White Paper

"Mobile phones have given more power to the people and have encouraged entrepreneurship in developing countries. Mobile telephony allows users to access information relevant to education, health, employment, mobile banking, and to also maintain and enhance family relationships and social networks."

the United Nations Conference on Trade and Development

The General-Secretary of the International Telecommunication Union (ITU) of the UN, Hamadoun Touré, said inone of his speeches: "... the main task we are dealing with in the ITU, means the UN, is to reduce digital barriers and eliminate digital inequality among different regions of the world. "

Table of Contents

Abstract

Introducing CTR.

- CTR - Capacity Transfer Radio and represents the name of the project
- Our own product is called CTRU (Capacity Transfer Radio Unit) and comes with revolutionary technology
- CSCT (Cellular System with Capacity Transfer) is an unique patented technology, which provides mobile operators with a cost efficient Plug'n'Play solution, enabling networks to expand footprint in sparsely populated and economically underdeveloped areas.

In recent years, the rapid development and adaptation of information and communication technologies (ICT) have become important factors in the modernization of society, affecting not only economic indicators, but also people's lifestyles. In order to form a modern information and communication space, the development of the telecommunications industry, the creation of a modern ICT infrastructure, the spread of telecommunication and electronic services, and the formation of the foundations of a dynamic information society will continue.

Enhancing the role of information exchange is one of the main trends in the development of the global economy in the second half of the 20th and early 21st centuries. This process is most clearly seen in the developed countries, which began the transition to a post-industrial (informational) economy, characterized by an increased contribution of knowledge, technology, and know-how to economic growth. The increasing role of information as an intangible good and the most important factor of modern production requires the presence of special means that allow it to be included in production processes. In the conditions of informatization of the economy, one of the most important means of information exchange is telecommunications, or telecommunications, transmitting information at a distance through electricity, electromagnetic or light radiation. Together with the means of creating, storing, processing and using information, telecommunications form a single information and communication unit of the economy. The information and communication sector has become an equally important and comprehensive part of the national, regional and global infrastructure like electricity, health care, and transport.

Today, the penetration of mobile service in many geographic markets is still below 50%. The reason is the lack of economic viability for operators in building fully blown radio access networks in sparsely populated or economically depressed areas. On the other hand, telecom operators can significantly grow the number of unique subscribers only by improving coverage of rural and relatively poor areas. Many operators are looking for inexpensive, easy to deploy and reliable solution to expand their network footprint and provide services to millions of incremental customers in what now appears to be a very challenging territory.

Glossary

GSMA (the GSM Association): An organization that represents the interests of mobile network operators worldwide. At the moment, 800 mobile operators are its full members and 300 are its associate members.

ITU (the International Telecommunication Union): A specialized agency of the United Nations, an international organization that defines recommendations in the field of telecommunications and radio and regulates issues of international use of radio frequencies.

LTE (Long-Term Evolution): A standard for high-speed wireless data transmission, increasing the bandwidth and speed due to the use of another air interface,along with the improvement of the network core, for mobile phones and other terminals working with data.

RAN Sharing: A form of sharing all equipment for network access. Each of the RAN access networks is included in one network, which is then divided into separate networks at the junction point with the core.

UMTS (the Universal Mobile Telecommunications System): A cellular communications technology developed to implement 3G in Europe.

Blockchain: A continuous chain of blocks, in which information is stored, built according to certain rules. Most often, copies of blockchains are processed on a variety of computers around the world; information recorded in a blockchain cannot be deleted.

A smart contract: An electronic algorithm designed to automate the process of executing contracts in the blockchain. Its main development idea was the divergence of interpretations of the contractual clauses by the parties to it. ERC20: The Ethereum blockchain token standard. It makes assets more easily interchangeable and ensures that they can work with Dapps that adhere to the same standard.

A token: An accounting unit of a digital asset, which is recorded in a database based on the blockchain technology.

Ovum: An independent analyst and consultancy firm headquartered in London, specializing in global coverage of IT, and telecommunications industries.

Market overview (Customer Needs)

The telecommunications industry is a rapidly growing market, evolving from providing telephone conversations to services of transmitting messages, photos, and data, and of a high-speed Internet access. In 2016, mobile technologies and services generated 4.4% of GDP globally, equivalent to around $3.3 trillion of economic value. This is projected to increase to more than $4.2 trillion (4.9% of GDP) by 2020. The growth is driven by the development of new services (e.g. 5G, IoT) on mature markets (USA, Europe) as well as further expansion of subscriber

base on emerging markets where considerable part of population remains outside the mobile network footprint.

Although there is very little consensus over the total number of base station deployed by operators around the globe, and therefore, the incremental number of installation at any given period of time, the indications by renown authorities (such as Ovum or GSMA) suggest that entire installed base of radio access nodes exceeds 7 mln. The said estimate seems to agree with the assumption that one access node is required for every 1000-1500 mobile subscribers. Given that total subscriber population in the world is 7.5 bln (a milestone widely celebrated at World Mobile Congress in February 2018), the total installed base of radio access nodes should be somewhere within the range of 6.5-7.5 mln. Having stated this one should very carefully specify the very definition of "base station" or "radio access node". The estimate above refers to the following:

- Radio access site (as opposed to "technical point" or "base station sector", or TRX)
- Only macro-sites as opposed to femtocells and other "micro cells" installed indoor or outdoor.

Network expansion factors

There are three major factors driving the expansion of mobile radio access networks and demand for incremental radio access nodes as well as cellular sites:

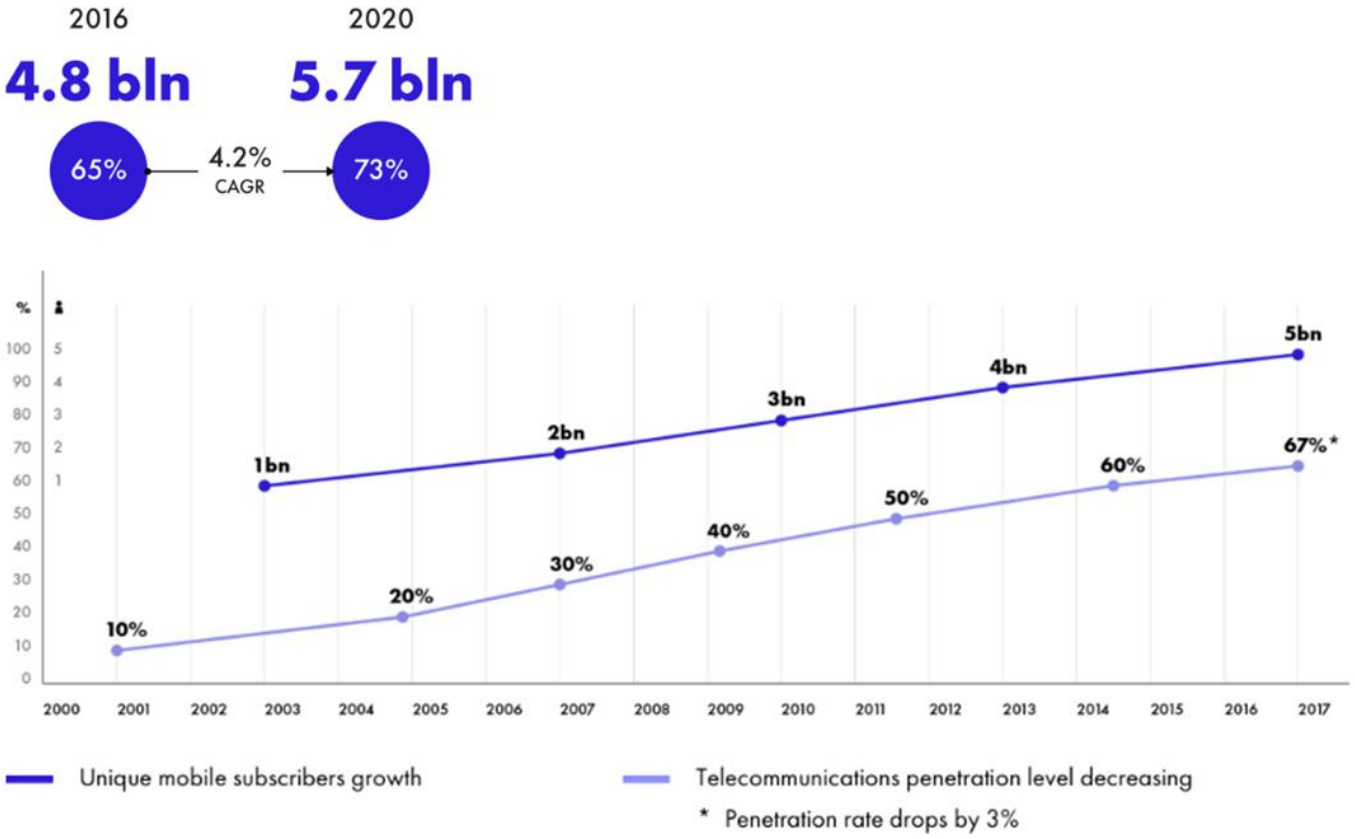
1. Subscriber growth. Evidently, the higher is the penetration of mobile service on the global arena, or within a particular geographic market, the more network capacity should be deployed to accommodate incremental traffic. This factor has been a principal driver for mobile network development since the turn of the century through to 2010-2012 when developed market entered saturation hase. According to GSMA, subscriber population in Europe, USA and on the most advanced Asian markets expanded at CAGR 1.5% between 2010 and 2015. Still on many developing markets, and particularly in Sub Saharan Africa, and South-East Asia many markets keep growing at double digit annual rate.

2. Technology Evolution. Each new generation of mobile communication, i.e. GSM (aka 2G), UMTS (aka 3G), iterations of HSPA(4G) as well as emerging fifth generation, offer higher access speed and more network capacity for each of mobile service subscribers, however with simultaneous significant reduction in footprint for each individual radio access node. Because of the radio wave propagation patterns and modulation technique, the effective radius of an average cell in projection on the Earth surface in 4G is almost twice as short compared to 2G. In other terms, one needs four times more radio access nodes in 4G to cover the same territory. Obviously when deploying 4 nodes, mobile network operators can reuse some of the sites already established within 2G footprint. The disparity in propagation is particularly pronounced in scarcely populated areas where

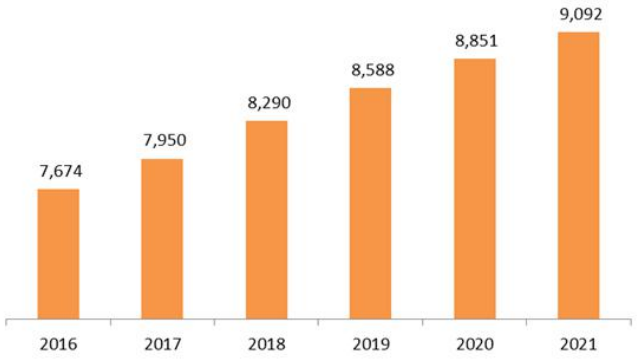
3. Relative traffic growth. Over the last 10 years mobile data traffic volumes have been doubling every 2 years or so. The trend could be observed on practically all markets regardless of the relative maturity. Incremental demand requires

adequate additional capacity, which could be provided through either incremental frequency bandwidth (which is rarely available without re-farming) or incremental number of sites and radio access nodes. With other parameters being equal, a denser network with small cells should be able to accommodate more traffic. There are all reasons to believe that the trend observed historically in mobile industry should hold and compound average growth rate for mobile data traffic should remain in the ballpark of 40-45% per annum.

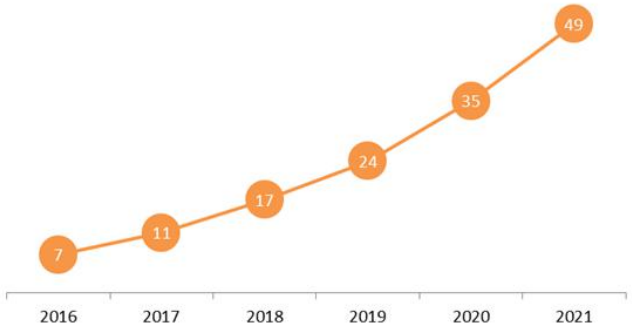
According to GSMA, the total number of unique mobile subscribers is projected to increase from 4.8 bln in 2016 to 5.7 bln in 2020. But the number of "connections" should increase from about 7.9 bln at the end of 2016 to 9.7 bln at the beginning of 2021. Assuming that the number of radio access sites should increase proportionally (which by itself is extremely conservative assumption, given the trend for smaller cells), we should expect over 8.5 mln macro cellular sites up and running by the end of 2020.



Mobile subscribers (mln)



Data traffic in mobile networks (Exabytes per month)



Phil Marshall, chief research officer at Tolaga Research, estimates the global number of base stations at 6.5 million sites, while Chinese equipment vendor Huawei puts the number at 7 million. Informa's estimate was 6 mln in 2013, with 1 mln incremental sites every 5 years.

That translates into 300,000 incremental sites per annum between 2015 and 2020.There is little doubt, that the roll out of 5G networks should further drive the demand for incremental radio access infrastructure. However, the effect will first take place in extremely highly populated areas, where macro cells can be easily collocated with existing sites. Even leaving to aside the effect from 5G initiation, the scale of network expansion remains very significant – suffice it to mention that annual increment of 300,000 in terms of new cellular sites is comparable to the entire portfolio of unique sites operated by all US mobile networks put together.
Also, it is predicted by 2020, almost 860 million new subscribers will be added, taking the global penetration rate to 73%. With developed markets approaching saturation, developing markets will account for nine out of ten new subscribers in the four years to 2020. Asia Pacific will add approximately 571 million unique subscribers, annual subscriber growth in Sub-Saharan Africa is expected to be 6.2%.
According to a report prepared by the GSMA, in the CIS countries, the cellular communications penetration is 79%, while the connection to the mobile Internet is 54%.
The main reason why certain geographic markets are lagging in terms of penetration is that mobile operators can hardly justify capital expenditure when providing connectivity to sparsely populated rural areas where incremental revenue and cash flow is not adequate to achieve reasonable return on capital deployed.
Mats Granryd, CEO of the GSMA, noted that the number of unique subscribers would grow in the near future due to the communications coverage of rural and poor localities. Many operators are now involved in searching for an optimal solution to do this.
"In recent years, we have faced a large expansion of mobile telephony in Latin America and the Caribbean Region, reaching remote and marginal localities.Mobile telephony has become a valuable tool for strengthening the social media and access to new opportunities for business and employment," Luis Alberto Moreno, President of the Inter-American Development Bank (IDB)
In 2015, the UN approved goals in the field of sustainable development (Sustainable Development Goals) until 2030. The GSMA notes that cellular communication and services coverage of regions with low standards of living is one of the key

influences of the mobile industry for 4 of 17 goals:
- End poverty in all its forms everywhere
- End hunger, provide food security, improve nutrition, and promote sustainable agriculture
- Gender equality, empower all women and girls
- Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

“For the first time ever, we can give meaning to the future, information, choice, and opportunities for people who live in poor countries,” Chris Fabian, Co-Leader of UNICEF’s Innovation Unit.

According to a research, conducted by Arturo Muente-Kunigami and Juan-Navas-Sabater in 2009, called Options to Increase Access to Telecommunications Services in Rural and Low-Income Areas, an average of 10% increase in the mobile telephony penetration could enhance the economic growth of developing countries by 0.81 percent, while a 10% increase in penetration of broadband communication—by 1.4 percent.

“The fastest way to get rid of poverty now is to have one mobile phone,” Muhammad Yunus, Nobel Peace Prize winner, Founder and Managing Director of the Grameen Bank, Bangladesh

The mobile communications coverage of poor or sparsely populated localities can solve problems related to:
- Providing farmers with timely economic information that will help them understand and analyze market prices, facilitating the trade
- Reducing transaction costs and traveling time spent to negotiate the purchase or sale of products
- Help in the organization of more involved and strong communities for making business decisions
- Accelerating communication and making it more effective

“Mobile phones have given people more opportunities and enabled the growth of entrepreneurship in developing countries. Mobile telephony allows users to access information related to education, health, employment, mobile banking, as well as support and improve family relations and social media,” the United Nations Conference on Trade and Development

The cellular communications coverage influences the following spheres of activity:
- Financial sector. Banking services in poor countries are shifted into the telecommunications sphere, enabling people to use basic services: money transfer, depositing.
- Management. UNICEF’s U-Report provides people with the opportunity to be heard by conducting surveys on various issues in fifteen countries through text messages.
- Agriculture. The main activity in developing countries is farming; they can use mobile phones to get access to effective prices and other information influencing the adoption of business decisions. USAID Pakistan together with the local

government and mobile operator **are developing a system** to use text or voice messages to send information about prices, market access, and ways to prevent epidemics to people who grow peaches and potatoes.
- Education. The mobile communication coverage can provide people with a simpler and easier access to information and learning process. For example, a school in Bangladesh **has authorized** the education fee payment by schoolchildren' parents with mobile money, whenever they find it convenient.
- Health. Grameen Foundation, as part of the Mobile Midwife program, sends daily voice and text messages to women with tips on their pregnancy and the first year of their baby's life.Despite such a large number of problems that can be solved with the help of mobile communication, its penetration level is still low. Based on the above study, it can be concluded that some of the key problems are access to electricity, high costs of cellular network coverage rollout, and their low payback.

Project Idea

The main objective of CTR project is the formation of solutions for cheaper and alternative opportunities in telecommunications systems.

The main idea of the project is to provide cheap and affordable opportunities for all people on our planet, especially in developing countries and hard-to-reach places of residence or access to high-speed Internet, mobile communications, and blockchain technology.

Our team designed a revolutionary Capacity Transfer Radio (CTR) technology that provides coverage equivalent to traditional base station coverage with significantly lower total cost of ownership and low power consumption (with the possibility of using alternative power sources like solar panels or wind power plants), small weight and size, which can simultaneously use multiple operators. Mobile operators will be able to decide for themselves if it is advisable to buy their stations when they can be rented. But in one case or another, they have the possibility of both renting and purchasing equipment.

Our invention has been patented in many countries and interested operators of mobile communication in Africa, Asia and Latin America, as well as the developed countries of Europe, with the ability to save energy and at the same time being an environmentally responsible project.

The uniqueness of the blockchain technology provides tremendous potential for the realization of our global idea, such as providing an opportunity for mobile providers to rent our stations without spending on expensive base stations that are currently in use. The blockchain technology makes it possible to make the traffic accounting system (transmission of digital and voice data) transparent when using one "tower" by several operators, as well as in the following areas: digital identity, data management (storage of various documents), roaming, 5G (selection of the most high-speed node for communication), Smart City - due

to openness and transparency, a secure P2P connection for IoT devices to create a cost-effective and self-managing system, as well as enable cellular companies to leave Make your data and customer data anonymous.

With a sufficient level of development of our platform, a decentralized blockchain can become completely autonomous and self-sufficient.

Having in the future many clients in different countries of the world and for quick settlements with them, we will release our tokens for internal settlements. Investors and customers who buy our tokens will be able to earn their interest on the use of mobile operators and network equipment traffic.

Our tokens are generated to serve as a recognized method of payment for all mobile telecommunications transactions conducted through our platform. Users will need to use tokens that can be received and exchanged for fiat currencies and other cryptocurrency assets.

Our company has a clear understanding in the application of blockchain technology for an already almost finished product for industrial production.

Solution

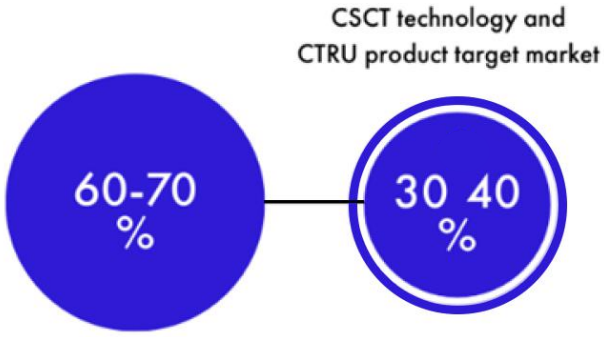
Cellular System with Capacity Transfer (CSCT technology) developed by CTR provides operators with valuable competitive advantages:

- Enables expanding service coverage to the previously underserved areas
- Reduces capital costs and operating costs, increases the return on network investment
- Supports sustainable social and economic development focus
- **Replaces 5 base stations 3G/4G by 1 base station + 4 CTRU (Capacity Transfer Radio Unit)**
- **Provides the ability of sharing a radio access network (RAN Sharing) by multiple operators**
- Offers superior network experience in the areas where other operators do not have coverage
- Enables the use of light masts for CTRU installation instead of heavy towers
- Improves energy efficiency of the site by factor of 5-7 and provides the possibility of using alternative energy sources, such as portable solar panels and fuel cells
- **CSCT technology is 5G compliant and 5G product would be production ready in 2020**

Addressable market for CSCT
Although there is no reliable data on the actual breakdown of newly deployed sites (into urban, suburban and rural) one can use the historic breakdown data as a guidance:

- 95% of microcells go to provide connectivity in densely populated areas, while only 5% of microcells expand coverage in specific remote and/or rural destinations;

- 60%-70% of macrocells go to increase capacity within existing footprint and 30%-40% are meant to improve basic connectivity on the edge of existing footprint or to eliminate “white spots” in the sparsely populated areas on the footprint map.



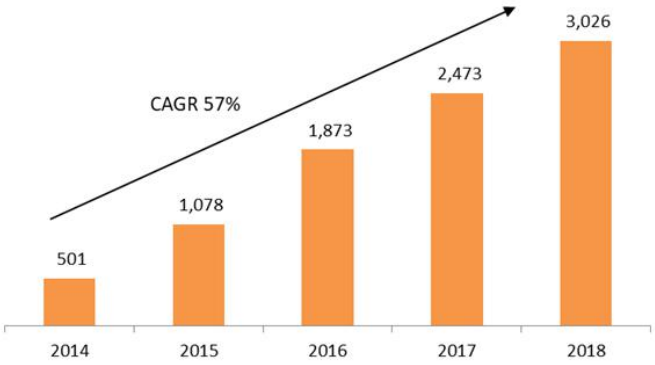
With that in mind, between 100 and 120 thousand sites are initiated every year, whereby network access nodes can hardly get justified solely by the expected incremental traffic, but rather by other effects from improved coverage:

- higher customer satisfactiona
- socially important regional development
- higher public safety standards, etc.

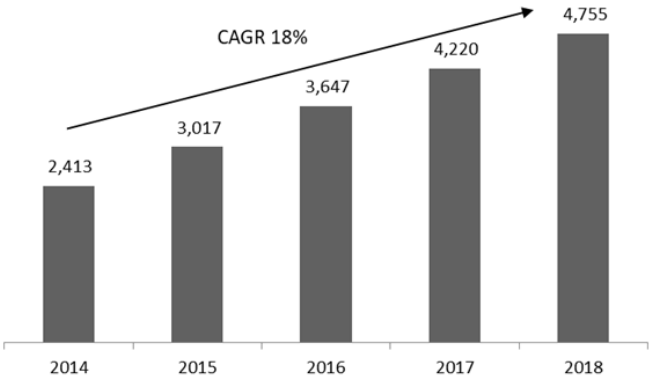
It is assumed that CSCT (Cellular System with Capacity Transfer) technology should be applicable for the bulk of the footprint expansion cases. The in-depth pilot research on the Russian market (the fifth largest cellular site portfolio after China, USA, India and Japan) offers strong indication that every fourth incremental site can potentially benefit from CTR project (with an average of as many as 8 extensions per site to be installed for the benefit of improved coverage). If extrapolated on the entire portfolio of new sites in remote and/or rural areas worldwide, the above ratio suggests that the total addressable market for CTR project infrastructure suppliers is between 200 and 240 thousand units per annum.

Apart from sheer incremental subscriber numbers, the Asia Pacific , Latin America and Sub Saharan Africa represent the largest untapped demand for additional traffic. Currently they have the lowest penetration of smartphones, a single most important factor affecting average traffic consumption. As soon as subscribers on emerging markets can replace obsolescent feature phones with affordable smartphones, the relative mobile Internet uptake and traffic consumption is going to increase considerable (as it was the case elsewhere in the world). The demand for mobile data in its turn should facilitate network evolution and proliferation of 4G technologies. Currently only about 2.5 bln subscribers can use LTE (overwhelming majority of LTE customers are in Europe, urban areas in US and China). Massive roll-out of LTE network on emerging markets should contribute to further increase in the number of cellular sites well beyond 2020.

LTE subscribers (mln)



Mobile data customers (mln)



Given that 4G deployment is very far from completion even on the most advanced markets outside Europe, it is only prudent to assume that the current trend in networks expansion should hold through 2020. It is somewhat difficult to provide accurate projections beyond 2021-2022 when operators across the globe embark on 5G deployment.

The main issue with 5G deployment between 2021 and 2025 is that on majority of market it should require a far denser network of sites than is currently available. For example, according to Institution of Engineering and Technology (IET), King's College London, and the universities of Surrey and Sussex, the UK market will require at least 400,000 incremental stand alone ground based towers to deploy 5G in rural areas (compared to 40 thousand towers in operation as of the end 2017). It is becoming a political issue in the UK, where authorities pounder over radical reforms: (i) deregulation of street furniture (which should allow deployment of radio access nodes on churches and public buildings); (ii) ease of license requirements to allow communities erect their own stand alone ground based towers and deploy alternative radio access devices to expand cellular coverage.

There are several bizarre estimates that illustrate, however, the magnitude of the problem faced by mobile operators in the context of 5G deployment. One of the leading global financial institutions Swiss UBS released their own estimate of the incremental sites required to establish 5G footprint in New York metropolitan area: "We modeled how many 5G sites would be required to cover the NY-NJ-PA Metropolitan Statistical Area (MSA), an area of ~8,300sq/mi with >20m population (6% of US total). Using FCC tower data, terrain, street and vertical elevation models, our analysis suggests over 600,000 5G cells (each at 100m radius) would be required for contiguous 5G coverage – more than a 500-fold increase from today's 3G/4G cell footprint" . Apparently, there is unlikely to be a seamless 5G coverage even in densely populated areas. It is obvious however, that we should expect yet another cycle of mobile network expansion after 2021 when 5G becomes commercially available.More information about target markets is can be found in the addendum of this white paper.

Project description

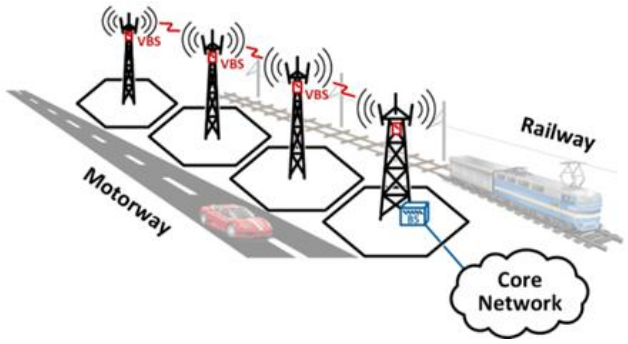
The Cellular System with Capacity Transfer (CSCT) technology was designed to reduce costs and improve cellular communications performance in sparsely populated and/or economically inefficient localities without losing network

Richard Dineen, an analyst at UBS

capacity or coverage area. The consumers of the technology are cellular communication operators.

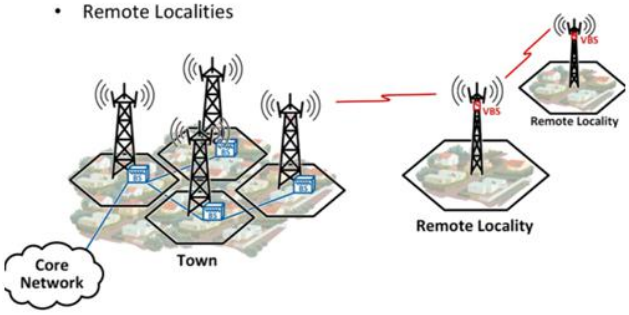
Typical Application Cases

- Motorway and Railway Arteries



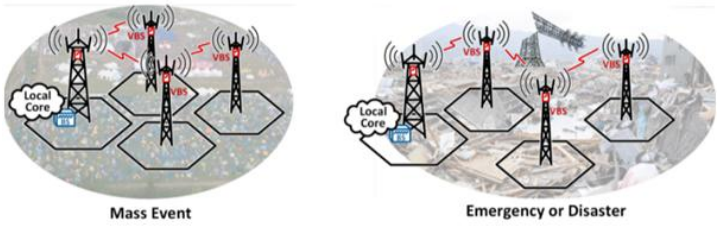
- New coverage areas in localities with a low population density
- Railways, motorway coverage, including unmanned vehicle support

- Remote Localities



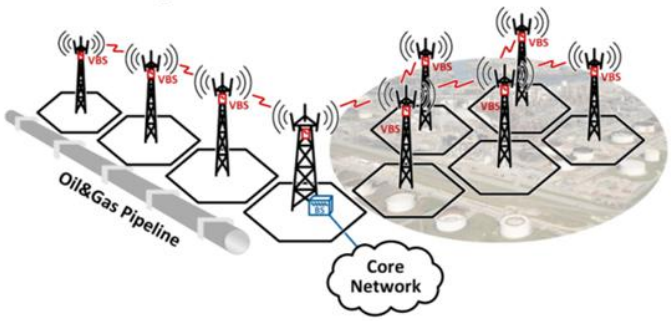
- Cellular communications communications for rural, remote, and mountainous territories

- Fast and Easy deployment for Mass Events and in Emergency situations



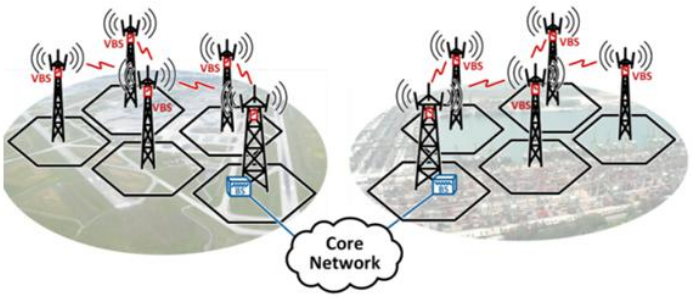
- Integration with satellite systems
- Communication in emergency situations and mass events

- Extractive Industry, Oil&Gas Pipelines, Factories, Technological Networks



- Oil and gas pipelines, technological networks

- Technological and Security Networks for transport Terminals, Networks for Underground Systems



- Technological and security networks for transport terminals, air terminals and sea ports

Efficiency and cost reduction

The use of RRS (radio-relay systems, ITU terminology) can be considered as a solution of increasing the radio coverage area of the BS (basic station) by using capacity transfer radio units (CTRUs). A similar problem can be solved by other known methods:

- Use of repeaters with frequency conversion. Repeaters of direct amplification are not considered due to their inapplicability outside the premises
- Increase the budget of the radio by increasing the power of the BS and / or using special antenna systems. Call this "powerful BS"

Comparison of the considered methods can be carried out using a table below.

		CTRU	Repeater	Powerful BS
1	Dependence of signal level on distance	Low	Essential	High. Proportional
2	Energy intensity	Low	Low	High
3	The multiplicity of the increase in the zone (sector)	4 and 4+	1,5-2	1,5-2
4	Cost	Low	Low	Very high
5	Frequency resource	F	2F	F
6	Visualization of AWS	Low	Low	Very high

Conditionally, with the weighting criteria's coefficients (1-6), the preferability of one or another method can be represented as the following table.

		CTRU	Repeater	Powerful BS
1	Dependence of signal level on distance	1	1	0
2	Energy intensity	1	1	0
3	The multiplicity of the increase in the zone (sector)	1	0	0
4	Cost	1	0,5	0
5	Frequency resource	1	0	1
6	Visualization of AWS	0,5	1	0
Total		5,5	3,5	1

The final preference is obvious.

As for optimizing the capacity of cellular systems (clusters), one more useful property of RSS - creation of focal zones of low-capacity radio coverage, when the radius of the focus (spot, cell) is much smaller than the radius of the reference BS zone, and the retransmission interval is much greater. We are talking about vast spaces with many small settlements. An example of such a region in the floodplain of the Ural River is shown on the picture below.

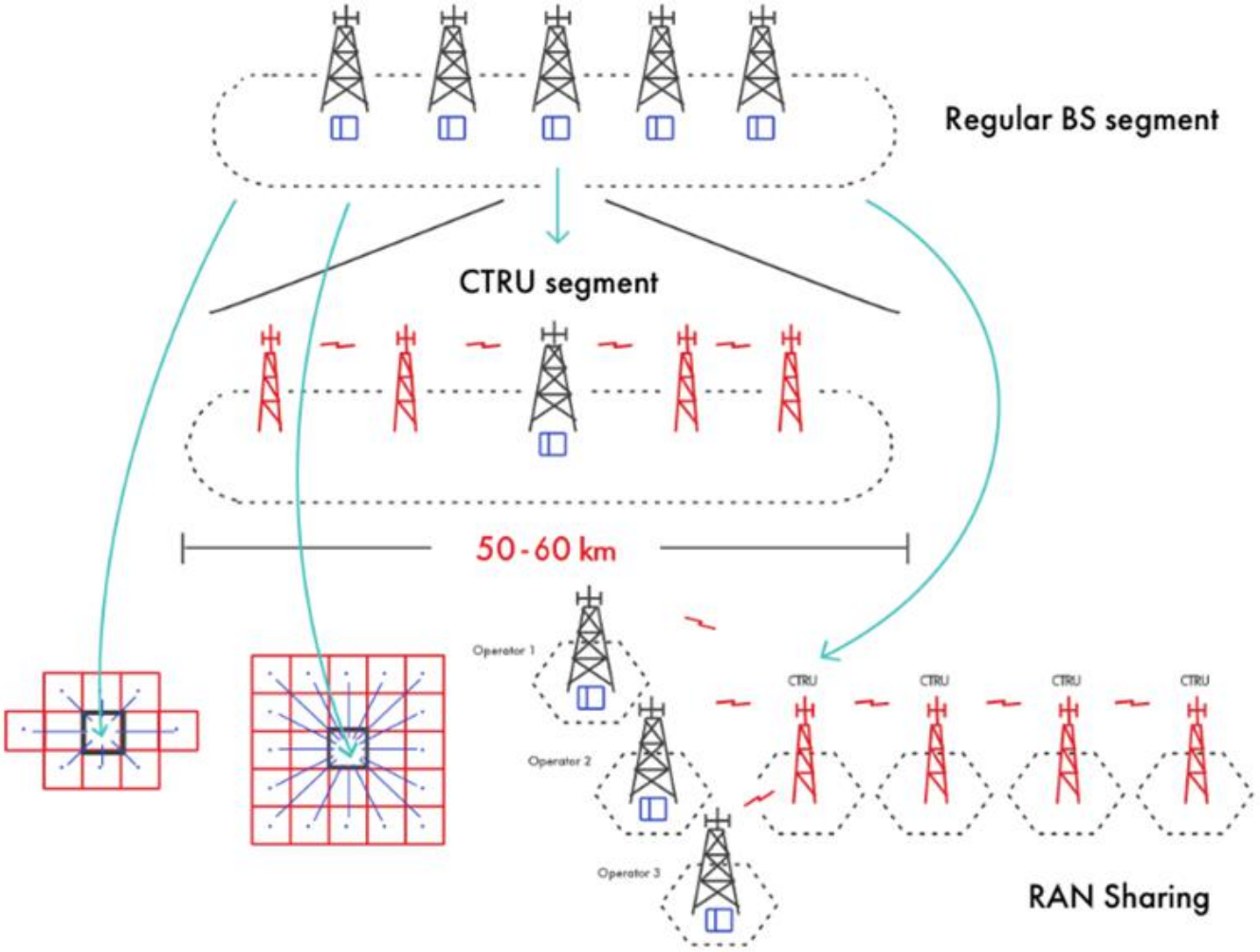
The CTR technology can significantly reduce the cost of equipment and power consumption. The chart below shows the figures.

Communication scheme	Cost reduction (BS/CTR) for network fragment		RAN Sharing operators	Cost reduction (BS/CTR) for network fragment, for each operator	
	Equipment	Power		Equipment	Power
Linear 3 sites 	2,0	2,3	2	3,4	2,6
			3	3,8	2,6
Linear 5 sites 	2,4	3,1	2	4,1	3,6
			3	4,5	3,6
Linear 7 sites 	2,6	3,6	2	4,4	4,2
			3	4,8	4,2
Rectangular 9 sites 	2,2	4,0	2	5,0	5,1
			3	5,5	5,1
Rectangular 25 sites 	2,4	5,2	2	5,6	7,0
			3	6,1	7,0

CSCT technology explained

CSCT technology helps to expand the footprint of radio access nodes (also referred to as “base stations”) in mobile networks of the second, third and fourth generation (2G, 3G, 4G). Each installation therefore consists of “donor sites” (i.e. the sites to get expanded footprint) and several CTRUs. Donor sites can be installed with an interval of up to 50 km for GSM and up to 200 km for LTE and UMTS, with CTRUs between them, resulting in:

- Reduction in the number of handovers
- Provision of an optimum service of the changing traffic load generated by passing cars and trains



Home base stations (BTS-R):

- Have a connection to the backhaul.
- Are supplemented with standard transceivers (TRX 2–TRX 4), which provide the capacity of the corresponding capacity repeating sites (CTRU1-CTRU3).
- Are supposed to have radio frequency converters (RF Converters) installed implementing together with the CTRUs (installed on CTRU1–3) the linear transfer of standard LTE air interfaces to the frequency range of repeating (FR) and back (the converter is connected directly to the radio output of the donor BS).

The first repeating site

- A CTRU is installed at the capacity repeating site (CTRU1) closest to the home base station, at the top of the tower.
- Each CTRU consists of three transceivers (X1–X3).
- The X1 transceiver transfers LTE signals from the frequency range of repeating (FR) back to the standard cellular frequency range and forms the CTRU1 coverage area.
- The X2 and X3 transceivers transfer LTE signals from one frequency nominals to other FR range nominals and ensure their further repeating to the CTRU2.

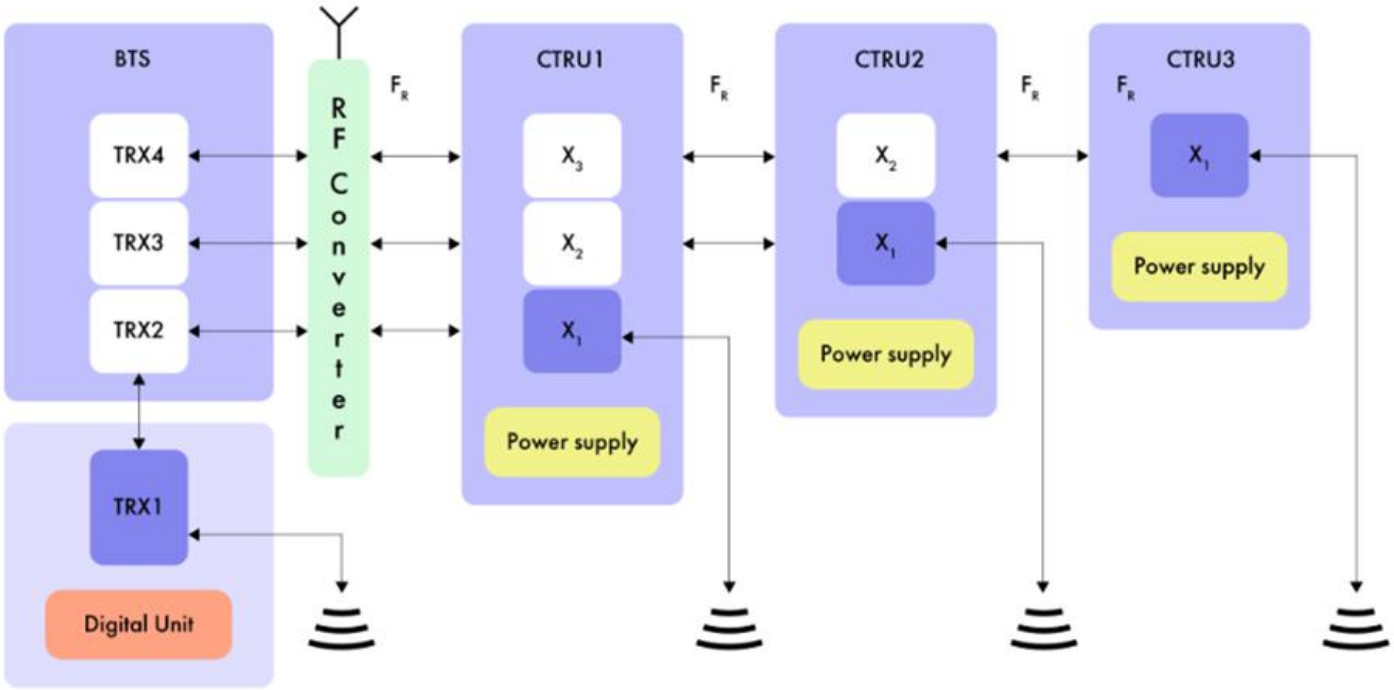
The second repeating site

- A CTRU consisting of two transceivers (X1, X2) is installed.
- The X1 transfers LTE signals (received from the X2 CTRU1 transceiver) from the frequency range of repeating (FR) back to the standard frequency range and forms the CTRU2 coverage area.

- The X2 continues the repeating chain, transferring LTE signals (received from the X3 CTRU1 transceiver) from some frequency nominals to other FR range nominals and ensures their further repeating to the CTRU3.

The third repeating site

- A CTRU is installed that includes only the X1 transceiver transferring LTE signals (received from the X2 CTRU2 transceiver) from the frequency range of repeating (FR) back to the standard frequency range and forming the CTRU3 coverage area.



Conclusions of the ITU (International Telecommunication Union)

The CSCT technology in various scenarios described above saves the cost of network deployment and reduces power consumption with a positive impact on the environment. Network capital investments can be reduced approximately three times and OPEX can be reduced approximately 5-7 times depending on the specific scenario (the number of retranslation channels, the number of CTRUs and their types). The power consumption of the CTRU varies from 160 W to 300 W depending on CTRU location in the chain, which is confirmed by field tests. Low energy consumption by the CTRUs allows the use of alternative energy sources (compact solar panels, mounted on top of the tower or must, fuel (hydrogen, etc. cells) and creation of environmentally friendly green networks.

Conclusions of the Bell Labs expert forum

The CTR project solution offers a cost-effective alternative to base stations in containers for low-loaded localities. Ordinary base stations have a high power consumption (3-4 kW per base station), which leads to significant costs for operation in comparison with the CTRUs (260 W). This is especially important for localities where the return on investment (ROI) is a difficult task.

Patents
The CSCT technology has patents in different countries of the world, including:
- USA (No. 8289888 B2 of October 16, 2012)
- Europe (No. EP 1890399 B1 of May 19, 2010)
- China (CN 101006665 B of September 29, 2010)
- India (No. 258620 of March 20, 2006)

Economic indicators

Parameters (for the billing period)		
Planning period	**year**	**5,5**
Planning period, to		**dec 2021**
Units Sold (VBS UMTS/LTE)	**thous. pcs**	**152,8**
Average sales prices (without VAT)	€/pc.	5000 (-15%)
Average COGS (without VAT)	€/pc.	1200 (-7%)
GROSS MARGIN,%	%	24%
Profits		
REVENUE (without VAT)	Million €	557,0
EBITDA	Million €	285,0
EBITDA margin,%	%	51%
NET INCOME	Million €	268,8
NET INCOME margin,%	%	34%
EFFICIENCY		
FCFF (Free Cash Flow Forecast)	Million €	261,0
PBP (Payback Period)	year	2,3
Discount Rate	%	20%
NPV	Million €	120,9
DPBP (Discounted Payback Period)	year	2,3
IRR	%	**193%**
TV (Terminal value)	**Million €**	**414,9**
NPV incl. TV	**Million €**	**260,3**
IRR incl. TV	%	**195%**

Comparison with alternative technologies

Traditionally, cellular and other kinds of radio access network (RAN) segments consist of Base Station (BS) sites and satellite or optical transport (backhaul) channels linking the sites with the core network (CN).

These solutions are expensive and do not pay off in places with low population density or in countries with low average revenue per user (ARPU). Therefore, operators are looking for new ways and technologies to reduce the cost of creating cellular networks coverage and maintaining them.

1. Photovoltaic systems
   a. https://en.wikipedia.org/wiki/Photovoltaic_system
   b. https://raachsolar.com/portfolio-item/power-supply-for-telecoms/
   c. https://arxiv.org/pdf/1411.5343.pdf

d. https://www.researchgate.net/publication/3545734_Photovoltaics_and_TLC_telecommunication_power_supplies

2.The Village Connection model, developed by Nokia and piloted in India. This model allows rural entrepreneurs to manage small operators in their towns with lower investment requirements and more efficient use of the telecommunications spectrum, and completely rely on IP.
3. The Last Mile Initiative, suggested by the United States Agency for International Development (USAID), according to which local access networks (i.e. small local companies capable of selling phone lines to private households in rural communities) will be created
4. Optical Fiber Network (Kenya)
https://en.wikipedia.org/wiki/National_Optical_Fibre_Network
http://www.datagroup.ua/ru/resursyi/volokonno-opticheskaya-set
5. "Neutral" GSM network (Ericsson's Rural Business Model)
https://www.ericsson.com/en/press-releases/2015/10/mtn-and-ericsson-bring-managed-rural-coverage-to-benin
https://www.fiercewireless.com/europe/mtn-first-to-choose-new-ericsson-rural-coverage-approach
https://www.ericsson.com/en/press-releases/2010/9/benefits-of-mobile-communication-in-rural-and-developing-areas
6. Distributed Antenna System (DAS):
https://en.wikipedia.org/wiki/Distributed_antenna_system
https://www.repeaterstore.com/pages/das-distributed-antenna-systems
http://www.l-com.com/what-is-a-distributed-antenna-system-das

To be precise, none of the technical solutions mentioned above could be considered
alternative to CSCT by definition. All these ways of reducing costs can be applied together and do not exclude each other.

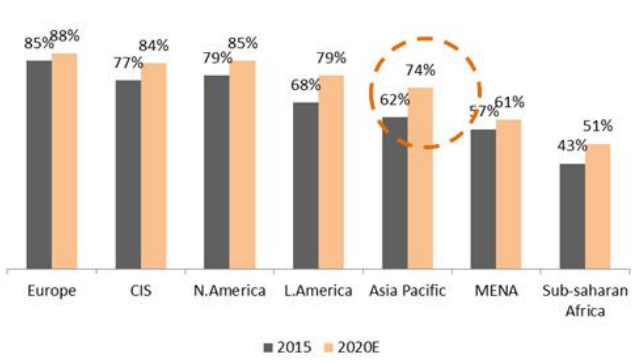
The key advantage of CSCT technology is network coverage expansion without increasing the number of base stations, or replacement of base stations with CTRU where network coverage exists already, but don't payoff due to low traffic load.

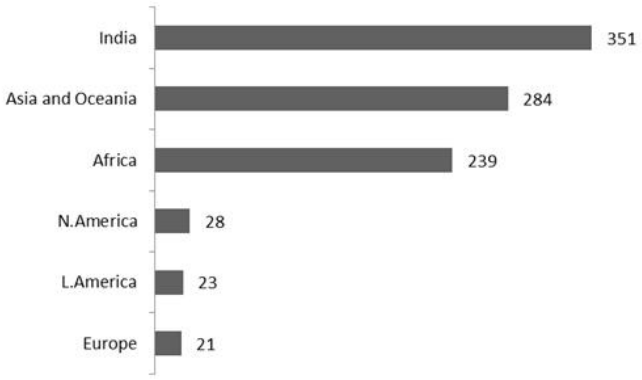
The nearest technology by its effect is the Distributed Antenna System (DAS).But the price of DAS solution is too high, and it necessarily requires the fiber optic backbone which makes it not comparable with CTRU in terms of Total Cost of Ownership (TCO). Nevertheless, DAS is a technological solution suitable for dense urban areas and uses small cells and microcells, which puts the DAS far outside CTRU market segment.

The closest proxy to CSCT solution is currently a "rural and remote" small cell solutions offered by various vendors to address emerging demand on the most challenging markets with relatively high capital investment (including expenditure on intangibles such as spectrum) and low average revenue per user. According to industry association Small Cell Forum, there are about 25,000 small cells

deployed in 2017 worldwide for rural and remote connectivity. The overwhelming majority of the incremental fleet goes to India and other markets in South East Asia. Small Cell Forum (SCF) maintains that in order to capitalize on untapped potential "a new approach is needed, which can deliver dense capacity and ubiquitous coverage with a radically lower cost of ownership, plus the ability to support new services and move to 5G" . There is a consensus among SCF participants that small cell shipment should increase towards 2022 at CAGR of over 20% (while in India small cell shipments both rural and urban are likely to increase by 30-35% per annum). Acknowledging, potential demand for low cost connectivity for rural and remote locations and the scale of actual small cell sales, it is important to mentioned, that network expansion activities and prospects for CTR differ from one geographical market to another. On comparatively more developed markets (particularly with higher population density) mobile service penetration already approached saturation levels. At the same time unique user penetration in Sub Saharan markets barely exceeds 45% and promises to keep growing well through 2020. According to GSMA penetration there is expected to increase materially towards 2020.

Mobile penetration
Subscriber increment (2015-2020), mln



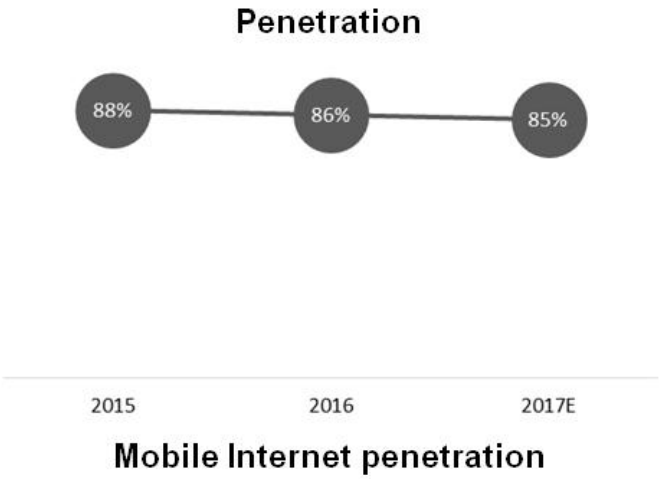


It is also the case with Asia Pacific markets, where healthy subscriber growth is registered in Indonesia as well as India, Bangladesh and Myanmar. Along with Latin America and former USSR countries, Asia Pacific and Africa account for almost 80% of incremental subscribers within the last 3 years.

These three markets Asia Pacific , Latin America and Sub Saharan Africa are likely to account for three fourths of all incremental cellular sites to be initiated by the end of 2020. Obviously, the emerging mobile service markets will represent the bulk of demand for CSCT.

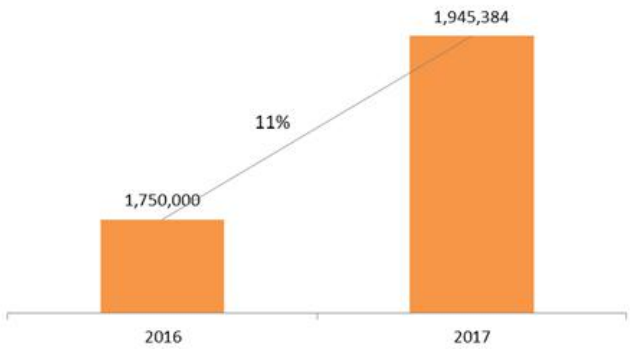
Target Geographic markets

China



Mobile Internet penetration

SA GBT sites

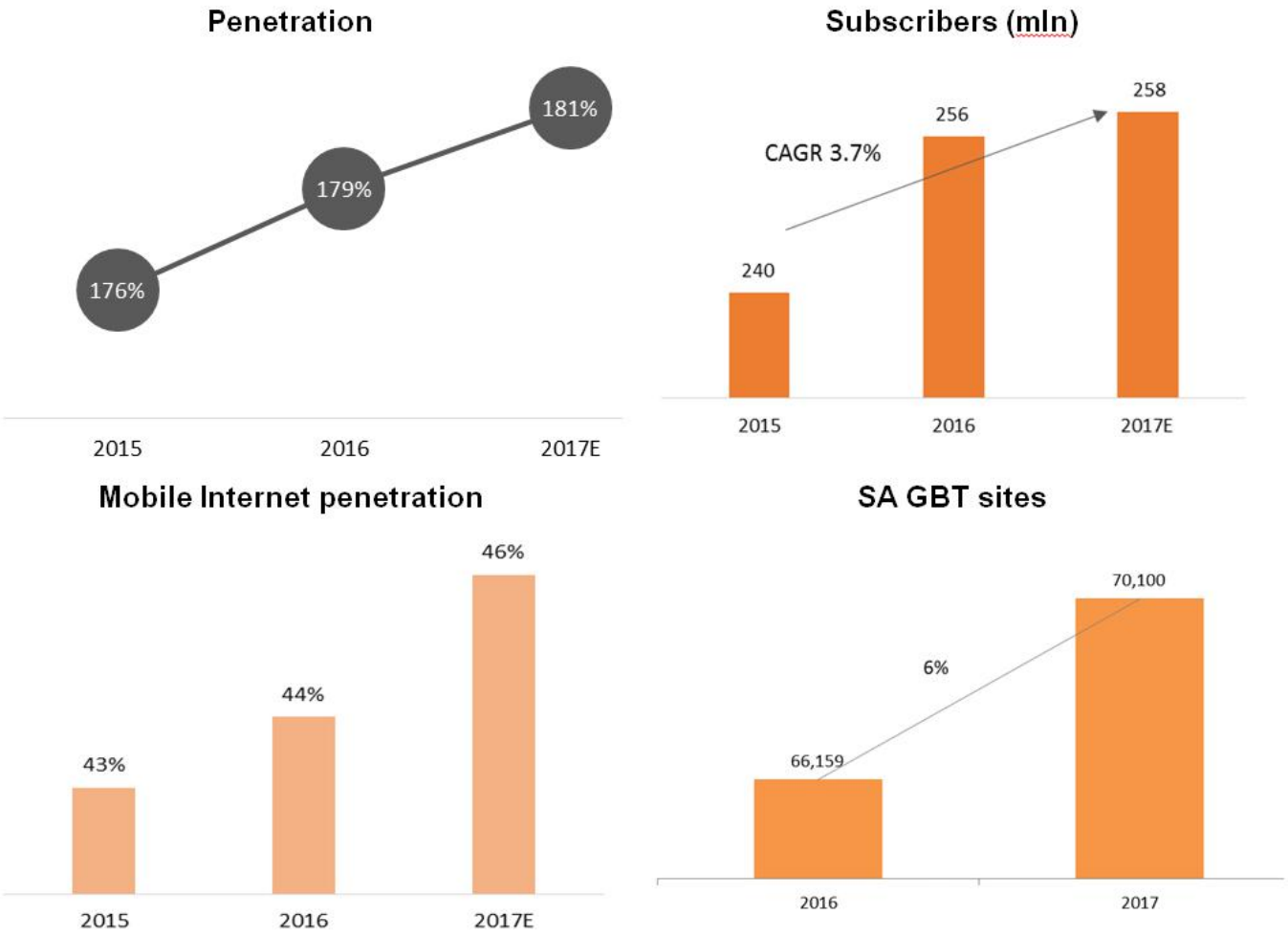


China is stand-alone case. It accounts for about one third of all cellular sites worldwide (1.5 mln) and in terms of physical infrastructure in place is five times larger than entire US market (third largest in the world) and 10 times larger than Russia (about 150 thousand cell sites). The China Academy of Information and Communications Technology (CAICT) announced 4G networks accounted for half of the 5.9 million base stations deployed across the country at end of1H2017. With 2.99 million 4G base stations in the mainland, China's big three mobile operators certainly account for the lion's share of the global 4G total – more than 40 per cent according to Mobile World Live. It must be mentioned, however, that the portfolio of 4G nodes does not necessarily reflects the number of physical cellular sites. The number of 4G base stations China's operators reported at end-June was significantly higher than CAICT's total. China Mobile had 1.65 million, China Telecom 1.05 million and China Unicom 770,000, for a grand total of at 3.47 million. China Mobile plans to add another 120,000 4G base stations in H2, while China Telecom said it will deploy another 110,000 by year-end.

There seems to be a consensus in the industry that China account for about one third of all cell sites commissioned as of 2017. Not surprisingly, it also accounts for at least 35% of all incremental cellular sites (over 100,000 per annum).
Given the peculiarities of Chinese market (areas to be covered in rural China with

comparatively low population density and the scale of Chinese highway infrastructure), potential market for CTR in China alone could be 100-120 thousand units every year between 2018 and 2021.

Russia



By sheer size of the territory and population Russia remains one of the largest markets for mobile radio-access infrastructure in the world. With over 250 mln active mobile between four nation-wide MNOs, Russia is one of the most capacious markets in both Europe and Asia. There are a total of 120 thousand mobile infrastructure sites operated by MNOs, while the number of BSs is 2G, 3G and 4G estimated to have exceeded 450,000.

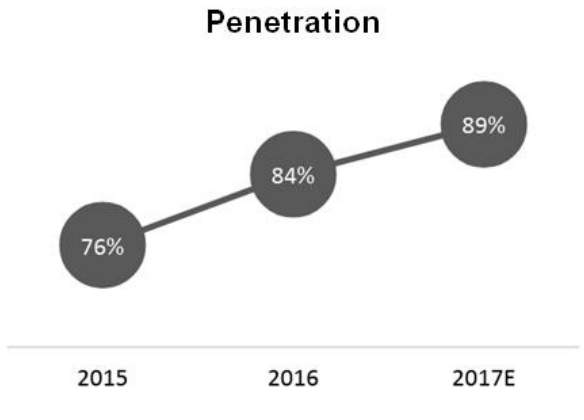
The portfolio of radio-access base stations has been expanding in Russia at 3-5 %. It translates into some 15-20 thousand radio access nodes or 4-5 thousand incremental sites per annum. A considerable part of incremental installations are meant to improve the shape of the footprint rather than provide additional capacity …which makes Russia one of the largest incremental markets. Although 3G and 2G footprint has been largely completed, there is still plenty of room for improvement: coverage remains patchy outside densely populated areas. It is estimated that mobile infrastructure is available to over 95% of the population, but only covers 37-39% of the entire territory. As for 4G, it is still available to only about about 80% of

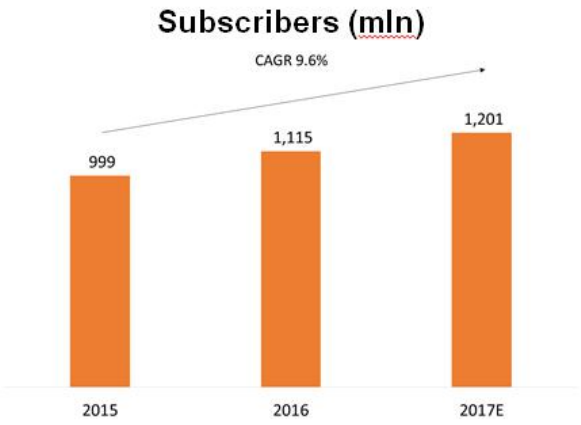
the population. It is estimated that LTE availability along principal highways does not exceed 40%, while 96% length of the principal federal highways.

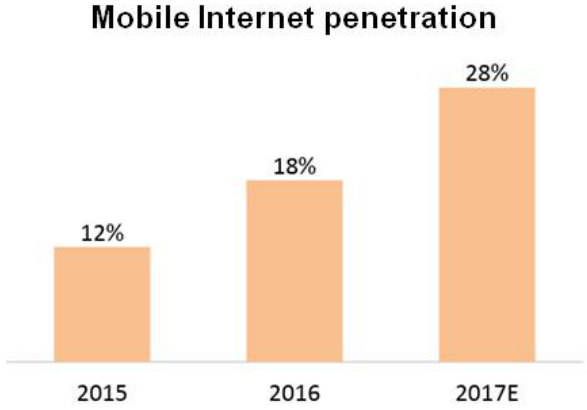
It was estimated that at least 3000 incremental sites every year are established to provide connectivity well beyond densely populated areas and could not be justified by the expected traffic load. Each of those incremental installations could have been replaced by 5-7 CTRU.

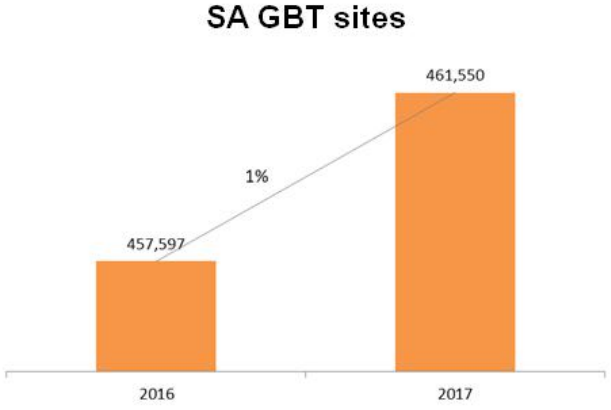
Russia is one of very few markets where relatively busy and populated enclaves are isolated by hundreds of kilometers of virtually uninhabited terrain (particularly to the East of the Urals). There is a massive deficit of basic infrastructure such as highways and local roads, electric grid and, which is important for a Northern country, natural gas infrastructure for heating. Although authorities maintain, that 96% of the federal highways have some sort of cellular connectivity along their route, in reality reliable mobile data connectivity remains to be significantly improved. Pending on the regulatory position on this subject matter Russia may embark on unprecedented program to guarantee reasonable connectivity along the principal backbone routs (which is considered to be an important element of the overall strategy to facilitate gravity between the regions and off-set centrifugal trends). That alone should generate unprecedented demand for CTRU infrastructure in 3G and 4G.

India







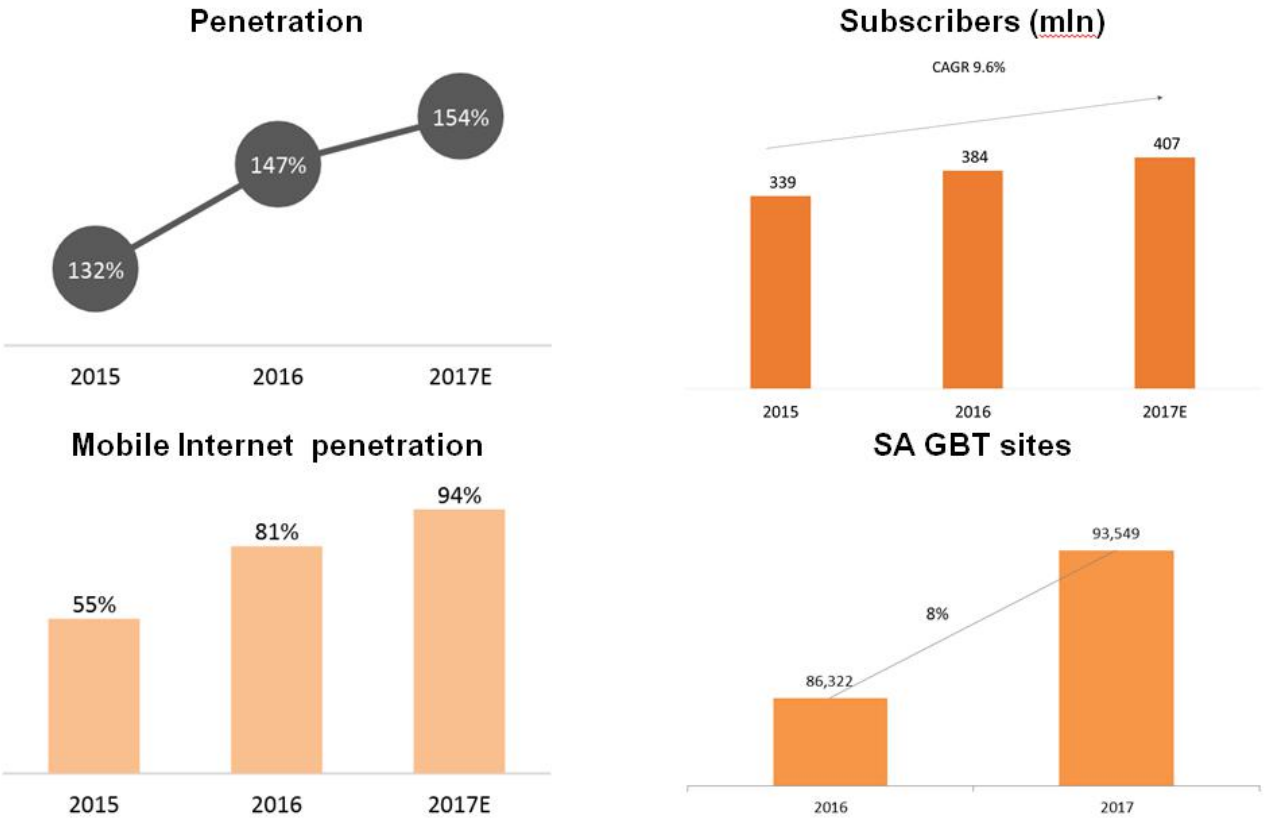


Second largest market after China India sustained healthy subscriber growth in 2017 and promises to see at least 100 mln net additions within the next two years. Mobile Internet penetration (the principal traffic driver) remains very low and is bound to increase twofold in the medium term. Unlike in China LTE has yet to build a critical mass in India, where both availability of compatible handsets and adequate infrastructure deter further proliferation of broadband services. Radio infrastructure is three times less developed compared to China (about 500,000 sites).

To summarize – India is at the very beginning of the 4G product cycle and is very likely to demonstrate unparalleled growth (traffic wise and infrastructure wise) within the next 5-7 years. It must be mentioned that India is currently facing a minor crisis in passive infrastructure sector: municipal authorities in the largest metropolitan areas (such as Dehli) stopped granting permissions for incremental towers and polls, which will probably make MNOs change their network roll-out strategy and deploy tens of thousands micro cells (including many indoor). India is recognized as the single largest market for micro-cell solutions for rural and remote areas, where capital expenditure considerations are of extreme importance, given the average expected revenue per site.

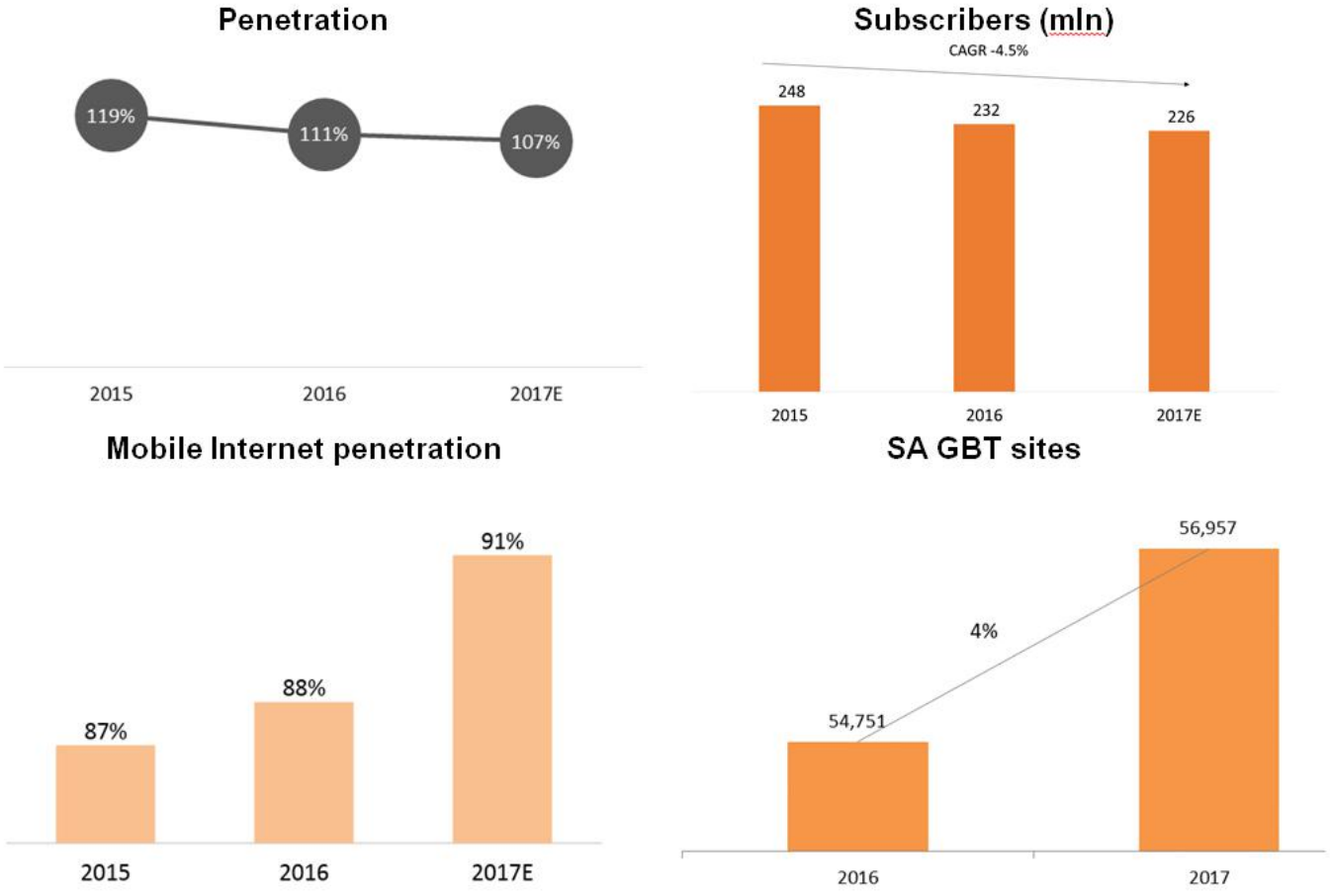
Provided that India resumes network expansion at the rate observed over the last 5 years (about 50,000-70,000 incremental cell sites per annum), it is perfectly conceivable that the demand for CTRU there should be in tens of thousands.

Indonesia



Indonesia is the fourth largest mobile market worldwide and it keeps growing at a healthy rate, despite 150% penetration. The Indonesian cellular infrastructure has come a long way: in the early 2000s, Indonesia was overpopulated with MNOs sub-optimally deploying CAPEX to build parallel infrastructure. However, all of that was about to change. A 2006 regulatory policy change enforced tower sharing and laid the foundation for unparalleled Indonesian tower industry. Currently mobile network operators only own about 65% of all cellular sites, while 35% is owned and operated by independent cellular tower companies, who achieve relatively high tenancy ratio. **Both MNOs and independent tower companies build 3000-5000 new sites per annum, which represents a considerable market for CTR** (particularly as a good half of new sites are meant to provide connectivity in remote and scarcely populated areas).

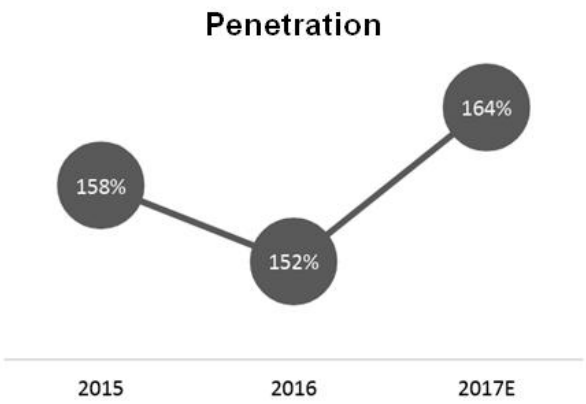
Brazil

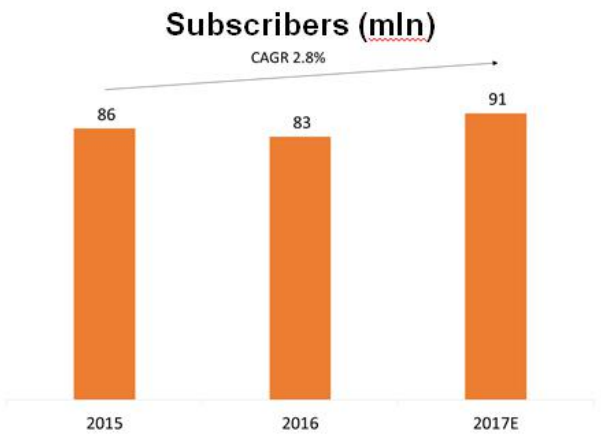


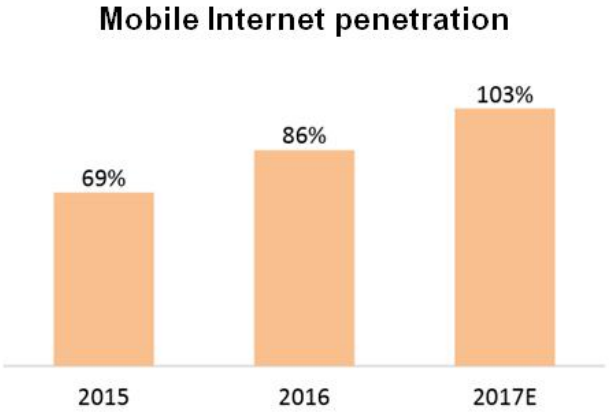
Brazil represent a rare example of high potential geographic market with pronounced effect of CAPEX shortfall. There is seemingly a significant deficit of cellular sites (particularly outside major populated centers). Several industry insiders (for instance panelists of the regional TowerXchange event on Latin America) appear to agree that the number of subscribers in Brazil will reach 300 million by 2020 (60 million more than as of the end 2016) which is approximately where the United States is at present. But the gap with the U.S. standards is still huge in terms of subscribers per tower (4,500 vs 1,000). It is important to keep in mind that Brazilian subscribers can't be calculated using the same rationale as in the U.S. In fact, most subscribers in Brazil own multiple SIM cards, which they swap depending on the best service in the

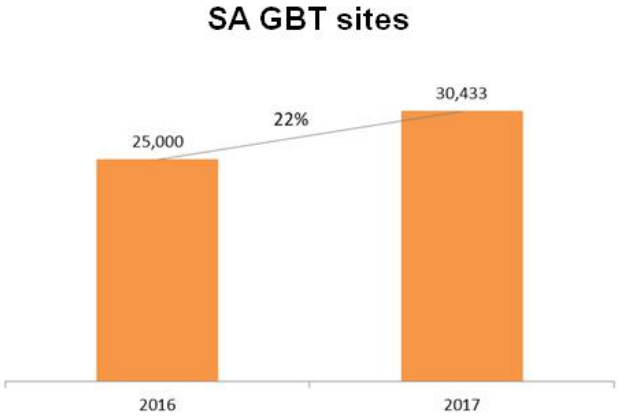
area, tariff offered for a certain call et cetera. So 4,500 subscribers per cell site don't represent the real number of people connecting to a given cell. Still it is 2.5-3.0 times more than on majority of comparable markets. CTRU may turn out to be an important instrument in abridging the deficit.

South Africa









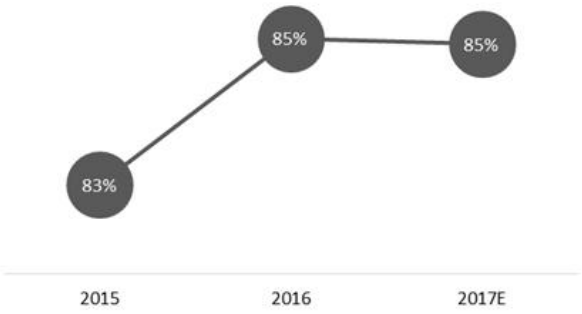
One of the two largest African markets along with Nigeria, SAR has a far more advanced mobile environment. There are over 30,000 cellular sites and the number is growing rapidly as SAR mobile operators push to promote 4G as a principal Internet access transport. Over 5000 incremental sites are initiated in 2017 and more to come, unless there is a radical regulatory reform (opposed by MNOs), whereby the authorities create a Wireless Open Access Network (OAN). All unassigned high-demand spectrum (essentially LTE spectrum) would be set aside for the OAN and the latter should provide the infrastructure to MNOs (who should be able to compete on services rather than network related differentiators).

African markets (SAR included) pose the challenges unknown anywhere else. One of the key issues is the lack of sites with reasonably uninterrupted power supply. Scarce availability of adequate sites makes CTRU a key instrument to address the demand in rural areas, where general population wakes up to Internet and other network powered applications. SAR and adjacent markets (Botswana, Namibia) potentially can use a dozen thousand CTRU per annum, if 4G deployment keeps the momentum.

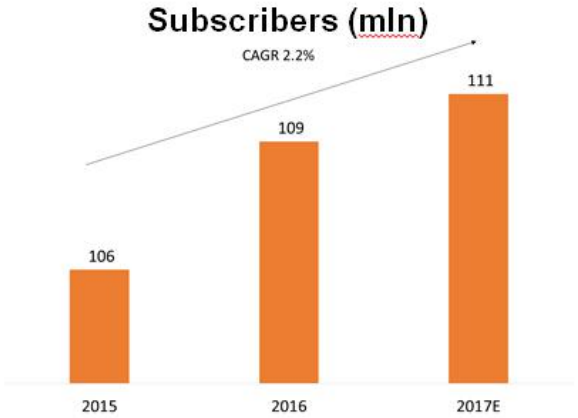
Other important markets at a glance

Mexico

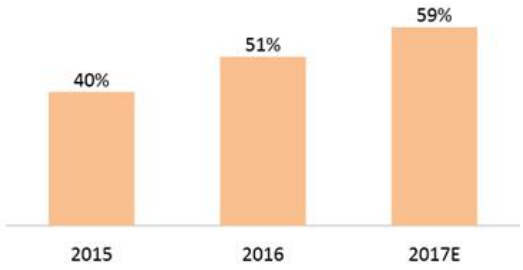
Penetration



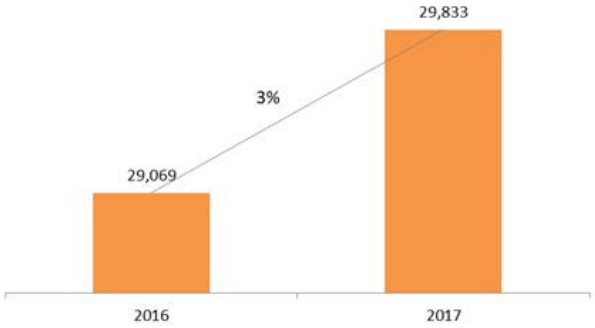
Subscribers (mln)



Mobile Internet penetration

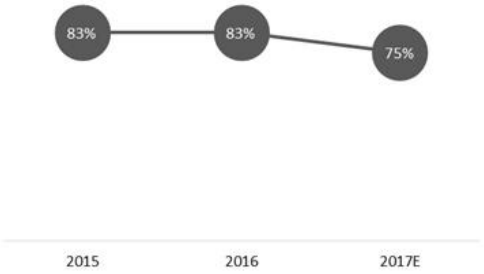


SA GBT sites



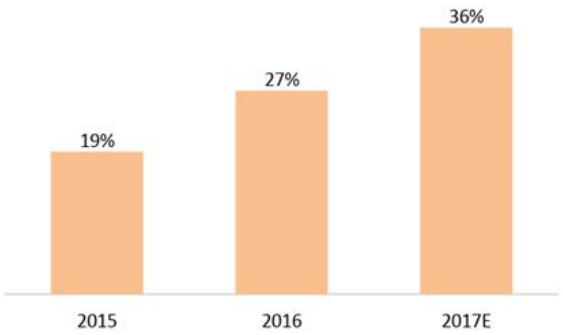
Nigeria

Penetration

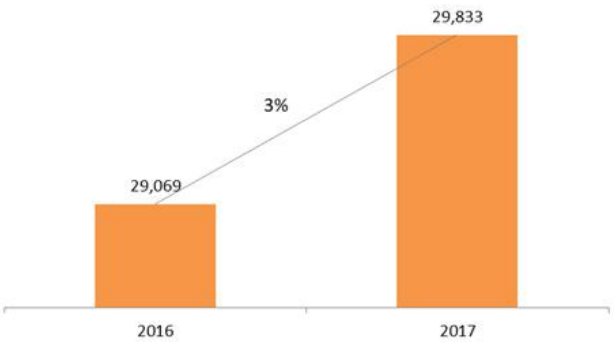


Subscribers (mln)

Mobile Internet penetration

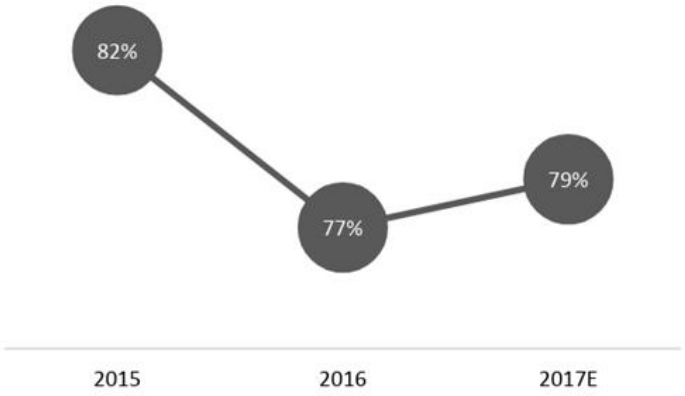


SA GBT sites

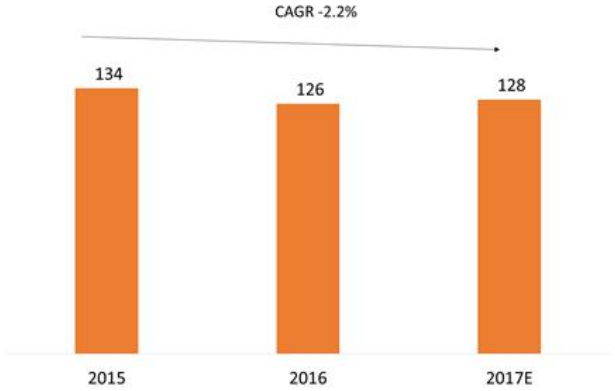


Bangladesh

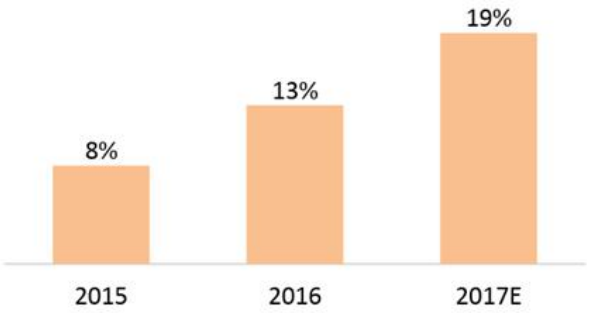
Penetration



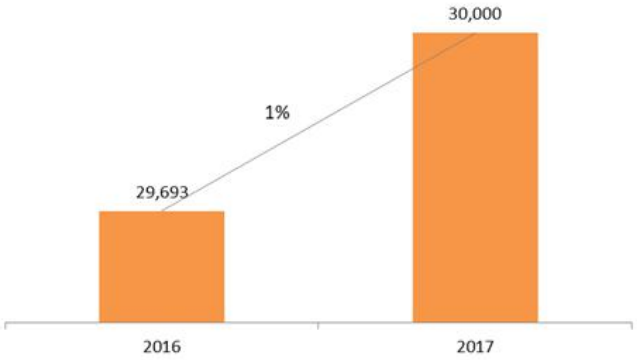
Subscribers (mln)



Mobile Internet penetration

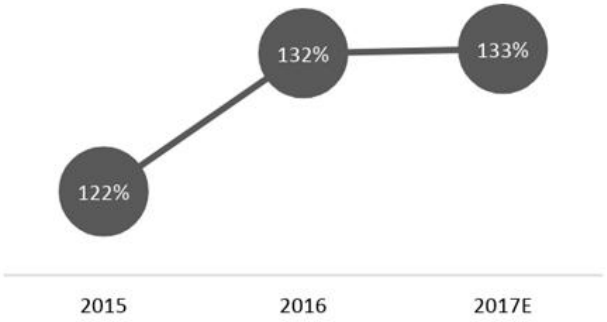


SA GBT sites

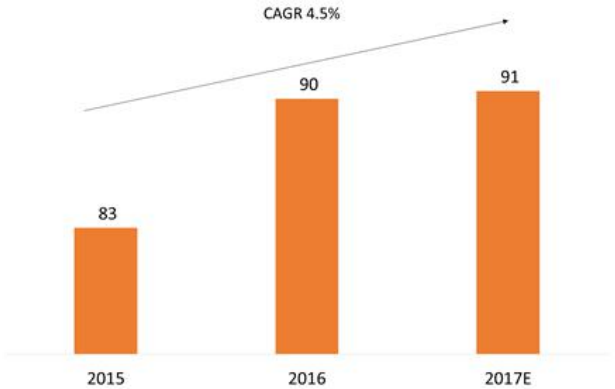


Thailand

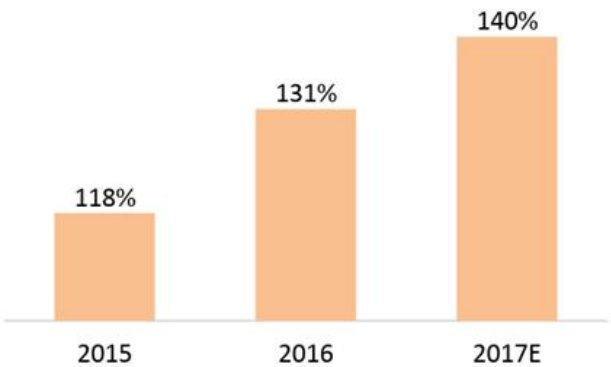
Penetration



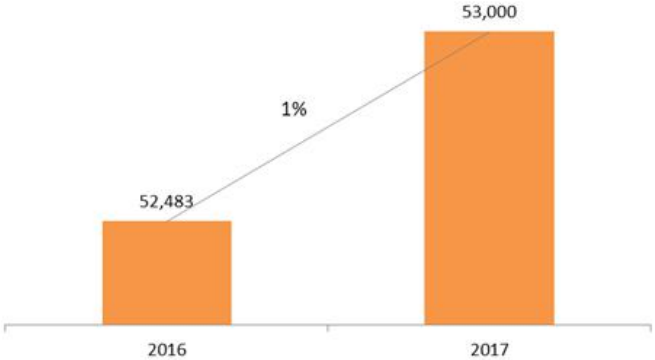
Subscribers (mln)



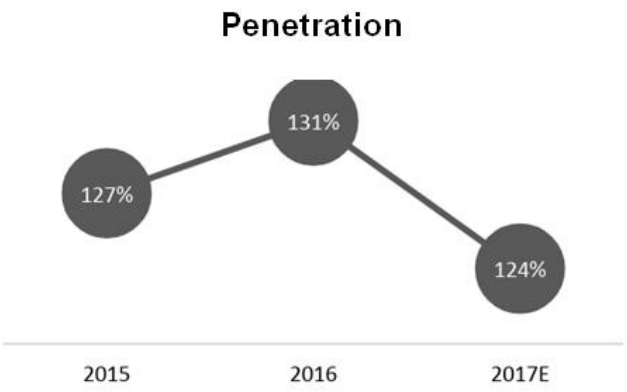
Mobile Internet penetration

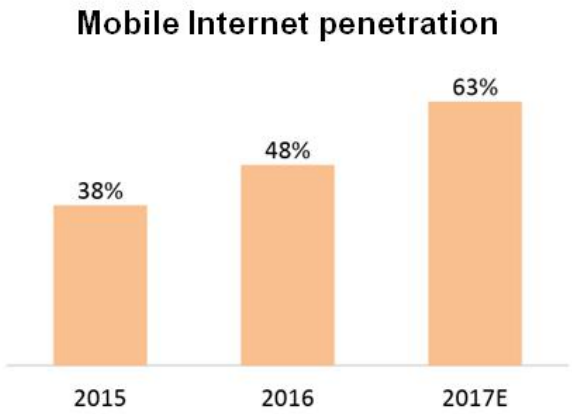


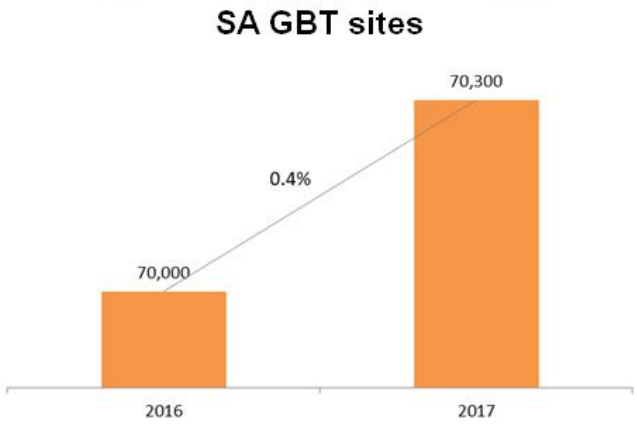
SA GBT sites



Vietnam







Project team

Reinhard Neumann

DIRECTOR

Many years of experience as a management consultant/process consultant in the field of finance and business administration. Lectures at universities and academies in the fields of controlling and financial management. Surveyor activity within the scope of business plan competitions.

In addition to that, he has more than 5 years of experience in the field of cryptocurrency and blockchain applications with many projects in the areas of cryptocurrency mining and investment.

Yuri Gromakov

INVENTOR

Renown Scientist, Innovator and Business Executive in telecom R&D sector: broadband wireless access, satellite navigation systems and mobile objects monitoring, satellite and railway communications, digital radio and TV broadcasting systems.

Holder of more than 30 patents in Russia, Europe, China, USA, India and other countries. Author of 3 monographs and more than 100 science publications internationally. An active member (since 1996) of work groups and research commissions of the International Telecommunication Unit (ITU).In 2007 led CDMA 800 cellular communication network deployment project in India.

Raymond Armes

SALES & MARKETING

25+ years of highly successful career in Telecoms. Managed dynamic, ambitious, market leading service providers and systems solutions in the challenging markets of Russia, CIS and India.

Ruslan Filatov

STRATEGY AND OPERATIONS

20+ years of C-Level multinational experience in Telecommunications, IT, fintech and mobile retail Industries.

Solid track record of turnarounds, crisis management, M&A, commercial operations.

Advisors

Roman Nemish

ENGINEERING AND PRODUCTION ADVISER

Executive and entrepreneur with over 20 years of experience in wireless and telecommunication industries. Proven team leader with balance combination of strategic, technical, financial and team management expertise who creates an inspiring, fast-paced, winning team culture. Strong track record of developing numerous high value.

innovative wireless solutions to address customer needs with 2G-5G, IoT and custom air interface solutions. Focused on creating real value for customers, employees and shareholders.

Partners

JABIL

https://www.jabil.com/

Production partner

Jabil Inc. is a United States-based global manufacturing services company. Headquartered in St. Petersburg, Florida, it is one of the largest companies in the Tampa Bay area. Jabil has 90 facilities in 23 countries, and 175,000 employees worldwide.

TEKTELIC

https://tektelic.com/

Research & Production partner

TEKTELIC has a rich heritage in the development of high quality carrier grade cellular products for its commercial service provider and defense OEM clients. TEKTELIC develops and manufactures high performance cellular radios (RRH and Shelf Mount), Basebands, Power Amplifiers and complete Small Cell base stations.

ICO

The main advantages of the business expansion ICO model:

- Token sale is a cost-effective fundraising mechanism and also makes a serious competition to venture capital;
- ICO will not only be a fundraising event, but also an excellent marketing opportunity;
- Token sale provides an opportunity to interact with the community and create products in consultation with token holders and experts. The result of this interaction is the creation of products that are best in class for customers.;
- Open opportunity for participants to enter and leave a position within a few minutes, compared with years in the traditional venture capital industry.

The purpose of token is to provide fast and secure network scaling.

Token is used for several functions:

- Ensuring reliability and safety through the introduction of dynamic charges;
- Granting a 15% discount for the acquisition of CTRU, as well as other products produced or offered during the implementation of the project CTR;
- Regular payments from the results of the rental equipment CTRU;
- Estimated unit for recording digital and voice traffic with partners and users within the framework of concluded contracts with mobile network operators;
- Cash payments to active token holders.

Smart-contract

For the implementation of the blockchain option, a smart contract was developed in the Solidity language. With the help of OpenZeppelin and ZeppelinOS as Solidity frameworks, the security of the smart contract is ensured.

The core is based on open-source and secure contracts of OpenZeppelin.

In case there are any security issues found in Solidity or the Smart Contract, we can-upgrade it with the help of the ZeppelinOS framework. This is done, to prevent losses of investments and to ensure that the product can grow with its challenges while staying completely secured.

The smart contract is based on the ERC20 standard, which allows the use of tokens for transactions and trading exchanges.

The token will be distributed through the CTR Group website, where the investment canbe withdrawn to any ERC20 compatible Ethereum wallet. We have ensured, that the distribution is secure and protected against attacks.

Token Design
Ticker: XCTR
Token type: Utility Token
Token specification: Fixed supply token
Token supply: 50,000,000 XCTR
Decimals: 18
Blockchain: Ethereum
Token interface: ERC20

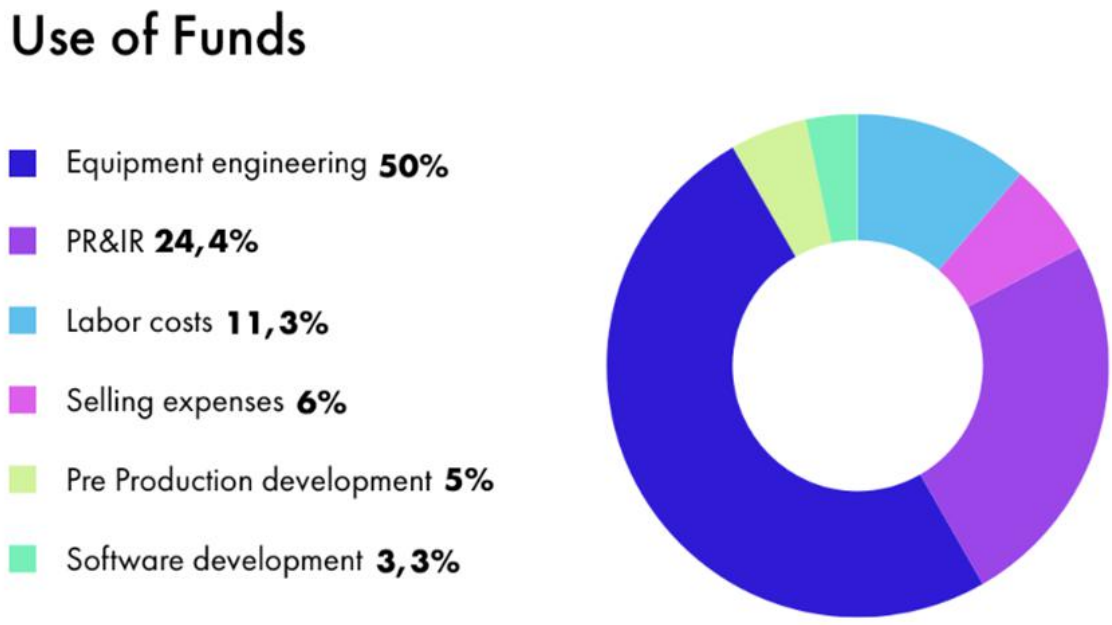
Placement Time and Token Price
Date: Q4 2018 – Q1 2019
Blockchain: Ethereum
Hard cap: €15,000,000
Soft cap: €7,000,000
Price: €0.5 for 1 XCTR
Crowdsale: distributed through the CTR Group website
Minimum investment: €100

Sale discount
With a purchase from 500,000 XCTR and higher, the sale discount is 30%
With a purchase from 100,000 to 499,999 XCTR the sale discount is 20%
With a purchase from 20,000 to 99,999 XCTR the sale discount is 10%

Token distribution structure

Crowdsale 60%
Advisors & Partners 10%
Team & Founders 30%
All tokens that are distributed among the founders and the team will have a blocking period of 24 months (2 years). During this period, the tokens will be frozen and will not be transferred.

Allocation of the collected funds
The funds collected in the ICO will be used for the following activities:



Project history and roadmap

2005 - 2012 – **Worldwide patents**
Patent first registered and then granted internationally: China, India, Europe, USA.

2014 - 2016 – **Endorsement by international industry organizations**
In 2014, CSCT technology have passed the evaluation of Bell Labs, American research and scientific development company. In June 2016 CTR project was recommended to the telecommunications industry as “Best Practice” by International Telecommunication Union.

2015 - 2017 – **Research & Development Stage**
CSCT 3G/4G research & development conducted successfully.

2018 – **Strategic partnerships**
CTR project partnered with Tektelic Communications Canadian engineering company, one of the leading manufacturer of cellular products, for the CTRU pre-production.

Expected stages

2018 – **Pre-ICO**
XCTR is likely to be a utility token created on Ethereum blockchain by CTR project and distributed during private sale.

2019 – **ICO**
We consider a public token sale for accredited investors only.

2019 – **5G compliant**
5G R&D and pre-production.

2019 – **3G/4G production Stage**
CSCT technology 3G/4G mass production will be carried out by one of the international contract manufacturing companies.

2020 – **5G production Stage**
CSCT technology 5G production.

LEGAL DISCLAIMER

Legal Notes
Cautionary Statement regarding Forward-Looking Statements
This White Paper includes statements which, to the extent that they do not recite historical facts, constitute “forward-looking statements”. These forward-looking statements appear in a number of places throughout this White Paper and include, but are not limited to, statements regarding our intentions, beliefs or current expectations concerning, among other things, the business model of CTR project, development costs, liquidity, prospects, growth, strategies.

By their nature, forward-looking statements involve risk and uncertainty because they relate to future events and circumstances. We urge you to carefully review this White Paper for a more complete discussion of the risks of an investment in CTR project. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee the actual results.

Certain Important Notices
This White Paper is prepared and furnished for the purpose of providing certain information about an investment in the CTR project and is to be used solely in connection therewith. You are reminded that White Paper has been furnished to you or has been otherwise made available for access by you on the basis that you are a person into whose possession this WhitePaper may be lawfully delivered or you otherwise may lawfully access this White Paper in accordance with the laws of the jurisdiction in which you are located and you may not, nor are you authorised to, deliver this White Paper to any other person in any jurisdiction where it would be unlawful to do so.

This document does not constitute a prospectus of any sort, and to avoid doubts is not an initial public offering or other shares/equity offering.

In making an investment decision, prospective investors must rely on their own examination of the CTR project's business model and respective tokens, including the merits and risks involved. Prospective investors should not construe the

contents of this White Paper as legal, business, tax, accounting, investment, financial or other advice. Each prospective investor is urged to consult its own advisers as to legal, business, tax, regulatory, accounting, financial and other consequences of its investment in the CTR project.

Risks

AN INVESTMENT IN THE CTR PROJECT INVOLVES A HIGH DEGREE OF RISK AND MAY RESULT IN THE LOSS OF ALL OR PART OF THE INVESTMENT.

The CTR project faces, among others, the following key risks:
- cryptocurrency price volatility (since a substantial portion of the funds is to be held as cryptocurrency, a downward shift in their price could have an adverse impact on the project's liquid position);
- execution risks (potential inability of the team and involved companies to organize mass production of the desired products);
- competitive risks, including on the side of large corporations and other projects that may use other technologies to solve the same problems;
- risk of a technological leap in telecommunication field that depresses mobile networks' market.

This list is indicative and non-exclusive. The CTR project may face other risks materially adversely affecting its realisation.

Further offering documents and materials
We reserve the right to prepare further offering documents and materials (howsoever named) for the purposes of obtaining registration or relying on any available exemption from the registration requirements under the United States Securities Act of 1933 or securities laws of any other state or jurisdiction for the purposes of offering and sale of the tokens within the United States or other jurisdictions during the potential ICO (as envisaged in this White Paper).That said, collating KYC on all investors will be a requirement and must be carried out to prove the identity and the source of funds used to invest.

YOU ARE HEREBY URGED THAT THE CONTENTS, STRUCTURE, LEVEL OF DISCLOSURE ETC. IN SUCH FURTHER OFFERING DOCUMENTS AND MATERIALS MAY BE SUBSTANTIALLY DIFFERENT, AND CONTAIN UPDATED OR ADJUSTED PROJECTIONS, ESTIMATES AND OTHER INFORMATION, COMPARED TO THAT SET OUT IN THIS WHITE PAPER.

THE TOKENS MAY BE SUBJECT TO RESTRICTIONS ON TRANSFERABILITY AND RESALE UNDER APPLICABLE SECURITIES LAWS OF THE UNITED STATES AND/OR OTHER RELEVANT JURISDICTIONS, WHICH MUST BE ASSESSED AND COMPLIED WITH IN CASE OF THE TRANSFER OR RESALE.