Moving Ahead Bravely for a Win in Africa

—An interview with Li Xiaodong, Vice President of ZTE’s Marketing Division II and President of ZTE Southern Africa Region

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ZTE Profile

ZTE is a leading global provider of telecommunications equipment and network solutions. It has the widest and most complete product range in the world—covering virtually every sector of the wireline, wireless, service and terminals markets. The company delivers innovative, custom-made products and services to over 500 operators in more than 140 countries, helping them achieve continued revenue growth and shape the future of the world’s communications.
ZTE Named “World’s Best CDMA Equipment Manufacturer 2009”

Frost & Sullivan award recognizes ZTE’s growing market position and product innovation

ZTE announced on November 6, 2009, that it has received the prestigious “World’s Best CDMA Equipment Manufacturer 2009” award from research and consulting firm Frost & Sullivan. The award was announced at the Enterprise Communications Summit & Award Ceremony in Shanghai, China. The award ceremony aims to recognize excellent performance of the global CDMA equipment vendors in the areas of outstanding service, product R&D capacity and innovation.

Based on in-depth research and analysis of the global CDMA equipment market, including market share, market competitiveness and potentials of emerging markets, Frost & Sullivan finally awarded the honor to ZTE for its exceptional performance over other industry players.

Since 2006, ZTE has been a leader in global CDMA product shipments. In the first three quarters of 2009, shipment volume experienced sharp growth exceeding 85,000 units, or more than 170% of the total 2008 annual shipment. ZTE’s industry-leading SDR base stations account for the majority of this year’s product shipments.

According to Frost & Sullivan research, ZTE is forecasted to overtake Alcatel-Lucent as the top player in the global CDMA market with a share of 29.3% by 2010, according to report.

In addition to being ranked second in CDMA installations, ZTE has made impressive achievements in CDMA product innovation globally. It independently developed the GoTa digital trunking system that has been widely applied in more than 40 countries including China, Romania, the Czech Republic, Chile, Mexico, Malaysia, Norway, Ghana and Senegal, making it the most widely used and internationalized Chinese-made digital trunking system.

ZTE also successfully deployed its innovative Air-to-Ground (ATG) broadband EV-DO solution across the United States last year, which received the “2008 3G CDMA Industry Achievement Award” from the CDMA Development Group (CDG). The solution has been deployed in more than 500 airplanes across seven U.S. airlines, fully tackling the worldwide challenge of high-speed Internet access on planes. ZTE also launched the industry’s first EV-DO Rev.B + LTE dual-mode system at EXPO COMM Wireless Japan in July 2009 after it made EV-DO Rev.B calls and launched a commercial trial network. In addition, the company also launched an integrated EV-DO Rev.B and Wi-Fi/WAPI solution at P&T/Expo Comm China 2009. (ZTE Corporation)
ZTE Showcases LTE Product Line in Germany

ZTE has recently showcased its Long Term Evolution (LTE) products and solutions to network operator Vodafone, demonstrating its leading position in the field of end-to-end mobile broadband technologies. With its Software Defined Radio (SDR) solution, ZTE enables operators to cost-effectively host multiple networks on the same base station, enabling them to easily upgrade to an LTE commercial network.

LTE will offer mobile phone users more bandwidth, faster data transmission and high-speed access to mobile Internet applications, and is expected to be introduced in Germany in stages from 2010 onwards. This will be partly done using frequencies made available by the digitisation of radio broadcasting (the ‘digital dividend’).

“With our LTE mobile telephony solutions, we can respond in a flexible way to all requirements of network operators in terms of connectivity and performance optimization,” explains Dr. Zhigang Zhang, Vice President of ZTE Europe and North America. “In our SDR base station, all mobile phone standards can operate in parallel, which significantly reduces operator costs and at the same time is very environment-friendly and saves space. For the ‘digital dividend’ frequency range, ZTE has developed its own LTE DD solution based on the SDR platform,” adds Dr. Zhang.

As a pioneer in the field of HSPA+/LTE, ZTE has long been involved in the development of LTE technology and supports network operators in their efforts to drive the commercialization of this next generation technology. Over 2,000 engineers are devoted to developing LTE in R&D centres in Xian, China.

(ZTE Corporation)

ZTE Shortlisted for Telefonica LTE Project

Six-month trials to take place in Europe and Latin America

ZTE recently announced it has been shortlisted by Telefonica to participate in its large scale LTE trial project across six countries in Europe and Latin America.

“ZTE has invested heavily in LTE research and development and has been involved in LTE trials with leading operators globally, including CSL in Hong Kong, giving the company a strong position in this market”, said Mr. Zhang Jianguo, general manager of ZTE’s UMTS/LTE products. “The partnership will give ZTE the opportunity to demonstrate its innovative products and help Telefonica shape the market for LTE services in Europe and Latin America.

The six-month trials will take place in Spain, the UK, Germany, the Czech Republic, Brazil and Argentina and marks the start of Telefonica’s LTE vendor selection process. By deploying LTE technology, the operator aims to reach a theoretical peak data transfer rates of 340Mbps, enabling data-rich services such as mobile video and TV. Telefonica has selected six vendors for its LTE (4G) trial project. In addition to ZTE, Ericsson, Alcatel-Lucent, Huawei, Nokia Siemens Networks and NEC have been shortlisted.

In September, ZTE announced a commercial LTE trial in Hong Kong with CSL during a joint event that included a live demonstration of the LTE network with peak download speeds in excess of 100Mbps. This project has drawn the attention of operators from across the globe. In October, ZTE announced the opening of an LTE testing laboratory at its U.S. headquarters in Richardson, Texas.

(ZTE Corporation)
ZTE SDR Base Station Records over 200,000 Volume Shipment

SDR solution helps meet 3G market demands and lowers operator TCO

ZTE announced on November 13, 2009, that its Software Defined Radio (SDR) base stations have recorded a total volume shipment of over 200,000 units as of October 2009. It took the company almost one year to achieve the first 100,000 SDR units shipped by April 2009, and only six months to ship the second 100,000. The fast growth showcases global operators’ recognition and favor of ZTE as a leading provider of SDR base stations, helping them meet the rapid market needs.

ZTE is the world’s first equipment manufacturer to roll out its SDR base station platform, taking the lead in commercial deployment. With its SDR platform, ZTE’s variety of multi-band and multi-standard wireless communications systems can be implemented with SDR technology, including GSM, UMTS, CDMA2000, TD-SCDMA, FDD LTE, WiMAX and TDD LTE, all on the same hardware platform to realize co-existence and a smooth evolution between GSM/UMTS dual-mode, GSM/UMTS/LTE multi-mode and CDMA/LTE dual mode, thus reducing operators’ TCO.

3G networks utilizing ZTE SDR base stations are being constructed across China, including a TD-SCDMA network (China Mobile), WCDMA network (China Unicom) and CDMA2000 network (China Telecom). In third party testing on China Unicom’s WCDMA network conducted recently in 77 cities, ZTE’s SDR solution achieved the highest ideal network ratio of 71.4% among the testing vendors.

In September this year, ZTE and CSL, the largest mobile operator in Hong Kong, jointly released an LTE commercial test network. Based on ZTE’s SDR base station platform, CSL successfully built GSM/UMTS/HSPA+/LTE multi-mode networks with a maximum download rate of 127.552Mbps and a mobile download rate of 43.9Mbps. Through its proven track record, ZTE is recognized as a reliable and innovative supplier for global operators and equipment providers in the area of SDR base stations.

(ZTE Corporation)

ZTE Integrates Interference Cancellation into HSPA+ Product Roadmap

ZTE announced on November 2, 2009 its plans to integrate Uplink Interference Cancellation (ULIC) into its next-generation HSPA+ base stations product portfolio. ZTE’s planned ULIC-based products will enable operators to leverage their existing UMTS network investments while significantly increasing system capacity to support a growing range of bandwidth-intensive consumer services such as IPTV, music, video and more.

ULIC technology delivers improved system capacity by eliminating interference between multiple uplink data streams from users who are simultaneously transmitting data over the air. The technology enables operators to significantly increase their UMTS voice and data throughput. Enabled by the increased level of integration possible in today’s commercial chips, ULIC brings the performance of CDMA-based modems close to their theoretical limits. The design is scalable and supports cancellation for a large number of simultaneous users and transmissions on the uplink.

(ZTE Corporation)
ZTE Becomes China’s First PON Vendor to Obtain MEF Certification

Certification to help ZTE further drive world-class PON solutions

ZTE announced on November 12, 2009, that its xPON Next-Generation Optical Access Platform has recently passed authoritative tests by the Metro Ethernet Forum (MEF) organization, making it China’s first and the world’s third passive optical network (PON) equipment provider to receive this significant certification.

ZTE’s xPON platform conforms to the stringent guidelines outlined by the tests. MEF 9 ensures equipment conformance when deployed at User-Network Interface (UNI) for setting up Ethernet Virtual Circuits (EVCs) and VLANs. MEF 14 tests EVC-related performance of the services.

MEF is a global industry alliance consisting of 145 organizations including telecom service providers, cable TV operators, and network equipment vendors. As the official laboratory of MEF, Lometrix provides globally recognized, trusted certification testing. It is the foremost authoritative organization of the network industry.

The rapid growth of fiber-to-the-home/building/premise (FTTx) users throughout the globe, particularly in the Asia Pacific region, has aroused the industry’s attention. As a globally leading telecommunication solutions provider and one of the leading pioneers in the broadband access field, ZTE has a profound understanding of and experience in xPON technology and market applications. ZTE has deployed 2,600 lines of xPON equipment for global mainstream operators’ high-end market networks, including in Hong Kong, Italy and the Netherlands. The MEF certification brings industry recognition of ZTE’s xPON product performance and capabilities.

According to a recent industry report by IDATE, a respected research and consulting firm, ZTE’s FTTx shipment lead the market with 19% global market share as of June 2009. By 2014, the global FTTx market will reach 140 million subscribers worldwide, representing an enormous opportunities for the industry.

(ZTE Corporation)

ZTE Named Top Two Optical Networks Provider in Asia Pacific in Q209

Ovum report shows strong optical market climb by ZTE

ZTE announced recently that it is now a top two optical networks provider in Asia/Pacific as reported by Ovum, a renowned research and consulting firm.

According to Ovum Report “Market Share: 2Q09 Optical Networks, Global and Regional,” in terms of sales revenues, Huawei, ZTE, Alcatel-Lucent and NEC were in the top four positions in the Asia/Pacific region. ZTE’s rolling four-quarter market share reached 12%, while its Q209 market share climbed to 16.1%, making it the second largest supplier for the first time in the region.

The report also shows that in Q209, optical networks sales as a whole in the Asia/Pacific region grew by 24% year-on-year, marking the region the first to attain recovery worldwide. The research also reveals that optical networking expenditure in the region amounted to US$2.671 billion in 1H09. The market size is expected to reach US$5.8 billion by the end of the year, largely attributable to significant growth in China and India, while uncertainties still shroud the Japanese market and Australia’s broadband investment plan.

Global single-quarter optical networks sales rose to US$3.8 billion in 2Q09, with ZTE showing the biggest quarter-on-quarter revenue growth at 213%. The report underlines ZTE as the number three vendor in global 2Q09 optical networks market.

(ZTE Corporation)
Li Xiaodong, currently serves as Vice President of ZTE’s Marketing Division II and President of ZTE Southern Africa Region, responsible for driving ZTE’s business in Southern Africa areas. Since joining ZTE in 1995, he has worked successively as Vice General Manager of ZTE Pakistan, Chief Representative of ZTE Nigeria, and President of ZTE Southern Africa Region, and has gained rich experience in overseas marketing and management.

When meeting with Li Xiaodong, the reporter was deeply impressed by his steady and calm voice. This man, who narrowly escaped from the war-torn Somalia and never knew what Masai Mara was like even after more than 20 visits in the park-like nation Kenya, was telling the reporter stories of ZTE Southern Africa Region, his projects, and his energetic and aggressive team. In his eyes, clients always come first. Also in his calm voice, the reporter heard and experienced his wisdom in the fierce market competition and his hard-bitten pursuit of goals. On Nov 12, 2009, the reporter interviewed Li Xiaodong, Vice President of ZTE’s Marketing Division II and President of ZTE Southern Africa Region. Now let’s approach this land of Southern Africa and ZTE team actively working on it for the development of its telecom business.

Great Potential, Fierce Competition
Since he was first sent to Nigeria in 2003 and later made in charge of ZTE marketing in the Southern Africa region in May 2007, Li Xiaodong has been working in the African telecom market for seven years, which has given him not only deep understanding but also rich experience in the African telecom market. In those three years when he was made President of ZTE Southern
Africa Region, Li Xiaodong went deep research into the market and clients. A well understanding of the market and an insight into clients’ needs have always been the focus of his work. When asked about the status quo of the telecom industry in Southern Africa areas, he used four words to precisely generalize characteristics of the market.

These four words were “great potential, fierce competition”. Take the 22 Southern African countries ZTE covers for example. These countries enjoy a population of about 300 millions, accounting for 30% of the whole in Africa. Except a few medium-developed countries like the Republic of South Africa, most countries have their per capita GDP less than 450 U.S. dollars, while Burundi and Somalia are the world’s poorest countries. Due to economic underdevelopment, the overall telecom industry in Southern Africa areas features weak foundation and backwardness in technology. According to Li Xiaodong, the average mobile penetration rate was only 30% and broadband penetration rate was merely 1%. But with the fast growth of global telecomm industry, telecom subscriber base in the Southern Africa region has been growing at a rate of 30% in recent three years, making it now one of the hotspots for high-speed growth in the global telecom sector.

With enormous market potential, the Southern Africa region has attracted many foreign investments coming from three major sources: firstly, some financial groups and Multinational Telecom Operators (MTOs) from Middle East, such as Hits consortium, Etisalat, Zain and other MTOs; secondly, Indian investors like Reliance and Essar; thirdly, operators from Europe and America like France Telecom and Vodacom. Apart from the outside investors, there are local operators, too, including MTOs such as MTN, the largest MTO in Africa, and Econet, a MTO in South Africa who is showing a rapid growth momentum, as well as local mainstream operators such as Telkom SA, Angolan Telecom’s Movicel Telecomunicacoes Lda (Movicel) and Telecommunication of Mozambique (TDM), of which Telkom SA was Africa’s largest fixed-line telecom operator, also one of the world’s top 500 enterprises. Besides the many investors, another major feature is that every country has not less than three operators, for example, seven operators in Uganda and six operators in Tanzania, resulting in low ARPU value for each operator (with the lowest ARPU of only US$ 4). All of these features lead to a fierce competition in the telecom market of this region, and meanwhile they also create a huge potential for development.

Li Xiaodong then gave an example on the great potential of development in the Southern Africa region. He said that due to a relatively late start in telecom industry, many countries in this region provide inadequate fixed-line infrastructure and thus have extremely low fixed-line penetration rate. However, as the wireless infrastructure produces a quick effect, the mobile penetration rate in this region has reached 30%. For example, the mobile penetration rate in the Republic of South Africa has risen to 100%. What the operators there are concerned now is improving their network quality and extensively deploying fixed and mobile broadband services. The east and west coasts of Africa are the places where submarine optical cables are being deployed. At present, the east coast has two submarine optical cables that will be put into use respectively this year and next year; while the west coast has one submarine optical cable to be put into practice in 2011. Once these optical cables are installed, they will directly stimulate the needs of African coastal and inland countries for optical networks.

“Starting in 2010, African countries will put into service their fixed optical networks. We predict that the next three to four years will see a peak growth of fixed optical networks in Africa. Meanwhile, mobile broadband deployments and value-added services based on high bandwidth will also have explosive development. Therefore, the market here shows a huge potential for development,” said Li Xiaodong.
Two Important Breakthroughs

From the coverage of 9 countries in 2006 to the coverage of 15 countries in 2007, a nearly doubled business performance, then to the coverage of 22 countries in 2009, ZTE’s business in the Southern Africa region is taking on the fast-growing track. At present, ZTE has achieved a breakthrough in the sales of both wireless and fixed infrastructure equipment as well as terminal products to this region, and has also made a strategic breakthrough with high-end operators. The two breakthroughs have laid a solid foundation for its development in this region.

Li Xiaodong told us that in 1998 when ZTE made its initial success in the markets of Bangladesh and Pakistan and was looking for new opportunities, the Chinese government delegation paid an official visit to Zambia and Shi Lirong, Executive Vice President of ZTE was among the delegation. With the efforts of all sides, ZTE succeeded in signing a telecom cooperation agreement with Zambia, opening a new page of the company’s development in Southern Africa areas. This was followed by contract wins in Ethiopia, Angola and Kenya.

“Before 2007, we made a partial breakthrough with certain countries, but not a complete breakthrough with the whole Southern Africa region. However, with the strategic adjustment after 2007 as well as our hard work and accumulation in the past two years, we have laid a solid foundation for our strategic plan. In product plan, our wireless infrastructures (including GSM and CDMA) and fixed transmission infrastructure have covered respectively 80% and 55% of countries in this region. This great improvement in coverage rate encourages us to ensure a continual and stable business growth in this region. In terminal products, our mobile phones basically dominate the Southern Africa markets, with sales volume increasing steadily year by year, from 2,400,000 units in 2007 to 3,500,000 units in 2008 and to an expected figure of 4,000,000 units in 2009,” said Li Xiaodong.

In traditional battles, the key to win is to seize the high ground. Just like high grounds in the battlefield, high-end operators are breakthrough targets for equipment vendors. In this regard, Li Xiaodong said, “We highly value our cooperation with high-end operators in the Southern Africa region and hope to become their strategic partners. Currently, we have made significant and strategic breakthroughs in high-end operators in this region.”

In 2007, ZTE got the first breakthrough with France Telecom Madagascar in terminal products, making ZTE mobile phone a well-known brand in Madagascar. Madagascar has a population of 20 million. From 2007 till now, ZTE has sold a total of 2 million mobile phones with the ZTE logo to Madagascar, occupying 80% of the market share. When ZTE employees enter Madagascar customs, usually the officers, seeing that they are Chinese, would ask if they are from ZTE or not, which means that ZTE enjoys a high brand recognition in this country.

In 2008, ZTE made a breakthrough with France Telecom’s Kenya subsidiary in intelligent network, access network, transmission, and WiMAX products. It has also achieved certain strategic breakthroughs with MTN, the Africa’s biggest MTO. Now, MTN Group has come to realize ZTE’s willingness for cooperation and the significance of introducing ZTE, so for the first time it invited ZTE to its 3G public bidding this year. But before that, ZTE’s power supply products had passed the testing by MTN. Its data cards won 80% share in the recent online public bidding of MTN Group; its mobile phones have taken the dominance in MTN. As we have mentioned above, MTN is Africa’s biggest mobile operator headquartered in the Republic of South Africa. It has over 100 million subscriber bases in 21 countries around the world, distributing mainly in Europe and the Middle East. MTN invests nearly 4 billion U.S. dollars every year in CAPAX, and its revenue in 2008 reached as high as 13 billion U.S. dollars. Therefore, making a breakthrough with MTN is of great significance for ZTE.

Innovation, Cooperation and Win-Win

Cooperation has become the main theme for an enterprise’s long-term and stable development. The effective and operable cooperation model should adapt to the local conditions. The countries in the Southern Africa region vary in economic development and telecommunications status. By considering characteristics of the telecom market and following the innovative thinking and practice in both the financing mode and the project operation, ZTE has created an innovative, cooperative and win-win road together with the operators in this region.

Relying on his deep understanding of the Southern Africa region and rich experience in the telecom market, and guided by the concept of growing with the clients, Li Xiaodong has led his team in making innovations and has achieved outstanding performance on both cooperation mode and project delivery. Li Xiaodong then took three projects for example to explain, from different angles, the complete cooperation between ZTE and the operators.

For different countries and operators,
ZTE has adopted different cooperation modes. Li Xiaodong said, “We have cooperated with Econet Group, a MTO in South Africa whose business covers many countries like Zimbabwe, Burundi, Lesotho, and Kenya. This cooperation project has proved our innovation in financing support.” Econet Zimbabwe, a listed company, is a most important source of profits for Econet Group. Before 2009, Zimbabwe’s economic situation was really bad and Zimbabwe dollar depreciated sharply. No bank would like to cooperate with Zimbabwe. But considering that Econet Zimbabwe was the largest operator in Zimbabwe where there is a huge potential for telecom development due to the quite low mobile penetration rate of less than 10%, ZTE started quick but small scale cooperation with Econet Zimbabwe. After that, ZTE gradually expanded their cooperation and undertook some capital risks by allowing deferred payments, so as to establish a steady strategic partnership with Econet step by step. This also helped Econet maintain its continual growth. Its subscriber base increased from 1 million in January 2009 to 2 million in June 2009, and is expected to reach 3 million by the end of 2009. The increase in subscriber base brought about a rapid increase in its revenue. In February 2009 when U.S. dollars became the currency for trade in Zimbabwe, Econet then saw a rapid increase in income. The market value of its stock also increased from 80 cents in early 2009 to 5 U.S. dollars in August. Now Econet’s total market value has reached 1 billion U.S. dollars, making it the company in Zimbabwe with the highest market value. ZTE began a widespread cooperation with Econet in 2006, helping it build a GSM network in Zimbabwe. The contract value reached about 20 million U.S. dollars in 2007. At the end of 2008, the GSM network experienced Phase II expansion valuing at 67 million U.S. dollars. In September 2009, the network underwent larger scale expansion of Phase III whose capacity would reach 2.5 million lines after completion. Particularly in Phase II and III expansions, ZTE adopted an innovative financing mode. Through the cooperation of Export-Import Bank of China with African Export-Import Bank and the cooperation of African Export-Import Bank with Econet, Econet received great financing support and further strengthened its cooperation with ZTE. “By cooperating with Econet, we have not only expanded our share in the Southern Africa markets, but also helped Econet achieve fast business growth, thus fulfilling the objective of co-development with our clients,” he said.

Li Xiaodong then talked about their cooperation with Essar Kenya YU this year. It is a typical case of successful project delivery. In April and May interim government, following the recommendation by the Chinese ambassador, invited Li Xiaodong to Somalia to discuss the release of related telecom management policies and the construction of Somalia’s national telecom networks. As Somalia was in a political mess at that time, it should take great courage to go there. However, for the company’s interests and market exploration, Li Xiaodong resolutely chose to make the trip, but almost at the cost of his own life. Because the flight from Djibouti to Somalia was canceled, Li Xiaodong had to take another flight from Djibouti to Kenya with one chief representative and one account manager, and then took a small flight by the United Nations to reach Somalia. Because the aircraft landed on an airport more than 50 kilometers away from Somalia’s capital Mogadishu, which was in the domain of anti-government militants, Somalia’s President specially arranged a general and
this year, the client made a Purchase Order (PO) without specific equipment configuration, which directly influenced our production and delivery. To complete the project within the required time, we worked together with the client by establishing a “War Room” at the client’s office, aiming at integrating and making full use of the resources, and improving efficiency of decision-making and implementation. This way of working jointly with the client and solving problems on site greatly improved working efficiency. With this new and innovative mode of project operation, our team installed over 300 base stations in one and a half months. It was indeed a miracle! Our client even sent us a thank-you letter, saying that “Today we have crossed the mark of 450 sites by achieving 171 sites in August which is a record achievement in Kenya. I am glad to say that we are working hard together as one team to make it a great success to achieve 200 sites in August to create another telecom history in Kenya.”

Finally Li Xiaodong told us about their cooperation with Somalia’s operator Harmoud. We all know that Somalia is a war-torn country in a state of anarchy. The existing government of Somalia is an interim government that has no formal government agencies and departments. There are many anti-government militants. All telecom operators in this country are pure unregulated private operators. In 2000, Harmoud took the initiative to sign a contract with us for the purchase of 20,000 lines of switches. This was our first cooperation agreement with Somalia for building a GSM network. It was also deferred payment contract. To date, the network has attracted more than 1 million subscribers and kept on expanding every year with a scale of 10 to 20 million lines. Harmoud, the biggest operator in Somalia occupying 85% of the market share, has established a long-term, reliable and trustworthy strategic partnership with ZTE.

Looking into the Future

When Li Xiaodong talked about future development plans, we were impressed by his cool mind and clear thinking. He said as calmly as ever, “The years from 2007 to 2009 are a period for us to lay a foundation and accumulate experience in the Southern Africa region. We have made achievements and strategic breakthroughs, but more importantly we have got accumulation. I believe 2010 will be a harvest year for us. Our goal is to further expand our market share and increase the coverage of our wireless products to 100% from the current 80% and our fixed-line products to 80% from the current 55%. What’s more important is that we will make a complete and massive breakthrough in either products or with MTOs in this region.”

several soldiers to meet them at the airport. When the three cars Li Xiaodong and his entourage took were passing a town, they were attacked by anti-government militants. A grenade exploded just under the car Li Xiaodong took. Thanks to the driver who was experienced and fast, the car was able to quickly break out of smoke and machine gun fire. When examining the car afterwards, they found the grenade had blown out at the bumper, not the oil tank. If the grenade had blown at the oil tank, the consequences would have been unimaginable. Li Xiaodong narrowly escaped! It was because this narrow escape that moved the Somalia’s interim government, the two sides signed a cooperation contract soon. That negotiation also strengthened the relationship between ZTE and the Somalia’s government and the cooperation of ZTE and the telecom operators in this country. To date, ZTE has been maintaining a good cooperation relationship with the Somalia’s government and operators.

When asked why he would risk his life even if he knew Somalia was in a political mess and full of dangers, Li Xiaodong simply replied, “When our clients have requirements, I should take the initiative and set a good example”. No big words but practical actions have made Li Xiaodong quite familiar with the clients and the markets he is in charge of. The reporter now understands more about Li Xiaodong’s words “2010 will be a harvest year for us”.
Econet Expanding Mobile Business in Africa

Zhao Lili

Econet is a telecommunications group, with investments and operations in Africa, Europe, Asia Pacific and Central America. It has cooperated with ZTE since 2003. Both parties have cooperated on GSM, CDMA network deployments in Zimbabwe, Burundi, Lesotho, etc. Especially in recent years, both parties have strengthened their cooperation. Recently, the reporter of ZTE TECHNOLOGIES interviewed Craig Fitzgerald, CEO of Econet, who shared with us their cooperation with ZTE and their future development plan.

Journalist: It's our great honour that you give us the opportunity to interview you. ZTE TECHNOLOGIES is our own magazine; our major readers include our more than 60,000 employees and telecom industry partners in 140 countries around the world. First of all, would you please give us a brief introduction of Econet and your major business in order that our readers will have a basic knowledge of your company?

Craig Fitzgerald: Econet is a telecommunications group, with investments and operations in Africa, Europe, Asia Pacific and Central America. The group’s primary focus is in GSM operations in Africa; however, we also operate an international voice and data traffic carrier business. Apart from GSM infrastructure, we have begun to invest in fiber in order to increase bandwidth provision to our various African networks and customers. The Econet Group has been active in African telecommunications for over 15 years now and we believe that in this period we have built a core competency in understanding African markets and the needs of our customers, and exploring ways to best meet their telecommunications requirements.

J: As far as we know, Econet has cooperated with ZTE since 2003. Both parties have cooperated on GSM, CDMA network deployments in Zimbabwe, Burundi, Lesotho, etc. Especially in recent years, both parties have strengthened their cooperation. For example, they have established cooperation in the GSM project during 2007 and 2009. Could you comment on the achievements made by both parties? Are you satisfied with the progress of the project?

Craig Fitzgerald: Yes, we are very satisfied. Since we began our cooperation with ZTE, we have more
than doubled the capacity of our various networks. The Econet teams in the respective countries have worked very closely with the ZTE teams and despite the obvious cultural and language differences, the two teams are now working very well together and making great progress on our further network expansion. I think both the Econet and the ZTE teams have learnt a lot from each other over the past few years and together we are targeting to increase the group’s subscriber capacity further in the coming 18 to 24 months.

**J:** Facing the global economic crisis, operators around the world have cut their investment in fixed assets. However, to drive the growth of their business in such an adverse condition, both operators and equipment vendors are actively seeking for effective measures against the crisis. ZTE provided financial support for the project from China’s bank. In this way, the project can be implemented smoothly. What are your comments on our financing support?

**Craig Fitzgerald:** The financial support we received from ZTE came at a critical time in our expansion programme and was instrumental in our ability to have expanded as successfully as we have done over the past 12 months. ZTE have played a huge role in increasing our understanding of the various funding options offered by the Chinese financial institutions and the funding structures that we have been able to implement as a result have provided us with the ability to invest significant amounts in our group over the past few years, and to achieve this in a relatively short time frame.

**J:** In today’s competitive environment, what, do you think, are the effective modes of cooperation between operators and vendors? Why?

**Craig Fitzgerald:** Firstly, it is important for the vendor to understand the operators’ requirements and the dynamics of the markets in which they operate. Markets can differ and have their own dynamic, and having an understanding of what the operator is attempting to achieve in each market allows the vendor to propose technical and financial solutions which are best suited to address these objectives. There is a lot of pressure on operating margins in the telecommunications industry these days, and therefore it is critical to find an efficient approach to the investment in CAPEX as well as the management of the operational costs within the network. Having a commercial view to equipment supply and selling a solution to the customer as opposed to plain hardware allows both operator and vendor to benefit from the market dynamics.

**J:** Could you please describe your network development plan or strategies in the future two to three years?

**Craig Fitzgerald:** The markets in which we operate still have relatively low penetration levels when compared to their neighbours in the region. Therefore our focus over the next couple of years is to continue with the expansion of our networks in our various markets and to do so in an efficient and effective way, which delivers high quality telecommunications services to our customers and allows us to be competitive in each of the markets we operate in.

**J:** Thank you very much.
Choosing the right strategy for xPON deployment is a challenge for operators as they want to preserve their investment, optimize CAPEX and OPEX while maximizing their revenues with new services. Each option depends on the addressed market, residential or business, on the regulatory environment and on the deployment cost, all leading to technical and financial decisions to be made.

**ZTE’s Solution—One Size Fits for All**

Addressing all types of FTTx network requirements with the most appropriate technology, ZTE launched ZXA10 C300, world’s first unified platform supporting GPON, EPON and P2P as well as the emerging next generation IEEE 10G-EPON and FSAN/ITU-T NG-PON in one platform.

ZXA10 C300 offers a series of benefits to customers and end users.

- **Reduced power consumption and carbon footprint:** ZXA10 C300 platform can reduce the power consumption levels thanks to the ASIC & PCB design and the innovative methods to set boards, ports and modules at idle status. These combined benefits contribute not only to increasing OPEX savings, but also to preserving the environment by reducing the CO₂ emissions.

- **Higher site savings:** ZXA10 C300 offers a higher density of PON modules with 8 GPON ports per module and a 1:128 splitter ratio for each GPON port, which allows 16,384 users to share the same platform. In the 10G-EPON configuration, 2/4 10G-EPON ports per module are offered and a 1:128 splitter ratio is available for each 10G-EPON port. ZXA10 C300 also offers longer coverage with a range up to 60kms using transceiver power of Class B+/Class C+. Compared to traditional OLT designs, ZXA10 C300 combined density and coverage benefits allow higher OPEX savings as fewer sites are needed.

- **Future proofness:** A smooth evolution path to 10G-EPON and/or NG-PON is possible with ZXA10 C300: only one new module is needed for the upgrade to 10G-EPON (or NG-PON). This enables additional CAPEX savings compared to a traditional design requiring the change of heavy hardware to evolve to 10G-EPON.
and/or NG-PON. By offering a future proof platform, ZTE ensures that the operator’s initial investments are preserved.

Better user experience: ZXA10 C300 offers not only powerful QoS, security control and self-care software for end users, but also higher bandwidth to end-users with 10G-EPON with at least 100Mbps to each ONT or end user considering 1:128 splitter ratio.

Higher easiness is also offered to end-users as ZTE’s Easyservice software provides easier service installation and provisioning for end-users so they can diagnose home networking issues automatically.

The major benefits provided by ZXA10 C300 such as higher site savings, limited power consumption and future proofness help operators obtain higher CAPEX and OPEX savings. Lower TCO, better end-user experience with higher bandwidth, higher easiness all lead to increased revenues for operators.

ZTE xPON Business Case

A business case study for a network evolution to 10G-EPON has been performed comparing ZXA10 C300 with a traditional solution.

The following scenario is studied:

In 2009, a 10-OLT network is deployed with 8,000 home connected subscribers per OLT; in 2010, the existing 10 OTLs are extended. In 2011, the existing 10 OTLs are upgraded into 10G-EPON for 40% of the subscribers while the remaining 60% subscribers are upgraded the year after into 10G-EPON.

As a result, ZXA10 C300’s major benefits such as higher site savings and future proofness lead to higher CAPEX savings: less equipment investment and spare parts are needed, and Installation & Commissioning costs are reduced.

This business case study reveals that ZXA10 C300 offers over 60% CAPEX savings after 1 year and 36% after 4 years to operators compared to a traditional solution based on heavy hardware and software (see Figure 1).

Moreover, the major benefits of ZXA10 C300 also lead to higher OPEX savings: less site rentals and Operations & Maintenance are needed. In addition, lower power consumption levels contribute to dramatically lowered OPEX.

As a result, ZXA10 C300 offers over 52% OPEX savings after 1 year and 39% after 4 years to operators compared to a traditional solution (see Figure 2).

Finally, the introduction of ZXA10 C300 allows operators to reduce not only CAPEX, such as equipment costs or Installation & Commissioning, but also OPEX, like site rentals, power consumption and OAM. As a result, the TCO savings based on this study reach over 37% 4 years only after initial roll-out.

This study demonstrates that ZXA10 C300, compared to a traditional platform, offers over:

- 39% OPEX savings 4 years after initial roll-out.
- 36% CAPEX savings only 4 years after initial roll-out

Combined OPEX and CAPEX savings help operators lower their TCO and increase their revenues.

Conclusion

ZTE has a very strong and innovative R&D team, which has achieved significant milestones in fixed broadband field. ZTE xPON products are recognized by the telecom industry players for their innovation. ZXA10 C300 is a typical example. It supports GPON, EPON and P2P as well as the emerging next generation IEEE 10G-EPON and FSAN/ITU-T NG-PON in a single platform, helping operators increase their revenues with lower TCO and higher performance levels.
“Bandwidth, convergence, flatness and mobility” has become the theme of ICT development in the 21st century. Being closest to the end user, Access Network (AN) has to accommodate changes in technology, service delivery and user experience. The universal demands for current access networks are higher bandwidth, longer transmission distance, lower cost, and more environmental-friendly equipment.

AN, the cornerstone of ICT networks, has a clear path of evolution towards FTTH. Telecom operators worldwide have started large-scale FTTH deployment. Of all FTTH technologies, GPON is a key option for them due to its wide coverage, high bandwidth, and multi-service support.

High Requirements for FTTH Networks

As the development of FTTH networks is a process in which access fibers are gradually extended to end users, it is necessary to take into full consideration the evolution to FTTH and ensure the scalability of FTTH networks. In addition, hybrid networking must be adopted to satisfy customers’ requirements for multiple (rather than one) FTTH application scenarios.

As traditional fixed-line and mobile operators are transforming into full-service operators, the FTTH network must support full-service operation. In addition to broadband services, it must support traditional TDM services and integrate mobile services.

With the increasing global awareness of environmental protection and energy saving, operators are seeking for a cost-effective FTTH construction mode to curb the growing energy consumption and reduce TCO. As new technologies keep emerging in the FTTH field, they hope to find an FTTH solution that can support smooth migration to new technologies while protecting their existing investment.

Future Proof GPON Solution

With the development of PON technologies and the growing demands for broadband networks, the Optical Line Terminal (OLT) equipment of high capacity and wide coverage has become a typical requirement for an FTTH network. In response to this market demand, ZTE took the lead to launch its new-generation optical access platform ZXA10 C300.

ZXA10 C300 is a large-capacity PON OLT that can provide a maximum of 128 GPON interfaces and allow the
access of up to 16384 GPON Optical Network Units (ONUs). In addition to GPON, ZXA10 C300 can also support P2P, EPON, 10G EPON, and WDM PON, making it a truly unified FTTx platform. Based on the large-capacity and high-performance OLT C300, ZTE rolled out its GPON-based FTTx solution, as illustrated in Figure 1.

**Multiple Application Scenarios**

ZTE’s GPON-based FTTx solution provides a full range of ONU products that support various application scenarios.

**FTTH**

Fiber To The Home (FTTH) is mainly designed for high-end residential users. The ONT can be placed on the desktop or mounted on the wall to save space. All kinds of home terminal devices can be connected to the ONT through a telephone line or category-5 cable to access multi-play services.

**FTTC**

In the Fiber To The Curb or Cabinet (FTTC) mode, the ONU can utilize the existing twisted pairs to access end users and achieve centralized coverage of a quite number of users at low CAPEX. The ONU can be placed in the outdoor cabinet or mounted on the pole. In order to cut wiring costs, the cabinet or splitter is usually placed in the center of multiple residential communities.

**Full-Service Support**

With non-blocking switching capability and perfect QoS, multicast and VLAN mechanisms, ZTE’s GPON-based FTTx solution can support a range of broadband services including voice, data and video. Additionally, through transparent transmission of E1 services and transfer of service clocks, the solution enables mobile 2G/3G backhaul over GPON, satisfying the operators’ needs for transformation into full-service operation.

**Green GPON**

With innovative ASI and PCB components, highly-integrated boards, and speed adjustable fans, ZTE’s GPON-based FTTx equipment
Focus

provides low power consumption, helping operators considerably reduce their OPEX. The power consumption of each GPON port of ZXA10 C300 is 40% lower than the average level of the industry. ZTE has been committed to putting its green concept of low power consumption, space and labour saving, and lead-free nature into the equipment design and manufacturing practice.

Smooth Migration
As a unified FTTx platform, ZXA10 C300 supports not only GPON but also a number of other technologies including EPON and P2P. More importantly, it offers smooth support for Next-Generation PON (NG-PON) technologies such as 10G-EPON, NG-PON1, and NG-PON2 only by adding one new module, as shown in Figure 2.

While meeting operators’ current needs, ZTE’s GPON-based FTTx solution supports smooth migration to NG-PON technologies in the future, which can protect operators’ existing investment and save the time for network reconstruction.

Widespread Applications
ZTE’s GPON-based FTTx solution leads the global market in features and functionalities. By September 2009, ZTE has widely deployed 26 million lines of its xPON products for commercial use in numerous countries and regions around the world including Italy, the Netherlands, Sweden, Hong Kong, Malaysia, Thailand, Saudi Arabia, and Indonesia. Its ZXA10 xPON optical access products have registered 278 Chinese patents and 38 international patents.

According to the latest IDATE report “World FTTx Market”, ZTE ranks No. 1 in global FTTx equipment market with 19% accumulated global shipments in the first half of 2009.

In 2006, Telecom Italia (TI) initiated its GPON project. After multiple rounds of stringent tests, ZTE’s FTTx solution was chosen by TI for building a GPON+VDSL2 network (see Figure 3) in the Rome area due to its low power consumption and high reliability.

The cooperation between TI and ZTE in FTTx has also been highly recognized in the industry. The GPON+VDSL2 solution won the prestigious “InfoVision” award at Broadband World Forum Europe 2007 sponsored by the IEC. Following this success, TI and ZTE agreed to further their cooperation in the FTTx area.
With the deterioration of global economy in 2009, both the telecom operators and the subscribers are seeking to maximize their benefits. Harvesting maximum benefit with minimum input becomes the common objective of the telecom industry.

Green represents environment protection and means low cost and high income. In the telecom industry, energy saving and environment protection are the key indexes in the appraisal of product performance. ZTE has been promoting and optimizing green environment friendly solutions and attaching great significance to the construction of green networks and application of energy saving and environment friendly technologies.

ZTE’s green broadband solution advocates “low energy consumption, high efficiency, and new life”, and complies with the principles of energy saving, emissions reduction, security, less pollution, and recycling. To reduce the network’s energy consumption, the solution uses chips of low power consumption, PCB boards of optimized design, high-efficiency heat dissipation technology, and mute design. Therefore, the solution has the characteristics of

Establishes Lead in Thailand's Broadband Market

Lian Yuxi
low power consumption, convenient installation, low noise, and high integration and can completely satisfy the operator’s requirements for green broadband networks.

Relying on its excellent green indexes and technical performance, ZTE’s green broadband network solution has been successfully applied in networks of Telecom Italia, Telkom, CS IT, TRUE, Turk Telecom, and Telekom Malaysia. This article introduces the application of ZTE’s green broadband solution in the network of TRUE, the largest broadband network operator in Thailand.

TRUE’s Breakthrough Admist Fierce Market Competition

TRUE was established by Charoen Pokphand Group (CP) in November 1990 as TelecomAsia Corporation Public Company Limited to jointly operate two million lines of fixed-line equipment in Bangkok with TOT. After setup, TRUE began to set feet in the telecom industry while cooperating with TOT and was listed on the Stock Exchange of Thailand in December 1993.

TRUE started its fixed network business at an early time. In 2003, TRUE aggressively promoted the ADSL service and now is Thailand’s largest broadband network operator. In 2005, TRUE acquired UBC, the only nationwide provider of pay television in Thailand and began to provide IPTV service in 2006. By now, TRUE is the telecom operator in Thailand that has the greatest number of licenses and operating networks.

In 2005, TRUE encountered a problem in the construction of broadband networks: The DSLAM equipment deployed by TRUE at initial stage was large and could satisfy the users’ limited bandwidth demands; however, with the business expansion, the original networks became unable to meet the users’ increasing demands, which are mainly represented in the following aspects:

- The original networks were characterized by large capacity, few offices, and long distance between the access point and subscribers. According to TRUE’s statistics, the copper cable length of the access nodes built before 2006 was usually 5km long. Under such transmission distance, the bandwidth of the ADSL line is generally limited to below 1M.
- The DSLAM equipment in the original networks adopted ATM core. Under the current IP oriented network development trend, the DSLAM equipment could not provide multicast and QoS functions as required by the IP services, restricting the development of multi-play services.
- With the rapid development in the telecom industry, more and more new broadband access technologies emerge. These new broadband access technologies require that the downlink of the broadband access point supports FE/VDSL2 for higher line rate and the downlink of the broadband access point supports EPON/GPON and even 10G-EPON and NG-PON for higher access bandwidth. In contrast, the DSLAM equipment in the original networks could not support smooth evolution to the new technologies.

Therefore, both business expansion and subscriber distribution impose higher requirements on TRUE’s access networks: higher bandwidth, multi-service support, and extensive broadband coverage.

A simple way of satisfying the requirement is to shift downwards the broadband nodes: Adopt next generation compact outdoor DSLAM to reduce the distance of the copper wire and improve the access bandwidth. In this way, the operator can provide multi-play services based on new access technologies and realize seamless broadband coverage at lower cost.

Application of ZTE’s Green Broadband Solution in TRUE’s Broadband Network

Compact, high-density broadband nodes suitable for TRUE’s user distribution condition

Riding the new wave of broadband network construction, TRUE decides to shift downwards its broadband nodes. After analysis of the subscriber distribution, TRUE concludes that it can provide full broadband coverage and high bandwidth by shortening the copper wire distance of the access...
ZTE TECHNOLOGIES

December 2009

Supporting smooth evolution to new technology to protect TRUE’s investment

The ZXDSL9806H equipment was initially designed only for ADSL access and gradually becomes capable of supporting ADSL2+, FE, VDSL2, EPON, GPON, VoIP and even 10G-EPON and NG-PON. ZXDSL9806H not only satisfies TRUE’s broadband access requirements but also ensures its leading position for a long period of time.

Lower power consumption to effectively reduce TCO

With the downwards shifting of broadband nodes and the increase of node quantity by dozens or hundreds of times, the power consumption of every set of equipment also climbs considerably. The power consumption of ZXDSL9806H is 40% lower than that of similar products in the industry or that specified by the CoC Standards of European Union, effectively reducing the OPEX of TRUE.

Multi-service bearing capability in line with TRUE’s business development plan

While establishing its leading position in broadband network construction, TRUE is planning to provide new broadband services, such as IPTV and VoIP. To provide these new services, the broadband network should not only support high bandwidth provisioning but also functions related to multi-play services such as QoS and multicast.

This is exactly the strength of ZTE’s DSLAM. ZTE’s DSLAM series, including ZXDSL9806H, can provide excellent QoS, security, and Zhongxing Group Management System (ZGMS) multicast functions, paving the way for the provisioning of multi-play services.

Customized outdoor DSLAM solution for quick deployment of TRUE’s network

With the broadband access nodes becoming increasingly dispersed and nearer to subscribers, the deployment of outdoor integrated cabinets is an inevitable development trend.

Located in Southeast Asian peninsula, Thailand is famous for its hot weather, abundant rainfall, and frequent lightning strike. The temperature all the year round is above 30°C and the rainfall season lasts for up to 8 months. What is more, Thailand is near the Indian Ocean and the salt concentration in the air is very high. The harsh environment requires that the cabinet should be waterproof, wind resistant, corrosion resistant and have good heat dissipation. Relying on its high efficiency heat dissipation technology, reasonable cabinet design, and advanced heat exchanger, ZTE guaranteed that its cabinets deployed in Thailand can work normally.

During cooperation with TRUE, ZTE provides a wide variety of outdoor integrated cabinets for TRUE, including OUT80H, OUT80E, OUT50EA, OUT50H, OUT50N, and IN200. These cabinets can satisfy TRUE’s requirements for various nodes with the built-in ZXDSL9806H.

TRUE’s Takeoff

TRUE finished phase 4 of its DSLAM project in 2006, phase 5 in 2007, phase 6 in 2008, and phase 6.1 in September 2009. TRUE’s DSLAM networks are experiencing rapid development, and ZTE is forging a closer and closer tie with TRUE.

With the help of ZTE, TRUE’s broadband network capacity approaches 1 million lines. Meanwhile, the quality of TRUE’s broadband services is improving obviously. While providing services of top quality for the subscribers, TRUE is improving its Average Revenue Per Unit (ARPU).
Among all optical access technologies, GPON is favored by many Multinational Telecom Operators (MTOs) for its high bandwidth and high optical splitting ratio. The GPON based FTTx network has drawn attention from global mainstream telecom operators, and its deployment solution has become their major concern.

In the Next Generation Operations Support System (NGOSS) put forward by the Telecom Management Forum (TMF), service development, billing, and customer relationship management are the most important aspects that directly decide whether telecom operators can enhance their management level and future-oriented competitiveness.

NGOSS can be divided into three functional modules: service fulfillment, service assurance, and service billing. Service fulfillment, an important factor deciding the service provisioning capability of a network, involves accepting service orders from customers, allocating and configuring telecom resources, as well as deploying and charging the services required by the customers.

Based on the NGOSS architecture, ZTE’s GPON deployment solution takes the service fulfillment and assurance as the core to enable fast and seamless interconnection between the Network Management System (NMS) and the BOSS and implement end-to-end (E2E) zero touch, which involves automatic order allocation, automatic engineering construction, and automatic service activation.

Zero-Touch for GPON Service Fulfillment

Different from traditional access networks, FTTx networks must adequately consider a series of problems, for example, how to identify users, locate users, and prevent illegal access and service theft. The excellent user identification and authentication of ONU is the key to these problems.

GPON standards are in the process of optimization. ZTE has participated in the formulation of IEEE and ITU-T GPON standards and has contributed a lot to the G.984 and TR156 standards. ZTE’s GPON ONU products support a wide variety of authentication modes: the authentication mode defined by the G.984 standards (SN, SN + password, and password); and the RID authentication mode defined by the TR156 standards. The diversified authentication modes are intended to satisfy the operators’ various requirements.

In deploying PON networks for many operators worldwide, ZTE found that the authentication of ONU based on the logical Identifier (ID) could help to realize zero touch. Figure 1 illustrates the process of GPON service fulfillment based on the logical ID.

A user goes to the business hall and applies for telecom services. The order processing module receives orders, queries available resources, and allocates the resources for the orders. The system then goes to the service provisioning stage.

In the service provisioning stage, the auto work order system dispatches work orders; creates the users’ IPTV services on the IPTV service operation
platform; creates the PPPoE account for the users’ data services on the RADIUS server; creates the users’ VoIP services on the SoftSwitch (SS); and configures the related device data via the northbound interfaces of the Element Management System (EMS). After completion, the system goes to the customer service engineering stage.

In the customer service engineering stage, if the logic ID is used for ONU authentication, it is necessary to input ONU logic ID. The engineer then installs the ONU on site and powers it. After completion of the installation, the system goes to the service activation stage.

In the service activation stage, the OSS dispatches work orders; activates the users’ IPTV services on the IPTV service operation platform; activates the PPPoE account for the users’ data services on the RADIUS server; activates the users’ VoIP services on the SS; and activates the related ports on the device via the northbound interfaces of the EMS. The ONU automatically registers itself to the OLT, and the OLT authenticates the ONU according to its logic ID. After the authentication, the OLT or the EMS automatically sends configuration data to the ONU, and the services can be provisioned for the users.

During the service fulfillment, ZTE’s NMS provides not only rich northbound interfaces for fast connection with the OSS but also diversified offline templates to simplify the configuration process, such as broadband data configuration template, board data configuration template, and device data configuration template. For quick ONU configuration, registration, authentication, and deployment, the NMS configures data in the OLT when the ONU is offline. All these operations pave the way for automatic and effective service fulfillment.

**Zero-Touch for GPON Service Assurance**

After service provisioning, it is necessary to provide test and diagnosis to implement service assurance, so that operators can offer quality services to retain existing users and attract new users.

ZTE provides E2E service assurance measures ranging from the network side to the end user side, which involve pre-warning, fault diagnosis, remote reset, flexible alarm, and quick ONU replacement.

The EMS monitors temperature, current, and voltage of optical modules, checks the conditions of trunk/tributary optical fibers, reports alarms, and gives the suggestions based on the expertise library. Additionally, it supports remote software upgrade in automatic and batch mode to assure customers of best services provided on the latest version; provides concurrent queries of performance, collection of massive performance data, and monitoring of device ports and performance indexes for service assurance; and backs up ONT configuration data that can ensure fast service recovery in case of ONT failure.

All these abundant service assurance measures are automatically executed by the EMS, making possible the zero-touch for GPON service assurance.

ZTE’s GPON-based E2E zero touch solution allows automatic processing throughout all processes, which arouses great concern among operators worldwide. The workshop entitled “GPON E2E Zero Touch” held by ZTE and Deutsche Telekom in September 2009 was highly recognized in the industry.

Today the concept of customer orientation has been implanted to all telecom operators. Obviously, when the services they offer to customers are quite similar, the only way for them to stand out amidst the fierce competition is to tackle technical bottlenecks in service fulfillment, assurance, and billing and set up a perfect business operation and support system.
China’s telecom equipment manufacturer ZTE Corporation plans to set up a new department tasked with boosting medium to long-term forward looking researches, a senior manager said in a recent interview with Xinhua.

The move was in line with the change in ZTE’s status “from largely a follower-competitor in the international market to an industry leader,” Vice President for Wireless Technology and Strategy Shen Donglin said.

It is also expected to help meet the needs for enhanced communication in exploring the developed markets like the United States, he added.

The company currently has a department for advance researches, but it has been mainly tasked with short-term advance researches. The planned new department, in comparison, will carry out forward-looking studies on medium and long-term trends.

Established in the southern Chinese city of Shenzhen, ZTE has quickly grown over the years to become one of the leading suppliers of telecom network equipment, handsets and provider of solutions and services worldwide, particularly in the developing markets. The private-owned company was listed in Shenzhen in 1997 and in Hong Kong in 2004.

The company boosts an annual revenue of 44.3 billion
yuan (6.5 billion U.S. dollars) in 2008, with about 60% contributed by its overseas operations.

The company has been trying to establish itself as an international brand. It is one of the market leaders in the emerging markets and some fields, but a runner-up generally in the developed markets, including the United States and Europe.

More resources will be devoted to advance researches, Shen said.

Rising Chinese mainland players in the telecom industry like ZTE are behind established leaders headquartered in the developed countries in terms of the technological base, but enjoy advantages in costs of engineering, research and development, and ability to provide quick customized products and services.

The Chinese firms still have weaknesses in communication with customers—a must in the developed markets—so as to know what they want. Their advance researches were behind established industry leaders, too, Shen said.

Nevertheless, the Chinese mainland players enjoy promising prospects, and they have been growing as competitors dropped out amid the international financial crisis.

They might have better chances with the deployment of the 3G and 4G networks, said Shen, who has been based in North America and previously worked for a local firm.

Shen said he expected ZTE to be one of the established leading brands in five years from now, and a definite leader in the industry in ten years.

The handset manufacturing operations of ZTE have been expanding rapidly over the past two years. The line of mobile phones it offered now cover basic phones, feature phones, 3G phones and the state-of-the-art smart phones.

Shen showed a customized phone ordered by a Spanish carrier that carries the logo on the back cover of the handset. The company will next roll out a smart phone using the Android operating system to gain a larger share of the high-end market, he said.

Shen said ZTE was now mainly providing customized handsets for mobile carriers worldwide, and with the rise of ZTE, more and more partner carriers have agreed to carry the manufacturer’s logo, typically on the back cover.

By partnering with carriers, ZTE has been able to avoid the large investment in marketing like other established brands, Shen said.

It is also helpful to earn credit by letting the carriers carry the ZTE logo on the phones they ordered, Shen said, adding that other operations of ZTE may also benefit from the brand awareness built this way.
Sales of equipment based on GSM, a second-generation wireless technology still widely used around the world but gradually being phased out in more developed markets, now account for about 10% of ZTE’s total revenue and a third of its wireless equipment sales.

“Our market share is now around 18%,” he said. “We could pass the 20% share mark by the end of this year.”

Both ZTE and Huawei have maintained their growth this year despite the global downturn, in part because of generous support from the Chinese government, which has made easy equipment financing available to ZTE customers through its policy banks.

Early this year, ZTE was given access to $25 billion in cheap funding to help its customers finance their purchases. Since then, about half of the company’s new GSM equipment customers had drawn on that credit to fund their purchases, Zhao said.

ZTE rose to prominence largely on the back of exports to developing markets but more recently has made inroads to more lucrative developed markets. Its customers include Europe’s France Telecom and Telenor and Australia’s Telstra.

Zhao said exports accounted for 70-80% of his division’s sales, with customers in more than 70 countries.
Out to Win
—An analysis on low-TCO WiMAX network strategy

Hu Yumin, Chen Min

Over the recent years, competition in the telecom industry has been intensified. Despite the richer and richer services provided, telecom operators have seen slow increase, or even decrease in Average Revenue Per User (ARPU). They are pay increasing attention to how to decrease their Total Cost of Ownership (TCO) through saving the Capital Expenditures (CAPEX) and Operation Expenditures (OPEX).

Analysis of WiMAX Network TCO
A mobile operator’s TCO includes CAPEX and OPEX. In constructing and operating a WiMAX network, CAPEX mainly consists of purchase and construction expenditures. Purchase expenditures cover the purchases of WiMAX and supplementary equipment as well as upgrade and expansion equipment in the later phase. Construction expenditures cover site acquisition, civil works, and equipment installation. OPEX is indirect costs related with routine network operation and maintenance. Operational expenditures cover the expenses on site rental, transmission rental and power consumption.

According to the process of network development, we can divide the lifecycle of a wireless network into three stages, namely network construction and deployment stage, operation and maintenance stage,
Stage 1: How to Reduce the Total Cost of Sites

In the network construction and deployment stage, the key factors that influence TCO is no other than the total cost of sites deployed.

It is noticeable that the cost of wireless infrastructure equipment makes up only 30% of CAPEX, because the costs of the site acquisition, civil works, and equipment installation are higher and even more than 50% of the total cost. Therefore, the cost of the auxiliary equipment and the expenditures on site installation and deployment are more concerned by mobile operators.

It is obvious that the most effective way to reduce the total cost of sites is to reduce the number of sites, bring down the construction cost of infrastructure equipment, and minimize the expenditures on installation and rental incurred by the space occupied by equipment. Less number of sites deployed means the corresponding auxiliary equipment will also be saved. This can significantly decrease the operators’ CAPEX and OPEX.

As a pioneer of WiMAX industry, ZTE has made every effort to reduce the total cost of sites in the early stage of product design, helping operators build their network sites at lower cost. Supported by a most complete series of base stations in the industry including distributed base stations, low-cost integrated macro base stations and low-cost indoor/outdoor pico base stations, ZTE is trying to reduce operators’ capital expenditure by providing the appropriate product portfolios according to the different scenarios. These products are supported with various flexible and efficient solutions for indoor and outdoor installation and deployment to meet the requirements of the operators. The Software Defined Radio (SDR) technology enables the WiMAX and the 2G/3G equipment to share the same site, the same cabinet and the same transmission, which saves the site room and reduces the construction and rental costs.

The most effective way to reduce the number of sites is to increase the coverage of a single base station. By using the industry-leading coverage enhancement technologies including Multiple Input Multiple Output (MIMO), Beamforming (BF) and Cyclic Delay Diversity (CDD), ZTE can effectively enhance coverage of a single station by 20–40%. Compared with MIMO 2T2R, MIMO 2T4R can achieve a coverage gain of above 4dB and reduce the number of sites by over 45%; compared with BF 4T4R, BF 4T8R can get a coverage gain of above 2–3dB and reduce the number of sites by above 30%.

Stage 2: How to Reduce the Operation and Maintenance Cost

In the network operation and maintenance stage, the energy consumption, transmission cost and equipment maintenance and management cost are the three key factors that influence the network operation profit.

It is all known that the operators have spent so much on energy consumption that both they and the earth on which we are living are suffering the pain incurred by such a heavy burden. It is the duty of every one of us to save energy and reduce emission. Through energy saving and emission reduction, we can not only effectively reduce energy consumption and save operation cost, but also make contributions to protecting and recovering the eco-system on the earth.

In the areas where there are scarce transmission resources like microwave and optical fiber, mobile operators have to pay high transmission cost no matter they build or rent them. In order to reduce the high transmission cost, high labor expense and high equipment maintenance cost, they are in urgent need for cost-effective base station equipment that can make full use of the transmission resources and provide high reliability and easy maintenance.

ZTE WiMAX products use board design featuring improved power amplifier efficiency, high integrity and low power consumption, as well as advanced technologies including RRU natural cooling, BBU intelligent temperature control, and intelligent power saving algorithm. All these help the operators reduce energy consumption in an all-round way and create a truly green, energy saving and environmentally friendly network.
ZTE provides a variety of flexible and innovative solutions to meet the operators’ requirements. For example, it can make full use of the indoor Ethernet and power line for transmission; transmit clock signal through the IEEE1588 technology; and adopt the unique WiMAX self-transmission solution to help those operators who are short of transmission resources reduce their transmission rental cost. In addition, owing to the IP65 level of protection, extremely wide range of temperature tolerance, the back-up mechanism of key boards and modular design, ZTE WiMAX products provide high reliability and easy maintenance, which help to minimize the maintenance cost.

Stage 3: How to Reduce the Upgrade and Evolution Cost

In the network upgrade and evolution stage, the key factors that influence TCO are the upgrade and evolution cost. Because of the uncertainty of the network evolution and frequent change of standard evolution brought about by the diversity of wireless systems, new technologies and standards often enter the market when or before the networks built by the operators based on the former technology begin to gain profit. The operators shall not be able to afford the high cost of technology upgrade if the networks they have just built fail to be upgraded smoothly to support the new technology and standard.

How can operators maximize their investment and reduce the upgrade and evolution cost? They have to select the products that can best satisfy the needs for wireless network evolution and convergence, i.e., provide scalability to support multi-band and multi-mode network coexistence, and allow smooth evolution to LTE/16m while making full use of the existing equipment to protect their original investment.

The unified SDR base station platform innovated by ZTE is applicable to all kinds of wireless networks. It has been widely deployed in commercial networks all over the world, and won the awards granted by BBWF and GSMA. ZTE WiMAX products based on the unified SDR platform can support multi-band wireless 2G and 3G systems and smooth evolution to LTE/16m, which help operators extend the lifetime of their infrastructure equipment, remove their risks in equipment investment, and minimize their network upgrade and evolution cost.

Conclusion

Facing the global financial tsunami and the ever intensifying competition in the telecom industry, one can only win over their competitors by applicable low TCO strategy that takes into account the key factors influencing TCO in the stages of network construction and deployment, operation and maintenance, and upgrade and evolution to maximize their Return On Investment (ROI).

Backed by a wealth of experience in the R&D of wireless communication systems including GSM, UMTS, CDMA and TD-SCDMA, ZTE has been committed to lowering TCO for operators based on the in-depth analysis of the TCO model and framework when developing its WiMAX products. Considering the characteristics in every stage of the wireless network lifecycle, ZTE has incorporated the low TCO concept into the product design, networking and evolution to help operators protect their investment and keep on maximizing their ROI.
Is it best for the environment, your customers or your business?

You may already know our new broadband access system was awarded “Best Green Innovation” at the SOFNET high-end forum in London.

If this doesn’t impress you, maybe 30-50% lower power consumption, reduced noise level, less need for expensive space, and higher reliability will.

Add to that high integration, re-use of existing copper lines and reduced need of fibre, and you get a system that decreases your carbon footprint as well as your CAPEX and OPEX.

We have deployed over 35 million lines with ZTE DSL products in over 40 countries.

ZTE is a leading global provider of telecommunications equipment and network solutions, delivering innovative, custom-made products and services to customers in more than 140 countries and regions, helping its customers achieve continued revenue growth as well as shaping the future of the world’s communications industry.

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