Communications Review

Discipline for growth

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More competition. Higher expectations. Escalating demand. Despite the incredible pace of evolution in the telecoms industry, revenue growth continues to be a challenge for many operators. Without discipline and focused efforts to make changes and place bets, increasing revenues will remain elusive to many.

Cover image: People practicing Taiji in Shanghai, China.

Communications Review
300 Madison Avenue
New York, New York 10017 USA

Editor
Pierre-Alain Sur

Managing editor
Shelly Ramsay

Contributing writers
Martin Blanche
Nicolas Borges
Stephen Dale
Johnathan Davies
Jose Esponera
Mark Higgins
Anne Murrath
Mohammad Rahman

Designer
Susan Campbell

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Drawing on our accumulated experience, we anticipate and meet the challenges of global regulatory change, and help our clients deal with the impact of industry convergence. We continue to add measurable value to our client relationships through our leadership and innovation, which are evident in our evolving services and products.

To request additional copies of this publication, please contact Shelly Ramsay by e-mail at shelly.ramsay@us.pwc.com. Current and back issues are available for download at www.pwc.com/communicationsreview.

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Message from the editor

While so much in our industry is changing, one thing that remains constant is the ongoing pursuit of revenue growth. Today's hyper-competitive environment consists of new competitors, high – and rising – customer expectations, falling average revenue per user, increasing capital expenditure demands and squeezed margins. That unprecedented combination makes the quest to secure rising revenues both more important and more difficult than at any time in recent decades.

The good news is that opportunities for growth are out there. But that doesn't mean they're easy to tap into. To do so successfully, communications companies will need to make radical changes to how they think and operate, how they focus their resources and make investments, and how they service their customers. And without a disciplined and focused effort to make these changes and place bets, increasing revenue will remain elusive. Given these imperatives, the theme for this issue of *Communications Review* almost chose itself: 'Discipline for growth'.

The underlying engine of revenue growth in any industry is innovation. In our first article, 'Innovating today: a must to regain growth', we get straight to the point. Authors Nicolas Borges and Jose Esponera highlight how most developed telecom markets have plateaued, making innovation the only way to change the dynamics and reignite growth.

The perception in recent years has been that the global, over-the-top providers and the original equipment manufacturers have led innovation. But that isn't necessarily the case. And operators do have the scale and capabilities to compete in innovation – if they become more integrated and deliberate in their innovation strategies and manage their 'innovation funnel' more systematically. Nicolas and Jose conclude by discussing six priorities that operators should target when rethinking their approach to innovation. Companies that apply them like principles will position themselves to take on the global, over-the-top giants in the innovation arena.

As well as formulating the principles of innovation, this article showcases an interview that examines the practicalities of making it happen. In 'Kissing Frogs: open innovation at Wayra', the head of Telefónica's Wayra programme, Gonzalo Martín-Villa, shares his experiences in nurturing and leading innovation. Telefónica created Wayra in 2011 to help accelerate the development of Silicon Valley-style innovation hubs in countries where the group operates. In an inspiring and wide-ranging discussion, Martín-Villa describes how Wayra sustains its innovative edge by being transparent and agile – acting 'at digital speeds rather than at traditional operator speed'. And why is the interview titled 'Kissing frogs'? I'll leave you to read it to find out!

In our next piece, 'Paths to profitable top-line growth', authors Mark Higgins and Mohammad Rahman examine the future of the industry through 2020 and beyond. As carriage-based growth runs out of steam and competition intensifies, the question to be answered is whether operators in developed markets can find a path to top-line, profitable growth. Mapping out the forces and dynamics operators face worldwide, Mark and Mohammad illustrate how the challenge isn't too few opportunities for growth, but too many. They then present six strategic plays for achieving breakout growth, and stress that harnessing these opportunities will require strategic focus and organisational agility like the industry hasn't seen before. The authors conclude that if operators in developed markets don't rise to the growth challenge, they face being trapped in a cycle of decline and defence, which effectively turns them into utility stocks. I know from my conversations with clients that few operators would choose that option willingly.

From the strategic challenges of and opportunities for revenue growth, we turn to what's often seen as a barrier to growth: regulation and, specifically, taxation. In 'Small change, big impact', authors Stephen Dale, Anne Murrath, Martin Blanche and Johnathan Davies examine the biggest single change to the European Union value-added-tax (VAT) regime that operators, broadcasters and other e-services suppliers have seen in decades. When new rules go into effect at the beginning of 2015, they'll present many companies with a stark choice: hike prices to consumers or accept lower profit margins.

Neither option is desirable, so the authors map out a route to help operators navigate the new rules and comply cost-effectively. As they point out, the changes mean the VAT rate in the country where a company is based is no longer relevant. And that change may trigger some companies to rethink their European business strategy and their choice of a global or a European hub. Watch this space.

We round off this issue with the latest in our 'Perspectives' series of interviews with leading movers and shakers in the global communications industry. This time it's Douglas Li, chief executive officer of SmarTone, one of the leading mobile operators in one of the world's most competitive telecom markets – Hong Kong. Douglas describes how SmarTone has managed to become both highly profitable and highly differentiated with customers, and he shares many provocative insights into SmarTone's focus, philosophy and future. Especially interesting is his account of how SmarTone has been leading the market to adopt volume-based charging, with significant success.

As the industry continues searching for new sources of revenue growth, I hope that the articles in this issue will help you refine your thinking and focus your strategy. And, as ever, we'd love to hear your views. So please feel free to get in touch with any of the authors, or to contact me at pierre-alain.sur@us.pwc.com or on [1] 646 471 6973.

Pierre

Pierre-Alain Sur
Partner
Global Communications Leader
PwC

Innovating today: a must to regain growth

Growth has faded in most developed markets in the telecommunications industry. As these markets become fully penetrated and as connectivity services are commoditised, fierce competition arises and efficiency becomes the name of the game.

Growth fuelled by innovation is what's needed to change the dynamics. Telco operators need to put their assets to work and develop a platform for true growth. To succeed, they must combine focused bets with open innovation; establish an 'operating system' for innovation; and extend their monetisation efforts to include managing their intangible assets. Finally, they must collaborate more effectively with peers to strengthen the value of network operators versus other parts of the value chain.

by Nicolas Borges and Jose Esponera

Nicolas Borges is a partner and Jose Esponera is a senior manager in PwC's Communications practice. For more information, contact Nicolas by phone at [34] 915 685 262 or by email at nicolas.borges.marcos@es.pwc.com; or contact Jose by phone at [34] 915 684 400 or by email at jose.esponera.aguilar@es.pwc.com.

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Sculptor at work in a metal shop.

The 1990s through the mid-2000s were the golden years for operators. Everything was in place to deliver substantial results for their shareholders: strong growth, increasing penetration and stable or growing average revenues per user (ARPUs).

That period also was a time of innovation in the industry. Data capabilities were continually increasing, handsets were becoming cheaper and better, and new content and services were easily accessible. Operators themselves weren't leading this innovation, but it helped them grow. Market tailwinds were strong enough to support their growth by piggybacking on the technology players who were leading the innovation.

Over the last five years, this growth story has been nearing an end. Most of the developed markets are fully penetrated. Industry 'net adds' are becoming harder to generate. As operators have to compete for churning customers, their commercial costs skyrocket. Despite all the costs associated with developing and implementing a new technology, advances such as LTE often are offered as a competitive tool to attract customers rather than used as a tool to increase ARPUs. The underlying growth in demand for data isn't being monetised, and ARPUs are declining.

The result is that consumers are getting more for less as operators' share of consumers' wallets is shrinking. Larger incumbents are hit harder as regulators impose an increasing toll through spectrum licences while promoting alternative players that have limited capital-expenditure requirements. These new entrants fight fiercely to win the segments of the market that are the most sensitive to price and value.

What's even more important in this no-growth environment is that operators are seeing their traditional industry allies become competitors. In the golden years, the innovation of the original equipment manufacturers (OEM) inspired new forms of consumption. And the content and services that the over-the-top (OTT) players offered generated demand for connectivity. Today, the same players are competitors in a complex and fierce war across the telecom value chain. The advantage of scale, also, is tipping in a different direction, as global winners such as Apple, Samsung, Google and Facebook emerge in adjacent areas of the value chain. Even the largest operators fail to match the reach of these companies.

In this context, innovating has become a requirement for growth. The good news is that operators still have very significant strengths on which to build.

For one, despite the industry's failure to monetise the growth of data consumption, the truth is that connectivity is more valuable to consumers than ever. An operator's rich customer base is a coveted asset for players coming from other areas of the value chain. Another strength is the ability to reach customers anytime and anywhere. That ability lies at the core of the social-local-mobile revolution. Even the extensive physical distribution channels, which might have been looked at as an expensive but unavoidable cost in the past, have become differentiating assets impossible for competitors to replicate.

But having these assets isn't enough. We believe that operators must turn the assets into a true growth platform through focusing their innovation efforts; creating an ecosystem for open innovation; developing an innovation 'operating system'; building a porous innovation organisation; managing today's intellectual assets; and fostering industry-wide collaboration.

Focusing innovation

Over the past 20 years, many operators have been stand-by participants rather than innovators. They've generated very few significantly innovative ideas, products or technologies that have helped influence the industry as we know it today. The most significant changes have occurred as the innovations of global giants from adjacent industries such as Apple and Google have reshaped the industry. At the other end of the spectrum, smaller focused players have occupied a sliver of the industry by changing established paradigms. For instance, WhatsApp has left traditional SMS out of the game in many markets.

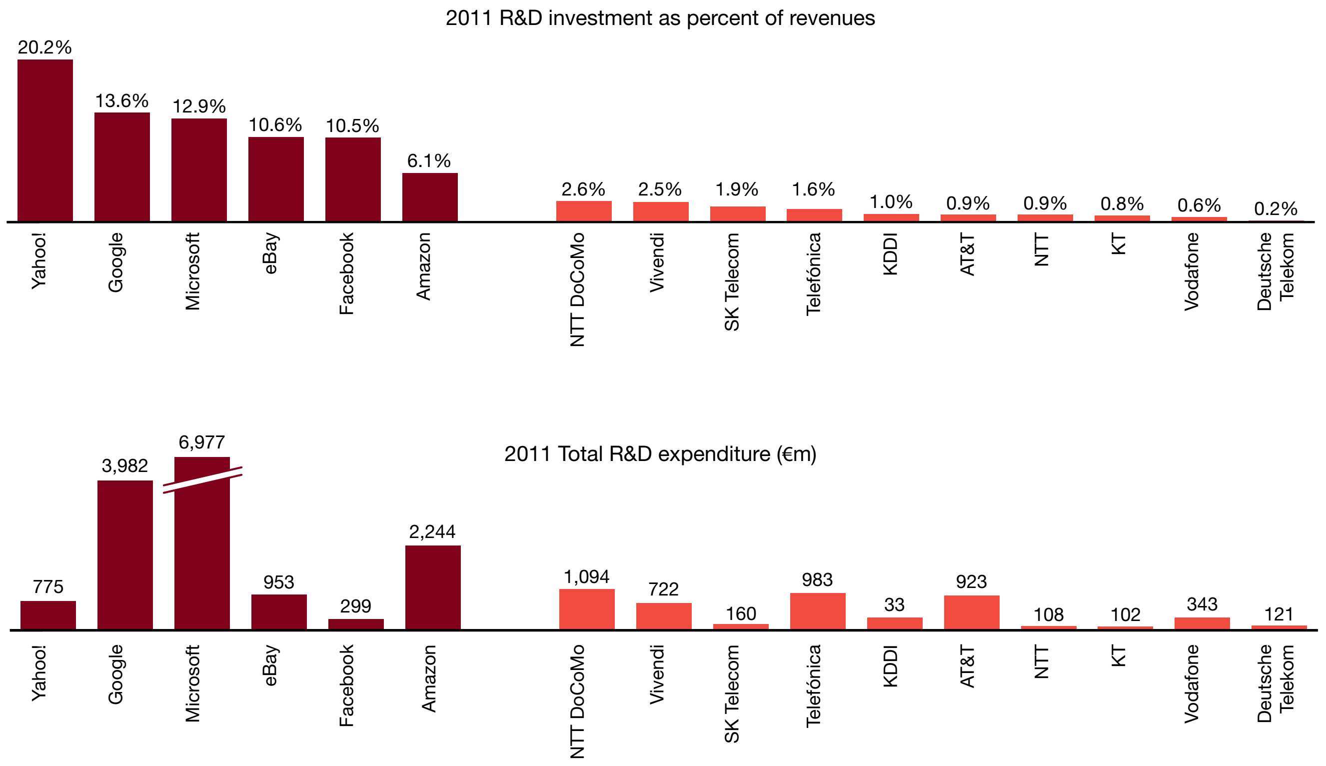
But, why is this happening?

OEMs and OTT companies tend to invest a higher percentage of their revenues in research and development. But if we look at absolute spending, only Microsoft, Apple and Google boast budgets that are significantly greater than those of the larger operators. For example, Facebook's research and development budget in 2011 was just 30% of the amount AT&T invested (see Figure 1).

Yes, the global nature of the leading competitors in the value chain is an advantage, but operators have sufficient scale to be relevant. The problem lies in the excessive fragmentation of their efforts. Winning in a global marketplace for applications and services requires global scale. Operators need to be more deliberate in their innovation strategies and to manage the 'innovation funnel' more systematically. They need to make big bets on focused technologies to deliver solutions to clients under a strategy-driven perspective.

A good example of the type of bet needed in today's environment – and among the most-often cited examples of innovation by operators – is M-PESA. Developed by Vodafone in Africa, M-PESA is a mobile money-transfer system that focuses on the unbanked population of emerging markets. In 2012, the system had 14.4m clients worldwide. When we look at some successful new product innovations coming from operators, we find a clear pattern of anticipation arising from a market need, which is then combined with focused, sustained investment.

Figure 1: Research and development revenues and expenditures 2011



Source: Bloomberg, PwC analysis.

Another global trend among operators is the establishing of 'innovation spots' to attract and develop state-of-the-art technologies and solutions. The American operator Verizon has built its Innovation Centers around what it believes to be a real game-changer: LTE. The whole idea is framed under its Verizon Innovation Program, which aims at building the fastest, most advanced 4G network in America to deliver a new world of services and solutions.

AT&T's bet on e-health is another good example of a strategic choice supported through implementation and with a high level of ambition. AT&T's e-health programme, ForHealth, raised US$5bn in revenues in 2011. That was after working together with large hospital systems and other healthcare organisations to enable innovative services such as quicker, cloud-based access to medical images and fast, secure electronic sharing of medical records.

What these examples have in common: a substantial and sustained bet behind a clear goal. Innovating at scale requires making true strategic choices, selecting the fields to play and aligning sufficient resources.

Building an ecosystem for open innovation

Just as more focus is needed to innovate at the scale required for the global nature of new telecom products, openness is essential to respond to the enormous breadth, complexity and need for speed in innovation today.

Operators must look outside their traditional boundaries to capture knowledge and talent. They should explore a wide range of sources for ideas, from customers and suppliers to acquiring companies with good ideas in their pipeline. Operators' strengths – deep pockets, expertise, channels, a customer base and a wide footprint – can bring a lot of value to the table when engaging external partners.

Companies following this path should also have a broader network connected to innovation communities, such as France Telecom's innovation centre in Silicon Valley or Telefónica's office in Israel. Often they'll have their own 'corporate venture capital' fund as a core part of their innovation strategy. And they'll build an ecosystem designed to nurture innovation, inviting other communities to participate in their innovation process.

For the German telecom giant Deutsche Telekom, product innovation is one of its main strategic objectives. This orientation should help the company both prepare for more growth in the digital markets and identify new revenue streams from non-core business. In 2012, Deutsche Telekom launched a new incubator programme, Hub:raum, to achieve open innovation through close linkages with Berlin's flourishing technology scene. Its focus, then, is mainly on Internet services and digital media.

In Berlin, the company aims to partner with 10 to 15 new businesses per year, offering them access to start-up funds of up to €300,000, expert mentors, skill sharing through co-working and access to an extensive distribution network. Linking corporate entrepreneurship and the Berlin start-up should help identify innovations and growth markets at early stages and develop new business ideas. Deutsche Telekom executives see Hub:raum as an important interface between the flexible, fast-acting start-up scene and the company's internal product development.

Another company with a growing innovation ecosystem is AT&T. Traditionally, AT&T has been recognised for developing innovation from within. An example is The Innovation Pipeline (TIP), which stands out as an internal source of innovation. TIP is a website that lets any AT&T staff member submit an idea or vote for others' ideas. The programme has generated and enhanced more than 14,000 ideas since it was launched in 2009. As just a few of the ideas have been developed commercially, TIP's main objective might not be business purposes as much as fostering and integrating a culture of innovation in the entire company.

Today, AT&T realises that it can capture ideas from outside the firm as well. The company offers entrepreneurs an opportunity through the Fast Pitch initiative: short sessions where anyone can present ideas. If the company selects a pitch, the entrepreneurs become part of the AT&T Foundry, a two-year-old, US$80m fund. The Foundry is present in three locations – Texas, California and Israel – and brings specialists from the company together with external developers to work on projects with three times less time to market than is typical for AT&T Labs ventures.

Telefónica's Wayra is another interesting initiative. Established in 2011, it accelerates entrepreneurial projects based on ICT. Wayra helps talented entrepreneurs not only accelerate their projects by collaborating with industry experts, but also offers financial support through an innovation funding network for Latin America as well as Spain and other European countries. Wayra provides infrastructure, management support and an appropriate working environment.

In March 2013, we had the opportunity to interview Gonzalo Martín-Villa, the global leader for Wayra, who shared the challenges of building an open initiative from an operator's traditional perspective. He also discussed the rewards that come from having access to innovation as well as from strengthened links to other communities and to institutions *(See Kissing frogs: open innovation at Wayra)*.

Developing an operating system for innovation

Open innovation models give access to new resources, improve the time to market and reduce strategic and investment risks. But for greater access to be effective, members of the ecosystem need simple interfaces that let them use an operator's distinctive resources. Similarly, in-house innovation teams need a simpler and faster way to make good use of the company's core assets.

Operators that want to grow by innovating should invest in developing a broad set of APIs that includes not only the network but also standard conditions for accessing distribution channels, a systematised plan for introducing products in the call centres and incentive systems designed to make introducing new products meaningful for sales agents.

In PwC's *Technology Forecast* 2012, Issue 2, we discussed the role of the application programming interface (API) in exploiting the growing value of information by developing a platform for co-creation and scaling integrations. One of the examples we analysed was AT&T's API programme. By opening up core capabilities (payment, locations, messaging and speech recognition), AT&T has created a digital platform that supports an ecosystem of network-related services that already processes more than 4.5bn API calls per month.

Besides digital information and services (transactions, consumption patterns, geolocation and billing), operators have a set of physical assets (customer relationships, field forces, sales forces and distribution channels) that are also a platform for innovation. The physical assets are difficult to use effectively, not only for third parties but even for the operator's internal innovation teams.

Let's consider an operator trying to sell a new machine-to-machine (M2M) service through its traditional business-to-business (B2B) sales force and analyse some of the challenges:

- The amount of revenues expected from these products is small compared to those of traditional connectivity services, as the salesperson usually works on commission over volume.
- To sell these services, salespeople often need to engage different buyers within the client's organisation. The value of an M2M solution tends to result from processes being improved by the use of its technologies (e.g. remote metering and fleet management). Often, the buyer is the business owner of those processes instead of the information technology or general purchasing manager. Salespeople aren't likely to have access to these buyers, or to the skills needed to engage in a different conversation than they're used to having.
- The *time to revenue* of these sales is often long, as the products are still being defined and the integration with the existing network and billing systems may not be ready yet.

In a nutshell, gaining access to distinguishing assets effectively is very difficult. And yet, if operators don't manage to differentiate themselves by getting and using those assets, they're very unlikely to succeed against global specialists playing over the top.

A possible solution is to extend the concept of APIs from the digital to the physical world, creating what we call an innovation operating system. This would be a set of interfaces that connect operators' assets with internal and external product developers. Operators that want to grow by innovating should invest in developing a broad set of APIs that includes not only the network but also standard conditions for accessing distribution channels, a systematised plan for introducing products in the call centres and incentive systems designed to make introducing new products meaningful for sales agents.

Operators shouldn't forget what today's competitive environment demands. They face a huge opportunity cost if they fail to turn their physical assets into an innovation platform for their internal product-development units and third parties. Using APIs to build bridges to innovation could help make sure that both in-house and external innovation succeed in terms of delivery, monetisation, the time to market or the day-to-day work approach.

Organising for innovation: the 'porous' approach

Another challenge for operators is how to change the internal pace of the company. The control-oriented management style that's well suited for traditional connectivity services clashes with the fast-paced decision-making requirements of innovation today.

Creating a separate organisation to focus on new services is generally accepted as a good practice. One of the operators following this route – MegaFon, a leading mobile operator in Russia – formed Megalabs as a means of reducing the time to market and of gaining flexibility. Opened in 2011 as a single centre for innovative creation, Megalabs is responsible for experimental development and launching new value-added services through partnerships with young entrepreneurs and well-known market experts. It focuses on bringing products to market in areas such as digital content, cloud and M2M services, and e-finance and e-health.

Nurturing new products in dedicated organisations may not be sufficient for operators. The advantages of agility and focus are clear, but so is the increased difficulty of reaching out to operators' privileged assets we mentioned before. Those assets create the edge for competing against the OTT players.

So, operators need to build a 'porous' organisation. That means an organisation that both external innovators and functional groups within the company find highly permeable. An organisation that balances the innovation processes – independent, needing a different culture to thrive – with making the best use of the current strengths of the operator. This is the elusive, but crucial, challenge.

Managing intangible assets

When we think about capturing the value from innovation, we've typically thought of business models and monetisation. But as operators become more active in developing their own innovations (individually or collaboratively) rather than just applying what others have developed, other elements become important.

Managing intangible assets is a critical element of managing innovation. But, in this day and age, what exactly do we mean when we talk about intangible assets?

The answer is no longer cut and dry. Intangible assets can cover not only patents, trademarks and utility models, but also intellectual property and content, and information and processes. Industrial and trade secrets also can be considered know-how because of the special value they add to a company.

Many companies – overlooking the opportunity to maximise their intangible assets – have been focusing only on registering and protecting

PwC employee multi-tasking in Istanbul, Turkey.

legally what they're accustomed to identifying as assets. Personnel from the business development or production areas are focusing on innovating new products or services, or on improving quality and optimising their current portfolio: they focus on what they do, but not always on the value of what they're creating or on what they have. New assets (such as databases, know-how and software) are being developed as a result of many routine processes, although they're not always identified. Practical examples of these assets include indexed and segmented information generated from current and new businesses, and ancillary software developed in the course of an internal process that finally becomes essential to make the process run. Internal know-how is another – such as market knowledge and human-resources evaluation models that are within the company's culture but are neither identified nor protected.

By properly identifying and valuing those kinds of assets, a company can boost its balance sheet, secure more efficient financing and reduce both costs and tax impacts. Intangible assets are the ideal vehicle for safeguarding a long-term competitive advantage. And when they're managed correctly and proactively, intangible assets can form part of a company's strategy and can generate new revenue streams.

For instance, an operator could grant subsidiaries licences on know-how that it developed but that it hasn't properly identified yet to create extra revenue and/or tax benefits. Simply by identifying which company activities generate internal knowledge or brand recognition or create some type of value the competition doesn't have, companies can identify which of their activities are able to generate intangible assets.

Based on that kind of an initial mapping, a company can take a series of measures to enhance the assets' value, both in practice and on the balance sheet. An operator can start by registering and protecting its intangible assets and, by means of identification, acknowledgements and other actions, can meet the final objective of showing their real value – making the intangible assets 'tangible'.

Meeting an individual and collective challenge for operators

In the long term, the ability of operators to deliver value to shareholders is more likely to depend on how the industry value chain evolves than on how a single operator performs within the boundaries of the value chain. The battle between network operators, OEMs and OTT players will determine the health of the industry. Leading operators that can shape the industry's behaviour should also look at how their approach to innovation in their company could affect the entire industry.

There are some notoriously unsuccessful efforts in this area, like the Wholesale Application Community (WAC), a platform to let developers build applications compatible with any mobile device, operating system or network. Unfortunately WAC is not a success story, probably because of its complex process based on consensus. The more recent coordinated effort around Joyn – the not-over-the-top instant-messaging platform that eight global operators developed and supported – still has to prove that it can gain a position for operators among messaging platforms.

An interesting initiative is the Open Web Devices that Mozilla and Telefónica presented at the 2012 Mobile World Congress, and which several operators and handset manufacturers later joined. Building an open operating system for mobile devices with web-based architecture as an alternative to the current closed mobile ecosystems is, for operators, a critical component of supporting innovation and regaining competitive ground. But, in search of faster deployment, this initiative has been developed not as a consensus effort but as a project with strong backing from a few leading industry players and then opened to the rest of the industry. Operators and OEMs are jumping on the bandwagon almost every day, and launches are planned for mid-2013. But we'll have to wait and see whether Open Web Devices can gain ground over Google's Android and Apple's iOS.

Whether with these initiatives or others, network operators need to act decisively to increase the value they're capturing across the value chain. To sustain growth, they need to retain a larger portion of the increasing value created for consumers within the scope of telco operators. And considering that OEMs and OTT players are the de facto main competitors for the profits the industry will generate in the future, the approach to developing standards, to regulatory management and to competitive pricing needs to be changed.

Conclusion

Operators need to take an active approach to innovation as a source of growth. They need to rethink their innovation model along six priorities:

1. **Focused innovation.** With research-and-development budgets similar to those of OEMs and OTTs, operators have brought to light no major industry-shaping innovations during recent years because of their fragmented efforts. New services are globalised and they require innovating at scale. Operators must review their innovation strategies and place their bets.
2. **Open innovation.** Even internal innovation efforts that are well focused won't be enough. Operators need to tap into the external world and promote innovation ecosystems to make sure they achieve the required reach and speed.
3. **An operating system for innovation.** Enabling external and internal innovation teams requires easy interfaces to make operators' privileged assets accessible. Winning operators will create an innovation operating system that uses APIs to open digital assets to third-party developers and that creates API-like interfaces that make access to physical assets easy for both internal and external development teams.
4. **The porous organisation.** To win at innovation, operators will need to have organisations dedicated to and focused on innovation and operating at a different pace than the company's traditional core. But these organisations can't work in isolation or they'll risk turning into just another OTT player with no special advantage. Operators need to connect their innovation units to their core through soft and hard connection channels.
5. **Intangible assets management.** The next wave of monetisation needs to extend to activities that generate internal knowledge or brand equity. Operators need to identify and map these activities in order to legally protect them and enhance both their practical and their financial value.
6. **Competition in the value chain.** For the long term, operators should be concerned about how the industry value chain will evolve – and their battle with OEMs and OTTs. They need to foster industry-level efforts both for their own competitive benefit and for the health of the industry.

Kissing frogs: open innovation at Wayra

An interview with:

Gonzalo Martín-Villa

Wayra was created by Telefónica to help accelerate the development of future Silicon Valleys in the countries where Telefónica is present. Created in Latin America in April 2011, Wayra aspires to identify ideas with the greatest potential in ICT and to boost their development by giving them the technology, mentoring and financing they need. Wayra is present in twelve countries – Argentina, Brazil, Chile, Colombia, Czech Republic, Germany, Ireland, Mexico, Peru, Spain, UK and Venezuela.

Here, Chief Executive Officer Gonzalo Martín-Villa, gives insights into Wayra's process for evaluating and investing in projects and the relationship that the organization has with the rest of Telefónica.

Communications Review: Tell us about how Wayra works and which projects you invest in?

Martín-Villa: We say that Wayra is like 'kissing frogs', but the other way around. We believe that all of our projects have the potential to be princes, but we know that the startup and entrepreneurial world is a hard one, and many of them will become frogs at the end. The princes we're after are small innovations that can make a difference. We look for projects that are disruptive and scalable. To select a project, we need to see a blueprint of a business plan, and the idea should have a large potential market and should meet a specific need. Above all, we look for teams that really know each other and have defined roles from the beginning. Team issues are the main cause of project failures.

We've received over 17,000 applications to participate in one of our Wayra Academies worldwide. From this pool we've invested in 231 projects, investing on average US$50,000 per project.

We have a pretty well-oiled process to funnel the projects. Each round starts with a global call for projects, using an online platform that performs several quality checks and interacts with entrepreneurs to make sure prerequisites are met. After this, we engage in a preliminary analysis, in which a large number of Telefónica employees (Wayra friends) volunteer to help us analyse projects. Each friend analyses 10 projects, and each project is independently analysed by four to five friends. This is important not only because screening such a large number of initiatives would be very difficult, but also because it brings Wayra and the Wayra spirit to the broader Telefónica organisation. Each project is also analysed by Wayra local offices.

After this preliminary selection, the Top 50 projects undergo a strategic and business analysis through the corresponding vertical business units and operating companies, where 30 projects are then selected. (The vertical units are our internal innovation areas. Each one focuses on a family of digital business opportunities, such as cloud, machine-to-machine and e-health.) The 'Pre-Wayra week' is convened with the aim of Telefónica – Wayra staff, HR and legal specialists – meeting the teams, and then reducing the group to no more than 20 projects. Those projects are presented to an external jury, which chooses up to 10 for the final cut.

The selected teams then join our academies. There, they accelerate building their businesses within vibrant communities supported by expert resources and other means that Wayra puts at their disposal, such as legal support and financial advice.

Communications Review: What was the main reason for Telefónica to create Wayra?

Martín-Villa: There isn't a single reason that led us to Wayra. Back in 2011 when we came up with the idea of creating an incubator, we saw that it was a great fit for several of our objectives.

First, it was about discovering products and services for Telefónica to sell or use. Despite having a large research and development department, we don't have enough resources to cover all relevant areas. In this sense, Wayra is an antenna to what's out there, to seeing what new business models will look like in six months. And six months is a good time frame for the future in today's fast-changing environment.

An equally important goal was for Wayra to foster Telefónica's internal transformation in terms of corporate culture, processes, reputation and even branding – especially with the younger generation. We had been talking about the need to be a more innovative company for years, but with Wayra, we weren't just talking about it. We were doing it and showing it visibly. It's very hard to measure this impact, but we believe that it will be large.

Of course, Wayra was also designed as an investment opportunity. It brings us investment projects, some of which will generate significant returns. Nevertheless, we have to manage expectations, since we're talking about long-term returns and high uncertainty.

Last, but not least, Wayra was meant to play a significant role in our corporate social responsibility agenda. We're a large agent in most of the countries in which we operate, and we need to be part of the social and economic fabric of those societies. Wayra allows us to contribute in the way we know best: by developing a stronger ICT sector, supporting economic growth and helping communities to retain local talent. For reference, Wayra has already created 3,000 direct and indirect jobs and 181 start-up companies. This is especially important given our footprint in Latin America, where the first Wayra academy was created. The local talent lacked opportunities to develop entrepreneurial initiatives, and Telefónica came to fill this gap.

Communications Review: How is Wayra organised? How big is the team?

Martín-Villa: Well, we're a start-up ourselves and we're building Wayra as we go along. We have strong backing from Telefónica but we operate as a small start-up, and one of our challenges is keeping a lean operation, never losing the flexibility and agility we need to be successful. Wayra's global team consists of 15 people. This team is responsible for the process and manages it in a very standardised fashion. When we try something new in one of the selection rounds or one of the academies and find that it works, it immediately becomes a global change. For example, a start-up tracking model was developed in Ireland and then spread worldwide.

In addition to the global team, each of the local academies has one director and usually one or two support people. All in all, there are about 30 to 40 people fully dedicated to Wayra worldwide – a small team. But we have a large number of collaborators, both within Telefónica and outside, including those involved in the filtering process and the external jury that leads the final selection. We also collaborate with consultants and business schools. Nowadays, many people want to be part of Wayra, and we have to be strict and say no if they don't meet our criteria for adding value to both Wayra and Telefónica.

Communications Review: What's the relationship model with Telefónica? What works differently?

Martín-Villa: Wayra sits as a unit within Telefónica's Strategy Department, but we've operated autonomously from the beginning. We've established clear linkages with the rest of Telefónica, such as in defining the criteria to select companies we invest in, or getting the support of Telefónica's personnel in selecting and coaching companies we finance. At the same time, we realised we need to be different. Despite Telefónica being a leading company in many areas, its mentality and many of its processes couldn't support Wayra. You can't use the same procurement process for launching a start-up with a €2,000 pilot as you do for purchasing 10m handsets.

Our approach to start-ups has to be different. We try to be very transparent and agile since speed is crucial for innovation. If we don't see the fit with one project, we need to answer at digital speeds rather than at traditional operator speed. A week's response time may be a best practice in many of our internal processes, but it's an eternity for a start-up. They can't wait – and if we aren't fast, they may go to a competitor.

Even Wayra's image and logo are distinct from Telefónica's. We see Wayra as a small grain of sand in Telefónica's transformation process – small, but powerful. And the logo has become one of the icons of the transformation.

Communications Review: Telefónica has set up Telefónica Digital as a separate unit to help develop new digital businesses. How does Wayra relate to Telefónica Digital and the broader Telefónica organisation?

Wayra was meant to play a significant role in our corporate social responsibility agenda. We're a large agent in most of the countries in which we operate, and we need to be part of the social and economic fabric of those societies. Wayra allows us to contribute in the way we know best: by developing a stronger ICT sector, supporting economic growth and helping communities to retain local talent.

Martín-Villa: We share the same objective with Telefónica Digital, enriching Telefónica's product portfolio. For this reason, we're closely connected, especially in selecting the projects in which we invest.

We assign mentors from the vertical business. In the beginning, meetings were conducted under a general perspective, but they've been gradually focusing on specific issues. And these specific issues are priorities set by Telefónica Digital.

Regarding the rest of Telefónica, you have to realise that one of the key elements of Wayra's value proposition to the entrepreneurs is our asset base. When Telefónica backs an initiative, it brings more than 300m potential customers, strong channels, support, contacts and so forth. Yet we need to focus on how we work with the operating companies. If we present projects that generate interest (demand), we can get others in Telefónica involved who will make an effort to open channels and provide access to other resources. The staff of Tuenti, our social network company, gives us simple but very useful tools that help us with problems we encounter and that they've faced before.

It's also important to note that we have the cooperation of Telefónica staff. The start-up world is very attractive and many people are interested in getting involved. This collaboration is crucial for us because Wayra is not staff intensive.

Communications Review: How do you manage such a large portfolio?

Martín-Villa: We've grown so quickly that we're now facing the challenge of our success. With close to 200 investments, we've been forced to create new processes that we're now implementing.

We have a tiered approach to our portfolio now. We've identified approximately 10% of our portfolio as high-potential projects, around 60% as average potential and approximately 30% as low potential. This ABC model allows us to focus our attention on the "A" group while managing for divestiture of the "C" projects. Yet this world moves so fast that an "A" project can become a "C" project within two months. We maintain them because we've already made the investment, but we'll probably have to remove them from our portfolio in the future.

Communications Review: All in all, how would you describe the impact of Wayra on Telefónica?

Martín-Villa: Wayra's impact at the financial level will hardly change Telefónica's income statement, even with a 10x return on investment. But Wayra is already changing Telefónica. The innovation gene is spreading throughout the organisation. Our people are much more aware of what's happening in the digital world, and Wayra is helping us see that as part of our core rather than as something external to us. In a few years, we'll also see Telefónica's portfolio change because of Wayra. A good indicator of this impact is that today we have business managers at Telefónica asking us for new projects. The traditional Telefónica is asking for more Wayra.

If Telefónica weren't developing Wayra, we would have to do something similar. Our environment is moving so fast that without initiatives like Wayra, it would be difficult to have a finger on the world's pulse. These days, open innovation isn't just a new approach to an old need – it's a requirement for survival.

Gonzalo Martín-Villa has been Wayra's chief executive officer since 2011. In 1997 he joined the Legal Department of Telefónica Internacional. Later he became the Legal Director of Telefónica Moviles Mexico. In 2006 he joined the technical office of Telefónica Latinoamérica's Chairman.

Gonzalo holds a degree in Law (1990-1995) from Universidad Complutense de Madrid, LLM from Georgetown University (1996-1997) and an MBA from IESE Business School – University of Navarra (2005-2007).

For more information, visit www.wayra.org.

Paths to profitable top-line growth

Over the last five years, revenue growth has stalled in the low single digits for most leading telecommunications companies in developed markets, as the carriage-based growth engines of mobile and broadband have started to run out of steam and as competitive intensity has increased. In these markets, companies face traditional competitors as well as disruptive, low-cost entrants, unrelenting price pressure and the decline of profitable fixed-line revenue streams. Some have been able to achieve higher growth of EBITDA than of revenue. But that has resulted largely from reducing costs – a strategy that ultimately has its limits.

So, what of the decade ahead? As we move towards 2020, will we find more of the same? Or can companies in developed markets find a path to achieve top-line, profitable growth?

We believe there's considerable room for optimism.

by Mark Higgins and Mohammad Rahman

Mark Higgins is a partner and Mohammad Rahman is a senior consultant in PwC's Management Consulting practice. For more information, contact Mark by phone at [61] (3) 8603 3492 or by email at mark.higgins@au.pwc.com; or contact Mohammad by phone at [61] (3) 8603 0258 or by email at mohammad.rahman@au.pwc.com.

Cycling near the Monument to the Discoveries and 25th of April Bridge, Lisbon, Portugal.

The telecommunications market is rapidly changing. Customers' needs are shifting, innovation in technology and services continues and battles are being fought across the industry to dominate the digital value chain. The combined impact of those changes will open up a new set of possibilities for growth on both a regional and a global scale.

Predicting the future is fraught with difficulty. Disruptive change, by definition, is impossible to predict. Eight years ago few, if any, industry observers anticipated the rise of social media or the impact that Apple would make by sparking innovation in mobile phones and the tablet revolution.

Although uncertainty is a fact of life, we believe there are a few critical trends that will define the market of the future (see Figure 1).

On the demand side, a number of trends stand out (see Figure 2). The geopolitical power shift towards Asia and Africa, the maturing Facebook generation, the need to put 'big data' to work and the increasing importance of mobile commerce will shape the telecoms industry of the future.

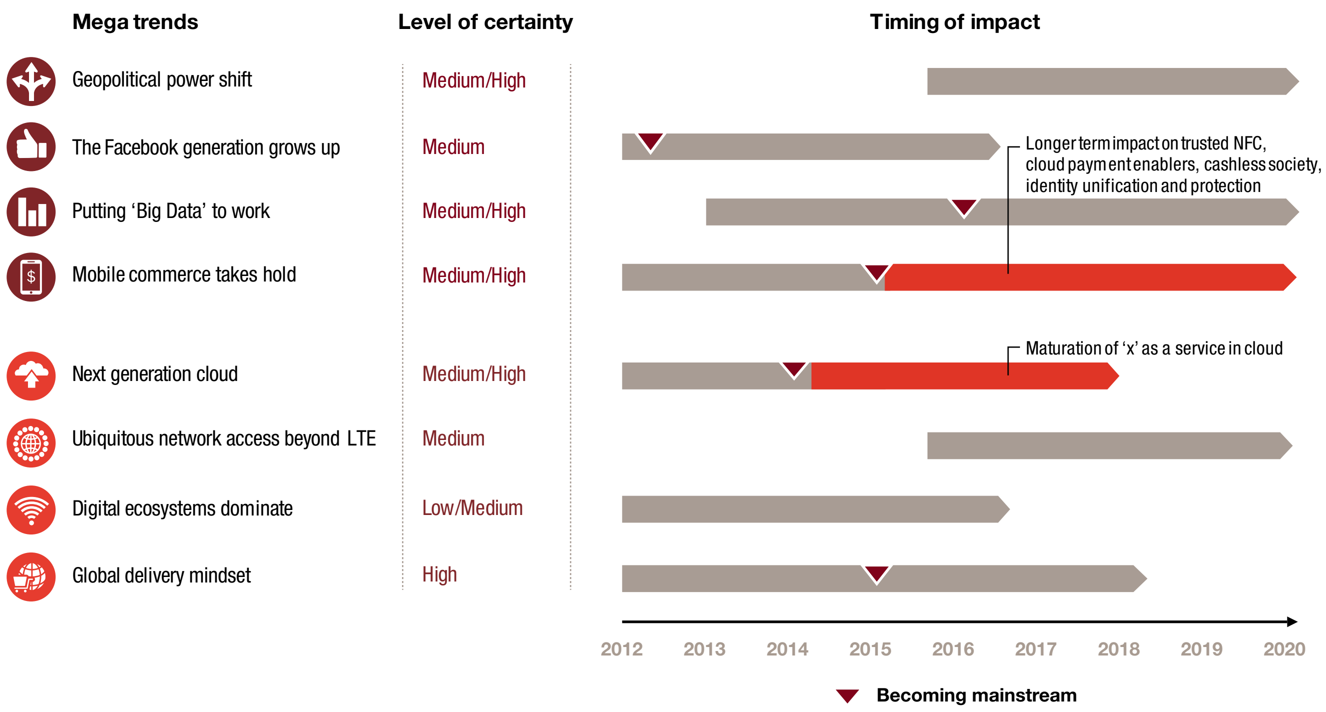
The shifting economic balance. With the gross domestic product of the E7 (China, India, Brazil, Mexico, Russia, Indonesia, Turkey) expected to reach US$138tr by 2050, and China to contribute more than 40% of that, the shifting economic balance is staggering.[1] Two-thirds of the world's middle class will reside primarily in Asia by 2030.[2] Consumer spending will increase as this growing middle class demands better quality of life. What does this mean for the telecom market? Asia will account for 3.5bn mobile subscriptions out of 6.8bn in the world.[3]

The maturing Facebook generation. We'll experience significant changes in the way we go about our lives as the Facebook generation grows up. We're seeing an increasing convergence of place and space in, for example, e-health, online education and telecommuting. This trend will put new demands on the traditional services along with telecommunications. The need for high-bandwidth connectivity continues to increase, as does device-agnostic access and application platforms that support these trends.

What to do with all the 'big data'. As the quantities of digital information continue to increase, businesses feel more pressure to put the data to work. On the consumer side, monthly data traffic is expected to grow at a 66% compound annual growth rate (CAGR) from 2012 to 2017, reaching 11.2 exabytes. Approximately 66% of that will come from video streaming.[4] Enterprises are facing a growing volume of data, and operators are at the forefront of this data boom. All the data are passing through the industry's infrastructure, often with the potential to add valuable attributes like demographics and location.

The coming of age of mobile commerce. As mobile commerce becomes part of the mainstream, analysts have forecast the number of mobile payments to reach 17bn in 2013.[5] With approximately 50% of the mobile subscriptions, Asia is in the forefront of the m-commerce boom. By the end of 2013, there may be as many as 300m NFC-enabled mobile phones.[6] Once again, operators are well positioned to benefit from this phenomenon.

Figure 1: Mega trends defining future markets



Source: PwC analysis.

Next-generation cloud services. Supply-side trends (Figure 2) point to a battle emerging in generating revenues and profits in the adjacent markets. The emergence of next-generation cloud services, dominance of digital ecosystems, ubiquitous network access and an increasingly global delivery mind-set will reshape the industry landscape.

In a recent PwC survey of companies, 77% responded that they had a cloud plan.[7] As next-generation cloud services emerge, more and more services are going to move to cloud. 'Anything-as-a-service' – where cloud replaces client/server – will become the dominant model for delivering applications and services. While the majority of workloads aren't yet ready for cloud, they'll be ready in three years. Operators need to position themselves for that change now.

Ubiquitous network access. Already we're hearing speculation in the industry about the next generation of wireless networks. Although ITU hasn't officially defined 5G, what's expected is that it will provide ubiquitous network access with intelligent networks that can handle billions of connected devices at once in a stable and operational environment. This capability will complement the demands of the future by providing high-speed Internet access over a vast geographic area.

The fight for the digital ecosystem. The fight to dominate the digital ecosystem is heating up. Industries like technology, information technology, retail, financial services, media and entertainment and telecoms are witnessing shifts to the usual business models and increasing digital revenues. Over-the-top global giants like Google and Apple are dominating digital, eating into revenue and profit pools that telecom and media companies traditionally have dominated.

A global delivery mind-set. Finally, on the supply side having the mind-set to deliver globally will become critical as companies pursue international markets and continue to use offshore sourcing models to save on costs. But we may well see totally new operating models. SingTel, for example, recently restructured along regional lines to break down barriers to collaboration between the national carriers in its portfolio.

A world of opportunity emerges

The interplay of demand and supply-side trends suggests to us two distinct growth arenas for the industry in 2020.

The first is the fast growth in developing markets – growth that will continue to fuel above average growth rates for players in those markets. It also will create opportunities for companies from developed markets. That's a well-worn path and the growth route many companies have chosen when their home markets have hit maturity. Our trend analysis suggests that

Figure 2: Mega trends affecting supply and demand

Mega trends

Demand trends	Geopolitical power shift	• Economic strength • Population growth • Emerging middle class	• Urbanisation • Asia telecoms revenue
	The Facebook generation grows up	• Everything mobile • Social change	• BYOD at workplace • Place-space convergence
	Putting 'Big Data' to work	• Digital information • Mobile data traffic	• Enterprise generated data • Automonic systems
	Mobile commerce takes hold	• Mobility at heart of how people connect • M-commerce growth	• Smart device and NFC • Mobile wallet substitute for cash
Supply trends	Next generation cloud	• Cloud services maturing • Anything as a service	• Rise of cloud brokerages • Mission critical workloads cloud readiness
	Ubiquitous network access beyond LTE	• Pervasive networks • Intelligent mobile networks	• Unified global standard
	Digital ecosystems dominate	• Digital business model matures • OTT giants dominate	• Traditional revenues impacted • OSS battle polarises
	Global delivery mindset	• Integrated global delivery model • Talent management	• Organisational agility

Source: PwC analysis.

opportunities will continue to arise for mature operators to acquire and add value to assets in developing markets, particularly Africa. That's a game, though, of replicating the core telecom business model.

The second arena, and in many ways the more exciting, is the battle for control of critical revenue and profit pools along the digital value chain. We're entering a new era of convergence, in which industries will collide and compete to stake out winning positions in emerging digital ecosystems.

From a traditional telecoms standpoint, this arena will create exciting opportunities to act as solution providers, enablers and brokers for the next generation of 'smart' products and services. But these opportunities challenge the core telecom business model. They're largely 'up the stack' in the world of applications and services, with carriage an embedded rather than a leading feature.

Examples of potential new roles include providing business intelligence in real time; using data analytics and technology to support advanced vertical services; and becoming a trusted broker of digital identity (see Figure 3). Globally, some operators are already responding to these opportunities. For example, last year SingTel acquired Amobee,[8] which offers end-to-end mobile advertising solutions, for US$321m. With solutions for publishers, advertisers and operators, Amobee brings advanced, proprietary mobile-advertising technology to SingTel's network in 25 countries. The combination means SingTel and Amobee can deliver a more personalised advertising experience to consumers and, hence, better return on the marketing investment for the advertising and media industries.

Verizon's Universal Identity Services is another example. It's a cloud-based, managed-identity service for health that creates identity credentials for physicians and other healthcare professionals. The credentials give them access to multiple health systems, patients' medical records, online prescribing and health-information exchanges by using a single identity. Verizon has partnered with HiTRUST, McAfee, Cisco, Avaya and others so that Universal Identity Services can offer state-of-the-art security and industry connectivity.

Verizon also acquired Hughes Telematics in 2012 to establish its footprint in the connected automobile services. Through Hughes, Verizon offers automotive solutions, from fleet management to one-touch emergency response systems. With global customers such as Mercedes-Benz and Volkswagen, Verizon is well positioned to benefit from the increasing demand for connectivity in cars around the world.

Figure 3: Potential opportunities for telcos

Emerging markets and mobility	Business intelligence	Verticalisation
• Telcos collaborate with local operators on wireless telecoms in emerging markets to fill capability gaps • Capture share of wallet from the rising Asian affluent, notably in mobile broadband/wireless Internet	• Mobile operators leverage real-time geo-location information of its mobile subscribers for better intelligent location-based marketing • Telcos can be the intermediary in formulating consumer and advertiser propositions using customer insights	• Enable advanced vertical apps/ services using data analytics and technology capability (e.g. M2M, health monitoring, energy usage tracking)
Expanded cloud	**Digital enablement**	**Identity security and privacy**
• Big data and cloud-as-a-service are significant growth opportunities • Network, data security and end-to-end performance will be critical for multinational corporations • Telco services portfolio roadmaps need to have a clear evolution towards cloud	• Move telcos away from core network into new ICT and advanced digital solutions for B2C, B2B and C2C across industries • Telcos need to avoid disintermediation of revenue from OTT through more compelling and price competitive offers	• Telcos as a trusted provider can be a broker of digital identity • Telcos as a gatekeeper of privacy in the social advertising, interaction and commerce environment

Source: PwC analysis.

Strategic plays for breakout growth

Against this backdrop, the challenge is not too few opportunities for growth but almost too many. As domestic markets mature in the developed world and the current carriage-based business models struggle to grow incrementally and gain productivity, the time to make real strategic choices for growth is fast approaching.

We see six discrete strategic plays across the two growth arenas that offer the promise of breakout growth. Importantly, for all but one, companies will need an applications and services focus – and that will require reinventing what it means to be a telecom company and shifting operating models profoundly.

1. **Emerging market leader/ innovator.** Telecoms revenue growth in the developed countries is slowing down, but in the emerging markets is still growing fast. Even for the fast-growing mobile Internet, the differences are stark. For example, Australian regulator ACMA reported mobile data traffic grew by 40% from mid-2011 to mid-2012, while Korean regulator KCC reported data traffic growth of 80% between January and November 2012.[9] The opportunity here is for operators from developed markets to bring their expertise in areas like marketing, product development and operating efficiency to bear to accelerate the growth of incumbent players. Innovative products that are emerging for mobile health and mobile money are also being deployed more rapidly in these countries and offer opportunities to put capabilities and experience to use.

   How can global operators get a share of these emerging opportunities? One option is through acquisitions or strategic partnerships in these markets, which primarily local incumbents dominate. This can be a joint venture, such as Hutchison Asia's partnership with Hanoi Telecom on nationwide GSM services in Vietnam. What's needed is established global delivery models, access to capital, the ability to secure regulatory clearance and, of course, strong capabilities in wireless networks and technology.

2. **Global or regional cloud and connectivity leader.** For many companies, ICT is now critical in differentiating themselves and achieving better business outcomes through collaboration, supply chain, speed to market and productivity improvements. So cloud and connectivity solutions are rapidly growing in importance for multinational and large enterprises. The challenging global economic climate is also inspiring businesses to look at how they can increase cost flexibility, achieve scalable growth and gain productivity. Most businesses believe cloud services help their efficiency. The Asia-Pacific market for cloud, alone, is expected to be more than US$35bn by 2020.[10]

   Global operators have been acquiring cloud and hosting services to further their capabilities (e.g. NTT's acquisition of Dimension Data). They also can partner with selected industries as service providers or suppliers to build scalable solutions rapidly, for example, retail for supply chain integration. Operators will require strong industry partnerships that give them credibility and expertise, and a service-based operating model to help them achieve standardisation and scalability.

3. **Small and medium business services provider.** While large multinationals are gearing up their cloud services, so are small and medium businesses (SMBs). For 2014, the cloud-related spending of SMBs is forecast to reach US$68bn.[11] Because SMBs have limited capital expenditures, their rate of adopting cloud services for security, software as a service and remotely managed information-technology services is higher than what larger businesses spend. The good news for global operators is that the ICT market for SMBs is fragmented within individual markets, with few dominant global/regional operators.

   Operators have several options for tapping into this growing opportunity. Firstly, they can extend their current SMB products and services to include simple, standardised and scalable cloud-based solutions. Secondly, they can extend their SMB products and services into developing and emerging markets to address untapped growth. Finally, they can acquire a dominant SMB service provider in selected markets, as a way to enter quickly, and can then replicate the acquired provider's services in other markets. But they'll need to clearly understand and deliver what SMBs need – reliability, value for money, simplicity and convenience – to gain traction with SMBs.

4. **Digital services enablement leader.** M-commerce is taking off, with a mobile wallet substituting for the physical wallet. Consumers and businesses need increased digital security if they're to have a safe experience with m-commerce. Having direct access to consumers' devices, operators can become trusted brokers of digital identity. They can combine the device identity, location information, consumer data and the latest verification technologies to create a secure transaction framework. Other digital enablement opportunities include machine-to-machine services, physical order fulfilment, billing and payments, customer care, etc.

   While operators have the technical capability, to succeed at digitally enabling services for businesses and consumers they'll need to partner strategically with industry and adjacent players. These partnerships include information-technology vendors (such as IBM and Oracle) and industry groups (such as healthcare, finance and government). There are also potential M&A opportunities with existing industry solution providers.

   Operators already have most of the delivery infrastructure but will need to develop capabilities in creating solutions, adapting technology and delivering or managing services. They'll have to develop and make the best use of such assets as real-time user data, secure distribution networks and payment processing capabilities.

5. **Industry solutions enabler.** Advancements in digital are revolutionising specialised services, such as healthcare. The digitising of health records and the use of digital devices, wearable and in the home, are both increasing – generating even more digital data. Consumers are also shifting to mobile-health applications. As a result, m-health is expected to exceed US$6.5bn in the USA and Canada in 2017[12] and to be higher in China, India and Brazil. As these kinds of changes become mainstream, e-health is poised to make a large impact on hospitals.

   Operators can partner with vendors, such as mobile medical-solutions developers, and can collaborate with industry groups to bring e-health services to consumers. They will need to invest in emerging economies – like Brazil, China, India and South Africa, the main markets for m-health – as sources of innovation, and then transfer any ideas to developed economies. Operators will need to align their business practices with the healthcare ecosystem and deliver services with the right technological know-how, such as interoperable devices and data intelligence. They'll need, also, to invest in research-and-development capabilities to find innovative solutions.

6. **Multi-market media and over-the-top intermediary.** Global electronic home video revenues are expected to reach US$18bn by 2016, at a CAGR of 14.2% for 2012-16; the digital music market is expected to reach US$14bn at 12.6% CAGR[13] over the same period. This growth presents substantial opportunities for operators. Having access to information about customers in real time, operators are capable of delivering personalised content and advertising on demand.

   There are two ways to go after the opportunities: firstly, bringing premium content to subscribers and using the content to boost subscriber numbers and revenue; and, secondly, becoming a network-agnostic, over-the-top player to deliver content. While option one is more like operators' existing models, the second option potentially can bring more growth through global scale and reach.

   Those options are essentially a multi-market media play rather than a regional or global play. Operators need to identify the individual markets with the potential for high growth – such as China, Indonesia and Brazil – and selectively enter those markets. With regulatory approval, they can collaborate with local content players to deliver content straight

The critical point here is that each strategic play in its own right is a big bet. All require substantial investment in new assets and capabilities. All are potentially regional and global. And all are characterised by strong established or emerging competitors.

to consumers. For operators to be able to customise and deliver content in real time, they'll need to either own or have access to distribution networks, cross-platform delivery networks and advanced analytics and business intelligence tools.

Agile and focused on the path to 2020

The critical point here is that each strategic play in its own right is a big bet. All require substantial investment in new assets and capabilities. All are potentially regional and global. And all are characterised by strong established or emerging competitors.

Take the play to become a global or regional cloud provider. To pursue this opportunity to grow will require major investment in service delivery models and capabilities, a market-leading approach to sales and bid development and the capacity to deploy standardised solutions rapidly. And all that will require major organic and inorganic capital investment. Verizon, for example, recently acquired Terremark, a provider of managed and cloud services, for US$1.4bn.[14] With this acquisition, Verizon can offer everything from cloud infrastructure for entertainment companies to data centres for federal agencies.[15] Their services include dynamic cloud solutions to back up and restore services.

Capital is limited, as is organisational capacity and capability. Put simply, only a limited number of truly big, game-changing strategic plays will be possible.

So, companies must make choices. The need for strategic focus is in itself a challenge. And the desire to operate broadly and to control ecosystems often is deeply ingrained. For many, that desire can lead to a tendency to place bets broadly, to continually experiment in multiple markets and, ultimately, to a lack of cohesion in their thinking about growth.

To work through this challenge successfully will require a rigorous and disciplined dialogue at the management and board levels on the relative merits of various growth options.

This is undoubtedly a tough process that we believe should focus on four priorities:

1. Determining the real appetite and imperative for growth – How much growth is needed and in what time frame?
2. Optimising the capital available for growth – Which non-core businesses could be safely exited to free up capital and enhance the company's focus on growth?
3. Developing a competence or an inside-out view in prioritising where to play – What organisational assets, skills and experience does the company already have? To which strategic plays do they best apply?
4. Building an objective view of how well placed the company is to attract the assets, alliances and talent for a given strategic play – What does the company offer that's compelling? How would the combined strengths be able to build a sustainable competitive advantage that the company couldn't do alone or with other parties?

- The final challenge for operators as they search for a breakout growth path to 2020 is to build an organisation that's agile. They'll need the agility to tackle the challenge of moving into new markets, dealing with uncertainty and rapidly learning from success and failure in an environment where constant change is the norm.

- PwC, working with the University of Melbourne, has begun a multi-stage project to research what causes organisations to be agile.[16] Based on this research we see three inter-related and self-reinforcing factors that will be critical to developing the culture, strategic focus and leadership that will support growth (see Figure 4):

Horizon. The ability to develop a clear view of the future, to track trends that will have a material impact on the operating environment and to develop strategy and plans that address medium- to long-term growth.

Velocity. The ability to quickly mobilise funds, people and information to achieve new goals and meet new challenges.

Plasticity. The ability to foster effective internal collaboration and external partnerships in a way that inspires the company to innovate and to creatively execute strategy.

Figure 4: Organisational levers for agility

Capacity for agility		Culture	Strategy	Leadership
	Horizon	An agile culture ensures employees have an eye to the future, are encouraged to share insight and can easily do so.	Organisations need mechanisms to feed new horizon data into strategy and scenario planning in a continuous way.	Leaders need to use formal and informal channels to gather intelligence within appropriate time and space horizons.
	Velocity	An 'all-of-enterprise' view discourages fixed-pie thinking, enabling financial and non-financial resources.	Strategic updating and velocity work hand in hand. Strategy provides direction and velocity provides the ability to make constant 'evolutionary' changes in direction.	Organisations need to develop agile leaders, trained for a paradigm of change. Good bench strength ensures talent when and where you need it.
	Plasticity	An agile culture fosters a focus on relationships internally and with external stakeholders.	A strong capacity to form and dissolve relationships will ensure swift and effective strategic response.	Leaders need to engage in trust-based partnerships, foster collaboration and be attentive to informal networks.

Source: *Rising to the Agility Challenge—Continuous Adaptation in a Turbulent World,* Catherine Casler, Dr. Michael Zyphur, Prof. Graham Sewell, Dr. Adam Barsky, Richard Shackloth, Faculty of Business & Economics, University of Melbourne and PwC.

Conclusion

Achieving profitable growth is never easy. Possibly for many operators in particular, the path to growth has never been more daunting.

But as we look towards 2020 we see more opportunity than threat and more cause for optimism than pessimism. The most important trends suggest the world is changing in ways that will open up new opportunities to grow and that operators are well placed to capture growth.

To capitalise, though, will require unprecedented strategic focus and organisational agility.

Firstly, operators need to recognise that the majority of growth opportunities will come from 'up the stack' applications and services. Controlling carriage will confer some advantages, but that will be secondary in creating propositions compelling to customers and markets.

Secondly, the nature and scale of the opportunities dictate that focusing on one or two major strategic plays rather than playing broadly will increase the chances of success. Disciplined choice is hard. And for many operators – used to betting broadly and controlling value chains – discipline is a new skill to be learned.

Finally, operators need to go to work on creating a more agile organisation, one that's better at sensing future opportunities and quick to deploy resources to capture growth.

If operators in developed markets don't rise to this challenge, they risk remaining trapped in a cycle of decline and defence as barriers to entry are lowered in their core markets and as commoditisation eats away at the profitability of their carriage businesses. From the perspective of value for shareholders, this path suggests a future as a utility stock, focusing primarily on cash flow and dividends – rather than focusing on a more compelling path to growth with a strong footprint and options in the digital economy.

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City roads, Dubai, United Arab Emirates.

Small change, big impact

The start of 2015 will bring the biggest single change to the European Union value-added-tax regime that telecom operators, broadcasters and others that provide e-services have seen in decades. The legislation is expected to have a profound impact on e-services providers and particularly on their pricing and commercial strategy. As providers of these services take steps to adapt to the new legislation, the result will be either a sharp increase in the prices charged to many consumers or a cut in suppliers' profit margins. Neither of which is a desirable outcome.

by Stephen Dale, Anne Murrath, Martin Blanche and Johnathan Davies

Stephen Dale is a partner with Landwell & Associés. Anne Murrath and Martin Blanche are partners and Johnathan Davies is a senior manager in PwC's Tax practice. For more information contact Stephen by phone at [33] 1 56 57 41 61 or by email at stephen.dale@fr.landwellglobal.com; or Anne by phone at [352] 49 48 48 3120 or by email at anne.murrath@lu.pwc.com; or Martin by phone at [44] 20 7213 8347 or by email at martin.j.blanche@uk.pwc.com; or Johnathan by phone at [44] 20 7212 1208 or by email at johnathan.c.davies@uk.pwc.com.

Tuning a pipe organ, Gloucester, Massachusetts, USA.

An amendment is being made to the European Union (EU) value-added tax (VAT) Directive that's intended to harmonise the VAT treatment of the electronic services businesses' supply to consumers within the EU. As it stands now, the legislation will affect telecoms operators, broadcasters and other e-services providers that sell directly to consumers (rather than business customers) who are based in the EU, irrespective of where the service provider itself is located.

In practice, companies based in the EU will be affected the most, as the rules change mostly for those suppliers. The legislation is expected to have a profound impact on e-services providers and particularly on their pricing and commercial strategy.

While hard data on the size of the existing and potential markets is difficult to determine, two Member States (France and the UK) have indicated that for them the VAT revenue shift to their countries will be in the order of €400m per year at current levels of activity.

The impact of these VAT changes on businesses providing e-services is likely to be significant.

The legislation – effective 1 January 2015 – changes the place of supply and the country of taxation of business-to-consumer telecoms, broadcasting and 'electronically supplied services' (as defined by tax law, of which more later) from the country in which the supplier is established to the country in which the consumer resides. This seemingly innocuous change will have a significant impact on operators and other e-services providers that have customers outside the territory they're located in, in particular those located in European Union jurisdictions with favourable VAT rates.

Standard VAT rates across the EU currently range from 15% in Luxembourg to 27% in Hungary, with the range being even greater where reduced rates of VAT apply. The average standard VAT rate in the EU is currently around 21%. (See Figure 1.)

As far as EU legislators are concerned, changing the place of taxation to the location where e-services are consumed is long overdue. Technology and the ability to provide services across borders have made enormous progress over the last 20 years. And it's been clear that the EU VAT rules, which have their origin in the 1960s, were no longer adapted to making sure that such e-services were effectively subject to VAT where consumption took place.

Businesses based in the EU Member States have always been required (as they still are in 2013) to charge VAT on their e-services, but those based outside the EU were, until July 2003, not. The result was a disadvantage to EU-based providers, and as a result some chose to locate their sales operations outside the EU. This prompted the European Commission to persuade the Member States to change the rules and require all non-EU e-services providers to charge their EU-established customers VAT at the rate applicable in the customer's own country, which was done from 1 July 2003. But the rule for the EU-based suppliers remained that of taxation where the EU-established provider had its establishment, regardless of the location of its EU customers. Again, a number of non-EU service providers adapted quickly to the change in legislation, with some choosing to locate in EU countries with low VAT rates.

So, currently, EU-based businesses providing business-to-consumer e-services charge VAT at the rate that applies in their home location, while non-EU providers apply multiple VAT rates based on the place where the customer is located or the service is used. The new legislation is designed to bring a consistent approach to taxing the provision of e-services to EU-established, non-VAT-registered consumers (which generally means private individuals, certain charities and public bodies).

From 1 January 2015, the provision of all e-services within the EU will be taxed in the customer's country, regardless of the location of the supplier. So, a US operator that sells mobile phone or broadband contracts to EU-based customers will be treated in exactly the same manner (from a VAT perspective) as a German company, an Indian company or a French company. The main criterion that matters is the customer's location.

The VAT treatment for non-EU-established telecoms operators and other e-services providers that have EU customers but no EU establishments essentially won't change, except for the application of more precise rules for example in the determination

Figure 1: VAT rates applicable in the EU Member States (as of 1 January 2013)

Member States	Super reduced rate (%)	Reduced rate (%)	Standard rate (%)	Parking rate (%)
Belgium	-	6/12	21	12
Bulgaria	-	9	20	-
Czech Republic	-	15	21	-
Denmark	-	-	25	-
Germany	-	7	19	-
Estonia	-	9	20	-
Greece	-	6.5 / 13	23	-
Spain	4	10	21	-
France	2.1	5.5 / 7	19.6	-
Ireland	4.8	9 / 13.5	23	13.5
Italy	4	10	21	-
Cyprus	-	5 / 8	18	-
Latvia	-	12	21	-
Lithuania	-	5 / 9	21	-
Luxembourg	3	6 / 12	15	12
Hungary	-	5 / 18	27	-
Malta	-	5 / 7	18	-
Netherlands	-	6	21	-
Austria	-	10	20	12
Poland	-	5 / 8	23	-
Portugal	-	6 / 13	23	13
Romania	-	5 / 9	24	-
Slovenia	-	8.5	20	-
Slovakia	-	10	20	-
Finland	-	10 / 14	24	-
Sweden	-	6 / 12	25	-
United Kingdom	-	5	20	-

Source: http://ec.europa.eu/taxation_customs/taxation/vat/how_vat_works/rates/index_en.html.

A US operator that sells mobile phone or broadband contracts to EU-based customers will be treated in exactly the same manner (from a VAT perspective) as a German company, an Indian company or a French company.

of the location of the customer. The most affected by the change will be EU established telecoms operators, broadcasters and other e-services providers that sell to customers located in other EU countries or that, due to the presence of land borders with other countries, also have a significant proportion of business-to-consumer customers located outside the location where they are established.

The affected providers have been working with the Commission and Member States to put into place a legislative regime that's effective and efficient but that minimises the burdens on business. It's clear from the draft legislation that the Commission is aiming to strike that balance. Nonetheless, compliance will be a challenge throughout the affected sectors.

The details of the amended VAT

Elements of the legislation are still being finalised, but already it's clear that there are a number of grey areas. Many of them may be ironed out only as the legislation comes into effect through the use of Explanatory Notes.

The first, and most fundamental, question is: Which e-services are caught by the new VAT legislation? The EU Implementing Regulation 282/2011 and the EU VAT Directive 2006/112/EC (as it effectively applies today to non-EU-established providers of e-services) address the question and state the current definition of e-services:

- Electronic services, i.e. paid-for services that are delivered over the Internet or other electronic network, in a way that's essentially automated and that can't be delivered without information technology. Included are access to and downloading of screensavers, ringtones, music, films, online games, e-books and online information such as traffic, news and weather reports, and subscriptions to digital newspapers or magazines. Software upgrades meet the definition, as do website hosting, banner blocking software, automated firewall installation, remote systems administration and online data warehousing. The category also includes fees charged to access software on the 'cloud'.
- Telecommunications, including fixed or mobile telephone services for voice or data, and VoIP services.
- Broadcasting, meaning radio or television programmes provided over a TV network or the Internet.

Within the three main categories identified by the legislation – telecoms, broadcasting and other e-services – are many grey areas. For example, automated distance teaching that depends on the Internet or a similar network and that requires limited or no human intervention would meet the definition of an e-service, and so would be taxed on the basis of the location of the pupil. But a virtual classroom where the Internet is used simply as a tool for communication between student and teacher wouldn't meet the definition. The virtual classroom would be treated as a supply of an educational service (which doesn't fall under the e-services rules) and normally would be taxed on the basis of the place where the teacher is located.

The existing definition of an e-service remains largely unchanged, although the list of exceptions is getting longer.

Analysing the evidence: where's the customer?

The biggest challenge by far for telecoms operators and other e-services providers will be to determine, and prove, where each customer is based – because the customer's location determines the applicable VAT. The affected operators and other e-services providers have been working with the Commission and Member States on this area. As a result, some simplifications have been agreed for particular services, especially in the field of providing evidence of the customer's location.

The draft legislation outlines the evidence that should be used to determine a customer's location for VAT purposes and separates it into two categories:

- **Irrebuttable presumptions.** Presumptions that can be taken as evidence on their own are considered irrebuttable. Included are broadcasting, telecom and e-services supplied to a telephone box or kiosk, Wi-Fi hotspot, Internet cafe, restaurant, hotel lobby and similar locations.
- **Rebuttable presumptions.** Presumptions that can be taken as evidence of a customer's location unless the supplier has information that the customer is located elsewhere are considered rebuttable. The evidence includes the mobile country code of a SIM card, a fixed landline and the address to which a viewing card is sent. In other cases, two separate pieces of non-contradictory evidence will give a rebuttable presumption.

More work will be required before the draft legislation is finalised to make sure that businesses have sufficient certainty about the requirements being imposed on them.

Inevitably, cases will occur that have contradictory evidence about a customer's location. For example, a Spaniard may rent a flat in Paris for the summer and buy a telephone service contract for a fixed landline for

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the duration from a French telecom provider. He may pay for it using his Spanish bank account and have bills sent to his Spanish address. His address and bank account suggest that the Spanish VAT rate should apply, and yet the service is being consumed in France. How operators should assess cases such as these is still unclear.

The guidance released so far suggests that the general rule should be to give priority to the place of actual consumption to determine the place of taxation. So, in our example, the French telecom provider would charge French VAT. But, as noted above, there's an element of legal uncertainty in this interpretation that could lead to the risk of either double taxation (i.e. both France and Spain claiming taxing rights) or non-taxation.

The main difficulties for affected providers are that current information-technology and billing systems generally aren't set up to cope with processing these multiple pieces of evidence. And creating new software to cross-check information is extremely complicated, and expensive.

Commercial considerations, multiplying issues

The change in the VAT legislation is by no means a narrow VAT issue – there are many potential knock-on effects that will need to be considered. The pricing, particularly of fixed-price contracts, will need to be reassessed because EU-established e-service providers will have to apply a variety of VAT rates depending on the location of their EU customers. Any agreements with third parties that are based on consumer price (e.g. commissions for providing content) will also need to be re-examined.

In particular, providers that offer long-term services paid for by annual or monthly subscriptions need to be particularly aware, as the applicable VAT rate could change during the term of the contract. So, for example, if a UK-based business sells a two-year mobile-phone contract to a customer in Hungary at the end of 2013 (i.e. the contract runs to the end of 2015), the VAT rate will increase from 20% (the UK supplier rate) to 27% (the customer's rate) during the life of the contract. This transitional issue is still being discussed with the European Commission.

A further concern is that the suppliers' need to ascertain the location of their customers could erode hard-won customer loyalty. If the legislation requires operators and other e-services providers to ask more questions of their customers and to request more personal information, as it likely will, the risk of damaging the consumer's experience is real. The data protection and other regulatory and security-related implications of collecting and storing information about customers (which may, for example, include credit card information) will also have to be addressed – as those, also, are constantly evolving areas.

Compliance risks and a special scheme

From a purely administrative point of view, the legislation presents a considerable challenge for telecoms operators and other e-services providers. They'll have to determine where each customer is located and their tax status – i.e. are they registered for VAT, or are they a final consumer? – and they must cope with multiple VAT rates. In theory, the changes also mean that from 2015 telecoms operators and other e-services providers could be obliged to file VAT returns in every EU country in which they have a customer. That would be an administrative nightmare.

As a result, the new legislation will extend a special scheme for VAT filings that's currently in place for non-EU-established providers of e-services. Under the simplified scheme (sometimes referred to as the MOSS scheme), EU suppliers of e-services can elect to register with the VAT authority of their 'country of identification', file a single VAT return detailing the supplies made to customers in the different countries and pay the tax due. The tax authority of the state of identification will then be responsible for distributing the VAT due to each jurisdiction in which the customers are located. For many businesses, this could alleviate the burden of multiple VAT registrations, filings and payments.

The penalties that could be imposed on operators for non-compliance, though, could be high. Each Member State will have responsibility for policing VAT receipts, and domestic penalties will apply. The new legislation will allow EU Member States to push hard on compliance – they'll be entitled to, and will want to collect, the VAT that they're due.

The risk is that some Member States could take a particularly heavy-handed approach to the legislation. Many jurisdictions expect VAT receipts to increase sharply once the legislation comes into force. France has estimated the amount to be around €400m per year and to be increasing rapidly. If the increase fails to happen, many prominent operators and other e-services providers should expect an audit from the local tax authorities of the country of location of some customers.

Audits could well arise due to the enhanced systems of exchanges of information between the Member States. For example, Member State X might ask Member State Y what the total turnover of Company A is, and from the answer could decide that an audit of Company A is necessary because VAT revenues reported in Member State X don't match Member State X's expectation. It's worth noting that legislation already is in place requiring Member States to share spontaneously, or upon request, information with other Member States about suppliers located in their country.

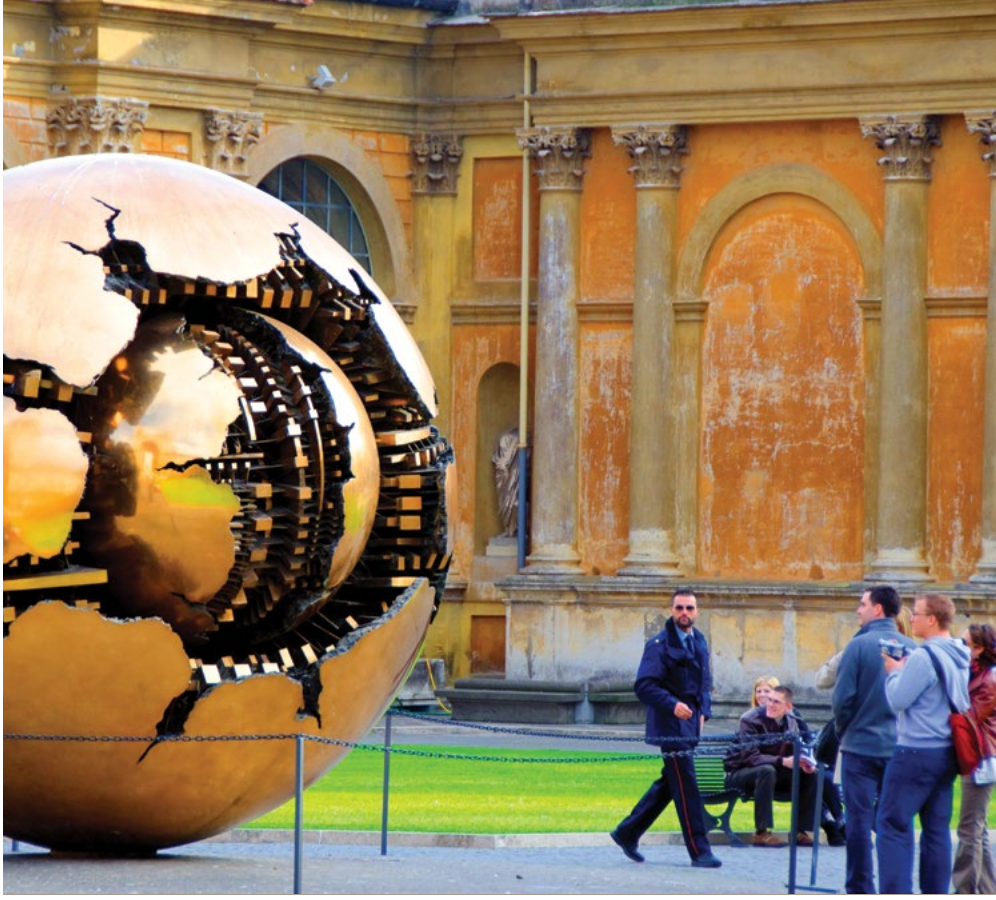
Preparing to comply, cost-effectively

The new legislation will come as no surprise to the communications sector. Already, most businesses should be well ahead in their preparations. But we believe companies need to address a number of questions as quickly as possible:

- Are all departments within the business that will be affected aware of the legislation?
- What evidence will you use for determining a customer's location?
- Will you need to change your pricing structure and billing procedures?
- How should you adapt information technology and other systems?
- What's the best approach to compliance?

Operators that have a relatively small proportion of customers outside of their home location (which in practice is most likely to be UK- or US-based operators) have a number of options when it comes to compliance. One is to rely on manual cross-checking. For example, a UK-based operator could assume that for VAT purposes it could treat every customer as though the UK VAT rate applies, but could run a report every month looking for non-UK addresses and then process the results manually. That pragmatic approach pays attention to practical considerations and could be the most sensible and most cost-effective solution. To invest significantly in upgrading systems when the amended legislation might affect only a small proportion of customers would be counterintuitive.

The best solution will be organisation-specific and will require a thoughtful assessment of the information that's needed, measured against the systems changes that are required.



Outdoor courtyard, Vatican Museum, Rome, Italy.

Wider strategic issues: rethinking business strategies?

In the longer term, the new EU VAT regime raises another question for the many telecoms operators and other e-services providers that have been attracted to certain EU jurisdictions also because of the lower VAT rates in those countries. The new rules mean that the VAT rate in the country of the supplier is no longer relevant. That change might trigger some companies to rethink their European business strategy and revisit their choice of global or European hub. A change to the VAT regime has transformed the sector in the past – we'll be watching carefully to see if history repeats itself.

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People on the viewing gallery, Peak Tower, Hong Kong.

Perspectives

The pursuit of revenue growth and building shareholder value are primary responsibilities of CEOs. And leading by example – with discipline, focus, creativity, drive – is key to those who succeed in this pursuit.

Here we give industry leaders an opportunity to share perspectives as they evaluate, take action and pursue the path that is best for their organisations and stakeholders.

An interview with:

Douglas Li
SmarTone

In Hong Kong, one of the most competitive and sophisticated mobile markets, five operators are vying to serve a population of around seven million people. Since 2010 SmarTone has been the strongest growing Hong Kong mobile operator in terms of service revenue and EBITDA. Here, Chief Executive Officer Douglas Li explains how the company's unique approach to the market has supported its evolution and position, how the company places the customer first and why the network is still the most important asset an operator has.

Douglas Li was appointed chief executive officer of the SmarTone Group in July 2001. He served as the founding chief executive officer of SmarTone Mobile Corp Limited from its inception in 1992 until 1996. During that time, Douglas oversaw the rapid expansion and service innovations that laid the foundation for what the company is today.

In addition to his experience in mobile communications, Douglas has considerable experience in corporate finance and direct investment. Douglas graduated in pharmacology from the University of London and is a chartered accountant. He worked for KPMG Peat Marwick in both London and Hong Kong, and joined Morgan Grenfell in Hong Kong in 1986. In 1989, Douglas joined Sun Hung Kai Properties Limited and was responsible for corporate finance, direct investment and new business development. Douglas was managing director of Suez Asia Holdings in Hong Kong until he re-joined SmarTone in 2001.

For more information, visit the company's website at www.SmarTone.com.

Communications Review: Operators everywhere are struggling to identify where the next wave of revenue growth will come from. Where do you see growth opportunities in Hong Kong and specifically for SmarTone?

Li: I think it would be too presumptuous to offer a prediction because that's not really how we work.

Without sounding too clichéd, over the years we've tried to focus on the customer. We've prepared ourselves for the future by building foundations that we believe are important now and will continue to be going forward. This allows us to capitalise on any industry innovation quickly.

Years ago we envisioned a computer in the hand of every person by way of a mobile device. So we focused on delivering the service platform that would work best with the network to give customers a decent experience.

We started doing this with 2.5G. Initially, the experience we gave customers was better than what the competition provided. The experience was nowhere near what it is today, but we didn't have a crystal ball to forecast when that future would come. We just believed in that future. When it did come, it came in the guise of mobile broadband, first with the dongle product, then with smartphones and all the services and applications that followed. We were there on time, the first to market, and we delivered an experience that was not only better than the competition, it was better than what was available in most parts of the world.

We also managed to price the service correctly, relative to the rock-bottom prices being offered for voice and SMS. So we monetised the data and capitalised on the opportunity to make it happen. Through all that development over the years, besides the service platform and optimising the network performance, we developed proprietary services that derived from our understanding of local Hong Kong customer needs. These services may have no relevance overseas, but we focused on Hong Kong consumers and offered something unique and differentiated – a proposition of genuine value to our customers.

Communications Review: When you look into the future, how do you see your investment in the network and service platforms and your focus on customers? What does SmarTone need to do to get from where it is now to where it needs to go?

Li: Besides the service layer, there's the network connectivity – coverage, stability, consistency and a necessary level of speed. I think there's a misconception about speeds in general. Marketers find it easy to sell speed, but actually most applications don't require much speed. Watching a video, for example, requires really no more than 300-500kbps of bandwidth, maybe less with better compression. Therefore speed, per-se, is not actually what's important. What's important is the capacity to consistently provide adequate speed for the whole population of users across the city at all times of the day. As an operator, it is essential for us to innovate to get more out of the spectrum we have.

Besides basic connectivity, we need to price services correctly. Offering unlimited data is unsustainable. Raising prices for everybody and still maintaining unlimited is a possibility, but that's not a very sensible way to go because it penalises those who use less. Some type of volume-based pricing is fair. In the early days, offering unlimited data was understandable because users didn't know how much data they used, what was reasonable or wasn't. Unlimited was a teaser to get people into the habit of using the data but once customers find out how much they use, we need to have some kind of volume-based pricing.

Communications Review: Is that where you're headed, or are you there now?

Li: SmarTone tried to lead the market to adopt volume-based charging 18 months ago. Everybody followed except one operator. We arrived at a limit of 5GB per month and after that a fair-usage policy applies. That's where we are now. Financial pressure is building, and data usage is rising inexorably. In February 2012, average data usage by smartphones on our network was 1.5GB per month. Now, it's about 2.4GB per month. I think customers use what you give them; many of them download and store on devices things they don't have time to use. There's a collector mentality.

Communications Review: Some of the services you offer compete with those available on fibre. Ultimately, those operators can provide more fibre but you have a physical constraint on spectrum. What are your thoughts on how operators and governments need to manage the allocating of spectrum and the issues with bandwidth fragmentation across markets?

Li: Spectrum is an important issue and I think the government needs to allocate more of it to the industry. Spectrum is too fragmented. In the US and Europe they're beginning to issue bigger blocks of spectrum to get more efficiency and reduce fragmentation. That's important because it affects everything – not just in terms of infrastructure, but also devices.

I personally don't think we're in the business to compete directly with fixed-line operators. Our business is really in mobility and personal connectivity, and in offering wide-area mobile coverage together with mobile-centric services that are uniquely valuable to customers.

In Hong Kong we market to everyone, but we focus on customers who appreciate what we have to offer.

Communications Review: Do you think spectrum is a constraint to how the market develops?

Li: Mobile usage in Hong Kong is already extremely high and availability of spectrum is clearly very important. We believe that spectrum in the digital dividend, which is currently nominally held for TV broadcasting, could be released for 3G/LTE services. A total of 90MHz of FDD spectrum could be made available in HK, after the analogue TV broadcasting switch-off in 2015. The governments in the US, Australia, Taiwan and most European countries have either made the digital dividend spectrum available or will do so soon.

Since this frequency band is being used in China for TV broadcasting, the Hong Kong government should work with Mainland authorities to harmonise its usage so that it can be made available for mobile use as soon as possible.

Communications Review: What's your view on the significance of LTE, both as an enabler and as an area requiring significant investment?

Li: There is constant debate about spectrum efficiency. LTE is more spectrally efficient than HSPA, but not by a huge margin, we believe. In terms of the customer experience, the biggest advantage of LTE lies in improved latency when compared with 3G. That's actually something customers notice.

The coming LTE-Advanced technology also allows for more flexible use of spectrum, which should help some of the legacy issues of spectrum allocation and optimisation. It could potentially allow operators to achieve a level of efficiency on par with ownership of a single block of spectrum. That's exciting to us. Naturally, there will be capacity enhancement.

Communications Review: What do you look to the government for, since it controls the spectrum? And, what are your thoughts on sharing spectrum?

Li: The Hong Kong government is causing controversy because it wants to take back one-third of the spectrum that existing 3G operators hold and re-auction it. We think that's crazy and will immediately damage the quality of service. It also will raise costs in the whole industry, which ultimately will be passed on to customers.

I look to the government to issue new, unutilised spectrum or repurposed spectrum, to allocate it to the industry and to auction it. We don't mind an auction and we welcome new players coming in; but we do mind losing existing spectrum without a right to renew the spectrum usage right, albeit on a negotiated basis and at a reasonable price. Otherwise, costs will go up, quality will go down and the consumer loses out.

In Hong Kong, there has been quite a lot of common antennae systems sharing – sharing inside commercial buildings and a few examples of 4G LTE base station sharing, but I believe that network sharing has inherent difficulties. I understand that being forced to share to cut costs is a reasonable justification. On the other hand, where's the differentiation on coverage or quality of service?

There are examples of network-sharing arrangements where there are constant debate and arguments about where and how to do things. What's worse, what happens if the parties really can't get along? Do they separate? How do they do that? By then, they probably don't have their own spectrum, engineering know-how or the people or resources on hand to be independent again. We're seeing examples of some messy outcomes globally resulting from this type of situation. We've never been comfortable with it.

Communications Review: In some developed markets, the consensus seems to be that today network quality isn't a big differentiator. In other markets – Hong Kong being one of them – another camp believes that quality is a big differentiator and is important. What do you think about this question?

Li: Several years ago, some operators and their management – as a part of cutting costs – came up with a myth that quality and coverage aren't important. Maybe in their countries the customers aren't as demanding and they can get away with it, but that's not the case in Hong Kong. A few years ago when the iPhone arrived, this issue came into the spotlight in the US, the UK and other parts of Europe, where there were widespread consumer complaints about network data performance.

Back when some operators were saying that network quality doesn't matter, the capex [capital expenditure] ratios for those operators were in the single digits and they were trying to convince the investment community that that was the norm. SmarTone's sales-to-capex ratios have always been around 13% to 15%. That's where we have to be to deliver good quality and to meet the Hong Kong customers' expectations, which are higher than elsewhere. It is where we have to be to compete in our market, and it is our brand positioning as well. So, determining what's right and what's not really depends on network strategy, brand positioning and the types of customers a company wants to attract.

The theory that the network isn't important has been blown out of the water in the past few years. In Hong Kong we market to everyone, but we focus on customers who appreciate what we have to offer. We're competitive but don't do giveaways or the other types of promotions offered by all the other providers. In fact, our main tariff plan hasn't changed in several years. What we do is deliver quality and a great experience for our customers, not just in terms of connectivity but in every way, and offer proprietary services that have found traction among our customers. I think that explains why we have out performed in the past few years.

Feedback from our customers has been great. They say "you're selling something quite different from the others." The difference is in the whole experience, not just in the network, quality, coverage, consistency, stability etc., but also in unique services, hotline, website and stores. Are they getting the service they need? Are we explaining what a transition to SmarTone means to them, what's relevant to them, how they should make a choice or use a particular service? All the effort we put into the design, systems and processes for training comes through then. Some customers will appreciate that and want that experience, and they're the customers we want to attract. We're delivering service, and if you appreciate and want that, then this is your home. That's our proposition.

Communications Review: What do you see as the role of the mobile operator in bringing innovative products and services to your customers?

Li: Besides the network – the connectivity and the quality of that connectivity – there's the overall value we bring to customers, the service we provide and our brand proposition. Our brand proposition is that customers will be able to do more, enjoy more and be more with SmarTone. So that means we must offer proprietary services with propositions that are unique in the marketplace and that we can sell for value. We need to innovate and to create, and to do that we need expertise and the right culture. We established a culture and devoted resources, systems, processes and people to make innovation happen.

Innovating for customers isn't just about creating services, but also proper execution so customers will feel the difference. That's the way we enhance our brand value. This is where we've put a lot of effort. It's something we can call our own, and something that isn't easy – even impossible – to copy.

We as operators have a duty to influence what our vendors do. At SmarTone, we constantly go back to our vendors with our requirements and suggestions on what they should do. We comment on their road maps and we try to get them to reprioritise to fit what we see as the emerging trends in this market.

Communications Review: What are your thoughts about opportunities in vertical markets?

Li: We're exploring various vertical markets. Connected health is one of them. There are a few others as well, more niche markets, but I think health is where the industry can help. By enabling better health outcomes and by helping optimise the provision of health services we can help the economy.

It's well known that medical costs are skyrocketing. People in many advanced economies and societies now enjoy a longer life span, yet metabolic diseases are increasingly prevalent. The cost of managing this is horrendous, and there's awareness that healthcare needs to be more productive and more efficient in order to serve a greater number of people at lower costs. Connectivity, wireless connectivity in particular, will be a great way to help, but the challenge is to create a sustainable ecosystem and business model that is consistent with legal, medical, privacy and ethical considerations.

Communications Review: In the healthcare value chain, what partners do you see for SmarTone that could help the company enter and support that market?

The key challenge then is devising ways to encourage consumers to opt-in to disclose their information to third-parties and participate in marketing initiatives.

Li: We've tried various partnerships, but I don't think there is one answer for that question. A partnership with clinics, hospitals and government health services would be our preferred choice, but the medical establishment is quite conservative. Private clinics are an area we want to work with. We also are trying to reposition our service so that it's not just about health, but also about fitness, one that can help people lead a healthier life, not just remind them they're sick.

Communications Review: Where is SmarTone going with cloud services?

Li: Some of our services are already in the cloud. We have a service that allows smartphone users whose devices don't support Flash to watch Flash videos on demand through cloud-based transcoding, which takes place in the background. Cloud is such a wide area, and there are different opportunities for corporate customers and consumers. It's an all-encompassing topic that needs focus. Will we offer computing in the cloud like Amazon? No, I doubt we could be competitive there. We need to offer something that will differentiate us.

Communications Review: Operators have access to an incredible amount of information on their customers, yet many are struggling with how to use that information to help deliver better solutions and services – to monetise that information – without overstepping privacy boundaries and regulations. On the other hand, many consumers willingly share information, with and without incentives, and over-the-top providers have looser restrictions in this area. How do you see sharing information in the context of the Hong Kong regulatory environment?

Li: Current privacy laws in Hong Kong do not allow the unauthorised sharing of customer information. The key challenge then is devising ways to encourage consumers to opt-in to disclose their information to third-parties and participate in marketing initiatives. Then better ways have to be developed to assist brands and businesses to market their products and services to opt-in consumers, in order for operators to properly monetise the opportunity.

Businesses will have to take the initiative to use data to develop more targeted, more effective campaigns with less risk of turning off customers. This could in turn promote the development of a permission marketing ecosystem.

Communications Review: Every mobile provider is looking at how to enter and differentiate itself in mobile payments. Hong Kong has such a dominant player in the mobile payments market already – Octopus. Do you think any other mobile payment groups can compete?

Li: In Hong Kong, I don't believe the market for payments per se is huge. Payments linked to ads or marketing or other marketing initiatives could offer opportunities. Octopus already has locked up micropayments and has the transport network in place to sustain it as well.

Payment services using NFC isn't a strong enough proposition by itself. The role of the operator as part of the delivery channel isn't enough to eke out a business proposition because the margin doesn't support it. The big challenge is to figure out how to create value.

Communications Review: With competition from non-traditional players increasing and the speed of change in the sector accelerating, what are your thoughts on the opportunities and challenges of partnering within and outside the industry?

Li: Historically we've partnered mainly on the device side. In terms of partnerships with non-traditional players, we have seen many in the market but we have not found any that have a material impact on the competitive landscape. If a non-traditional player has a truly compelling service proposition, they would make it available to all operators in the market as that would be in their business interests. However, we remain on the lookout for future partnership opportunities both inside and outside the industry.

Communications Review: Given the size of Hong Kong, has SmarTone ever considered moving into another market? Perhaps Mainland China?

Li: No, I don't believe we have that ambition. The telecoms business is a very local business and tightly integrated with government, regulation, politics, business and the architecture of each market. As a player in Hong Kong, I don't think we'd have a competitive edge overseas. We could partner and share some best practices, but so far we haven't taken that path.

Communications Review: Over the years, you've developed a distinctive culture and feel within SmarTone. Some of that is reflected in your brand and in the management style of the company and how you do things. Can you summarise the essence of the SmarTone culture?

Li: We have an internal architecture for training. We start with the brand ambition: making each day better than the last, for us and for our customers. From there, we focus on how to innovate and be creative and on using our expertise to deliver that. It's complicated; it's not one singular thing.

We implemented a behavioural training system called U ACT, which is about encouraging understanding, agility, clarity and teamwork. This creates an environment where we make it possible for people to excel and get satisfaction from their work, and we have the systems and processes in place to help them achieve that. We've actually found that when a competitor poaches our staff members, they find they can't perform as they did when at SmarTone and ask to come back. There's a totality to our training architecture that's important and that makes it effective at all levels of the organisation.

We want to execute well and be creative in spotting opportunities to serve customers better. What can we do for customers that make us more valuable to them? We believe operators need to have something that speaks to their customers. They need to pick the segment they feel they can serve best, bring new ideas and hope the segment is big enough to sustain their business. You can't look at everyone en masse. Looking at customers en masse rather than focusing on their uniqueness won't help an operator serve its customers, or differentiate itself.

The following publications, authored by partners at PwC, provide thought-provoking and informative discussions of interest to various segments of the industry. To obtain PDF files or hard copies of the publications, please visit the websites listed below.

Cloud-enabled telco opportunities

The shifting ICT landscape has placed greater revenue and profitability pressure on telecom operators. Technology vendors are cannibalising telco revenues with over-the-top offerings, and forging customer relationships with value added services. More than ever before, telcos are challenged with the need to evolve beyond network connectivity and provide distinctive service offerings – into the rapidly growing technology services market. Fortunately, telcos are well positioned to offer a number of cloud services and those that can create a compelling end-to-end cloud proposition that integrates their network management capabilities, supported by an agile and service-oriented operating model, could carve out a differentiated and attractive offering to small and midsize businesses (SMBs) and large enterprises. To read or download the PDF file, please visit www.pwc.com/cloud.

Real time: The growing demand for data- 2012 North American wireless industry survey

Now in its 16th year, our annual wireless industry survey reflects the participation by nine US and four Canadian wireless operators. The survey provides a framework for understanding current and emerging trends in the communications sector, and dives into financial accounting and reporting practices to empower readers in decision making in this fast-changing environment. Among the findings:

- Smartphone sales to postpaid customers represent 60% of new device sales, up 46% from the 2011 survey.
- The average minutes of use (MOU) per postpaid subscriber decreased from 720 MOU per month in the previous survey to 673 MOU per month in the 2012 survey.
- On average, 65% of carriers' cell sites used 4G technology, compared with 46% in the 2011 survey.
- Eight of the 12 responding carriers have plans for, or are currently in the process of decommissioning network assets.

To read or download the PDF file, please visit www.pwc.com/us/wirelesssurvey.

Technology forecast: Evolving transactions into relationships (2013, issue 1)

This issue examines the impact of Internet of Things trends on businesses and the IT organization. The article, "Using technology to help customers achieve their goals," explains how the digitization of consumption sets the stage for post-transaction relationships with customers. "The Thing Stack: Technologies that guide customers to their goals" looks at the maturation of the technologies that create the potential for post-transaction relationships. And, "CIO leadership in post-transaction relationships," explores the key role CIOs and IT staff can play in going beyond the transaction. We also include interviews with six executives at enterprises that are demonstrating leadership with post-transaction relationships. To read or download the PDF file, please visit www.pwc.com/techforecast.

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