Revenue Assurance

Maturity Model

GB941-B

Version 0.9

April, 2012

Notice

Direct inquiries to the TM Forum office:

240 Headquarters Plaza,
East Tower – 10th Floor,
Morristown, NJ 07960 USA
Tel No. +1 973 944 5100
Fax No. +1 973 944 5110
TM Forum Web Page: www.tmforum.org

Table of Contents

List of Figures

1. Introduction to the Maturity Model

This appendix discusses a way to assess maturity of business activities to deliver revenue assurance objectives.

By defining a schema to standardize the subjective judgment of the maturity of revenue assurance, this document

- provides a common framework to review and describe the relative maturity of revenue assurance in different businesses;
- states a repeatable method to assign a numerical score to maturity in an organization, so that it can be correlated to other performance measures that are more expensive or time-consuming to collate;
- provides a consistent framework for benchmarking the maturity of revenue assurance in one company relative to its industry counterparts; and
- outlines a long-term vision for the evolution of revenue assurance within industry.

The appendix will be circulated to revenue assurance practitioners as appropriate to assist the standardization, benchmarking and establishment of revenue assurance as a recognizable profession.

1.1. Introduction

1.1.1. Document Overview

This chapter introduces the concept of maturity within the context of revenue assurance for electronic communications providers. It explores the need to model maturity and distinguishes the maturity of the business as a whole from the activities performed by the nominal revenue assurance department.

Chapter 2 discusses revenue assurance in businesses not yet mature enough to adopt the strategic approach embedded in the maturity model. It gives some simple advice on the basics for justifying and commencing revenue assurance activities.

Chapter 3 provides the detail of the maturity model which describes the strategic evolution of revenue assurance across each aspect of performance with a Communications Service Provider. The detailed maturity questionnaire is presented and a scoring mechanism is explained.

A discussion of the relationship between maturity and the timing and efficiency of revenue assurance activities is given in Chapter 4.

1.1.2. A Strategic Approach to Revenue Assurance

The revenue assurance maturity model is intended to aid strategic planning for revenue assurance. It is not a detailed checklist of operational activities that should be performed. It would not be impossible to devise and maintain a checklist of specific activities relevant to the different operational circumstances found in service providers using different technologies to sell different products to different market sectors in different countries. By assessing the current level of maturity within a communications service provider, the model aids the determination of what should be the next appropriate major strategic ambition if the provider is to mature as rapidly as possible.

1.1.3. The Need for a Revenue Assurance Maturity Model

The term “revenue assurance” has been widely adopted by telecommunications providers. It generally is used to describe a series of inter-related objectives and activities relevant to the integrity or maximisation of operating revenue and cash inflow. However, the term “revenue assurance” is still not used with a uniform meaning. There are wide discrepancies in what different CSPs consider to be within its legitimate scope. The TMF Technical Document TR131 gives the following definition of revenue assurance, supported by an analysis of how the term has been used in practice:

“Data quality and process improvement methods that improve profits, revenues and cash flows without influencing demand.”

However, even a common definition does not imply a common understanding of the subject. The lack of consensus is a severe impediment to the

- comparison of revenue assurance between businesses;
- raising of the industry profile of revenue assurance as a mature discipline;
- development of off-the-shelf tools and methods; and
- cooperation between businesses on ventures such as training or benchmarking.

A dynamic model for the evolution of revenue assurance would be a complement to the static definition. In particular, a dynamic model can allow for changes in:

- objectives;
- priorities;
- activities, methods and tools; and
- resources;

as revenue assurance matures within an organisation. The extent and type of resources deployed for revenue assurance will inevitably change with maturity.

Appropriate methods and tools for a novice RA unit are unlikely to remain appropriate as it becomes more sophisticated. Definitions of revenue assurance tend to focus on high-level objectives, and although these may be relatively constant over time, this obscures the necessary pragmatic shifts in short and medium-term detailed objectives and priorities. Detailed objectives and priorities inevitably change to reflect changing circumstances, and as business improvement is an element within revenue assurance goals, successful revenue assurance will of itself give rise to changing circumstances.

Characterising the evolution of revenue assurance should help explain the relations between

- a consistent mission and group of core principles; and the
- changing operational objectives, priorities and approach.

In particular, it would be unreasonable to expect an immature revenue assurance unit likely to be focused on short-term delivery to articulate a meaningful long-term vision for revenue assurance. On the other hand, no organisation is in a position to claim to have perfectly delivered everything that belongs with the broadest definitions of revenue assurance. In addition, differences in personalities, organisations, technology, business models and culture will tend to bias opinions on what is treated as fundamental to revenue assurance and what is treated as peripheral or outside of scope. Describing a series of archetypal steps in the evolution of revenue assurance should identify what is common to revenue assurance in different organisations by describing a common and recognisable end point or aspiration. This makes allowance for the difficulty in reconciling revenue assurance between providers where the starting points may have practically nothing in common and where the end objectives are undefined or where senior management in each provider has different priorities.

1.1.4. How the Revenue Assurance Maturity Model was Developed

The evolutionary path described is based on real-life observation of revenue assurance in several providers since the year 2000. This is then extrapolated to characterise how the principles of revenue assurance might continue to develop in future. The future development proposed represents an ideal which can be used as a source of comparison for widely different businesses because they represent a rational extension of the underlying principles.

The descriptions given are couched in themes applicable to any business, such as organisation, status and technology. The descriptions avoid reference to systems, products or processes. Describing the model in terms of specifics would have made the description less abstract and easier to relate to real-life. However, this would have been at the cost of making the description less general, creating a barrier to comparison between providers with little similarity in terms of systems, products or processes.

The model described here significantly expands upon and amends the model presented in the TMF document TR131, which was itself an expansion of an initial proposal by T-Mobile. This version of the model has been made more useful than its predecessor on a practical level, through the addition of a detailed and reproducible questionnaire and scoring system. In addition, a number of errors and confusions in the TR131 model have been identified and eliminated. Many of those confusions related to a failure to distinguish revenue assurance from the nominal revenue assurance department, as described further below.

1.1.5. Distinguishing Revenue Assurance and the RA Department

Throughout much discussion of the subject, and in the sections above, it is common to only vaguely distinguish between revenue assurance and the organisational unit that might typically be called Revenue Assurance. This leads to a potential confusion between

- the objectives of revenue assurance, and
- the objectives of the Revenue Assurance department.

A simple analysis may seek to equate the two, but this ignores the pragmatic decisions made in setting priorities and allocating resources to any organisational unit. For example, an organisational unit that already performs a useful and successful activity that helps to satisfy the business' overall revenue assurance objectives is unlikely to be reorganised simply in order to put it into the same organisational silo as other revenue assurance activities. Another example is that an oversight function such as Internal Audit or Programme Management may have many revenue assurance objectives without this suggesting they should address all the objectives that fall within revenue assurance. Because revenue assurance covers the integrity of systems and processes, it is possible to envisage almost all systems and processes as in some way subordinate to revenue assurance. This tends to mean that mature Revenue Assurance departments are given an organisational role that is broad and cuts across traditional organisational boundaries, but it would be unrealistic to position it as superior to the functions that it straddles. Instead, the role of the Revenue Assurance tends to mature into that of a champion and watchdog, responsible for promoting positive change and for identifying problems but not accountable for implementing those changes or for the problems of other business units. There is much debate on what is the correct balance for revenue assurance departments: whether they should have active responsibility for addressing revenue loss, or should be limited to a supervisory or watchdog remit. However, there is no contention that somebody within the organisation should be active in dealing with loss and somebody should serve as a watchdog. The problem is who performs which role in each case, and whether the same department can fulfil both roles at the same time without creating a conflict of interest. As such, it is both possible and desirable to distinguish what the Revenue Assurance department does, and how its success is measured, from the overall objective of revenue assurance for the business, and how various business units all support this objective. The ability to distinguish revenue assurance from the Revenue Assurance department is itself a sign of maturity.

The revenue assurance maturity matrix given below applies to the whole business, not to any single department (whether called "Revenue Assurance" or not). It cannot be used to gauge the maturity of a department in isolation, because in practice there may be significant advantages in distributing responsibility for revenue assurance across a business. The ideal distribution will depend on the way the business is structured. Any Revenue Assurance department using this method must impartially assess the relevant organisation, people, tools, influence and process both within and outside its department and within and outside of its control. One challenge this will present for newer Revenue Assurance departments will be to gather knowledge of everything relevant to assessing maturity. For example, a common mistake would be for a Revenue Assurance department to assume the absence of a relevant control when in fact the control is being performed without the awareness of the Revenue Assurance department. In fact, experience shows many controls that support revenue assurance objectives are executed by parts of the business that are themselves ignorant of the full range of revenue assurance objectives their controls effectively support. This means to get a comprehensive survey of relevant control activities, it should be assumed that people executing revenue assurance activities may not understand how they support revenue assurance.

This is a simple illustration of the point raised above. Suppose a telco has implemented strong controls for reconciling CDR flows from switch to bill. These are executed by a team within its Network Operations unit with assistance from people in Billing Operations. Because of a series of customer complaints and adverse audit findings about rating errors, the COO decides to recruit a new team to monitor rating accuracy, reporting to him and called "Revenue Assurance". In order to gauge the revenue assurance maturity of the business, it would be necessary to take account of the CDR reconciliations performed outside of the Revenue Assurance department. Furthermore, it may be that the tools and processes used for CDR reconciliation are stronger and more mature than those implemented for rating assurance by the new Revenue Assurance team.

1.1.6. Differences in Defining Revenue Assurance Not Addressed

A dynamic maturity model compares favourably to a static definition as a practical answer to the question "what is revenue assurance?" but it does not address several differences of opinion evident in the variety of definitions offered. Some of these differences are listed below. As far as possible, the maturity model attempts to be agnostic with respect to these matters. It tries to identify principles that underpin the pattern of evolution, whether these are applied to a narrow or broad vision of revenue assurance. As a result, it should still enable comparison between businesses that take differing positions on these matters.

- It does not address whether the "ultimate" objective of revenue assurance is to maximize economic returns (however that is measured) or just to ensure integrity or even whether it is some combination of the two.
- It does not address whether the "ultimate" objective of revenue assurance relates solely to revenues and/or cash inflows or also covers costs and/or outflows.
- It does not address whether the key measures relate to amounts billed, posted to the general ledger, nominal cash flows, discounted cash flows or any other measure that may be adopted.
- No position is given with regard to limiting the scope to types of products or services or to types of technology.

- No analysis is given of whether revenue assurance includes only operational transactions or also encompasses use of capital.
- No position is given with regard to what are appropriate or inappropriate tools, techniques, methods and so forth.

See above for a static definition of revenue assurance.

2. Establishing Revenue Assurance in the Immature Provider

The Maturity Matrix described in Chapter 1 is a powerful model for a common understanding the state of development of revenue assurance within an organization. However, the starting point for revenue assurance will be unique to each provider. It is impossible to generalise about the particular circumstances, challenges faced, or resources employed by each business when it first becomes aware of revenue assurance as an objective. Such awareness will necessarily be primitive and piecemeal; it will depend more on personalities and available information than a rational plan or a well-defined business goal. Generalizing about the development of revenue assurance in very immature providers is dangerous. This section provides some advice for providers that would struggle to determine their maturity because of their limited experience and understanding of revenue assurance. It draws out some generalizations that may help the initial establishment of revenue assurance in any provider. These will serve as a foundation to assist the adoption of the planned approach described in Chapter 3; the foundation must be established before strategic planning can begin. Attempting to adopt a strategic attitude to revenue assurance, as described in Chapter 3, in a business with no revenue assurance awareness or lacking any definition of revenue assurance priorities is likely to lead to failure. Telcos not ready for formally adopting a strategy for revenue assurance should first consider how they address the following tactical elements of revenue assurance.

2.1. Low-Hanging Fruit

Whatever the differences in focus between revenue assurance in different providers, a common preconception tends to motivate the first revenue assurance activities in any provider, namely

- there are some “easy wins” or “low-hanging fruit”
- meaning that the bottom line can be significantly improved
- in a relatively short space of time
- applying a low level of resources at low risk
- by better realizing current sales instead of just trying to sell more.

The proposition is compelling in outline. On detailed inspection, it depends entirely on the specific costs and benefits of improving a current process or system. The most dramatic positive examples of this type hence relate to rectifying processes that appeared to be functioning correctly. The mistaken impression of functional correctness might result from a lack of management or control oversight, or inadequate performance measures. The goal here is to show that appearances were wrong – that some relatively simple actions could significantly improve results. As such, the value stems from recognising and correcting flawed performance and either fixing the cause or performing an additional activity to address the symptoms. However, there will always be a key limiting factor: the magnitude of the benefits is directly proportionate to

- how sub-optimal performance was before it was corrected, and
- the total value of transactions impacted by the flaw.

The returns will never be dramatic when this approach is applied to a process that is already near-optimal or to a process relevant to only a low value of transactions.

Though the outline proposition is consistent, many different incorrectly functioning systems and processes might serve as the subject for assurance. One of the most consistent themes in revenue assurance as presented across all providers is that the risks and rewards are very similar, although the issues addressed may have nothing in common. This begs the question of how the value proposition can remain the same, though the specific systems, processes, and problems may vary greatly. An unattractive though straightforward answer might go something like the following.

- The reasons for incorrectly functioning systems and processes are one or more of the following: human error, poor management, lack of adequate governance or control, poor quality control, uncorrected or unidentified technical errors, poor design, and inability to quantify the financial impact of any of the above.
- Incorrect functional performance may have persisted over an extended period of time, and as time passes it becomes increasingly less likely that any individual accountable for the sub-optimal performance will seek to address it without external impetus either because of resistance to change or, at least as likely, because flaws are not looked for or identified.
- The individual or group that identifies a given instance of incorrect functional performance that in turn yields significant bottom-line benefits when resolved will do so because of a coincidental fit with their individual skills, experiences or bias. It is not because they have been given a meaningfully articulated objective to improve all instances of incorrect functional performance that might actually exist. Nor is it because they have a particular skill set for revenue assurance, as that would imply it is possible to identify a relevant group of skills that any business needs, but which for no rational reason no business seeks to employ *before* things go wrong.

It would be easy to appear critical of a business which is focusing on such low-hanging fruit, or for such a business to become defensive about its actions. However, it would be fairer to represent this stage of revenue assurance as *immature*. Whoever is promoting the ad hoc resolution of sub-optimal performance identified is acting perfectly rationally:

- there are potentially significant low-risk economic benefits to be realized,
- they are focusing on fixing what they already know about as first priority instead of looking for problems where none have yet been found, and

- they are seeking to motivate immediate positive change without dwelling on the historic reasons why significantly incorrect performance was allowed in the first place.

Though this behaviour is rational, it is still immature in the sense that it is a short-term reaction to business failings, without regard for anything beyond the immediate benefits that can be realised. For revenue assurance to mature, it must become more long-term in outlook, seeking to deliver sustainable benefits to the business instead of simply reacting to serious shortcomings as they become apparent. Reviewing the stereotype of picking "low hanging fruit" clarifies the properties that will signal increasing maturity as follows.

- As "low-hanging fruit" opportunities are realized, there is an appreciation that the number of issues due to functionally incorrect performance is finite and that greater skill will be required to keep on identifying issues and greater ingenuity will be needed to earn positive returns as the costs of resolutions increase and value of potential benefits fall.
- Although opportunities for significant returns for newly-established RA may be due to previous lack of foresight or propensity for human error, RA will need to guard against repeating those same failings. In particular, a short-term resolution may not address the underlying reasons for functionally incorrect performance, hence RA should also seek to prevent recurrence of revenue loss as well as fix its symptoms, even though the business case for prevention will not be as easy to make and eliminates the option for RA to justify its existence in terms of repeat fixes of the same problem. Also RA staff will need to avoid falling into the trap of assuming superior knowledge or understanding to those in the business accountable for the functionally incorrect systems or processes. If they assume superior knowledge they risk also failing to identify significant flaws. As RA increasingly motivates change, there is the increasing risk that RA could become "part of the problem" if it fails to understand the full financial implications of its proposals or fails to review its previous work for weaknesses.
- In order to identify further opportunities and also in response to any broadening of the scope, there will be an increasing need to broaden the range of skills, experience, and data available to those responsible for finding them. It will be insufficient to assume the same individual traits that helped to deliver one big win will be suitable when considering very different systems and processes. The basics of method may be the same, but an understanding of the detail is needed to ensure that the method is applied correctly.
- The focus of RA will need to increasingly embrace management of cultural change if it is to promote improved management, quality control and sophisticated financial appraisal in order to prevent recurrence of functionally incorrect performance.
- In order to both identify new issues and monitor performance that should remain functionally correct, RA will need access to increasing amounts of data about a wider range of systems and processes. This will likely necessitate both increasing automation of RA data analysis and delegation of responsibility for basic checks and controls back to the responsible

business unit even where those checks and controls were originally implemented by RA.

- RA will need to closely monitor performance over time and show sustained business benefits, without the advantage of being able to claim no responsibility for "what went before". In so doing, it must continue to be objective even about its own performance. Furthermore, the methods of quantifying performance must become increasingly consistent to get a meaningful assessment of trends over time and of current priorities.

- The timeliness of RA will shift from a simple reaction as and when issues are identified towards more speedy identification and resolution of issues when reacting to them and also towards prevention of issues before they even occur. The net outcome is that there will be fewer issues to react to, and where revenue loss occurs this will be remedied more quickly, thus reducing the total value of revenue loss identified and recaptured. This pattern of starting with a purely reactive approach to revenue assurance and supplementing this with both active and proactive assurance is described further in Chapter □.

- There will be increasing reason to extend the costs of revenue assurance in ways which will not yield a direct relationship to benefits obtained, for example the cost of training staff or of obtaining and processing monitoring data which shows performance is in fact optimal. Conversely, the benefits of revenue assurance will be less tangible and harder to quantify, in particular the value associated with prevention of errors and improved timeliness in identifying and correcting errors. More sophisticated methods of gauging the benefits to the business will be needed whilst also using more advanced techniques to judge where further resources are best deployed.

2.2. Increasing Knowledge of Revenue Loss

It follows from much of the above that an immature revenue assurance unit will focus, not unreasonably, on financial metrics of the value it adds to the business. In its simplest form, this will be represented as a straightforward variance: the return that was realised with the RA fix less the return that would have been realised without it. The difference is easy to quantify if it is easy to quantify the impact of RA. For example, if RA identified that a number of billing records were not in fact billed, then prompted their billing, the value attributable to RA is the value of those records. However, this simple model may become a disincentive to improving business performance, because if RA identifies the same problem sooner, and promotes a resolution that prevents the problem from recurring, the benefit attributable to RA is reduced unless you ascribe a benefit to "what would have gone wrong" had RA acted later or not prevented future errors. Clearly there will be difficulties in valuing this "would have" component to benefits. Many of the more headline-grabbing figures produced in claims for the benefits of RA depend entirely upon the supposition that nothing could have been done sooner. This may be true from the point of view of an external consultant or vendor just introduced to the provider with the task of reducing revenue loss, but it breaks down once the objective of revenue assurance is taken to be ongoing and not a one-off.

To some extent, this means that simple financial metrics are undesirable as a measure of ongoing performance of revenue assurance. To take a stereotypical example, claims that consultants or vendors can reduce revenue loss by factors of "3 to 5%" would soon seem incredible if, having realised just such a level of benefits, they were asked to achieve the same the next year. If revenue assurance improvements of the order of 5% of revenue were consistently delivered over, say, a 5-year period, this means that either the extent of loss at the outset must have been approximately 25% of total revenues, or that there is a failure to prevent new causes of revenue loss. Extend this model to a 10-year or 20-year timeframe and it becomes evident that the economic model for revenue assurance cannot be sustainable in the long-term if it entirely depends on measuring short-term solutions to historic problems. The mis-use of financial metrics often encourages a common and duplicitous step on behalf of maturing revenue assurance departments. In order to keep on yielding significant benefits, they alter and extend their definition of revenue loss over time. This continues to generate estimates of similar levels of returns year after year, but only because the method of calculating benefits is changing each year to accentuate the current benefits, which may have been zero under previous methods of calculation, or conversely would have implied that benefits of RA in previous years would have appeared proportionately much smaller if calculated using the most current methods. The pressure to manipulate reporting of financial benefits of revenue assurance has two undesirable consequences:

- virtually all public reports of typical revenue loss are based on anecdotal and subjective estimates which if believed year on year would suggest that the increasing spend on revenue assurance is failing to lead to significant improvements;
- attempts to consistently quantify and benchmark performance have generally failed.

A step forward would be to desensitize the issue by paying greater attention to one of the factors that might render the calculation of financial benefits inconsistent: instead of measuring performance solely in terms of incomplete measures of financial loss, performance can be measured in terms of completeness of coverage. This widens debate from the difficult problem of ascribing financial benefits to early intervention and prevention to the assumption of that demonstration of revenue integrity through continuous monitoring has an inherent value and that failure to monitor has an associated risk and likely cost to the business. This shift of emphasis relies upon a changing culture within the business, from a backward-looking costs and benefits justification relating to the elimination of historic losses, to a forward-looking risks and rewards justification to preventing future loss. This might elegantly be summarized as a move away from reactive revenue assurance towards proactive revenue assurance. Proactivity is hence also a measure of the maturity of revenue assurance, not only because it is a methodological expansion of the revenue assurance remit, but also because it requires:

- an enhanced financial analysis to support revenue assurance decision making that accommodates unknowns and probabilities such as quantifying the risk of error/loss in the absence of activities to prevent it; and
- a cultural change to accept that such forward-looking forecast and management of risk is itself an acceptable and worthwhile cost to bear.

The difficulty in appraising the forward risks of revenue loss is many-fold:

- there is an absence of historic and comparative data to base assumptions of likely future error rates, leading to a reliance on guesstimate base assumptions;
- it is highly subjective to calculate expected losses using "what if" scenarios e.g. "what if we had not performed this revenue assurance test?";
- part of the reason why revenue assurance may deliver low-hanging fruit is that the simplicity or complexity of an error is not well correlated to the scale of the financial impact e.g. a trivial error can have very large financial consequences;
- RA employees will lack the necessary technical knowledge and insight to evaluate risks for systems and processes that fall outside of their experience and skill set; and
- ongoing sub-optimal performance is commonly due to a failure to identify the problems that cause revenue loss and also a failure to identify exactly what revenue loss has occurred, but the fact that problems can persist unidentified for extended periods of time only begs the question of how to evaluate the risk that other problems exist but have yet to identified (the "iceberg" paradox: how to quantify what is invisible by extrapolation from what is visible).

Sources of information on how to extend the completeness of coverage whilst keeping the focus on the higher risk causes of revenue loss are patchy. This is because revenue assurance methods lack an agreed and consistent professional or scientific foundation. The most typical methods for identifying new areas to extend coverage are:

- past experience of RA staff who have worked at other businesses (e.g. "when I worked for X, we found a big problem with….");
- feedback of problems experienced by customers and business partners;
- analogy from experiences of other businesses recounted at conferences, industry workshops and informal conversations;
- analogy from previous experiences within the same business (e.g. "mistakes were made in mediation for product X, perhaps we should check for similar mistakes with products Y and Z?);
- difficulties in implementing wide-span detective controls that were assumed to be simple (e.g. "we tried to establish a reconciliation between A and B but it never works even though we seem to have captured all the business rules – perhaps these have not been implemented correctly?); and

- previously unidentified errors uncovered as an unexpected by-product of root cause analysis of those issues highlighted using established wide-span detective controls.

The order of the list above roughly represents a typical learning cycle for a maturing RA unit. A new unit will rely heavily upon the personal experiences of individual staff and anecdotal sources of information suggestive of problems. As the unit becomes established, staff will tend to spend more time learning from peers and trying to repeat past successes. Over time, the “hit and miss” approach to finding potential sources of revenue loss will be superseded by a more methodical programme of detective controls. The term “wide-span” here contrasts with “narrow-span”; a wide-span control covers more possible causes of error than a narrow-span control. Wide-span controls have higher detective power because they can provide evidence of a wider variety of problems, but they have lower diagnostic power, because more analysis is subsequently needed to pinpoint the root cause of discrepancies detected. Narrow-span controls are generally not a useful way to extend the completeness of coverage because they will typically be designed to respond to specific risks that have already been identified.

In addition to understanding maturity per se, there is a complementary need to understand the learning cycle for identifying the inventory of leakage points to be addressed by revenue assurance in each telco. This falls outside of the scope of this document.

2.3. Building the Business Case for Revenue Assurance

One of the major constraints on revenue assurance evolution is the need to overcome senior management scepticism about its benefits. Scepticism about the merits of revenue assurance is due to:

- doubt over the magnitude of benefits that can be earned from implementing fixes and improvements that arguably could and should have been made unnecessary had systems and processes been implemented correctly to begin with;
- the difficulty of quantifying the unknown (the “iceberg” paradox); and
- the lack of agreed and consistent professional or scientific foundations to the methods employed by revenue assurance practitioners.

This means any Revenue Assurance department will need to be acutely sensitive to demonstrating its value in its early stages. However, in order to reduce the time to go through the maturation stages, it will also be important to systematically educate the business that the financial merits of revenue assurance are not easy to predict or measure. Successful maturation will depend heavily upon choice and adaptation of the measures of success to fit the current stage of revenue assurance. Failure to adopt the correct measures will likely drive dysfunctional business behaviour. For example, if KPIs focus exclusively on the value of errors identified and fixed, there is a disincentive to analyse the root causes of errors and to implement preventative controls.

Good analogies of professions that address similar scepticism about benefits that are hard to predict and quantify include:

- IT security
- software engineering
- disaster recovery and business continuity
- supply change management
- human resource management
- fraud management

The experience of these professions is that development and acceptance is as much a product of cross-industry evolution as it is of maturation within individual businesses.

3. The Revenue Assurance Maturity Model

The revenue assurance maturity model is intended to aid strategic planning for enhancement of revenue assurance capability in a service provider. Its goal is to describe a common strategic roadmap for revenue assurance. It is not a checklist of operational activities that telcos should consider implementing, although it does describe some how tactics change in providers as they mature. Greater detail about the tactical evolution in immature providers is given in the preceding section.

By comparing the actual status of a provider to the model, it is possible to determine the next major strategic ambitions if the provider is to mature as rapidly as possible. Of course, any provider may wish to take steps out of order. For example, it may be tempting to invest heavily in systems to diagnose certain kinds of losses before anyone establishes the organizational responsibilities for investigating the causes of loss. The strategic roadmap presented here is based on the same premise that underpins the Capability-Maturity Model which in turn was based on a premise of Deming Quality Cycles. Each stage of a cycle, and each level of maturity, must be completed in order to correctly inform decisions vital for the transition to the next stage. If stages are skipped, there is an increased risk of

- poor decisions, like a poor choice of investment in automated systems, or
- short-term but unsustainable improvements in performance, like a system that yields good returns when first implemented but which cannot be adapted for changing circumstances.

Poor decisions can be blamed on lacking the relevant information to make a decision. On the other hand, if the relevant information is lacking or not properly appreciated, even good decisions are fortuitous. If the relevant factors for decision-making are not understood, short-term gains will degrade as a consequence of circumstances changing but decisions not being appropriately reviewed and refreshed.

3.1. Model Overview

Similarities between revenue assurance and software engineering suggested a model based on the staged software development Capability Maturity Model of the Software Engineering Institute.

5. Continuous improvement via feedback. Decentralized ownership, holistic control.
4. Leakage quantitatively understood and controlled.
3. Standardized approach developed. Designing-in control commences.
2. Basic project/process management. Repeatable tasks.
1. Ad-hoc, chaotic. Dependant on individual heroics.

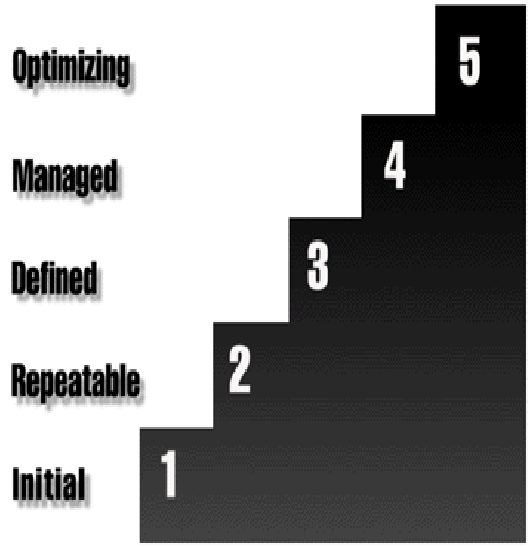

Figure 1: Outline Revenue Assurance Maturity Model

Five steps of maturity are identified in the model. The fifth step, optimising, should be considered an ideal. The optimising step represents an aspiration that may never be perfectly satisfied in practice. The description of each step reflects many observations of how revenue assurance has matured in different businesses combined with a forward-looking extrapolation of how it might continue to mature. Each upward step involves a shift of emphasis from reactive to proactive revenue assurance.

- No revenue assurance process, only arbitrary ad hoc reactions to circumstances as motivated by the prejudices of individuals and what data they obtain by accident.
- Revenue assurance processes are developed at the level of individual projects, products and implementations. Flaws are identified and remedial action taken.
- Revenue assurance processes are developed for the whole organization. Organizational priorities for revenue assurance are understood and guide proactive deployment of resources.
- Revenue assurance processes provide consistent quantitative measures. Measures drive planning and control.
- The measures, planning and controls implemented in order to improve the business not only improve the business, but also themselves become the subject of planned, methodical and measured continual improvement.

3.2. The Five Aspects of Maturity

Five distinct aspects or themes have been identified to aid understanding of the ways in which revenue assurance matures.

3.2.1. Organization

Organization of revenue assurance responsibilities reflects how well aligned the objectives of individual staff and of the business as a whole to the goals of revenue assurance. Organizational fit is also a reflection of the business culture and the extent to which the business culture is suited to genuinely adopting revenue assurance objectives.

3.2.2. People

The maturity of revenue assurance can in part be gauged from the human resource dedicated to revenue assurance or providing secondary support.

3.2.3. Influence

The ability to proactively instigate, manage and deliver change is a sign of mature revenue assurance. Influential revenue assurance delivers financial rewards to the business and a mechanism to continuously improve the satisfaction of revenue assurance against its full potential.

3.2.4. Tools

The use of tools is one of the most tangible guides to revenue assurance maturity. However, maturity relates to the cleverness of design and implementation, the synergy use of tools to meet multiple business objectives and the blend of activities supported by automation as well as the raw processing power, number and cost of tools.

3.2.5. Process

Revenue assurance involves the improvement of processes, but is itself a high-level process, containing many detailed processes, that should be improved over time.

3.3. The Importance of Measurement to Maturity

Measurement is of particular significance for the maturation of revenue assurance. Immature revenue assurance units may have no mechanism for measuring the benefits they bring to the business, and if they do measure will tend to only do so on an inconsistent and ad hoc basis. Businesses that have matured to the defined or managed stage will have consistent measures that are regularly produced and reviewed and acted upon by senior management. However, the consistency of these measures may effectively define the scope of revenue assurance and as such artificially limit it. Whilst consistency is desirable in order to gauge progress, this conflicts with the need to reconsider issues that may have been previously overlooked or excluded from scope because of resource limitations. So whilst producing consistent measures is a sign of growing maturity, the inability to vary, extend or develop measures to reflect increased knowledge or new issues is a barrier to attaining the highest levels of maturity.

Measurement is normally considered a process but has a pivotal role for other aspects of revenue assurance maturity. Supplying consistent metrics that are understood will underpin the influence aspect of maturity. Who in management reviews these metrics, the regularity with which they review them, and the actions they take as a result reflect the organizational aspect of maturity. The production of sophisticated metrics on a frequent basis usually necessitates a more mature tools environment. Because of the importance of measurement in gauging maturity and its interaction with the various aspects it is tempting to treat it as a sixth, overarching aspect of maturity. We have not followed that approach here, including elements relating to measurement within the existing five aspects. However, it is desirable to consider measurement as a unifying common element within the five aspects of maturity and to review the maturity of measures as a whole as well as along these five dimensions.

4. A Maturity Matrix

By plotting relative stages of maturity for each of the five aspects, a matrix is formed. This can be used to assess maturity and identify areas for improvement. The objective in all cases will be to raise the maturity of those aspects at lower levels, to bring them to a consistent standard. Once a consistent level of maturity is attained, then management can plan to raise all aspects to the next level in a consistent timeframe.

4.1. The Maturity Questionnaire

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Organization							
Org1	Who in effect takes ultimate responsibility for revenue assurance?	100/655	Lone “champion” is responsible for any RA activities, leading them as and when time of resources under the champion’s control and other responsibilities permit.	Several individuals working piecemeal across different functions in the business with little co-ordination.	Dedicated team or department.	CxO	Responsibility for activity distributed throughout the whole organisation, for monitoring centralised with dedicated unit reporting to the CxO on a regular basis.
Org2	How is ownership of revenue assurance defined?	50/655	Based on prejudices, skills and opinion of lone “champion”. No others compete for ownership.	Several areas effectively have RA “champions” who may sometimes compete for ownership but the relations between them exhibit gaps, overlaps and uncertainty regarding ownership of new issues.	Defined responsibilities for RA team and some other key contributors to RA.	Defined responsibilities for all relevant business units stemming from CxO-level determination of roles and priorities.	Responsibilities embedded within role profiles and line management reviews across all relevant aspects of the business.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Org3	Is there an organisational unit dedicated to revenue assurance? If so, where does it sit in the organisation?	80/655	No RA unit. RA performed as a sideline to another business activity like Internal Audit or Billing. Work performed hence represents success factors of those units rather than of RA proper.	No RA unit. RA performed as a sideline to several other business activities like Internal Audit and Billing. Due to lack of clear leadership objectives vary according to priorities of the various business units with a stake in RA.	Dedicated RA unit, but subordinate and within another business function like Billing. Some RA objectives can be distinguished from those of its parent unit but because of the organisational relationship independence and scope is constrained. Cannot act as a leader or co-ordination point for RA in other parts of the business due to rivalries and hence co-ordination may actually be stifled.	Dedicated RA unit, with responsibilities clearly separated from those of other units. Goals of RA understood at CxO level and hence consistently communicated across the organisation. Prioritisation of objectives performed at the level of the whole business, not at the level of individual business units. RA has responsibility to identify problems across the business and seek to intervene to resolve them.	Performance measures of individual business units across the business embed and reflect RA objectives. Monitoring of performance can be scaled back and RA unit becomes less interventionist as individual units actively identify, communicate and resolve issues within their respective remits.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Org4	Is the number of organisational units claiming (part of) the responsibility for revenue assurance one, none or many?	50/655	None, or "champion" claims it alongside of other more important regular responsibilities.	Several take some responsibility relating to RA, but may not agree on scope, purpose, objectives, inter-relations or even that it is called "revenue assurance".	One single unit accorded sole responsibility for revenue assurance, to the possible detriment of revenue assurance activities elsewhere in the business.	One single unit responsible for leading and co-ordinating revenue assurance. Develops and maintains relations with units across the business either to monitor the success of their activities, to promote necessary change or to seek to intervene to resolve problems. Other units understand that their work supports the business-wide revenue assurance objectives but there is still the potential for conflict between these and the unit's objectives.	One single unit responsible for leading and co-ordinating revenue assurance, other units have revenue assurance objectives clearly embedded within their priorities and their success is measured accordingly. Intervention by the RA unit no longer necessary as units actively deliver RA requirements. RA unit retrenches to a more tactical and strategic, and less operational role, ensuring that suitable responsibilities and activities have been agreed for new risks as the business transforms.
Org5	Is the responsibility for revenue assurance centralised or distributed? How do other functions work with revenue assurance?	100/655	Centralised on the champion. No meaningful relationship with other functions.	Distributed across the areas contributing and supporting projects.	Centralised on the RA unit, with regular levels of input from stakeholders in key functions. Level of input from key functions is as much a reflection of understanding and interest of people in those units as it is of the value of RA.	Centralised RA unit is balanced by strong ownership and stakeholder relations with all the key functions including IT, Networks, Marketing, Sales, Customer Services and Finance.	The small central RA unit is pivotal to the matrix-type responsibilities for revenue assurance now distributed throughout the organisation.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Org6	How are the relations between relevant organisational units managed? Are there clear lines of communication and responsibility? Is there a steering committee or other formal mechanism for co-ordinating across traditional organisational boundaries?	40/655	Lone champion takes it upon themselves to communicate RA concerns and priorities on an ad hoc basis, particularly when there is a clear cost/benefit rationale for a specific RA activity.	Informal ad hoc communications between the various individuals involved in RA.	Virtual team supports the RA unit, but membership is not always clear and importance attached to RA varies across its membership. RA unit may take steps to communicate its leadership on RA problems but lacks sufficient skills and experience to understand priorities of other units.	Reporting to executive level enables business-wide communication and coordination. RA activities move from being seen as a voluntary additional objective for business units to one with clear interlock with overall commercial objectives. Regular meetings between RA and other functions. SLAs start to be put in place with varied levels of success.	Regular communications across the business in order to support SLAs and communicate clearly-defined performance metrics.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Org7	Does the history of organisational responsibilities for revenue assurance show a pattern of continuity?	30/655	New activity.	Continuity within business units, but largely depends on continuous employment of specific individuals. Continuity in performing RA activities need not imply that they are performed well or meet their purpose. Some conflicts over responsibilities when there is an overlap or gap in scope.	Responsibility for RA now vested in a single business unit head, but there are still conflicts over specific tasks with other units. Changes in business unit head likely to result in discontinuity in overall approach but not of specific RA activities. Because RA is accepted as a legitimate goal with an owner, but rivalries and conflicts persist, the scope of RA, its measurement and how it relates to peripheral activities like network cost management and corporate governance become focus for disputes and discontinuities.	Continuity of RA reflects continuity, or otherwise, in membership and priorities of the executive team. Day to day activities now performed regularly but also subjected to meaningful management review to ensure they remain relevant and efficient.	RA continuity attained by a combination of embedding values in responsibilities of roles across the organisation and clear understanding of how the RA unit's goal is to promote specific measurable benefits that support overall business objectives.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Org8	Is there a clear segregation of responsibilities between the revenue assurance unit and other functions?	40/655	No. Individual champion seeks to balance conflicting goals by rationalising the priorities.	No. Each function has its own responsibilities but absence of a clearly dominant function acts as a kind of balance where issues relate to more than one unit.	Partial at best. Dedicated RA personnel somewhat undermined by sitting within a unit with contrasting goals and priorities. Freedom of reporting on flaws of own unit is prejudiced. Freedom to report on other units grows significantly but may lead to hostility if RA practitioners are not thought to be impartial or have sufficient skill and experience.	Yes. RA unit distinct from other business units. Relations are managed formally but also with sensitivity to competing business demands.	Yes. RA unit distinct from other business units, but priorities are embedded within the units.
Org9	Is there clear segregation of responsibilities within the revenue assurance unit?	25/655	Not possible due to number of staff and other demands on time.	No unit as such, but segregation occurs where activities involve more than one business unit.	Some formal segregation occurs for day-to-day activities but this may be undermined by lack of segregation in management.	Formal segregation within the unit to ensure fair measures of performance both for the business as a whole and for the individual practitioners of RA.	Formal segregation supported by diminishing need for intervention. Business units undertake the bulk of RA activities, leaving fewer segregation issues for the RA unit.
Org10	Is there an identifiable strategy for RA? Is it aligned to the strategy for the business, for IT, and any other relevant strategies?	50/655	No RA strategy.	RA strategy is focused solely on creating and establishing the justification for permanent RA resource.	RA strategy written in isolation from the rest of the business or seeks to "dictate", with limited success, to other business areas.	RA strategy is written by the RA department with the intention to align it with other key strategies in the business. Buy-in to the RA strategy is sought and obtained from owners of those strategies.	RA strategy incorporated within the relevant aspects of the business strategy, and is decided as part of a collaborative process with the strategy owners.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Org11	Is the organizational structure flexible enough to reflect changes in the business model, products and other factors that significantly change the balance of risks?	40/655	No flexibility as focus is on whatever the champion is able to address with available resources.	Flexibility is obtained because the structure is only temporary but new and different work still needs sponsorship and justification which may or may not be forthcoming.	In order to support the justification of permanent headcount, there is a reluctance to permit much flexibility. Some flexibility may be delivered by permitting the head of department or a few individuals a large degree of autonomy to review and consider the impact of change.	Organizational flexibility is actively managed through a combination of forward-planning, and encouraging individuals to be prepared to take on a wide mix of responsibilities.	Dispersal of RA responsibility throughout the organization gives a natural flex to ensure it addresses the changing profile of risk.
Org12	When issues are identified, how well defined are the hand-off points between departments for the purposes of resolving the issue?	50/655	No defined hand-off points.	Some hand-off points are defined formally, and some informally, but most are not defined.	For processes to manage the most common incidents, hand-off points are all defined formally or informally. It is rare for other hand-off points to be defined.	Hand-off points are formally defined for all the kinds of issues covered by measures of leakage.	Hand-off points are formally defined for all kinds of issues, in line with complete coverage of leakage measures.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
People							
People 1	How are the human resource requirements for incremental revenue assurance tasks satisfied?	40/570	The opportunity to obtain human resource is taken by the champion whenever possible. There is no meaningful plan or basis for deciding what kinds of skills are needed or how individuals are deployed.	Depending on the culture of the business, the cost of human resource is managed by either spreading responsibilities over existing non-dedicated roles, or through engaging additional staff on a piecemeal basis, often for limited durations relating to specific projects.	Staff are recruited to dedicated revenue assurance roles. Recruits are selected either because they match a particular profile of requirements, often relating to a specific reactive monitoring control, or as a by-product of organizational redeployment. The total number of staff and the extent to which they perform manual tasks reflects executive attitudes to incurring operational costs and headcount versus capital costs and automation.	The importance and number of dedicated revenue assurance roles diminishes as monitoring responsibilities are permanently incorporated within operational roles across the business or replaced by automation. New staff are increasingly only needed on a project-by-project basis relating to the implementation of automation or the understanding of new products and technology. This will typically be realised by employing contractors who already have the necessary experience on a time-limited basis.	A few staff are permanently retained to assess the changing profile of risks and to co-ordinate. All other staffing needs are met as part of other roles or through well-defined temporary engagement of external consultants.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
People 2	What types of skills are employed in revenue assurance? What is the level of skills? Do the type and level of skills deployed in practice meet requirements?	100/570	Skills base reflecting that of the champion's primary responsibilities and background.	Skills reflecting various roles across the business but with little interlink by a common RA skill set and many gaps.	The skills of dedicated RA staff are generally biased to fit with business unit the RA team sits in. A few have skills intended to complement the team and give it some limited balance, either because they are proven RA all-rounders, or because they have specific skills that relate to other business units.	Core RA team has a broad range of general skills reflecting the variety of business activities that need to be covered across the business supplemented by good project management and data integrity skills. Technical skills maintained at adequate level through ad hoc and informal support from other business units.	Core RA team has a broad and deep understanding of all relevant business processes. Negotiation and analytical skills now dominate, with decreasing need for project management and ad hoc data inspection. Detailed understanding of systems and processes and of monitoring tasks now concentrated in the business units again, but risk of bias mitigated by embedded understanding of objectives and regular lines of communication with RA.
People 3	Do revenue assurance employees come from a common background or a range of backgrounds? What levels of experience are expected?	100/570	Background and experience reflects that of the "champion" and the resources available for RA work.	Wide range of backgrounds and experience in particularly aspects of operations but all only partially involved or interested in RA and there is no experience of RA per se.	Narrow range of backgrounds reflecting the department in which RA sits, but increasing tendency to select staff for generalist skill set and to broaden them through informal exposure to new areas of the business.	Broad range of backgrounds working in a cohesive RA team, but ability to manage projects and deliver pragmatic solutions more important than detailed understanding of operations.	Staff chosen because of RA background and experience.
People 4	Is there training for staff within the RA unit?	25/570	On-the-job training under supervision of the "champion".	Limited practical training is given in order to fulfil specific tasks or to understand particular aspects of technology or operations.	Some increased emphasis on staff qualifications is muted by recognition that these tend to only obliquely relate to RA.	Natural exchange of information with other units addresses most skill gaps and training needs. Small numbers of graduate entry staff and redeployments are provided with a systematic training program.	Regular ongoing program to develop relevant technical knowledge for current and future business activities.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
People 5	How are revenue assurance staff recruited? Are most staff dedicated to revenue assurance internal transfers from other parts of the business? Are they mostly external recruits? Is prior experience of revenue assurance a major factor in recruitment decisions?	80/570	Staff are chosen on basis of who is interested and has time available.	Staff typically redeployed from other roles or recruited because of specific matches between their skills and particular tasks undertaken by RA.	Staff both redeployed and recruited from outside the business. Mixture of levels of experience of RA.	Staff predominantly recruited from outside the business with emphasis is on career RA professionals. Internal transfers occur only where staff demonstrably want an RA education and are either changing career direction or are thought likely to remain with the business and hence export RA skills when they leave the team for another business unit.	RA professionals recruited from other businesses and staff formally seconded to RA from business units as part of a continuous program to communicate and extend the reach of RA.
People 6	What is the turnover of dedicated revenue assurance staff? Are they seen as valuable assets to be poached by other parts of the business? Is it seen as a dead end? Do dedicated revenue assurance staff leave to move up, move sideways, or move out of the business?	30/570	Turnover of staff dictated by personal interests and potential of the staff. RA is not seen as an element of career progression.	RA of marginal importance to career progression.	Dedicated staff perform RA for a number of years but ultimately look to shift sideways into other roles in the business or elsewhere. Limited prospects for internal promotion due to staff turnover.	Good staff retention. Staff increasingly leave for other RA roles in other, often less mature, businesses. Some staff continue to move sideways into other roles but RA prestige now more helpful in securing them their desired move.	RA unit now a training bed for high-quality staff. Turnover remains consistent because the Increased competition for the staff developed by RA is balanced by increased satisfaction and opportunity for deeper influence over business affairs.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
People 7	How does the dedicated revenue assurance team retrain, reskill or restaff in order to cope with new challenges?	50/570	Not applicable.	New challenges are handled at the discretion of individuals in the business units who already have the time and skill to deal with them.	Limited on-the-job training is complemented by an occasional and untargeted approach to formal training.	RA management seek to recycle learning experiences within their team. Knowledge in other business units is fully utilised through a combination of building strong relations with key experts and providing both ad hoc and on the job training. Possible outsourcing of routine elements of RA monitoring solves some problems of maintaining niche skills.	Partnership approach between the RA unit and other functions ensures that all relevant knowledge and skills within the business are employed for RA.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
People 8	Are there mechanisms to temporarily increase manpower or bring in additional skills in response to increases in demands on dedicated staff time and skills?	75/570	Additional temporary staff may be recruited following the delivery of a strong enough business case. Securing approval for business cases is likely to be delayed and take up much of the resource working on RA.	Resources from across business units may be reprioritised for short periods to handle RA issues. Units may include need for short-term RA resources as part of wider projects such as billing migrations or improved network cost management.	Informal reciprocal relations between RA and other units allows resource to be loaned to cope with urgent priorities. RA increasingly adopts a role of producing a stream of business cases for additional staff with varying levels of success.	Executives and RA management have agreed basis for determining when benefits of additional RA work outweighs costs of using temporary staff or external firm. Decisions are hence executed promptly to avoid leakage and waste of RA resource on "influencing" the business. Where outsourcing agreements are in place, these allow for some flexing of staff demand.	Problem of peaks in demand partly mitigated by more distributed responsibility for RA and through outsourcing and other arrangements with external parties. RA management have relationship with executives where the aim is to show RA resources are optimal, growing or reducing with anticipated demand not just through recruitment but increasingly through secondment within the business. RA Management shift focus from making business case for ever-increasing resources to anticipating changes in demand and ensuring a consistent annual financial return per FTE.
People 9	How many jobs include an explicit secondary objective relating to revenue assurance? For jobs that do, is performance monitored and taken seriously?	30/570	None.	Some line managers, at their discretion, expect staff to be aware of revenue assurance issues but no formal objectives are stated.	Staff responsible for dealing with the RA unit on a regular basis tend to have one or more explicit objectives relating to this.	Staff with jobs that clearly impact RA measures have both formal and informal RA expectations communicated to them, and are monitored against the formal objectives on a regular basis.	Departmental management include RA metrics within the assessment of all relevant staff. These objectives are aligned with their own departmental objectives and those of the business as a whole to ensure meaningful assessment and the importance of RA is intuitively evident to staff.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
People 10	What revenue assurance training is given to staff that have a secondary revenue assurance objective?	20/570	None.	Staff are only trained in doing specific tasks that support RA when they are being used for particular one-off projects.	RA gives high-level "awareness" training to willing staff in other functions.	Awareness training given by RA given to most relevant senior managers who in turn pass this on to their teams. Key individuals work closely with RA to ensure their understanding of RA is sufficient to enable them to meet RA expectations.	RA awareness training becomes part of the induction of all new employees. Training mirrors objectives, so gives relevant staff both the technical knowledge they need and explains what they should do if they need more information or are confronted with new issues.
People 11	May dedicated RA resources be reapplied to other activities if the business believes there are higher priorities not being covered and which it does not want to recruit to support?[1]	20/570	Easily re-deployable in other areas as team has limited visibility and recognition in the organisation	Re-deployable in limited time frames, but may not be always in related areas	Unit is independent and may refuse requests for re-deployment except where the requirement relates to a critical business activity.	Executive management treats RA as a critical function for the business, but may on occasion direct the unit to perform non-routine work such as special investigations and reports into highly related business activities	Executive management identifies RA as a business critical function. The unit is not required to perform other activities outside of its agreed scope.

[1] A good example would be Sarbanes-Oxley clause 404 compliance.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Influence							
Inf1	What influence does revenue assurance have? How much is formal and how much informal?	100/640	Informal influence only, directly related to the existing status of the "champion".	Threat of potential embarrassment causes units to ensure most serious leakages are resolved once identified, though scepticism may still cause resolutions to be delayed.	RA spends significant portion of time raising awareness and business cases, thus gaining influence in a mixture of informal and formal ways.	RA reports monthly to CxO level audience on consistent measures of performance relating to a wide span of the business.	CxO sponsorship reinforces influence of RA goals embedded across the organisation.
Inf2	What is the awareness of revenue assurance across the business? Is it a factor in decision-making? Does revenue assurance remain a factor in people's thoughts even when nobody from a dedicated Revenue Assurance unit is there to remind them?	100/640	RA of interest depending on the persuasive powers and intervention of the "champion".	Key departments aware of revenue assurance from a narrow leakage avoidance perspective.	Other departments regularly factor RA department concerns into their working.	Other departments take lead in identifying RA issues and communicate these as appropriate with aim of building case for work that may not otherwise take place. Increased willingness to submit to RA intervention to resolve remaining long-standing and previously unidentified risks.	RA awareness now a component of thinking across the business, with RA dedicated staff now acting as guardians to ensure new risks are mitigated promptly.
Inf3	What are the perceptions across the business of the role of dedicated Revenue Assurance staff? Are they considered a help or a hindrance? An enemy or a friend?	30/640	RA largely ignored.	RA treated as an additional driver of improvements where they align to other goals of departments. RA activities otherwise resisted or imposed.	RA intervention met with a variety of acceptance and resistance. Helpfulness of RA depends heavily on congruence of RA measures to the measures already used in other departments. Communication skills and abilities of individual RA staff key to whether considered helpful or not.	RA now a regular aspect of review of performance, with a properly understood connection to departmental and overall business objectives.	RA staff act as consultants identifying risks in co-operation with other departments.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Inf4	Is the relationship between revenue assurance and overall business objectives well understood?	40/640	Only simplistic connections understood according to the prejudices of the "champion".	Objectives of RA treated as an additional consideration where congruent to objectives of other departments.	RA objectives increasingly imposed on the rest of the business with mixed success depending on how well RA conforms to actual business goals and skill of staff.	RA objectives developed and improved to support goals of each department and business as a whole in an increasingly consensual fashion. RA has better alignment to CxO objectives thanks to regular contact and alignment of measures.	RA objectives treated as a component of overall business objectives and no longer treated as a specialised subset.
Inf5	Does the dedicated Revenue Assurance unit get all its useful information by pulling it from the rest of the business, or does the business also push useful information?	50/640	Existing knowledge of the "champion" is pivotal to all RA work.	Knowledge of departments drive RA activities but very limited investigation of previously unidentified risks.	RA department actively investigates risks and increases scope by pulling information from other departments. RA department uses several stand-alone sources of data such as data warehouse or key reconciliations as a way of highlighting areas of potential concern.	RA department performs process reviews corroborated by a mixture of data sources. Other departments increasingly use RA to report areas of concern not being addressed.	Free flow of communication between RA, other departments, and CxO sponsor.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Inf6	How consistent is the business approach to reviewing and justifying expenditure on revenue assurance (including tools) with the methods used to calculate and forecast the benefits of revenue assurance? If different, does the revenue assurance unit have an objective to improve either, neither or both?	50/640	No connection between RA justification and that used to justify other business activities.	Calculation of RA expenditure and benefits a subset of justification of activities according to the mechanisms employed in each department.	RA develops methods to measure business benefits versus cost of RA activities, but these are often altered to remove weaknesses and reflect growth in scope. Alignment with other business methods slowly improves due to rigor and regularity of raising business cases.	RA method for assessing costs and benefits now well understood by CxO and aligned to overall business measures. Though the method remains consistent at a conceptual level, the sources of data and detail is steadily improved on an iterative basis to eliminate causes of potential inconsistent evidence and to broaden coverage to maximum scope of RA.	RA methods embedded within a consistent overall business approach to assessing financial factors, gauging risk and measuring returns.
Inf7	Is a justification for revenue assurance activities based solely on economic benefits adequate to influence business change? Does the revenue assurance unit need to bolster its economic justification with incidentals such as the impact of external regulation? Does the revenue assurance unit see itself as aided or distracted by non-economic external factors?	50/640	Other factors aid or distract RA depending on the champion's prejudices. Champion most effective when relating RA to what are the most critical business priorities, whether financial or otherwise.	Economic aspects of RA support various objectives of other departments where these are aligned.	Economic justification of RA department is pivotal to continuous provision of staff and automated resources. Other factors may serve as a distraction if RA staff lack the skill to intelligently link them to economic goals and prioritize accordingly.	CxO sponsorship aids development of consistent priorities addressing both economic and non-economic factors. RA successful in supporting both so long as it aligns to a consistent CxO steer.	Business objectives for both economic and non-economic factors aligned across the organisation, with RA supporting both in a coherent and holistic fashion.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Inf8	What are the revenue assurance reporting lines? For revenue assurance, where does the buck stop?	100/640	Champion reports to anyone who will listen.	RA staff tend to report on one-off projects. Most successful when they work co-operatively with other departments on raising concerns to their departmental heads. Occasional interaction wit CxOs on specific matters they sponsor.	RA regularly communicates to a CxO but format of communication may vary as it is being developed and as CxO becomes familiar with the topic.	RA regularly reports consistent measures to one sponsoring CxO and other relevant and specific measures to a mix of other executives and departmental managers.	RA reporting a regular feature of management at all levels, both from RA to others and from others to RA.
Inf9	How is the RA department viewed within the business?	50/640	Business is not aware of RA.	Business knows it to be a value-add on specific projects.	A range of perceptions across the business, ranging from support as a source of additional profits to antagonism as an unnecessary cost which fails to add value.	RA seen as an element of risk management that also aids maximization of profits by taking on work that might not otherwise be done.	RA seen as a watchdog, ensuring the business continues to optimise its RA performance whilst keeping RA departmental costs to a minimum.
Inf10	How much of the business is covered by the scope of the work performed by the RA unit?	20/640	Only visible and limited problem areas addressed.	Unstructured coverage for: ○ critical revenue streams; and ○ areas with high probability of revenue leakage.	Structured coverage of all critical revenue streams and operational processes.	End-to-end coverage for all important revenue chains and operational processes. Implementation of limited but most relevant control points.	End-to-end coverage with ability to proactively address new revenue streams and operational processes.
Inf11	Who are the stakeholders for revenue assurance?	50/640	Only pioneers fill the role of stakeholders with any level of continuity.	Stakeholders come and go. They identify their objectives as associated with revenue assurance because of coincidence rather than design.	Senior staff in the finance and operational communities recognize themselves as stakeholders on a permanent basis.	Senior staff in a wide range of business communities, including technology, customer services and marketing, understand their stake in revenue assurance. Their involvement is convened at the instigation of the dedicated management of revenue assurance.	Senior staff across the business understand their stake in revenue assurance. They receive an appropriate level of information on an ongoing basis, enabling them to act as stakeholders without needing anyone to instigate their involvement.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Tools							
Tools1	What key tools are available to revenue assurance? What is the blend of hard (data analysis, invasive testing, reperformance) and soft (workflow, reporting, risk analysis) tools?	60/640	Few MS Office or similar "tools" developed ad hoc for simple checks and reconciliations.	Limited RA monitoring or reconciliation functionality built into tools bought by or developed by other departments e.g. reconciliation of network users with billing, test calls performed also checked to billing. RA staff often undertake ad hoc and piecemeal development work as an opportunistic way of identifying leakage.	Tools steadily become more established and sophisticated, covering most reactive monitoring checks in the main revenue streams. Monitoring tools are mostly stand-alone, sitting separately from the main OSS/BSS. Soft tools within the business to support incident management, process mapping etc, are co-opted for RA use, often with workarounds to tailor them for RA needs.	RA has established tool set for all key risks, used by staff according to a regular daily, weekly or monthly schedule. RA functionality now increasingly considered in implementation or development of core OSS/BSS. Soft tools now established are used on a regular basis by both RA and other departments to communicate results from both an immediate (e.g. incident management) and long-term (e.g. process maps) perspective.	RA soft tools become entirely consistent with the rest of the business. RA monitoring tool requirements mostly embedded within core OSS/BSS systems with small number of adjunct "independent" monitoring tools giving real-time or daily alarms and reports.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Tools2	Is there an identifiable revenue assurance tools strategy? Does it actually support the objectives and priorities of revenue assurance?	50/640	No strategy for tools.	Strategy for RA tools is subordinate to other system objectives but is treated sympathetically by other departments if budgets permit.	RA department has a stand-alone tools strategy. Opportunities to work co-operatively with other departments on system developments are taken irregularly and with mixed success, causing RA to overly focus on owning its own unique tools and fail to deliver synergies. RA tools strategy focuses on monitoring and reconciliation tools because these identify faults, but give only secondary consideration to soft tools that either assist in resolving faults or identifying gaps in RA scope.	RA monitoring tool strategy now is balanced between stand-alone RA tools and RA functionality embedded in OSS/BSS. RA soft tools now given equal importance to monitoring tools.	RA functionality is a strategic component of the business' overall approach to OSS/BSS as part of a holistic framework such as the TM Forum's Frameworx.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Tools3	How much human intervention and support is needed? How much of this is because automation does not precisely meet requirements? How much of this is because automated tools are not well integrated with other systems and each other?	80/640	Tools only simplify basic elements of data processing and constantly require human intervention.	Where RA functionality is integrated into other systems, automation levels are high but functionality narrow and rigid. Tools used by the RA department tend only to have a low level of automation but this allows greater flexibility.	Increasing mixture of tools with high levels of automation for regular tasks and low levels of automation for flexibility as regular processing requirements become increasingly automated. Mistakes may be made in scoping or implementing systems due to lack of knowledge of business rules or over-ambition by RA staff. Distinction in RA between a generalised "developers" and "users" of RA tools starts to emerge but remains blurred.	RA automation needs increasingly satisfied by the dedicated IT function instead of through ad hoc development within the RA department, leading to superior functionality both within stand-alone tools and built into core OSS/BSS. Integration between RA systems and OSS/BSS significantly improved leading to greatest reduction for human intervention.	IT department works according to the priorities for the business including RA requirements. RA team still retains for flexibility but attains this through a suitable blend of using external vendors and internal IT, removing the need for its own in-house "developers". Sufficient flexibility is retained due to generalist skills of RA users.
Tools4	Are externally-sourced tools obtained through capital purchases or rental/bureau arrangements? Is the choice driven by a coherent revenue assurance strategy is it a response to constraints on expenditure?	20/640	No external sourcing of RA tools.	External sourcing of RA systems functionality is a by-product of other system projects such as migration to a new billing platform.	Some tools sourced externally by the RA department, predominantly purchased in order to ensure the capex cost is maximised and ongoing opex cost is minimised, especially where support for sufficient opex budget in future years is uncertain.	Tools acquired according to the overall business priorities and best value for the business, which may lead to any mix from all capital purchases to entirely outsourcing RA systems.	Acquisition of new tools diminishes as all requirements are satisfied. New risks are handled through development of existing RA tools and increasingly through embedding functionality in core OSS/BSS.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Tools5	Are revenue assurance requirements also included in procurement and development of automated tools where intended to meet requirements of other functions for the sake of synergy and efficiency? How often are such requirements subsequently descoped?	100/640	Mostly no, although the champion may be able to influence cross-discipline tool requirements.	Very narrow and specific RA requirements are factored into procurement and development activities of other departments.	RA tends to pursue a tool strategy in isolation, failing to identify and maximise opportunities for synergy. Vicious circle may occur if RA does identify synergies but attempts to include requirements in cross-discipline systems get descoped. Persistence and CxO sponsorship determines chances of getting requirements delivered in cross-discipline projects.	RA tool strategy becomes increasingly focused on cross-discipline systems. Virtuous circle created as RA staff get better at defining and negotiating win-win requirements which then are seen to deliver real benefits to the business at reduced cost and to the advantage of other stakeholders.	RA involvement in cross-discipline view of systems is part of the cultural norm.
Tools6	How well does the revenue assurance unit follow its own advice in ensuring procurement of high-integrity tools? Does the revenue assurance unit work well with the procurement department? What level of research is performed in investigating and choosing tools and providers? How does the revenue assurance unit assure itself it has chosen the best product on the market?	100/640	Not applicable.	RA involvement with procurement is marginal and subordinate to other departments.	RA department has limited understanding of tools and vendors available and may not choose optimal solutions. Procurement department understanding of niche area and RA inexperience in following rigorous process means mistakes are made. Significant overspends may occur due to poor vendor decisions and/or using overly expensive external consultancies to aid procurement. Emphasis on quick financial returns can lead to rushed and hence sub-optimal decisions.	RA department learns from previous mistakes and forms better working relationship with the Procurement department. Key improvements include gaining a proper understanding of the full range of tools and vendors available through sensible, planned and controlled market research. More long-term approach to RA and OSS/BSS permits greater time to ensure specifications are realistic and complete.	Shift of emphasis from RA to IT function allows procurement to be embedded within a stronger and more systematic overall framework. Business framework such as the TM Forum's Frameworx gives structure for procurement activity.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Tools7	How does RA behave when revenue assurance vendors and revenue assurance tools underperform and hence fail to satisfy the justifications given in the business case? Do such issues get actively and honestly tackled by RA in order to really meet their objectives, or are they kept secret from executives in the interests of projecting an image of RA success?	100/640	Not applicable.	RA success or failure in tools is very narrow in scope and hence easily and readily measured but of limited concern.	Mistakes in RA tools and failures of vendors tend to be hidden by the RA department. The justification within the RA department for failing to accurately represent the success or failure of procurement they are involved in stems from a need to continuously show positive financial returns and a lack of peer review.	Earlier mistakes have been learned from and are used to justify a more risk-averse approach to vendor and tool selection. RA increasingly uses its own experience to set a good example, using it as a template or case study for how the business can avoid potential errors and limitations in systems that increase risks. As functionality becomes embedded in OSS/BSS rather than stand-alone RA systems, greater rigour is applied.	RA tool and vendor management shifts from being a narrow area understood by and known only to the RA team and becomes part of wider IT processes to ensure quality.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Tools8	What is the level of investment in automated tools? How does this compare to investment in people? Is one disproportionately easier to justify than the other?	80/640	RA tool investment is itself just a product of what spare human resource the champion can direct at development.	RA tool expenditure is hidden within larger projects. Once functionality is delivered, this in turn is used to justify increased staff demands, with mixed success.	RA department oscillates between building cases for increased staff and for increased automation. Staff time itself is increasingly focused on making business cases for expenditure on automation. Imbalances occur as staff are recruited when investment would more productively be focused on increased automation, or when automation is acquired, but there are insufficient staff to make use of it, especially in handling the incidents and problems identified as a result of enhanced monitoring. Expenditure peaks as new capital purchases take place for systems that will also need significant work to integrate with OSS/BSS.	Balanced strategy of managing expenditure on both staff and automation. Automation is increasingly justified as a low-cost alternative to manual tasks. The tendency to increase expenditure on automation is balanced by better negotiation of deals with vendors and increased delivery of RA functionality within core OSS/BSS.	Separable expenditure on automation declines as new requirements tail off and by mitigating new risks caused by changes to OSS/BSS within the functionality of the core OSS/BSS.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Tools9	What is the degree of access to source data?	50/640	Access is available where the "champion" already has access for other reasons.	Specific projects are granted access to source data for limited reasons.	Dedicated revenue assurance staff often work around limitations on their access to data, sometimes very inefficiently. This may involve acquiring extra automation simply to create useful data, or exploitation of the data warehouse.	Access to source data is approved on the basis of clearly-defined procedures. Those procedures are developed as a response to the recurring need for source data for revenue assurance purposes. Access is granted based on a consistent understanding of risk.	Issues with access to source data diminish as responsibility for revenue assurance is increasingly embedded within teams that already have access to necessary source data.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Process							
Process1	Is there a recognisable revenue assurance process? Do dedicated revenue assurance staff follow consistent processes? How much is determined by individual personality and prejudice? Is the revenue assurance process defined? Is the defined revenue assurance process actually followed?	100/660	Process reflects background and skills of the champion. No systematic approach is defined as there is no time to define it and any process needs to vary with immediate sense of priorities and to take advantage of opportunities as they arise.	Informal processes gain credibility when built into the work of other areas. These develop spasmodically when short-term opportunities arise. Processes occur on an irregular basis and need to be handed over to other departments if they are to be maintained due to resource limitations of RA staff.	RA staff develop processes, often beginning with idealised or theoretical approach. These are somewhat dovetailed with processes developed due to external pressures and to take advantage of immediate priorities. RA develops a mission statement that is the summary of what these processes have in common.	RA develops and maintains a systematic and documented approach followed by its own staff and other key individuals in other departments. Focus shifts from detection and correction to embrace prevention to consolidate earlier wins.	RA process is incorporated into the business culture as a whole, and reflects a successful balance of reaction to problems found and prevention of new problems.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Process2	Has the development of revenue assurance processes been guided by relevant experience in related fields? Where possible, have processes been modelled on good working examples from similar disciplines?	100/660	Guidance of processes based on background of the champion and what easily fits with opportunities and behaviour of other departments.	Processes develop haphazardly, sometimes pulling on other disciplines, much of it just a dogmatic assertion of the process owners. Documentation of processes takes place with a view to ensuring they are maintained irrespective of absences or staff turnover. Some established processes that are of limited or decreasing benefit but may be maintained rather than improved. Effort is directed to driving new processes in areas where risks are not currently mitigated.	Fundamentals of processes are deepened but often given an arbitrary grounding based on experience to date of RA staff. Increasing sophistication and numbers of dedicated RA staff opens up process development to other schools of thought and increases their rigour accordingly though there is a reluctance to rework repeatable processes that have already gained momentum. RA staff spend a regular portion of time documenting and communicating these processes in part to aid their consistent application and enforcement.	RA team use cross-organisation experience to identify new challenges for processes and work interactively with other areas to address more fundamental process issues. Examples include improved management of change, forward-looking risk reviews, and coherent and logical methods to derive conclusions from available data. Arbitrary process decisions steadily are refined and give way to a more scientific way of implementing conclusions drawn from empirical evidence.	Process management and development becomes the focus of RA. Process decisions are backed by a thorough understanding of evidence offered by data generated by RA and received from other sources. Successfulness or otherwise of processes is honestly recognised promoting a role of business stewardship. Open interaction with other disciplines within the business and external sources of expertise are used to continuously refine and optimise work.
Process3	Have learning experiences been used to redefine and improve the revenue assurance process? Is useful feedback from other parts of the business used to correct weaknesses of the dedicated revenue assurance unit?	80/660	Not applicable, save for the personal experience of the champion.	Some learning through feedback is received from other departments but generally a defensive attitude is taken.	Other departments are more actively involved in giving feedback. Improvement occurs in fits and starts when other priorities allow. Still some defensiveness due to sense of hostility and uncertain support for RA.	Previous successes of RA enable more open and less adversarial approach to feedback. This in turn allows RA to make improvements on a continuous basis.	Continuous improvement becomes the key credo for RA and as such is aligned to continuous improvement of the whole business. RA seen to be part of a culture of understanding and reviewing performance on a never-ending basis. RA follow a clear Plan-Do-Study-Act cycle.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Process4	Have the customers of revenue assurance been identified? How is their satisfaction monitored and measured?	40/660	Anyone willing to engage with RA is treated as a customer with varying levels of success. Regularity and quantity of feedback is dependent on perceived success of one-off activities.	RA identifies the varying business areas that it should work with, but focuses on those most willing to provide support. Growth and feedback is strongest when other departments become actively involved in seeking mutually beneficial relations. Other areas remain sceptical and disinterested and remain hostile to RA involvement.	More regular interaction gives rise to a stronger sense of informal service levels in practice. RA defines some service levels for itself and others, often with a selfish interest. This is used in part to justify greater levels of intervention in other areas and to support business cases, for example by demanding data without necessarily making a clear argument for how it benefits the suppliers or how it aligns to corporate goals. With a larger team the RA line manager can be more objective about aspects where customer satisfaction can improve, but this is heavily biased towards the goal of the business unit in which RA sits.	RA relations with customers across the business become fully defined. This makes RA broader in outlook and less susceptible to the priorities of the unit in which it sits. RA plays a more impartial role in communicating RA successes and failures, including its own. This is relayed to a CxO on a regular basis who in turns provides crucial steer on business politics. Adversarial stance of RA and other departments slowly erodes due to these strong lines of open communication at multiple levels.	Customers of RA have open dialogue with RA and each other to ensure goals are satisfied and remain aligned to overall business needs. Service levels are formally defined and adhered to with minimal need for policing. CxO supervision fosters collegiate attitude to RA.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Process5	Is the revenue assurance process measured? Have methods of measurement remained consistent over time? Do they change to satisfy long-term improvement objectives or in response to short-term pressures to appear successful? Is a distinction made between measuring what is and what is not in the control of the dedicated revenue assurance unit?	100/660	One-off measures are produced to justify short-term projects and activities. Consistency in measures is a by-product of dominant personality of the champion.	RA measures are inconsistent and still largely one-off responses to separate initiatives. RA measures fail to distinguish the success or failure of the RA processes from the success or failure of the business.	RA measures become standardised to assess performance of the RA department, though this still fails to properly distinguish measures of the RA unit from measures of the business. Focus is on quantitative measures of matters of fact derived from data obtained and processed by RA. This can lead to confusion if other departments have contrary data. This also positions RA as a policeman of the business.	RA measures clearly separated between measures of an individual process (e.g. did this process take place correctly and on time?) and of the health of the business (e.g. what level of leakage was identified by the process?) This means performance of RA department can be objectively and consistently judged over time. Role of qualitative measures alongside quantitative measures is better understood, allowing scope of RA to broaden to better include prevention and management of risks previously not measured.	RA measures are understood within a wider context of overall measures of business performance. Key measures are identified because they relate to key priorities for the business, and no longer reflect the arbitrary opinions of RA staff or the segment of data they have access to.
Process6	Is there a method for setting priorities and evaluating risks? Are these qualitative or quantitative?	100/660	The champion sets priorities according to what goals are realistic with available resources.	The champion and other business units negotiate priorities and identify risks through an informal dialogue.	Risks are identified and prioritised using a largely quantitative approach. This approach may have shortcomings due to weaknesses in available data.	Risks are identified and prioritised as part of a consistent process that is itself subject to review and improvement. Quantitative data is balanced with qualitative information to ensure the priorities reflect the underlying business performance.	The method for setting RA priorities is part of that for setting wider business processes. Regular ongoing quantitative measures are given an equal footing with skilled qualitative assessment of risks.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Process7	Is revenue assurance subject to relevant stretch targets?	20/660	Not applicable.	Stretch targets can only be applied in very narrowly defined circumstances where a find and fix process has been implemented. Because narrow, they tend to be realistic.	Quantitative targets are imposed, often from the CxO level, with little understanding of whether they are realistic. There is a poor understanding of the relationship between benefits and the costs that will be involved in delivering hem. Targets drive further work and are a condition of increased investment. Poor choices of quantitative targets may sometimes lead to dysfunctional behaviour by RA and other departments.	Targets are agreed with the CxO on the basis of a deeper understanding of quantitative and qualitative data. The goal is to ensure congruence with overall business objectives e.g. correcting and detecting flaws is not inadvertently promoted over preventative action. To ensure targets for newer activities are realistic, RA often undertakes work on a limited trial basis, seeking to solidify aspirations before resources are committed.	Targets become less important as RA delivery is seen as synonymous with good business practice across multiple functions. RA impact on measurable properties hence becomes harder to separate as good practice is embedded within the overall culture.
Process8	Can the dedicated revenue assurance unit delegate work to the business? Is it prepared to delegate responsibilities it previously assumed in order to improve processes?	50/660	Champion may ask other areas to undertake work, but is as likely to be looking for permission or support to undertake work.	Other business units volunteer to undertake RA work depending on the nature and quality of their relationship with RA and the competing demands on their resources.	RA in part competes with other departments for resources, thus undertaking work that might have otherwise been delegated. The work undertaken is a haphazard reflection of the needs of the unit in which RA sits and the sporadic initiatives involving other units.	Operational tasks pioneered by RA are migrated to other functions, allowing for a better fit of skills and responsibilities. This permits RA to pioneer new tasks currently not performed anywhere in the business and also to take on a broader and more consistent scope without needing more resources.	RA takes on only an oversight role for the many activities now routinely undertaken in the relevant operational unit.

Number	Question	Weight	1. Initial	2. Repeatable	3. Defined	4. Managed	5. Optimising
Process9	Does the dedicated revenue assurance unit critique its own performance? Does the dedicated revenue assurance unit behave consistently with the advice it gives? Does it distinguish between the best interests of revenue assurance for the business and the best interests of the organisational unit?	50/660	No resource is available to meaningfully review past RA performance. The champion is the sole individual with the ability to critique. The champion's prior experience is essential to gauging how well RA is developing and in determining its next steps.	RA performance is scrutinised in cooperation with the other units it works with. The critique reflects interplay of their respective priorities but is narrowly tied to the few regular processes and measures. Limited exposure to other points of view is obtained through review of publicly available material and dialogue with peers and consultants.	RA competes with other units for resources and so fails to distinguish its own interests from the business as a whole, even when these are not aligned. Most effort is spent on promoting the good work done by RA, very little on assessing flaws and potential improvements. Consultants are used to drive the increase of RA scope, with mixed success. Benchmarking with other businesses is performed on an informal basis to gauge the major gaps that need to be addressed.	RA dedicates a portion of its own resources to the objective critique of its own performance in an effort to drive increasing efficiency. This dovetails with the business case for eliminating the remaining gaps in scope. With CxO support, a clear distinction is reached between the interests of RA as a department and those of the business as a whole. External high-quality sources of information on RA are regularly sought to ensure all issues have been identified and addressed.	RA review of performance is not readily separable from review of the many cross-departmental processes it is involved in. This is done on an objective and consensual basis by all interested stakeholders, with the goals of the business paramount. Comparison with RA in other business units is used to drive increasing efficiency instead of growing scope.
Process10	Are revenue assurance activities driven by a methodical approach and clearly defined priorities? Are they a response to opportunities and problems as they become apparent?	20/660	RA work and priorities driven by skills and capacity available to the "champion".	Other departments work through RA priorities where congruent to their goals.	RA department starts to define priorities for itself and business as a whole, working piecemeal according to CxO perception of priorities to give business cases most likely to succeed. Some methodical work through largest revenue streams.	RA department works methodically in assessing risk proportionate to magnitude of financial risk. Even mix of regular work and one-off projects.	One-off projects diminish in importance as most areas covered and risks mitigated. Methodical reviews maintained as a safety check to ensure risks have been identified and mitigated and to deal with new risks as they arise.

4.1.1. Using Maturity as a Different Way to Benchmark

Hard KPIs that may be useful to a business, like a variance between numbers of users on a network and numbers of customer billed, need not give a meaningful source of comparison to other businesses. This is because of two factors:

- business models and market dynamics vary and this reduces comparability of simple quantifiable properties,
  - for example, we should expect significant differences in the metrics of a network operator servicing other telcos from those of a business with a solely retail focus; and
- quantifiable properties often reflect very deep-seated fundamentals in business operations that are hard to change,
  - for example, manual processes may be inherently more likely to be prone to error, but whether the cost of automation is appropriate depends on scale, future business outlook etc.

This means a simple attitude of benchmarking quantitative metrics will often fail to give a useful analysis of what a CSP should next prioritize to improve its revenue assurance. The maturity model provides an alternative, qualitative basis for benchmarking. One technique for benchmarking could be performed thus:

- A Revenue Assurance manager performs an assessment based on answering the detailed maturity questionnaire above.
- Answers are scored 1 to 5, with “initial” as 1 and “optimizing” as 5.
- The answer score to a question is multiplied by the relative weighting specific to that question, in order to give some questions a relatively higher importance than others.
- The weighted scores for the questions are totaled for each maturity aspect, and then divided by the number of questions, to give an average level of maturity for each aspect.
- Average scores for the five aspects can be compared with each other and with other businesses as a way of identifying aspects of revenue assurance are most in need of improvement.

4.2. Linking Maturity to Timing of Action

4.2.1. Reactive, Active and Proactive

To be reactive is to do something as a response. To be active is to do something presently. To be proactive is to act in anticipation. From the perspective of assurance, reactive assurance occurs after something has gone wrong, as a response, whereas proactive assurance seeks to anticipate problems, so that they never materialize. Between the two is the active response, still strictly speaking a response, but one where the timelag between cause and effect is so short we can disregard it. The definitions lend themselves to a categorization of revenue assurance activities:

- A project to identify and resolve the causes of historic revenue loss is reactive.
- Monitoring of problems in real-time designed to instigate corrective responses before *any* revenue loss takes place is active.
- The implementation of controls and other measures to prevent problems is proactive.

4.2.2. A Trend Between Maturity and Timing of Action

We can observe tendencies for maturing revenue assurance departments to shift from reactivity to proactivity. However, not all the revenue assurance activities will develop at the same rate. The degree of proactivity will relate to both the general maturity of revenue assurance and the maturity at satisfying each specific objective. A mature and proactive unit will still tend to start with a reactive approach when increasing its sphere of influence to an unfamiliar subject area.

The trends in timing of actions follow two distinct patterns, often confused because they can occur in tandem.

- There is a tendency to reduce the time taken to respond to problems, in order to reduce the loss that occurs before correction takes place – a shift from reactive to active assurance. There a number of ways to do this:
  - reduce the intervals between the activities that detect problems to the point where they become continuous (a shift from a project or review approach to a real-time monitoring approach);
  - automation of assurance to speed the processing of large amounts of data;
  - improvement in times to resolve incidents; and
  - through obtaining data on problems extracted from points that are increasingly close to the root cause (e.g. identifying missing records from controls in mediation rather than inspection of bills).
- There is a tendency to supplement a responsive approach to assurance with a pre-emptive approach. The goal here is to anticipate what can go wrong and seek to prevent it. Some of the techniques are:
  - explicitly including revenue assurance considerations into decision-making for designs, procurement, etc;
  - maintaining communication channels to assist co-ordination and ensure goal synergy when changes involve more than one organizational unit;
  - risk management;
  - avoiding unnecessary complexity and encouraging flexibility and future-proofing.

We can crudely map the response times to maturity as follows:

	Reactive		Active	Proactive	
Initial	ad hoc projects				
Repeatable	ad hoc projects	recurring monitoring			
Defined	ad hoc projects	recurring monitoring	continuous real-time alarming		
Managed	ad hoc projects	recurring monitoring	continuous real-time alarming	design review	
Optimising	ad hoc projects	recurring monitoring	continuous real-time alarming	design review	procedures to quantify risk

4.3. Conclusion: Striving for Best Practice in Revenue Assurance

It follows from the maturity model that best practice in revenue assurance represents a dynamic striving for optimization rather than the static delivery of a particular series of methods, controls and tools. It also follows that any assumptions of how to attain best practice are subject to perpetual review and, where suitable, revision. This means that whilst the evolution of best practice requires industry-wide evolution, differences of opinion must be openly recognized. The industry-wide development of best practice can only be token unless hypotheses are rigorously examined and subject to continual improvement. Real data must be used to rigorously test any theory. Assessments of maturity should be compared and correlated with KPIs to identify actual correlations between maturity and business performance. They should equally be conducted to debunk falsely assumed correlations. This means the maturity model itself should be allowed to evolve to represent an agreed and common understanding of how revenue assurance develops to meet challenges within businesses.

5. History of the Revenue Assurance Maturity Model

This appendix details the original draft selection of questions used in deliberating what should be the content of the model. It is reproduced here to further inform the reader about the relevant factors in judging maturity against each of the five aspects.

5.1. Organization

- Who is responsible for revenue assurance?
- How is ownership of revenue assurance defined?
- Is there an organizational unit dedicated to revenue assurance? If so, where does it sit in the organization? How well does the unit's objectives fit with the objectives of the organizational directorate it sits within? Is it called "Revenue Assurance"? If not, why not?
- Is the number of organizational units claiming (part of) the responsibility for revenue assurance one, none or many?
- How are the relations between relevant organizational units managed? Are there clear lines of communication and responsibility? Is there a steering committee or other formal mechanism for co-coordinating across traditional organizational boundaries?
- Does the history of organizational responsibilities for revenue assurance show a pattern of continuity? Have the responsibilities been significantly reorganized? Is organizational change motivated by a plan to improve performance or a reaction to poor fit?
- Is there a clear segregation of responsibilities between the revenue assurance unit and other functions?
- Is there clear segregation of responsibilities within the revenue assurance unit?

5.2. People

- How many people (FTE) perform jobs where revenue assurance is the primary role?
- What types of skills are employed in revenue assurance? What is the level of skills? Do the type and level of skills deployed in practice meet requirements?
- Do revenue assurance employees come from a common background or a range of backgrounds? What levels of experience are expected? How

does this compare to actual levels of experience? What revenue assurance training is conducted? How are revenue assurance staff developed?

- How are revenue assurance staff recruited? Are most staff dedicated to revenue assurance internal transfers from other parts of the business? Are they mostly external recruits? Is prior experience of revenue assurance a major factor in recruitment decisions?
- What is the turnover of dedicated revenue assurance staff? Are they seen as valuable assets to be poached by other parts of the business? Is it seen as a dead end? Do dedicated revenue assurance staff leave to move up, move sideways, or move out of the business?
- How does the dedicated revenue assurance team retrain, reskill or restaff in order to cope with new challenges?
- Are there mechanisms to temporarily increase manpower or bring in additional skills in response to increases in demands on dedicated staff time and skills?
- How many jobs include an explicit secondary objective relating to revenue assurance? For jobs that do, is performance monitored and taken seriously?
- What revenue assurance training is given to staff that have a secondary revenue assurance objective?

5.3. Influence

- What influence does revenue assurance have? How much is formal and how much informal?
- What is the awareness of revenue assurance across the business? Is it a factor in decision-making? Does revenue assurance remain a factor in people's thoughts even when nobody from a dedicated Revenue Assurance unit is there to remind them?
- What are the perceptions across the business of the role of dedicated Revenue Assurance staff? Are they considered a help or a hindrance? An enemy or a friend?
- Is the relationship between revenue assurance and overall business objectives well understood?
- Does the dedicated Revenue Assurance unit get all its useful information by pulling it from the rest of the business, or does the business also push useful information?
- Do staff in other parts of the business want to work in roles dedicated to revenue assurance? Is it seen as a step up or step sideways?
- Is managing internal transfers and secondments to and from revenue assurance used as a mechanism to spread influence?

- Are revenue assurance activities driven by a methodical approach and clearly defined priorities? Are they a response to opportunities and problems as they become apparent? What is the mix of methodical and opportunistic revenue assurance? What is the mix of recurring activity and one-off projects?
- How consistent is the business approach to reviewing and justifying expenditure on revenue assurance (including tools) with the methods used to calculate and forecast the benefits of revenue assurance? If different, does the revenue assurance unit have an objective to improve either, neither or both?
- Is a justification for revenue assurance activities based solely on economic benefits adequate to influence business change? Does the revenue assurance unit need to bolster its economic justification with incidentals such as the impact of external regulation? Does the revenue assurance unit see itself as aided or distracted by non-economic external factors?
- What are the revenue assurance reporting lines?
- For revenue assurance, where does the buck stop?

5.4. Tools

- What key tools are available to revenue assurance?
- What is the blend of hard (data analysis, invasive testing, reperformance) and soft (workflow, reporting, risk analysis) tools?
- Is there an identifiable revenue assurance tools strategy? Does it actually support the objectives and priorities of revenue assurance?
- How much human intervention and support is needed? How much of this is because automation does not precisely meet requirements? How much of this is because automated tools are not well integrated with other systems and each other?
- Are tools sourced in-house or from external vendors?
- Is the choice of tools and supplier driven by revenue assurance requirements or by what is available?
- Are externally-sourced tools obtained through capital purchases or rental/bureau arrangements? Is the choice driven by a coherent revenue assurance strategy is it a response to constraints on expenditure?
- Do revenue assurance requirements get included in procurement and development of cross-discipline automated tools? How often are such requirements subsequently descoped?
- How well does the revenue assurance unit follow its own advice in ensuring procurement of high-integrity tools?

- What level of research is performed in investigating and choosing tools and providers? How does the revenue assurance unit assure itself it has chosen the best product on the market?
- Does the revenue assurance unit work well with the procurement department?
- What happens when revenue assurance vendors and tools underperform? Do issues get tackled or are they "swept under the carpet" in the interests of projecting an image of success?
- If the revenue assurance profession is relatively immature, it follows that revenue assurance tools are likely to be immature, so how does the revenue assurance unit determine what is the "leading edge" of revenue assurance tools? When purchasing "leading edge" tools, how does revenue assurance guard against them becoming the "bleeding edge"?
- What is the level of investment in automated tools? How does this compare to investment in people? Is one disproportionately easier to justify than the other?

5.5. Process

- Is there a recognizable revenue assurance process?
- Do dedicated revenue assurance staff follow consistent processes? How much is determined by individual personality and prejudice?
- Has the development of revenue assurance processes been guided by relevant experience in related fields? Where possible, have processes been modeled on good working examples from similar disciplines?
- Is the revenue assurance process defined? Is the defined revenue assurance process actually followed?
- Have learning experiences been used to redefine and improve the revenue assurance process?
- Is useful feedback from other parts of the business used to correct weaknesses of the dedicated revenue assurance unit?
- Have the customers of revenue assurance been identified? How is their satisfaction monitored and measured? What mechanisms exist for customers to provide feedback?
- Is the revenue assurance process measured? Have methods of measurement remained consistent over time? Do they change to satisfy long-term improvement objectives or in response to short-term pressures to appear successful?
- Is there a method for setting priorities and evaluating risks? Are these qualitative or quantitative?
- Is revenue assurance subject to relevant stretch targets?

- Is a distinction made between measuring what is and what is not in the control of the dedicated revenue assurance unit?
- Are there revenue assurance service levels?
- Can the dedicated revenue assurance unit delegate work to the business? Is it prepared to delegate responsibilities it previously assumed in order to improve processes?
- Does the dedicated revenue assurance unit behave consistently with the advice it gives?
- Does the dedicated revenue assurance unit critique its own performance? Does it distinguish between the best interests of revenue assurance for the business and the best interests of the organizational unit? If so, which takes precedence?
- Does the dedicated revenue assurance unit strive to improve? Where does it obtain advice on how to improve? Does it have a source of independent and impartial advice from respected practitioners?
- Are there methods to allow the dedicated revenue assurance unit to learn from others? Where practical, does the unit benchmark its performance? Is consideration given to the merits of alternative approaches to revenue assurance adopted by other businesses?
- Is there a willingness to embrace change in order to improve revenue assurance processes that are already perceived to be successful?

6. Administrative Appendix

This Appendix provides additional background material about the TeleManagement Forum and this document. Some sections may be included or omitted as desired, however a Document History must always be included.

6.1. About this document

GB941B is an addendum to the GB941 Revenue Assurance Guide Book.

6.2. Document History

6.2.1. Document Version History

Version Number	Date Modified	Modified by:	Description of changes
0.1	29/Jun/07	Eric Priezkalns	Initial creation of the RA Maturity Appendix
0.2	2 August 2007	Debbie Burkett	Formatted to current template
0.3	8 August 2007	Tina O'Sullivan	Further updates & corrections.
0.4	4 April 2008	Eric Priezkalns	Corrected acknowledgements
0.5	4 April 2008	Mike Burkett	Updated footer, header, and version number
0.6	20 Nov 2009	Alicja Kawecki	Updated cover page, footer, copyright, and version history to reflect TM Forum Approved status
0.7	10 May 2011	Alicja Kawecki	Removed "Release 1.1" from cover page per CD to align with R3.0 guidelines
0.8	26 February 2012	Gadi Solotorevsky	Updated to use Frameworx nomenclature
0.9	13 April 2012	Alicja Kawecki	Notice, minor formatting & cosmetic corrections prior to web posting and

			Member Evaluation

6.2.2. Release History

Release Number	Date Modified	Modified by:	Description of changes
1.2	TBD	<<name>>	This addenda is planned to be included in GB941 Release 1.2;
3.6	26 February 2012	Gadi Solotorevsky	Updated to use Frameworx nomenclature

6.3. Acknowledgments

This document was prepared by the members of the TM Forum Revenue Assurance team and is a genuinely collaborative effort. The TM Forum would like to thank the following people for contributing their time and expertise to the production of this document.

Eric Priezkalns, Editor, Revenue Protect Limited

Gadi Solotorevsky, Team leader, cVidya

Lee Scargall, Cable & Wireless

Jane Booth, Cable & Wireless

Rustam Iskandarov, IBS

Einar Nymoen, Telenor ASA

Ilya Kuznetsov, Ernst & Young (CIS) B.V.

Vinoo P Jacob, SubexAzure

Michael J Willett, Telstra

