Safaricom
Micro finance
Macro profits

Optus says Yes

MegaFon pioneers
Russia’s mobile Internet

China Mobile Zhejiang
bridges fiber management gap
We’ve found a way to accelerate your journey into the future with LTE.

Just as a bridge enables high volume traffic, Huawei’s SingleRAN LTE solutions deliver equivalent benefits: accommodating high capacity and the ability to evolve networks from GSM, UMTS, CDMA and WiMAX. Huawei’s SingleRAN LTE solutions are backed by considerable experience gained from building commercialized LTE networks for many of the world’s leading telcos, including the world’s first and fastest LTE network in Norway. These are the values your business needs to reach the future faster.

Please visit www.huawei.com/SingleRAN-LTE to find out more about our SingleRAN LTE.
Voice revenue may still be going strong on the whole, but some of the advanced markets are no longer advancing. PricewaterhouseCoopers noted a drop in the number of voice minutes consumed by U.S. post-paid subscribers from 720 to 638 minutes from 2010 to 2011, a decline of over ten percent in just one year. And, it isn't just happening there; Weixin and Weibo, local equivalents of WhatsApp and Twitter, respectively, have taken the mainland Chinese smartphone market by storm, so much so that voice has become practically commoditized.

Chinese operators have recently carried out several promotions offering unlimited voice, making for a potential price war. On the Western front, Verizon's shared data plans, which made all the headlines recently thanks to their shared elements, have unlimited voice & text in the fine print. Free voice (with caveats) has already hit the market from the likes of AT&T and O2, and others are not likely to be far behind. Any way you slice it, voice tariffs are definitely going the way of the rotary phone.

This is a scary prospect, in light of the fact that, on average, voice still accounts for the majority of an operator’s business, and this holds true in the developed markets as well as the developing ones (accounting for two-thirds of revenue in China Mobile's case).

However, the era of free voice need not be an extinction-level event. As we all know, mobile data is surging. A recent O2 survey of some 2000 smartphone users revealed that of the two hours and eight minutes that they spent using their handsets every day, only twelve of those minutes were spent making calls; in other words, they spent ten times as many minutes doing other things, and this transformation is extending to the developing world as well; China Mobile's mobile Internet traffic amounted to roughly 150 petabytes (150 billion megabytes) in Q1 2012, a 181.3 percent increase year-on-year.

As interactions increasingly move to the realm of 1’s and 0’s, data-centric plans are the way forward, and Verizon has finally put its money where the industry's mouth is. However, other operators cannot simply sit around awaiting Verizon's success or failure. Other plans need to be put out in parallel (as AT&T has done with its shared data alternative), as a good data scheme has the potential to finally pry user loyalty away from the handset brands. In other words, operators will be able to differentiate themselves again. Under these circumstances, megabytes will be on everybody's minds; voice will just be background noise.
Voices from Operators

01 Safaricom: Micro finance, macro profits

Safaricom is the poster child of developing world operators. However, despite its enviable position, a price war in the voice market and new entrants into the mobile money and MBB sectors are forcing the Kenyan operator to stay hungry. WinWin recently sat down with both its CEO and CTO to discuss what they have in mind for an encore.

Optus says Yes

Optus serves some nine million customers (roughly 40% of Australia) each day a diverse mix of consumer, SMB, enterprise, and wholesale services. Günther Ottendorfer, Managing Director of Optus Networks, recently told WinWin about how the operator brings choice and competition through “The Open Network.”

09 MegaFon: Pioneering Russia’s mobile Internet

Russia may be considered a developing country, but MegaFon is currently carrying out an LTE launch that will make it the envy of its fellow BRICs by year’s end. COO Valery Ermakov shares his insights concerning this launch, as well as the operator’s strategic and operational development plans.
Tao of Business

13 Cloud-enabled intelligent bearer networking

According to Zhao Huiling (China Telecom), cloud-enabled intelligent bearer networks are key to next-gen telco infrastructure. Operators can add new network elements or upgrade existing ones to enhance network intelligence, while evolving existing networks to next-gen architecture.

16 NBN in Serbia takes shape

The Serbian gov’t is working with key industry players to keep the Balkans in the thick of telco evolution.

Winners

29 China Mobile “ultrafies” MBB

China Mobile Zhejiang launched its TD-LTE services in March 2012, marking the prelude to its mass deployment in mainland China.

33 Zhejiang Mobile bridges the fiber management gap

Optical networking is the foundation for Zhejiang Mobile's transformation into a convergent service operator. However, fiber resources are passive; their management is unintelligent and inefficient.

Perspectives

19 Telco development trends & strategies

To deliver a zero-wait user experience and satisfy user demand instantly, a network with flexible resource allocation and functionality is a must.

36 Desktop cloud draws praise in Africa

39 Shanghai Telecom clouds the issue

Shanghai Telecom has unleashed the potential of legacy IDC infrastructure while creating a guide for its future forays into the cloud.

23 Ascend P1: Product Review

The Ascend P1 is a striking piece of hardware that delivers superb comfort & connectivity; an impressive high-end debut from Huawei. Read our in-depth review of this stylish new offering.

43 Telekom Malaysia delivers a digital lifestyle to Malaysians
Having achieved 600-fold customer growth within eight years of Vodafone’s buy-in and what is now a textbook example of grassroots innovation (the M-PESA mobile money service) under its belt, Safaricom is the poster child of developing world operators. However, despite its enviable position, a price war in the voice market and new entrants into the mobile money and mobile broadband sectors are forcing the Kenyan operator to stay hungry. CEO Robert Collymore and CTO Thibault Rerolle recently sat down with WinWin to discuss what their firm has in mind for an encore.

By Joyce Fan

**Less reliance on voice**

**WinWin: What competitive advantages does Safaricom have?**

**Collymore:** We have the biggest and the best network in the country, which gives us a significant advantage. The network has the broadest geographic coverage. We made it the best by upgrading 50% of the base stations to 3G, which provides the speed of 21Mbps, and we are about to introduce 42Mbps.

The other advantage that we have is M-PESA, of course. So, we have a very effective mobile money transfer system which is used by a large percentage of the population (96% of banked & 75% of unbanked in Kenya in 2011, according to Slate)

**WinWin: How does Safaricom effectively increase ARPU and retain customers in the midst of a price war?**

**Collymore:** ARPU decline comes about from two things. First is a reduction in price. We are addressing it really by making sure that our pricing accurately reflects the products that we are delivering. In a number of places, the prices of our products are more expensive than our competitors, but at the same time, the customers believe that the product gives them best value for money.

Second, as you increase the penetration, you start to increase in the lower-income customers, which will decline your ARPU. Comparing with our competitors, we are not continuing to drive further the penetration into the market, and that is sustaining our overall ARPU.

The most important thing is to make sure the customers are using more than one product. A typical customer uses voice and SMS. We also introduce them to M-PESA. Around 15 million out of nearly 19 million of our customers use M-PESA. Other than that, we are encouraging them to use data and finding some interesting applications for them. The more products you give to customers, the more they are likely to stay with you, if you are giving them overall good value for money. We are substituting the decline in the voice ARPU with people spending more on M-PESA and data.

**Fully exploring the possibilities of M-PESA**

M-PESA (an acronym that combines mobile with “money” in Swahili) has been called a lifesaving service
The more products you give to customers, the more they are likely to stay with you, if you are giving them overall good value for money. We are substituting the decline in the voice ARPU with people spending more on M-PESA and data.

— Robert Collymore, CEO of Safaricom
because it fulfills the needs of money transfer for millions of the unbanked. After five years of operation and development, M-PESA has moved far beyond its origins. Lifestyle-changing features are now in use and banks have taken part. Collymore has commented, “M-PESA is bigger than cash – anything you can do with cash you can do with M-PESA. So, the possibilities are endless.”

WinWin: The fifth anniversary of M-PESA was celebrated this March. Can you tell us what new features/applications have been added in the last few years?

Collymore: Well, we are getting more people to accept M-PESA. First is to broaden the range of uses for M-PESA. For example, individuals can pay school fees, utility bills, and shop in the supermarket through M-PESA. We extend the service to the corporate business level where companies can pay salaries by M-PESA. The second thing is that we have reduced the lower limit people can transfer with M-PESA. It was reduced from 50 Kenyan shillings (KSh) to the present level of 10 shillings, which is equivalent to about 12 cents in the U.S. We’ve also reduced the fees for those lower-level transactions, which makes it more accessible to more people. I think that we are number one in the world, in the sense that more than one in every two mobile money transfers is done on Safaricom’s M-PESA system.

WinWin: What is the next step then? How are you going to make it a fully-fledged banking service?

Collymore: Many people ask this question. Features that we are currently exploring include micro-insurance, micro-financing, micro-lending, and micro-savings.

Cooperating with Equity Bank (an East African financial group), we have got a thing called M-KESHO, which means mobile saving in Swahili. With M-KESHO, the customer can earn interest, borrow or lend money. That is a partnership that we have with one particular bank, but we are exploring how we can broaden that.

Kenya has the privilege of having around 42 different banks; 42 for a small country serving only 40 million people. We have different cooperation models with different banks. We are integrated to a lot of banks. You can move money between the bank account and the M-PESA account seamlessly. You can currently take out your money from ATMs. I think you can take out money from about 300 ATMs across the country, which is probably most of the ATMs, actually. With companies like Equity, we have M-KESHO. We also have some banks who are expressing their loans; so if you borrow money from the bank, they will deliver the money on M-PESA. So, there’s a range of cooperation models that we have with banks. We have moved on from the days when the banks were critical of what we are doing. And I think that we have all understood that these things are complimentary.

WinWin: This gives people more access, leading to increased ARPU and user base, but do you have any challenges related to technology and/or operations?

Collymore: The technological challenges are many because the platforms weren’t designed to handle 15 million distinct users or more than 2 million transactions a day. We are handling about KSh2 billion in cash per day, and that’s a constant challenge.

Rerolle: Yes, as mentioned by Mr. Collymore, the capacity of the platform overall was not designed for this scale. So what’s happening then is that we are constantly increasing the capacity. But now we have come to a point where we not only need to increase the capacity but also change the architecture in order to evolve this platform to the next generation.

The issue lies not only in terms of volume but also volume of transaction. Currently, our run rate is around 100 transactions per second and we are peaking at 220 to 250
transactions per second. We see the growth in the coming months and years and this is a reason that we absolutely need to change the architecture. We also need to improve the relay ability of the platform and its accessibility; that also needs to be more robust in the future.

**WinWin: Safaricom has announced a platform migration plan for M-PESA. How will you do that?**

**Rerolle:** The migration, as I mentioned, is an architecture change. It’s also a geographical change. Currently it’s a Vodafone-hosted platform and service and I would say that the objective of this migration is for it to be hosted locally, in Kenya.

We will execute this over a period of time that we plan to be around a year and a half. Obviously we cannot tie this rollout with the new service evolution because the cycle of new services in the market is much quicker than this timeframe. Our roadmap of new services is not totally dependent on this migration. So, we are rolling out new services and new functionalities into the existing platform as much as we can, while we are also preparing for the migration.

**Promoting mobile data usage**

**WinWin:** You mentioned that Safaricom runs the biggest 3G network in Kenya. How has your 3G service been received by the local people?

**Collymore:** We were the first to launch 3G in Kenya. I think it has been welcomed by local people. More than 90% of data and Internet access are primarily through the mobile phone in Kenya. So, 3G has been important.

The biggest determining factor has been the availability of 3G handsets on the market. So, although more than 50% of our network is 3G, we still only have just over one million
3G handsets, and most of the mobile accesses on laptops require a 3G modem. We have actually been very successful in our partnership with Huawei over the past year through the introduction of the Ideos phone. This has been one of the best-selling phones in the market. Through that kind of partnership, we will drive the adoption of smartphones.

**WinWin:** Safaricom’s website helps users choose data packages based on their using habits for different data applications such as video, email, SNS, etc. Tell us more about your data service offerings.

**Collymore:** What I would say is that we are still learning from international benchmarks about what the pricing models should look like. But we have attempted to provide a range of options whenever possible – unlimited-but-throttled bundles, daily bundles, weekly bundles, and monthly bundles.

We have bundles based on size, but for people who don’t understand megabytes, we price the service based on minutes – KSh3 per minute. We thought that was interesting but simple because many of our customers understand a minute but don’t understand megabyte. They were criticizing us for allegedly stealing their money because they didn’t understand that if they downloaded a big file in two minutes, and because the speed has gotten better, they were quickly exhausting their bundles. So, we have offered that as an option.

**WinWin:** Providing diverse data offerings in a timely manner requires a robust billing system. How has the new CBS system helped in this regard?

**Rerolle:** Yes, of course, the billing system is absolutely instrumental to this functionality. We have implemented, in the past year, Huawei’s Convergent Billing System. It is a long journey. We initially migrated prepaid voice, then postpaid voice, then out-of-bundle data; now we are migrating in-bundle data. And then once all data functionality is integrated, we will be able to benefit from all the functionalities that we have drafted into this migration path.

What we want is to be able to timely deliver what is inside the bundle, enable timely top-up on top of the bundle, and give adequate visibility or clarity to the customer about what is his bundle, what is his consumption. This is absolutely the key to the customer experience – to understand and to have a simple way to see or to benefit from this bundle.

I don’t know how the previous CBS performed. But for sure, the robustness and the response to the overall network system of the new system is quite fine in terms of integration. And of course, the simplicity that it brings by converging all voice & data, prepaid & postpaid, is an essential asset that we benefit from now.

**Editor:** Jason Patterson jason.patterson@huawei.com

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**M-PESA milestones**

**2012**
- Over 15 million active M-PESA users, out of 19 million total Safaricom customers.

**2011**
- Alliance with Western Union: Customers can receive international money transfers from 45 countries and territories.
- M-PESA International Prepaid Visa Card: Customers can transfer money from their M-PESA accounts into an international prepaid Visa card.
- School fee payment: Safaricom’s Lipa Karo service allowed learning institutions to receive school fees via M-PESA.

**2010**
- M-Ticketing: Customers could now book and pay for tickets to concerts, galas, and even sporting events with M-PESA.
- Supermarket service: In a milestone that re-defined the Kenyan shopping experience, customers could pay for groceries using M-PESA.
- M-KESHO Bank Account at Equity: Safaricom and Equity Bank partnered to offer a new banking system that allows customers to manage their bank accounts via mobile.

**2007 – 2009**
- Paying for fresh water: Safaricom partnered with Grundfos LIFELINK (a pump manufacturer that aids rural access to fresh water) to allow these residents to pay for their water through M-PESA.
- Small and Micro Enterprise Program (SMEP): SMEP allowed its customers to make their monthly loan repayments and savings contributions through M-PESA.
- ATM withdrawal without ATM cards.
- Acquired 19,671 users two weeks after launch, Mar 31st, 2007.

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**Image:**

[Image of a green shop named Safaricom with people standing outside.]
Optus says Yes

Optus is one of Australia’s big-3 telcos, serving some nine million customers (roughly 40% of the country) each day a diverse mix of consumer, SMB, enterprise, and wholesale services. In April 2012, the company became the second Aussie carrier to jump into the deep end with LTE. Günther Ottendorfer, Managing Director of Optus Networks, recently told WinWin about how the operator brings choice and competition to 97% of the population with “The Open Network.”

By Julia Yao

“Australia is the second highest smartphone-penetrated market in the world... that means huge data growth, huge growth of mobility because of smartphones.”

— Günther Ottendorfer, Managing Director of Optus Networks
WinWin: Optus rebranded its mobile network to “The Open Network” in November 2010. What message is this meant to convey?

Ottendorfer: The Optus Open Network is our way of explaining to the Australians that our networks come in 2G, 3G, and in the future, 4G. And it’s open to all customers and will bring all customers in Australia choice and competition. That’s important. Because of the huge size of the country, competition and choice was not everywhere. There were big areas without choice and competition. Now, with The Open Network, we are bringing choice and competition to more than 97% of Australia.

WinWin: We know you joined Optus last year. Maybe you would like to compare the German market, with the Australian market. What do you see as the major differences, maybe in terms of the customer demands or the technology?

Ottendorfer: So, if I compare the Australian market with the European market, I think it’s quite obvious that Australia has a very high smartphone penetration… there was a recent Google survey which showed that Australia is the second highest smartphone-penetrated market in the world (second to Canada), and we know that nine out of ten phones that we sell to postpaid customers are smartphones… so, it’s really amazing how big (the smartphone penetration rate) that is. That means huge data growth, huge growth of mobility because of smartphones. And that means specific challenges for the networks because of lots of signaling traffic. So, from what I have seen, there is a big difference.

There is a really strong data market, lots of signaling traffic – a market which demands small cell solutions because there is so much traffic in hotspots. For example, in the stadiums… you know the MCG (Melbourne Cricket Ground) in Melbourne is one of the biggest stadiums in the world. I think it seats more than 100,000 (making for a lot of smartphones).

WinWin: What are the key projects and strategies you are engaged in to ensure a good mobile data experience for the vast number of smartphone users?

Ottendorfer: We are now embarking on the modernization project, to be one of the biggest UMTS900 refarming projects in the world. We are really leading the Australian market in is femtocells. We have successfully launched a femtocell strategy and will develop that into a small cell strategy. We will extend our capability to integrate more small cell solutions. We believe that this is necessary in a highly-penetrated smartphone world, and every operator will need that.

WinWin: Can you tell us more about the modernization project?

Ottendorfer: We are continuing with a big modernization program. We will do that with UMTS900 refarming and that will be one of the biggest UMTS900 refarming projects in the world and it will bring for our customers better indoor coverage, more capacity, and that should really help them, especially smartphone users. This refarming is now proceeding in the big cities because in the countryside we already have a very good experience by using Huawei refarming equipment for UMTS900 in regional and rural parts of Australia.

WinWin: What have been the major challenges in
your network upgrade and modernization and how do you tackle them?

Ottendorfer: The greatest challenge in our network modernization project is really the logistics. There is a huge rollout to be done every week. Every gear wheel has to turn with the other. That’s a big logistical challenge, and we are up to it. The peak we are doing is three or four clusters a night. The second challenge is customer experience and quality. We will do all customer-related work at night (to reduce service interruption). The third challenge will be the introduction of UMTS900 refarming, which is a quite technical process. To manage that, we have a lot of expertise at our sites, and we have good experience from our regional refarming projects.

The recent experience with the modernization project shows us that we get high capacity and very good quality (from Huawei). We look forward to the future (of our cooperation) and to our LTE project to build on that foundation.

WinWin: Are there any recent Huawei advancements that interest you?

Ottendorfer: It’s interesting to see how Huawei is further developing the SingleRAN architecture. The AtomCell (part of Huawei’s small cell solution) is a very valid extension of that architecture and a good tool for operators. Going forward, LTE-A features, especially spectrum aggregation, will be a very important topic for the mobile industry. It’s important that Huawei will contribute to this. The other thing is the R&D that Huawei is doing on the antenna, making very good use of the sites (current antenna solutions) and developing them further. I think it’s a very important topic for the mobile industry for the next few years. It’s important, because more and more frequencies are becoming available for LTE. That makes antenna technology a key building block for a successful LTE rollout strategy.

WinWin: Optus launched its first LTE service in April 2012. What is the network rollout plan and how has the progress been so far?

Ottendorfer: We at Optus have, in September 2011, been committed to LTE. And, we have now launched LTE services based on 1800MHz in April 2012 in the Hunter Valley and Newcastle region, which is north of Sydney. And we will then continue our rollout in Sydney, Melbourne, and Perth later this year… and the special thing about this is that this will be the first time in Australia that a really important technology is available and people will have a choice of two players from the beginning… the difference is this time it (choice) will be there from the beginning.

WinWin: Optus commenced a 700MHz pilot program with Huawei in November 2011. How have the 700MHz trials been going so far, and what are the next steps for Optus after trialing it?

Ottendorfer: Optus clearly, in partnership with Huawei, is a pioneer in developing LTE 700MHz as an Asia-Pacific standard. So, that means that in big parts of Asia, over the next years, 700MHz spectrum will be freed from analog television and will be used for telecommunications. We know that this will happen in Australia in around 2014-2015… it will be available and we are getting ready for that now. And we are glad that in Huawei we have a partner who has been willing to trial this with us now, in Bendigo and in Victoria. The trial was very successful. It showed that 700MHz has very good indoor penetration. It can be used very well for mobility. And we demonstrated this with several video conferences, from our campus to Bendigo, and it all worked very well. And we have seen very good throughput and also low latency… as for the next step, the most important thing for us now is that we get the regulatory process moving faster. We will focus on that… and that’s next.

WinWin: What can we expect to see from Optus in the future?

Ottendorfer: Optus has the tradition of being a challenger, and bringing choice into a continent (because Australia is a big continent). We will continue to do that. We say “Yes Optus.” We said yes to LTE, we said yes to our network modernization of our switching network. What I see for the next years is that we will have a very good switching network, besides which we will have an LTE network as our resource. We will focus on developing both.

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We believe that the most important result of 2011 is our absolute leadership in mobile Internet in Russia. MegaFon accounts for 43.4% of total Russian Internet traffic, and the mobile Internet segment significantly determines the company’s positions in general.

— Valery Ermakov, MegaFon’s COO
Russia may be considered a developing country, but MegaFon is currently carrying out an LTE launch that will make it the envy of its fellow BRICs by year’s end. Valery Ermakov, MegaFon’s COO, shares his insights with WinWin concerning this launch, as well as the operator’s strategic and operational development plans.

By Julia Yao

MegaFon has been at the forefront of telco innovation in Russia for the last decade. In 2004, it became the first operator in Europe to offer MMS, and the first in its home market to offer mobile TV. In 2009, it helped bring the term Turbo Button into the telco lexicon. Currently, MegaFon is number one in Russia in mobile data (over 40% market share), and its plans to cover roughly ten major cities with LTE this year should keep it there. COO Valery Ermakov, a Russian telco veteran and former CEO of one of MegaFon’s subsidiaries, discusses the operator’s evolution, both in terms of technology and strategy.

A strategy for growth

WinWin: MegaFon has risen from being a modest GSM carrier in Saint Petersburg to being a top-10 firm in Russia in terms of net profit (in 2010). What has MegaFon done right?

Ermakov: MegaFon now provides mobile communication services in every RF (Russian Federation) region. We also cooperate with transport and power supply companies who help us to provide up-to-date and high-quality communication services to the remote areas of Russia.

We were the first cellular operator to complete licensed coverage of the country, and after that we focused on development of our 3G network, because we were sure that the future would be driven by the growth of mobile Internet, which is extremely essential for the country, where the population density is less than ten persons per square kilometer (putting Russia in the bottom twenty worldwide).

In 2009, we started to invest seriously in mobile broadband. Starting with the launch of our 3G network in Saint Petersburg, which was also the first ever 3G network in Russia, we now have a strong network infrastructure. MegaFon has built over 24,000 3G base stations and over 120,000km of our own FOCLs (fiber-optic communications lines), so it has the largest 3G network and the best network in the country in terms of quality.

The company is already the market leader in mobile Internet, with over 44% market share. It provides a guiding hand for the future, and will definitely have upcoming positive effects in revenue. We believe that the most important result of 2011 is MegaFon’s absolute leadership in mobile access to the Internet in Russia. MegaFon accounts for 43.4% of total Russian Internet traffic, and the mobile Internet segment significantly determines the company’s positions in general.

WinWin: MegaFon has been buying up both fixed and wireless assets aggressively. What challenges have you faced with the integration of these disparate network elements?

Ermakov: Since the very beginning, MegaFon has used two strategies — organic development and acquisition of existing assets that fit the company’s strategic objectives and meet the investing criteria. In addition to the commercial rationale of acquiring a particular company in each specific region, we also evaluate the reputational effect of such a transaction and how it is perceived by our subscribers, employees, partners and regulators. If the asset does not
meet our criteria, it will be of no interest to us. MegaFon’s recent acquisitions, e.g. Nakhodka Telecom (a regional operator in Russia’s far east) and ChebNET (a major FBB operator), are good examples of mutually beneficial relations between the seller and buyer. The high quality of assets and adequate terms & conditions allow us to close transactions within a short time and subsequently successfully develop the businesses built by the previous owners.

As to our experience, I believe that the key aspect in integration of newly acquired assets and MegaFon is our intention to preserve the competencies of both companies. In other words, we are not trying to adjust the small company to the needs of the big one. MegaFon believes that the process of merging requires mutual integration. From the very beginning, we have not expected that our company would keep operating without changes, while the acquired asset will be adjusted to comply with existing practices. For example, when we kicked off the process of integration with Synterra (a major fixed voice & data operator), we realized that MegaFon would have to change. This is not a fast process and we are still undergoing transformation. However, I am sure that such an approach will allow us to gain the maximum benefits from the merger.

WinWin: MegaFon has undertaken a mobile strategy that seems to favor consumption over mere subscription. In 2009, you introduced the Turbo Button feature (which was pressed over 150,000 times in December of that year). In 2011, you initiated a contest designed to encourage mobile data consumption (more in the box). You have also implemented some bold tariff plans (tariff-free data during off-peak hours, half-price weekend data for suburban areas). What has been the rationale behind these moves and how does MegaFon plan to better monetize its data traffic in the future?

Ermakov: Today, we face the task of educating our consumers in mobile data services. There are still many subscribers who do not really feel how convenient the mobile Internet and its services are. So, our current tariff policy is aimed at attracting the customers and demonstrating all capabilities of mobile data services. The issue of monetization will be the next stage and is really extremely important. Today we are working on a number of tariff models for the mobile Internet.

**Partnering for LTE**

WinWin: MegaFon and Yota are jointly developing LTE in Russia. How does the cooperation help you address the spectrum challenge and more?

Ermakov: Yota is one company in Russia that has enough spectrum to provide LTE service. Currently, we are studying the mechanisms of interaction between both our companies, based on MVNO business models. MegaFon received MVNO LTE licenses on February 17th, 2012. In this case, our partnership with Yota is a good chance for MegaFon to become one of the few operators in Russia that provides LTE services for our own clients.

The key idea of our partnership with Yota is what we call “RAN sharing.” In this model, MegaFon will be able to provide LTE services using Yota’s equipment, while Yota will be able to use MegaFon’s network infrastructure.

MegaFon plans to roll out 4G networks in Moscow and in some Russian regions during the first half of 2012. The first 4G segment in Moscow will cover a significant part of the city center as well as the places of maximum concentration of the mobile Internet’s active users, such as business centers, office quarters, cafes & restaurants, exhibition centers, and other sites.

WinWin: What technical or operational challenges do you expect to encounter that stem from this partnership, if any?

Ermakov: Our partnership with Yota is a field trial for operators in Russia looking to adopt the RAN-sharing business model. Usually, operators build and operate their own networks. The key idea of our partnership is to use the same radio network, and for us this results in some technical challenges. On one hand, we need to ensure good quality of service for both sides, not only for the MegaFon side, but also for Yota. On the other hand, we also need to have the right control and a 100% monitoring core for the system. For that reason, we are going to have different core systems to support this huge traffic.

The second challenge is to organize and integrate between the LTE layer and GSM/UMTS layer, because our clients expect seamless transition between different layers. This requires us to provide the seamless experiences to our clients and give them the unique chance to use our 3G services and also to use LTE services as well.

WinWin: How would you characterize Huawei as a partner, and what do you see for the future?

Ermakov: Next year will be the 10-year anniversary of our cooperation with Huawei. The first time we signed a contract was in January 2003. Huawei is one of the most reliable partners for MegaFon. We are very happy to have reliable equipment, very good service and I would say the attitude of Huawei’s staff is very amazing. It is a really client-oriented service. We are very happy with the Huawei team, with their services and products.
Moving forward

WinWin: What do you see driving the market potential for mobile Internet services in Russia?

Ermakov: Russia still has a very low Internet penetration. On average, it is about 40%; but if you look at big cities like Moscow and Saint Petersburg, the penetration is about 60 to 70%. Not surprisingly, in the rest of Russia, the penetration is less than 20%. However, we have seen 17-fold growth in mobile data traffic in Russia from 2007 to 2010. It is a real opportunity for our company to provide a very good quality of Internet to our potential clients. So mobile broadband, particularly LTE, is going to be very important as a sort of substitution for fixed-line Internet.

WinWin: What are the major challenges you face in taking your mobile Internet services forward?

Ermakov: The most significant challenge for us is a lack of reliable spectrum, especially for LTE and 3G technology. Right now, with 3G technology, we can provide our clients with an average speed of about 2-5Mbps, which is good enough for some essential services. But in my view, more spectrum might be available in the market within two years.

But when looking ahead, the future of the Internet is based on the consumption of video, as video is king in terms of data traffic. It is important to provide this service through viable technologies such as LTE.

We are also going to roll our 100G network. MegaFon right now has the second longest backbone network in Russia. We would like to fill this network with our mobile traffic, our fixed line traffic for our fixed line assets, and also traffic stemming from Europe and Asia transit. I think we will need a lot of capacity to deal with this enormous traffic. Traffic will increase significantly, without a doubt.

WinWin: Congratulations on launching the country’s first LTE mobile services. Tell us about it and your future plans.

Ermakov: On May 14, 2012, MegaFon became the first operator among the big three to provide to its subscribers 4G mobile services in Moscow. Higher Internet connection speed (up to 50Mbps) is the main consumer benefit of the 4G networks compared to previous generations. The main technological advantage of MegaFon’s 4G network is that it is compatible with current 3G and 2G networks. In practice, this means that if owners of 4G mobile devices leave the coverage zone of the new network, they will be automatically connected to 2G/3G; mobile Internet access will not be lost.

There are more than a thousand 4G base stations on the air now at the moment of launch at the capital branch, and we plan to expand the number to 3000. MegaFon has invested about RUB700 million (USD22 million) in the infrastructure and development of our 4G network in Moscow. Besides Moscow itself, we plan to roll out 4G networks in over twenty towns and cities in the Moscow region.

We expect that around 50,000 subscribers will use our 4G services by the end of the year in greater Moscow. The 4G standard paves the way to a qualitatively new stage of access to Internet resources. Our clients will be able to watch high-quality streaming video, download photos in just a few seconds, and send emails/open web pages much faster. Balanced 4G tariff options will allow users with different income levels to get more advantages from the mobile Internet.

In addition to Moscow, we have launched 4G services in Sochi (the site of the 2014 Olympic Winter Games), Krasnodar, Novosibirsk, and Samara. The contest might seem foolhardy to the typical developed-world operator, but it fits right in with Ermakov’s concerns about consumer education.
Cloud-enabled intelligent bearer networking

Cloud-enabled intelligent bearer networks are key to next-gen telco infrastructure. Operators can add new network elements or upgrade the existing ones in legacy networks to enhance network intelligence, while evolving existing networks to next-gen architecture.

By Zhao Huiling & Shi Fan, China Telecom

Next-gen features

Operators are looking for a bearer network that can provide enhanced QoE, service flexibility, and management. It should also deliver integrated high-speed access, on-demand resource allocation, and access rate assurance.

Operators can build a cloud-enabled intelligent bearer network through legacy network upgrade and the introduction of intelligent features that accommodate cloud applications and services. However, it is not enough for a network to be intelligent, it must also be WISE.

W (Wide) – The network must have wide coverage, with sufficient bandwidth to build a super data highway between subscribers and cloud service providers.

I (Instant) – Resource allocation must be timely for cloud applications, especially for strategic upgrades during virtual machine (VM) migration.

S (Smart) – Control, scheduling, and route processing must be intelligent and flexible.

E (Ensured) – Quality assurance must be provided for cloud services and applications.

Key next-gen bearer technologies

Virtual awareness

VM awareness is a basic capability of cloud-enabled intelligent bearer networks; it is also key to flexible resource allocation. Operators generally use hosts, network interface cards (NICs), and network switches for VM awareness. However, with their less than satisfactory scalability, the first two methods enable only basic VM awareness, while occupying host resources and possibly degrading system performance, and yet they are mature and inexpensive.

Network switches (mostly top-of-rack switches) can deliver performance, scalability, and free host resource occupation, as well as VM awareness. However, relevant technologies, based on IEEE802.1Qbg or IEEE802.1BR standards, are still immature and costly. But thanks to their varied functions, enhanced performance, and easy
Operators need to integrate geographically isolated platforms to enhance network resource utilization. Most use a data center network (DCN), based on MAC/Layer-2 and IP/Layer-3 networking, for Internet data center clustering.

The MAC/Layer-2 network DCN is usually implemented by expanding the Ethernet frame header on the data plane, or through Mac-in-Mac technology that leverages Layer-2 routing protocols (such as IS-IS) on the control plane. The IETF is drafting the relevant protocols, including transparent interconnection of lots of links (TRILL) and provider backbone bridge (PBB).

IP/Layer-3 network DCN technology uses Layer-3 protocols to encapsulate Layer-2 MAC, which is similar to building a Layer-2 tunnel through Layer-3 nodes; key technologies include VXLAN, NVGRE, and IS-IS VPLS, all of which are still IETF drafts.

The growth of cloud-enabled intelligent bearer networking will exceed the capability of a single IDC, and DCN can ease the challenge, but its standardization progress is unsatisfactory and more efforts are needed to further development.

**Data center interconnection**

In cloud-enabled intelligent bearer networks, the data center interconnection (DCI) required by VM migration is proving to be a new challenge, thanks to the Internet's present use of Layer-3 network interconnection. Currently, DCI technologies cover MAC/Layer-2 and IP/Layer-3 networking. The former uses VPN or MAC over IP to deliver DCI functionality at Layer 2 through applications such as VPLS/VPLS over GRE, E-VPN, and OTV; but all are still IETF drafts or vendors’ proprietary protocols. The latter separates locations and IDs, or it can use Border Gateway Protocol (BGP) extension; representative technologies include LISP and Virtual Subnet, both of which are still IETF drafts.

In the bearer network, DCI technology is critical to cross-domain VM and Internet data center migration, though it also ensures smooth cloud application scheduling. In this context, the telecom industry should further strengthen its DCI standardization efforts.

**Data center networking**

A cloud-enabled intelligent bearer network should provide routing differentiation and forwarding for various scalability, network switches are the future of VM awareness, while their independent maintenance mechanisms, which lie between the VMs/source host and telecom network, simplify network O&M.
Policy control and QoS scheduling

In an intelligent network, policy control and QoS scheduling should cover both mobile access and fixed access, including Wi-Fi and fixed broadband. This facilitates broadband remote access server (BRAS) and packet data serving node (PDSN) control, while enabling QoS policy implementation and mapping.

Policy control and QoS scheduling enable three key functions – service identification (service identification modeling based on service feature and traffic type), unified resource control (a unified interface for monitoring & integrating resources abstracted from lower-layer bearer networks), and dynamic resource allocation (adaptation of resources to meet specific service needs based on bearer network capability, enabling their efficient allocation).

Evolutionary strategy

Through highly-intelligent network architecture, a cloud-enabled intelligent bearer network can smoothly meet the needs of cloud applications while promoting network evolution for intelligent bearing of new services and applications. Though still preliminary, such networks have drawn increased attention from the telecom industry.

Initially, operators can introduce virtualization awareness to network switches proximal to servers and virtual machines in an Internet data center. Operators can also upgrade their network management systems to deliver enhanced interoperability and deploy DCI Layer-2 technologies for the network equipment responsible for connection of such data centers, enabling end-to-end DCI compatible with legacy backbone networks.

Later, operators can further unify and develop DCN technologies, while also building resource pools among Internet data centers to enhance network efficiency. In the long term, operators need to deploy SDN for these data centers and provide virtualized routing for specific applications. They can also deploy SDN on the backbone and metro network. All can help enhance network service efficiency and QoS.

In 2011, China Telecom proposed the Network Intelligence Capability Enhancement (NICE) program to the ITU, together with China Mobile, China Unicom, and Huawei. NICE defines a new intelligent network (and its architecture) with five major features – multi-dimensional awareness, on-demand service assurance, flexible network collaboration, resource optimization, and open architecture. NICE also specifies the bearer layer, bearer control layer, service control layer, and their functions, so that fast, efficient, and safe communication services are delivered. As a typical application of NICE, a cloud-enabled intelligent bearer network can better accommodate new services, while embodying the next generation of network architecture.
NBN in Serbia takes shape

Serbia, now an EU membership candidate, jumped on the NBN wagon this February by forming a working group for the building of the National Broadband Network in Serbia (NBN-S). Milan Jankovic (General Director) and Jovan Radunovic (President of the Management Board) from RATEL, the regulatory architect of the NBN-S, explain how their institution will ensure both the sustainability and development of national broadband.

By Julia Yao

WinWin: Can you brief us on the trends and broadband market status in Serbia?

Jankovic: Having recognized the impact of telecommunications on the overall progress of society, the government of the Republic of Serbia, the telecommunications ministry, and RATEL (Republic Agency for Electronic Communications) have, over the past several years, enabled adoption of a number of edicts pertinent to the development of telecommunications in Serbia. These measures have helped create the conditions for unobstructed development of the telecommunications sector, in line with the trends in the European Union countries.

In 2011, annual revenues (published by RATEL) from telecom services in Serbia totaled approximately EUR1.6 billion, holding a GDP share of almost 5%. Over the past six years, investments in the telecom sector have reached a total of EUR2.4 billion. All retail markets have been liberalized in compliance with the Electronic Communications Law, with Internet wholesale regulated.
Broadband Internet penetration stands at 49%, with services now offered by several fixed and mobile operators, and some cable operators as well. Our ICT Development Index, a developmental measure for a country’s information society, positions our country as among the leading 40 of the 159 ranked countries.

WinWin: The Serbian government announced the NBN-S initiative this March. What is the rationale for this initiative, and how do you expect the connected possibilities it will facilitate to benefit your people and the country at large?

Jankovic: The aforementioned level (threshold) of ICT implementation has created the conditions for further development so that broadband access is available for all citizens, which is a Millennium Development Goal set by the 2010 UN Declaration for all modern countries to achieve. Broadband access will give all citizens an opportunity to use not only the telephone, Internet and television, but also a large number of modern multimedia services, especially those related to running businesses, control & surveillance, education, and providing health care services over the Internet. The expected result is a significant increase in production efficiency for every individual, and also a tremendous development surge for all manufacturing and heavy industries, as well as for the banking and commercial sectors.

In addition to being crucial for the overall development of the Serbian society, the project for building the national broadband network is a development challenge for our domestic ICT industry, which is expected to produce dedicated hardware and software intended not only for use in households and private firms, but also for measurement, control and management purposes in large government systems. Economic growth will thus be enabled, together with the increase in employing highly-qualified domestic experts.

Actual estimates for Serbia indicate that the increase in productivity due to using the Internet-based state administration system will increase tax revenues at the rate of 0.2% per year. The direct state income, due to such uses of the Internet, will be approximately EUR50 to 60 million per year (excluding the revenues of Internet service providers). New business activities will bring an increase in GDP of 0.3% per year, while the use of the Internet will cultivate job creation to the tune of up to 90,000 per year.

WinWin: What is RATEL’s role in the NBN-S project?

Radunovic: RATEL’s regulatory role is to ensure a level-playing field and an open telecommunications market, both in terms of competition and implemented technologies. Further market growth will thus be enabled, and the users will have better quality of network access and higher bit rates. New multimedia services will be offered, at competitive prices.

Since NBN-S will be an integrated network consisting of several backbones operated by private companies, intended for connecting all government bodies and institutions, RATEL’s regulatory task is to apply measures in order to create the conditions for NBN-S to function. This regulation is related to the interconnection among operators, mainly in terms of technical and financial issues.

NBN should provide broadband access (BBA) to all users, thus enabling them to use various modern services. Overall availability of BBA, with quality and bit rates offered to users at reasonable prices, is one of RATEL’s principal regulatory tasks.
WinWin: What is at the top of your top agenda at the preparatory stage?

Jankovic: The term NBN implies the necessity of having a high-capacity telecommunications backbone, which includes the systems of state & local administrations, major public enterprises like the Electric Power Industry of Serbia (EPS), Electric Networks of Serbia (ENS), PTT Communications (Srbija) and Serbian Railways, as well as government organizations and companies. Unfortunately, state-owned telecommunication systems are not integrated. It is necessary to realize a single system which will serve as telecom operator for the government bodies and, together with the networks of major private operators (Telenor and Vip mobile, and probably Telecom Serbia in the future), constitute the NBN backbone. Hence, the NBN-S development project should be realized in two phases.

The first phase will require the integration of the existing state-owned telecom infrastructure. The Republic of Serbia avails the large-scale, high-quality information-communications systems (ICS) of public enterprises, joint-stock companies and organizations, which are primarily used by those institutions for running their services; but their capacities can be used for offering services to the government bodies as well. Unfortunately, these capacities are not integrated; they were developed separately, with the intent of fulfilling the needs of the institutions which built them. Telecom Serbia possesses an advanced, high-quality network, but, on the other hand, the implementation of modern technologies (optical communication systems) for the development and realization of the dedicated systems of the EPS, ENS, PTT Communications, Serbian Railways, the Serbian Army and the Ministry of the Interior, as well as other smaller but still significant systems belonging to a variety of organizations that range from the tax authorities to forestry officials, have enabled these institutions to build additional capacities, which can now be used for integrating and realizing a single state-owned network.

The second phase will be the NBN-S realization project, which will involve the integration of the existing state-owned telecom infrastructure into a single state-owned telecommunications network and the appointment of a state-owned company to govern this infrastructure and serve as telecom operator for e-government; thus creating the conditions necessary for the starting of actual NBN-S construction at the end of this year.

WinWin: How do you plan to operate a single state-owned telecom network?

Jankovic: The experiences of the developed countries indicate that the maintenance and further development of a unified national infrastructure should be delegated to an autonomous public company, which will serve as telecom operator for the government bodies, whose tasks will include planning, organization and realization of various services, both for the needs of dedicated systems and for the needs of state and local administrations, the judiciary, health care, educational and scientific institutions, as well as other non-commercial state organizations.

The purpose and importance of this company primarily lie in the rational use of existing capacities, and also in the further optimal development of the state information-communications system (ICS). The value of the existing state infrastructure, which can thus be put into function (approximately 5000 to 6000km of optical fiber), is estimated to be higher than EUR50 million. The profit gained by using these capacities will, naturally, depend on the extent of their utilization, but the analyses conducted in our country and in other moderately developed countries indicate that the gain is primarily reflected in economic, technological and industrial development, and also in educational and overall sociocultural progress.

WinWin: NBN requires heavy investment. What funding approach is considered most viable?

Jankovic: Public and private investments in the further development of the NBN-S (including the backbone), and also of the broadband local loop, will be stimulated, which is of utmost importance. This project must define the regulatory conditions that will safeguard economic feasibility and business model sustainability, while furthering the development of the national network as well. There has been a lot of interest from the private sector to go into a certain area or services. It’s also important to include local governments who have an interest in networks and operations. So, it will be a combination of these two things.

WinWin: When Chinese Premier Wen Jiabao and Serbian Prime Minister Mirko Cvetkovic met in Warsaw this March, Wen announced a credit line of USD10 billion to facilitate economic cooperation between China and Eastern Europe. Considering the warm relations that Serbia and China have enjoyed, will you consider the credit as a viable funding option for your NBN?

Radunovic: We totally support this proposal, as we have had some cooperation with the Chinese government, and the Serbian Prime Minister visited Huawei’s Shanghai facilities during the Shanghai World Expo 2010. This topic of putting telecommunication in this agenda is at a very high level.

Editor: Jason Patterson jason.patterson@huawei.com
Perspectives

Telco development trends and operator strategies

Subscriber demand and technology advancement are two fundamental driving forces behind telco industry development. Opportunities for success are reserved only for those who can implement an appropriate strategy with foresight into these two areas.

By Li Changwei
Innovation-on-demand

Successful innovation-on-demand typically identifies a specific demand and answers it for an appropriate time, location, scenario, and user. If operators are to do this, a strong cloud platform, short TTM, and smart BI and AR/VR technology are needed.

Accelerating MBB growth

Breakthroughs in terminal and cloud technology have helped unleash mobile Internet demand and pushed user experience to one limit after another. The Android platform can be credited with making the smartphone, previously a big-ticket item, a mass-market product. In 2011, global smart terminal users numbered 1.2 billion, accounting for 20 percent of total mobile Internet subscribers.

Meanwhile, cloud technology advancements have fundamentally changed the cost structure for SPs/CPs, reducing their operational costs enormously, with 1.7G CPU + 40G HD rental rates slashed to a level of ten cents per hour. Currently, there are over 350,000 SP/CPs leasing from Amazon’s EC2/S3 platform, which in turn spurs grassroots innovation while speeding up MBB development.

Network upgrade driven by MBB

Broadband, cloud, and SNS have become the new catalysts in the communications industry. Video is indisputably the major form of data service. Its portion of overall Internet traffic in 2011 was 52 percent and this figure will surely go above 90 percent in the future. It is no wonder that MBB traffic doubles almost each year. The
number of MBB smart terminal users is also accelerating, at an estimated annual rate of 600 to 800 million.

This surge in network traffic and user takeup has accelerated network upgrade. It is estimated that WCDMA/HSPA networks will cover 80 percent of the global population within five years, with LTE at 40 percent. For mobile access, ultra-broadband with zero waiting will require coordination between fixed and wireless network elements. NFC, supported by terminal and cloud collaboration, can effectively alleviate the pressure on broadband networking. Softcom, based on optical communication and data centers, will prevail as the future mode of communication.

Open platform & innovation

As indicated by the VUCC and emotion pyramid, no one SP can possibly survive and grow on its own. If operators wish to survive, they must identify their role in the value chain and stick to a strategy of open cooperation, platform sharing, and innovation.

Profit models for telcos

It is getting increasingly difficult to profit solely through provision of a dumb pipe. Operators must diversify, and they can look to the most profitable tech firms to find out how.

Apple leverages a terminal-plus-cloud model that combines an app store (a consolidated center of content innovation and application that catalyzes user takeup) with a superior user experience. Of Apple's USD108 billion in revenue in 2011, terminals contributed 90 percent. In other words, Apple is using its software to sell hardware. Operators should consider this moving forward.

Google profits differently through backwards charging for ads, on the strength of its robust and ubiquitous searching services (it's a rare company whose name becomes a verb). In 2011, Google collected 95 percent of its USD38.9 billion in profit from ads, ranking it tops among global OTT advertisers.

The freemium model is being effectively leveraged by the likes of Rovio, Zynga, and Tencent, and involves an open application platform and the charging of a premium for valued content and applications. This model, in particular, is the future of ICT.

However, the pipe market is not dead yet. Its current value is about USD2 trillion, compared to the USD200 billion cloud and USD300 billion terminal markets.

Intelligent big data processing

To gain insight into subscriber sentiments, subscriber behavior data collection and intelligent CFP (Communication Finger Print) analysis is a must. Market leaders such as Amazon, Apple, and Google have mature algorithms and solutions in place, while operators are just now taking their first steps into BI; they need to catch up through the building of service and/or support platforms for IT, OSS/BSS, SDP, and DSM. The increasing weight of M2M will only further pressure operators in this area (60 billion M2M terminals are expected by 2020).

NBN & wireless city deployment

We all know the statistics regarding broadband/Internet connection rates and GDP, but neither FTTx nor wireless cities are profitable, in a strictly business sense. So, it has been up to the public sector to keep them alive. Currently, there are hundreds of NBN and wireless city projects under implementation. Given the global economic climate, both types of projects are becoming standard
routes for governments looking to jump start productivity.

Building blocks for scenario-based services

To deliver a zero-wait user experience and satisfy user demand instantly, a network with flexible resource allocation and functionality is a must. Specifically, operators need to make all network functions and enablers standardized and IP-based, allowing for an innovation factory where resources are pooled. Operators must also build up their data centers and cloud platform capacities to support service processing and creation (through a business-oriented service engine) on a massive scale.

Operators: Three windows of opportunity they can’t miss

Given these current trends in the telecom industry, the chances for operators to shift toward other profit models over the next three years are slim. Yet, there are three windows of opportunity that lie ahead. First, in the 2.5 billion-subscriber MBB market, reshuffling opportunities abound in a new market landscape. Second, there are 1.5 billion new mobile users about to join the game. Third, operators can merge, either with each other or with players in other areas such as OTT, online gaming, and the like. To seize these opportunities, operators must better manage traffic, while marketing around value and subscriber experience, though possibly with different priorities at different times.

Over the next two to three years, traffic management should probably be top priority. Operators must scale up their networks in terms of capacity, efficiency and intelligence to support the exponential growth of data traffic and realize equitable and balanced resource allocation, while maximizing their network value via monetization policies and pricing intelligence. This must be supplemented with refinements in asset operation such as outsourcing and managed services.

The next three to five years will prove an appropriate stage for user experience marketing and design. Specifically, this will involve UGC & interactive innovation, QoE guarantees, open platforms, and cooperation in the ecosystem, so that continuous innovation and market leadership are maintained.

Value marketing should come later, over the next five to ten years. Operators should work on insights into value trends, value propositioning, value-based innovation & design, value-based resources consolidation, as well as the other aforementioned elements.

Only those operators who manage to navigate these industry trends while maintaining clear visibility into market demand and strategy for business innovation will prosper in the mobile broadband era.

Editor: Pearl Zhu
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Throughout its history, Huawei has been known as an also-ran in the mobile terminal space; 2012 is hoped to be the year that changes all of that. The vendor is now in the process of launching a series of products with high-end specs at mid-level prices, but to make a dent in the crowded & prestigious high-end market, a question must be answered – do these products deliver? The Ascend P1 is the first to reach the market, and has a sleek form factor as its claim to fame.

Peeling back the ribbon

The box itself is small, light, and austere in a way likely to appeal to young people who buy cheap jewelry and expensive coffee. The exterior is handsome & minimalist, and displays the right specs and logos. There’s also no obvious Chinglish on the exterior; operators can display it with pride. The packaging is secure, no frills, and ecological, with no styrofoam or hard plastic to speak of. All interior elements are designed to fold and/or flatten so that minimal space is taken in your recycling bin. A mini-USB cable (with one of those ultra-thin plugs common among handsets), a wall plug, and earphones are included.

How does it feel?

Despite the Ascend P line’s reputation for thinness, the most striking thing about the P1 out of the box is how light it is; it’s hardly noticeable in the hand and makes our comparison phone, a brand-name ex-flagship model (now a half-gen old) with comparable hardware specs and celestial nomenclature, feel like a brick. Now, considering that this phone weighs a paltry twenty grams more than the Huawei model, one might be tempted to wonder whether or not some of this difference

By Jason Patterson
is perceptive as opposed to factual. After spending some time with both devices, it seems that some of the difference is indeed perceptive. The P1 seems designed to minimize the contact points with your hand by sitting on the edges of your fingers, while its plastic casing never seems far off from the ambient temperature (making it more stealthy against the skin). The rival phone, with its larger form factor (which has to be held flatter against the palm) and faux metallic bezel, feels cooler and more hefty. Either way, users will notice a big difference from the other heavies (pun intended).

The distinct corners of this device represent a stylistic departure from Huawei's typical "racetrack" form factor, but it suits this fat-free handset well. The face is all glass, while the edges and back are a sort of glossy plastic that is stylish & distinctive amongst the iPhone clones but might also turn off anyone old enough to remember New Coke.

The Ascend P1's dimensions are quite pleasant. With its 4.3-inch screen, this device gives up very little to the competitor's 4.7-inches, while gaining a great deal in comfort. In the opinion of WinWin, the name-brand felt right on the border of too big, and probably would be too big to anyone with smaller hands (i.e. more than half the world). The Huawei device, on the other hand, can be gripped snugly, without the nagging feeling that it's about to slip out, thanks to its edges, which dig nicely into the skin thanks to their perfect balance of sharpness and roundness, and the overall slim profile. All in all, the P1 feels like an uber-comfortable phone with an excellent screen, as opposed to a TV that you talk into.

How's the design?

The Ascend P1 is a solidly put together little number. The screen is Corning Gorilla Glass and can take most typical forms of abuse. The surrounding bezel can survive a drop from listening height onto the typical indoor surfaces. A lucky impact with stone did manage to nick one of the non-glass corners, as it would most phones, but the chassis held together firm. On the whole, the P1 gives the impression that it would take deliberate malice to do any serious damage.

The overall arrangement of the buttons will be familiar to anyone in the Android ecosystem. All three of the bottom buttons are capacitive, which means there's a smooth glass surface from edge to edge (as intended by the designers of Android 4.0), helping to contribute to the glossy and fat-free air that the P1 projects.

The rear panel is not meant for removal (a necessary trade-off for its thinness), so both the SIM (yes that's SIM and not micro-SIM or some other up-in-the-air incompatible standard) and micro-SD slots are external, enabling insertion & removal on the fly. The covers on both are secure without being too difficult to open, though the SIM card slot might strike some as being too close to the charger port (this never proved an issue in practice). Both slots enable smooth insertion and removal, though those with larger fingers may find SIM card removal a bit of a trial.

The side buttons are a slight turnoff, as they have a faux chrome finish that gives the impression of being vulnerable to scratches. The power and volume button placements are pretty standard, but the latter comes across as a little high, reducing the likelihood of it being pushed accidentally but also making the camera zoom slightly more difficult to use when the unit is held vertically. Potential users might also be alarmed by the zoom control's proximity to the lens itself (they might imagine the index finger obstructing the camera), but it never actually proved an issue during actual use. The way the camera housing protrudes slightly from the bezel might strike some as a red flag, but WinWin believes that only the most belligerent 3-year-old could possibly damage it.

Spec Talk

The Ascend P1's form factor and hardware specs put it in a unique class, ranking it somewhere between stepdown and flagship. Its CPU is a dual-core 1.5GHz OMAP4460 from Texas Instruments, giving it as much raw horsepower as anything in its screen class, while the GPU is a PowerVR SGX540 (a longtime industry workhorse that no longer impresses the benchmarkers but is still in use for Android 4.0) supported by 1GB of RAM (the industry standard for the high-end). Its still photography (8MP) and video recording (1080p) specs are on par with most flagships, though its combined screen size (4.3") & resolution (960 x 540) slide in just below for the Android ecosystem (though HD is an overrated battery hog at this screen size). The P1's complimentary cloud storage is adequate for smartphone newbies at 16GB, but this is sub-par for a flagship model (though amenable). Onboard ROM is also light at only 4GB (with only about 2.5GB of that available for use), so a micro-SD card is basically a must (operators may want to consider bundling one). But, given the fact that a higher built-in memory capacity can add USD100 to the price of a handset, the flexibility here is appreciated, and potential users might be willing to forgive this trespass given how comfortable the P1 is.
How does it look?

Between its bony angles, svelte profile, and lustrous styling, the Ascend P1 is undeniably hip. Its qHD screen takes no prisoners, serving up a punchy, dynamic image with bright whites and rich inky blacks. Reds do look a little overpumped on the P1 (as they did on the name-brand, but to a lesser extent), lending vibrancy to the colors but also making warmer shades glow a bit unnaturally (a common issue with AMOLED screens), though skin tones and fine detailing hold up quite well. The gamma curve on the Huawei device isn’t the best we’ve seen, leading to unremarkable shadow detailing and dimensionality on photos & movies, but it would probably take someone who actually knows what a gamma curve is to notice this.

The Ascend P1’s screen does not hold up well under bright sunlight (very few do), but it did distinguish itself with the camera running; for both photos and video, the Huawei device managed to deliver just enough detailing, in terms of light and shadow, that the viewer could be reasonably certain of the image being captured (the name-brand comparison phone, despite its mighty 1280 × 720 screen, was a total wash). On the whole, the name-brand’s image fared slightly better, but it would probably take a side-by-side comparison to notice.

How does it shoot?

The Ascend P1’s 8MP rear shooter can be opened directly from the unlock screen and still operates while connected via USB, both nice touches that the competitor failed to offer. The menu offers an impressive variety of functions, adjustments, scenes, and effects, including a

Despite the Ascend P line’s reputation for thinness, the most striking thing about the P1 out of the box is how light it is; it’s hardly noticeable in the hand and makes our comparison phone feel like a brick.
Between its bony angles, svelte profile, and lustrous styling, the Ascend P1 is undeniably hip. Its qHD screen takes no prisoners, serving up a punchy, dynamic image with bright whites and rich inky blacks.

menu dedicated to visual distortion effects (also unoffered by the name-brand).

Still photography for the Huawei device is solid, but a notch below elite status, especially in terms of auto-focus speed and color accuracy, though no one would call either deficient. Interestingly, the P1 seems to average out the image a bit (very bright scenes are a little darkened, darker scenes are a little brightened), which should please the point & shoot crowd but may irritate more serious photographers. Some manual adjustment can produce a more accurate approximation of ambient light levels, but the trade-off is a slightly washed out image. For the best results, stick with the auto-adjustments.

One of the Ascend P1’s unique selling points is its dual-LED flash, which produces a shocking amount of light, but to limited effect, as the resulting image is certainly brighter than what the name-brand produces but is also somewhat washed out and noisy (the rival phone took near-black conditions in stride, delivering a dark but well-delineated image with plenty of fine detailing).

However, one area where the P1 rear shooter wins is video capture, which features superior on-the-fly adjustments to ambient light levels in bright or intermediate conditions. Colors are also terrific, as are sharpness & resolution. One minor nitpick is that the Huawei device’s video shooting struggles in very dark conditions, despite the dual-LED, but this is a minor bother; 1080p recording on the P1 is terrific.

The Ascend P1 has a 1.3MP front camera that also shoots video (this is where the aforementioned video distortion menu comes in). While it doesn’t produce an image that will impress anybody, it’s quite true to life in terms of ambient light levels (meaning that the little blemishes on your face shouldn’t stick out too much). The rival’s front-shooter was 2.0MP, and captured more facial detail than we really felt comfortable with.

How does it use?

The Ascend P1’s touchscreen is pleasingly sensitive; a light tap with the end of your fingernail will be sufficient. The Huawei device also offers a menu on its standby screen (with the options chosen by the direction in which you slide your finger), a pleasant surprise. The user has options for the homepage, phonebook, message menu, or camera, and all four are zippy fast. Menu page sliding can be as slow or as fast as you want it to be (from glacial to lightning), making for a terrific user interface, on par with its rival. However, the name-brand’s flavor of Ice Cream Sandwich was definitely a bit more polished and had more of a “they thought of everything” feel to it (the onscreen battery status display made this review a lot easier), but the P1 never feels negligent (and will likely get better once Huawei’s Emotion 1.0 UI is available); most of its likely users will be thrilled.

Video playback of high-quality sources, whether streaming or saved, is silky smooth, in fact slightly better than what the name-brand manages, but the Huawei device does seem to struggle a bit with choppier sources. WinWin suspects this to be a buffer issue, as this extends to other elements such as gaming under peak load (Riptide GP v1.3 was an eyelash choppy, but it would probably take experience with a better phone to notice this). Nonetheless, the Ascend P1 proved flawless with all the other games we tried, including graphically intense ones such as Temple Run.

One of the P1’s selling points is its audio capabilities (the box has three third-party logos; two of them are for Dolby). Without headphones, the Huawei device produces a sound no one outside of a factory floor will have any trouble hearing. With headphones, the user is presented a choice of ten different audio flavors with names like
Comedy or Music Video. Each flavor produces a distinct audio effect; one might produce a sound reminiscent of a large listening hall while another might make the voices seem to come from within your head. While some of these choices might strike the listener as a bit gimmicky, the Ascend P1 does indeed produce superior stereo separation and plenty of distinct surround effects (the rival phone’s surround effects were solid but lacked the diversity and panache of the P1). All in all, it makes for a great listen.

The Ascend P1 has a battery of relatively modest capacity (needed to keep its trim figure), but this shouldn’t prove to be an issue, as it acquitted itself admirably in all areas of battery life. However, a straight apples-to-apples comparison was impossible here, as the rival phone’s battery had seen significantly more mileage, was 10% larger, and a bit inaccurate at times (WinWin actually witnessed an incident where the displayed charge increased when not plugged in). Nevertheless, the P1 seemed to have a roughly 20 to 25% edge for video playback, talk time, and wall socket charging (full USB charging proved too close to call, but the Huawei device definitely had faster charging in the 10-to-90% range), while the name-brand had a similar edge in web surfing. However, in light of the P1’s superior webpage loading (more in next section), this particular edge dulls a bit.

Does it play nice with others?

The Ascend P1 really shines here; PC compatibility is terrific. Windows tracked down its driver in a few minutes (which it failed to do for the comparison phone) and loaded it without a hitch. After plugging in via USB, Windows Explorer pops up, ready for use, in less than five seconds. There’s no glacially slow interlinking software involved here (the comparison phone takes about a minute before files can be accessed). So, that’s one minute versus five seconds; the rival phone looks like a tech neophyte by comparison.

The Ascend P1 is a pentaband UMTS phone, which means that 3G will work just about anywhere. While this might come across as overkill given that this phone does not seem aimed at road warriors, it is still a nice option to have (at least your daughter won’t complain during the family trip to Bali).

For voice calls, the Ascend P1 had somewhat better signal clarity and fidelity, though the receiving experience came across as a tad anemic when compared to the name-brand. Bluetooth device and Wi-Fi hotspot location and connection were a draw, and download speed proved too unpredictable to declare a clear winner, but both handsets were pleasingly fast (both could download a 10MB app over WCDMA in about two minutes).

However, web surfing is a definite win for the P1; it loads web pages very fast over 3G (in a second or two in most instances) with a clear edge over the rival phone (which takes about twice as long). Web surfing is definitely the Ascend P1’s strongest technical suit; operators should plan their marketing efforts accordingly.

What’s the verdict?

The Ascend P1 is a thin slice of cool. It offers the visual real estate that users want in a form factor of superior comfort and style. Though it lacks some of the refinements (the rival phone’s UI was a bit more intuitive and all-encompassing, while delivering somewhat better still photography) that a more prestigious vendor would deliver, it compensates with superb web surfing, impressive video recording, solid battery life, and a great price. Considering that this device retails for about 50 to 70% of what an unlocked flagship phone would command when new (and about 15% less than what the half-gen-old comparison phone commands, as of the time of this writing), the Ascend P1 from Huawei is a fantastic value. Recommended!

Perspectives

The Ascend P1 is a thin slice of cool. It offers the visual real estate that users want in a form factor of superior comfort and style. This device retails for about 50 to 70% of what an unlocked flagship phone would command.

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Beauty meets brains.
Introducing the new HUAWEI Ascend P1

www.huawei.com/device
China Mobile

“ultrafies” mobile broadband

China Mobile Zhejiang launched its TD-LTE services in March 2012, marking the prelude to its mass deployment in mainland China. Ultra-high speed applications, such as HD VOD and video shooting/uploading, are now within reach, making for a new era of mobile broadband convenience and profitability.

By Li Xuefeng    Editor: Pearl Zhu zhuwenli@huawei.com
A closer look at TD-LTE

China Mobile boasts the largest mobile subscriber base in the world and is also a pioneer in leading technologies and services. At the end of 2010, China Mobile officially started its overall TD-LTE trial plans in six domestic cities, including Hangzhou, where China Mobile Zhejiang (Zhejiang Mobile) is based.

As a major champion for the Digital Zhejiang initiative, Zhejiang Mobile is positioned to become both an expert in advanced ICT technology and a key socioeconomic catalyst in the region. As of the second quarter of 2011, its subscriber base had already surpassed 50 million, while its network carried 650 terabytes of data a month.

To sustain its development and set a benchmark within the China Mobile group, Zhejiang Mobile set out to craft a TD-LTE business model that can be both commercial and practical. Using its TD-SCDMA experiences as a model, it plans to build its urban networks first before scaling gradually across suburban and rural areas, deploying over multiple frequency bands to ensure seamless coverage and a good user experience. It will also release terminals in stages to widen the experience scope.

In January 2011, Zhejiang Mobile kickstarted its buildup efforts in cooperation with Huawei. In one year, its phase-2 TD-LTE pre-commercial network was up & running for pilot trials, with nearly 200 sites activated, covering an area of 41.5 square kilometers in Hangzhou city. Phase-3 covered an area of over 200 square kilometers in all major districts in Hangzhou before May 17, World Telecom Day for 2012, laying a solid foundation for future development.

Experiencing TD-LTE

On March 30, 2012, Zhejiang Mobile invited the public to experience its TD-LTE pilot network services at the city’s Huanglong Square, an experience which would prove a big hit. Participants toured buses equipped with TD-Fi receivers and enjoyed a variety of services such as VOD, high-speed download, and microblogging on a variety of smart devices. Any visitor with a WLAN device (including those not subscribed to China Mobile) could surf the Internet and experience LTE access with an actual on-the-go average download speed of 30Mbps (ten times faster than the previous 3G speeds); some could
Users can enjoy free high-speed mobile broadband and WLAN services at certain bus stations and transit hubs. Nearly ten thousand users now access the Internet daily, generating nearly 800GB in traffic.

“We plan to further expand the TD-LTE network to cover all of Hangzhou city (including its satellite cities),” states Zhong Tianhua. “In September 2012, the network will cover highways that connect to four adjacent cities, as Hangzhou becomes the prototype for large-scale TD-LTE deployment worldwide.”

China Mobile and Huawei

Zhejiang Mobile’s trial success is just a prelude to China Mobile’s further moves into TD-LTE. Li Yue, President of China Mobile, stated at MWC 2012 that the company would further expand its TD-LTE-ready network over the next two years. In 2012, the operator will deploy over 20,000 TD-LTE base stations in a number of China’s tier-1 cities. In 2013, the number of base stations will increase ten fold, through either new deployment or TD-SCDMA upgrade; pre-commercial efforts in the relevant cities will also accelerate.

Besides the pilot network in Zhejiang province, China Mobile had already gained abundant experience in TD-LTE network operations, as exemplified in its successes in supporting the Shanghai World Expo, Guangzhou Asian Games, and Shenzhen Universiade. During these events, the operator joined hands with Huawei to deploy TD-LTE networks and provide guaranteed service...
and device support.

In 2011, China Mobile conducted a large-scale TD-LTE test, in which Huawei took the lead in terms of network efficiency and performance. Huawei also was the first to live up to expectations for the ZUC algorithm (a new homegrown cryptographic algorithm intended for use in 3GPP LTE) during China Mobile’s phase-2 TD-LTE test.

Terminals are, of course, key to unlocking the potential of TD-LTE and Huawei has been a leader in TD-LTE device innovation. In 2011, Huawei launched the E392, the market’s first multimode data card to support LTE FDD, LTE TDD, UMTS, GSM, and CDMA. In addition, Huawei plans to launch a TD-LTE multimode smartphone in Q3 2012. The convergent development of LTE FDD and TD-LTE will definitely fuel the commercial application of the latter.

Deng Taihua, President of Huawei TD-LTE & TD-SCDMA & WiMAX Product Line, has stated that Huawei inked 17 commercial TD-LTE as of April 2012 with operators such as STC, Mobily, and Aero2. Huawei is completely ready to facilitate operator success in TD-LTE, be it in terms of technologies, solutions, or delivery capabilities. Working with the likes of Zhejiang Mobile, China will no longer be playing catch-up in the telco arena.

“The

Huawei is completely ready to facilitate operator success in TD-LTE, be it in terms of technologies, solutions, or delivery capabilities. Working with the likes of Zhejiang Mobile, China will no longer be playing catch-up in the telco arena.”
Zhejiang Mobile

Bridging the fiber management gap

Optical networking is the foundation for China Mobile Zhejiang’s transformation into a convergent service operator. However, fiber resources are passive, which makes their management feel far from intelligent and efficient. Bridging this gap has become the operator’s top priority.

By Zhang Weicong, General Manager (Wenzhou Mobile)
To support the development of 3G and convergent service operation, China Mobile Zhejiang (Zhejiang Mobile) lays hundreds of thousands of kilometers of fiber optic cable annually; their number of large sites (more than 10,000 lines) for fiber scheduling is also rising. However, fiber resource utilization has been very low due to inefficiencies in its resource management methods.

Thanks to a lack of accurate information and intelligent network management systems dedicated to dumb resources (fiber ducting), fiber laying work (including routing and addressing) can only be completed by maintenance O&M engineers, while service provisioning is complex and inefficient.

Therefore, China Mobile Wenzhou (Wenzhou Mobile), a Zhejiang Mobile subsidiary, decided to delve into intelligent optical distribution network (ODN) technology, conducting a pre-commercial launch in 2011.

Moving forward

Typically, when an optical network is deployed, service provisioning and scheduling are done manually, making for a crude, inefficient, and costly process. As intelligent ODN technology evolves and matures, Wenzhou Mobile has deemed the technology suitable in terms of fiber management efficiency for its development needs. In other words, we’ve got our eyes on intelligent ODN technology.

Wenzhou Mobile believes that the viable electronic identification (eID) technology that makes an ODN intelligent should be in line with three criteria. First, the technology should be simple and mature, enabling timely deployment and one-click ODN status management. Secondly, relevant products should be stable and compatible with fiber distribution devices from different vendors, without any customization of the patch cord. Thirdly, the cost should be reasonable and under control.

With these requirements taken into account, we selected Huawei’s iODN technology to make our ODN management system intelligent and efficient.

Beauty before brains

As an intelligent fiber management platform, Huawei iODN has certain advantages in terms of fiber infrastructure management. First, distribution devices for the entire network can automatically track down fiber connections so that dumb resources can be presented in an intelligent manner, thus making the optical network visible. Second, Huawei’s iODN management system can interconnect with and supplement Wenzhou Mobile’s existing inventory system, enabling intelligent network resource management in real time.

However, before the pilot launch of its iODN, Wenzhou Mobile had to address issues in network convergence and business process compatibility between the iODN and legacy networks, as well as in power supply to the intelligent devices. We set up a joint innovation workgroup with industry partners to work out the relevant solutions.

This workgroup formulated a series of business processes that met our needs for E2E service provisioning and large-scale network deployment, enabling us to seize market opportunities and improve user satisfaction. These business processes have reduced manual work to a minimum while shortening the business cycle, leading to dramatic
improvements in O&M efficiency. The workgroup also delivered solutions for traditional ODN equipment modernization and intermittent power supply for outdoor fiber distribution devices. All laid a solid foundation for deployment of our intelligent ODN.

**Proven results**

Wenzhou Mobile carried out its pilot iODN deployment in the Binhai district of Wenzhou city, which covers roughly 15,000 enterprises and family users. After a year of effort, the benefits of Huawei iODN began to make themselves known in terms of optical network management capacity. Service provisioning times and customer satisfaction both improved, while O&M convenience and efficiency rose dramatically, particularly for service swapping and debugging. Fiber utilization was also improved on the whole.

**Service provisioning – From two days to one**

Through Huawei iODN’s eID technology, all optical resources and connection indicators in Binhai District can now be displayed on an LED board. The rework rate due to tag-searching errors has declined by 20 to 25 percent, while installation efficiency has improved by 40 percent. Furthermore, with the adoption of automatic service provisioning, service provisioning efficiency has risen sharply. Now, it takes only one day to complete the service provisioning process after an application is submitted, half of the time it took before; a sharp improvement in user satisfaction has ensued.

**Maintenance time reduced by 63%**

By automatically gathering and checking fiber resources, Wenzhou Mobile’s intelligent ODN management system eliminates the need for regular manual resource checking. Furthermore, the sharing of fiber resources allows our engineers to accurately locate points of failure and improve our network maintenance efficiency. Regarding the 4,500 homes in Binhai District, Huawei iODN helps Wenzhou Mobile to save 194 man-hours each year. If resource checking is carried out on an annual basis and the failure rate is five percent, the iODN management system reduces the overall maintenance time by 63 percent.

**100% fiber utilization**

The Huawei iODN management system can accurately gather and schedule network resources so that waste is minimized. Before this system was adopted, about 20 percent of Wenzhou Mobile’s fiber resources fell into the category of “dark fiber” as tags fell off. With the adoption of eID technology, all resources in Binhai District are visible to the network management system. In other words, fiber utilization is now 100 percent.

**Looking to the future**

After the past year’s experiences, we believe that Huawei iODN suits our optical network development needs. Both eID adoption and network management system construction helped Wenzhou Mobile to improve its O&M. However, this is not the end of the story. A large number of legacy traditional ODN devices on the network are awaiting upgrade, and before that can occur, we must manage both the iODN and legacy network in a converged manner. We have made remarkable progress in this regard. Given the importance of intelligent ODN standardization, we plan to participate more actively in this field in the future.
The African Union Commission has joined hands with Huawei to craft and implement a desktop cloud solution that enhances the governing body's IT capabilities in coordinating pan-African political and economic affairs.
Reaching a height of 99.9 meters, the African Union (AU) Conference Center stands as a landmark in the Ethiopian capital of Addis Ababa. Consisting of offices, conference halls and support facilities, the center has a large conference hall (2500 seats), a medium-sized hall (650 seats), and digital libraries, training centers, a media center, and other ancillary facilities to round out its attendee services. Connected by fiber and serviced by Wi-Fi, the center features video monitoring, video conferencing, and desktop cloud or virtual desktop infrastructure (VDI).

On January 29, 2012, leaders from 55 AU member states attended the 18th AU Summit at the center and enjoyed an eye-opening desktop cloud service experience.

Legacy headaches

As a top organization coordinating pan-African political, economic, and military issues, the African Union Commission (AUC) needed a robust information system to support a large number of conferences and the larger amounts of data that they entail. As most of this information is of a confidential nature, legacy PCs were proving too vulnerable to hackers, phishing, viruses, and other forms of compromise.

The AUC holds nearly 600 conferences each year; most require printed materials in its four official languages – English, French, Arabic, and Portuguese. This amounts to a profound waste of time, money, and paper, and is sometimes ineffective. If last-minute changes are needed, reprinting may not prove viable. The AUC needed an IT system that could support electronic versions of these materials.

The legacy IT system also consumed a lot of power (200 Watts per PC) and its upgrade was a constant headache. Its wiring was also a complex issue and did not fit in with the clean and orderly aesthetics desired for a conference center. O&M costs were also a major burden; engineers needed to constantly resolve the hardware, software, and operating system issues. The AUC staff members, who hail from 55 member nations, must also travel a lot, so mobile access to internal documents is a must.

In December 2011, the construction of the AU Conference Center was completed, with the 18th AU Summit set to be held there. The AUC expected a modern IT solution to bring their operations into a new era.

A highly-recognized desktop cloud

Part of this solution involved Huawei’s desktop cloud solution, which offers computing, storage sharing, and unified resource allocation services through cloud data centers which enable enhanced information security, conference efficiency, and reduced O&M complexity.

The AUC can now enjoy having all computing and storage resources integrated through its data centers, with smooth legacy interoperability. In addition, end users can now access legacy IT applications through any connected device or Wi-Fi-enabled thin client (a low-cost fixed
terminal with a monitor, keyboard, and mouse, thus eliminating the need for a PC cabinet). This new arrangement contributed to a clean, orderly, and quiet (about 10dB of sound are generated by thin clients) office environment, while reducing terminal power consumption by 70 percent.

Traditionally, each PC is equipped with an operating system and other software, with locally-stored information vulnerable to virus attacks and transmission interceptions. With desktop cloud, terminals do not store information, as all information-related computing, storage, and management are done in the AUC data centers, making for greatly enhanced security. Huawei's desktop cloud also delivers mobile office functionality; AUC personnel can remotely access documents through certified smartphones and tablets at any time and any place with a network connection.

As the data center stores all data and applications, the AUC can flexibly manage and allocate IT resources. Unified O&M has also become feasible. With desktop cloud, it takes only three minutes to ready a virtual PC, while software and operating system patches can be installed in a one-stop manner. As a result, the AUC can efficiently allocate IT resources for various conferences, including impromptu events.

**Successful applications**

On January 4, 2012, the AUC inked its desktop cloud deployment contract with Huawei, leaving both parties only three weeks for project delivery. However, in less than 20 days, the joint project team managed to put all equipment in place and finish commissioning.

On January 25, 2012, the system's Wi-Fi-enabled thin clients were fully tested and deployed. Erastus Mwencha, Deputy Chairperson of the AUC, was invited to test them in person. He came away impressed, and asked engineers to install the thin client software on his iPad for easy access.

On January 29, 2012, the Huawei desktop cloud was officially launched and ran smoothly during the three days of the AU Summit. Ten days later, the AUC sent a letter of appreciation to Huawei, stating that “the Commission notes with appreciation the outstanding daily cooperation between Huawei and the MIS Division of the Commission, as well as the high efficiency in execution, hard work and support by the Huawei team, thereby ensuring the deployment of the VDI system successfully in three weeks. This system has been working very well and will really help improve efficiency in conducting meetings and working method in general in the future.”

Huawei’s desktop cloud has also been highly recognized by the United Nations Economic Commission for Africa (ECA) during its visit to the AU Conference Center.

The AUC has been using desktop cloud for conferences, offices and daily training ever since, and is expected to expand throughout the compound. The commission is also planning to introduce cloud applications to its data centers. The AU Summit has also highly recognized the importance of ICT industry in promoting African socioeconomic development. As a key ICT partner of the AUC, Huawei will continue its support and effort to help the AUC promote its ICT infrastructure.
Shanghai Telecom, through its innovations in high-density modular Internet data center construction, has unleashed the potential of legacy IDC infrastructure while creating a guide for its future forays into the cloud.
Adjacent to the China Pavilion at the World Expo 2010 grounds is the Zhoujiadu building, belonging to China Telecom Shanghai (Shanghai Telecom). From the viewing platform on its fifth floor, the view of the expo site and Huangpu river, with the famous Pudong skyline behind it, is hypnotic. The Zhoujiadu Internet Data Center (IDC), located on the fourth floor, occupies what was once Shanghai Telecom’s “Expo Command Center,” and has successfully scaled up from a traditional IDC into a next-generation cloud IDC.

Undisputed leader

Shanghai Telecom's IDC services can be traced back to 1999, when it offered hosting and access services. However, even after the dot-com bubble burst, Shanghai Telecom still managed to spur strong growth in sales revenue.

In 2007, Shanghai Telecom began to provide managed IDC services, including network management, server management, database management, application management, and some security services.

Entering the year 2011, known in the local industry as “Year One for Cloud Computing,” Chinese operators all jumped on the cloud bandwagon to further capitalize on their pipeline value. Shanghai Telecom tested the water with a variety of innovative services, including customized database service management.

January 1st of that year gave Chinese consumers their first taste of cloud computing, as hundreds of thousands of premium subscribers were presented with 100GB each of complimentary cloud storage space by Shanghai Telecom.

On October 12th of that year, Shanghai Telecom introduced its cloud rental services to SMEs, which feature a high performance/price ratio and ease of use, helping these businesses to establish themselves more easily and operate more efficiently.

In 2011, Shanghai Telecom’s IDC revenue was CNY900 million (USD140 million) and its goal for 2012 is CNY1.3 billion. Claiming 60 percent of the East China IDC market, Shanghai Telecom is the undisputed king in this area, with a whopping 80 percent share in Shanghai.

Urgent needs

Under China Telecom’s overall corporate strategy and the MONET optical fiber access initiative (a joint initiative between the Shanghai municipal government and Shanghai Telecom), huge bandwidth increases are planned. Shanghai Telecom’s IDC business focus for 2012 is service platform innovation and value-added product marketing. Both will place higher demands on the IDC machine room, as well as the power equipment, transport network, and overall Internet bandwidth.

Eyun, a cloud storage service started in early 2011 by Shanghai Telecom and Huawei, was the first and largest commercial application of its kind among Chinese operators. One year after its deployment, its users exceed 200,000, while its capacity has 8.7 petabytes. It was through this service that the hardware constraints for Shanghai Telecom’s IDC facility made themselves known, thus hindering its cloud business development.

Typical IDCs have a 3-5kW power density
per rack, while cloud IDCs, with their far greater server density, push this figure to 15kW. At Shanghai Telecom’s IDC facility, the figure was 6kW, meaning each rack could house only one blade server, which would consume about 4.5kW each. This meant that a lot more space was needed if Shanghai Telecom’s cloud business is to develop as it should, a formidable investment considering Shanghai’s notorious real estate pricing.

Power efficiency is another major concern, as traditional IDCs typically waste about a third of their power. Shanghai Telecom’s IDC had an average power usage effectiveness (PUE) rating of 2, which meant that non-computing facilities consumed almost the same amount of power as its servers. For an IDC with 500 servers, the servers’ portion of the electric bill would total CNY1.80 million (USD280,000), with that figure almost doubling after adding the power consumed by lighting, cooling, and wastage. Given the scale that cloud IDCs are sure to take in the future, this level of OPEX is unacceptable.

With the sheer number of servers, networking devices, and storage devices involved, another major concern for cloud IDCs is unified, intelligent management. Shanghai Telecom’s traditional IDCs can only provide fault alarm services through its power environment monitoring system; this is proving woefully inadequate.

**Joining hands in the cloud**

Shanghai Telecom decided to renovate its legacy IDCs rather than build new ones, as this should both reduce CAPEX and speed up the process. Senior management made the Zhoujiadu IDC a top priority, as it will be deemed a “next-generation cloud IDC” once completed, making it a showroom of sorts for the cloud industry. In light of business demand over the next three to five years, the Zhoujiadu cloud IDC is intended to offer the latest features in terms of server density, reliability, and green operations. Its modular design should lend it both the flexibility to provide growing SMEs with practical and reliable cloud services as well as the technical prowess to serve high-value customers in East China in both the public and private sectors.

As such, Shanghai Telecom has made a clear goal of reducing its PUE from 2 to less than 1.6, which should allow for high-density server deployment and flexible expansion. Through improvements in facility management, the operator also plans to enable real-time PUE display.

Given this project’s strategic importance, Shanghai Telecom had very high expectations. No vendor was above a thorough vetting. A slow dance between Huawei and Shanghai Telecom started in the form of technical exchanges, eventually growing into exchanges with Shanghai Telecom’s experts and management. This culminated in the operator gaining trust in Huawei’s one-stop cloud IDC solution, which encompasses consulting & planning, detailed proposal, project delivery, and after-sales warranty.

Shanghai Telecom and Huawei jointly surveyed the Zhoujiadu site, while also formulating a
User-friendly interfaces, easy remote control, and flexible scalability are all coming to fruition, making for a next-generation cloud IDC solution that lives up to its promise.
The year 2010 was an eventful year indeed for Telekom Malaysia Berhad (TM) as it successfully launched triple-play bundled high-speed broadband (HSBB) services for both its residential and business customers under the UniFi brand. UniFi offers digital voice, high-speed Internet access of up to 20Mbps, and also Internet Protocol television (IPTV) services, branded as HyppTV.
or homes and businesses ready to embrace an enhanced, integrated digital lifestyle, UniFi is definitely for them as it delivers a faster, richer and more reliable online experience that opens up a whole new world of rich digital content, applications and services,” said Dato’ Sri Zamzamzairani Mohd Isa, Group Chief Executive Officer, TM.

TM’s UniFi customer base has recently surpassed the 340,000 mark and TM continues to work closely with partners such as Huawei to launch new services to transform and enhance users’ digital lifestyle at home and on the go.

Seizing broadband & TV opportunities through HSBB

Through a public-private partnership (PPP) agreement with the government of Malaysia and with a project value of about MYR11.3 billion (USD3.8 billion), it is believed that the High Speed Broadband Project (HSBB) will boost the country’s national gross domestic product (GDP) by 0.6%, while creating approximately 100,000 jobs by the year 2017. UniFi, TM’s HSBB service brand, is currently available at 81 exchange areas with more than 1.198 million premises passed to date, with these numbers expected to reach 98 and 1.3 million, respectively, by the end of 2012.

“This year marks the second birthday of UniFi and we are excited that the service has reached more than 340,000 customers nationwide. This achievement augurs well for TM and in line with the Company’s transformation from a Voice Exchange into an Information Exchange. We are indeed very grateful to our customers for their continued trust in us in delivering an enhanced and integrated digital lifestyle to their homes,” the group CEO added.

IPTV proved to be the ideal differentiator, and ultimately the game changer for service expansion. After researching the global IPTV industry, and the needs of its own home users, TM decided to officially launch its IPTV service, known as HyppTV, bundled together with UniFi.

TM’s IPTV strategy is to offer pristine video quality, as opposed to the blockiness and other compression related issues that often accompany HDTV viewing, enabling a true HD experience. Bandwidth efficiency is also top priority so that HD channel availability is ensured for all UniFi users. TM deployed an innovative, best in class, tightly managed & integrated IPTV service delivery platform, while offering home network appliances that differentiate its services.

IPTV realization

In its effort to ensure the successful implementation of HyppTV, TM has set high benchmarks for its IPTV equipment vendor, which demand extensive experience and the ability to deliver IPTV service within just three months. The vendor must also have a strong experience-over-time track record (the ability to provide end-to-end solutions, planning, operations, training, and transfer services). Last but not least, quality must be ensured so that TM’s IPTV is clearly differentiated from what local satellite competitors offer.

Huawei was selected as TM’s IPTV project partner after going through a stringent technology and service assessment, involving several well-known candidates, that drew upon the vendor’s wealth of experience with nearly 40 IPTV commercialization projects worldwide. Huawei
Having fully committed to TM’s success in HSBB, Huawei did indeed deliver its solution within two months, fulfilling TM’s strict requirements in terms of KPI and QoS.

Extending the value of HSBB

According to Jeremy Kung, Executive Vice President, New Media, TM, HyppTV has opened a lot of eyes in Malaysia. “Today we have incumbents who provide their services via satellite, and there would be times when services are not available due to Malaysia’s unique weather conditions. It happens so often that, when it rains, people just switch off the television, because they don’t expect a service. TM has come in and changed that perception. We believe that if the service is available, it must be available all the time. Secondly, we have refreshed the quality for our subscribers. By leveraging HSBB, we have dedicated 8Mbps of the bandwidth exclusively to IPTV service, so HD, 3D, and VOD, and the capacity are no longer an issue. Today, HyppTV offers customers 88 channels with 12 HD channels consisting of 19 free channels, 34 premium channels, 17 VOD genres and 18 interactive channels featuring YouTube, Facebook, and games.”

“In addition, we are always looking forward to acquiring new content that we believe will entice TV viewers to HyppTV. This is keeping in line with our strategy for viewers to be allowed flexibility to view their choice of content when they want. Our focus on VOD and interactivity means that we can offer viewers a lot more choice in content without necessarily forking out the RM (money) required for a multichannel-only service,” he added later.

Huawei strengthened its partnership with TM through the Customer Business Partner (CBP) program officially kicked off in November 2011. The CBP program aims to help position TM as the leading ICT provider through HSBB and to collaborate with Huawei to deliver future innovative services to stand out from its competitors and deliver a superior experience to its customers.
The Challenge of 78°13’ North Latitude

June 2011: Svalbard Islands, Norway

Their breath was frozen in the -50°C Arctic air, but they didn’t mind, because, as Huawei engineers, they had just completed the world’s northernmost Long-Term Evolution (LTE) base station - bringing 100MB wireless internet service to the people of Svalbard.

As a leading global ICT solutions provider, we develop the technologies that help you share your dreams and let your inspiration travel. Huawei. Building a connected world of endless possibilities.

Find out more at: Huawei, the most northern LTE base station

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