
COVERSTORY: How to build future business in telecom

By Leslie Maunsbach page 10

► Business strategist Torbjörn Nilsson, formerly part of the management team at Ericsson is advisor to the Ericsson group management and CEO. Here, he shares his insights from 30 years of experience in issues that deal with strategic innovations.

Innovation has always been a core success factor for growth and improvement in the communication industry. According to Nilsson there are two types of innovation: continuous innovation that leverages a company's proven core business, and strategic innovation, which branches off into new areas but can turn into future core businesses. Strategic innovation usually takes much longer to be realized – on average 5 to 10 years – and can be very disruptive.

No business can sustain itself only on continuing its current inventory, especially not in the highly competitive telecommunication and technology industry.

Technology is the key for many strategic innovations. But not everything. Great innovations can be driven by consumers or technology. But with a completely new innovation, it's pointless to ask consumers what they want. Unarticulated needs may take time to emerge. Looking at numbers can lead you in a completely wrong direction.

There have been several cases of hyping new services. On the other hand innovations may fail and go through a disillusionment phase – but as all the necessary pieces eventually come together, the innovation can outgrow the forecast.

“Between 1991 to 1995 GSM was hyped and didn't grow as much as expected. Ten years later the success is phenomenal and still growing. In 2002 it was said that 3G was a big

failure; now it's growing like crazy.”

The first mergers between communication, internet and media have not been very successful, but things have moved on; now is the time for convergence. This is happening mainly because broadband is developing so quickly.

He notes that innovation is not all about the vision, either. A holistic view is needed to enable an innovation's success. All the pieces must be worked on simultaneously, including technology, marketing, business planning, and customer planning.

Working hard with just the technology or user perspective is not enough. Sometimes a new technology is in place for years before the other pieces come together and the innovation takes off.

He thinks, going forward, that innovation in telecom should continue to focus on infrastructure in order to create more broadband capability, both fixed and mobile, at lowest cost per bit or per Hertz. Energy consumption is a top challenge for technology, for both devices and infrastructure.

He suggests that strategic innovation can be nurtured by creating a separate business that reports to the CEO, rather than having it compete within the core business.

Nilsson says it is important to think in terms of longer life cycles, especially for technology. There is a tendency to be short-sighted and focus on the next quarterly report, when instead bold decisions are needed.

A good strategic innovation, Nilsson notes, is smart enough to build on something that can reach critical mass as quickly as possible. The main priority, to sustain industry growth while creating new business in the future, may be to utilize the innovations that have already reached success. Today, most strategy deals with how to keep full inter-

operability between the new devices and the large-volume services on established platforms.

Connectivity has great value in itself. There are many opportunities for strategic innovation here. Starting a new volume business from scratch takes forever. A more smart way is to build on the top of earlier successes.

THEME: Hyperconnected cities

By Johan Hjeltn, page 16

► The token of a hyperconnected city is ubiquitous wireless and broadband access to everyone. Not all places in the world have 3G yet. And there are only two cities in the world with more than 75 percent household connectivity: Singapore and Seoul. A third is on its way: Dubai.

Singapore formulated the first vision for the computerization of city services in 1981. Singapore's goal now is to grow its economy using the network, and civil services are of key importance. Seoul, in contrast, does have a vision for its civil services – but not for the network.

Three years ago, the local social networking sites in Korea claimed penetration rates higher than Facebook today. Korea is also the world leader in online role-playing games, at least in terms of household penetration.

Games companies, homegrown in Seoul, are already launching their games in the US. Singapore is betting on games companies setting up development centers, aided by the Grid initiative, to drive next-generation development of computer graphics. The next step beyond moving call centers and development farms to China and India is finding professionals for special projects, which is why Dubai is investing so heavily in education.

Logistics is one of the major new industries in Dubai, with

companies like DHL opening offices there. In Seoul, Singapore, and Dubai the shipping lines and airfreight companies are moving offices to be closer to the most sensitive link in the chain after the customer: reloading. Less time on the ground means less time to the customer.

Hyperconnected cities do not thrive on stealing business from others. The financial industry, the media, engineering, and software live by creating new values. While foreign investment abounds in Singapore and Dubai, Seoul is driven by homegrown corporate giants, from engineering companies to banks. Knowledge, not money, is the new capital, and it grows as you share it. The trick, as Singapore, Seoul, and Dubai have discovered, is sharing back.

In Singapore the electronics industry is overtaking the harbor as the biggest value creator. When a city gets hyperconnected, not only is broadband usage high, but so is penetration among households. Hyperconnected citizens use their networks for multimedia. IPTV is a booming market but higher bandwidth also means that other services, such as 3-D modeling, become practical.

Hyperconnected means broadband and network access for everyone, and this is what these cities can use to change their administrations. Although the digital divide remains an issue (except in Dubai), both Seoul (where the city administration provides the needy with computers) and Singapore (where “silver centers” are created for elderly citizens to enable them to participate) have programs to increase internet use.

Customer participation is making administration more efficient, and hyperconnected cities are taking democracy to a new level. That may be the lasting legacy of hyperconnectivity, when the fads of multi-

media formats have come and gone.

But being hyperconnected is not one single thing. Hyperconnected cities have only a superior network in common – utilized with very different approaches.

THEME: Dubai – the vision of the Sheikh

Page 27

► On the surface, Dubai does not have much – no territory to speak of, no big harbor, no strategic trade route location, and not much manufacturing power. But it does have a vision, created by its ruler, the Sheikh.

What was once a small trading city between the desert and the Persian Gulf is now one of the great luxury destinations of the world, where the economy runs on services, and the currency is knowledge and ideas.

The incredible growth of the economy seems to be sustained, and this member of the United Arab Emirates (UAE) is developing into the financial and trading center of the Middle East – as well as becoming one of the world’s hyperconnected cities.

Wherever you go in the world, other hyperconnected cities want to be like Dubai. It actualizes the dream of all property developers: an empty stretch of land turned into valuable real estate.

In oil terms, Dubai is poor. It has the feel of a garden suburb of an American city rather than a desert city on the Persian Gulf. New high-rises sprout from the ground in the newly developed areas between Dubai proper and the harbor city of Jebel Ali. Sheikh Mohammed bin Rashid Al Maktoum – the ruler of the country, vice president and prime minister of the United Arab Emirates, owns Dubai Holding and runs the emirate as if it were a company.

Trade, the original mainstay

of the Dubai economy, was the fastest-growing industry between 2000 and 2005, despite strong showing by construction and real estate. Oil and gas were shrinking during the same period. The sectors targeted for growth are the same that show strong growth in the world economy: trade, tourism, transportation, and financial services. The emirate’s airline, winner of several awards for good service (in keeping with Arabian tradition), is a major cargo transporter as well.

Turning itself into a logistics hub, Dubai is exploiting its strategic location halfway between Southeast Asia and Europe, creating not just one but two of the largest airports in the world.

The financial industry is one of the most electronically connected industries in the world. Entirely dependent on their networks, stock and commodities exchanges all make their trades on networks, increasingly based on the internet. Education and innovation, although not profit drivers in themselves, are vital drivers of economic growth. No wonder US universities are eager to open campuses in Dubai and other Gulf countries (see separate article).

The government uses the internet – and mobile services – heavily. The government even enables complaints for its services online. And the government itself is one of the biggest customers for its services.

Government efficiency, in line with the overall productivity increases, is on the agenda, as is empowering and motivating public service employees. The vision includes financial management and using partnerships with the private sector to deliver selected services and “non-core operations.”

All government departments are measured on their compliance to the shared service that the e-services

department has developed. All departments must use some common service enablers – primarily the call center and the e-payment gateway. Payments are the focus area for the e-government in Dubai.

The government is selling its competence to private institutions, such as banks. The sms gateway used both to pull and push information is used by private industry; and, in a breakthrough deal, Noor Islamic Bank signed an agreement to license educational material from the government – in the area of customer service, no less. The government has set up a complaints reception service, which not only lets people register complaints, but actually increases government transparency.

Expatriates are a mainstay of the economy in Singapore, where they have helped build the financial industry and run the large harbor, as well as several other industries. The main expatriate communities are Indian, Pakistani, and Bangladeshi, and their main work is in the construction industry. Chinese and Europeans are another strong group, driving the trade, financial, and property management industries. Expatriates make up more than 80 percent of Dubai’s population. They often stay, but the strong education drive of the Dubai and other governments around the Gulf shows that the work they are doing may eventually be taken over by nationals.

The Gulf States have invested USD 22 billion over the past five years to create opportunities for university study. The “brain drain” of Arab graduates is taking a tremendous toll on the economy. Universities setting up campuses in expanding economies is nothing new, but in recent years, there has been a massive shift – from satellite campuses, offering a downscaled version of the mother campus

curriculum, to distributed universities.

The pioneer in academic cities was Qatar, which built an “education city” in the capital, Doha. Bahrain has brought in Britain’s Brunel University to provide engineering know-how, and Abu Dhabi has Sorbonne and INSEAD business school campuses. In Saudi Arabia, the King Abdullah University of Science and Technology has established partnerships with the University of California at Berkeley, Stanford University, and the University of Texas, Austin.

THEME: Seoul – hub of East Asia

Page 20

► Home to almost half the population of South Korea (and more of the economic activity), Seoul is a city of 20 million, and has seen one of the most astounding developments of any city in the past 50 years. The GDP growth staying above 7 percent for many years has raised the South Koreans from poverty to a position where they can rival Europeans.

Koreans mostly live in apartments. High-rise towers abound along the extensive subway network, and all of them have fiber-optic connections. Many are “intelligent homes” where the appliances communicate with each other – and with the owners via their mobile phones.

Korea is famous as the base for the original electronic games world cup. Gaming is one of the favorite pastimes of Koreans, often taking the shape of role-playing. Being connected has come to be second nature to the people of a country where mobile TV, although not personalized, was introduced several years ago, and the mobile phone is as important a means of communication as the personal computer.

The island where the



»»»» Incheon airport is situated where the government wants to create a new city, with residences, offices, and a beach resort next to the airport. The island comprises one-third of the Incheon Free Economic Zone (IFEZ), an area in the estuary of the Han river where the Koreans are creating a completely new city, one that will be both hyperconnected and home to the tallest building (151 floors) in northeast Asia. The most connected part of the city will be in Songdo, where RFID readers will be placed in recycling bins, recognizing the garbage and telling you if you sorted it correctly.

Korea has adopted the principle that airports should be in the center and cities built around them. The reason is the rise of air freight, the driver for both the new Dubai airport and Incheon's expansion plans. Over the past 30 years the world's GDP has risen 154 percent, and global trade has grown 355 percent. But the growth of the value of air cargo has been 1,395 percent.

The vision of Seoul as a hyperconnected city was formulated ten years ago. Today the vision of Seoul is a "clean and attractive global city," which sounds cliché until you realize it is a framework for the city's development and policies, and it sets the scene for all new projects.

From this vision it follows that Seoul must be a "ubiquitous city," with "ubiquitous computing" techniques used to realize the vision. The vision drives the way of working, rather than being a lofty goal. The city government can be measured against it: If the city does not become cleaner, more attractive, and more global, the government will be taken to task by its citizens.

The success of the city e-administration is also applied at the national level, where the ministry adapts many of the initiatives from

Seoul. But integration is not enough. New services must be created all the time to fulfill the vision, the latest being location-based services, part of the effort to make city government mobile. The location-based services are even starting to be used by real-estate brokers, who want to show clients where the public offices and schools are in their neighborhood. Seoul is working on a project to create a three-dimensional map of the city, where citizens can play around with maps and models.

The citizens do not just want to see web pages presenting their local politicians. They want active involvement in decisions, and Seoul city is giving it to them. The government is also using the technology to get new ideas for projects.

Participation in the discussion forums is linked to the personal promotions of civil servants. Picking up good ideas results in promotion points.

The city has peering agreements with all the operators in the city, both mobile and fixed. The city cannot discriminate; services must be available to all. So it tests mobile services with all mobile operators, making sure the services work equally well.

THEME: Singapore – priming the digital pump

Page 32

► Starting in the 1990s, when Singapore became the first city in the world to implement congestion-charging (long before London) and based it on smart cards and radio-frequency identification (RFID) tags, Singapore began leveraging its mobile networks, its broadband network, and the cultural diversity of its citizens to attract researchers – first in semiconductors, then in biotechnology.

There is 99 percent island-

wide broadband coverage, household broadband penetration is over 80 percent, while internet penetration among households is 74 percent.

Singapore's first civil service computerization program was launched in 1981, and the country started its first broadband-building project in 1996. The first three-year e-government action plan ran from 2000 to 2003, and the next ended in 2006 – followed by the vision plan for 2015.

Now that a national broadband infrastructure is in place, the vision plan hinges on completing the next step. During the next five years, the country will make strategic investments to deploy the Next Generation National Infocomm Infrastructure (Next Gen NII), a nationwide ultra-high-speed fiber access infrastructure, with a complementary pervasive wireless network. The Next Gen NII will support new industries such as the digital media and the biomedical sciences industries, as well as Grid computing.

While several multinational companies have located their manufacturing, logistics, or customer support centers for southeast Asia in Singapore, the real economic growth will come from local entrepreneurs, using the "digital living lab" to create new services and products.

The country aims to catalyze the resources of Grid Service Providers (GSP), which make Grid-enabled software, computing, and storage services, through a national project leveraging government investment in commercial consortia. For example, animation rendering requires huge, dedicated data centers and Grid services provide a way of distributing the processing and reusing the infrastructure.

In June 2008, IDA appointed three consortia to lead the Grid development, creating shared resources using networks. The consortia are man-

dated to offer commercial services by the end of 2008, and to make their systems available for other businesses that are interested in working with the technology.

By 2013, Singapore envisions a Grid Market Hub, an infocomm-enabled marketplace of Grid service providers that offer the global community a platform for sharing, buying, and selling infocomm resources such as software, computing, and storage, on an on-demand and a pay-per-use basis.

Users will be able to purchase storage by the gigabyte and computing by the hour, making it easy for a software-as-a-service (SAAS) house to grow quickly when demand escalates – and easy for the Grid consortium to get paid.

In 1981, the Singapore government began using mainframes to automate government business. TradeNet, MediNet, and LawNet. TradeNet, for instance, shortened the time of applying for an export license from 15 days to 15 seconds.

At the turn of the 21st century, 130 government services were online; now there are 1600, available around the clock. But it would be an ideal world where everyone could use all services without help.

One of the main drivers is the national competitive advantage: Government is to be an engine in the transformation of the economy. Citizens of Singapore already have a single password and user ID to access all government services. Three million users are registered, out of a population of 4.5 million.

There are a number of one-stop-shops catering to user needs, including forums where citizens can discuss various aspects of daily life, including dating.

The goal is to make all services available everywhere, to everyone on the island, on their mobile devices.

Reshaping the business of television

By Rene Summer, page 38

► The challenge of transforming what is today known as TV and media, including public service, is immense.

Advertising is a vital source of income not only to all commercial TV and media distributors, but also to producers of content. This revenue source has been exploited by some internet-software-advertising-based businesses in their setup of unmanaged TV offerings, including both professional and user-generated content.

The improved matching capability has shifted the power base in the incumbent TV and media value chain. It puts further pressure on existing relations, as content owners and conventionally managed TV and media distributors respond to advertiser new-spending preferences.

Advertising has to some degree become more targeted as unmanaged TV and media offerings customize consumers' TV and media usage. A precondition for the emergence of this improved matching capability has been the presence of an IP-based access network that can handle interactivity, immediacy, and on-demand features.

Networks facilitate and realize capabilities and services that are enjoyed by consumers, and these networks are continuously evolving. Telcos are investing in IPTV, cable operators are digitizing their networks and adding broadband access; conventional broadcasting networks are also being digitized.

New market opportunities have been exploited by the unmanaged TV value chain, which has enjoyed a tremendous growth in TV and media consumption, both legal and illegal. There are signs in the managed TV value chain that conventional stakeholders are increasingly acknowledging

new capabilities in distribution, such as immediacy, interactivity, and on-demand.

From a TV and media distribution point of view, interactivity, immediacy and on-demand – all facilitated via a bidirectional, IP, and high-capacity/high-speed access network – are key strategic capabilities.

Both managed and unmanaged TV value chains face a number of different but crucial challenges. Symmetry or asymmetry in the business environment is of central essence. This brings regulation into the picture, as regulation is all about exerting control over business environments. From the broad value chain perspective, a number of key business issues have emerged:

- Rivalry has increased, primarily between cable and telecom operators, as they have entered each other's "home turf."
- Unnecessarily high risks are associated with the sizable but necessary up-front heavy investments in next-generation networks.
- Increased flexibility in managed TV and media distribution is essential for meeting consumers' expectations.
- Continued evolution and further rollouts of networks will increase bandwidth and penetration.
- Internet-software-based models do not invest in access networks and hence do not face the associated risks.

Can regulators do something to solve these problems? And if so, what can they do?

Based on internal and external independent third-party research we found that there is an important role for regulators to play.

- ① Where necessary, regulate applications and services, not technologies.
- ② Remove asymmetries in vertical and sector-specific

regulation, creating a level playing field between different service providers, such as telecom, cable, satellite, and terrestrial.

- ③ Stimulate market entry and evolution of personalized managed TV and media distribution.

In order to adapt to new usage patterns, regulators should remove hurdles that prevent consumers from personalizing their media consumption; endorse unbundling of managed TV channel programming as an option to linear or scheduled transmission; improve the publishing rights clearing systems by promoting competition, fairness, neutrality, and efficiency.

By embracing these changes, a modernized market environment will increase incentives for all players in the managed TV and media value chain.

IPTV: So far so good

By Mariette Lehto page 42

► There are presently almost 600 IPTV commercial launches worldwide. The total number of IPTV subscribers grew by 117 percent in 2007, reaching 12.34 million, up from 5.71 million at the end of 2006. Growth estimates vary, but it could be realistic to expect the IPTV market to quadruple at least and reach more than 50 million subscribers by 2010.

At the end of 2007, there were over 6.9 million IPTV subscribers in Western Europe, which accounts for 57 percent of global subscribers. France is the clear leader with nearly 75 percent of all Western European IPTV subscribers. France has almost ten times as many IPTV subscribers as second-placed Spain.

France was not first to introduce IPTV, but at the time of launch, telecom operators benefited from advanced network infrastructure and low cable TV penetration.

These factors made IPTV offerings attractive to consumers.

Competition played a key role in creating the market. Initially, the French market was driven by an aggressive player: "Free," which developed innovative pricing strategies and forced other players to move forward.

A majority of IPTV players are currently focusing their efforts on gaining scale and building subscriber base. Critical mass is vital.

IPTV over ADSL is Swedish-Finnish TeliaSonera's fastest-growing segment. At the beginning of 2008, this operator passed 300,000 IPTV subscribers, almost doubling the subscriber base in six months.

Hong Kong has an IPTV penetration of 59 percent – the highest in the world, and the operator PCCW ended 2007 with 882,000 IPTV subscribers, up from 758,000 at the end of 2006. PCCW's IPTV ARPU grew from USD 18 at the end of 2006 to USD 26 at the end of 2007.

By combining IPTV with social networking features, viewing times are expected to increase and services to become more relevant for the users, which creates new advertising and revenue opportunities for IPTV providers. Big screens and high resolution will make a majority of the e-commerce services more attractive and easier to use.

People are more willing to adopt home security services as a part of multiplay services because of the simplicity and cost savings. France Telecom's Livezoom and télésurveillance are interesting examples of services that show the potential of home security services.

For IPTV providers, new opportunities in advertising are: Targeted advertising, associated advertising, interactive advertising, and advertising associated with specific services such as social networking.

Competition is the biggest >>>>>

»»»» barrier for adoption, and early time to market is a critical success factor. Winning a new subscriber is three to five times easier if the customer has not already subscribed to a similar competitive service offering and possibly committed to a one- or two-year-long binding period.

To attract customers, IPTV providers must come up with more appealing offerings compared to the other players in the market. Still, many IPTV providers are offering the same services as satellite and cable have done for years. From a consumer's point of view, pricing will remain a key criterion, and to a great extent the defining one.

Rethinking is also required through the overall operating environment, including:

- ▶ Service management: Development of convergent services, how does one match mobile "personal media" and TV "family media"?
- ▶ Customer management: Where one subscription becomes several users.
- ▶ Revenue management: How does one manage account hierarchies for residential customers in the billing system?
- ▶ Sales and distribution: How does one sell and provide services through new and existing distribution channels to individual users?

When translating these business requirements into system requirements, it is highly likely that a traditional fixed-system infrastructure will no be longer capable of handling these changes. As a result, a number of systems might need to be replaced.

Patent strategies – a fork in the road toward 4G

By Gustav Brismark and Kasim Alfalahi, page 62

- ▶ The industry is nearing a point when it must decide which way to go: collaboration

and openness, or a completely new business model that threatens key telecom values such as interoperability and scale.

The telecom industry relies on interoperability between devices to ensure communication from anyone to anyone. The way collaboration works is that a group of company representatives sits down to define what problems need to be solved in order to build a new and better system. The companies then go back and start working on solutions to the requirements that were agreed upon.

This way of working means that the best solutions are the ones that constitute the standard. When you have a standard; you have a specification; and the specification defines the market. The market is owned by all the companies that have contributed to the standard.

In standardization, each of the partnering companies must sign a waiver from the beginning, by which they waive their rights to a monopoly and promise to license all of the involved patents on fair and reasonable terms. The companies that contribute the most get the largest share, the biggest return. An important part of this business model is that companies which take part in the development of solutions and products are guaranteed part of the returns instead of gaining a monopoly.

The convergence of the telecom and computer industries has brought new players into the communications arena. Non-telecom companies such as Cisco and Intel also work with standards but in a manner that allows them to dominate their markets.

In comparing the two models, one could say that the Cisco model is like sailing a large tanker, and every now and then somebody throws something out for the others to catch; telecom vendors on the other hand are taking a risk by lining up in a new race

against each other. Standardization starts by defining what problems need to be solved. This leads to concurrent research to find solutions and patent applications to protect these solutions. The commitment to let others use the patents on "fair, reasonable, and non-discriminatory" (FRAND) terms ensures that all can afford to use the solutions in their own products.

Reasonable pricing is critical. Owners of intellectual property recognize that there has to be profit involved, otherwise no one will invest in developing new technology. There is no contradiction here: To acknowledge reasonable total royalty levels is a good deal for you as a patent holder, even if you only take your share of the total, as long as you have your patented technologies in the "winning" standard that reaches a global market.

We think it's important that operators understand this approach and recognize the opportunities that lie ahead in working with open standards. The risk of looking toward the promises coming from Google and MSN is an uncertain outcome.

Working with patents and other intellectual property in an open and collaborative manner is crucial to the future of communications. The way the telecom sector has handled these issues in the past has been a resounding success, exemplified, for instance, by the way GSM has created global mass-markets built on interoperability, open competition, and economies of scale.

Ending the obsession with youth – what do consumers really want?

By Eva Windisch, Erik Kruse, Martin Garner, and Eden Zoller, page 48

- ▶ Consumers are changing dramatically in terms of what they expect from services and how they interact with them.

Their overarching desire is to have more control over services and flexibility in how and when they use them.

There is a shift in how consumers define value: from products to experiences. It is not enough to make a well-functioning product or service; now you must also provide a rich user experience and appeal to consumers' emotions. For instance, people like to be stimulated and have things suggested to them.

Designers have been slow to change their focus from things to services, leading to a divergence between technological intensification and value perceived by the consumer. Designing with people, not for them, can bring new life to the creation of "right" user experiences.

Once technology reaches the point where it satisfies basic needs, it loses its glamour and people start looking for efficiency, reliability, low cost, and convenience.

We live in societies characterized by multiple trends and contradictions that are often two sides of the same coin. Such coexisting trends and contradictions will increase and become more complex. We should expect them not just in society, but in the same person.

Control vs. chaos, collectivism vs. individualism, freedom vs. enslavement, and work vs. leisure are examples of such contradictions.

It is natural that the demand on future services will be to simplify life. So far, digital media have not made life easier – you now need to master and coordinate different devices connected through different networks using different business models.

Users expect industry players to employ business models that are easy to understand, transparent, fair, and priced at a suitable level. There must be a holistic user perspective – people want to use dif-

ferent devices depending on the situation they are in, but they will use and pay for services in a broader context.

Today the industry speaks about mobile internet like it's a new internet. From the user perspective, however, there will be only one internet, and the services they utilize will be compared in terms of content, usability, quality, and price.

For content, consumers request a trial during market introduction. For applications, consumers want to try things out during market introduction. For accessing social networks, consumers want to pay a flat rate for access but nothing for the social network itself. With heavy usage, consumers are willing to pay a premium price and, when fully immersed in the social network, they are willing to pay for add-ons.

In sorting through the sometimes bewildering maze of opportunities and choices that lie in the future, we identify two strong recommendations: (1) The industry should end its obsession with young consumers and (2) get away from thinking that entertainment will be the main source of revenues.

Because of the shrinking margins in film and music, entertainment is an elusive industry where you may not want to be over the long term. A much more sustainable market can be expected from services built on bringing value to people's everyday lives.

Our research shows that there is great potential in services beyond entertainment. Looking further ahead, we see interesting developments such as Near Field Communication transforming the mobile phone into a multi-tool for payments, electronic keys, and tickets. There will also be a multitude of connected devices that will bring new opportunities and many new services to market.

OPINION: a new MobileNet formula is needed

By Philip Sugai, page 52

► The term "mobile internet" has often been used with two different meanings: PC internet connectivity for portable computers, or "simplified" internet capabilities optimized for portable devices.

When the first WAP trials were launched in Europe and NTT DoCoMo launched its "i-mode" service in Japan, there was a true synthesis of the mobile phone platform and the PC internet, creating a new concept of "mobile net," which took advantage of the best of both platforms.

Today's business leaders need to understand what the MobileNet actually is and what makes it so unique compared with other channels.

With the equation Mobile Phone + PC Internet = MobileNet serving as the basis for discussion, we can see that it leads to two critically important corollaries: MobileNet is greater than mobile phone but also that MobileNet is greater than PC internet.

Because MobileNet is more than just the mobile handset or the network through which it operates, the operating model for it must be fundamentally different from that for the 1G or 2G mobile telephone. Operators in Japan quickly understood this fact, whereas operators in the West are only now catching on.

Operators in the West have tried relentlessly to maintain a dominant position relative to content developers. Japanese operators have created a business model that inspires innovation by passing 91 percent of subscription revenues on to content developers.

This combination sparked the development of an amazingly diverse body of mobile content and services that has yet to emerge in any other market.

The hype of the past decade

has focused almost exclusively on the PC internet and its superiority to the MobileNet (owing to its larger screen, full keyboard, and higher computing power), but it can be argued that the PC screen is in effect too big.

To the surprise of those unfamiliar with the MobileNet formula, my own and others' research has shown that the majority of usage is happening at home and at work where there is a "better" PC internet experience just waiting to be had; also, subscribers are more loyal to a content provider when its content is accessed via the MobileNet rather than the PC internet.

All things considered, the MobileNet is poised to become far bigger than the PC internet, but it requires new models and new thinking.

As Apple, Google, and many others bring their focus to the MobileNet, we are already seeing hints about which models will ultimately succeed. However, these may come at the expense of the traditional players in the mobile telecommunications industry.

For network operators, actively embracing the lessons from the MobileNet formula will provide an escape from the dangers inherent in becoming a "dumb pipe" provider.

Although regulators, operators, and manufacturers struggle through the evolutionary process, it is clear that the future of the MobileNet is bright.

A future that includes the power to interact with anyone or anything, anytime and from anywhere, is exciting. But if, at the same time, each of us is openly vulnerable to anyone or anything at anytime and from anywhere, the MobileNet will quickly lose its luster. To date, no operator, handset manufacturer, or content or service provider has solved this dilemma.

Nevertheless, once solutions

are in place, be prepared for the MobileNet to reshape the face of modern business practices.

Mobile payments – reloaded

By Giorgio Andreoli, page 54

► The term "mobile payments" or "m-payments" means a basic service involving an electronic money transaction between two peers (human or machine), enabled through mobile phones. Another way to describe the service is "peer-to-peer (P2P) payments." Based on this definition, it is possible to imagine an m-payment transaction as a basic service that enables more complex value-added services such as m-commerce, m-banking, or mobile remittance. The obvious analogy is with SMS, which as a basic service allows text messaging but can also enable premium services such as ringtones.

The idea of mobile payments dates back to the early days of global mobile communications. A mobile handset could be the ideal way to authenticate end users and generate monetary transactions. This is exactly what happens in real-time prepaid charging systems. But regulatory constraints have almost everywhere left a rigid separation between "(prepaid) phone credit" and electronic money.

M-payments can be broadly categorized into two classes: proximity payments and remote payments.

One of the key issues with m-payments has always been the hybrid nature of "mobile" and "payments" service. That is, m-payments are a family of financial services that in principle could be provided by a mobile operator, a bank/financial institution, or a combination of them in partnership.

Unfavorable regulation has always been a barrier for operators wanting to enter the payments market. This situa-



tion is changing. Since the late 1990s the European Commission and the European Central Bank (ECB) have envisioned the need to progressively deregulate and open the payments market.

The Payment Services Directive (PSD), (EU directive 2007/64/CE) constitutes the legal infrastructure for the Single Euro Payments Area (SEPA) process, and defines a new legal entity that will be allowed to offer payment services: the Payments Institute, or PI. New players will not be requested to set up ad hoc legal entities as PIs but will be allowed to become licensed PIs themselves.

The entry barriers to becoming a PI are expected to be relatively low. In order to operate in an effective way, it is likely that Payment Institutes will be able to access relevant banking infrastructures, such as interbank networks and circuits.

The first strategic choice to be made is which service concept to focus on. Most analysts agree that NFC technology will require at least five years to become widely available. For operators, a SIM-based approach would solidly anchor m-payments evolution within the telecom industry space.

► **Payments and digital signature on one platform.** Having one logical platform that supports both payments and mobile digital signature seems the right combination.

► **Interoperability through a broker.** Interoperability and openness are crucial for long-term market development. In order to achieve them easily and effectively, it is suggested to select a broker-centric approach.

► **Payments broker as PI.** Defining the payments broker as a PI would allow the payments broker to quickly offer a broad range of services without having to implement complex agree-

ments between operators and banks.

These requirements and choices lay the groundwork for a Next-Generation Service Platform (NGSP), the technical infrastructure on which a payments broker should rely, in order to launch and operate SIM-based P2P payments. The NGSP should be the central hub into a multi-operator, multi-bank environment, allowing interoperability and supporting innovative services.

The NGSP can assume a central role within a mobile secure-transactions ecosystem, where m-payments are only one of the services being provided. By combining the abilities to process transactions in real time and to support mobile digital signatures, the NGSP could enable several new services, such as P2P payments, m-parking, transportation and ticketing, m-government, and m-commerce.

Contactless payments can also be supported on an NGSP platform, because some of the capabilities requested (key exchange/key management, dynamic SIM management, identity management, integration with relevant banks' internet services and infrastructure) make an NGSP the natural candidate to host – or integrate with – a “trusted service manager” (TSM) function in a mobile NFC ecosystem.

A radical approach to the mobile core

By Colin Goodwin and Huimin Ng, page 58

► In October 2006, Telstra launched its 3G mobile network offering, branded “Next G.” While not the first 3G network in Australia, the Next G network has become the most successful, forming the largest part of Telstra’s 43 percent mobile market share. Of particular importance is the success of the Next G net-

work for mobile broadband, achieving 60 percent market share and generating 90 percent of the growth in annual mobile revenue for Telstra last year (2007).

Telstra promotes its network as having coverage superior to competitors’ networks, covering more than 99 percent of Australia’s population today. Telstra also promotes its network as having superior performance compared to competitors’ networks. In particular, it has achieved considerable success with the delivery of HSPA services to laptop computers for mobile broadband and internet access, consistently offering faster and faster speeds to subscribers.

Clearly, faster access speeds for subscribers require faster radio access networks. No less important is increasing the capacity and speed of the mobile core network. Without a major core network transformation, Telstra’s Next G network would never be able to sustain the growth in circuit-switched voice and data usage that has been experienced.

Telstra operated two 2G mobile networks, the GSM “Telstra Mobile” and “Telstra CDMA.”

A third, 3G network is operated by 3GIS, a joint-venture company formed by Telstra and Hutchison for this purpose.

In 2005 Telstra announced its intention to reorganize its mobile networks, focusing on growing its next-generation 3G mobile business as the successor to both 2G and CDMA. This has been achieved by building a new nationwide mobile network: a 3G network operating at 850MHz, with a common core that can handle all 2G and 3G traffic.

In 2006 Telstra began the process of making a common core for the GSM 2G network, and the 2100MHz radio access network operated by the 3GIS joint venture. Simul-

taneously, rural subscribers were encouraged to convert from the CDMA network to the new 850MHz Next G network. By April 2008 all rural subscribers had been transferred and the CDMA network was turned off.

Telstra is forecasting a growth of approximately 45 percent in voice traffic and 680 percent in data traffic between 2008 and 2011. To handle this traffic increase in the traditional core network architecture, Telstra would have had to invest heavily in more circuit- and packet-switched core network equipment. However, by making use of new mobile core network technologies, Telstra is able to meet the growth with a more resource-efficient network.

Higher-capacity nodes and improved network design help to optimize the number of sites, resulting in reduced capital and operating expenditure, as well as decreased energy consumption and consequent CO₂ emissions.

The commercial benefits of the new core are: Meeting growth forecasts for voice and mobile broadband usage with lowered capital expenditure, and reduced operating expenditure due to lower energy consumption and more efficient operations.

The competitive benefits are: Faster user access speeds, reduced unit costs for voice and packet traffic, as well as enhanced user performance and reliability.