

# Communication NewsFlash

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2011 - The year of PwC Indonesia's 40<sup>th</sup> anniversary

## **40 and beyond...**

Preserving loyalty and trust  
- to deliver value

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## ***Joint arrangements: a significant issue for the telecommunications industry***

### **What is the issue?**

The International Accounting Standards Board issued IFRS 11, *Joint arrangements*, in May 2011, which overhauls the existing accounting for joint arrangements.

IFRS 11 provides investors with greater clarity about an entity's involvement in joint arrangements by requiring entities to recognise the contractual rights and obligations arising from their joint arrangements. Parties to a joint arrangement should recognise on the balance sheet their rights and obligations arising from the arrangement as assets and liabilities.

This article considers the business and industry-specific issues associated with IFRS 11 that management should consider, which is relevant to the companies that apply IFRS as issued by IASB. For example, management will need to evaluate how the standard will affect the way they account for their existing or new joint arrangements; and how their current business activities may need to change beyond the accounting processes, such as key business metrics (for example, debt covenants), controls and processes, information-gathering and information technology requirements.

## Growing use of joint arrangements in telecoms industry

Accounting issues in the telecoms sector regularly present management with challenges. Telecoms operators find themselves operating in increasingly complex business models. A range of industry-specific accounting challenges arise through the provision of standard telecoms services (such as fixed and mobile services), as well as through the provision of additional services such as data and internet access.

Telco operators are moving from control and ownership of all assets and activities to sharing control through joint arrangements. Telco operators commonly enter into joint arrangements to build cable systems and mobile networks; to develop and market billing software; and to form consortia to acquire spectrum licences. A decade ago, this sort of arrangement was rare, but these arrangements are expected to continue to grow in popularity as the pace of change puts strain on capital budgets and capacity.

The joint arrangements standard will continue to be a significant accounting and business issue for the telecoms industry.

## Why is this issue significant for the telecoms industry?

The new standard will affect some entities and industries more than others, although all entities with joint arrangements should expect some level of change. Entities in the telecoms industry that are likely to be most significantly affected include those that:

- are active in emerging or developing economies with restrictive foreign ownership rules;
- enter into new joint arrangements;
- apply proportionate consolidation for joint venture entities;
- participate in a significant number of complex joint arrangements; and
- have former joint arrangements, with limited documentation detailing the terms of the arrangement.

We expect IFRS 11 to affect a significant number of entities in the telecoms industry because joint arrangements are commonplace. They generally allow entities to share the risk and expense of projects; facilitate access to new geographies; provide benefits from new expertise; and often ensure the retention of tax benefits.

Many of these joint arrangements are established in a legal entity and take on significant amounts of debt, but all different types of joint arrangement can and do occur. IFRS 11 also introduces new financial statement presentation requirements. These will be particularly relevant for telecoms operators where identifying their share of revenue or expenses is important to stakeholders and/or where their gross balance sheet does not currently consider the specific rights and obligations associated with the joint arrangement.

## Three key areas of focus under IFRS 11

1. Classification of a joint arrangement	
Key change (snapshot)	<p>The standard requires entities to assess their rights and obligations under the joint arrangement in order to determine the appropriate classification as either a joint operation or joint venture.</p> <p>The accounting for a joint arrangement will no longer be driven solely by its legal form.</p> <p>Operators will account for their involvement in a joint arrangement in a manner that is consistent with their rights and obligations.</p>
Impact on IFRS financial statements	<p>A joint operation is a joint arrangement that gives parties to the arrangement direct rights to the assets and obligations for the liabilities. A joint operator will recognise its interest based on its involvement in the joint operation (that is, based on its direct rights and obligations) rather than on the participation interest it has in the joint arrangement. The balance sheet and income statement will be presented gross.</p> <p>A joint venture, in contrast, gives the parties rights to the net assets or outcome of the arrangement. A joint venturer does not have rights to individual assets or obligations for individual liabilities of the joint venture. Instead, joint venturers share in the net assets and the outcome (profit or loss) of the activity undertaken by the joint venture. Joint ventures are accounted for using the equity method in accordance with IAS 28, <i>Investments in associates</i>. The net investment in the venture is a single line in the balance sheet, and the profit appears in a single line in the income statement.</p>

<b>1. Classification of a joint arrangement (con't)</b>	
Industry insight	<p>Network or infrastructure share arrangements are common in the industry. Some take the form of contractual arrangements between the sharing parties; others operate through joint ownership of a separate entity that owns and/or operates the shared assets.</p> <p>Classification and the resulting accounting for each structure will differ based on the rights and obligations of the parties to the joint arrangement.</p> <p>For example, Telco A and Telco B enter into an agreement to share the costs of construction of an undersea cable. The arrangement is set up in an unincorporated entity over which Telco A and Telco B have joint control over decision-making. This is likely to result in the accounting as a joint operations as opposed to a joint venture, depending on the rights over the assets and obligations. Telco A and Telco B will account for their rights and obligations to assets, liabilities, revenue and expenses rather than their share of the net assets and net income.</p>
<b>2. No proportionate consolidation for joint ventures</b>	
Key change (snapshot)	<p>The standard requires joint ventures to be accounted for using the equity method.</p> <p>Previously, a venturer could choose to proportionately consolidate its ownership interest in the joint venture.</p>
Impact on IFRS financial statement	Equity accounting will apply to all joint ventures. A single line item will be shown in the consolidated income statement to reflect the share of profit or loss in the joint venture, and a single line item will be shown in the consolidated balance sheet to reflect the share of net assets in a joint venture.
Industry insight	Proportionate consolidation is not widely used in the industry. However, some operators provide additional disclosure about revenues and customer numbers using their proportionate share of joint ventures; this practice of additional disclosure should be unaffected. Those operators that currently proportionately consolidate will no longer show their share of revenue in the income statement, which will affect key metrics, such as revenue growth.
<b>3. Transition</b>	
Key change (snapshot)	Management should re-evaluate the terms of their existing contractual arrangement to ensure their involvement in joint arrangements are correctly accounted for under IFRS 11.
Impact on IFRS financial statement	<p>Joint arrangements that were previously accounted for as joint operations may need to be treated as joint ventures or vice versa on transition to the standard.</p> <p>A change in the classification of a joint arrangement will require all parties to the joint arrangement to change the way they report their respective rights and obligations in their financial statements.</p> <p>When transitioning from the proportionate consolidation method to the equity method, management should recognise its initial investment in the joint venture as the aggregate of the carrying amounts that were previously proportionately consolidated.</p> <p>To transition from the equity method to accounting for a joint operation, management derecognises its investment in the joint arrangement, and recognises its rights and obligations to the assets and liabilities of the joint operation.</p>
Industry insight	<p>For example, Telcos T1 and T2 form a 50:50 joint venture to build a new cable system. Under their existing policies, T1 and T2 account for their proportionate ownership of the cable on balance sheet; the day-to-day operating costs will be shared equally.</p> <p>Under IFRS 11, T1 and T2 account for the joint arrangements based on their contractual rights and obligations. These may differ from a 50:50 sharing of each asset and liability. For example, if T1 is responsible for maintaining the cable network and T2 is responsible for marketing the cable service to potential customers, these respective rights and obligations would not necessarily result in a 50:50 share of the network assets.</p>

## Examples: illustration of key impacts in the telecoms industry

### Scenario 1

Operator A has obtained an investment in entity T in a relatively undeveloped telecoms environment. The in-country requirements for foreign ownership of T do not permit a local entity with a telecoms licence to be controlled by a foreign entity. Operator A therefore enters into a shareholders' agreement with a local investor B, whereby all decisions will be made jointly. Over the last couple of years, T has shown phenomenal growth, with net profit of C400 million and net assets in excess of C10 billion.

**Current accounting:** The investing parties have joint control of entity T; they account for their interests by using proportionate consolidation in their own financial statements. This is on the basis that there is joint ownership of the legal entity by two shareholders and that operator A has a policy to account for jointly controlled entities using the proportionate consolidation method.

**New accounting:** Under IFRS 11, operator A needs to consider the type of joint arrangement. On the basis of the contractual rights and obligations, the arrangement would be considered a joint venture, as A has a right to the net assets of T. IFRS 11 requires all joint ventures to use the equity accounting method outlined in IAS 28. Operator A replaces the line-by-line proportionate consolidation of entity T's statement of comprehensive income and balance sheet with a single net result and a single net investment balance.

**Challenges in practice:** This may have a fundamental impact on the landscape of each party's financial statements. The financial position and income statement line items would be reduced individually, which would directly impact return-on-asset calculations and average revenue per user (ARPU); it may even affect certain loan covenants, such as those based on asset ratios and earnings before interest, tax, depreciation and amortisation (EBITDA). Furthermore, many entities have concerns that the business may now be undervalued, as EBITDA valuations often do not include income that has been equity accounted.

### Scenario 2

Two large telecoms operators enter into an arrangement in which they establish a Newco and transfer all tower equipment to the Newco. The purpose of the arrangement is to share tower-related costs. The operators have direct rights to the assets and obligations for the liabilities of the Newco based on their proportionate shareholding. All Newco's decisions need to be made unanimously between the operators.

**Current accounting:** The parties account for their involvement in the legal entity as a joint venture and equity-account their investment. This is on the basis that the parties have elected to equity account all joint ventures.

**New accounting:** The arrangement should be accounted for as a joint operation, based on the fact that the operators have direct rights to the assets and obligations for the liabilities. This requires the interest to be accounted for based on rights to the assets and obligations for the liabilities and not on a net basis as previously presented.

**Challenges in practice:** Understanding the respective rights and obligations may be challenging, and contracts need to be carefully considered. Management should consider the impact on covenants and financing agreements.

### Scenario 3

Based on the same facts as Scenario 2; however, the telecoms operators do not have direct rights to the assets and obligations for the liabilities of the Newco based on their proportionate shareholding. In addition, the operators have agreed to ensure that the capacity of the network towers will be shared by the two operators only. The capacity fee charged for the network will be based on costs of the network towers.

**Current accounting:** The parties account for their involvement in the legal entity as a joint venture and equity-account their investment. This is on the basis that the parties have elected to equity account all joint ventures.

**New accounting:** All of the network assets or costs are borne by the two parties, so the interest should be accounted for as a joint operation and not a joint venture.

The network towers provide all economic benefits to the operators, and the network towers are dependent on the financing of the operators. This is because liabilities and costs will be settled through the purchase of capacity by the operators. The network entities will therefore recognise their share of the assets and liabilities based on ownership interest.

**Challenges in practice:** This is a crucial judgement and will have a significant impact on the financial statements. It will need to be carefully considered and properly disclosed. Leverage, capital ratios, covenants and financing agreements may be affected as a result of changes to the balance sheet, particularly when moving from equity accounting to the share of assets and liabilities approach.

## Scenario 4

This scenario also considers a tower-sharing arrangement, except that the two telecoms operators involved do not form a separate legal entity. Instead, each operator retains ownership of its own network estate and grants a right of access to the other operator. Decisions concerning investment in new equipment and maintenance of existing equipment are made jointly, and tower-related costs are shared.

**Current accounting:** The parties treat the arrangement as jointly controlled assets; they account for their own network assets and obligations as well as their share of any joint obligations.

**New accounting:** The arrangement should be accounted for as a joint operation, which in practice would represent continuation of the previous accounting. Each operator will account for its own rights and obligations as well its share of any joint rights and obligations.

**Challenges in practice:** Understanding the respective rights and obligations may be challenging; contracts need to be carefully considered and scrutinised to ensure they have been correctly interpreted. There would be no change to the accounting in this scenario, but that should not be presumed to be the case for all arrangements.

## What are the potential effects on the telecoms industry?

- Changes to the classification of joint arrangements may result in significant financial changes for telecoms operators. This could impact the recognised amounts in profit and loss (for example, revenues and expenses) as well as the balance sheet presentation. For example, leverage, capital ratios, management incentives, covenants and financing agreements may be affected as a result of changes to the balance sheet, particularly when moving from the equity-accounting approach to the share of assets and liabilities approach. Such impacts should be reviewed in advance to understand how an entity's balance sheet may be affected.
- Most operators focus on EBITDA and ARPU. The changes will impact both of these measures, and some operators may choose to adjust the figures they report.
- Management should consider how to communicate the impacts of the accounting changes to their shareholders and other stakeholders. There could be important changes to the manner in which the operator's interest in the joint arrangement is reported and understood by users of the financial statements.
- Future deal-structuring should be considered with the new rules in mind. For example, a joint arrangement in a corporate wrapper would not necessarily give rise to a joint venture, but the specific terms of the arrangements would still need to be analysed in order to understand the operator's rights and obligations under the agreement.
- There are frequent instances in the industry of arrangements being characterised as revenue shares. Some of these are, in reality, simple supply agreements; however, some involve sharing results and/or underlying assets. These will need to be assessed against the new framework to see whether their presentation needs to change.
- Operators may need to request more detailed financial reporting information from an operator of a joint operation if they move from equity-accounting to the share of assets and liabilities approach. Similarly, they may need to provide more detailed information to other parties if they are the operator of a joint operation. For example, an operator may need to provide information concerning the maturity profile of financial liabilities to allow appropriate classification on the balance sheet of the venturer or understand the assumptions utilised in measuring assets at fair value (such as investment property). Operators may also be required to provide this information at numerous points during a reporting cycle, as venturers may have different reporting dates, which could increase their reporting obligations.
- In some countries, non-domestic operators are obliged to have a local partner. It can be challenging to obtain detailed financial information on a timely basis from these businesses, and moving from equity accounting to share of assets and liabilities could be complex.
- Existing systems that integrate joint arrangement accounting may be in place. Any changes to the accounting should be understood to ensure the accounting application of any systems used can also be updated on a timely basis. Some operators in the telecoms industry may need to develop new systems.
- Initial transition requirements and annual reassessment of arrangement terms may require changes to existing processes and internal controls. Gathering and analysing the information could take considerable time and effort, depending on the number of arrangements in place, the inception dates and the records available. Where significant changes to financial results and financial position arise, management should communicate these effects to stakeholders as soon as possible. Prompt assessment and management of all of the potential implementation and ongoing business impacts of IFRS 11 will help reduce unexpected business and reporting risks. Beginning this process early will allow management enough time to consider potential adoption strategies or to renegotiate agreements in order to reduce the impact of adoption and to achieve preferred classification outcomes for future arrangements.

# Financial reporting consideration

The telecommunication industry in Indonesia continues to enjoy sound market growth, which is mostly driven by rising internet access penetration. The intensified competition among service providers, however, pushed down the net income margin as reflected in the past few years. The strategies to increase such margin, among others, would be by increasing the revenue figure either through offering attractive marketing promo or increasing the operator's customer base and reducing the expenses figures by applying cost efficiency.

One alternative of applying cost efficiency that we would like to discuss further in this edition is through exchanges assets and capacities with vendors or other operators.

## Asset exchanges transactions

Businesses sometimes engage in non-monetary exchange transactions, where tangible or intangible assets are exchanged for other assets, without a cash transaction or with only a small amount of cash settle up. These exchanges can involve productive assets such as equipments, which are not held for sale under normal circumstances, or inventory items, which are intended for sale to customers.

The accounting treatment of such transaction generally follows PSAK 16 (Revised 2007) *Fixed Assets*. This standard stipulates that *"if an asset is acquired in exchange for another asset, the cost will be measured at the fair value unless (a) the exchange transaction lacks commercial substance or (b) the fair value of neither the asset received nor the asset given up is reliably measurable. If the acquired item is not measured at fair value, its cost is measured at the carrying amount of the asset given up."*

The following are the considerations as to whether or not an exchange has commercial substance, according to the standards:

- (1) the configurations of cash flows (amount, timing and risk) are different for assets received and given up; or
- (2) exchange transaction changes entity-specific value of the operation that is affected by exchange; and
- (3) the difference between (1) or (2) is relatively significant to the fair value of the assets in exchange

## Tax implications on Assets exchange transactions

From a tax perspective (with the assumption that a vendor is an offshore entity and a purchaser is an Indonesian telecommunication operator), the assets exchange transactions are viewed as two separated transactions (i.e. the telco operator sells its old assets to the vendor and buys new assets from the same vendor), irrespective of whether they are monetary or non-monetary transactions, with the following tax implications:

Transactions	Tax implications
1) The telco operator purchases new assets from the offshore vendor	The imported new assets are subject to import taxes (i.e., import duty, VAT, and Article 22 income tax) unless the telco operator obtains tax exemptions for the import of assets (i.e. master list facility, VAT exemption on the imported capital goods, Article 22 tax exemption approval).
2) The telco disposes of old assets (assets given up)	<p>A transfer of the exempted assets before the elapse of the five year time window i.e. the old assets which were previously imported using import duty exemption (master list facility), the telco operator must re-pay the exempted import duty payable plus 100% penalty of the import duty payable. As for VAT and Article 22 income tax on the imported old assets, these taxes should not be an issue when the imported assets are transferred within five year time window.</p> <p>However, considering the acquisition of the assets directly relates the telco operator's business and the related assets are not sedans or stations wagons, the telco operator must impose Article 16D VAT at 10% on carrying value (NBV) of the disposed assets to the vendor.</p>

From the above disposal of old assets, the 10% VAT would be additional cost for the offshore vendor as such VAT is unrecoverable. The following are alternatives to mitigate the VAT cost for the offshore vendor:

1. The related old assets can be sold through export procedure (although the telco operator does not have an export license), where the telco operator can get a 0% VAT facility.
2. The related old assets can be sold locally to other third party through a normal sale transaction (not through exchange of assets). The sales value would normally be lower than the amount of the carrying

value (for example being sold at USD 100), since it was assumed that the economic benefit of the old assets no longer exists. Therefore the VAT imposed would be lower than structuring this transaction through exchange transactions.

## Capacity exchanges transactions

In some network-based industries, such as telecommunications, entities often enter into transactions for the sale or purchase of network capacity. Occasionally, an entity may sell capacity to another party in exchange for receiving capacity on that other party's network. The ownership of the network assets would probably be retained by the assets owners, but such transaction would convey an indefeasible right of use (usually referred to as an IRU) to the buyers for an agreed period of time.

In addition, the transaction's commercial substance must be considered. To the extent that the swap/exchange does not have commercial substance, both parties should not record revenue or costs in respect of the capacity exchanged. To the extent that the transaction has substance, it may be appropriate to recognise revenue.

Often, assets and capacity in exchange transactions involve complex arrangements and as such require careful consideration of the appropriate accounting treatment.

## Tax implications on Capacity exchanges transactions

Accounting treatment for the capacity exchange transactions (i.e. either not recording revenue and its cost or only recognizing the variance if it occurs on capacity exchange transactions (net presentation)) are different from the tax perspective.

From the tax perspective, the capacity exchange transactions are treated as two separated transactions i.e. a telco operator e.g. PT ABC rents the capacity to another telco operator e.g. PT XYZ and at the same time, the telco operator PT ABC also uses the capacity from the other telco operator PT XYZ.

The tax implications for the above example would be as follows:

- 10% VAT must be imposed on each transactions to the users of the capacity. The VAT paid by the users (PT ABC or PT XYZ) will be treated as creditable input VAT in their monthly VAT return;
- The users of the capacity are liable to withhold Article 23 income tax at 2% on the value of the capacity used. The tax paid would be claimed as corporate tax prepayment of both companies.

# The Telecom Security Arms Race

When facing the facts on a global basis, the losses because of fraud in the telecommunications industry are huge. This is the single biggest cause of losses for telecommunications operators. Estimations of losses vary, but many sources estimate that fraud will cost operators between 3% and 5% of their revenue on average. This makes telecommunications fraud globally a bigger business than drug trafficking. While security measures and technical aids have become more and more sophisticated during the last decade, security threats have become much more prominent as well. Telecommunications operators are facing an ongoing security arms race, especially in their advanced IT systems. It is time to realise that, in order to keep up to speed with the security arms race, traditional security measures are no longer sufficient.

## Introduction

Fraud hitting telecommunications companies has existed probably ever since Alexander Graham Bell invented the telephone. This fraud is not limited to financial fraud: when telephones became a commodity for public, the main type of fraud was presumably eavesdropping by phone operators, who could not resist the temptation of this big opportunity to contribute to the gossip channels in town.

Since then, a lot has changed. The telecommunications industry has become a multibillion dollar business, and so has fraud in this field. This article will discuss the most common types of fraud, and several causes that may contribute to excessive fraud. At the end of the article, some directions to limit the extent of telecommunications fraud are provided.

## Phone freaking

Phone freaking is a terminology often used to describe *"the activity of a culture of people who study, experiment with, or explore telecommunication systems, such as equipment and systems connected to public telephone networks"* (Wikipedia, The Free Encyclopaedia). According to this definition, phone freaking does not necessarily lead to (efforts to) commit fraud. In practice, however, phone freaking often leads to, or is seen as similar to, fraudulent activities, with free calls, eavesdropping and sabotage featuring as the most common objectives. Phone freaking has evolved following the technical development in telecommunications. Some examples of known ways of freaking, roughly in chronological order, are wire tapping, attacks of switches and subscriber databases, PBX attacks, abuse of mobile telecommunications, and abuse of the Voice over Internet Protocol (VoIP).

## Wire tapping

Wire tapping has been committed as long as phones have existed, and is still a major source of eavesdropping and call fraud, particularly where landlines are in use. The simplicity of the technique makes wire tapping relatively easy. Taps can be placed into the devices, wall sock-ets, or supply lines, and the way is open for eavesdropping and for making calls at other people's expense. In the early days of the cordless phones, this way of fraud became even easier, because of the lack of proper handshaking techniques between handsets and base stations.

For a long time, telecom operators were reluctant to actively facilitate protection for their customers, likely because of their monopoly position in the market. Since the deregulation in the market in many countries, the attitude of telecom operators has changed. Many operators now proactively provide information to their customers on how to prevent wiretapping, often combined with offering a range of hardware that is better protected against wire tapping. Nevertheless, the technique used for landlines remains an inherent risk.

## Attacks of switches and subscriber databases

As the availability of computers, the access to public networks and the technical knowledge became more and more sophisticated, hacking became a common phenomenon, which also affected the vulnerability of telecom systems. Hackers found out that critical systems such as switches and subscriber databases were often well protected from outside, but that the protection of backend systems for administrative purposes was in many cases insufficient, making them easily accessible. Having identified and utilised these weaknesses, it was usually only a matter of time and effort to find the way to switches and subscriber databases through the internal network of the telecom operator.

To date, tampering with call detail records (CDRs) and utilisation of free numbers (for example: numbers used for internal purposes) have been known sources of fraud, often in combination with collusion with employees of the operator. These cases are not limited to revenue fraud. Privacy violations (disclosure of private telephone numbers) are, although not quantifiable in terms of revenue loss, from time to time a serious issue.

## Abuse of computerised end systems

Ever since the introduction of computerised end systems, these systems have been subject to attacks, utilising the intelligence available in these computerised systems for fraudulent purposes.

In companies, dial through fraud is a rising star in the fraud universe. A PBX (Private Branch Exchange) is a telephone switch that is installed on the premises of a medium to large size company. The PBX allows many users to share out-side lines, significantly reducing the number of lines needed to be leased from the local phone company. Dial through fraud exploits a PBX feature that allows employees to ring in to the switchboard and by keying in certain dialling codes, make national and international calls for which the company will pay the bill. Most business PBXs are set up to be maintained remotely. This is to allow engineers from a maintenance company to make changes to the configuration without needing to make a site visit but it exposes the PBX.

Using trial and error, hackers will identify the number that the PBX connection is on. Default passwords like *admin*, *0000* or *1234* will be tried first, followed by a brute force attack until the right password is found. Once the hackers have gained administrative access to the PBX, they will identify unused extension numbers and set them up to allow dial through. For the cost of a local phone call, the hacker can make calls to anywhere. This can lead to significant revenue losses if this is done on a large scale.

End users are under attack, since PCs are used as phone devices. There are numerous examples of cases where dialling software is installed on the PC, initiating calls to predetermined service numbers owned by criminals. These criminals collect their share of the revenue generated by these numbers, leaving the end users with huge telephone bills.

## Abuse of mobile telecommunications

When the first generation of mobile phones came on the market, the vulnerability inherent to wireless analogue communication quickly became obvious. The lack of privacy precautions made these phones a source of leakage of confidential information. The lack of proper authentication mechanisms made this way of communication vulnerable to identity theft, and calling on the account of the owner.

The next generation of mobile phones, based on the Global System for Mobile communications (GSM) digital technique, provided increased security, but secrets soon leaked out. Some aspects of the security designs were leaked, and other aspects were disclosed by reversed engineering. Furthermore, the GSM technology had a number of inherent weaknesses, such as calls made through networks other than the customer's own provider's network, where it was unavoidable to transmit data unencrypted during a certain stage of the data traffic.

The introduction of the third generation of mobile telecommunications based on the Universal Mobile Telecommunications System (UMTS) overcame the GSM weaknesses in some aspects, by implementing an end to end encryption. The weakness in this system was, however, the usage encryption based on a master key, with the inherent weakness of becoming known in a broader circle. This, besides the fact that in many countries this master key is claimed by Governmental agencies for crime fighting purposes, causes another inherent vulnerability in the security of mobile traffic.

## VoIP

Voice over Internet Protocol ("VoIP") has made a skyrocketing development, driven by the customers' wish for cheaper (or even free) long distance calls, and the increasing penetration of personal computers in house-holds.

Although VoIP has a number of facilities that enable secured phone traffic (at least as secured as the conventional phone traffic); the way VoIP is often used in practice causes a number of vulnerabilities.

First of all, not all VoIP providers utilise facilities to ensure secured phone traffic to their full extent. It is likely that cost reduction is one of the causes. Encryption reduces performance, and it will need additional investments to regain an acceptable level of performance.

Secondly, the use of computers as phone devices bears a risk of eavesdropping-software on these computers. The owners of these computers are often not sufficiently aware of this.

A third source of risk related to VoIP is the fact that different systems need to be able to communicate with each other, which reduces (or sometimes even excludes) the possibility to apply proper encryption.

## FFWs – Frequently Found Weaknesses in security

As described above, telecommunication traffic has, and will probably always have, a number of inherent security weaknesses.

Many of these security weaknesses are successfully abused by customers, hackers, as well as personnel of telecom operators.

The likelihood that such abuse leads to significant fraud which is not prevented, or not detected in a timely manner, largely depends on human factors. The most important factors are:

- A lack of security culture and security awareness. In many companies, there is an elementary lack of a security culture. Without a proper culture, driven from the top of the organisation, there will be most likely a lack of security awareness as well. This will degrade the general level of security to a low level, which is likely to be abused by internal and external parties.
- Weaknesses in operational security processes. Security is often not a topic on the agenda of the Board, and insufficient time and effort is allocated to develop and to maintain appropriate security processes. The results are obvious: there will be a lack of attention for security and in the event of security events, no-one can be held responsible.
- Competencies of staff. Many companies invest insufficiently in recruitment and training of staff with the proper competencies. An issue often faced by telecom operators is: technical staff is insufficiently skilled in security, and security staff (including internal auditors) is insufficiently skilled in the business. The telecommunication business is highly specialised, and so should security staff be.
- Human temptations. There is a lot at stake: money and reputation. Human temptations are everywhere, and they should be managed by a strong tone from the top (including a clear code of conduct), a system of compensation in accordance with the nature of the position of key staff, and a zero-tolerance policy for non compliance.

## Summary and recommendations

The telecom industry has always been, and will always be, vulnerable to fraud. The business is complex, the number of transactions is massive, and the temptations are big, from an internal (employees') point of view as well as from an external (customers, hackers, competitors) point of view. During the last decades, the business has become more and more complex, and so have the techniques and the technical aids to commit fraud. This arms race will continue, requiring telecom operators and their customers to keep alert and to keep on working on continuous development of their security.

Traditional security measures will always be necessary, but will not be enough. For telecom operators, there are opportunities in hardening the technical security of access to the key IT systems, an increased level of consistent security monitoring, and an increased level of data analysis with a strong focus on intelligent trend analysis with prompt follow-up of any issues found. This may require an increased effort to recruit security specialists with sufficient technical knowledge of the telecom industry. Furthermore, a better job could be done to provide customer education in the area of security.

# Developing Risk Resiliency

Managing risk should be regarded as a means of driving higher performance. For communication operators, facing a complex and fast changing blend of technological, customer, and regulatory risks, it is especially critical to align and link risk and performance management in a way that creates sustainable value for shareholders. Operators that can achieve risk resiliency can make better, risk-informed decisions with greater confidence and clarity.

## Why need it?

The environment is increasingly complex for communications companies: rising competition, changing consumer habits, regulatory uncertainty and change, rate and cost pressure from customers, evolving technologies, and relentless innovation. This dynamic environment creates more pressure on boards and executive management teams to think creatively about how their organizations will navigate challenges and manage risk proactively.

One of the errors in risk management in the past was the mistaken notion that risk management should be bolted on or attached to the organization, or that it was simply an overview function or a department. To be successful, the risk management capability must become an enabler in driving performance. Organizations that have been successful in establishing a meaningful risk management capability have found that the most effective way to drive that outcome is by integrating risk management and performance to achieve resiliency.

## How to integrate risk and performance?

### Start with strategy

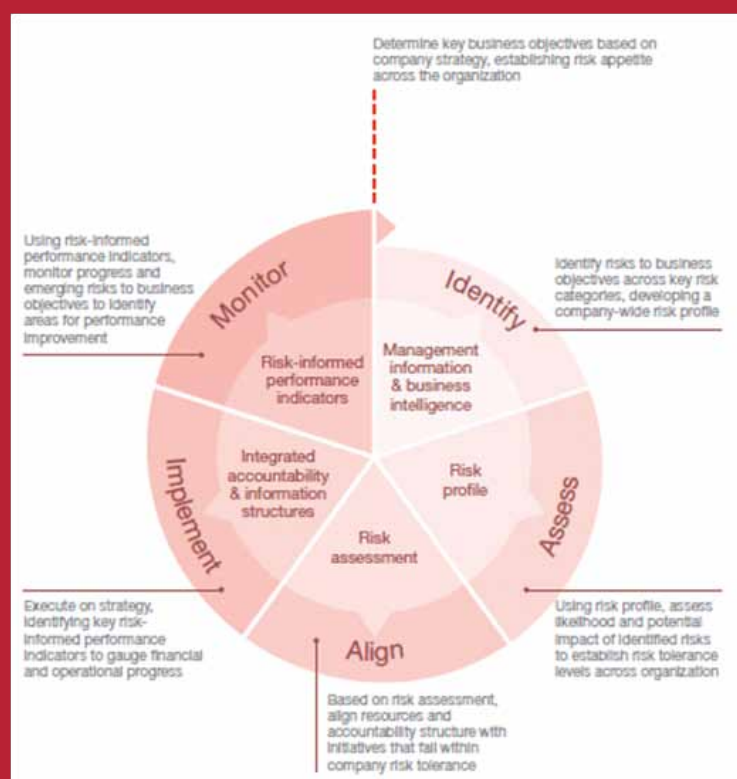
The critical first step is to understand strategic objectives and clarify the measurements and planning horizons associated with their achievement. Grounded in a common cause and rooted in the language of the strategic plan, the executive team and the board can focus on the key strategic risks that matter most, and can provide a framework for the rest of the organization to follow in identifying and assessing other risks throughout the enterprise.

Integrating a view of risk and performance allows for a wider lens on risk, which helps the organization focus not only on the narrowly defined financial measures but also on broader operational and performance measures that will significantly impact the success or failure of an

initiative. Once the measures are defined (what does success look like?), the organization can identify the measures that best illuminate the status of key risks.

### Assess and align

Modelling scenarios raise key points about the power of applying risk management principles in the strategy-setting environment. While we define risk resiliency as an organizational capability that enables confident, risk-informed decision making, the resilient organization also enjoys strong and sustainable financial health. To achieve sustainable financial strength, organizations must have a clear understanding of how changes in the operating environment (such as regulatory or competitive changes) will impact core financial measures and the health of the balance sheet. Developing sufficiently robust models that help management evaluate the impact of various events and scenarios on core measures, such as cash flows and liquidity, will provide executives with the insight necessary to make better decisions and to navigate more confidently the uncertainties and changes in the external environment.





### **Establish accountability**

In the communications industry, the capital-intensive nature of the industry and the frequent need for ongoing capital investment often results in chief financial officers having a great deal of accountability for risk management. However, executive ownership of risk management also can rest with business unit leaders or strategic planning executives.

The compensation and performance analysis of managers and executives is the junction at which risk and performance planning meet. Are performance incentives appropriately aligned to the strategic plan and risk assessment, as established by the senior executive team and the board? Does the board hold the senior executive team accountable by using the same framework of integrated risk and performance measurement? Do incentives encourage the unnecessary or unmeasured taking of risks in pursuit of more easily quantified targets, such as revenue or profitability?

### **Implement and monitor**

Implementing appropriate risk management capability within performance framework provides the ability to mitigate, manage, or share risks that might otherwise negatively impact or impede performance achievements. Ultimately, it comes down to planning how to address the risks and implementing those plans when circumstances warrant.

Finally, with plans in place, and a framework of strategic objectives and complementing measurements, the risk team can establish the monitoring process to ensure that the plans and measurement criteria are dynamically maintained and acted upon. Viewing risk monitoring as not just a compliance or overview function but a strategic enabler that helps executives throughout the enterprise become better at identifying, assessing, and managing risk (in effect, improving organizational competence in risk management) create an asset that will serve the organization for the long term.

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