412 | 1,444 | 16 | 8 | 8 |
| Abaiang | 5,502 | 2,745 | 2,757 | 5,330 | 2,668 | 2,662 | 172 | 77 | 95 |
| NTarawa | 6,102 | 3,048 | 3,054 | 5,927 | 2,984 | 2,943 | 175 | 64 | 111 |
| STarawa | 34,427 | 16,575 | 17,852 | 33,680 | 16,197 | 17,483 | 747 | 378 | 369 |
| Betio | 15,755 | 7,658 | 8,097 | 15,570 | 7,488 | 8,082 | 185 | 170 | 15 |
| Maiana | 2,027 | 1,001 | 1,026 | 2,016 | 998 | 1,018 | 11 | 3 | 8 |
| Abemama | 3,213 | 1,569 | 1,644 | 2,826 | 1,429 | 1,397 | 387 | 140 | 247 |
| Kuria | 980 | 508 | 472 | 980 | 508 | 472 | - | - | - |
| Aranuka | 1,057 | 519 | 538 | 1,057 | 519 | 538 | - | - | - |
| Nonouti | 2,683 | 1,340 | 1,343 | 2,549 | 1,270 | 1,279 | 134 | 70 | 64 |
| NTabiteuea | 3,689 | 1,758 | 1,931 | 3,573 | 1,743 | 1,830 | 116 | 15 | 101 |
| STabiteuea | 1,290 | 666 | 624 | 1,290 | 666 | 624 | - | - | - |
| Beru | 2,099 | 1,058 | 1,041 | 1,991 | 1,003 | 988 | 108 | 55 | 53 |
| Nikunau | 1,907 | 993 | 914 | 1,858 | 951 | 907 | 49 | 42 | 7 |
| Onotoa | 1,519 | 753 | 766 | 1,519 | 753 | 766 | - | - | - |
| Tamana | 951 | 459 | 492 | 951 | 459 | 492 | - | - | - |
| Arorae | 1,279 | 631 | 648 | 1,261 | 624 | 637 | 18 | 7 | 11 |
| Teeraina | 1,690 | 907 | 783 | 1,690 | 907 | 783 | - | - | - |
| Tabuaeran | 1,960 | 1,002 | 958 | 1,943 | 994 | 949 | 17 | 8 | 9 |
| Kiritimati | 5,586 | 2,854 | 2,732 | 5,423 | 2,760 | 2,663 | 163 | 94 | 69 |
| Kanton | 31 | 17 | 14 | 31 | 17 | 14 | - | - | - |

Between 1995 and 2000, there was significant migration of people from the Outer Islands to South Tarawa, resulting in an urban growth rate of 5.2%, compared with a national growth rate of 1.7%.[4] This has resulted in the particularly dense population in South Tarawa. From 2000 to 2010, North Tarawa's population growth rate was 4.8% and Kiritimati Island's 8%.

*Figure 16 Population growth in Kiribati and South Tarawa Island*

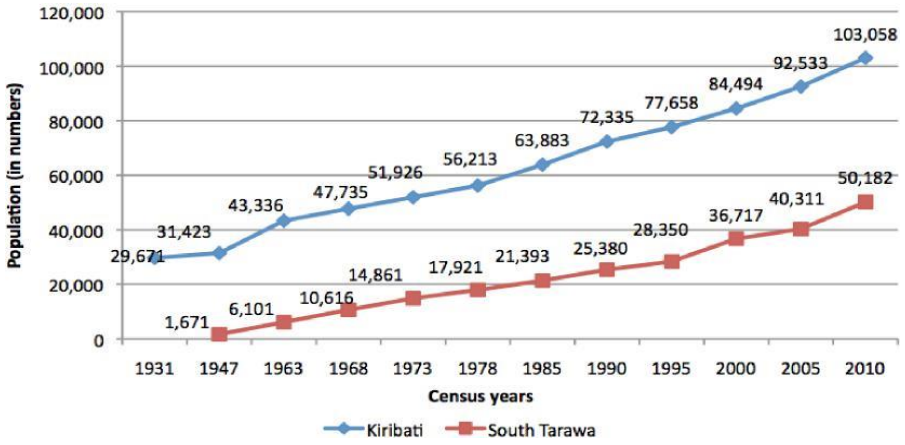
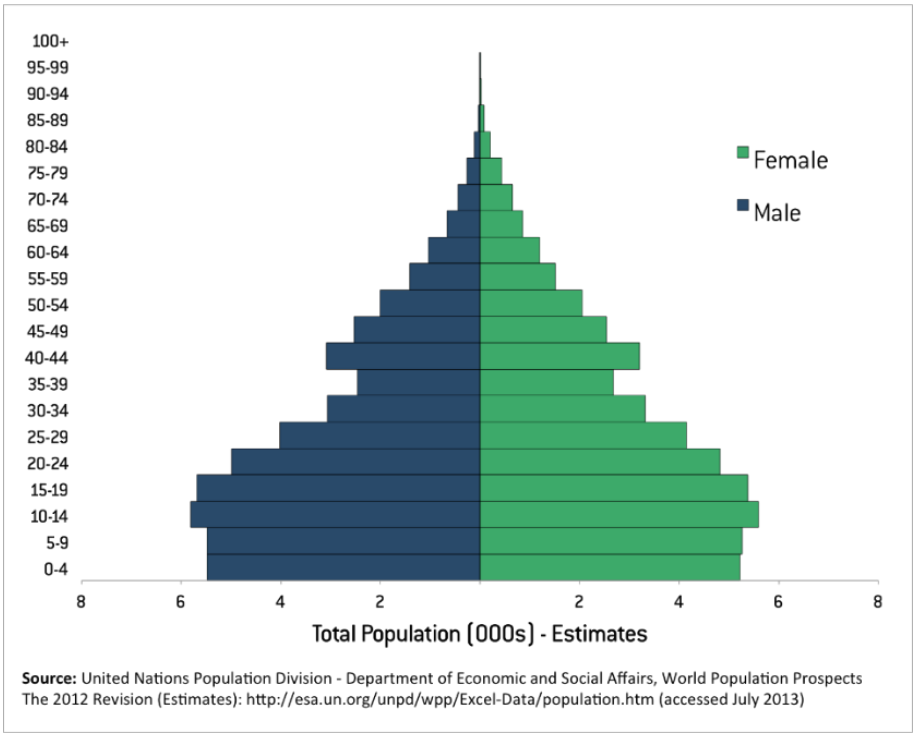



Figure 17 illustrates the breakdown of population by age and gender. It is a young country, with a growing customer base and demand for telecom services.

[4] Kiribati 2010 Census – Volume 2: Analytical Report, Secretariat of the Pacific Community, 2012

*Figure 17 Population breakdown by age and gender*




*Source: United Nations - Department of Economic and Social Affairs - Population Division. See http://www.un.org/en/development/desa/population/*

### Language, ethnicity and religion

English is the official language and Kiribati is the national language. Ethnically, the people of Kiribati (I-Kiribati) are Micronesians. The original inhabitants settled in the islands some thousands of years ago. Around the 14th century, Fijians, Samoans, and Tongans invaded the islands diversifying the ethnic range and introducing Polynesian linguistic traits. Intermarriage among all groups, has led to a population reasonably homogeneous in appearance and traditions.

## Economy

### Overview

A substantial part of the economy comprises revenue from the sale of fishing licenses, remittances from abroad, and income from a residual mining trust fund.[5] Fishing license fees account for 34 percent of GDP or 64 percent of government revenue excluding grants from abroad.

Kiribati has one of the largest exclusive economic zones (EEZ) in the world. The country has one of the most productive tuna fisheries, with over 250,000 tonnes of tuna caught annually. It is the world's second largest provider of tuna after Papua New Guinea.

[5] The Revenue Equalization Reserve Fund (RERF) is a sovereign wealth fund established in 1956 and capitalized using phosphate mining proceeds before phosphate deposits were exhausted in 1979. It is one of the main sources of fiscal income and budget financing for Kiribati.

## IMF STAFF REPORT 2014

Key reforms to public financial management, tax systems, SOEs and the private sector are ongoing, in line with IMF advice. Significant progress has been made in SOE reform and work is underway to implement the recently approved fisheries policy, and improve cash and debt management. Based on this reform progress, the World Bank has provided budget support for 2014 and further donor budget support is envisaged based on the continued progress of the reform agenda. The reforms are consistent with the IMF advice provided. The IMF has been actively involved in all relevant aspects of the government-led reform program in coordination with the World Bank, AsDB, AusAid and other development partners. Although the formal financial sector lending remains limited, household and private business credit has risen briskly, as reliance of public sector on commercial borrowing was reduced.

IMF Kiribati Staff Report for the 2014 Article IV Consultation. Available at http://www.imf.org/external/pubs/ft/scr/2014/cr14138.pdf

External grants play a very important part in the economy and account for 48 percent of GDP, as summarised in Table 2.

The government plays a major role in the economy. According to the IMF, in 2013, total government current spending accounted close to 60 percent of GDP, and government sector for more than 28 percent of GDP. Government employees represented 21.5 percent of total employment and 42 percent of formal employment.[6]

Economic activity is led by state-owned enterprises while the private sector is composed mainly of small and microenterprises often operating in the informal sector. The Government has made "impressive

*Figure 18 Trading company on Betio*


progress with SOE reforms" according to the IMF. In 2013, the SOE Act was enacted, establishing a legal framework to improve the independence, governance, financial reporting and management of SOEs. Several SOEs have already been privatized and more are planned to be privatised. The Government sold the import trading company and developed its first PPP with the owners of the former state owned hotel, the Otintaai Hotel. It is providing for effective subsidies for SOEs with a social mandate to ensure that they are commercially healthy. A core focus is the shipping industry, in which the Government seeks to increase the role of the private sector.

The service sector comprises the largest part of the economy, followed by the agriculture/fishing sectors. Combined, they account for 84 percent of GDP. See Figure 19. Private sector activity is picking up with the commencement of key donor funded projects. There are numerous trading companies, an increasing

[6] IMF 2014 Staff Report

number of hotels, restaurants and small shopping malls. International Finance Corporation (IFC) seeks to partner with private sector companies in sectors crucial to Kiribati's long-term sustainable development, including making investments in infrastructure.

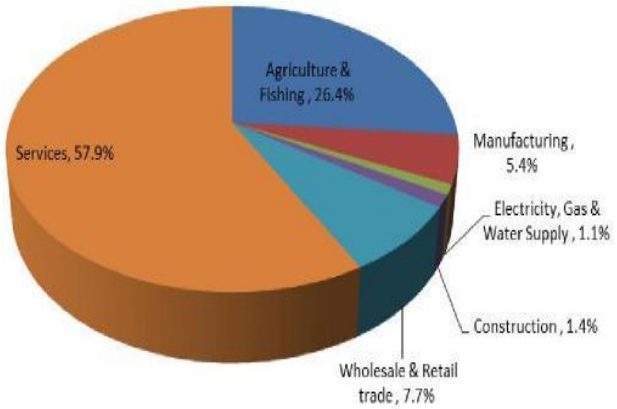
*Table 2 Central Government Finances*

| Indicator | % of GDP |
|---|---|
| **Government revenue and external grants** | 102.2 |
| **Government revenue** | 53.8 |
| **Tax revenue** | 16.1 |
| **Nontax revenue** | 37.8 |
| **--of which fishing license fees** | 34.5 |
| **External grants** | 48.4 |
| **Government expenditure** | 109 |
| **--of which subsidies to state-owned enterprises** | 3.9 |

*Source: International Monetary Fund. Kiribati: 2013 Article IV Consultation. IMF Country Report No. 13/158, June 2013*

Although Kiribati's per capita income is low, its economy grew by close to 3% in 2013 and growth is projected to continue according to the IMF's 2014 Staff Report. (See Figure 20.)

*Figure 19 Structure of the economy by sector*




**IMF economic review and forecast**

In 2013, the economy experienced its third year of consecutive economic growth on account of donor projects and increased private sector activity. Construction activities related to the sea-port and private sector projects drove last year's growth outcome. Consumer and business confidence has improved with the commencement of the road project in 2014 and the anticipated positive spillover to the retail, wholesale and service-related sectors. […] Recent and planned key improvements to infrastructure should strengthen the growth momentum into the medium term. Apart from creating jobs, the growth dividend to ongoing infrastructure projects includes improving the climate for increased investment and business activities.

*Source: IMF 2014 Staff Report*

Growth is visible in various areas, from building construction to opening of shops and hotels to development of infrastructure. From 2011 to 2014, the number of airline passengers to Kiribati increased by more than a third.

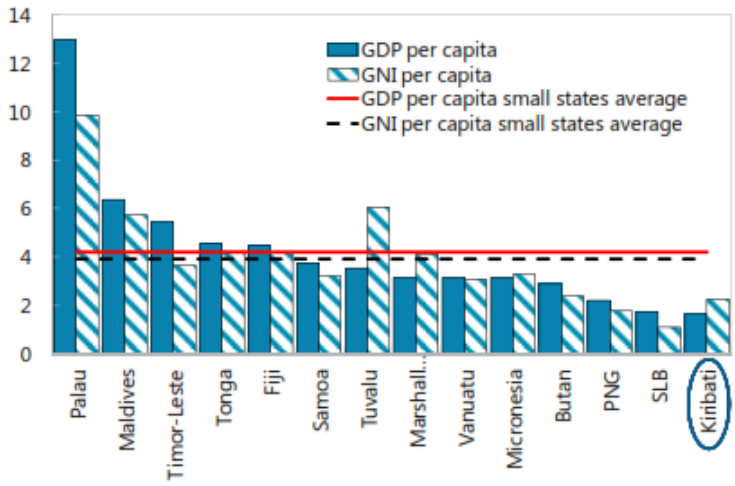
*Table 3 Economic growth projections*

| | 2009 | 2010 | 2011 | 2012 Est. | 2013 | 2014 | 2015 Proj. | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Real sector | | | | | | | | | | | |
| Real GDP (percentage change) | -0.7 | -0.5 | 2.7 | 2.8 | 2.9 | 3.0 | 2.7 | 2.5 | 2.4 | 2.3 | 2.1 |
| Inflation (period average) | 9.8 | -3.9 | 1.5 | -3.0 | -1.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Nominal GDP at market prices (in millions of A$) | 162.8 | 164.1 | 167.3 | 169.0 | 175.4 | 185.1 | 194.9 | 204.8 | 215.0 | 225.4 | 235.9 |

*Source: IMF 2014 Staff Report*

The Government has made significant successful efforts to improve fiscal management. At the end of 2014, the Asian Development Bank (ADB) approved a $3 million grant to improve fiscal sustainability in line with the government's fiscal framework and the Kiribati Economic Reform Plan (KERP).

*Figure 20 Per capita income 2012 in thousands of US dollars*




*Source: IMF 2014 Staff Report*

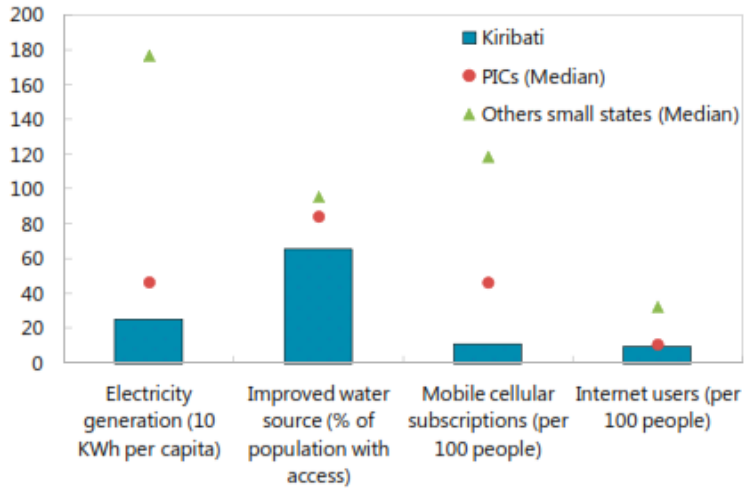
## Development projects

Kiribati lacks infrastructure, including telecom infrastructure, which is primarily why there is such need for investment – and why it presents a genuine telecom business opportunity. (See Figure 21.)

Kiribati benefits from substantial international support from the World Bank, Asian Development Bank, the Australian and New Zealand Governments, the Pacific Regional Infrastructure Facility – among others. Major projects to develop roads, water and sanitation systems, electricity generation and distribution, aviation, port expansion and other key economic infrastructure are underway with substantial funding. This is contributing to employment and growing disposable income in the population. It is improving economic efficiency by reducing the costs of travel and access to power, liberating resources for other services. Telecom services are expected to be among the highest priority of the population, business and Government.

The injection of such funding, as well as improving infrastructure, will help to further stimulate the local economy and provide an important source of demand for any new telecom operator.

*Figure 21 Infrastructure indicators, 2012*




*Source: IMF 2014 Staff Report*

## Currency and foreign exchange

Kiribati's national currency is the Australian dollar, which lends considerable currency stability and predictability to the economy. Kiribati thus does not have a national monetary authority. There are no restrictions on obtaining foreign exchange. Investors may freely remit earnings, profits, fees, dividends, royalties, payments and capital abroad, as well as interest and service charges stemming from foreign financial obligations related to the investment.

## Banking

The country has only one bank, ANZ Kiribati Limited. There has been a significant growth in credit to the agriculture, forestry and fisheries and construction sectors. The Kiribati Provident Fund (KPF) operates a small loans scheme (SLS) which is growing, growing to about AUD 11 million due to increasing demand for credit.

## Media

Te Uekera is a I-Kiribati and English language weekly newspaper. The Kiribati Newstar is another weekly newspaper. The churches publish newsletters. Radio Kiribati provides a public service. Newair FM 101 is a private broadcaster.

## Electricity

The Public Utilities Board provides electricity on South Tarawa. To address the lack of reliable power supply, the Solar Energy Company Limited (SECL) is in the process of installing solar panels extensively in Kiribati's Outer Islands under a European Union funded project, and now also on Tarawa itself. Power is available to connect telecom equipment – schools and local island councils may make power available directly to customers.

SECL has a trained technician on each island. It trains children in the schools, aiming at 6 children in each school. The technicians are capable of learning to manage basic maintenance of telecommunication equipment to act as a first line of support.

### Freight and shipping

Most freight is brought to Kiribati by ship. The leading international shipping providers are Bali Hai Lines, Chief Container Services and Kiribati Shipping Services Ltd. These provide direct services to Australia and Asia. Some global firms (e.g., Russells Freight International) provide freight to Kiribati's islands.

The largest inter-island shipping business that operates between Kiribati's islands is the state-run Kiribati Shipping Services Ltd. Several other shipping companies carry freight and passengers between Tarawa and the three neighbouring islands of Abaiang, Maiana and Marakei.

The main ports are on Betio (which connects with South Tarawa) and on Kiritimati (or Christmas Island). The Kiribati Ports Authority (KPA) operates the ports at Banaba, Betio and English Harbour. The KPA is a statutory body responsible for maintaining and coordinating the nation's port facilities. Provision for handling containers is available at Betio, while Banaba has a cantilever for phosphate loading.

Kiribati has 19 airports, four of which with paved runways. International airline connections are serviced by Our Airline and Fiji Airlines.

Major couriers and shipping firms, such as DHL and UPS, operate either through local shippers and agents in the country, or from Kiribati's larger neighbours such as Fiji, Australia and New Zealand.

## ASIAN DEVELOPMENT BANK

Kiribati's economic growth in 2014 is fuelled by public spending on projects financed by development partners, and subsequent spillover effects on wholesale and retail sales. Further, the steady pace of reform to state-owned enterprises is expected to spur private sector growth. A value-added tax was introduced on 1 April to help enhance revenue mobilization. Growth is still expected to moderate in 2015, as work on infrastructure projects winds down.

Inflation forecasts remain unchanged despite a weakening Australian dollar (the official currency). In Kiribati, higher spending related to construction is expected to drive inflation to 2.5% in 2014 and 2015 following 2 years of deflation (revised to -1.5% for 2013).

High revenues from fishing license fees enabled Kiribati to achieve budget surpluses equal to 10% of gross domestic product (GDP) in 2013. These unexpectedly high revenues helped the Government of Kiribati to shore up its Revenue Equalization Reserve Fund with deposits totalling A$10 million. In 2012, Kiribati cleared its expensive commercial debt, which had restrained expenditure.

Freight forwarders and custom brokers in operation in the country include Ameritrans Freight International, Universal Express International, Inc., Link Shipping, Transportation and Trade Ltd, Paragon Shipping Services and Caretta Freight Forwarding.

The Ministry of Communications, Transport and Tourism Development (MCTTD) is responsible for developing and regulating transport and shipping.

*Figure 22 Kiribati's road rehabilitation project*


*The project is supported by the World Bank at a cost of USD 40 million*

Contact information for the MCTTD and KPA is provided at the end of this document.

## Land and works

According to University of the South Pacific statistics, half of Kiribati land is public land, 5% is freehold, and 45% is customary land. In the case of customary land, the Government has long leases (over 90 years) giving it the right to use or designate use of it. Access to land, then, is typically arranged either by:

- sublease from Government,
- direct lease arrangement with landowners, or
- negotiating purchase of a plot from landowners.

On South Tarawa for example, land is leased to the Government for 90 years. A company seeking access to land may sublease it from the Government, and should contact the Land Management Department (LMD) at the Ministry of Environment, Land and Agriculture Development (MELAD) for permission. Where there is a risk of construction plans endangering electricity cables or water pipes, the Public Utility Board (PUB) will inspect the site and stamp the building permit application. The MELAD's Sublease Advisory Allocation Committee (SAAC) approves the sublease, which is submitted to the Cabinet of Ministers for approval and signed by the Minister of MELAD. Permissions may also be required from the Environment and Conservation Department (ECD) of the MELAD, and the Public Works Department and the Local Land Planning Board (LLPB). In all cases, there are either no fees for such approvals or the fees are extremely low.

Foreigners cannot buy land in Kiribati. However, for investment purposes land can be leased on a long-term basis.

The role of real estate agents is slowly increasing but is limited due to long-term government leases on land. Most land is owned by individuals except for Kiritimati Island where it is almost entirely owned by the Government.

## Foreign investment, taxation, laws and business registration

### Foreign investment

Foreigners can enter and leave Kiribati with ease (visas can be acquired on arrival), establish companies and enter into contracts including with the Government. As noted above, there are no restrictions on repatriation of profits abroad. There are no limits on foreign ownership of a business, including a telecom business.

*Figure 23 Temaiku Fish Farm*

*Farming milkfish for tuna fishing bait, funded*

The Foreign Investment Act 1985 established the Kiribati Foreign Investment Commission (FIC). The FIC's Promotion Division assists investors. The Kiribati Industrialists Association acts a trade association for the sector. The Kiribati Chamber of Commerce and Industry (KCCI) also supports businesses, including foreign investors.

Contact information for the FIC and KCCI is provided at the end of this document.

### Taxes

Kiribati taxes are simple to manage. The World Bank's Doing Business in Kiribati ranks the country 14th globally for ease of paying taxes.

Kiribati implemented a 12.5% VAT on 1 April 2014 with support from the Pacific Financial Technical Assistance Centre (PFTAC) and Australian Department of Foreign Affairs (DFAT). The Taxation Division implemented its new IT system, the Revenue Management System (RMS), in December 2013. The system is used widely throughout the Pacific and is reliable and robust.

Further information about Kiribati taxes is available from the Taxation Division of the Ministry of Finance and Economic Development (FED).[7]

*Table 4 Taxes on Kiribati*

| Tax | Statutory tax rate | | Tax base |
|---|---|---|---|
| **Corporate income tax** | AUD 0 – 25k:<br>AUD 25k – 50k:<br>AUD >50k: | 20%<br>30%<br>35% | Taxable profit |
| **Employer paid social security contribution** | 7.5% | | Gross salaries |
| **Employee paid social security contribution** | 7.5% | | Gross salaries |
| **VAT** | 12.5% | | Price of goods/services |

[7] See http://www.mfed.gov.ki/sample-page/taxation-division

## The legal system

The Kiribati Law Society is the professional body that represents lawyers in the nation. It may also be able to assist an investor in identifying a lawyer to assist with setting up a company and reviewing relevant laws. Contact information for the Law Society is available at the end of this document. The country's laws are available at: http://www.paclii.org/ki/legis/consol_act/

Kiribati inherited the Common Law system from the United Kingdom before its independence. Pursuant to the Laws of Kiribati Act 1989, s 4(2) in addition to the Constitution, the Laws of Kiribati comprises customary law. Additionally, the courts must take customary law into account when considering specified matters in criminal and civil proceedings.

The legal system consists of three tiers of justice. Thereafter, appeals are made to the Privy Council in England.

The courts of first instance are the magistrates' courts. There are more than 20 magistrates' courts with local district jurisdiction – one for each island in the Gilbert group and one for the Line Islands. Magistrates are often respected village elders (unimane) and the courts are conducted in I-Kiribati language.

Appeals from magistrates' courts are made to the High Court. The High Court also has original jurisdiction in the most serious civil and criminal cases.

The Court of Appeal has the jurisdiction to hear civil and criminal appeals from any High Court decision on a question of law and to hear civil appeals with leave. The Court of Appeal is presided over by a Chief Justice and other justices of the High Court. The Chief Justice is appointed by the President of Kiribati, who then advises the president on appointing the other judges. The High Court consists of a Chief Justice and other judges, with the Chief Justice also presiding over the appointment of magistrates.

Additionally, native land courts have jurisdiction over property claims. The Land Division of the High Court deals with appeals relating to land, divorce and inheritance.

## Business registration

Starting a business in Kiribati is relatively easy. Foreign investors may establish, own and operate businesses in the same way as local enterprises.

The business owner must register the company with the Companies Office of the Ministry of Commerce, Industry and Cooperatives (MCIC). This typically takes 11 days and carries a fee of only AUD 50 for name reservation and AUD 50 for approval of the name.

The business must register for tax purposes with the Ministry for Finance and Economic Planning (MFEP), as required under the Income Tax Act. This takes only 2 days and has no charge.

The business must also register with the Kiribati Provident Fund (KPF), which only takes a day and is not subject to a fee.

The business must obtain a licence to provide communications services from the CCK, which acts as a one-stop-shop. Telecom providers do not require a separate licence from local authorities.[8] Foreign investors do not require separate authorisation from the Foreign Investment Commission (FIC) or Cabinet under an exemption specifically provided in the Communication Act to encourage investment in the telecom sector.[9] Foreign investors are also exempted from the other foreign investment requirements of the Foreign Investment Act 1985, such as requirements to file accounts with the FIC. Licensing is discussed in further detail below under "*Communications licences*" on page 27.

More information about starting a business in Kiribati is available from the Kiribati Chamber of Commerce (KCCI).[10]

Contact information for the MCIC, MFEP, KPF and KCCI is provided at the end of this publication.

# TELECOMMUNICATIONS REGULATION

## National ICT Policy

Kiribati's regulatory regime prioritises market-oriented solutions through competition. On March 2, 2011, the Government issued its "National ICT Policy - phase 1 reforms" (ICT Policy), which "is focused on creating a robust, stable, market-driven ICT sector, which the Government believes will create a favourable climate that is attractive to private investors and will lead to increased ICT infrastructure investment and services development."

The ICT Policy set forth its objectives in the telecommunications sector and provided a roadmap for achieving these objectives. In the ICT Policy, the Government reiterated its commitment "to fostering the development and use of affordable, reliable ICT services in the interests of all the people of Kiribati."

The ICT Policy also noted the relatively low level of penetration for fixed telephony, mobile and Internet services in Kiribati when compared with other Pacific island countries, as well as the general lack of affordability of these services. The ICT Policy concluded that increasing competition for such services in the country was of paramount importance.

The ICT Policy set forth five guiding principles:

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[8] Section 32(8) of the Communications Act provides: "Notwithstanding the Local Government Act 1984, a licence issued under a council bye-law shall not be required to carry on the business of owning or operating a communications network or providing a communications service."

[9] Section 32(7) provides: "The Foreign Investment Act 1985 does not apply to carrying on the business of owning or operating a communications network or providing a communications service by a licensee."

[10] See http://www.kcci.org.ki/index.php/services/start-business.html

- open and competitive markets;
- modern, independent and proportionate regulation;
- non-discrimination and technology neutrality;
- Universal service for remote areas of Kiribati; and
- optimal use of scarce resources.

The Government concluded that new regulatory policies and a strong, independent regulator would be required in order to successfully implement the ICT Policy. To that end, the ICT Policy specifically stated that the Telecommunications Authority of Kiribati (TAK) would become institutionally and financially independent from the government and would be responsible for implementing government policy and regulating the telecommunications sector in a transparent manner, in particular with regard to competition and consumer matters, and would be funded through licensing fees.

## Communications Act 2012

The year following promulgation of the ICT Policy, the Government adopted the Communications Act of 2012 (the "Act") which was formally assented to by the Beretitenti (the President) on May 15, 2013. The Act replaced the Communications Act of 2004 and was designed to implement the ICT Policy.

The Act sets forth the following objectives:

- providing transparent, technologically and competitively neutral regulation which focuses on promoting the long-term interests of users;
- providing regulation that is proportionate to the end to be achieved, non-discriminatory and promotes reliance on market forces, to the greatest extent reasonable in the circumstances;
- providing a communications licensing regime which promotes entry by new licensees and which fosters investment and innovation in communications networks and the supply of communications services;
- providing for efficient use of communications facilities and providing for cost-based interconnection and access on an equitable and non-discriminatory basis for operators of communications networks, to promote end-to-end connectivity of separate networks;
- providing conditions for effective competition among licensees in Kiribati and encouraging efficient and sustainable investment in and use of communications networks and services;
- protecting the interests of consumers and regulating prices;
- promoting the development of communications in Kiribati, as far as practicable, in accordance with recognized international standards and practices;
- promoting the effective and efficient use of the radio frequency spectrum, numbers, rights-of-way and other finite resources;
- extending access to communications services to all persons in Kiribati, to the greatest extent reasonable in the circumstances; and
- promoting the appropriate use of communications networks and communications services.

## Communications Commission of Kiribati (CCK)

In accordance with the ICT Policy, the Act converted the TAK into the Communications Commission of Kiribati (CCK), and endowed the CCK with powers and authorities which are described in further detail below.

The CCK, established in 2013, has 13 employees, its own office premises and information systems separate from Government. Its mission is to create an open level playing field ICT market through fair distribution of communications resources and a transparent, technologically and competitively neutral regulation to promote fair competition and innovation for universal delivery of affordable and quality communication services. The CCK is pursuing a vision of achieving affordable quality Information and Communication Technology (ICT) Services to foster socio-economic development for every I-Kiribati. Contact information for the CCK is provided at the end of this publication.

## Communications licences

Part IV of the Act authorizes the CCK to issue licenses for both communications and radiocommunications.

The Act specifies two categories of communications licenses:

- individual licenses; and
- class licenses.

Individual licenses are required for an operator to own and operate a communications network and to provide communications services. Individual licenses may not exceed a term of 20 years. Class licenses are required to otherwise provide a communications service without owning a network.

The CCK adopted Licensing Rules in March 2014, which it revised in July 2014.[11] These provide for a relatively quick and simple process for obtaining licences. Most licences will be class licences as opposed to individual licences, and are obtained simply by completing a registration form and agreeing to abide by CCK's regulatory framework. Applications for individual licences must be approved or rejected by the Commission within 45 days. Licensing fees are set out in Schedule 2 to the Licensing Rules.

The CCK's licences do not include coverage obligations. Instead, the CCK seeks to incentivise coverage through regulatory treatment and licence fees.

## Licence fees

Mobile cellular licence fees are 3% of annual gross revenue where the operator's population coverage is less than 65% but they are reduced to 2% of annual gross revenue if the operator's coverage is 65% or more, and to 1% if coverage is 75% or more. (See Table 5.) The application fee for such a licence is AUD 1,000.

[11] Available at http://www.cck.ki/index.php/services/licensing/network-and-services-licences.html

*Table 5 Coverage & licence fee relationship*

| Coverage Area (% of population) | Licence Fee (%of Annual Gross Revenue) |
|---|---|
| ≥ 75% | 1% |
| ≥ 65% | 2% |
| < 65% | 3% |

The 75% population threshold above could be met by covering just the Gilbert Islands.

Providers other than mobile service providers wishing to provide network services, including networks used to provide international gateway services, Internet services, Internet exchange services and various other services require an individual licence and are subject to an annual fee of 1.5% of annual gross revenue and an application fee of only AUD 250. Internet cafes (one of the class licences) have no application fee and an annual licence fee of only AUD 50.

## Radiocommunications licences

The Act authorizes the CCK to issue three types of radiocommunications licenses:

- spectrum licenses, authorizing use of the designated part of the radio spectrum in specified geographical areas;
- apparatus licenses, authorizing the use of specific designs utilizing frequencies in specified areas; and
- general permits.

The Act authorises the CCK to promulgate licensing rules covering, among other things, license application provisions, fees, and eligibility criteria.

The CCK adopted Radiocommunications Rules in November 2014 covering the matters above.

There is radio spectrum available in all bands, including substantial spectrum blocks reserved for public mobile services. The spectrum assigned to ATHKL is shown in Table 6.

*Table 6 Access spectrum assigned to ATHKL*

| Networks | Frequency Assignments |
|---|---|
| LTE Network | 700 MHz, 17 MHz paired |
| UMTS | 850 MHz, 10 MHz paired |
| GSM | 900 MHz, 8MHz paired |
| GSM | 1800, 8 MHz paired |
| GSM | 1900 MHz, 8 MHz paired |
| ISP Network | 2.4 GHz |
| Microwave Links | |
| 3G Network | 8 GHz band, CHL 2, 4, 6 and 8 paired |
| HF Network between Tarawa and the Outer Islands | (Nonouti, Nikunau, Onotoa, Beru, Tamana, Arorae, Tabiteuea S, Banaba) 4840, 5890, 6805, 6975, 6988, 7150, 7260, 7405, 7425, 7440, 7460, 7470, 7480, 7515 (MHz) |
| 4RF | 1.5GHz, 1448.25-1523.25, 1499.25-1434.25, 1441.25-1506.25 |
| ALCON 7 | 2 CHL 16Kbps |

## Enabling interconnection and access

Part V of the Act provides a framework to ensure that licensees have the right to interconnect with each other's networks and to share each other's facilities on an economic and non-discriminatory basis. The Act provides a two-step process to this effect. First, it requires licensees to negotiate interconnection and access agreements with other licensees upon request. Second, if no agreement is reached within 30 days, the CCK is empowered to determine the terms of an agreement covering such interconnection and access, in accordance with the interconnection and access rules that the CCK may issue under the Act.

The Act stipulates the parameters for such agreements and for the interconnection and access rules to be issued by the CCK. Specifically, the Act requires that such agreements provide for interconnection of networks at any economically and technically feasible point under non-discriminatory conditions that provides access to communications facilities, networks, software and services, in a manner that is sufficiently unbundled to enable all licensees the ability to access the facilities they reasonably require.

The Act gives the CCK discretion in making its interconnection and access rules but provides that pricing methodologies should reflect actual costs and adhere to “internationally recognized” approaches.

Furthermore, in an effort to promote efficient sharing of facilities and cost savings, the Act requires that licensees who propose to construct new communications facilities must first consult with other potential users of such facilities and then to negotiate agreements with all interested parties providing for shared use of such facilities.

As of the date of this publication, the CCK’s draft Interconnection and Access Rules have been issued for public consultation and are available on its website.

Although the date for comments has passed, the Rules have not yet been adopted and parties are at liberty to submit comments.

## Prohibition of anticompetitive practices

Part VI of the Act enumerates several types of conduct from which licensees are prohibited from engaging. This represents the Government's effort, as stated in the ICT Policy, to promote competition and protect consumers. Generally, the following conduct is prohibited:

- supplying communication services at a price below cost under circumstances that could limit competition;
- cross subsidizing and/or bundling services between competitive and non-competitive markets;
- imposing restrictions on third-party dealings;
- engaging in "market squeezes" at the wholesale or retail level;
- pre-emptively acquiring scarce facilities or resources that are likely to be needed by another licensee for the purpose of restricting the ability of such licensee to provide service; and
- designing or installing a facility or network with the purpose of hindering another licensee's possible interconnection or access.

## Consumer protection and pricing regulation

Part VII of the Act requires licensees to publish their terms and conditions (including pricing) for all offered services in "clear and simple terms." The CCK has developed Consumer Protection Rules which it plans to publish for public consultation in the third quarter of 2015. The CCK may also issue pricing rules for cases where it is satisfied that prices for communications services in question exceed the price set on the basis of economically efficient costs and a reasonable return on investment and that competitive market forces are not sufficient to protect the interests of consumers.

## Outer Islands infrastructure PPP and universal access

The Government is considering establishing a public private partnership (PPP) with the country's telecom operators for coverage of Outer Islands that would otherwise be uneconomic to serve, and expects to make public investment available for infrastructure for such purpose. The new licensee along with other licensees will be expected to participate in negotiations with the Government regarding the establishment of such a PPP.

Part X of the Act provides for a universal service regime. The CCK may allocate funds in the universal access fund based on a competitive tender, negotiation, or imposition of obligations on licensees. The CCK adopted the Universal Access Rules in January 2015.[12] These provide that, for the foreseeable future and at least up to 2020, universal access will be funded from grants, donations,

[12] Available at http://www.cck.ki/index.php/2015-01-12-03-40-20/universal-access-rules.html

parliamentary appropriations and sources other than levies on licensees.[13] After 2020, under a general licence condition, licensees could be required to pay a levy of gross revenues (net of interconnection) up to maximum of 2% to a Universal Access Fund established only where required as the result of Universal Access Rules developed by the CCK.

Whether any universal access funding will be required at all will depend on the success of the contemplated PPP for Outer Islands.

## Appeals

The Act provides for a process to appeal decisions of the CCK to expert panels and, in some cases, appellants may seek relief from the courts.

## Foreign investment and local licensing exemptions

The Act provides that the Foreign Investment Act 1985, which imposes restrictions on the operation of businesses by foreign-owned companies in Kiribati, does not apply to carrying on the business of owning or operating a communications network or providing a communications service, so long as the operator possesses a license issued by the CCK.

Similarly, a local island council licence is ordinarily required under the Local Government Act 1984 in order to operate a business on the relevant island. However, the Communications Act provides that such licence is not required to carry on the business of owning and operating a communications network and provide communications service in any council's jurisdiction.

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[13] According to the Universal Access Rules, the funding arrangements for the Universal Access Fund are as follows:

> *"5. The Commission shall establish, with a separate account, a Universal Access Fund which shall comprise of:*
> *(a) all levies payable under Section 69 (2) of the Act if and when the Commission requires such levies.*
> *(b) grants or donations made to or for the benefit of the fund, including any grant, contribution or loans from any international organization or donor*
> *(c) any monies that the Commission receives in excess of its approved budget and forecast needs as per Section 18 (7) of the Act*
> *(d) any monies received by way of interest or repayment of any loan granted from the Fund*
> *(e) any monies appropriated by Parliament for the purposes.*
>
> *6. The Commission shall source the Fund with monies made available through Rule 5 (b) through (e) for the foreseeable future and at least up until 2020.*
>
> *7. The Commission shall only disperse money from the Fund:*
> *(a) in accordance with contracts for planned UA projects*
> *(b) to recover any costs associated with the administration and reporting responsibilities of the Fund." (emphasis added)*

# THE TELECOMMUNICATIONS MARKET

## Introduction

Apart from some licensed Internet cafés and WiFi service providers, there is only one full service licensee, namely the incumbent operator ATHKL. Since the market was recently liberalised, it is expected that new service providers will enter the market, especially for providing Internet services.

Kiribati's telecommunications market is underserved with low penetration for all ICT services, whether it is mobile or fixed voice services or data and Internet services. The provision of Internet access is so limited that many organisations have resorted to self-provision by acquiring their own satellite terminals and linking to expensive satellite services, often at costs that are several times higher than ATHKL's Internet services at comparable speeds. This reflects on the quality of existing services which face very high congestion. Enterprising service providers that can obtain reasonable priced access to international capacity and market different ICT services effectively are likely to have a transformative impact on the market.

## ATHKL's services and infrastructure

### Privatisation and the Outer Islands

ATHKL, which is owned by ATH of Fiji, took over TSKL's business and acquired its assets on South Tarawa, Betio and Kiritimati for AUD7.2 million in May 2015.

ATHKL did not acquire TSKL's assets on the Outer Islands, which comprise all islands other than South Tarawa, Betio and Kiritimati. The Government is considering establishing a PPP for Outer Island telecom infrastructure. See "*Outer Islands infrastructure PPP and universal access*" on page 30.

In the meantime and for the next three years (unless the agreement is terminated earlier), the Government, TSKL and ATHKL have agreed that ATHKL will have the right to access and use the Outer Island assets for its business and will have the responsibility to maintain and operate them. ATHKL is obligated to keep the Outer Island assets in good working order so that they allow service at least comparable to the service provided as of the closing date of the agreement. The parties have agreed to carry out a joint inspection of the Outer Islands assets within 6 months. If they agree on repairs, upgrades or replacements needed to continue provision of service of substantially the same type, quality and coverage as at the closing date, then ATKHL will bear the first AUD 50,000 of the costs and the remainder of such costs will be borne by TSKL, the Government or its designee.

Although the agreement has a duration of three years, TSKL and the Government may terminate it early and assume responsibility for maintaining and operating the Outer Island assets. If this happens, ATHKL will no longer be responsible for maintaining and operating the Outer Island assets and will compensate TSKL, the Government or their assignee in accordance with CCK regulations for continued use of them.

*Figure 24 ATHKL tower on Tarawa*

*Figure 25 Bairiki earth station*

As described below, ATHKL provides mobile voice and Internet services, as well as fixed line services.[14] Table 7 indicates the geographical spread of services currently provided by ATHKL.

*Table 7 Service distribution*

| Island | Council Office | Landline/Public phone | Mobile | Internet |
|---|---|---|---|---|
| Makin | √ | | | |
| Butaritari | √ | √ | | |
| Marakei | √ | √ | √ | |
| Abaiang | √ | √ | √ | √ |
| N.Tarawa | √ | √ | √ | √ |
| Maiana | √ | | √ | |
| Abemama | √ | √ | | √ |
| Kuria | √ | √ | | |
| Aranuka | √ | √ | | √ |
| Nonouti | √ | | | √ |
| TabNorth | √ | √ | √ | √ |
| TabSouth | √ | | | |
| Onotoa | √ | | √ | |
| Beru | √ | | | |
| Nikunau | √ | | | |
| Tamana | √ | | | √ |
| Arorae | √ | | | √ |
| Tabuaeran | √ | | | √ |
| Teraina | √ | | | √ |
| Banaba | √ | | | |

*Source: Rural Development Presentation, GoK Development Partners Forum 2014*

## Mobile services

Existing mobile penetration in Kiribati is estimated to be about 17% of the total population (2G/3G). The most recent statistics show around 10,000 GSM mobile subscribers and about 8,000 3G subscribers (about 6,400 3G subscribers on Tarawa and about 1,600 on Kiritimati). GPRS was offered from 2009 and 3G

[14] Information in this publication about ATHKL's network is derived from the Government's Information Memorandum for the sale of the business of TSKL dated 24 December 2015 prepared in connection with its privatisation.

from November 2013. There are a little over 700 GSM fixed wireless subscribers.

As well as being limited in terms of geographical coverage, mobile services typically found in other markets are either provided on a limited basis or not at all. For example, international roaming services have not been available, although ATHKL can be expected to introduce them. This creates additional revenue opportunities for a new entrant and the potential to provide differentiated service offerings. The 3G/4G mobile network is illustrated in Figure 26.

### Internet services

The supply and growth of Internet services, including 3G, is constrained by limited capacity in the network and international bandwidth. Prior to privatisation, TSKL had a total international broadband capacity of less than 40 Mbps at a cost close to USD 1 million per year. Yet demand far exceeds 40 Mbps, which has resulted in an overloaded data network with poor throughput and long response times.

The need for international connectivity is so pressing that many customers (schools and government) use RICS, even on the islands of Tarawa and Kiritimati where service rental costs significantly more than TSKL's rate for similar service. The number of privately owned VSATs demonstrates the gap between supply and demand. On nearly every inhabited island there is a company, school, or other user that pays several times what TSKL normally charges for Internet access because of the inability to reach the customer. There are currently 39 licenses issued for VSAT services: 24 with 1.2 metres, 9 with 1.8 metres and 3 with larger than 3 metres antenna diameter and 3 with no diameter indicated. The total broadband capacity purchased via these VSAT terminals is estimated to be equal to or larger than TSKL's provision at a cost of USD 2 to 3 million.

Internet service is also limited by microwave capacity: only 2 Mbps to serve the Betio and Bikenibeu ADSL distribution units, and only 2 Mbps to serve Betio and Bikenibeu WiMAX bases. The existing network is not capable of increasing Internet speed until capacity is increased in the backhaul network.

In terms of Internet access technologies, TSKL relied on limited ADSL and Mobile WiMAX and 3G technology to provide access. ATHKL has inherited TSKL's WiMax fixed wireless access network for data services (TSKL had 600 customers). The historically low level of 3G services appears not to be due to lack of demand, but rather due to the separation of 2G mobile and 3G mobile into separate services. 3G services have also been constrained by tariff structures, cost of handsets, technology chosen and backhaul costs.

*Table 8 Mobile cellular subscriptions per 100 habitants (2013)*

| | |
|---|---|
| Fiji | 105 |
| Kiribati | 16* |
| Nauru | 68* |
| Papua New Guinea | 41 |
| Tonga | 55 |
| Vanuatu | 50 |

**Figures for Kiribati have since increased to 17%; figures for Nauru are for 2012*

*Source: ITU World Telecommunication*

ATHKL's acquisition of TSKL's business is expected lead to introduction of new services and equipment and a new business strategy.

### Fixed line services

Fixed telephony network operations began in the early 1990s with the installation of copper-based services and an Alcatel E10 OCB-283 digital switch. This was expanded several times to modernize it, and was expanded to serve as a GSM mobile switching centre to offer mobile services in Kiribati. The number of fixed telephony subscribers is estimated to be around 1,600 (penetration below 1.6%). This number has been declining due to improved usage of mobile telephony.

Figure 27 shows the fixed telephony service being provided on Tarawa and Kiritimati. The E10B was expanded several times to modernize it, and was even expanded to serve as a GSM mobile switching centre to offer mobile services in Kiribati.

There is a limited fixed data service, comprising a mix of ADSL (less than 200 subscribers), WiMAX (less than 600) and RICS (satellite) service.

## Other players

Speedcast has been the sole provider of international bandwidth capacity, providing connection to the Internet backbone through a 3.8 m Ku band satellite antenna, which provides Kiribati with Internet connectivity. Speedcast offers a range of satellite services. They supply and install satellite terminal equipment and provide ongoing support via their 24x7 network operations centre. They provide KU Band contended services for single users and small businesses using VSAT terminals. For larger customers, Speedcast provides C-band contended or uncontended service via antennas ranging from very small to large (4.5m). They offer speeds ranging from 256/128 Kbps to 80/20 Mbps.

In addition, several wireless ISPs have begun offering services using WiFi equipment. TeniCom is now entering the market on Tarawa and Betio to provide Internet access across powerful WiFi equipment, operating its own microwave backhaul using three 50m towers. Ezy WiFi operates in Betio and Nauoi on Tarawa, each offering wireless Internet services. Table 9 lists current licensees.

*Table 9 Communications network and service licences issued up to June 2015*

| Communications Network and Service Licences | | Type of Licence | Class of Services | Location | Licence Issue Date |
|---|---|---|---|---|---|
| 1 | ATHKL | Individual | All | National | May.15 |
| 2 | SpeedCast | Individual | Internet Network and Services | National | Aug.14 |
| 3 | Ezy WiFi | Class | Internet Café | Trw, Betio | Jun.14 |
| 4 | Nauoi | Class | WiFi Internet | Trw, Betio | Jun.14 |
| 5 | Tobaraoi | Class | WiFi Internet | Trw, Bekenibeu | Jul.14 |
| 6 | Taotin | Class | Internet Café | Trw, Teaoraereke | Aug.14 |
| 7 | ICTL | Class | WiFi Internet | Chris, London | Dec.13 |
| 8 | KPA | Class | WiFi Internet | Trw, Betio | Sept.14 |
| 9 | Kiribati Update | Class | Internet Café | Trw, Bairiki | Oct.14 |
| 10 | KPF | Class | WiFi Internet | Trw, Bairiki | Nov.14 |
| 11 | MLPGD | Class | WiFi Internet | Christmas, Linnix | Dec.14 |
| 12 | Tersun Enterprises | Class | Internet Cafe | Trw, Bairiki | Jan.15 |
| 13 | Fema Lodge | Class | WiFi Internet | Trw, Antenon | Jan.15 |
| 14 | TeniCom | Individual | Internet Network and Services | National | May.15 |
| 15 | Utirerei | Class | WiFi Internet | Trw, Ambo | Jun.15 |

*Figure 26 The 3G/4G network*

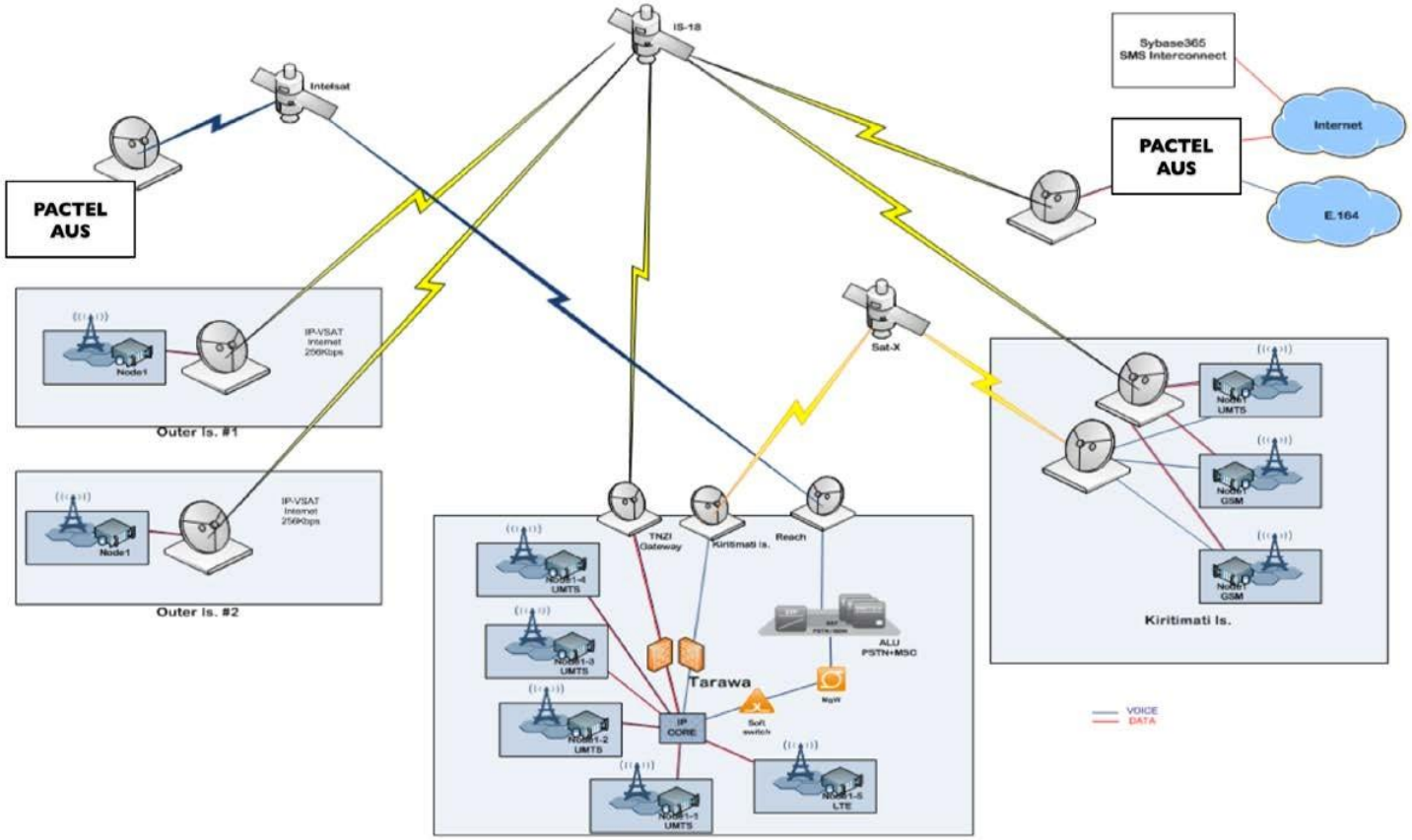
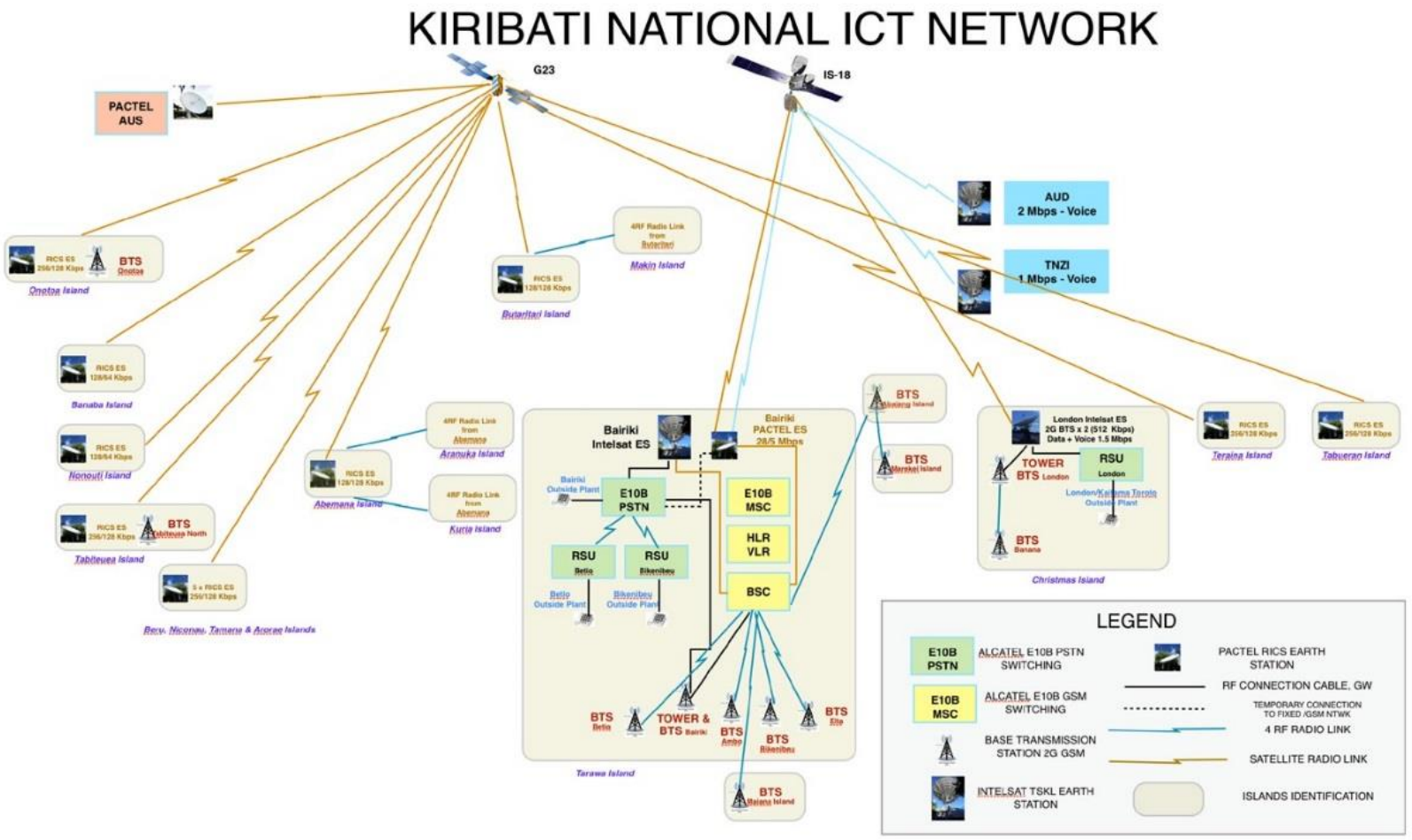


*Figure 27 The fixed line network*



# BUSINESS OPPORTUNITIES

## Introduction

In order to deepen its understanding of the market it regulates, including levels of demand and the potential for competition, the CCK engaged experienced advisers to explore and examine the opportunities for international and local investors. To facilitate investors' exploration of the market opportunity Kiribati presents, this section provides an overview of the opportunities they considered.

These opportunities do not represent the CCK's view on what services new licensees should provide or an opinion on their viability. That is for investors to determine after evaluating the market for themselves.

The discussion of business opportunities below does not make any assumptions about who or what kind of investor will pursue them, including whether it may be ATHKL or new entrants, or whether they are each pursued separately by different providers or are integrated.

After providing an overview of market potential, the first telecom business opportunity discussed is the market that is currently the key bottleneck: the provision of access to international capacity (page 42). The currently exceedingly high prices for international capacity act as a major flow-through impediment to all other services.

Individuals, businesses and international organisations have gone to the effort of directly acquiring their own VSATs and subscribing to international capacity services from the likes of Speedcast at relatively high prices. This demonstrates that there is genuine demand in the population and economy for services. Access to international capacity must be distributed. The business case is simple and obvious in the case of Tarawa and the islands within close proximity. Yet even beyond these, there is an opportunity available to a ready investor to generate attractive returns from establishing an international gateway with hubs serving several of the islands. There appears to be sufficient demand to generate a commercial profit by covering a significant number of hubs.

More than remoteness or size, income levels are far more influential in the development of a market and demand for services. Kiribati's income levels are low, but there is no cultural or structural economic reason why Kiribati should not expect to enjoy service levels similar to those of other countries once competitive investment is made and the market develops.

So, having explored the opportunity to provide an international and backhaul network, the section then explores (page 45) demand for mobile telecom services – the means by which access to services can be provided at a retail level to the population, businesses and Government. Again, the market is currently severely underserved due to the lack of investment and competition over the years.

There is also evidence that innovative low cost wireless networks using technology currently available to serve rural and low income areas can also be deployed profitably in Kiribati (page 47).

Following these are several examples (page 48 onwards) of business opportunities that are necessary elements in the value chain of telecom services even if they are not themselves the operation of a telecom network. These offer significant opportunities for local businesses in Kiribati, some of which might be pursued alone, and some more likely in partnership with foreign suppliers and investors.

## Market potential

Because the largest population concentration is on South Tarawa and closely situated islands, the greatest commercial potential for telecom services in Kiribati is in the Gilbert Islands. [15] It is reasonable to expect most service providers to begin there.

*Table 10 Demographic statistics for Kiribati – Gilbert Islands*

| **Kiribati - Gilbert Islands Review** | | | | | | |
|---|---|---|---|---|---|---|
| Island/Atoll | Main Village | Land Area (km2) | Population | Pop Density | Est. # Households | Villages |
| **North Cluster:** | | | | | | |
| Makin | Makin | 7.9 | 2,753 | 349 | 466 | 2 |
| Butaritari | Temanokunea | 13.5 | 3,786 | 281 | 641 | 11 |
| **Tarawa Cluster:** | **Subtotal:** | **21.4** | **6,539** | **306** | **1,106** | **13** |
| Marakei | Rawannawi | 14.1 | 3,164 | 224 | 535 | 8 |
| Abaiang | Tuarabu | 17.5 | 6,351 | 363 | 1075 | 18 |
| Tarawa | Bairiki/Betio | 31.0 | 53,082 | 1711 | 7087 | 30 |
| Maiana | Tebwangetua | 16.7 | 2,202 | 132 | 455 | 12 |
| **Central Cluster:** | **Subtotal:** | **79.4** | **64,798** | **817** | **9,152** | **68** |
| Abemama | Kariatebike | 27.4 | 3,929 | 144 | 812 | 12 |
| Kuria | Tabontebike | 15.5 | 1,249 | 81 | 258 | 6 |
| Aranaku | Takaeang | 11.6 | 1,337 | 115 | 276 | 3 |
| **Southern Cluster:** | **Subtotal:** | **54.5** | **6,514** | **120** | **1,346** | **9** |
| Nonouti | Teuabu | 19.9 | 3,669 | 185 | 784 | 9 |
| Tabiteuea | Buariki | 37.6 | 5,653 | 150 | 1208 | 18 |
| | **Subtotal:** | **57.5** | **9,323** | **162** | **1,992** | **27** |
| **Uncovered Islands:** | **TOTAL Covered:** | **212.7** | **87,174** | **410** | **13,596** | **117** |
| Beru | Taubukinberu | 17.7 | 2,504 | 142 | 478 | 9 |
| Nikunau | Rungata | 19.1 | 2,207 | 116 | 421 | 6 |
| Onotoa | Buariki | 15.6 | 1,898 | 121 | 362 | 7 |
| Tamana | Bakaka | 4.7 | 1,010 | 214 | 193 | 3 |
| Arorae | Roreti | 9.5 | 1,450 | 153 | 277 | 2 |
| | | 279 | 96,242 | | 15,327 | 144 |
| **Addressable Population** | | **213** | **87,174** | | **13,596** | **129** |
| | | **76%** | **91%** | | **89%** | **90%** |

[15] Analytical Report on the 2006 Kiribati HIES, prepared by Tekena Tiroa, National Statistics Office, Kiribati

The four clusters shown each have at least 6,000 residents and include 91% of the population of the Gilbert Islands and 82% of the total Kiribati population.

The Kiribati population currently spends far less on telecom services than most countries. Although income levels are low, there is substantial disposable income that people would choose to spend on telecom services if such services were made available at reasonable quality and price.

*Table 11 Income clusters on Kiribati (USD)*

| **Kiribati - Gilbert Islands Review** | | | | | |
|---|---|---|---|---|---|
| Island/Atoll | GDP/Capita | Estimated Income per island pm | GDP/Hub | Est Island Income per annum | **Potential ICT Revenue cluster pa** |
| **North Cluster:** | | | | | |
| Makin | $ 1,360 | $ 238,382 | $ 8,893,404 | $ 6,794,034 | $ 991,154 |
| Butaritari | $ 1,360 | $ 327,788 | | | |
| **Tarawa Cluster:** | | **$ 566,169** | | | |
| Marakei | $ 1,530 | $ 273,964 | | | |
| Abaiang | $ 1,530 | $ 549,927 | $ 119,226,189 | $ 89,977,165 | $ 13,126,409 |
| Tarawa | $ 1,908 | $ 6,398,016 | | | |
| Maiana | $ 1,530 | $ 276,189 | | | |
| **Central Cluster:** | | **$ 7,498,097** | | | |
| Abemama | $ 1,615 | $ 492,740 | | | |
| Kuria | $ 1,615 | $ 156,623 | $ 10,521,768 | $ 9,803,854 | $ 1,430,245 |
| Aranaku | $ 1,615 | $ 167,624 | | | |
| **Southern Cluster:** | | **$ 816,988** | | | |
| Nonouti | $ 1,190 | $ 299,759 | $ 11,094,973 | $ 9,139,314 | $ 1,333,298 |
| Tabiteuea | $ 1,190 | $ 461,850 | | | |
| | | **$ 761,610** | | | |
| **Uncovered Islands:** | | **$ 9,642,864** | **$ 149,736,334** | **$ 115,714,367** | **$ 16,881,106** |
| Beru | $ 1,190 | $ 179,543 | $ 2,979,447 | $ 2,154,516 | |
| Nikunau | $ 1,190 | $ 158,269 | $ 2,626,419 | $ 1,899,232 | |
| Onotoa | $ 1,190 | $ 136,085 | $ 2,258,281 | $ 1,633,021 | |
| Tamana | $ 1,190 | $ 72,430 | $ 1,201,944 | $ 869,157 | |
| Arorae | $ 1,190 | $ 103,968 | $ 1,725,305 | $ 1,247,613 | |

The extent of disposable income per island can be assessed using adjusted GDP (PPP) and Household Income per month. The four clusters of islands in Table 11 produce around USD 149 million or 83% of the entire Kiribati GDP. These four clusters cover the most important economic centres in Kiribati.

Household ICT spend on the islands can be expected to reach between 5% and 15%. The ICT spend is likely to be higher in places where fewer alternatives for communication, Internet access and physical transport exist. This figure tends to increase as the market is stimulated with lower tariffs for Internet access, making high-value services affordable at reasonable costs.

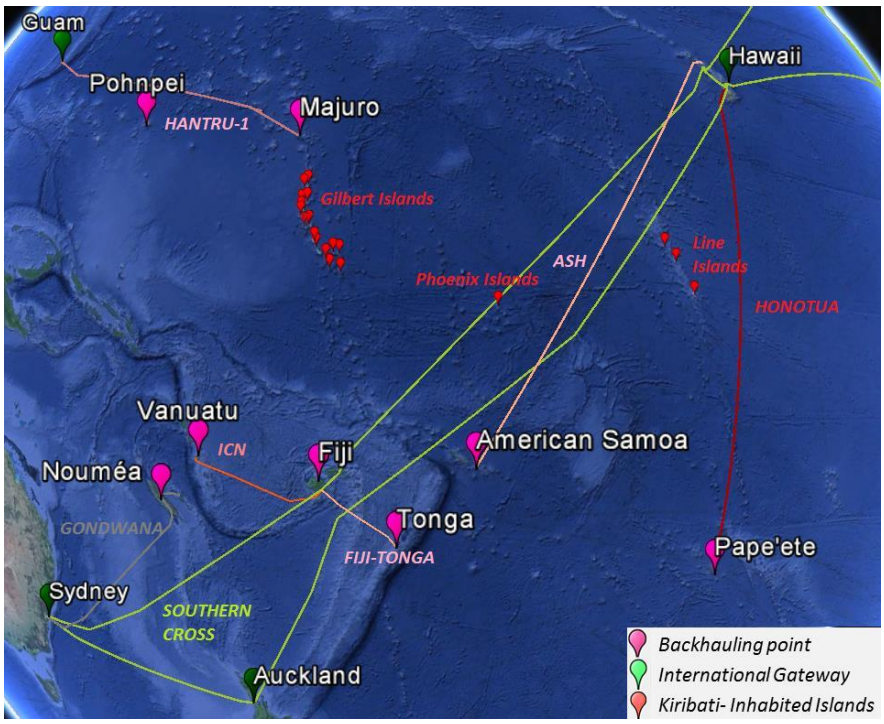
It is reasonable, then, to expect the market size to more than double its revenue levels which recently averaged only about USD 7 million annually.

## International connectivity hubs

Given the low volume and exceptionally high costs of international capacity available to Kiribati, there is a clear commercial business opportunity for provision of international hub services to the ICT market in Kiribati's Gilbert Islands – whether provided by a separate wholesale international service provider, by ATHKL or by another service provider.

Even at a relatively poor quality of service, Kiribati generates demand for international capacity of some 100 Mbps at very high prices and pays more than USD 3 million per year for this service. This provides a good starting point for developing a business case aimed at improving the international broadband services in the more densely populated islands.

*Figure 28 Submarine cables in the region*




## International access alternatives

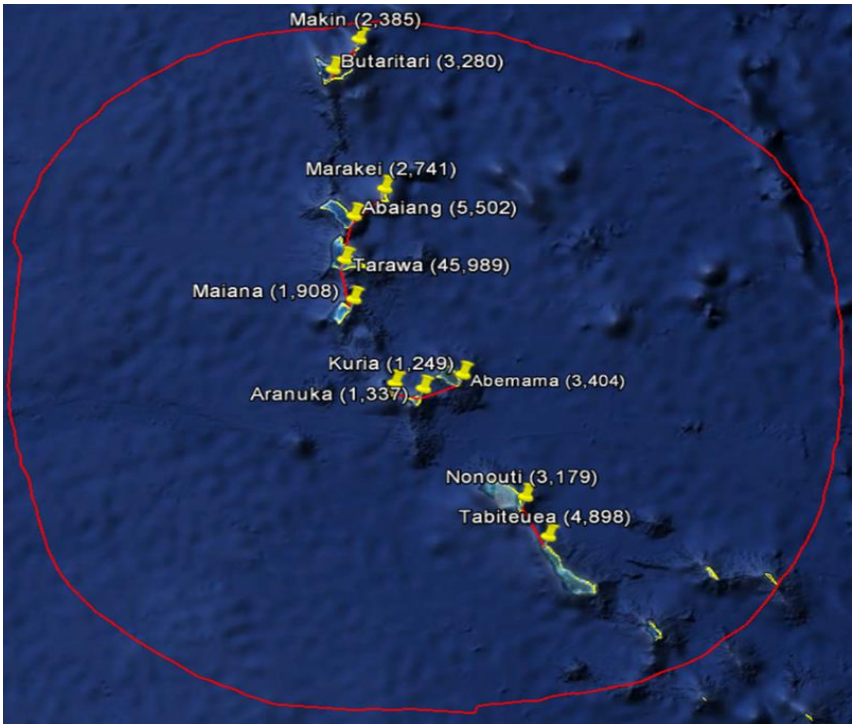
Submarine cables and medium earth orbit (MEO) satellites provide capacity at significantly lower latency than geostationary satellites (on which VSAT service is based) – albeit that submarine cables provide much higher capacity. Both solutions have in common the need for high traffic volumes and require major capital expenditures for initial operations.

The World Bank is currently studying the options of providing funding support for a submarine cable. It would be possible for example to interconnect to the submarine cable in Majuro of the Marshall Islands that is served by the HANTRU-1 submarine cable from Guam. This is currently the submarine landing station that is closest to Tarawa at a distance of 666 km. Studies suggest that the costs of such a cable including landing stations would be in the order of magnitude of USD 27 million. To this would be added the transit costs from Majuro to the

Guam hub for international connectivity that might represent a significant mark-up on the bandwidth costs.

In the meantime, a MEO solution would provide low latency and has much lower initial capital costs in comparison to submarine cables. It offers quality of service comparable to a fibre optic cable. A beam from a MEO satellite covers a circular area of approximately 385,000km$^2$ (with 700 km diameter). The map in Figure 29 shows in red the possible coverage of a beam directed to the Gilbert Islands. The figures in brackets are island population (taken from the 2010 census data).

*Figure 29 Potential beam coverage of Gilbert Islands*




## Hub and spokes network

Clusters of islands could be connected by a hub and spoke design, with a central earth station and network Internet exchange point on Tarawa, connecting islands within approximately 45km of Tarawa using terrestrial wireless / microwave links and connecting more distant island groupings via satellite IP backhaul links. For example, four clusters of islands could comprise:

- a Northern cluster of Makin and Butaritari with 6,000 people;
- a Tarawa cluster of closely situated islands of Marakei, Abaiang, Tarawa and Maiana, which have over 67% of the Gilbert Island population;
- a central cluster of Abemama, Aranuka and Kuria, which are reported to have almost 45% higher GDP/capita than the northern cluster (based mainly on agriculture and fishing); and
- a Southern cluster of Tabiteuea and Nonouti.

*Figure 30 Northern cluster (hub at Butaritari)*

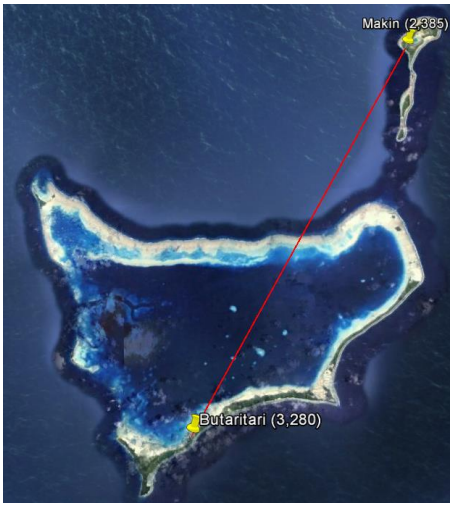



*Figure 31 Tarawa cluster (hub at Betio)*

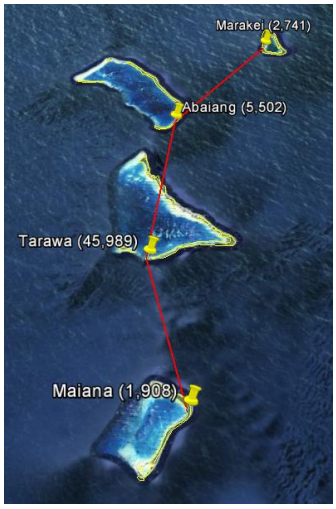



*Figure 32 Central cluster (hub at Abemama)*


*Figure 33 Southern cluster (hub at Tabieuea)*


Demand can be expected to grow for voice and data from mobile services, VOIP and ISP services as well as Government services and VSAT service replacement.

Altogether, a conservative business model reveals good cash flows for an international hub business, with potential for a positive EBITDA from the first year of business, positive overall NPV with a healthy internal rate of return.

## Mobile Network Operator (MNO)

Kiribati offers the potential for strong returns from investment in mobile infrastructure and services, not least because Kiribati has a huge gap in penetration compared with countries with similar economic conditions (see Table 8).

### Network investment

In addition to the excess of demand over supply, the majority of the Kiribati population is confined to a relatively small number of islands, all of which are quite flat and therefore cost effective to cover using a small number of conventional cell sites. This and the likelihood that a greenfield operator would use a mature technology will further reduce capital investments.

Tower sharing is available in Kiribati, which would further reduce a MNO's capital investments. In addition to ATHKL's towers, other licensees such as TeniCom have erected several tall towers on Tarawa. Similarly, access to other operators' international bandwidth should be available at cost-based rates.

It is anticipated that that donor funding will be made available via aid agencies such as the World Bank and donor governments, targeted towards the rollout of telecommunications infrastructure in the Outer Islands. A new MNO would have rights of access to such infrastructure, thereby lowering the cost of networks and operations in the Outer Islands.

While network design will be very much technology dependent and a matter for the MNO to determine, it would appear to be feasible to serve the islands identified above with a GSM/LTE network that is linked by a combination of fibre (Tarawa only), microwave and VSAT type satellite links.

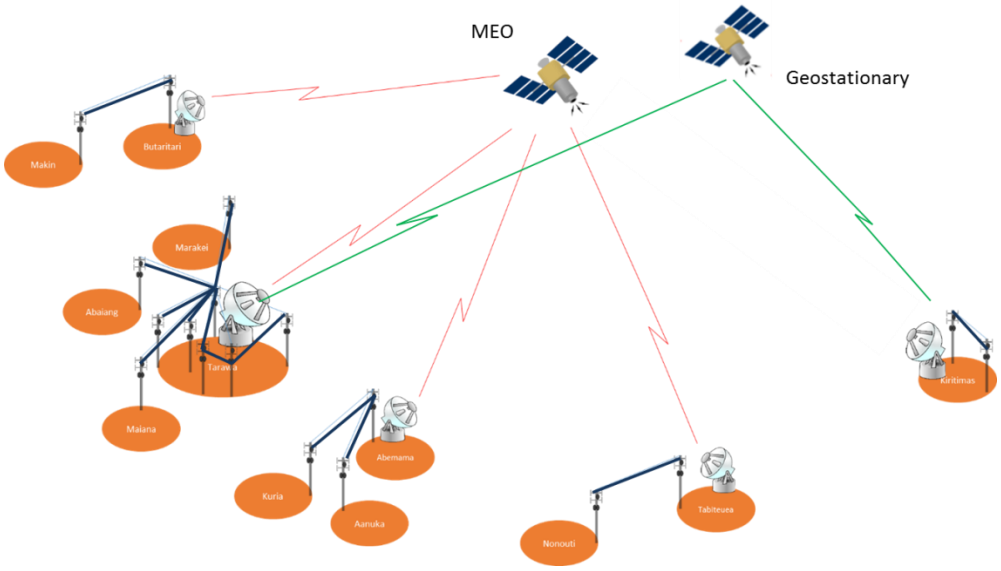
This suggests that approximately 87% of Kiribati's population could potentially be served with a mobile network based on the schematic diagram in Figure 34. (See also "*Market potential*" on page 40 for further considerations in designing inter-island backhaul and international connectivity.)

In this scenario the served islands might set up in four clusters. Cell sites would be connected via microwave within each cluster and by satellite between the clusters. Access is also available to a duct that runs from the airport located at Bonriki to Bairiki. This duct is likely to be suitable for installing a fibre to connect network facilities within Tarawa. The main switching and network operations centre could be located on Tarawa (possibly at Bairiki).

Supporting facilities, such as billing and finance could also be located on Tarawa or, if the MNO had other operations in other countries, it may be possible to locate those services outside of Kiribati. This would allow for additional economies of scope and scale to be achieved.

In terms of distribution, there is an abundance of retail outlets on Tarawa which would be a natural means of distribution for contracting new customers, selling SIM cards and top-ups.

*Figure 34 Potential network configuration*




## Market opportunity

International experience suggests that a mobile penetration rate of 60% of the population should realistically be achievable – a major opportunity given today's 17% level. (See Figure 4 on page 8.) For the purposes of this publication, a conservative estimate of 50% penetration of the population on each of the islands served has been used as the basis for revenue estimates.

Similarly, low latency international bandwidth via satellite operators will make data services more useable and more attractive to customers. As a result, it would be reasonable to expect that both voice and data revenues will increase rapidly.

Other opportunities for new revenue from services not currently provided include international roaming (outbound and inbound). This creates a substantial market opportunity as international roaming can account for 2 – 5% of revenues. This number looks set to rise as international travel and data usage increases.

As penetration rises, inbound international calling can also be expected to become an important source of revenue for a new operator. Approximately 6.5% of Kiribati people live outside of Kiribati and are an important source of remittance income for the country. As well as providing remittances, it would be reasonable to expect that they will generate incoming international calls from which inbound international revenue may be derived.

There are a range of other services that a MNO could offer, including:

- mobile banking services that enable the transfer of funds and micropayments within Kiribati and facilitate the flow of remittances from outside of Kiribati;

- web-based top-up of prepaid accounts, including the facility for people outside of Kiribati to top up Kiribati customers prepaid accounts;
- information and entertainment services;
- gaming services; and
- handset sales and service.

## Wireless ISP (WISP) and voice services

### Introduction

Experience in other low income markets suggests that Kiribati offers an opportunity not only for mobile services as described above but also for Wireless ISP broadband services. The first operator to provide such services, TeniCom, is now entering the market.

While different approaches could exist, the example discussed in this section is a hybrid Point to Multi-point (PTMP) system with Wi-Fi hot-zones designed into the network architecture. It is referred to more commonly in the industry as a hybrid WISP model. The service is full IP play with data, voice and video delivered over IP.

Customers need "line of sight" to a high site to receive a service. The customer's premises are connected to the network using an access point (AP). Each customer would be provided an indoor Wi-Fi hotspot to provide Wi-Fi enabled devices within the home or business premises with Internet access. The customer would also be given an Ethernet connection. A VOIP desktop phone can also be connected to the AP for high end residential and SME market.

Hot-zones are an overlay on the PTMP network where specific customer Apps are used to distribute public outdoor Wi-Fi hotspots. A series of overlapping hotspots form a hot-zone allowing a degree of mobility in high traffic and public areas on each island.

The hybrid model uses smaller, cheaper radios to create a hybrid PTMP and Wi-Fi hotspot designs. The network therefore provides Internet, voice and hot-zone - public access services.

The coverage plan could follow the four geographic clusters described in "*Market potential*" on page 40. Each cluster is in terrestrial microwave reach of islands in its vicinity and could act as a secondary network hub for each cluster where traffic would be aggregated and relayed to the network hub in Tarawa. The traffic could be carried via tier 2 satellite links.

The clear advantage of a broadband wireless network strategy is that a "pay as you grow" strategy is can be adopted as increasing radio capacity and coverage is simple and relatively inexpensive. The cost of a fully installed high site is typically less than $1,500. These high sites are simply linked back to the main high site and even come in self-install kits. Only minimal technical skills are needed to deploy new sites.

Wireless networks have proven to be able to carry significant traffic and customers. In sub-urban areas, a potential of 250 customers per square km is

possible.[16] In high density city environments, up to 900 potential subscribers per square Km.[17] The inhabited parts of Kiribati are densely populated, but the technology can accommodate these densities should demand increase beyond the projections.

### Market opportunity

The broad market segments that typically use wireless broadband services are as follows:

*Table 12 Broad market segments*

| Market Segments | Voice (VOIP) | Broadband Internet | Public Access / Hot zone |
|---|---|---|---|
| High income residential | | ■ | |
| SOHO / small business | ■ | ■ | |
| Govt and business offices | ■ | ■ | |
| Mobile users / mass market | | | ■ |

Due to economic and demographic differences, all the market segments would likely be addressed on South Tarawa whilst only the SOHO and hot-zone markets would be addressed on the other islands.

The CCK does not guarantee the business ideas presented here and investors should carry out their own complete analysis, and may choose assumptions and predictions that are more optimistic or pessimistic than were used here.

## Wholesale handset and accessories

A key element in the development of Kiribati's telecom sector will be the availability of low cost devices – basic GSM mobile phones, smartphones, tablets and laptops, particularly devices equipped with GSM, 3G and WiFi connectivity. The ability of customers to obtain devices that will use the network will be a key driver of usage that will make network investment viable.

This is an area where local businesses and investors in particular can play a key role, using already-established wholesale purchasing, shipping, importing, and distribution systems. It is not an area dependent on extensive network design and operating knowledge.

The pace of take-up of devices can be expected to be rapid even despite Kiribati's low income levels. Developing countries worldwide show very high rates of phone ownership, as illustrated in Figure 35. Essentially, this is an opportunity to sell tens of thousands of devices that are typically sold at prices between USD 10 to USD 100 at the low end of the market. Assuming, as is reasonable to assume, that 50,000 I-Kiribati become subscribers over the next

[16] 330 customer proven in a network in Scottsdale USA.
[17] in Boston: 1,200 customers per square Km.

four years (see Figure 2 on page 7) and that handsets average USD 30 per unit, this alone represents a retail market of USD 1.5 million that is likely to be achieved over a few years. Beyond then, the market can only be expected to grow.

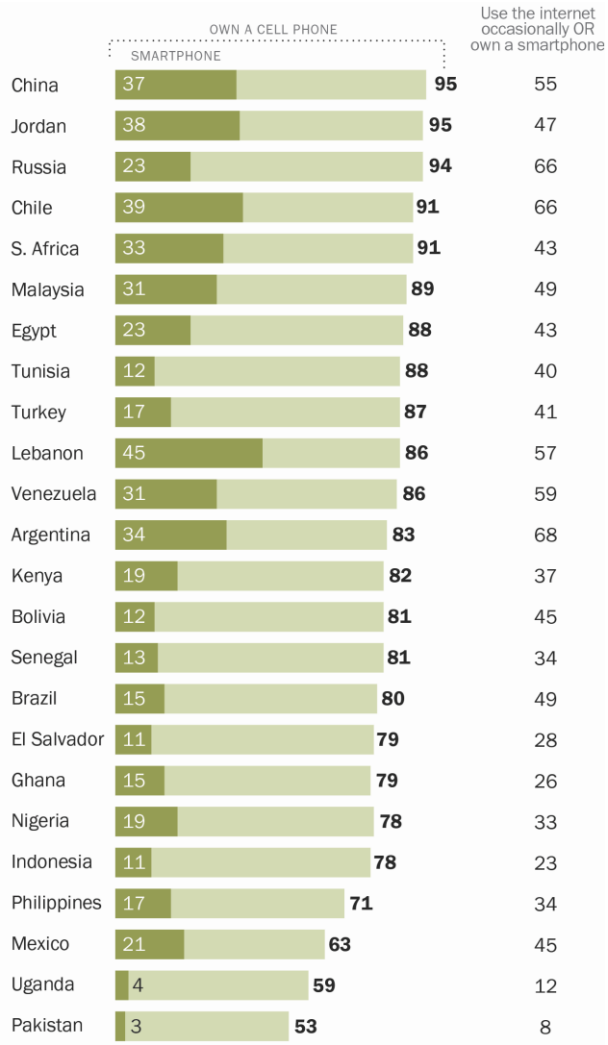
## Distributor role

There is thus an opportunity for distribution of mobile handsets and accessories at wholesale level to retailers on the islands. A formal distributor relationship with a manufacturer could include marketing and training support to a distributor committed to the manufacturer's brand.

The distributor would supply accessories such as batteries, chargers, covers and pouches. Accessories enjoy very high margins usually in excess of 80%, with both genuine and grey market accessory products being stocked due to the high price differential.

A distributor would need a very small warehousing / storage facility (<100sqm) to support such a business with a basic stock control and financial system (off the shelf). Sales would be made directly to retailers. A retail outlet will be very advantageous and protect the distributor from retail penetration into the wholesale market.

*Figure 35 Percentage of population who…*




*Source: Pew Research Centre 2013*

A distributor from the outset would support the manufacturer's warranties and create a reliable reputation in the market for upholding such warranties. The manufacturer would provide swap out stock to ensure customers are protected from out of box failures and device failure in warranty period.

Assuming the average life span of a handset is 24 months, the turnover of handsets could become approximately 20,000 units per annum. A large share of handsets will likely be acquired abroad, perhaps 50% of the market. Lost and un-repairable phones also add 5-10% of subscriber base units to sales. With 10,000

handsets per annum at an average margin of 15% with average sales price per handset USD 60, there would be a gross margin of USD 90,000 per annum. If accessory turnover were USD 10 per customer per annum, a USD 15,000 gross margin per annum could be expected. This results in a total gross margin opportunity in excess of USD 100,000 per annum.

### Obtaining refurbished phones

The market in low price used smartphones is growing, particularly as operators in wealthier markets often provide trade-in offers that allow customers to swap their existing handsets for new handsets with more features.

To illustrate this, according to a recent survey,[18] 60 per cent of users in the U.S. and Germany upgrade their phones to have the newest model. The global market for sales of used, refurbished phones to end users was 56 million units in 2014 and is expected to grow to 120 million units by 2017, with an expected annual wholesale revenue of US$14 billion. Two thirds of smartphones are now reused in the second hand market. There are many wholesale sellers of such used phones internationally,[19] including in Hong Kong, China, Vietnam and other Asian countries not far from Kiribati, with handsets available at low prices.

Phones are typically offered wholesale at different grades, e.g.:

- Grade A mobile phones are just like new with little or no signs of use.
- Grade B phones show signs that they have been used, e.g., minor scratches.
- Grade C phones show signs of heavy use but are nevertheless functional.

These all have full functionality and are available at a fraction of the price of new handsets.

### Obtaining new low price handsets

The market in new low price smartphones is also increasingly competitive, with Chinese and Indian manufacturers offering low priced devices. Many are available on a retail basis at prices well below AUD 100, many relying on Android operating systems down to AUD 50. Basic GSM handsets retail at far lower prices. The wholesale purchase price for an importer to Kiribati will of course be even lower.

## Wholesale mobile airtime and SIM distribution

Another wholesale opportunity in the growing Kiribati market will be the distribution of prepaid airtime and SIM cards to retailers. This can also include distribution of wireless network data and airtime vouchers.

This opportunity is dependent on the network operator's willingness to outsource the distribution if airtime to the retail channel. If so, an opportunity exists to distribute airtime both physically and electronically. SIM card

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[18] Gartner Research, Poll of 5,600 consumers in June 2014

[19] E.g. GYTelecom operates out of Hong Kong (http://www.gytelecom.com/), with others operating out of Poland, The Netherlands and the UK (http://www.used-phones-wholesale.com/, http://akbono.com/trade.html and http://second-handphones.com/).

distribution is a smaller line of business which has to be sold physically with the objective to increase the subscriber revenue base.

Electronic airtime distribution would require airtime distribution software to manage this. The operator can be expected to provide this if needed.

The smaller islands can appoint a dealer / retailer to undertake the distribution on each individual island. This fits in with local island councils and cooperative models on the islands.

A distributor can be expected to undertake direct sales of SIM cards to the market by the operator.

The scale of the opportunity is a portion of the total airtime revenues generated by the mobile operators. It is often approximately 2% of total airtime revenues. Electronic distribution often receives a higher margin due to absence of physical airtime card costs. Any airtime sold through the distributor's own retail outlets would ensure the retail margin is also earned by the distributor.

The distribution of SIMs is a low margin business line but typically vital to ensure subscriber growth.

### Retail mobile airtime, handsets and accessories

The retail sale of airtime, SIMs and, to a lesser extent, handsets will provide a multitude of existing retailers with additional product lines. Market forces will possibly see the establishment of a few dedicated handset and accessory retail outlets retailing handset models not supported by the main mobile handset distributor on Kiribati. This will provide the necessary choice and competition for the market.

The sale of physical prepaid and electronic airtime vouchers presents the biggest revenue opportunity to nearly all retailers. The retailer earns between 3-5% margins in many emerging markets. Stock is turned over at least 15 times a month which presents a 50-100% return on investment per month.

SIM cards carry little margin opportunity because they are one off purchases and of low value, but are a necessary product for retailers to stock.

Handset, SIM card sales and top-ups will likely be the largest portion of the mobile retail business in early period. However, as the market grows, demand will rise for more diverse products and services.

Retailers will be able to offer accessories and after-sales options. Accessories include antennas, batteries, belt clips, cables and adapters, cases, chargers, faceplates, and modems. Value-added services can be expected to grow, for example offering technical support for set-up or for problems, anti-virus software and other applications, handset maintenance and repairs. From the outset, retail outlets might also profitably offer short term phone rental and power for recharging batteries.

Retail outlets can be large centralised shops or small widely distributed family businesses up and down the road on Tarawa and Betio and the other islands.

More sophisticated services, such as repairs, will of course require centralised expertise. However, the majority of adjustments to devices required to correct malfunctions can be quickly learned, including with online guides and short video clips on YouTube. Enterprising young people will be able to set up repair shops whether separately or as part of larger retail outlets.

Setting up a retail phone business need not be complex or difficult. It does not require deep technical knowledge but rather skill in retailing to the population:

- Basic business know-how
- Knowledge of the industry and technology
- A business license
- A retail storefront
- Office equipment
- Inventory
- A price schedule
- Employees
- A marketing plan

Further ideas about setting up a retail outlet for mobile phones can be found online.[20]

## Handset repairs and warranty support

The development of the telecom market will produce and depend on a small low level technical business opportunity in providing mobile handset repairs. These can be offered as part of or separate to a wholesale or retail handset distribution business. It requires an individual, often a self-trained technician, with an aptitude for electronics. The business can form part of an existing business that supports computer hardware / software support or other electronic repair business on Tarawa.

If this business supports a distributor handset brand, the manufacturer may provide support to a repair centre in terms of training, repair equipment and diagnostic software. A small, well branded, centrally located shop is generally sufficient for this business. It can also be a counter and workshop that forms part of a bigger electronics support business or even part of the Distributor's premises.

The size of the opportunity depends on the size of the mobile subscriber base. Repairs undertaken within the manufacturer's warranty period are paid for by the handset manufacturer and are lucrative revenue stream as the repair fees are globally based. Out of warranty repairs and walk-in repairs are typically charged at rates set by the repair centre depending on market conditions and local cost base.

[20] E.g., see http://www.bplans.com/cell_phones_retailer_business_plan/executive_summary_fc.php

The repair centre also sells parts such as screens, buttons and casings where such parts need to be replaced. Margins on parts are often in excess of 40% and form a lucrative revenue source. In addition, brands such a Samsung offer free screens within warranty periods to customers, which Samsung refunds the repair centre.

### Wireless network installers

There is likely to be quickly rising demand in Kiribati for the installation of wireless access points at residential and business locations. The wireless network provider will typically provide the equipment to ensure quality control and therefore the installer will not need to carry stock. The installer would usually earn a fixed fee for each installation completed.

The installer would only need a low level of technical expertise which will be provided through training from the network provider. The installer will install antennae, cabling, connect power and install the termination boxes in the customer's premises. If needed a VOIP phone can also be installed.

A natural extension to this business, the installer can act as a sales agent as well. This provides an additional opportunity to earn a sales commission where the installer finds customers.

The network provider can also train the installer to undertake basic network technical maintenance work and troubleshooting such as re-booting routers, generating monthly fees. Given the small size of the business opportunity, it is likely that a single representative of each island would undertake these functions.

### Internet services: email, domain and web hosting

Over time, a market will grow in a range of internet services primarily aimed at the business market. This opportunity is relatively small as the business market is small and secondly these services are of low value and increasingly free (e.g. Google email and domain name hosting services). However these services are sometimes difficult and complicated to manage for businesses who prefer to out-source these services. Furthermore, local hosting will reduce the need for international capacity required to reach servers in other countries, and thus reduce the overall costs on the Kiribati market.[21] Email hosting also provides more reliable service as emails are spooled. An additional service that can be provided in time is managed firewalls.

### Internet Exchange Point (IXP)

Installing and operating an IXP will allow local switching of local Internet traffic so that the traffic remains on the Kiribati networks as opposed to using

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[21] See *Promoting Local Content Hosting to Develop the Internet Ecosystem*, Internet Society, January 2015, available at http://www.internetsociety.org/sites/default/files/Promoting%20Local%20Content%20Hosting%20to%20Develop%20the%20Internet%20Ecosystem.pdf

expensive international IP backhaul via satellite.

In time, all Kiribati service providers will benefit from an IXP. There are various ways an IXP model can be implemented. It is common for the operators to contribute and partner in the establishment of an IXP. A neutral operator is often utilised to operate the IXP.

An IXP would need connectivity to each network operator's gateway. The routing is done by the operator. The IXP maintains the local url database.

The commercial model tends to be a fixed income model where the operator is paid to manage and operate the IXP with some portion of the revenues linked to volumes of traffic switched.

## Managed networks and specialised services

There are likely to be discrete market opportunities providing managed networks for larger network organisations such as private businesses and government. This would include, for example, providing services to the banking sector, which has a substantial need for secure international bandwidth and virtual private networks (VPNs). It could include providing services to the shipping industry. The power sector does not currently rely on central electronic control over its facilities (whether the limited grid, generator or solar power) due to lack of communications infrastructure, but could achieve efficiency gains to justify employing telecommunications for such purposes. Government, whether central or local island councils (or coordination among these), will also naturally be a substantial user of telecom services.

## Mobile money and remittances

In time, mobile money could develop on Kiribati using a low cost platform.. This may be more viable if integrated with transfer of foreign remittances. According to the Kiribati Chamber of Commerce and Industry, foreign aid from the EU, UK, US, Japan, Australia, New Zealand, Canada, Taiwan, Cuba and UN agencies accounts for 20 – 25% GDP. Remittances from seaman on merchant ships and a small workforce in Australian and New Zealand working in the agricultural sector account for more than AUD 5 million each year.

## Site development and leases

Telecom network operators will need to locate sites for their telecom equipment, negotiate access to land and buildings, obtain necessary permits, clear necessary space, dig necessary foundations for towers, and erect towers and poles. All of these activities will depend on local knowledge of land and building ownership, leasing arrangements for government, private and communal property, processes for obtaining administrative permissions whether from the CCK, local councils or other bodies, as well as construction services. Local companies will have opportunities to assist with these.

Telecom network operators will typically rent use of land and buildings to install towers, poles, masts and other equipment that host antennae and other telecom equipment. The nature and scale of land or buildings needed varies widely depending on whether a tall tower is being built and requires a secure

fenced area around it or whether a transmitter can be installed directly on top of an existing building. One way or another, though, there will be a business opportunity for local owners and tenants of land and buildings to make space available for telecom operators.

## CONCLUSION

This booklet has sought to introduce Kiribati, its economy and business opportunities in the communications sector, whether for international operators or for local businesses. The Kiribati market comprises a concentrated population hungry for services that is currently served by very few service providers. The CCK is committed to being a facilitator of investment and competition in the sector with a view to improving the availability, quality and price of services to the population, businesses and the Government of Kiribati. Investors seeking further information should review the CCK's website and contact the CCK at:

Email: info@cck.ki

Tel: +686 25488

# Appendix 1: Organisations and aid agencies

**Kiribati Law Society**

PO Box 501, c/o High Court Office
BETIO, Tarawa, Republic of Kiribati
Tel: +68 626 007
President: Sister Bernadette Eberi (Acting)
Email: bernadette.eberi@gmail.com

**ANZ Bank**

PO Box 66, Tarawa, Kiribati
CEO: Rufus Pinto
Tel: +686 21 067
Fax: +686 21200
Email: rufus.pinto@anz.com

**International Finance Corporation (IFC)**
Gavin Murray
Regional Manager, Pacific
Email: gmurray@ifc.org
IFC Pacific Office, Level 18/14 Martin Place
Sydney NSW 2000, Australia
Tel: (61-2) 9235-6519
Fax: (61-2) 9235-6595

**Chamber of Commerce and Industry**

PO Box 550, Betio, Tarawa, Kiribati
CEO: Tabokai Kiritome
Mob: 72098118
Tel: +686 26351
Fax: +686 26332
Email: ierevia.b.kcci@gmail.com

**New Zealand High Commission In Kiribati**
High Commissioner Michael Walsh
Phone +68 621 400
Fax +68 621 402
Email nzhc@tskl.net.ki
Postal PO Box 53, Bairiki, Tarawa, Kiribati

**New Zealand Pacific Island Business Council**

Contact Christine Connon
Phone +64 9 302 9932
Fax +64 9 309 0081
Email executiveofficer@nzpbc.co.nz

# Appendix 2: Government contact list[22]

GOVERNMENT OF KIRIBATI

OFFICE OF TE BERETITENTI

P.O Box 68/ Bairiki Tarawa/ Tel:21183/ Fax:21902

## Ministries

| Ministry | Websites | Telephone (686) | Fax (686) | Address |
|---|---|---|---|---|
| **Ministry of Foreign Affairs and Immigration (MFAI)** | www.mfa.gov.ki | 21342<br>21368 | 21446 | PO Box 466, Bairiki |
| **Public Service Office (PSO)** | www.pso.gov.ki | 22789<br>22790 | 21145 | PO Box 68, Bairiki |
| **Ministry of Labour and Human Resource Developoment (MLHRD)** | www.labour.gov.ki | 21097 | 21452 | PO Box 69, Bairiki |
| **Ministry of Finance and Economic Development (MFED)** | www.mfed.gov.ki | 21086 | 21307 | PO Box 67, Bairiki |
| **Ministry of Public Works & Utilities (MPWU)** | www.mpwu.gov.ki | 26192<br>26142 | 26172 | PO Box 498, Betio |
| **Ministry of Health and Medical Surveillance (MHMS)** | | 28100<br>28701 | | PO Box 268, Nawerewere |
| **Ministry of Education (MOE)** | www.moe.gov.ki | 28091<br>28153 | | PO Box 263, Bikenibeu |
| **Ministry of Women, Youth and Social Affairs (MWYSA)** | | 21017<br>21120 | | PO Box 265, Bairiki |
| **Ministry of Fisheries and Marine Resources Development (MFMRD)** | | 21099 | 21120 | PO Box 64, Bairiki |

[22] The contact list is taken from the website of the Office of the Presidency: http://www.president.gov.ki/information-library/

| Ministry | Websites | Telephone (686) | Fax (686) | Address |
|---|---|---|---|---|
| **Ministry of Environment, Lands and Agricultural Development (MELAD)** | | 28211<br>28647 | | PO Box 234, Bikenibeu |
| **The Ministry of Line and Phoenix Islands Development (MLPID)** | | 22854<br>22853 | | PO Box 164, Bairiki |
| **Ministry of Communications, Transport and Tourism Development (MCTTD)** | | 26003 | 26193 | PO Box 487, Betio |
| **Ministry of Commerce, Industry & Cooperatives (MCIC)** | www.mcic.gov.ki | 26157<br>26158 | | PO Box 517, Betio |

## Agencies and SOEs

| Agencies and State Owned Enterprises | Websites | Telephone (686) | Fax (686) | Address |
|---|---|---|---|---|
| **Communications Commission of Kiribati (CCK)** | www.cck.ki | 25431 | | PO Box 529, Betio |
| **Foreign Investment Commission** | www.mcic.gov.ki | | | Mr. Tokoia Oben<br>Ag. Foreign Investment Officer<br>toben@mcic.gov.ki |
| **Kiribati Provident Fund (KPF)** | www.kpf.com.ki | 21153 | | PO Box 76, Bairiki |
| **Air Kiribati** | | 28532<br>28533 | 29716 | PO Box 274, Bonriki |
| **Development Bank of Kiribati (DBK)** | www.dbk.com.ki | 21665 | | PO Box 33, Bairiki |
| **Broadcasting and Publications Authority (BPA)** | | 21547<br>21549 | | PO Box 78, Bairiki |
| **Kiribati Port Authority (KPA)** | www.kpa.com.ki | 26972<br>25510 | | PO Box 506, Betio |
| **Kiribati Oil Company (KOIL)** | | 26090<br>26052 | | PO Box 488, Betio |
| **Kiribati Shipping Services Limited (KSSL)** | www.kssl.com.ki | 26162<br>26195 | | PO Box 495, Betio |

| Agencies and State Owned Enterprises | Websites | Telephone (686) | Fax (686) | Address |
|---|---|---|---|---|
| **Kiribati Housing Corporation (KHC)** | | 26702 | | PO Box 491, Betio |
| **Kiribati Copra Mill Company Limited (KCMCL)** | | 26831 | | PO Box 607, Betio |
| **Public Vehicle Unit (PVU)** | | 26017<br>21619 | 26343 | PO Box 459, Betio |
| **Public Utilities Board (PUB)** | www.pub.com.ki | 26276<br>25201 | 26106 | PO Box 443, Betio |
| **Kiribati Solar Energy Company Limited (KSECL)** | | 63797<br>50507<br>50517 | 26120 | PO Box 493, Betio<br>CEO: Tavita Airam<br>tavitairam@gmail.com |
| **Telecommunications Services of Kiribati Limited (TSKL)** | | 20700 | 21141 | PO Box 72, Bairiki<br>TSKL's CEO, Teannaki Tongaua, ttongaua@gmail.com, Tel: 720 90000 |
| **Kiribati Insurance Corporation (KIC)** | www.kic.org.ki | 25352 | | PO Box 509, Betio |

# Appendix 3: Licence fee schedule

The licence fee schedule below is Schedule 2 to the Licensing Rules for Communications Networks and Services, which are available on the CCK's website at http://www.cck.ki/index.php/services/licensing/network-and-services-licences.html.

| **INDIVIDUAL LICENCES*** | **Description** | **License Term** | **Initial Application Fee**** | **Annual License Fee Based on % of AGR** |
|---|---|---|---|---|
| Mobile Cellular Communications Services | Provides a range of mobile communications services to the public by deploying own infrastructure or by leasing infrastructure from others | 15 years | $1000 | 1% ≥ 75% coverage*** 2% ≥ 65% coverage 3% < 65% coverage |
| Fixed Line Services | Provides a range of fixed line communications services to the public by deploying own infrastructure or by leasing infrastructure from others | 15 years | $500 | 1.5% |
| Network Infrastructure Services | Network owner who leases network elements to third parties for a fee | 15 years | $500 | 1.5% |
| Local Communications Services provided in Kiribati's Outer Islands | Any communications service provided by a network service provider based in an Outer Island | 15 years | $250 | 0% for the first 5 years |
| International Gateway Services | Any facility through which international telecommunications traffic is sent and received. Can be submarine cable system or the earth stations that link a domestic network to a satellite system | 10 years | $250 | 1.5% |
| Internet Exchange Services | Provides infrastructure that enables the exchange of Internet traffic within the country and/or with international Internet exchanges | 10 years | $250 | 1.5% |
| Internet Services | Provides Internet Services for a fee using own network | 10 years | $250 | 1.5% |
| **CLASS LICENCES** | **Description** | | **Initial Application Fee*** | **Annual License Fee** |
| Internet Café | Provides public access to the Internet at a specific location with a radius not to exceed 50 meters by reselling the Internet services of network service providers. | indefinite | 0 | $50 |

| | | | | |
|---|---|---|---|---|
| Internet Services | Provides Internet services for a fee by reselling the Internet services of network service providers. Includes Wide Area Network areas, WiFi hot spots with a radius greater than 50 meters and VOIP services. | indefinite | 0 | 1.5% |
| Prepaid Calling Card Services | Provides national/international prepaid calling cards through the resale of telephony services from a network service provider. | indefinite | 0 | 1.5% |
| Digital TV Satellite Services | Provides national digital TV satellite services by reselling/distributing the services of a network service provider. | indefinite | 0 | 1.5% |

Notes:

1. Licensees, except for Internet Cafés, who earn less than $7,000 in a given license year, shall pay a minimal license fee of $100.
2. A single licence will be issued to applicants who provide more than one licensed service.
3. Operators of private networks do not need a licence and are not required to pay licence fees.

* The list of licensed services is indicative only and persons are encouraged to apply for any other service as appropriate.

**The application fee for an Individual Licence with multiple service offerings will be based on the service with the highest application fee.

*** Coverage refers to the population coverage of the inhabited islands of Kiribati based on the current census.