Communications Review

Are your priorities fit for the future?

A journal for telecom, cable, satellite and Internet executives
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Increasing profitability in B2B
Putting customers at the fore
Improving information security
Maturing the revenue assurance function
Approaching growth with confidence

The communications industry changes frequently and quickly. And the priorities of the operators in the sector must match the pace of change. In this issue we present some of the priorities on which we believe operators need to focus in order to survive and thrive in the future.

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Message from the editor

The phrase 'change is the only constant' is commonly attributed to the Greek philosopher Heraclitus, who died in 475 BC. Yet it perfectly sums up the recent history of the communications industry. While seizing new growth opportunities at home and abroad, and managing the risks of an uncertain environment, operators' priorities have evolved at dizzying speed.

In the recent past, we've seen a surge of investment in network build-outs (remember all that 'unlit fibre'), then the dot-com bust triggering a wave of consolidation via M&A, and then widespread cost-cutting programmes. Those were followed by the wireless race, then the broadband race, then more cost cutting. These successive waves of activity have left most operators on a largely equal footing as far as their service offerings and platforms are concerned, throwing the focus back onto the business basics of differentiation, customer relationships and operational structures.

Operators are prioritising these imperatives amid ongoing change in the technological and customer landscape. With consumers' adoption of digital devices and behaviours accelerating by the day, communications service providers are well on their way to finding the 'new normal' of pervasive, end-to-end digital technologies. With this in mind, we have centred this edition of *Communications Review* on some of the priorities on which we think operators need to focus in order to survive and thrive in the future.

In our first article, "Setting sights on B2B profitability", Rolf Meakin, Andrew Wisnia, Ian Corden and Cledwyn Jones tackle an issue that has long been a concern for many operators: the comparatively low level of profitability from business-to-business (B2B) communications services, especially to multinational corporate customers. As the authors point out, incremental improvement efforts often have not been the answer. Thoroughly investigating the issues at play, they conclude that providers of B2B communications services need to both refocus their operations on profit and cash and embrace change across multiple domains. There is no time to lose. Those that fail to act may find themselves increasingly squeezed between their customers' rising expectations and a fundamentally unsustainable economic model.

Our second article, "Simplifying the business to build value", zeroes in on a growing requirement in the communications marketplace: converged and integrated customer-centricity. Typically, an operator launching a new service would create a separate division to manage it. No longer. The move to triple- and quad-play services across multiple platforms and devices leaves such an operating model unfit for its purpose.

According to authors Colin Light and Cledwyn Jones, to get the most value throughout the lifetime of their customers, operators must address both costs and revenue growth within a single transformation programme. Drawing on their extensive hands-on experience in planning and executing such programmes, Colin and Cledwyn identify the stepping-stones and critical factors for success.

In our third article, “Building a strong defence”, we discuss one of today’s global hot topics, not just for communications service providers but for all industries, in both the public and the private sectors. When the World Economic Forum published its latest Global Risks report in January 2011, it ranked cybersecurity in the top five threats facing the world. That ranking put cybersecurity on a par with planetary risks that range from scarcity of resources to weapons of mass destruction.

As communications operators continue migrating to Internet Protocol and open architectures, the threats to their systems and to critical corporate and customer information are growing steadily. In this article, authors William Beer and Ian Corden analyse the responses from communications executives who participated in PwC’s *2011 Global State of Information Security Survey*. They examine the scale and nature of cyber threats, and describe how operators can justify and optimise their spending to manage and mitigate the risks, while still capitalising fully on cyber opportunities.

From how to survive in the new world of cyber-business, we turn to part of the traditional bedrock of operators’ financial sustainability and success: revenue assurance. In “The transformative journey of revenue assurance”, authors Dan Stevens and Tim Banks examine how operators’ Revenue Assurance functions are evolving. From monitoring and affirming usage transactions, Revenue Assurance is growing into an increasingly strategic role in today’s data-rich, high-bandwidth, collaborative environment.

Building on its roots in auditing, a mature Revenue Assurance group should provide insights and enable competitive advantage in areas such as product and service development, customer profitability and experience, network performance and fraud management. In the future, as the authors point out, the central position of Revenue Assurance in the flow of data through an operator’s value chain means the function must mature further to deliver even greater value.

In our final article, “Returning to confidence amid sweeping change”, we take the pulse of the communications industry as it shapes up for the challenges and opportunities ahead. PwC’s *14th Annual Global CEO Survey* was published in January 2011. In an article that I authored, we analyse the responses from the communications CEOs who took part and find some interesting results.

One result is a surprising and encouraging level of confidence, given the current economic environment and the pace of technological and competitive change. Another is that communications CEOs are more optimistic than are their counterparts in other sectors that their company’s innovations will lead to significant new revenue opportunities. The picture that emerges from the results shows an industry that understands the challenges it faces, and relishes the task of rising to them.

As all our articles illustrate, there are many risks for communications operators to navigate in the new industry landscape that is now emerging, but these are more than offset by the opportunities on offer. Success will depend on how operators prioritise and follow through on their investments and actions. If you would like to discuss or comment on any of the ideas in this issue, I am keen to hear from you. So please send any comments to me at colin.brereton@uk.pwc.com, or feel free to call me on [44] 20 7213 3723.

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Setting sights on B2B profitability

For a number of years now, providers of business-to-business (B2B) communications services—especially to large corporate customers in multiple territories—have lagged behind other segments of the industry in generating profitability. Many B2B players have tried to enhance profitability through incremental improvements, but with limited success.

In our view, the only viable way to close the B2B profitability gap is to undertake fundamental and pervasive change across several domains. This includes reorientating the entire B2B business model to metrics focused on margins and cash flows, giving sales forces the incentive to achieve profitability as well as incremental sales, forming network-sharing partnerships to reduce the cost of serving customers outside of home markets and having robust, accurate, up-to-date management information on the profitability of specific contracts and customers. We believe operators that achieve these changes will be positioned to deliver differentiated profitability and value in the years to come.

By Rolf Meakin, Andrew Wisnia, Ian Corden and Cledwyn Jones

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The B2B segment has long underperformed in profit despite several positive factors, particularly the potential to up-sell a wider scope of network-centric business enablement services. The B2B sector's multi-year contracts and high return on sales and marketing operating expenditures support profitability, and some contracts clearly are highly lucrative. Yet overall returns in corporate telecoms have remained stubbornly low. That has been true especially for providers who are not the incumbent, or who are the incumbent in one territory but serve corporate customers' needs in multiple territories.

The scale of the problem is illustrated in Figure 1, which is based on benchmark information for a range of operators and business models focused on three types of communications businesses, mainly in developed markets:

1. **Consumer fixed:** broadband, voice and, increasingly, pay-TV entertainment services.
2. **Consumer and business mobile:** mobile voice and data services.
3. **B2B:** corporate-focused telecoms such as IP VPN and Multiprotocol Label Switching (MPLS) network services with additional network-related services.

-5% to +7%

range of free cash flows being generated by B2B communications operators

The figure maps the range of free cash flow margin we typically see in each type of provider (the y-axis) against the range of prospective revenue growth (the x-axis). As it shows, many B2B communications operators today are generating free cash flow margins in the -5% to +7% range. Revenue growth prospects—depending on the mix of business and business maturity—are in the low positive to low negative percentage range. Although negative revenue growth is causing consumer fixed-line operators to face their own specific challenges, both they and, more particularly, mobile providers are significantly outperforming B2B players on profitability.

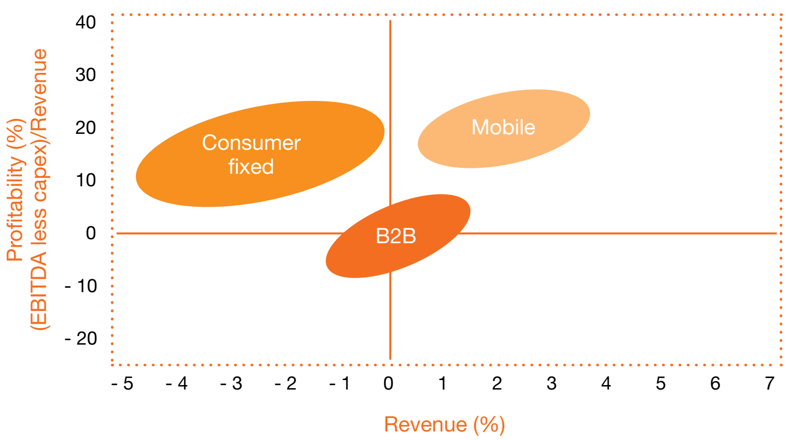
Finding the barriers to B2B profitability

Why has this profitability gap opened up? Our experience shows that the dynamics of the B2B market make achieving economic returns especially challenging, for four main reasons.

The first is that **scale economies in network costs are restricted mainly to home markets**. For most operators, customer revenues related to markets outside of home markets are insufficient to justify investing in extensive infrastructure to reach customers' sites. So global operators have tended to lose money outside their home markets, where network economies already exist. Low global profitability has been seen as a price worth paying in return for the profitable domestic business of locally based, multinational corporate clients.

The second barrier is that **third-party access and service provision tend to constrain margins**. Lacking economies of scale, regional and global players alike need to rely on third-party access and service-provision arrangements to reach customers' sites. This has the effect of limiting the margins realisable from customer contracts.

Figure 1: B2B versus other segments' profitability and revenue growth



Thirdly, **supply-side dynamics prevent the market from reaching an equilibrium** of 'normal' profitability. Put simply, too many operators are chasing the same corporate spending—and the largest corporations tend to have sophisticated buyers able to select best-of-breed providers for different services. At the same time, while few operators have reached a critical mass of profitable business, there is always an incentive for one player or another to increase its share of the market through disruptive pricing.

The fourth barrier is that **excessively customising services to meet the specific requirements of customers often translates to costly solutions**. Standard solution elements, on the other hand, can be delivered profitably within the stringent pricing that results from the strong competition for large corporate business.

Thinking through operational challenges

For many B2B operators, the impact of these market barriers on their ability to achieve profitable business is compounded by a number of embedded operational challenges. The challenges vary from business to business, but several commonly occur.

- **Complex product portfolios.** Having too many versions of products across the business increases development costs, confuses customers, and increases testing, training and maintenance requirements. A symptom of this problem is new products or product variants being created because it is possible to do so, rather than in response to a clear customer demand. For example, do customers actually need all the varieties of network data rates or security standards? Another issue complex portfolios cause is the widely varying levels of profitability between various service and solution offerings.
- **Bespoke solutions.** Some B2B carriers tend to treat all non-standard requirements as bespoke solutions, rather than guide customers towards standard, flagship products that they then configure to customers' needs. Bespoke solutions are costlier and slower to design and deploy, making it harder to predict how revenues and costs will behave over the lifetime of the contract. This problem lies in both the pre-sales stage—effectively translating customer requirements into the design of a solution—and the post-sale stage, providing services cost-efficiently.
- **Fragmented systems and processes.** Dislocations in systems and processes can delay and disrupt the providing of solutions; can lower visibility into future demand (affecting, for example, the ability of the network and information technology (IT) domains to address evolving demands effectively); and can cause inaccurately costing or pricing services (often resulting from a lack of cohesion and common understanding between the sales and delivery functions). One example of system fragmentation occurs with access inventories that, if they have been duplicated or regionalised in the past, can be difficult to reconcile—and that complicates making sure infrastructure investments meet demand. In recent years, several leading international B2B operators have centralised their access management functions to overcome this issue.
- **Inefficient launches of large, long-term contracts.** Industry experience shows that if large, complex contracts are not managed effectively during set-up, they fail to deliver the levels of service—and the cash returns—expected in the time frame suggested by initial business cases. This shortcoming has left many operators needing to conduct tricky ex-post reviews of contracts and drawn-out renegotiations with customers.
- **Geographical dispersion of resources.** The multi-regional nature of the segment requires operators to maintain people, infrastructure and services across geographically wide markets. And in each of those markets, different underlying economics are associated with providing services. This situation has led to margin erosion as the industry has moved to global pricing models, such as a flat price for anywhere-to-anywhere connectivity worldwide on MPLS services. Having become locked into such models, some B2B operators have found themselves struggling to manage a complex and ever-changing set of costs against a single—and declining—pricing level.
- **Effective development of new services.** As the industry migrates increasingly towards cloud-based services (e.g. SaaS, PaaS, IaaS), many carriers struggle to get innovative, cost-efficient solutions to market. Typical challenges in this area include developing commercial models quickly enough, signing-off on investments for new infrastructure and developing strategic partnering deals.

Targeting higher profitability in the primary business areas

Given this background, it is logical that B2B communications companies have been striving to boost profitability. The ingredients needed for B2B profitability are no secret. Although the companies are already applying many of them in existing initiatives, few have succeeded in exploiting all the means to profitability at their disposal.

As Figure 2 shows, in three primary areas of the operator business model—products and sales, provision and maintenance and care and support—operators can take steps to boost revenues or control costs. The result is six core areas of opportunity for improving profitability. In each opportunity, a number of measures can be applied.

Products and sales

In the products and sales arena, the **revenue enhancement** options include up-selling more effectively by developing services and taking them to network clients to increase the penetration of existing accounts and embed the company's service offerings more deeply. Operators also can sharpen their focus on 'sweet-spot' customers globally—pursuing larger global deals that because of their complexity have more potential to generate revenue. Bundled services represent more revenue opportunities. They enable an operator to act as a 'one-stop shop' for clients across network and professional services, and to take on a wider range of third-party communications/IT contracts with more economically attractive deals.

Cost control in products and sales includes portfolio industrialisation. That involves standardising solutions to get the most out of existing delivery models and product configurations by making them quicker and less costly to deploy for each customer. The time to get new products and services to market also can be improved through efficiency measures such as streamlining and fast-tracking agile research and development processes and making more focused decisions on investments. At the same time, selling, general and administrative (SG&A) expenses can be reduced through rationalisation, such as globalising sales and bid management functions, moving to a 'leaner' organisational model and cutting real estate costs.

Figure 2: Matrix of six profitability improvement opportunities

	Products and sales	Provision and maintenance	Care and support
Enhance revenue	Up-selling VAS Sweetspot customer focus Full-service model	IP migration Premium network features Wholesale	In-sourcing Customer satisfaction Charging discipline
Control cost	Portfolio industrialisation TTM efficiencies Expense rationalisation	OEM tie-ins Regional access agreements Operations outsourcing	Offshore models OSS/BSS centralisation

Higher profitability can be attained by applying measures from core areas of opportunity.

Provision and maintenance

In provision and maintenance, one of the most powerful means of **revenue enhancement**—and one that most players are already using—is Internet Protocol (IP) service migration. Customers are moved away from legacy platforms and onto an IP network. Extending the contract and re-pricing support the move. Premium network features (e.g. deep packet inspection—enabling enhanced data handling and security management) present further revenue opportunities by helping operators establish price premiums with product feature sets. Other examples include using IPv6 or multicasting as a point of differentiation.

In improving **cost control** in the provision and maintenance area, IP migration is again significant. Through economies of scale, greater transport efficiencies and higher use of common platforms—which also lower operational costs—IP has inherently lower infrastructure costs compared to legacy systems. IP transport as a basis for regional access agreements is another area in which operating costs can be reduced. Operators can control costs through outsourcing, reducing the workforce and migrating to more flexible, volume-based business models. Typical areas where operators have outsourced and have accrued significant cost benefits include network engineering testing, field force operations and IT platform development and operations.

Care and support

In care and support, **revenue enhancement** measures include in-sourcing—selling service capacity in internal care centres to external parties in order to fund growth, utilise capacity and generate additional income. Customer satisfaction and revenue both can be improved by using feedback programmes to track and identify new customer requirements and develop specific solutions to meet them. And applying greater discipline to charging can ensure that care and support services are effectively built into the service charges in the customer contract.

For **cost control** in care and support, improving customer satisfaction and reducing churn help by reducing the cost of acquiring and managing customers. At the same time, 'offshoring' models can be used for essential but low-value back-office functions, front-office monitoring and second-tier customer support to lower-cost regional hubs. Rationalising operational support systems enabled by common platforms, cloud-based systems and network architecture simplification is also effective in managing costs.

Changing the fundamental operating model

Our experience with B2B service providers shows that focusing on revenue and costs in the ways we've identified can be all the more positive when combined with fundamentally changing the operating model in critical areas of the business.

One such innovation that is gaining ground among B2B operators is the creation of sales and marketing partnerships to match sales and partner channels to specific geographies, customer groups or product growth plans. The partnerships include alignments within or between B2B operators and across the broader communications industry (B2B operator with consumer-focused operator), as well as alliances in the vendor or IT service provider markets.

Some operators are also setting up 'complex deals' business units, pooling resources and focusing them on a set of contracts that are especially significant in size, revenue or complexity of service delivery. This approach involves rationalising the process and pulling in resources from the sales, delivery and back-office functions to create a highly targeted 'business-within-a-business'. The core objective is to increase profitability from relationships with the primary contract customers.

Many B2B operators are forming partnerships across the broader communications industry and with vendors and service providers.

A further operational change is the creation of 'launch factories', which are specialised operations teams that roll out and establish, at launch, the most critical elements of large, complex contracts. These teams focus principally on the first six months of a contract. They aim to ensure that the services meet customers' expectations from day one, and that what is delivered is in line with the business requirements and the planned costs.

The current failure to deliver

To date, B2B operators' execution of these initiatives has not been as successful as they had hoped, resulting in the benefits falling short of expectations. In our view, there are four main reasons why this is so often the case:

Continued focus on network footprint and standards. Led by engineering, many operators have continued their efforts to expand the network and develop gold standards, even if the demand from the majority of the customer base didn't justify the goals. Often, B2B operators have seen the network footprint as important to business strategy. As many as five providers currently claim to have the most comprehensive global coverage and the highest-quality networks. This competitive focus on the network has led to investing a lot of time and resources into an asset that customers don't necessarily see the same way.

Account targeting and segmentation based on owners' economics. Traditionally, the B2B communications services sector has segmented its customer base in a relatively simplistic way, based mainly on the customer's size in terms of turnover and/or location, rather than on the customer's service needs or likely profitability and lifetime value to the business. Occasionally, segmentation has taken into account industry verticals, such as with financial services or logistics businesses. In general, though, the approach to segmentation remains fairly unsophisticated. We believe that has caused operators to miss opportunities where accounts do not 'fit the description', and has also resulted in some ultimately unprofitable deals being signed.

Mismatched sales incentives and business value. Historically, B2B sales incentives have been based primarily on deal size or lifetime contract revenue. As a result, the main focus for reward has been sales growth rather than profitability or cash returns. Operators in this sector rarely seem to decline the opportunity to bid for large revenue deals because of concerns about contract profitability or cash returns. With the benefit of hindsight, they might consider how many deals they should have turned away on this basis.

Unwillingness to cull or change unprofitable contracts. B2B service providers have proved largely unwilling to shrink the overall size of their business in revenue terms in return for increased absolute profitability and return on investment. This reluctance is caused partly by external analysts' benchmarking of performance, which has always focused on revenue/deal growth, not profits. Another factor is the service providers' unwillingness to invest the resources and time cost needed to renegotiate or cancel large, multi-year contracts. They also are reluctant to risk possible damage to their reputation if the public sees them as walking away from providing large or complex network services to major customers.

Moving to a truly margin-based business model

Given the market dynamics and profitability barriers we have described, we believe that a piecemeal or incremental approach to providing B2B services more profitably simply will not work. Instead, an operator needs to commit itself to migrating, pervasively and permanently, to a margin-based business, one based on the metrics of profitability and cash flow.

Our engagements in this part of the industry have highlighted four steps that companies can take to support the execution of profitability initiatives. We summarise the steps in the box at right and investigate them in more detail below.

Improve profitability in four steps

1. **Govern around cash.** Run the business for incremental margin rather than revenue growth, by offering the right business incentives and bonuses.
2. **Build profitability insight.** Invest in greater insight into performance on a contract level to identify, manage and address margin-eroding activities and customers.
3. **Improve segmentation.** Develop a more sophisticated customer segmentation and go-to-market approach that matches investment and demand.
4. **Execute through partnerships.** Explore regional partnership models that go beyond access sourcing, wholesale traffic or 'white-labelling'.

1. Govern around cash

To match incentives and bonuses with margins rather than revenues—and thereby encourage the right behaviours and culture across the business—the first step is to redefine success so that revenue growth isn't the main goal. That may mean culling unprofitable customers and shrinking the business to improve profits. It should also mean that for a sales leader, deal ownership doesn't stop with signing the contract, but reflects the longer-term value created for the business, perhaps by splitting the bonus between revenue size and profitability.

Redefining success requires implementing the right governance model. To ensure that both the sales and the delivery operations have 'skin in the game' throughout the lifetime of the contract, there should be a shared bonus pot or complementary key performance indicators and incentives for both teams. Ideally, the sales force should be equally as accountable for profitability as the service delivery team is for supporting an effective deal structure and sales effort. Ex-post reviews can also be put in place for significant deals, to highlight success factors and any lessons learned.

These changes will create significant consequences for the business teams if they ignore risks associated with poor profitability that later manifest themselves in a contract. This new accountability will encourage more profitable sales behaviours, which can be locked in place by creating a mechanism for complying with the sales process and bid tools. In many cases, this will mean instilling a much stronger risk management culture.

2. Build profitability insight

To pinpoint the customers and activities that are having a negative impact on margins, it is first necessary to know where profit is—and isn't—being created in the business. That awareness begins with a standardised view of margins, based on an understanding of what the margin should be for each product and service type, and realistic goals for sales and delivery teams to achieve these margins. For the goals to be acceptable and workable, the various elements affecting margins, such as the effect of combinations of services or bespoke arrangements, need to be transparent.

To support and sustain this higher level of understanding and transparency, the operator will need the appropriate tools for gaining better insight into profitability across multiple dimensions—geography, customers, contracts, products and services. Many initiatives to date aimed at improving margins, but not founded on a real understanding of what is determining costs or how a contract is performing, have fallen short in focus and in assessing progress. Tools for gaining insight can overcome such issues and can help build an information model that supports full P&L at several levels.

3. Improve segmentation

Enhancing profitability requires making sure that investment in service development, sales and delivery reflects real customer needs and spending priorities. Customers should be identified more selectively and with a view to their lifetime profitability. To achieve that, B2B operators need to replace traditional, simplistic customer segmentation mechanisms with a more sophisticated approach based on customers' specific needs and buying behaviour, not their size and location.

The go-to-market approach may also need to be modified. This means being less accommodating to bespoke requests and passing on premium costs-to-serve—such as bespoke network or product build or higher security standards—directly to the premium customers benefiting from them. Product solutions can also be fine-tuned to mirror what customers demand and are willing to pay for. Investments in new network and information technologies can lead to greater agility and lower costs in developing services and migrating customers to them.

One approach may be to offer a premium product to the top 10% to 20% of the customer base that have high-end requirements and genuinely need a premium product. The remaining 80% to 90% are offered a standard product—with lower costs, fewer bespoke elements and features that match demand at an appropriate price. This two-pronged approach can help to rebalance the revenue mix towards a smaller number of repeatable customer propositions based on re-usable solutions, enabling the operator to achieve the same or higher margins on a lower cost base.

4. Execute through partnerships

The fourth—and in many ways the most challenging—step towards improved profitability is to collaborate more closely and continually with a wider range of external partners to cut costs and boost quality, customer loyalty and revenues. That kind of collaboration demands a new approach to partnerships, potentially relying more on partners' network assets for regional and domestic connectivity.

In the international airline industry, global alliances between carriers have successfully reduced the costs of operating global networks while allowing retail competition on shared routes. Today, three global airline alliances account for approximately 80% of international airline capacity.

Global B2B carriers should, in our view, consider developing network partnerships beyond the traditional regional or domestic access-leasing model. When partners have significant elements of their networks integrated and used to deliver services to customers, operators save significantly on costs by not having to build and manage substantial infrastructure (e.g. at the IP/MPLS network switching layer or below) beyond their international backbone network.

Overcome the barriers to profitability

Our experience shows that many B2B operators face four major, embedded barriers in their efforts to improve profitability and margins:

1. **A traditional sales and engineering culture and focus.** Sales and engineering historically have been the driving force of these businesses. Sales revenue and owned-network footprint often continue to be the yardsticks by which business performance is measured. That must change to a margin-driven culture and focus, and the delivering of solutions must be adjusted better to markets' and customers' demands.
2. **Segregated information and processes.** Caused in some instances by a legacy of mergers and acquisitions, 'silos' need to be broken down. And information and processes need to be accessible to enable clear insight into how to achieve true profitability.
3. **Accountabilities and responsibilities.** Volume, revenue and cost management are typically run by different functions. Greater cross-functional alignment with a new governance model is required to bring cohesion and efficiency to delivery as well as business and customer requirements.
4. **Partnership operations.** Partnerships require clear, converging strategies and agreement on rules of 'ownership' and engagement with customers. When it comes to executing well under these agreements, the devil can be in the detail.

This approach, involving the use of network-network interfaces (NNIs)—points of interconnection between each party's network—can offer material cost benefits to B2B players. But success depends on carefully matching network designs to customers' needs. Wherever a point of interconnection occurs between two potentially very different networks, service might be compromised to the lower of the two network design levels. With careful design across the demand and delivery domains, network integration offers B2B players a means of tailoring service delivery capability and costs to customers' requirements, tying in with improved segmentation of customers based on needs and profitability opportunity as described earlier.

Network integration presents an alternative way of giving customers the required level of network service without owning the end-to-end service delivery or bearing the administrative burden of managing third-party access partnerships. It is important to appreciate that network integration should not mean losing control of customer relationships, which are critical to future value. Nor should it mean losing oversight and control over local service provision, including customer premise or network maintenance.

Inevitably, integrating the networks will involve up-front costs (e.g. to develop switching performance levels across NNIs to acceptable levels). But focusing this approach on customers and markets with more basic service requirements in regions beyond the carrier's existing core footprint will help to build a positive business case.

Overall, network integration should be seen as helping to reduce infrastructure costs while preserving or enhancing market access. Benefits to expect include reducing network provisioning and maintenance costs, as well as improving the levels of network use (by virtue of traffic sharing) and realising consequent savings in the partnership deal.

Embarking on the profitability journey

In our view, B2B operators that take these four steps will be in a good position to improve margins and close the profitability gap that has opened between them and the rest of the communications services industry. To succeed, they will need to overcome some entrenched barriers (see box). But the prize more than justifies the required effort and investment.

Indeed, we believe that B2B operators have little choice but to embark on the type of profitability journey we have mapped out. With competition continuing to intensify and customers becoming ever more aggressive on price, the profitability problem is not going away. Incremental initiatives have been introduced, but no one answer has emerged. The result is that B2B businesses still aren't delivering the returns that investors expect of them.

The fundamental message is clear. B2B communications service providers need to recalibrate and refocus their operations on profit and cash to boost margins and support broader profitability initiatives. Getting this right means embracing pervasive change across multiple domains. It means encompassing internal behaviours, insight into customers and openness to deeper partnerships with other industry participants.

Competition and customers' expectations continue to escalate. Players that fail to focus on profitability now may find themselves with unsustainable economic models as corporate customers' needs evolve throughout the process of globalisation.

Simplifying the business to build value

The communications industry has long recognised the need to focus on the customer, but has always struggled to marry this goal with their own internal structures. To do so, they will need to simplify their operating models. Rarely have we seen operators tackle the issue of costs and revenue growth as an integrated programme, with the customer at the heart of the objectives. However, we believe that only by addressing the issue of integration can operators really maximise the lifetime value of their customers and deliver the converged communications and media experience that customers are demanding.

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The authors wish to thank Colin Brereton and David Russell for their contributions to this article.

Traditionally, as operators have launched new consumer services (e.g. mobile or broadband), they have created separate divisions to manage these offerings. Sometimes operational necessity and other times regulatory oversight was the greater influence. Often the result has been the same—fragmented, product-based structures separated by function. As operators launch triple- and quad-play services across a wider array of platforms and devices, they must rethink their operating models.

Operators need a more integrated strategy for developing their products and getting them to market. That means revising their product development and marketing strategy at the same time as their organisational structure. Some operators have tried to reduce costs by integrating divisions. Others have seen multi-play as a way to increase the number of subscribers, reduce churn or increase incremental revenue per customer.

But rarely have we seen operators tackle the issue of costs and revenue growth as an integrated programme, with the customer at the heart of the objectives. We believe that only by addressing the issue of integration can operators really maximise the lifetime value of their customers.

Although operators have multiple contact points and established billing relationships with their customers, many are failing to cash in on what they have. Some customers do not understand, or care, that two (or more) arms of the business are part of the same group. So deciding to buy multiple services from the same operator may be more of a simple pricing choice than a conscious integrated product decision. Other customers may be aware of the link, but frustrated by inconsistent service on the products they already use. Customers increasingly are having that experience in other sectors where they buy multiple services from one supplier, for example retail banking. Very few operators successfully meet their customer's needs, and very few deliver integrated mobile, broadband and television services in a seamless way.

Simpler, converged and dynamic operating models create opportunities for cross-selling and up-selling.

Fixed and mobile operators need to boost the performance of all their revenue generating units, as cable operators and other pay-TV providers have already done. As Figure 1 illustrates, operators that have structurally integrated their product businesses into a single entity—focused on customer segments rather than on the products—have been more successful in boosting their revenue generating units. Besides increasing revenue, they have removed the duplication among the former stand-alone business units, such as support functions, technical functions, sales and marketing and management overhead.

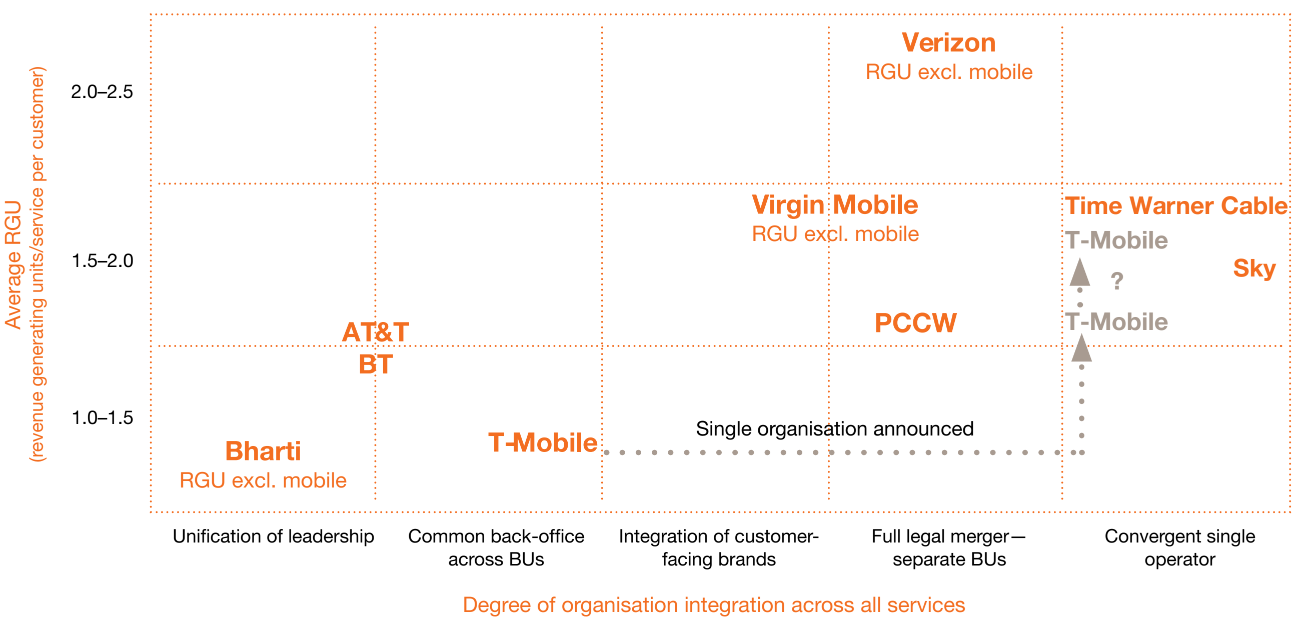
By centring the business on what customers need, and by creating a complete view of the products each customer adopts, operators will be able to transform customer service, reduce churn and vastly increase the opportunities for cross-selling and up-selling.

What's needed is to develop much simpler, converged operating models. Technology-heavy product development cycles no longer make sense in a converged and dynamic market environment. Getting products to market quickly is critical to success. We see time-to-market targets of 30 to 60 days as realistic, depending on the complexity of the product and the capabilities of business and operational support systems. Anything non-core in the value chain should be outsourced or divested altogether so that operators can rapidly develop offerings that match what customer segments expect. Only then will they be able to serve content consistently across all the platforms they now have at their disposal.

The stepping stones of revenue-enhancing integration

We've identified four strategies that operators should consider on the path to integration. These strategies can help operators understand customers better and use multiple platforms to offer a broadening range of digital content and services that suit their preferences and requirements.

Figure 1: Trend towards broader bundles and deeper integration



1. Leverage relationships to target converged offerings.

To place customers at the heart of everything they do, operators need to rethink their strategies. Customer data plays a crucial role. It helps operators understand customer behaviour in the context of time and location, and then enables them to better serve the customer's wants, needs and expectations in those future contexts. It also helps in creating advertising that reaches audiences.

A trusted billing relationship is equally important. Customers' willingness to make micropayments for everything from content and applications to related merchandise depends largely on already having a trusted billing relationship with their service provider. Operators, by understanding and owning the relationship they have with their customers, can turn, for example, the rise of the applications store and over-the-top TV to their advantage.

A more rationalised way of making products and customers more profitable should also be a priority for most operators, especially given the rapid rate of change within many organisations trying to launch new offerings such as broadcast and hybrid IPTV. They should forget the mass-market approaches of the past and develop products and services that address the specific needs or concerns of their customers. For example, finding ways to make social networks more personally valuable to users without intruding on their privacy; offering content that's personalised to customers without restricting their choices; and making content and services accessible on all platforms and devices.

Deutsche Telekom has restructured its domestic fixed-network business and domestic mobile business within a new German company. Last year when this was announced, Chairman of the Board of Management René Obermann emphasised the enormous potential for creating value. "On the one hand," he said, "customers with fixed network and mobile contracts with Deutsche Telekom are considerably more loyal." On the other hand, he continued, "Just one in five of our 29 million customer households currently has a fixed-network and a mobile contract with Deutsche Telekom. If we were to persuade just 1% of the remaining customers to sign up for a second contract, our revenue could increase by up to 100 million euros per year."

There has been plenty of discussion about customer personalisation and the link to customer profitability, but operators have rarely focused their efforts on driving value differentiation in their customer base. Instead, faced with competitive price declines, they have tended to concentrate on stabilising the average revenue per user in each service area (such as voice, broadband and television).

2. Exploit digital advertising.

Today, 'display and search' advertising dominates online because most established platforms and players lack the ability to serve an advertisement according to behaviour, demographic and location information. Operators have the network layer capability and existing customer relationships to exploit a shift in advertising spend towards more intelligently targeted and served advertisements. Research from PwC's *Global Entertainment & Media Outlook 2010-2014* indicates that consumers, especially those aged 18 to 25, are often willing to share information about themselves in exchange for content or targeted advertisements.

Increasing numbers of consumers are willing to provide detailed demographic information about themselves as well as how and what they consume and what brands they prefer—provided that they receive something valuable in return (and that they are not personally identified). Others in the value chain, though, from service providers and search engines like Google to advertising-oriented customer services like Groupon, are now exploiting that trend.

Operators need to rethink their strategies and place customers at the heart of everything they do.

To take full advantage of the trend, operators must develop the tools and techniques for bringing together demographic, location and preference details, and the ability to identify and authenticate prospects. All that information needs to be brought into platforms capable of analysing behaviour and compiling customer profiles for advertisers to use. The result is a significant lift in CPM (cost per 1,000 impressions) rates and the creation of a high-value advertising revenue stream for operators.

To be successful, operators will need to form strong relationships with both traditional and new players in the advertising space. That will not be easy given that the mind-sets and cultures of the two industries differ so much.

3. Serve content consistently across platforms.

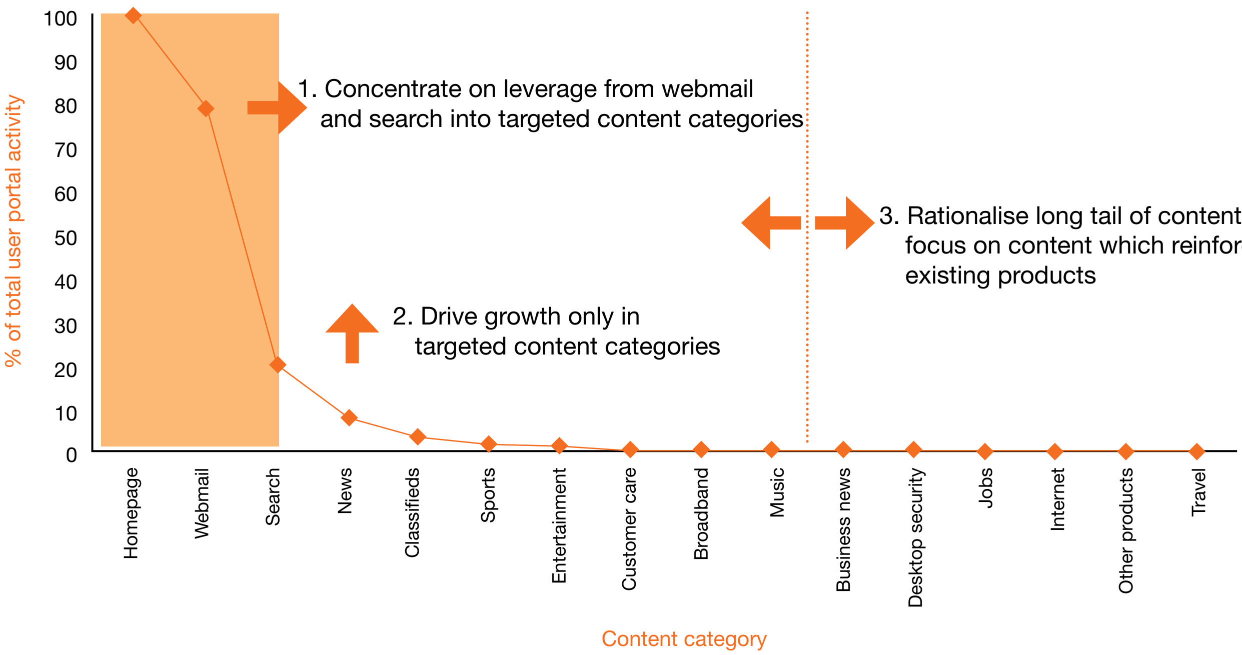
Whether or not operators choose to launch television and mobile content services, they need to be able to serve their content consistently across all platforms. But they do not need to own all the content. Operators that purchased premium content rights, which haven't yielded the forecast return on investment, have misinterpreted the old adage that 'content is king'.

We continue to see avid consumption of 'long tails' of content, which can lessen the overall profitability of content offerings (see Figure 2) if an operator chooses to own and resell the content. Instead, operators should aim to facilitate access to the 'long tail' through partnering. Some content providers have demonstrated that 'smart' commissioning and acquiring of content can be what differentiates their television offering, irrespective of how it actually reaches customers.

4. Put the customer first.

Traditionally, operators have been forced by regulation into separate legal entities to provide fixed and mobile services, especially if one part of the business dominated the market (e.g. fixed) but other parts were split more

Figure 2: Operator's portal activity/content



competitively across the market. But this split doesn't reflect the reality of customers' usage and service preferences. As demand for tailored communications and entertainment services and product functionality overlap, a comprehensive look at what customers need becomes more important. This means rethinking their traditional operating models (i.e. separate divisions for separate services such as mobile or fixed), which have often been reinforced by individual business/product performance KPIs.

Operators have begun adopting a number of approaches to integrating their organisations to help realise some of these objectives. In today's market, where cost reduction is such a major concern, operators are increasingly focused on driving towards full legal merger. This trend will only accelerate, we believe, as more recognise the link between integrating the organisation and increasing the number of revenue generating units.

New measures of success for operators in the world of converged digital services

In order to make the most of content across platforms, operators should consider:

- **Establishing robust return-on-investment (ROI) metrics**
  Negotiating rights is complex, and the costs of buying and managing content can be high. Both factors make it important to evaluate and select deals based on customers' needs and by using tangible ROI metrics. Much in the same way as operators need to distinguish between core versus non-core organisational capabilities, to maximise customer value they need to focus on the content that delivers value and ROI (core) and then provide third-party access and applications for the rest (non-core). However, the key factors used to measure ROI are critical, and these often differ between operators in accordance with their strategic goals.

- **Comparing partnerships against direct acquisition**
  Understanding what value suppliers and competitors offer will help operators be informed and efficient in acquiring content. Partnerships are likely to be the most natural fit for operators looking to get the most from the content production and aggregation aspects of the value chain. (Especially in light of potential regulatory intervention to provide access to premium rights content, as seen with Sky in the United Kingdom and Orange TV in France.) Yet most operators will focus their efforts lower down the value chain, away from content production.

  The key here is for operators to retain a primary role in the customer delivery value chain to prevent the apps stores, over-the-top TV, and OEM services (e.g. Nokia's Ovi and Apple's iTunes) from achieving the disintermediation they desire.

- **Assessing secondary threats and benefits of content**
  Cannibalisation and the halo effects of different content strategies can have a significant impact on the overall value contribution (both positive and negative) of content to the business. For example, rights to premium sports content can have a positive, or 'halo', effect on the rest of a multi-screen sports community approach. But the same rights might also be cannibalistic of other broadcast channels—the operator must balance this against its potential obligations to the rights holder to deliver minimum viewership numbers or face penalties and/or revenue guarantees.

Further questions remain as to whether operators should proactively embrace the over-the-top approach—it can act as a positive differentiator against their pay TV competitors, but conversely it can drive significant incremental network loading and costs without associated revenues.

These factors need to be considered in line with the market segments addressed, especially as operators begin offering entertainment on multiple platforms. And especially as they become more specific in aligning customers with content and services.

Organisational redesign

We've identified five convergent models that communications operators have already adopted to become more integrated businesses. Degrees of integration vary, with most operators being less evolved where customer-centricity is concerned. We expect that, with greater maturity in customers' consumption of digital services over fixed and mobile platforms, operators will look for more radical options for integrating—learning from others' successes and challenges. Some of the convergent models operators adopt may be temporary while they get comfortable with their position and role as a converged provider (see Figure 3).

Unification of leadership

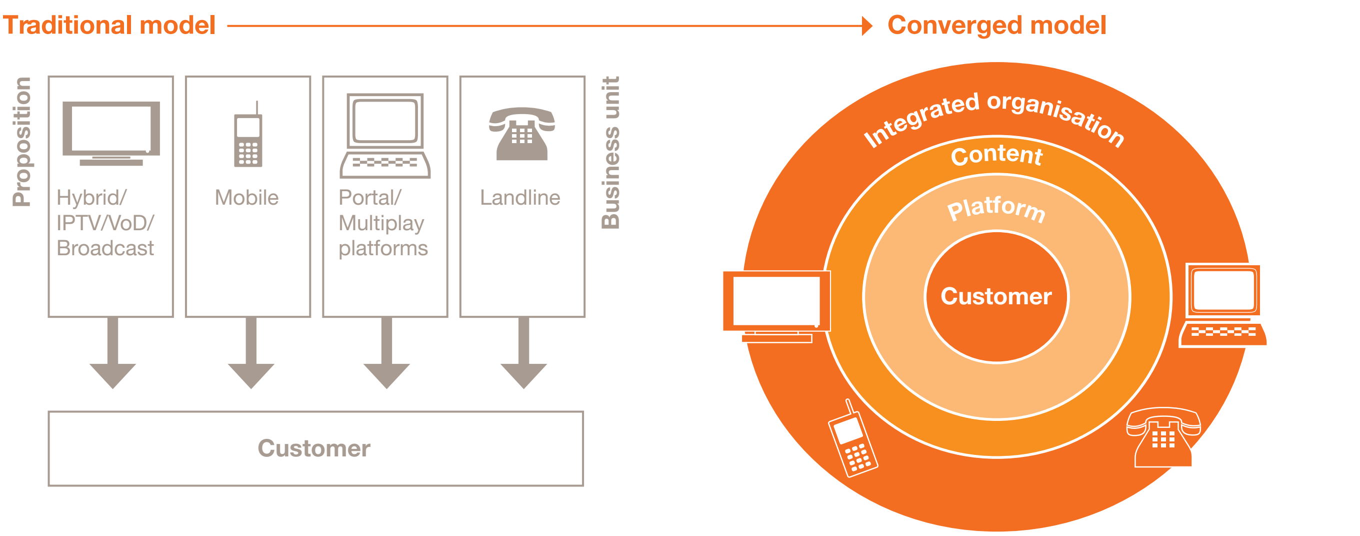
Most operators choose this model because it allows the management board to centrally coordinate strategic issues (e.g. investment priorities or regulatory policy) across its business. But it is not practical in making day-to-day operational decisions for individual business units (e.g. pricing decisions that lead to internal cannibalisation).

In a top-down culture, this model has the danger of generating multiple overhead functions (seen necessary to support the board). Most telecoms groups with a fixed heritage that have added mobile businesses (organically or inorganically) have adopted this organisational model, especially for markets where fixed and mobile operate in parallel.

Unification of non-customer-facing functions

This model typically integrates back-office support functions, such as finance, information technology, human resources and administration. We have seen operators start to integrate their fixed and mobile businesses (such as France Telecom combining aspects of its operations in France) by focusing on finance, information technology or other non-customer-facing activities. This level of integration brings greater consistency to the supporting infrastructure and the potential to leverage scale in the cost base. But this kind of integration has been more about removing duplication of those functions across separate product organisations than about organising to meet customers' needs.

Figure 3: Operator strategy



Although this model can be effective on processes and costs, it is limited. It does not typically involve customer-facing activities, sometimes because of regulatory issues, such as protecting data or preventing cross-promotion among business units. Other times, operators, wary of damaging the mobile growth engine, have preferred to manage the downside of fixed services as an isolated part of the organisation. Now that mobile is saturated and fixed services have a new lease on life—with the emergence of broadband content—the need to revisit this approach is growing.

Redefinition of marketing functions

This model integrates marketing functions into single, converged businesses aligned to customer segments, and it integrates all support functions. By unifying the company's brand, it enables operators to create customer-centric products and services.

Redefining marketing allows an attempt at convergence focused on the customer. But often the legal and regulatory constraints on the legal entities diminish the effectiveness and may result in new overhead to manage Chinese walls across the business.

In 2006, France Telecom's Polish subsidiary, Telekomunikacja Polska (TPSA), tried a hybrid integration. The company integrated its customer-facing activities, but stopped short of full legal integration and the regulatory and legal consequences that would have been triggered at the time. (The regulatory environment was still being formed, and regulatory positions on issues such as structural separation had not been concluded.) TPSA created a converged 'overlay' organisation that enabled two distinct legal entities to remain, and also created an operationally integrated organisation. That meant setting up a matrix of legal reporting and operational reporting. Restrictions and informational screens had to be put in place where regulatory restrictions kept fixed and mobile from collaborating or sharing information.

Despite the complexity of making such a matrix work, TPSA benefitted from the approach by harmonising many aspects of the fixed and mobile businesses that related to managing customers. For example, the online strategy and capability were harmonised and a more ubiquitous content approach was adopted across all platforms. Reducing duplication created some opportunities to reduce costs, especially management overhead.

The lesson TPSA learned from this experience was that maintaining legal separation still requires a degree of duplication to give the impression of two companies and to not fall foul of regulatory scrutiny.

Other operators have integrated in a similar fashion. AT&T and Telstra have integrated many functions across fixed and mobile for their corporate business units.

Full legal merger, but with distinct business units

Unlike 'redefinition of marketing functions', which has a high degree of integration but maintains distinct legal entities, this model dismantles duplicate functions (e.g. support areas) to save significantly on costs. But because it preserves the 'silo' structure, it does not result in full integration for the business.

Magyar Telekom adopted this approach as a precursor to the broader Deutsche Telekom strategy to create single, converged fixed/mobile businesses in many of its markets. Telefónica O2 Czech Republic acquired Eurotel and Český Telecom and then integrated them under a single brand in 2006.

Operators chose this model, as opposed to a deeper, converged integration, because of the maturity of the market and, in particular, not wanting to disturb high-performing mobile business units. Those reasons may be less prevalent in developed markets today, as evidenced by Telefónica's subsequent integration of sales and service. Telefónica is now adopting much more of an integrated-organisation philosophy within each of its country operations, and for regional activities across country operations.

Operators need to move toward converged organisational structures and provide a fully integrated and consistent approach if they wish to retain customers.

Converged single legal entity

This represents the combination of 'redefinition of marketing functions' and 'full legal merger'—a truly integrated, single entity structured on common customer segments. It's a fairly recent trend. KPN, becoming the first to adopt it in 2006, has improved its EBITDA (earnings before interest, taxes, depreciation and amortisation) margins. The company has restored its 2009 levels to 2006 levels on a smaller revenue base. Over the past 18 months several other operators have announced programmes to implement converged organisations. Deutsche Telekom, Telekom Austria and TP Group are all planning such a move.

Operators that increasingly are adopting elements of redefinition of marketing functions also may find themselves heading towards a single converged organisation. As a result of current cost pressures, many operators are relinquishing any benefits they've received from maintaining two legal structures. But a broader influence is the strategic need for change in today's converged market for communications services.

No longer offering a portfolio of distinct solutions through distinct organisations, becoming a converged, single legal entity equips an operator to capture more of its customers' entire spending on communications services. Deutsche Telekom has forecast its earnings to improve by 600 million euros yearly in the medium term. Austria Telekom expects to benefit from synergies—in revenue (approximately 30%), operating expenditures (55%) and capital expenditures (15%)—and from more than a 10% uplift in free cash flow from its 2010 level.

Challenges on many fronts

Any effort to integrate fixed, mobile and television businesses around common customer-facing functions and common supporting activities will raise a number of challenges. In particular, options that seek to harmonise functions but that maintain distinct legal entities typically are the hardest to implement successfully because of the complexities of a dual culture.

Whether an operator is coherent and integrated is easy to see in its online activities. The corporate website can remain separate, but any new approach for up-selling content to customers needs to span both an operator's fixed and mobile operations to encourage the wider take-up of services (though this is harder to achieve without full legal integration).

Wherever content is being sold, how and when that takes place must be reported fully so that the correct royalties can be paid. Operators can negotiate better rights arrangements if they can show how much their customers are watching content over mobile and fixed channels. Perhaps more important, having that information reveals a wealth of underlying data that makes more personalised offers possible.

Reorganising creates the opportunity to segment operational activities into core (essential in-house competencies) and potentially non-core (competencies that can be outsourced or placed into shared services facilities). In 2006, the Indian telecommunication services provider Bharti Airtel outsourced the majority of its network assets and operations to Ericsson in a US$1 billion deal. In 2007, the arrangement was expanded to include all of India. The arrangement has enabled Bharti Airtel to focus on its customer-facing and marketing activities without losing momentum towards its goal of developing nationwide coverage. Bharti is now the largest GSM player in India.

Only rarely do operators outsource all of their network activities as many define this as a 'core' activity. However, Bharti's example illustrates how customer-facing activities have superseded the network department as key to maintaining a company's competitive edge.

Conclusion

The market is demanding consistent, customer-focused services across all platforms. From now on, the operators that can successfully meet these expectations will be the winners. Operators need to move towards converged organisational structures if they are to get the most benefit from a fully integrated approach to customers. That approach is based on content, advertising and customer data, and it incrementally enhances revenue generating units.

As companies reorganise their businesses, they must take several critical actions to make the process successful:

- **Define a business model for common processes.** In our experience, integrating legacy businesses is a political, emotional process. Areas requiring review include portal and content management, marketing and sales, the role of strategy and governance. A neutral partner needs to act as an impartial, independent adviser and help arbitrate the many tradeoffs that have to be made in designing an integrated organisational model that works for the particular starting point of an operator, their culture and management style and level of ambition to be transformed. No two cases are the same.
- **Set goals for workforce efficiencies.** To get the most benefit from integration, management needs to agree how to reduce the workforce (as brutal as that might be). If the opportunity to downsize is not grasped at the outset, it will usually be too late to introduce after integrating.
- **Downsize corporate overhead.** If management delegates effectively and aligns market-facing units with their objectives, the corporate centre should be able to function without large armies of people. Reducing corporate overhead can be a real test of management's desire to fundamentally change.

Up until now, product and service bundling has been largely for home-based services, and integration has been focused on triple-play offerings (fixed, broadband and television). The most integrated organisations so far, not surprisingly, have been those that offer home-based bundles. We believe that in the future, there will be no escaping the logic for fully integrating mobile units.

As content and advertising have rapidly transcended all screens, often through the efforts of service providers such as Apple and Google, operators haven't come up with a cost-effective, converged offering to meet the challenge. Increasing revenue, reducing churn and reducing costs are clear benefits for operators, that is, if they can align their organisations and make the customer-facing changes at the same time. But operators may face greater risks than service providers do. Based both in cloud computing and in the devices—and without the legacy structural issues of the telco—service providers are positioned to disintermediate the network operators.

The time to change is now, before customers no longer look to telecoms operators for their converged communications and media needs.

Building a strong defence

Communications service providers continue to migrate to new, flatter IP and open, standards-based architectures, while simultaneously expanding their range of services to customers. With these advances, the threats to their systems, their critical information and their customers' information grow significantly. As a result, security risks—to information and systems—have gotten attention and a place on the industry agenda. Operators are examining how they might justify and optimise their spending to manage, mitigate and capitalise on this risk.

In PwC's 2011 Global State of Information Security Survey, *more than 700 communications industry participants shared their concerns as well as actions and plans to protect their information, both today and into the future. Here, we explore the implications and opportunities based on their feedback.*

By William Beer and Ian Corden

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With the global economy still uncertain and volatile, the boards of many communications operators aren't investing hard-earned cash in managing or capitalising on information security risks. They remain reluctant despite clear evidence that the threats to data are increasing by the day. The high-profile data breaches include the recently reported leaking of Vodafone Australia's customer database and even state-led attacks on organisations' intellectual property.

As the rate, complexity and quantity of attacks continue to rise, so does risk because of the declining effectiveness of many traditional 'block-and-tackle' security capabilities developed over the past decade. The constraints on spending continue, and tension is growing between the need to protect the business and its customers and the need to preserve cash. Lacking the funds to systematically secure data in the operational core of the business, many operators are feeling the pressures on their information security functions intensify.

In a difficult economy, reducing or freezing capital expenditures (capex) may be an obvious move. Evidence indicates that investors tend to reward companies that can focus capex spending on areas that strengthen EBITDA (earnings before interest, taxes, depreciation and amortisation) and cash growth. As capex budgets begin to loosen across the industry, we believe that operators should take the critical step of investing in information security.

The reasons are many: to preserve service levels, keep customers loyal, prevent revenue leakage and create new services and a platform for significant potential growth. To grow, operators will need to craft a service portfolio, carefully segmented according to customers' needs, and not get mired in the political debate about network neutrality.

2011 Global State of Information Security

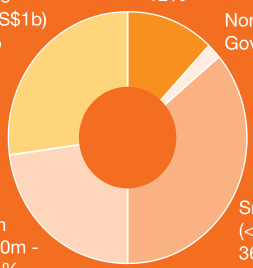
Scope and methodology

The survey was jointly conducted by PwC, *CIO Magazine* and *CSO Magazine*. The sample was made up of readers of *CIO* and *CSO* plus clients of PwC. More than 12,840 responses were received from chief executive, chief financial, chief information and chief security officers; vice presidents; and directors of information technology and security from 135 countries.

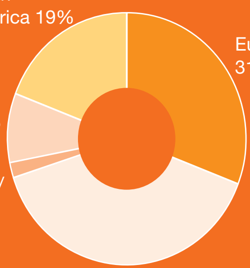
The online survey included more than 40 questions about privacy and information-security safeguards and how they align with the business. Of the responses received, 30% were from companies with revenues of US$500 million or more. Respondents from the communications industry totalled 710—a large enough sample to be statistically significant. The demographics of these respondents are detailed in Figure 1, and the views they expressed form the basis of this article.

Figure 1: Demographics of the communications industry respondents to the survey

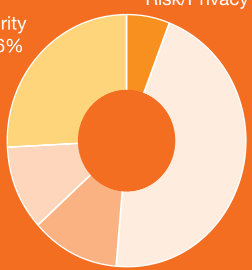
Telecom respondents by company revenue size



Telecom respondents by region of employment



Telecom respondents by title



*Numbers do not necessarily add to 100% due to rounding.

“From its peak in 2008, worldwide service provider capex declined 5.3% in 2009 and another 3% in 2010. Infonetics Research forecasts a 1.6% pickup in telecom carrier capex in 2011, marking the start of a new investment cycle.”

Infonetics Research, December 2010

Communications’ risky position

For communications companies, the nature of their business complicates the managing of and capitalising on information security risks. On the one hand, operators have to protect their own business information assets from theft and attack. On the other, they also need to protect their customers. What the customers buy from them may be as diverse as traditional telecoms services, fixed and mobile broadband, and IPTV and cloud computing solutions. And maybe even the managed security offers some operators have developed.

This dual responsibility means communications companies face different and more complex information security requirements than other types of businesses do. Our survey sheds some light on both sides of this challenging equation.

The three trends in communications companies’ historical spending to manage information risk, revealed in the survey findings, are:

1. ***The CFO’s ‘protect’ list***
   As the information security function matures—and contributes more to the business—it encounters much more stable funding curves. Although funding remains tight, there’s a growing tendency to protect it in the ‘down’ cycle, and increase it as markets get stronger.
2. ***The ‘flavour of the year’ syndrome***
   Because security sits at the heart of the business, spending is susceptible to knee-jerk responses to requirements caused by external events. Examples have included business continuity spending following the 9/11 attacks, regulatory compliance after the bankruptcy of WorldCom and retrenchment following the economic turmoil of 2008.
3. ***The ‘water drop’ effect.***
   The ‘flavour of the year’ syndrome tends to lead to a cycle of periodic big splashes of spending followed by gradual diffusion. After peaking, each successive external stimulus shifts from being an ‘external game-changer’ to an ‘internal given’. Each remains important, yet becomes integrated into the business through steps such as newly automated systems, updating job descriptions and improving internal controls. That process is strengthening security functions. They’re moving from a fire-fighting approach into a more strategic approach that’s better aligned with the business.

"Practitioners need to take a new look at information security practices that have not been working in order to protect critical infrastructure."

Ed Amoroso, CSO, AT&T, in an article on InfoSecurity.com, January 2011

Clients' requirements, confidence and cyber-attacks

Traditionally, 'flavour of the year' has been an impetus to spend on information security. Our study suggests that a new consideration is replacing it: clients' requirements for better security. That may prove more consistent and sustainable over time.

As Figure 2 shows, the influence of client requirements on information security spending declined slightly during the economic downturn. But in 2010, its influence rebounded. What clients need took first place from legal/regulatory requirements and became the main rationale for spending on information security.

For a communications company, what clients require can vary widely depending on the company's mix of services. As more operators and their customers recognise the importance of managing data security, the need for effective solutions and services intensifies. Investors, also, see the importance of information security covering operations as well as services to an operator's customers.

Operators, then, have to meet demands from both internal and external stakeholders. And they're growing more aware—as are businesses in other sectors—of how profoundly information security breaches can damage a company's reputation. Figure 3 ranks how communications respondents to the survey assessed the damage to their business resulting from a security incident.

Not only did these impacts on businesses increase strongly in 2010, but also confidence levels declined the most in a year that we've ever seen in this survey. Communications respondents' confidence in the effectiveness of their organisations' information security activities fell from 87% in 2009 to 74% in 2010, a drop of 13 percentage points. Similarly, operators' confidence in the effectiveness of their suppliers' and partners' information security declined by 7 percentage points, from 80% in 2009 to 73% in 2010.

We're concerned about confidence—and the fact that security threats are becoming more sophisticated. Early attempts by hackers have now evolved into organised, complex cyber-crime activities. A recent example is the attack on the European Carbon Registry, which halted online trading and caused losses running to millions of euros.

Operators are responding with the security that clients require. Doing so for the purposes of protecting their own reputation and the value of their enterprise may well continue—and even intensify—in the coming years. The online banking industry offers a clear parallel. Its significant investments in and efforts to build the sector have resulted in a vibrant, commercially effective business in today's markets. Both being responsible for sensitive data, operators and banks have much in common.

Figure 2: How is information security spending justified in your company?

Top 5 spending justifications in 2010		2007	2008	2009		2010	Three-year change
1. Client requirement	- 19 pt gap	41%	39%	38%	+ 6 pt gap	48%	+ 7 pts
2. Legal/regulatory requirement		60%	45%	48%		42%	- 18 pts
3. Professional judgement		44%	45%	38%		41%	- 3 pts
4. Common industry practice		46%	46%	33%		37%	- 9 pts
5. Potential liability/exposure		50%	41%	37%		36%	- 14 pts

Among the challenges of developing information security solutions and services, operators will need to wrestle with complex market demands and plan what to do when things go wrong. With the onset of cloud-based solutions, a number of operators have developed managed security services. The jury is still out on the extent to which communications customers expect data security solutions from their bandwidth providers. Various solutions likely will be required, e.g. virus detection and removal in the network cloud, desk-based file scanning with USB memory sticks and managed security services. Operators may be wise to develop a portfolio approach whether they're devising solutions for consumers or for enterprise clients.

Another challenge is the legal issue: according to one senior executive,"there is no one in the industry that will take on a liability SLA." If security fails—who is liable?

Opportunities to embrace responsibility

Rising awareness of potential problems is inspiring more operators to make information security a senior responsibility. They are clarifying ownership of as well as the lines of reporting for those managing information security and providing such services to customers. Companies are developing competencies in information security. They're making acquisitions to improve information security. For example, BT acquired Counterpane in 2006; Verizon acquired Cybertrust in 2007; and AT&T acquired Verisign's security consulting business in 2009.

Traditionally, chief information security officers (CISOs) have reported to the chief information officer (CIO)—an approach that has tended to limit both their authority and their effectiveness. The strategic value of information security, executives are realising, should be aligned more closely with the business than with information technology.

Our survey results found a shift to be under way in the principal reporting lines for information security within communications operators (see Figure 4). The reporting structure for CISOs is moving away from the CIO and towards the chief security officer (CSO), the board as a whole and, to a lesser extent, the chief executive officer (CEO).

Figure 3: What were the business impacts to your organisation as a result of the incident?

Business impacts	2008	2009	2010	Two-year change
Financial losses	13%	19%	25%	+ 92%
Intellectual property theft	9%	15%	19%	+ 111%
Brand/reputation compromised	8%	13%	18%	+ 125%
Fraud	8%	10%	11%	+ 38%
Loss of shareholder value	4%	5%	9%	+ 125%

Figure 4: Where or to whom does your CISO or equivalent senior information security officer report?

Who the CISO reports to	2009	2010	One-year change
CEO	29%	35%	+ 6 pts
Board of directors	23%	32%	+ 9 pts
CSO	14%	24%	+ 10 pts
CIO	30%	23%	- 7 pts

Economic impacts on managing information security

Trends such as shifts in reporting structures appear to transcend the effects of economic cycles. Yet our research confirms that changing economic conditions affect some of the main priorities and requirements in managing information security. Over time, the business environment does have some influence on operators' information security agendas and spending.

Figure 5 shows our communications respondents' views of how the harsh economic conditions of 2009-2010 influenced their information security strategies. Fearing that data would be leaked or compromised, our respondents, not surprisingly, gave data protection the highest priority in both years.

The concern about protecting data is helping to fuel other priorities, including adopting security technologies and stronger governance and compliance procedures.

Naturally, as information security priorities are affected, so are those of the information security function within operators. As Figure 6 shows, these functions have had to deal with such changes as a more complex regulatory environment, an increasing risk of attack making security more important in the organisation and cost reductions that challenge the effectiveness of security. At the same time, as recession-related programmes to reduce the workforce have been completed, the risks to data posed by laying off employees have decreased.

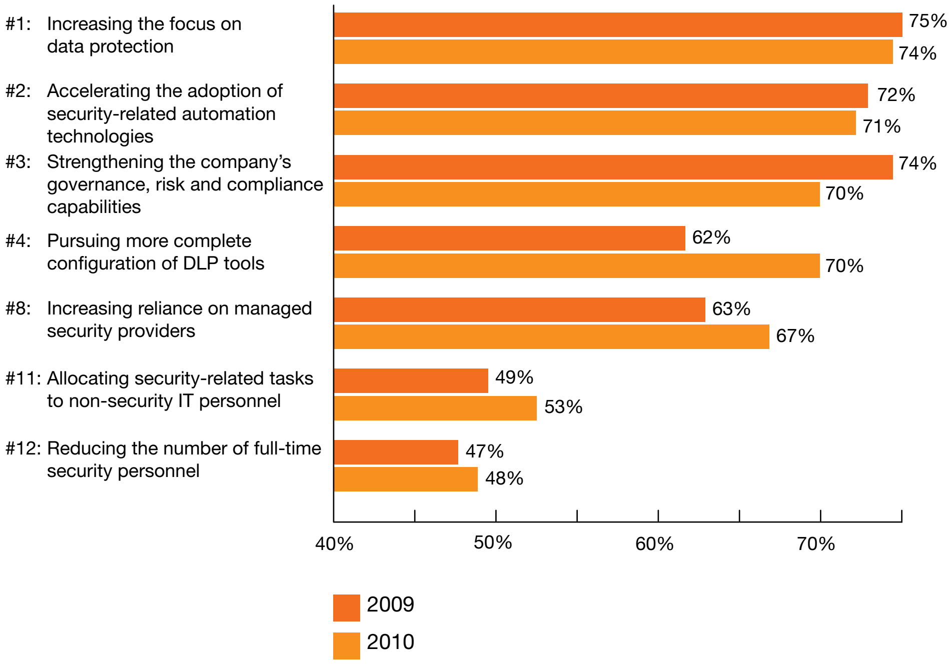
The most striking finding for 2010 had to do with business partners and suppliers that had been weakened by the recession. Our respondents' perceptions of them as posing information risks increased sharply. Operators are offering more services, have expanded their collaborative partnerships and, through outsourcing, for example, have improved their operations and their costs and strategic positions.

Our experience indicates that they have come to rely on an increasingly complex, interdependent system of third-party providers and partners.

Developing security solutions that reflect how their partners and suppliers influence overall effectiveness will be essential for operators. Compounding that need are technology developments in the industry, including network and information technology convergence, network sharing, open standards and IP-based networks.

The impact of the economic downturn on the financial strength and resilience of some suppliers and collaborators—and on their ability to maintain rigorous, effective information security—is now a growing cause for concern. Especially so wherever operators must know that those partners will protect and manage the corporate and customer data entrusted to them.

Figure 5: To continue meeting your security objectives in the context of these harsher economic realities, how important are the following strategies?



Note: Based on respondents who answered 'Important', 'Very important' or 'Top priority'. Not all factors shown. The results do not add up to 100% due to rounding.

Technology shifting and threats emerging

Cloud computing is emerging as an important area and one in which information is increasingly vulnerable. As network and information technology architectures move towards all-IP and next generation network solutions, open standards, IP-related services and ecosystem-based solutions, the traditional 'walled garden' model for operators is eroding. We need new ways to safeguard data and systems. Cloud- or software-based solutions also present opportunity, although operators will need to base the security they offer on the complex demands of customers and market segments.

Firstly, we had the openness of the Internet. Next came security threats and attacks that undermined system performance (e.g. software viruses, spam— leading to denial of service attacks and to identity and data theft). Then came corresponding solutions (e.g. anti-virus applications) for information technology players.

The shift towards openness in the communications domain presents similar challenges and opportunities for operators in spite of offering cost-effectiveness, innovative service and other significant advantages. Threats may materialise in communications providers' networks or on users' devices. The integrity of data may be seriously compromised, or the performance of systems, or both.

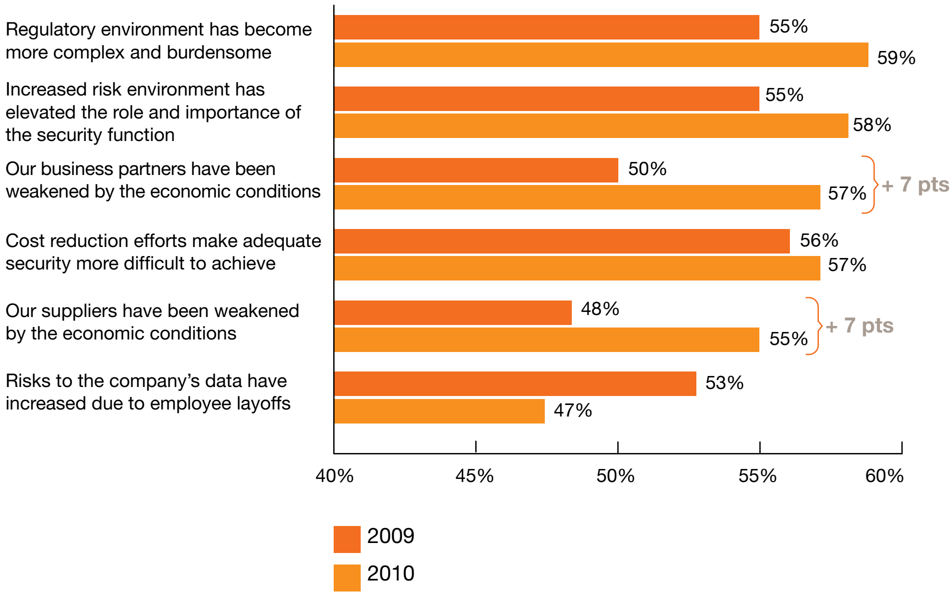
Degradation of system performance can lead to potentially catastrophic effects, such as interrupting communications links to emergency call services or damaging operations in the financial sector. Some of the most serious emerging risks related to technology are listed in the box on the following page.

All these risks also represent potential opportunity. That is, if operators can find out how to capitalise on clients' needs and ensure low-risk operations in vital systems and communications links.

The architecture of the future

In our survey, 60% of the communications respondents work with cloud-type services such as software-as-a-service (SaaS), platform-as-a-service (PaaS) and infrastructure-as-a-service (IaaS). The respondents see their three greatest security risks

Figure 6: What impacts have the current economic conditions had on your company's security function



Note: Based on respondents who answered 'Agree' or 'Strongly agree'.
Not all factors shown. The results do not add up to 100% due to rounding.

Emerging technology-driven information security risks

Compromises to network performance levels include:

- Availability
- Breach of network management, OSS or BSS systems
- Denial-of-service attacks
- Degraded network capacity and configuration
- Terrorist attacks
- Business continuity capabilities
- System operational performance levels
- Dysfunction on machine-machine systems and spam.

Breaches of data confidentiality include:

- Packet sniffing/eavesdropping
- Client data breaches
- System operational breaches
- Authentication breaches
- Data corruption
- ID spoofing
- Malicious manipulation of client data
- Fraud.

in cloud computing as springing from inadequate training (28%), uncertain ability to enforce security policies at a cloud provider (24%) and questionable control over access to privileged data at a provider (15%). Just as cloud or ecosystem/partner solutions can present significant risks, they can present opportunities for operators, such as developing managed security solutions, i.e. security-as-a-service.

Besides developing new security-domain-based network architectures (e.g. ITU-T Rec. X.805) and new services, we believe operators should develop new, effective operating processes related to security. They need to think of security as an architecture, not a single solution.

If responding to an incident becomes necessary, an operator must be fully prepared. And here more concerns emerge.

Only 38% of the communications respondents in our survey report that their organisation has a contingency plan for responding to security incidents *that is effective*. In other words, 62% either have no plan or the plan that they have does not work. When we asked why, we got five principal reasons: lack of training, incomplete plan, delay in implementation, lack of management support and lack of partner cooperation. The reasons reinforce the need to address people as well as technology and processes.

As a final observation from our survey, we noted that some operators are becoming interested in insurance policies to protect themselves in the event of claims brought against them associated with information security breaches. Time will tell whether the insurance approach or maintaining customer loyalty and satisfaction proves the more successful.

Conclusion

Our survey found that a diverse set of complementary and sometimes conflicting pressures means that operators' information security functions entered 2011 in a finely balanced position.

On the one hand, recent events and advances have boosted the importance and status of information security across the business, aligned its functions better with clients' requirements and helped operators see the causes and effects of security incidents. On the other, operators' challenges include continued spending constraints at a time when traditional security processes are losing effectiveness, escalating threats from well-funded and highly organised cyber-criminals, concern over business partners' data security and bigger problems when breaches occur.

Many operators aren't well prepared for either the threats or the opportunities presented by new market developments that rely on new technology solutions. The migration to IP-based systems and open standards pervades not only front-end services to customers but also back-office business processes—and the links between the two. And the risks and opportunities surrounding data and network security for communications operators are growing fast.

We don't need to ask *whether* operators should invest in continually upgrading and enhancing their security capabilities and offers. The questions are: *How much* to invest and *where* to focus the investment?

The transformative journey of revenue assurance

Traditionally, Revenue Assurance groups only monitored and affirmed usage transactions. Because it functioned centrally in the flow of data through the operator's value chain, Revenue Assurance always had the potential to play a far more valuable role across the organisation. Today, with the industry-wide move to data-rich, high-bandwidth services, often delivered in partnership with other providers, operators' Revenue Assurance groups have to evolve to realise new ways they can support the business.

Building on its role in auditing, revenue assurance now provides insights into and competitive advantage in such areas of the business as product and service development, customer profitability and experience, network performance and fraud management. Revenue assurance has matured but still has further to grow— and operators continue to examine how to put its unique analyses of data to even more valuable use in the future.

Dan Stevens and Tim Banks

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Across the communications industry, telcos' Revenue Assurance functions have reached a defining moment in their development. Originally charged with performing reactive, audit-based, monitoring and escalation tasks, supported by automated tools and multiple data feeds from both their network-based and IT systems, they are now evolving rapidly to fulfil an increasingly commercial role within the organisation. In our experience, a mature Revenue Assurance group can still recover around 1.5% of additional revenue from traditional revenue streams, with those at an earlier stage of their development capturing up to 6%.

In today's data-driven world, operators' products, services and supporting technologies are far more complex than in the past. The complexity increases the likelihood of revenue leakage. At the same time, operators are required not only to pay third parties for providing the content that generates their revenues, but also to validate commission payments received from the third-party, further increasing the intricacy and complexity of revenue assurance. The situation demands a strong focus on margin assurance—defined as the relationship between the costs of delivering a product or service and the revenue it generates, including revenue associated with third parties.

This rising complexity, combined with the multiple linkages needed across the organisation and the large amounts of data required for comprehensive assurance, means that the more mature Revenue Assurance functions now find themselves playing a central role in many telcos. They are in the unique position of being able to provide top-level executives with significant insights not only into how profitable their products and customers are, but also, for example, into how any network performance issues are affecting revenue.

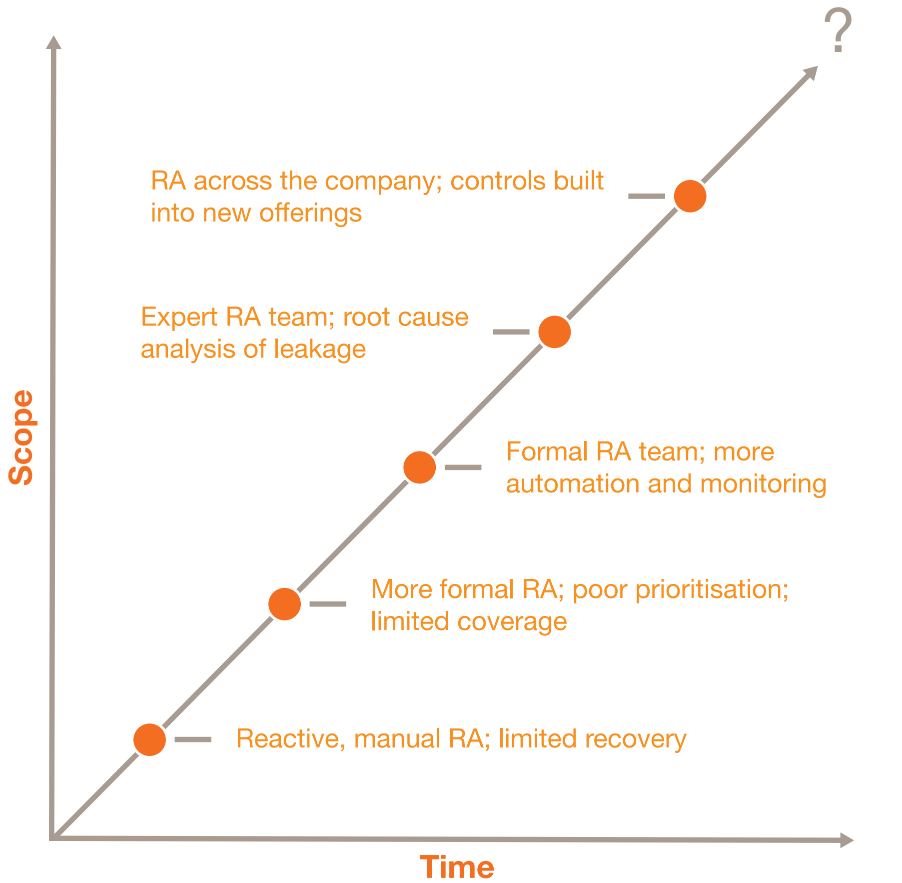
Given the current blend of an uncertain economy, fierce competition and continually shrinking margins, any operator that can take full advantage of the information its Revenue Assurance function has at its fingertips will get what it needs to create significant competitive advantage.

> *"I think of Revenue Assurance as a football team; the defence are the guys doing the standard reconciliations, the midfield is where new developments and products are being implemented and the forward line are key margin impacting guys."*
>
> **Nigel Smith, group head of revenue assurance and fraud, Colt**

The fundamentals of revenue assurance

Most operators around the world have, at the very least, some understanding of revenue assurance and what it involves, even if they don't have a formal group responsible for performing traditional revenue assurance tasks. In the first instance, revenue assurance activity tends to be performed in response to a specific business need. Often that's where leakage has been identified and the cause needs to be analysed and resolved to prevent the same issue from recurring.

Figure 1: Traditional revenue assurance (RA) maturity model



As revenue assurance becomes more mature, an operator may create a formal department. The department performs specific, repeatable tasks to identify, quantify and address leakage and to provide assurance over the four main areas of any revenue stream:

1. Provisioning: making sure the services and features a customer is billed for match the services and features a customer receives.
2. Usage: making sure the network records usage completely and promptly and sends the records through various mediation platforms to prepaid and postpaid rating and billing systems (including wholesale/ interconnect billing).
3. Rating: making sure complete, accurate usage-rating processes conform to the agreed rate plans/ published tariffs for all types of prepaid and postpaid services.
4. Billing: making sure wholesale, retail and enterprise billing processes are complete and accurate by confirming that correct monthly recurring charges, usage charges and any associated bundles and/or discounts are applied to customers' bills.

The assurance of these four areas often relies on specific tools that require access to the raw reference and transactional data held within core operational systems. The first reason to grant access is that it eases and speeds the process of identifying any issues affecting revenue and analysing the root causes. Access is also, as we discuss later, the first step towards Revenue Assurance being able to offer real commercial insight to the operator.

Until a few years ago, revenue assurance was thought to be mature once it had achieved the organisation-wide role described above. That view is illustrated in the traditional Revenue Assurance maturity model in Figure 1. At that stage of maturity, it is now clear, the journey has in fact just begun. Ahead lie many more opportunities for revenue assurance to add even greater value than before.

Mature revenue assurance at work

A mature Revenue Assurance department will carry out all the assurance tasks described above. It also will be involved in developing new products and services and, when appropriate, in system implementations or changes or technology developments. The mature department always aims to protect the operator's ability to generate and capture revenue, both now and in the future.

PwC's *14th Annual Global CEO Survey*, published in January 2011, found that 88% of communications CEOs worldwide 'agree' or 'agree strongly' that their company's innovations will lead to significant new revenue opportunities (see article on page 46 for more results). Some 49% of them regard new products or services as the main opportunity to expand their business in the next 12 months. These statistics give any Revenue Assurance group a big clue as to what to focus their activities on.

Already, many Revenue Assurance functions support operators' regulatory compliance requirements, in particular, confirming the accuracy of their network and billing systems along with the associated processes. Research suggests that regulation will keep getting more complex. That will create further need for Revenue Assurance to help the business maintain compliance.

The revenue-aware organisation sees revenue everywhere

Another way the Revenue Assurance group should help the business is in becoming a revenue-aware organisation. That means getting all parts of the organisation to focus on producing the most revenue from every aspect of what they do.

Revenue Assurance typically approaches the business in cases where they have identified some leakage or breakdown of control. But a revenue-aware organisation asks Revenue Assurance for advice and for guidance in building controls to assure revenue into new products, services, systems and business processes.

At some operators we have worked with, the operational and technology groups have asked Revenue Assurance to submit their requirements during the investigation of a new billing system or to assist the business in validating the ability of their existing systems to capture all the revenue for new product launches. Addressing problems before they occur is especially important given the emergence of data-related products. Operators are realising that the incremental revenue those products generate doesn't cover the significant network costs caused by having to deliver the bandwidth customers are now demanding.

The article "Staying relevant in a mobile data world", by Colin Light, Andrew Light and Vincent Teulade in the last edition of *Communications Review* explains that the mobile content market (excluding access) will reach 25 billion euros by 2014. To capture as much of this value as possible, operators need to be confident that they are billing for the data moving across their networks accurately and in its entirety.

Content-rich services transform the revenue landscape

Usage has changed and so must its definition. No longer just voice and SMS call records, it must be expanded to include the length and volume of the data transferred in a session and the type of download—whether music, application, video or gaming content. Established revenue-assurance techniques will help ensure completeness and accuracy in capturing these transactions. Another factor to consider is the involvement of third parties in these revenue streams and the fees operators must pay them for providing the application or content they own, as well as any commissions that may be due for allowing customers to download this content in the first place.

In their traditional wholesale-type revenue streams, such as interconnect or roaming, operators have to deal only with each other or with specific clearinghouses, and within established processes and controls. In contrast, today they are dealing with many diverse partners, all of whom are determined to receive a piece of an ever more fragmented revenue stream. In fact, according to the PwC *14th Annual Global CEO Survey*, 55% of communications CEOs expect to develop their revenue-generating innovations collaboratively with external partners rather than to originate within their own operations.

Detail plus access illuminates usage

A Revenue Assurance department must be able to capture all the usage transactions recorded by multiple systems, whether an operator's own or those of third-party partners. The usage data captured must include details such as the type of device used—mobile, television or computer—as well as the number of times application X was downloaded, video clip Y viewed or advertisement banner Z clicked on.

Usage transactions will need to be evaluated for revenue completeness and accuracy. But to understand any commissions due or to be paid, transactions will need to be linked directly to the associated contractual agreements made with the third-party content provider. The internal systems must be validated to confirm that the business rules and calculations applied conform to those contracts, and that any subsequent payments made or commissions received are complete and accurate.

To gather this information and automate any subsequent reconciliation needed for the required analyses, the Revenue Assurance group may need to engage areas of the business that it would not typically work with, including commercial finance and marketing. In our experience, the most effective Revenue Assurance departments report directly to a C-level executive, and therefore have a mandate to access all parts of the operator's organisation to facilitate this 'margin assurance' focus.

"Revenue Assurance should produce margin analysis, essential to build up to customer and product profitability, enabling the company as a whole to determine their direction. RA should be ensuring margin, not just revenues."

Head of Revenue Assurance, European fixed line operator

Insight into the heart of the business

No longer can a Revenue Assurance team only make sure that material revenues are being captured completely and accurately, along with any revenue recovered or losses prevented each month. With the revenue assurance capability spanning the network as well as mediation and billing, operators should seriously examine the opportunity for revenue assurance to add even greater value to the organisation.

So, what might the increased scope of revenue assurance look like to a top-level executive? And how can the Revenue Assurance group make its function critical to the operator's success?

To answer those questions, we need to understand the raw materials that a successful Revenue Assurance group will have at its disposal: direct access to untampered data from the network, together with the ability to trend and manipulate data for reporting requirements. Visibility into large volumes of data, analysed by specialists, can give an operator the competitive edge of understanding what is happening in its markets quickly and in great detail.

Cross-functional visibility brings a new level of insight into the heart of the company—including how likely customers are to remain active, how profitable products are, how effective promotions are and how all that affects the capacity of the network. These are just some of the new areas where Revenue Assurance can offer value and insight to support the business.

Keep customers coming back

How can revenue assurance provide enough insight to help analyse customer profitability? Visibility into raw event data is one way. If the data that Revenue Assurance has access to is modelled effectively, then it can provide insight into customer behaviours from a user's perspective. It can pinpoint trends in the services and products customers use, as well as when and how much customers in each segment use them.

Such insights allow for aiming promotions for products and services to the most likely buyers. For example, if a particular segment of customers accesses certain content more often than others, an operator can develop a product to appeal specifically to those customers. Creating a more personalised experience for customers increases revenue and customer retention.

At the same time, information from the revenue assurance tools already in place within the business can give product managers a more effective understanding of how products are performing in the market versus what was forecast. How effective were the promotions for a particular product? Did customers adopt it as expected? These are the types of questions into which an effective Revenue Assurance team can provide insight.

Given that more and more future products and services will be offered through partnering agreements, the risk of customers receiving more or less than they contracted for will continue to increase. Daily revenue assurance activities, such as provisioning and rating controls, ensure that customers get the services they contracted for at their contracted price. As the use of partnering increases, future Revenue Assurance teams will have an even greater effect on what customers experience, as customers will still look to the operator to explain differences that appear on their bill that a partner organisation may have created.

Conduct revenue assurance on products sooner rather than later

Revenue assurance activities need to be conducted early in the process of delivering new products and services to the market. That's a critical way Revenue Assurance adds value to products. And with products becoming increasingly complex, and business models and their associated commercial benefits becoming more blurred, it is important that Revenue Assurance takes a proactive role in signing off relevant controls to ensure accurate, complete billing before products and services are sold.

They can also support the business in understanding more effectively how newly launched products and services are performing and how successful promotions are.

With the increasing adoption of smartphones, e-readers and tablet devices and faster networks to support the delivery of innovative and interactive content, advertising through mobile devices will continue to grow. As yet there is no clear commercial model for the interactions among the various organisations involved, including mobile operators, Internet service providers, media companies and advertising partners. Each organisation in the tangled value chain will need to understand clearly how its own element of the relationship works, with revenue assurance activities confirming that revenue is subsequently billed completely and accurately.

Balance the network and the deluge of data

Many new products and services will make heavy demands on network capacity. In its 2010 Communications Market report, Ofcom, the UK regulator, reports that data volumes over UK mobile networks increased by 240% in 2009. While the costs of operating the networks are growing apace, the hugely increased data volumes are not being offset by a balancing increase in revenues. Current business models find it difficult to break away from the flat fee habit to which customers have become accustomed, significantly impacting the margin operators are making.

In light of this challenge, operators are thinking about using network-level quota management to restrict the amounts of data that customers consume or adding one-off charges (sometimes referred to as the Google Tax) for YouTube, BBC iPlayer and other high-volume content providers. Regardless of how operators try to make money on the use of their networks, they will increasingly need the insights of Revenue Assurance into how data is being used, as well as the type and volume of data flowing over the network.

Get friendly with Fraud

The relationship between operators' Fraud and Revenue Assurance functions has always been close. The two teams use similar analytical skills, knowledge of the network and billing systems and even—in some cases—similar tools drawing from similar data sources. How this relationship will evolve in the future will depend very much on the maturing of each of the functions.

Where there is room for maturity to increase, there may be opportunities to bring the two functions closer together. The costs of ownership may even be reduced by directly sharing tools, resources and some analytical skills. The more mature the two groups are, the greater the need to develop their relationship. Using open communication and transparency of the activities between the functions will create a closer relationship and put any potential synergies to work.

Bringing the expertise of Fraud and of Revenue Assurance closer together will increase the sharing of experience at both a technical and—to the advantage of the business—a more commercial level. Combining the experience of the two functions will lead to more of both resolving actual problems and detecting and preventing new ones across the organisation.

Conclusion

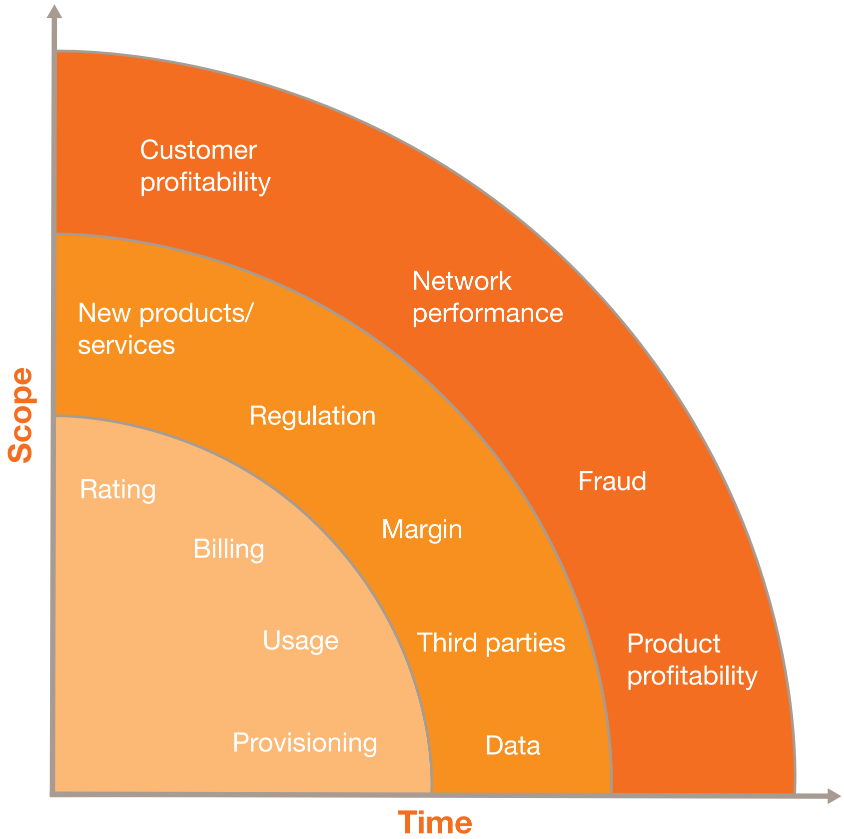
The maturing of revenue assurance within operators across the globe has progressed at a different pace in each company. The general direction it travels is consistent, though, as Figure 2 illustrates. Since starting about ten years ago in a reactive, audit- and compliance-type role, today's more mature Revenue Assurance groups have moved up the organisational value chain. They have evolved to a position of having powerful automated tools and access to large volumes of data on a virtually real-time basis. Both tools and access help users to see clearly and accurately how traffic is moving from their network to their billing systems.

The most mature Revenue Assurance functions are now looking at how they can move to a more central role within the operator and contribute even more to the success of the business. A number of alternatives are open to them:

- Expanding their scope of activity and sharing insights into the more commercial elements of the business in new and previously unvisited functions and divisions.
- Gaining greater insight into how profitable customers and products are.
- Giving engineers a deeper understanding of how new products and services may affect the network.
- Developing closer relationships with the Fraud team.

The path operators decide to take with their Revenue Assurance groups will vary from business to business, and no one answer is right. Those with an open mind—and a desire to use the connected resources and data available within Revenue Assurance to gain valuable commercial insight and competitive advantage—will find many opportunities. To sum up, although revenue assurance has come a long way, its journey is far from over.

Figure 2: The evolution of revenue assurance



Returning to confidence amid sweeping change

The global economy is still recovering from the worst economic crisis in 75 years, and many countries are grappling with the aftermath of recession. We set out to uncover how chief executive officers are approaching growth during a time when sustainable economic recovery is far from certain.

In PwC's 14th Annual Global CEO Survey *we found a surprising level of confidence in the current economic environment. Chief executives were nearly as confident of growth this coming year as in the boom years before the crisis. The survey also revealed where CEOs saw growth for 2011, and how they were going to achieve it.*

Here, we analyse highlights from our survey of CEOs in the communications sector.

By Colin Brereton

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To explore the full results from the *14th Annual Global CEO Survey*, please visit www.pwc.com/ceosurvey.

Chief executive officers (CEOs) in the communications industry are relatively optimistic about their companies' prospects for increasing revenue. Well over half (57%) of the communications CEOs we interviewed around the world are 'very confident' that their business' revenues will increase during the next 12 months, compared to only 48% of CEOs from all industries. This optimism may stem from the communications industry's resilient performance during the downturn.

Other findings indicate that communications CEOs fully recognise the major strategic challenges confronting their businesses amid profound and irreversible change. With technological innovation and shifts in consumer behaviour advancing quickly, operators face many issues around customer retention, service and revenue models, operational excellence, regulation and innovation.

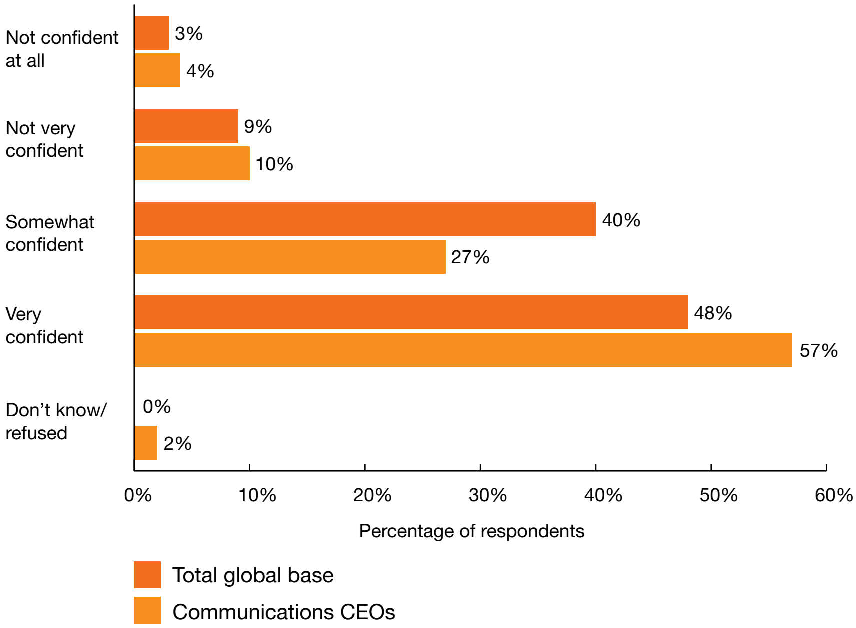
All the issues operators face, which are reflected in the communications CEOs' survey responses, fall within the four categories of strategy, operations, growth and risk.

49% *of communications CEOs see developing new products or services as the main opportunity to expand their business in the coming 12 months.*

Strategy: innovating and collaborating with the customer in mind

As Figure 1 shows, communications CEOs are more likely than their counterparts in other industries are to be 'very confident' about revenue growing in the coming year. Yet fewer than the overall global average are 'somewhat confident'. The lower confidence suggests that, between fast-growing high performers and followers who are struggling to keep pace, communications is more polarised than most other industries are. Contrasting conditions affect the players in the global industry, be they fixed or mobile operators, active in developing or in mature markets.

Figure 1: How confident are you about your company's prospects for revenue growth in the next 12 months?



Source: PwC *14th Annual Global CEO Survey 2011*

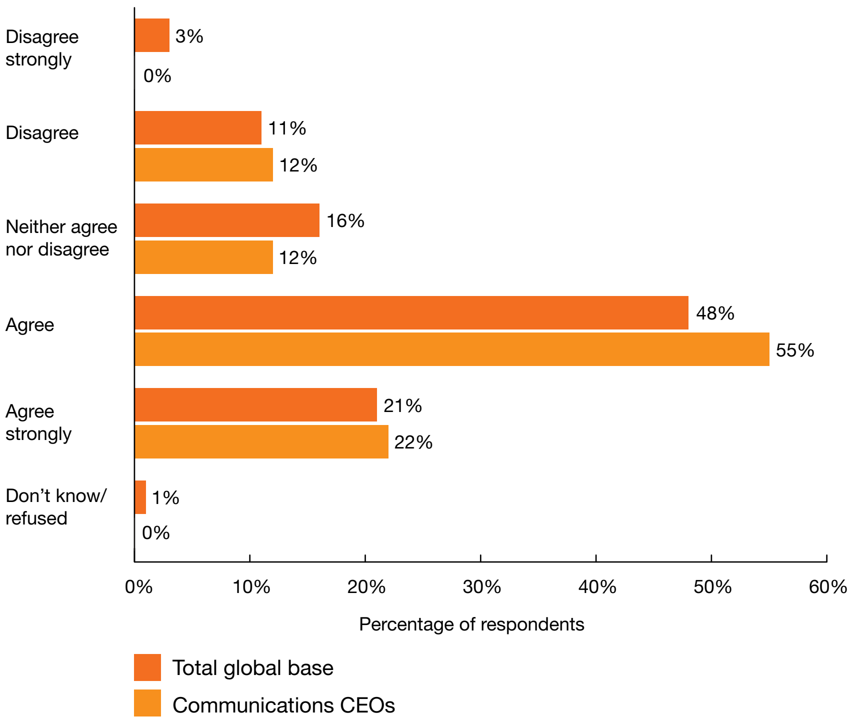
Whatever the conditions they face and whichever customer segments they pursue, communications CEOs are more likely than are others to believe innovation is vital to earning more revenue in the future. Some 88% 'agree' or 'agree strongly' that their company's innovations will lead to significant new revenue opportunities, compared to 78% of the total survey population. And the majority of communications CEOs (55%) expect to collaborate on revenue-generating innovation with external partners rather than to originate it in their own operations.

Not surprisingly, communications companies are investing in technology to reach and serve customers through new platforms and networks. Eighty-two percent of communications CEOs say they invest in information technology primarily to support growth initiatives and to make the most of emerging innovations, such as mobile devices and social media. The overall average is 54%. And 49% of communications CEOs see developing new products or services as the main opportunity to expand their business in the coming 12 months, compared to 29% of the total sample.

All these findings underline the radical transformation now under way in the sector. The traditional telecoms model is being replaced by a convergence of network-centric, digital services that makes access to digital content possible anytime, anywhere. The transformation requires operators to think about value rather than about volumes of call minutes and customers.

Operators need to focus rigorously on value on each side of the customer relationship: the value they deliver to each customer through a differentiated and tailored experience, and the value they glean from each customer. Making this radical shift demands constant innovation, not just in products and services but also in underlying operating models.

Figure 2: To what extent do you agree your IT investments are made primarily to reduce costs and become more efficient operationally?



Source: PwC *14th Annual Global CEO Survey 2011*
The numbers may not add up to 100% due to rounding.

Operations: pursuing excellence

Communications CEOs know that they must restructure and reinvent their operations for the new digital world. As well as using innovation to help increase revenues, they are using technology to enhance their organisations' effectiveness. The majority of communications CEOs (77%) say that a main reason they invest in information technology is to help their business reduce costs and operate more efficiently (see Figure 2).

20% of communications CEOs indicate that competitive threats are having the biggest impact on strategies causing them to lower prices and consolidate businesses.

The effort to improve operational excellence progressed in the previous year. The survey asked about restructuring activities initiated in the past 12 months. The responses showed that communications CEOs are more likely to have outsourced a business process or function (49% versus 37% of the total sample); to have implemented a cost-reduction initiative (92% versus 84%); and to have entered a new strategic alliance or joint venture (57% versus 40%).

Communications companies aim to keep transforming their operations. During the coming year, 37% of communications CEOs plan to outsource a business process or function, and 63% expect to form a new strategic alliance or joint venture. Companies seem to have finished the most intense cost-cutting measures. The 63% of communications CEOs planning a cost-reduction initiative is in line with the overall average.

The survey findings reveal operators committed to tackling the complex, inefficient and product-focused legacy operating models that previously characterised much of the industry. Today, communications companies need to understand and respond to what customers want, control costs, make sure that new services work well with existing services and make money, offer pricing based on actual use, bundle their offerings, collaborate and consolidate. Each requirement demands that they simplify their operations and develop their organisations' ability to develop emerging opportunities.

Growth: looking for new markets

Communications operators are seeing networked digital ecosystems replace their traditional operating and revenue models. For companies based in mature economies, the near saturation of their core markets and intense competition are resulting in lower prices and margins and causing businesses to consolidate.

Our research findings reflect those dynamics. Asked what factors have had the biggest impact on their need to change strategy, 20% of communications CEOs pointed to competitive threats. That percentage is double the overall average of 10%. On the customer side, communications CEOs are more likely than are those in other sectors to expect the squeeze on pricing to continue. The survey asked how much businesses' focus on price will cause them to change their strategy in the next three years. Fifty-five percent of the overall respondents and 79% of communications CEOs said they expect 'some/significant change'.

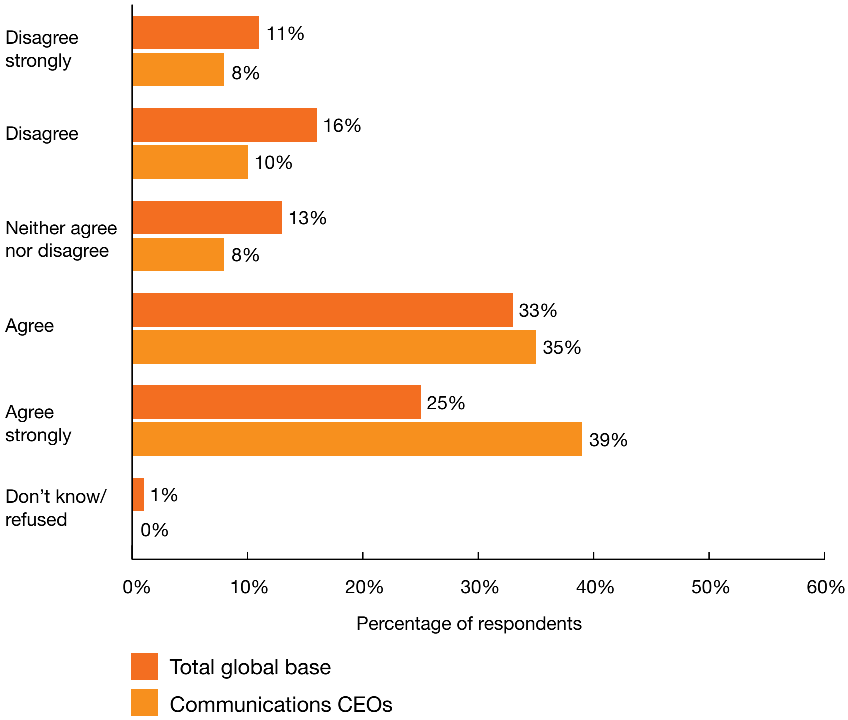
Both the pressures on pricing and the potential for higher revenue in emerging markets are encouraging operators to look beyond their traditional geographies for new sources of growth. Asked to name the three foreign countries or regions they think are most important for their business' growth over the next three years, 25% of communications CEOs listed Africa, 22% China and 18% Brazil. And some 74% 'agree' or 'agree strongly' that emerging markets are more important than developed markets are to their company's future. That percentage is well above the overall average of 58% (see Figure 3).

The communications CEOs' strong focus on Africa reflects that market's massive potential. Fifty-seven percent of communications CEOs who plan to merge with or acquire another company in the coming year are looking at Africa, compared to an overall average of just 10%. Seventy-four percent of communications CEOs expect to alter their strategies in the next three years when changes caused by businesses in emerging markets create opportunities for their company to grow. Again, this is higher than the overall average. Communications CEOs are also more likely than are CEOs in other sectors to expect their business in Africa and Asia to grow during the coming 12 months.

Risks: anticipating new entrants and regulatory change

In recent years, new players—device manufacturers, application developers, content suppliers, retailers and others—have entered communications operators' core marketplace. Adding to the impact of the new players has been the shifting focus of customers' loyalty and trust in brands. Customers have shifted away from networks on which devices and services operate and towards devices themselves and the online applications they can access with the devices. Engineering this shift, in part, have been device, content and service providers, who quickly made their brands popular with the public.

Figure 3: How strongly do you agree that emerging markets are more important to my company's future than developed markets?

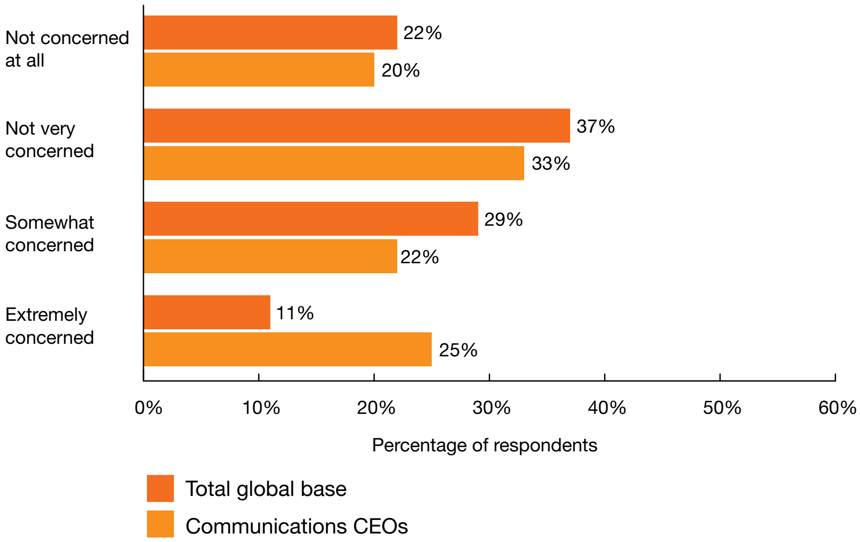


Source: PwC *14th Annual Global CEO Survey 2011*
The numbers may not add up to 100% due to rounding.

35% of communications CEOs cite new players breaking into and disrupting their markets as the most significant business threat they will have to mitigate over the next 12 months.

Communications CEOs are extremely wary of new players breaking into and disrupting their markets. When asked what potential business threats represent the most significant risks they plan to mitigate over the next 12 months, 35% of communications CEOs cited new market entrants. That percentage is well above the overall average of 24%. Equally significant, 25% of communications CEOs admit they are 'extremely concerned' about new market entrants, compared to 11% of all CEOs globally (see Figure 4).

Figure 4: How concerned are you, if at all, about new market entrants?



Source: PwC *14th Annual Global CEO Survey 2011*
The numbers may not add up to 100% due to rounding.

Incumbent operators in mature markets have the increasing risk that new entrants will include not only non-communications players from other sectors, but also operators based in emerging markets that want exposure in developed countries. Operators from developed markets used to grow by moving into emerging markets, but that dynamic may go into reverse. Emerging-market operators, from countries such as India, are aggressively looking around for assets and may well look at developed markets. With their proven, low-cost operating models, such companies may be able to undercut the incumbents in the mature markets they choose to enter.

As well as scanning the horizon for new entrants, communications CEOs continue to focus on regulatory risks. Asked which economic and policy-related issues represent the most important risks they plan to mitigate in the coming 12 months, 39% of communications CEOs pointed to the threat of over-regulation, as did 34% of the total survey population. And 44% of communications CEOs say regulation has significantly influenced their need to change their strategy—again, well above the survey average of 34%.

Looking across the entire risk portfolio, compared to other industries communications CEOs are also more likely to improve their company's ability to manage risks associated with the new strategy by giving the risk management executive more authority.

Conclusion: reshaping for the new era

PwC's *14th Annual Global CEO Survey* finds communications CEOs battling for position and revenues in a fragmenting industry and increasingly competitive markets. They are facing up to such challenges as consumers' rapid take-up of smartphones and the resulting exponential rise in data traffic. And they are tackling challenges in an environment where the business model that will deliver adequate financial returns on network investments is still elusive.

Operators can turn digital transformation to their advantage. In our view, they have the capacity and capability to re-establish the value of connectivity. They can build deeper, more lucrative relationships with customers and others in the value chain. They can use innovative services and business models to find new revenue streams. Their strong focus on innovation to make revenue grow, as highlighted by our findings, underlines their commitment to achieving these goals.

In this new environment, three prerequisites will be critical to operators' success: understanding what customers truly want; collaborating effectively to make the most of new opportunities; and achieving efficiency and agility by simplifying operations. The findings from this survey confirm that communications CEOs are working on developing all three capabilities.

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.

A range of possibilities in a changing wireless landscape: 2010 North American wireless industry survey

Published annually, this in-depth survey provides a framework for understanding the current and emerging trends in the communications sector and addresses general financial accounting and reporting policies and practices of wireless telecommunications service providers. The results of this survey reflect the participation of eight US wireless operators and three Canadian wireless operators. To view or download the PDF file, visit www.pwc.com/communications and click on Publications.

Technology Forecast, Issue 2 2011: Decoding innovation's DNA

This issue of the *Technology Forecast* looks at enterprise innovation and the role of information technology. It answers the question, is innovation the result of inscrutable, opaque genius, or can innovation be treated as an end-to-end process subject to performance optimisation by adopting proven methods? To read or download the PDF file visit www.pwc.com/techforecast.

Making sense in a complex world: The future of leasing and the impact on the telecom industry

Part of a series of discussion papers addressing topical accounting and financial reporting issues in the telecom sector, this paper outlines the proposed changes to accounting for leases contained in the IASB and FASB exposure draft issued a few months ago and points out the changes likely to be of most significance to the telecom industry. To read or download the PDF file, visit www.pwc.com/communications and click on Publications.

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