Revenue Assurance Control Desk©

A Reference Guide for Utilities and Retail Energy Providers

KopacConsulting©

Providing Business Solutions to the Energy Industry

VOLUME ONE
Revenue Assurance Control Desk© A Reference Guide for Utilities and Retail Energy Providers 2010
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ACKNOWLEDGEMENTS

Kopac Consulting would like to thank the following individuals for their editorial contributions in publishing this guide:

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Both regulated utilities and deregulated retail energy providers will cope with significant changes in the years ahead. Protecting and maintaining revenue and profit is a growing priority. Successful companies manage risk, adopt best practices, and apply new technology to maximize profits and stay competitive. Thoughtful managers continually look for cost-effective methods to protect and enhance the value of their organizations.

Some innovations have become best practices for many companies. These include shared services centers, centers of excellence, and governance and risk committees. For utilities and retail energy providers, technological advances such as Advanced Metering Infrastructure (AMI), Smart Grids and Meters, Radio Frequency Identification (RFID), and enterprise reporting are being used to reduce risk and improve operational efficiency.

All of these beneficial transformations share common themes. Above all, they centralize transaction processing and expertise. This gives management better visibility, accountability, and efficiency in making decisions.

Energy companies are ready for best-practice solutions—innovations that materially improve revenue development and security. For retail energy providers and utilities alike, revenue assurance—and in particular the Revenue Assurance Control Desk (RACD)—provides a practical solution for organizations to successfully protect their revenues in any business environment.

Revenue assurance is already a widely adopted practice in the telecommunications industry. Our experience proves it is equally valuable to energy providers. Factors such as multiple products, structured products, timing changes, account turnover, and complex systems and processes create revenue leak points. Diverse regulatory environments also increase billing complexity for both regulated utilities and deregulated providers. Variable pricing plans create challenges for deregulated retail energy providers. These organizations need a way to ensure they capture and retain their hard-earned revenues. The Kopac RACD solution addresses this assurance and identifies vital hard-dollar recoveries.

The Revenue Assurance Control Desk solution is a natural outcome of Kopac Consulting's experience. We have served energy clients and followed industry trends. We have studied revenue assurance principles from the telecommunications industry and control-desk concepts governing quality control in manufacturing. Our approach integrates the operations and finance concepts we've mastered to overcome obstacles that jeopardize the accurate and timely billing that utilities and retail energy providers need. Our RACD is available to help you remain competitive—and to protect profit—in a competitive world.

We invite you to explore in this document what we believe will soon be recognized as a cost-effective, best practice for traditional regulated utilities—as well as for competitive providers of retail energy to protect value.

Sincerely,

John Kopalchick III
President
Kopac Consulting, LLC
2010

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EXECUTIVE SUMMARY

The Revenue Assurance Control Desk (RACD®), created by Kopac Consulting, marries *revenue assurance* concepts of the telecommunications industry with the *control desk* standard used by manufacturers in maintaining statistical quality control to create a new solution for utilities and retail energy providers. *The essence of a RACD involves setting up a sustainable process to baseline operations, monitor revenue risks, audit for recoveries, investigate inquiries, and recommend process improvements.*

A RACD solution is a formal structure for managing your company's end-to-end revenue processes. It can be set up as a separate department, or as a process within your company. A RACD's value was proven through a case study—enclosed. In that study, a pilot test of one market, with sales of approximately $210M showed a range of potential losses of 1.9% to 6.65% of revenue. This reflected a net of costs benefit range of $4-14 million, on a three-year present value basis. Extrapolating this revenue at risk over the case study company's entire revenue of $5 billion, translated to a benefit range of $95M to $332M.

During the mid-nineties, revenue assurance became a *best practice* in the telecommunications industry as a formal strategy for reducing billing errors, preserving income, and identifying revenue at risk. Because of increasing complexity in billing processes and industry migration to new technologies, the energy industry is also beginning to embrace revenue assurance strategies. Hard dollars must be protected.

Your trained and functioning RACD department will find, source, and identify for recovery all revenue leaks, while improving processes and controls. This process includes exposing front-end metering losses due to fraud or human error and then extends from billing to settlement. *Usually a RACD begins in Finance.* It then spans front-to-back across Information Systems, Operations, Billing, and Accounting. A RACD does not serve in a receivable collections role. Instead, by making key data more visible, its presence improves your billing accuracy as well as timing. The remarkable result is maximum collections for your company. Your RACD analysis also generates continuous feedback for marketing to use in adjusting products to maximize revenues.

The cost of implementing your own RACD solution is minimal compared to the cost of lost revenue. Depending on your company size, operating a RACD may require little or no increase in staffing. For smaller organizations, existing staff can be transferred from other positions or cross-trained to perform revenue assurance activities. In some circumstances, a RACD can be completely outsourced to a third-party provider.

Revenue Losses and Control

Our RACD uncovers billing errors using a *bottom-to-top* examination of detailed billings—from enrollment to cash—rather than the typical *top-down* audit approach used by internal audit, corporate financial auditors, or regulators.

Total revenue at risk for companies will vary. Based on Kopac's research of losses across multiple industries, experience with recovery projects, and a recent project for a retail energy provider, we estimate a conservative loss range between .5% to 5% for utilities or retail energy providers. Although some sources cite losses higher than 5%, losses greater than that should be detected by the company's internal and financial auditors and would likely be a significant issue for any single organization.

RACD Process

A RACD efficiently detects revenue leaks using systematic and centralized, forensic-like sampling of billing detail. This meticulous sampling then allows accurate extrapolation of total revenue at risk for any business unit or customer category. Experience shows that by examining all revenue processes: Billing, Finance, and Operations, a RACD can more effectively discover and stop revenue leaks. Because a RACD is a process, not a capital-intensive software implementation, it can be scaled to fit an organization of any size. A RACD can therefore become a permanent, sustainable practice within *your* organization. It will expose revenue losses and help you—through use of its assessment, monitoring, recovery, and related systems—prevent and recover financial losses. A RACD also provides a natural feedback loop to various functional teams such as Finance, Internal Audit, Sales, Product Structuring, and Pricing.

An embedded, forensic-like RACD process will expose a clear picture of your entire revenue chain. Greater confidence in the relevance and accuracy of internally and externally generated financial reports will permit management to make better decisions in optimizing all revenue sources. This bottoms up and systemic approach is proactive, which is more cost effective than reacting to problems after they have surfaced.

Benefits

1. "Utilities that have aggressively pursued revenue assurance have achieved impressive results, over $1 million per revenue assurance professional in some cases."(**Energy Risk – Revenue Assurance, The Time is Now**, October 20, 2005)
2. Actual *days sales outstanding* (DSO) can be confidently established forensically. Our experience is that average DSO is greater than typically assumed. With true visibility, management can repair those friction points and lower DSO, thereby reducing the cost of working capital.
3. RACD tests the *entire* revenue cycle—from enrollment through settlement. This can translate to reduced financial audit fees.
4. RACD discoveries improve company-wide processes and controls.

Next Steps

Because a RACD tests transactions forensically, it's completely scalable, adaptable, and adjustable. No two companies are alike. Each RACD can be *fit-for-purpose* based on the transaction volume, billing complexity, and unique needs of any size organization. Key steps are as follows:

1. ***Project sizing*** An initial on-site review involves analyzing data, and conducting detailed interviews with Operations, Information Systems, and Finance Staff. This assessment will help determine where potential revenue losses are likely to reside. The entity's transaction volume, market distribution, and billing complexity will determine the time and scope of assessment.

2. ***Proof of concept*** After the initial assessment has been presented to senior management, they will decide the size and market parameters for conducting a test pilot. By statistical extrapolation from the pilot assessment, the organization's baseline revenue at risk is established.

3. ***Sustainability*** After extrapolating the data, the last step involves designing and building-out a permanent, or variable RACD structure. A RACD solution is designed to suit the size and complexity of each organization. Senior management will be presented with practical recommendations that fit an entity's needs. For example, small organizations may need only one dedicated RACD professional. Large companies will need personnel commensurate with their size. Lastly, management will decide how best to proceed. They may choose to implement an organization-wide RACD, gradually phase in a RACD installation over a longer period, or outsource the function to a third-party provider.

II. RACD PROGRAM

Part 1: Benefits and Costs of Revenue Assurance

1. *Primary benefits of a RACD*

A revenue assurance function can:

Improve Financial Position

1. Recover dollars
2. Prevent revenue leakage
3. Increase revenue and cash flow
4. Decrease collection time for accounts receivable, which leads to decreased working capital costs
5. Reduce audit fees due to decreased audit risk related to the revenue cycle, more reliance on controls testing, and substituting external audit testing for in-house testing
6. Provide a feedback loop to product structuring and sales teams, resulting in revenue enhancement

Reduce Risk

7. Identify and quantify revenue at risk
8. Test and monitor key revenue controls
9. Recommend control enhancements and improvements
10. Provide assurance related to Information Systems (IS) and similar implementation initiatives impacting the revenue process

Retain Customers

11. Reduce customer churn (Customers lost from billing and service errors are almost impossible to re-acquire. It costs less to retain an existing customer than it does to acquire a new one)

Provide Strategic Direction

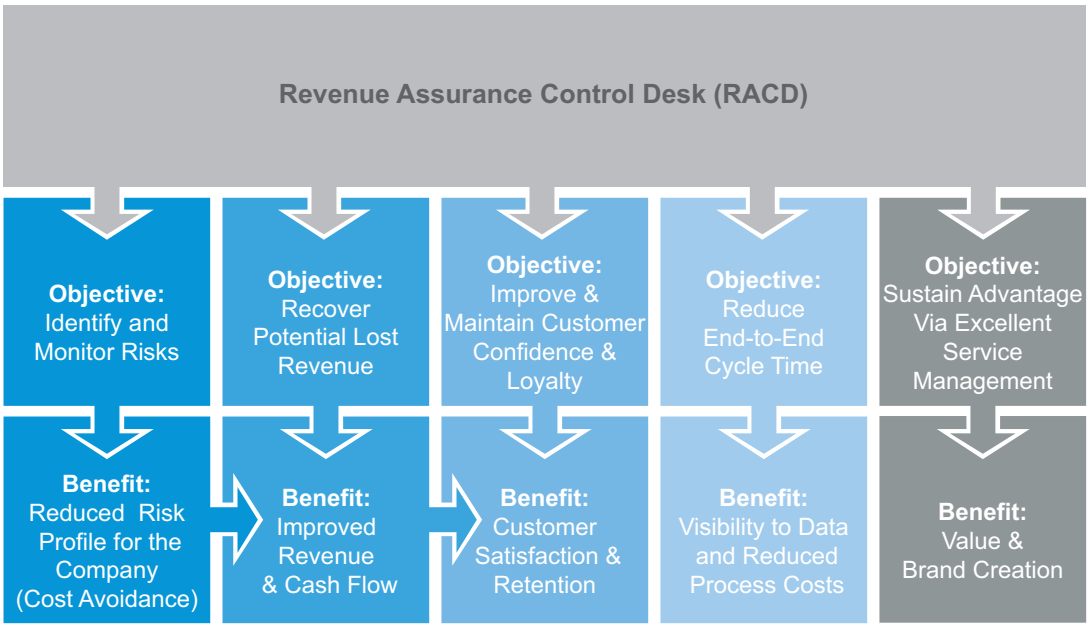
12. Identify revenue opportunities and threats
13. Create competitive advantage (e.g. timely and accurate service delivery and related billing)

Streamline Processes (Visibility and Reporting)

14. Identify areas for revenue optimization
15. Increase management confidence in internal and external reports
16. Reduce cycle times
17. Enhance visibility to the revenue chain

Exhibit 1: Benefits of Revenue Assurance outlines the five key elements and primary benefits.

Exhibit 1
Benefits of Revenue Assurance



2. *Costs to start and maintain a revenue assurance program*

The cost to implement a revenue assurance program includes internal or external support necessary to provide the expertise, project leadership, risk assessment, and pilot testing. If the decision is made to implement a full time revenue assurance solution through a Revenue Assurance Control Desk or RACD, there are costs necessary to build out the function internally that include staffing, training, IS support and potentially travel costs. Your company's internal advisors, external consultants, or Project Management Office (PMO) can provide an estimate of these costs after risk assessment and pilot testing have been completed.
The cost to install the primary elements of a revenue assurance program will cover: 1) an assessment to determine where recoveries may exist (i.e. which products, markets, locations, or commodities); 2) recovery or determination of revenue at risk; and 3) Build out of a permanent RACD function that will support ongoing revenue assurance efforts for the organization.

Many times an organization is able to redirect existing personnel to a RACD, resulting in *net cost savings*.

3. *Dollars that can potentially be recovered*

Any recovery project is primarily dependent on several factors such as market risk and complexity, market population size reviewed, and depth of sample billings tested. However, management should not look at revenue assurance as merely a recovery project. *The essence of a RACD involves setting up a sustainable process to baseline operations, monitor revenue risks, audit for recoveries, investigate inquiries, and recommend process improvements.* This structured way of approaching revenue provides the necessary visibility and accountability needed to control the complexities

of revenue streams. Although there is no hard and fast number for potential recoveries because revenue assurance is in the nascent stages for the *energy* industry, some illustrative guidelines from energy and telecommunications are as follows:

- "The estimated losses to utilities are about $6 billion or 1-3% of utility revenue for North America." (**International Utilities Revenue Protection Association or IURPA and U.S. Department of Justice**)
- "Industry surveys peg non-technical losses from theft in the range of one-half to a few percent of total utility revenue." (**Energy Risk – Revenue Protection and AMI Come Together**, June 25th 2007)
- "According to various Revenue Assurance research reports, the degree of exposure lies in the range of 3% to 15% of the Communications Service Providers (CSP) gross revenue, depending on several factors…" (**TeleManagement Forum**, April 29, 2008)

Total revenue at risk for companies will vary. But, based on Kopac's research of losses across multiple industries, experience with recovery projects, and a recent project for a retail energy provider, we estimate a conservative loss range between .5% to 5% for utilities or retail energy providers. Although some sources cite losses higher than 5%, any losses greater than that should be detected by the company's internal and financial auditors and would likely be a significant issue for any single organization.

4. *Contingency fee pricing*

Although revenue assurance is similar to other recovery projects such as accounts payable and taxes, its primary purpose is to create a structure in the form of a control to review the entire end-to-end revenue process. There are software solutions that permit data extraction and analysis on a large scale for telecommunications providers. However, because there is no equivalent for utilities and retail energy providers, projects are not supported through a contingency fee program at this time. This could change as the technology evolves to support a 100% review of the data.

5. *The solution is scalable, adaptable, and adjustable*

Scalability

Although this guide describes a RACD implementation for the larger organization, the solution can be easily scaled down to fit smaller organizations. Depending on a company's size, the ongoing RACD may require little or no increase in staffing. For smaller organizations, existing staff can be transferred from other positions and cross-trained to perform revenue assurance activities. Data extraction and analysis can occur for 100% of the data in the smaller organization. Additionally, the solution may be adjusted to review billing data on a periodic basis without full-time commitment of permanent-function or in-house personnel. Every organization is unique. Consequently, each solution will be designed to fit a company's size and circumstances during the scoping phase of the project.

Adaptability

In addition to scalability, the RACD solution can be applied across a variety of energy sectors including large retail power, gas, electric cooperatives, wholesale marketers, and pipelines. The solution can be adopted across multiple industries such as: water utilities, waste management, pharmacology, software, and airlines.

Adjustable

The solution can be adjusted within an organization to include a broader scope of coverage or include additional markets (or more data within a given market). Markets are the segments or auditable units for purposes of revenue assurance. Markets are differentiated based on geography, commodity type, regulated versus deregulated, and type—residential or commercial. For example, the residential regulated power market in Chicago is one unit for review purposes. There are other ways of defining a market as well, such as: business unit, profit center, or service code.

6. *The solution applies to both regulated utilities and deregulated retail energy providers*

The RACD solution benefits both categories of providers. From Kopac's perspective, both regulated utilities and deregulated providers are subject to regulation, which affect billing and collections. However, both regulated and deregulated providers share the common goal of getting bills out on time, in the right amount, and to the correct person. The goal for both is the same—assess and manage revenue dollars at risk. Variations in Public Utilities Commissions (PUC) and other regulatory bodies are factored into any RACD implementation to maximize all opportunities for optimizing revenue processes.

Utilities (Regulated)

Public utility pricing is fixed by tariff. For public utilities, revenue risk will be primarily at the front end of the revenue process. This includes line-loss, meter reading errors, theft, and meter tampering. There are multiple hardware and software vendors that support metering technology to detect and control fraud. The International Utility Revenue Protection Association (IURPA) supports fraud protection efforts worldwide.

Because of fixed pricing, revenue risk for utilities tend to diminish as the chain progresses from front-end metering to billing. However, billing errors and timing issues remain a source of leaks. Utilities can also suffer losses if they miss the final bill window when customers move without notice. A functioning RACD makes these losses more visible and offers opportunities to improve final billing processes.

Retail Energy Providers (Deregulated)

Conversely, deregulated retail providers generally do not own meters or own far fewer meters than their regulated counterparts. Neither do they receive guaranteed payment from the utility for the "last mile" of power or gas transmission when cost-conscious customers switch providers. There is generally less revenue leakage up front during the metering process, but deregulated providers suffer more leaks at back-end billing. Leaks often occur because large variations in tariff and product offerings increase billing complexity. Exhibit 2: Recovery by Area and Type provides a graph depicting this behavior.

Collection risk may be an issue for both the regulated and deregulated utility. Generally, the goal of revenue assurance will be to identify earned but uncollected revenue. However, management can decide during the scoping phase if the RACD will include *revenue up to collections* or *conversion to cash*.

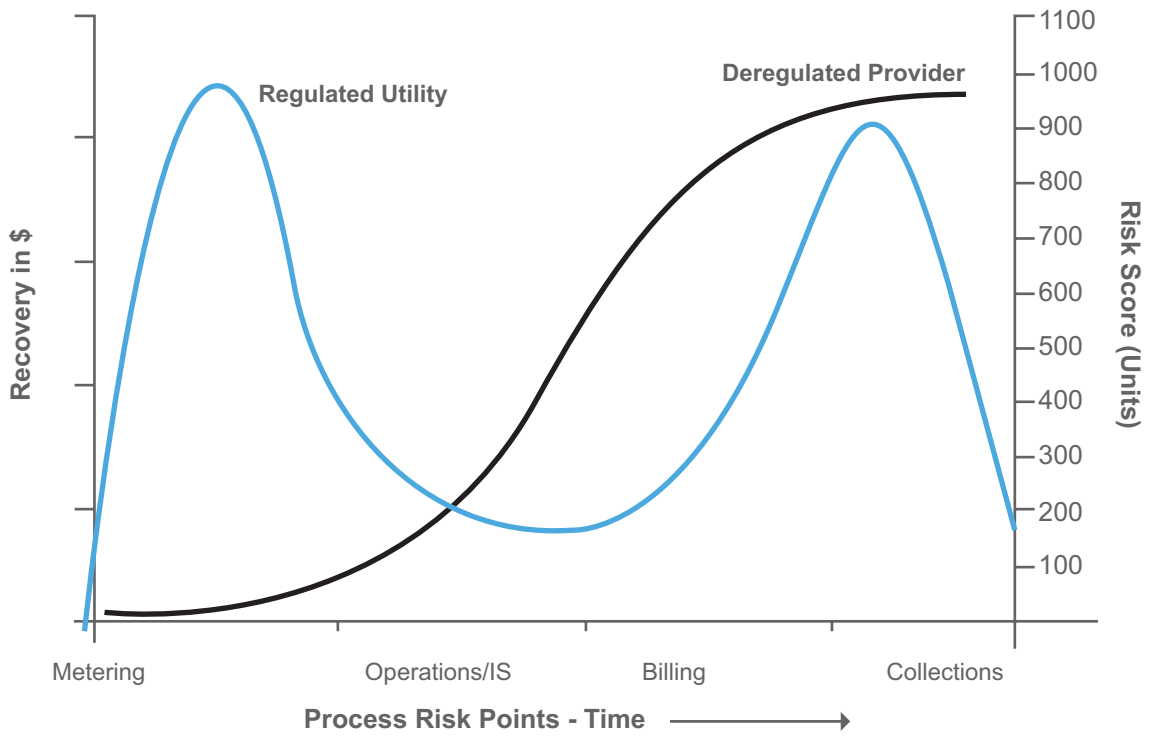
Utilities must navigate through strict regulation. Each region, usually by state, will have its own Public Utilities Commission (PUC) for all utilities in the area.

A RACD solution should factor for differences between one PUC regulatory environment and another. There may be cases where a single utility's operations span multiple PUC jurisdictions and are subject to substantially different recovery rules. The implementation team should address these issues up-front as part of the planning process. Typical issues can include the following:

- Rate rules and billing plans
- Collections and recourse for non-paying or relocated customers
- Last payments for customers who switch plans
- Budget billing and special billing plans

Exhibit 2: Recovery by Functional Area and Type depicts the targeted recovery points for both the regulated and deregulated utility.

Exhibit 2
Recovery by Functional Area and Type



For deregulated providers, metering may be a significant risk, although it lacks visibility. Deregulated energy providers often depend on regulated distribution companies for metering and sometimes billing. Although meter reading is outsourced, it does not mean these areas lack risk completely. Management will have to decide how it can assess and mitigate this risk.

Part 2: Revenue Assurance Basics

7. Revenue assurance defined

Revenue assurance is a control in the form of a monitoring and sampling activity that an organization performs to maximize the completeness and accuracy of revenue recognition. Revenue assurance ensures entity revenue and process controls function effectively, provides visibility to revenue leaks, and highlights control concerns.

Revenue assurance is a company-level, centralized-control function (through a Revenue Assurance Control Desk or RACD) that samples transactions to identify billing errors and uses forensic testing techniques on billing detail to identify and extrapolate billing errors. It includes elements of control monitoring, process improvement, and quality assurance principles.

Revenue assurance is not an auditing checklist or test of controls. Although revenue assurance uses elements from existing control frameworks, its benefit is derived from using detailed, bottoms-up forensic testing to extrapolate revenue at risk and make recommendations for improving processes and controls.

8. Revenue assurance as a control

Revenue assurance could be described as a major control, entity level control, management control, or monitoring control that management implements through a control desk or other formal structure. This assurance goes beyond traditional internal and financial controls to ensure revenue is maximized. Additionally, advanced revenue assurance functions include real-time monitoring of usage and revenue streams through technology.

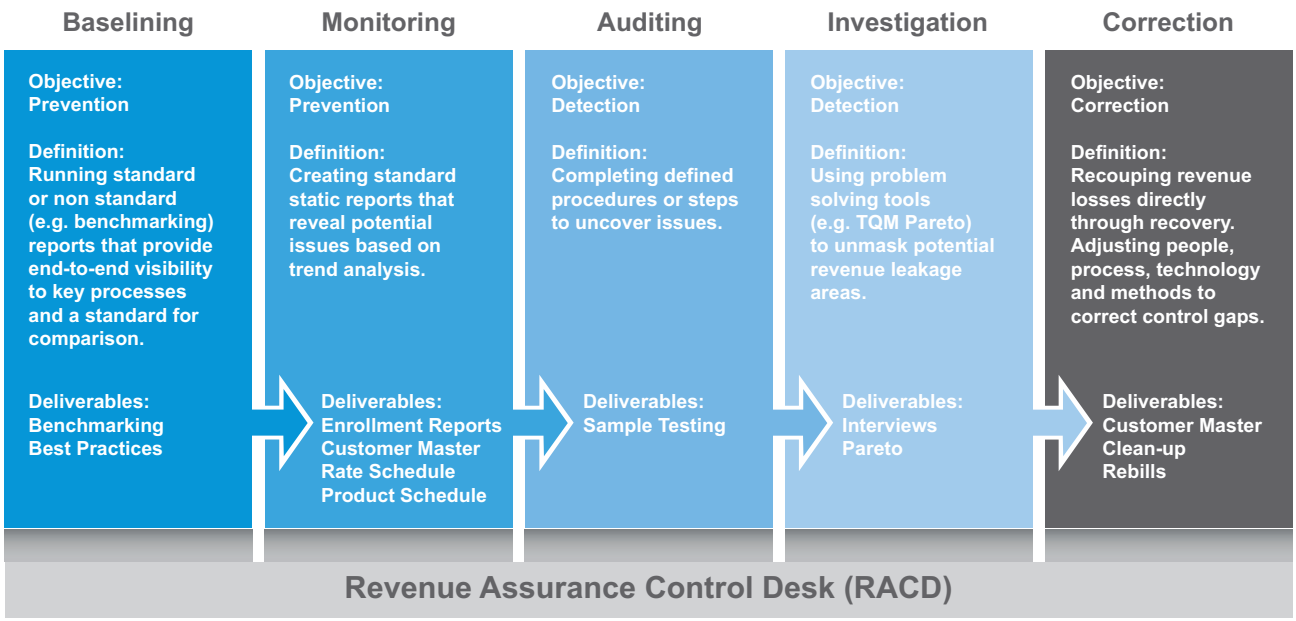
Traditionally, there has been a major emphasis in the accounting and operations industry on risk assessment. Risk assessment tools are beneficial in establishing a foundation and context for underlying risks and issues. But they are not a substitute for detailed, bottoms-up review of transactions. RACD incorporates the assumptions of traditional risk assessment processes, but goes further by capturing information on exception processes, non-routine transactions, or complex interface issues that contribute to system variability encountered in operations.

The RACD solution includes these complexities in its assumptions. These assumptions determine how transactions will be monitored and tested as part of a fully functional RACD program.

9. Key elements of revenue assurance

The five key activities of advanced revenue assurance functions include baselining, monitoring, auditing, investigation, and correction. Exhibit 3: Key Elements of a Revenue Assurance Function displays the core elements of a revenue assurance function.

Exhibit 3
Key Elements of a Revenue Assurance Function



Adapted from "A Financial Framework for Revenue Assurance Decision Making" By Rob Mattison

10. Industries most likely to implement a revenue assurance function

Revenue assurance is applicable to any industry. However, it is more suited to industries with complex, high-volume billings. Traditionally, revenue assurance was limited to the telecommunications and cable industries. However, medical, software, defense, waste management, and water utilities sectors present unique revenue challenges. Although the focus of this paper is energy companies, particularly utilities and retail energy providers (both power and natural gas), the principles can be applied across multiple industries.

Typical energy segments and their applicability to revenue assurance based on revenue factors are noted in Exhibit 4: Key Drivers of Revenue Assurance for the Energy Industry. Note that market dynamics is a class of factors that are systemic or common to all companies within an industry or sub segment. Internal factors such as information technology may vary for companies within the same industry.

Exhibit 4
Key Drivers of Revenue Assurance for the Energy Industry

	Factor	Description
Market Dynamic Factors (Environmental Factors)		
1	Time	Is the billing dependent or variable based on the time of day or a certain period?
2	Transaction Volumes	Are there a large number of billings per customer unit or only a few large bills?
3	Bill Period	Are there variable billing periods or special billing periods?
4	Non-Competitive	Are revenues based on a traditional non-competitive environment or a regulated rate based structure?
5	Product Variability	Are there multiple product types that are not easily distinguished or complex billing arrangements (e.g. license agreements)?
6	Product and Service Integration	Are products and services integrated as part of the business model, but complex in terms of billing?
7	Geography	Do bills or other charges such as taxes vary based on geography?
8	Allocations	Does the revenue that is billed require internal allocations across business units at month end or year end financial close?
9	Regulatory	Are there unique regulatory issues related to billings such as allowable charges vs. those not permitted by law?
10	Billing Calculation	Are billing calculations comprised of several charges including base fees, tariffs, and special charges?
11	Commodity Contracts	Are commodity contracts complex, or tailored to particular custom types, or contain unique terms and conditions?
Internal Factors		
12	Process Complexity	Are there numerous processes and revenue streams supporting information flow?
13	Information Systems	Are there multiple system interfaces and varying systems for certain products? Are there “home grown” systems?
14	Size of Operations	Does the sheer size of operations or the company structure necessitate division of responsibility within the company (i.e. no single revenue point of contact)?
15	Internal Reporting	Does the complexity of internal reporting generate hard to explain fluctuations? Is there limited ability to calculate product profitability?
16	Complex Reporting	Does revenue recognition accounting require unique or complex recognition from an SEC or other regulatory agency?

Exhibit 5: Market Dynamic Factors by Energy Industry Segment outlines a similar view of key revenue drivers by industry sub-segment. Note that utility and retail energy providers represent the most complex revenue dynamics.

Exhibit 5
Market Dynamic Factors by Energy Industry Segment

		Geological & Geophysical	Exploration & Production	Drilling & OFS	Pipeline & Transmission	Refining & Marketing	Utilities & Retail Energy Marketing	Energy Trading	Wholesale Power Marketing	
1	Time				●		●			
2	Transaction Volume						●	●	●	
3	Bill Period Frequency						●	●	●	
4	Competition						●			
5	Product Variability	●					●	●	●	
6	Product/Service Integ.			●			●			
7	Geography						●			
8	Allocations	●	●		●	●	●	●	●	
9	Regulatory	●			●	●	●	●	●	
10	Billing Calculations	●	●		●	●	●	●	●	
11	Commodity Contracts						●	●	●	

11. *How revenue enhancement, revenue assurance, and revenue collections and reporting differ*

Differentiating Revenue Enhancement, Revenue Assurance and Revenue Collection concepts is key. Revenue Enhancement is a commercial activity that is generally high on the agenda of sales and commercial leadership responsible for top line growth. Revenue Collection is painfully apparent if billed transactions are not being realized as cash receipts. Revenue Assurance is in the middle ground – comparing recorded results with expectations with the goal of identifying and eliminating leakage. A summary is presented in Exhibit 6: Revenue Service Definitions. Exhibit 7: Revenue Service Definitions Matrix presents a detailed comparison.

Revenue Enhancement represents those activities that generate revenue for the company or support customer acquisition and includes business development, sales and marketing, promotions, and acquisition of revenue streams.

Revenue Assurance provides the visibility, discipline, and monitoring needed to properly capture all revenue that is rightfully earned by the company. The scope of this paper is revenue assurance.

Revenue Collections and Reporting includes the areas of converting revenues to cash (collections) and customer reporting.

Organizations may include some or all of their cash collection activities into their assurance operations. Each company will need to determine its scope of service as part of implementing a revenue assurance program. An organization must dedicate resources to all three service areas, and all three should integrate to maximize effectiveness in the revenue stream.

Exhibit 6
Revenue Service Definitions

Revenue Enhancement
Includes business development activities for creating top line revenue growth. Incorporates elements of profitability, pricing, and growth. Revenue Enhancement is determined by a company's revenue effectiveness. Revenue effectiveness is driven by a company's ability to identify, create, and retain customers, markets, and channels.

Revenue Assurance
Includes all activities related to controlling revenue and includes elements of risk assessment, monitoring, and correction and includes after the fact control and processing of revenue activity.

Revenue Collections and Reporting
Includes activities primarily related to cash collections, but also includes reporting on unit profitability and pricing, for the purpose of determining whether results are in line with expectations.

Exhibit 7
Revenue Service Definitions – Matrix

Revenue Enhancement	Revenue Assurance	Revenue Collections & Reporting
Purpose: Growth & Value Creation **Effectiveness:** Revenue Effectiveness **Function:** Business Development Portfolio Management Sales & Marketing **Elements:** Identify, Create and Retain Customers **Costs:** Cost to obtain and retain **Key Processes:** Strategic Planning Product Development Portfolio Management Marketing & Sales **Measures:** Market Size, Reach, Churn, Leakage, Prospects, Conversion, Retention	**Purpose:** Control & Risk Management **Effectiveness:** Control Effectiveness **Function:** Revenue Assurance **Elements:** Baselining, Monitoring, Auditing Correction, and Investigation **Costs:** Cost to Assure **Key Processes:** Enrollment & Set-up Billing/Settlement Reporting Customer Life Cycle Monitoring **Measures:** Unbilled Revenue/Leakage Lost Revenue Recovered Revenue Error Rate	**Purpose:** Cash Collection & Reporting **Effectiveness:** Profitability Effectiveness **Function:** Collections & Performance Management **Elements:** Monitor, Collect and Reporting **Costs:** Cost to Collect and Report **Key Processes:** Credit Collections Performance Reporting **Measures:** DSO Segment Profitability

12. *Organizational revenue processes are within different scopes of revenue assurance, revenue enhancement, and revenue collections and reporting*

Revenue enhancement and processes include elements supporting acquired sales growth. They include: mergers and acquisitions (M&A), business development, asset planning, and due diligence. Processes from organic revenue growth include sales planning, customer acquisition, and marketing. Broadly speaking, these comprise planning processes for revenue.

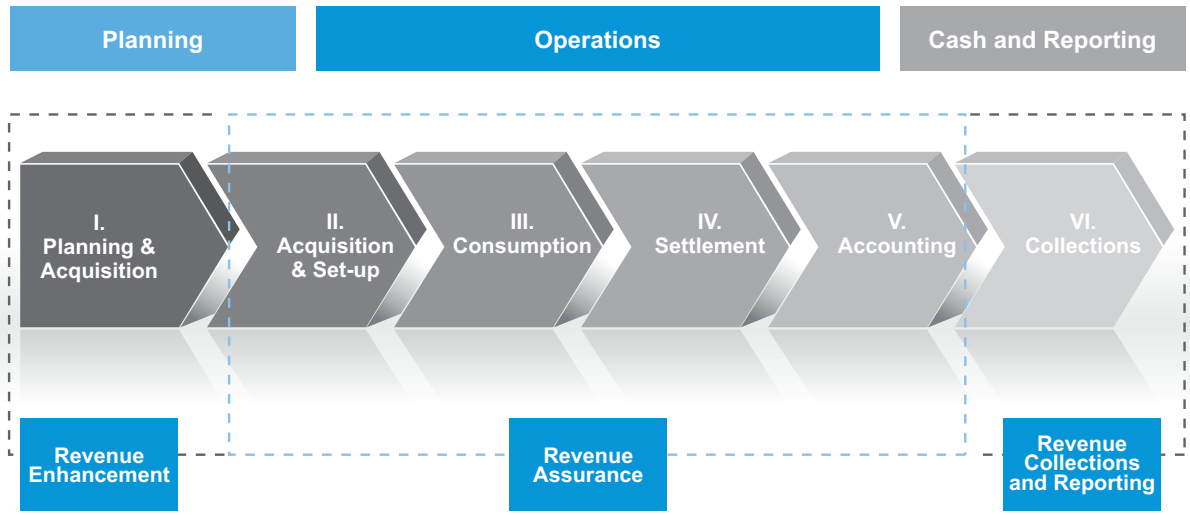
Revenue assurance solutions support operational and accounting processes within the overall revenue process. It includes customer contracting, account set-up, metering, settlement of commodity and rate charges, and billing and revenue accounting.

Revenue collections and reporting includes processes supporting conversion of billing to cash, aging of accounts receivable, and all back-end reporting—including data segmentation by customer revenue, profitability, risk, geography, margin, and growth.

Specific solutions for improving visibility and effectiveness can be developed and implemented for each of these revenue service domains: revenue enhancement, revenue assurance, and revenue collections and reporting. Exhibit 8: Primary Revenue Processes segments an organization's processes by revenue service area.

Exhibit 8
Primary Revenue Processes

There are 6 key sub processes within the overall revenue process.



13. Objective of revenue assurance

The overarching objective of revenue assurance is to establish confidence in revenue processes and related management reporting. Subsidiary objectives supporting this vision are as follows:

a. Test detailed billings for possible hard-dollar recovery (i.e. revenue leaks)

b. Identify revenue streams or market segments at risk and monitor risks within the revenue process (i.e. revenue at risk)

c. Improve and maintain customer confidence and loyalty

d. Provide visibility and accountability to revenue processes

e. Assist operations with corrective action and identify potential process improvements

14. Key risk factors driving the need for a revenue assurance function within an organization

The two core drivers of risk in any system are complexity and variability. Additionally, drivers of risk include multiplier effects and systems issues.

Complexity

- Complex or multi-tiered contracts
- Special offers and promotional programs
- Bundling and unbundling of products
- Multiple markets or submarkets and regulations
- Multiple commodities: natural gas, power, water, etc.
- Hedging

Variability

- Consumption patterns
- Commodity pricing
- Customer profiles
- Markets
- Demand patterns
- Revenue, margin, and earnings variability
- Change of billing plans

Multiplier Effects

- Merger and acquisition activity
- Employer training and experience—especially in revenue recognition, margin reporting, and adjustments
- Organization structure
- Existing control culture
- Recent entry into new markets

Systems Issues

- Number of systems that support revenue processes
- Interface quality among systems
- Age of systems
- Understanding of system controls, reporting, and financial impacts
- Number of manual processes
- Number and type of system upload corrections
- Number of masterfile changes and upgrades

15. Symptoms that may indicate need for a revenue assurance function

A typical assessment a company can perform to determine if a revenue assurance function is needed is as follows:

Overall

- Is there a single end-to-end assignment of revenue responsibility? This includes single ownership for monitoring risk and controls through the entire process: contracting, metering, billing operations, accounting, collections, and operations.
  A single independent contact point responsible for controls and leakage in the revenue cycle is proactive and prevents "firefighting" revenue issues.
- Do revenue audits or projects use robust bottoms up testing of billing detail or conventional top-down control and risk assessment?
  Bottoms up or detailed testing provides a different perspective in assessing risk, testing controls and quantifying potential recoveries. Analysis of data is supportable and reliable. Bottoms up testing in addition to top down control assessment provide a foundation for identifying revenue leak points.
- Can the executive team list the top 3-5 revenue streams, markets, or processes at risk?
  The organization's leadership should have a "bird's eye" view of revenue stream problems (i.e. collections or contract upgrades) or problem products, commodities, or markets. A "gut level" perspective provides an additional data point for determining which markets are most at risk for revenue leakage.
- Can the organization articulate its 3-5 Key Performance Indicators (KPI's) for revenue known throughout the company? Are they communicated throughout the company?
  Critical measures should be developed to support financial, customer, and risk objectives. Examples may include the following:
  - *Days sales outstanding*
  - *Billing errors*
  - *Accounting adjustments or prior period adjustments (PPA's)*
  - *Revenue at risk*
- Does the organization's culture encourage and reward behaviors that contribute to revenue protection?
  Employees and managers should be encouraged to have a control focus and participate in behaviors that contribute to revenue growth and protection. Visibility drives accountability. Metrics should be communicated throughout the organization.

Pre-contract

- Have necessary credit approvals been secured?
  Credit risk is a major item for the utility and retail provider. The organization needs to determine if credit and collections will be within the scope of its RACD operations
- Has there been failure to meet margin requirements or charge correctly for all parts of the transaction?
  Failure to meet margin requirements on deals or charge correctly can increase the revenue at risk for transactions.
- Are there commitments for sales of products not supported by the business?
  The sales team should be adequately trained by the marketing team to avoid offering products and services that are not supported by the company which can result in unnecessary fines, adjustments, and customer dissatisfaction.
- Is there valid execution by authorized signers on both sides of the transaction?
  Proper contract control includes obtaining the required contract signatures.

Customer Service and Support

- Are there a large number of billing inquires in the customer call center?
  Large numbers of complaints related to billing inquiries, bill errors, usage challenges, and collections should be collated and analyzed for immediate action.
- Do customers challenge invoice details more than industry average?
  No two companies offer the same products and services; however, that should not prevent management from benchmarking complaints, call center data, and billing errors per customer.
- Do customers churn inconsistently?
  There are multiple concerns for customer churn including service, billing discrepancies, pricing, fraud, and collections. Management should track these trends by customers, market, production and business unit for possible revenue leakage areas.
- Do customer accounts require adjustments more than industry average?
  An abnormal number of adjustments to customer accounts can signal control deficiencies such as plan update errors, missed billings, or meter change-outs.
- How many requests does the organization receive from utility bill audit firms for historical billing data? Are these excessive? Can they be tracked and followed-up up on with the customer?
  Numerous requests by utility audit firms may indicate the need to revise sales team training, product and service design, and billing procedures.

Billing Operations

- Are there limited controls over meters?
  Management should establish some comfort that meter reads are accurate and complete. Fraud and theft are common at the front end of the process.

- Is there a high meter turnover rate?
  Meter turnover because of upgrades to interval meters, replacement of meters, or new installations may create a risk of revenue leakage. In addition to revenue management, a program needs to be in place for tracking the physical location of meters.
- Does Information Systems (IS) consistently need to reload transactions or master file data prior to processing?
  Data uploading, validation and tracking can be causes of errors in the billing process. Significant job abends and reruns may create a risk of revenue errors.
- Are exception processes and controls in place for meter change-outs, meter upgrades, customer moves, final billings, contract rate changes, and system upgrades?
  Leakages of revenue occur at exception processes and for non-standard products and services.

Accounting

- Are there a large number of month-end or year-end accounting or auditor adjustments or reclassifications to the revenue accounts?
  Revenue adjustments point to control breakdowns and possible leakage points. Complex allocations among business units and adjustments can increase the likelihood of revenue errors.
- Are transactions between costs and revenue netted?
  Complex netting of trade activities can create the risk of revenue leakage or reporting discrepancies.
- Is there lack of visibility to revenue and margins by product or market?
  Visibility drives accountability. A basic report which shows revenue by business unit against plan and forecast and highlights variances and risk areas should be in place.
- Is there complex billing calendarization of billed revenue?
  Complex or large adjustments in the calendarization of flow versus monthly revenue may indicate control challenges in accruals or meter reading.
- Is the unbilled accruals process complex? Is it complete?
  A formal and documented process needs to be in place for tracking unbilled accruals of revenue.
- Is there a reconciliation of commodity costs to revenue?
  Both volumes and dollars should reconcile in computing the month end revenue, cost and profit.
- Are liquidated damages (e.g. early termination fees) being billed properly?
  Contract management processes and controls should be in place to ensure all damages for early termination are captured.
- Is there a variance between the costs of good sold of billed revenue to the forecasted (or priced) cost of goods sold?
  Variance in billed versus forecasted costs of goods sold point to hedging concerns. Additionally, there may be the opportunity to recapture supply cost differences for particular customer accounts.

16. Energy Cost Audits and RACD

There has been a recent and dramatic increase in the number of firms providing utility bill and energy site audits for the end consumer and commercial concern. There are hundreds of firms providing these services who are willing to work on contingency fee structures to recover dollars for their clients—both consumer and business. The fact that there are so many firms and services is a testament to the number of billing errors, plan inconsistencies, and process breakdowns that can occur from contract to cash. Top errors and hot spots for utility bill auditors include the following:

Meter Reading

- Agreement of prior months end reading to the current months beginning reading.
- Reasonability of current month's reading in kilowatt hour (KWH) usage
- The meter constant is a factor that determines KWH usage (This cost multiplier helps establish the month's usage charge and it should match the constant that is recorded on the meter)

Rates

- Because there are several rate plans structures available to corporate users, management needs to ensure it has the best plan for its needs
- Reasonability of special charges for upfront surge costs in operating inefficient equipment for some markets
- Classifications of rate structures are complex
- Limited bill support services because of the economic downturn

Calculations

- Calculations may be incorrect based on rates, taxes, special charges, and time periods

Regulatory

- Complex regulatory structure drives complexity of billings

By focusing on the recoveries from the utility bill auditor perspective, the RACD process provides a view into the "other side" of these concerns for prevention of bill errors and a proactive means to capture its revenue leakage for the utility or retail energy provider. The results are maximization of a consistent revenue stream, customer satisfaction, and direct feedback on processes that need to be revamped from plan design to cash collections.

17. Foundation of revenue assurance

Revenue assurance's value proposition is based on assessing and mitigating risk; calculating revenue at risk; identifying revenue for recovery; and recommending process improvements. Exhibit 9: Revenue Assurance Value Proposition outlines the three key life phases: Build Infrastructure, Baseline, and Maturity.

Build Infrastructure

The initial phase of building the functional support of a revenue assurance function includes determining the scope of the function, communicating the vision for the function, and completing basic revenue-risk assessments and revenue-recovery pilots as a foundation.

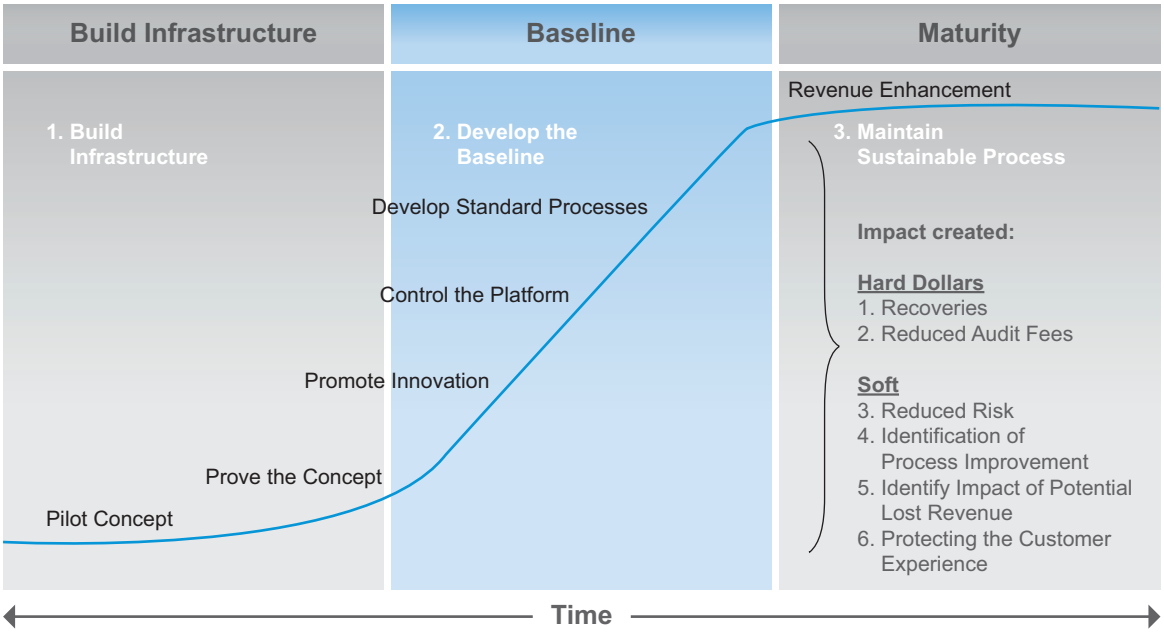
Baseline

As the function acquires and extrapolates data from one or more pilots, industry expertise, and application of practices from the revenue assurance industry, standard processes and procedures can be developed to create baseline standards. Baseline standards allow sustainable revenue assurance improvements.

Maturity

As the revenue assurance function matures within the organization, advanced technology and techniques can be developed for assessing risk of revenue loss, recovering revenue, and monitoring controls. In best-in-class operations the emphasis should be on real-time monitoring and nearly 100% review of transactions through the system. Additionally, the assurance function migrates to a full revenue management function performing end-to-end recoveries based on standard business rules, completing process improvements, and integrating with ongoing revenue initiatives. Both investments and benefits will increase and change as the function matures. Capability models and tools will be adopted to define more detail elements and capability requirements through each stage of growth and maturity for the organization.

Exhibit 9
Revenue Assurance Value Proposition



18. Primary activities within a revenue assurance function

Revenue assurance comprises all activities involved in controlling and monitoring the revenue process. This includes the core elements of risk assessment, market profiling, data analysis, and bottoms-up analysis of bill transactions. Results from detailed analysis provide quantification of revenue lost, revenue at risk, and potential recovery.

Part 3: The Revenue Assurance Control Desk (RACD)

19. The Revenue Assurance Control Desk (RACD)

A Revenue Assurance Control Desk or RACD is the embodiment of a revenue assurance function. The RACD[1] was created by Kopac Consulting. It is the function within the organization that is responsible for all aspects of revenue assurance.

It is a centralized function within an organization that has the following responsibilities:

- Provides a single point of contact for all revenue related risks, controls, testing, and process understanding for the organization
- Ensures that revenue risks are identified and addressed throughout the revenue process
- Conducts revenue reviews by market, product, or process to determine revenue at risk or hard dollar recoveries. Reviews include the following:
  - documenting revenue processes from contract to cash
  - documenting key risks and controls
  - testing billing and related revenue transactions
  - extrapolating revenue at risk
  - identifying opportunities for revenue recovery
  - recommending process and control improvements
- Monitors overall revenue activity of the company to ensure key activities are reported
- Serves as a central contact point for other company audit activities related to revenue—including financial statement audits, internal audits, process improvement reviews, and operational reporting
- Reports revenue at risk for possible recoveries, control issues, and process improvements to management
- Identifies and tests controls for mitigating revenue leakage

The function typically starts out as a small organization reporting to Finance, or in some cases Operations within the company.

20. The solution basis

A RACD solution involves setting up the formal processes, technology, metrics, and organization within the company for managing end-to-end revenue processes. Although the solution is primarily process based, the heart of the work involves data extraction and analysis using forensic-like accounting techniques. Currently, data analysis uses basic Excel or Access applications for processing.

There are software solutions that support data extraction and analysis on a large scale for telecommunications providers. However, there are no current revenue assurance solutions for utilities and retail energy providers. As the industry adapts the RACD concept and demand grows, software vendors will emerge that provide more robust solutions.

[1]RACD was developed by Kopac Consulting, LLC. Kopac has filed an application for patent and copyright protections with the United States Patent and Trademark Office (USPTO).

21. *How the RACD concept was derived*

The concept was created in 2009 by Kopac Consulting, a leader in energy and energy related industry consulting. RACD adopts elements from traditional revenue assurance in the telecommunications industry and control desk concepts from manufacturing and trading. It is a new concept, which Kopac Consulting believes will be a best practice for many companies in the energy industry.

Several factors contributed to RACD development, including the need to protect revenue during challenging economic times, increased audit scrutiny on revenue transactions, market dynamics related to complex regulatory and deregulation practices, and revenue and billing complexity.

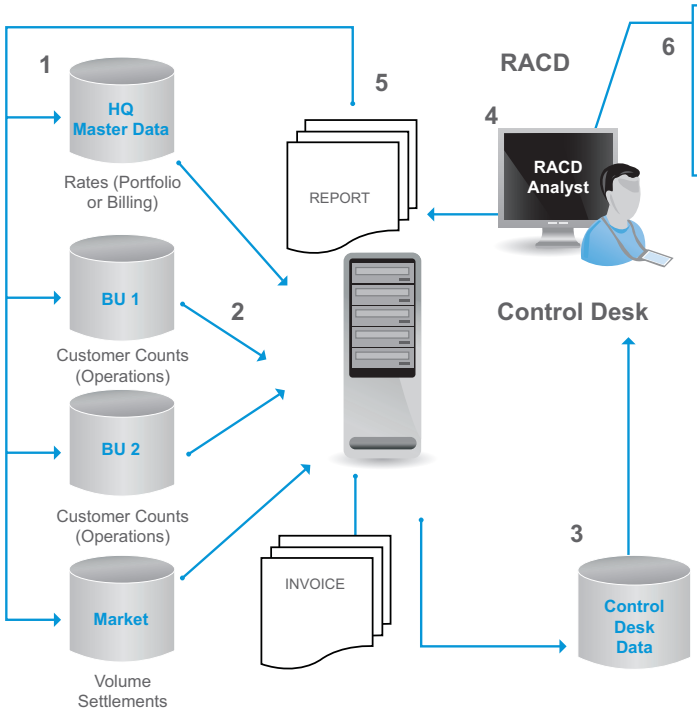
22. *Difference between revenue assurance and RACD*

Revenue assurance is a term used to describe a set of control capabilities and activities a company uses to validate that all revenue earned by the company is appropriately captured by its systems, controls, and processes. A RACD is the functional element—or form—of a revenue assurance activity within a corporation.

23. *Key daily processes of RACD*

Exhibit 10: RACD Daily Processes outlines the key processes for a RACD. Much like an accounts payable recovery audit, the RACD extracts customer billing and related data for detailed analysis and recovery by the RACD team.

Exhibit 10
RACD Daily Processes



Test	In-Progress	Completed
All Flow records billed	X	
All Billed Records accurate		X
Flow records billed timely	X	
Revenue losses tracked		

Key Processes within the RACD:

1. Transaction and master file data from market and business unit functions is extracted or transferred for normal revenue processing.
2. A RACD consolidates and analyzes data.
3. Based on a risk profile, materiality, and management request, A RACD runs standard or special request routines on data to test for revenue completeness and accuracy. Alternatively, detailed invoice testing can be completed.
4. Records are kept of historical error types and causes for audit, process improvement, and performance management purposes.
5. Exceptions are collated.
6. A RACD produces and distributes reports to appropriate business units for correction and follow-up.

24. *How to structure a RACD within your organization*

A RACD could have many roles and forms within the company. These depend on several factors such as the organization's culture, budget, and operating philosophy:

- ***Formal Structure vs. Informal Structure*** Management may desire for a formal control structure as a separate functional element within the organization. However, management may encourage an informal structure and include revenue assurance as one of many activities assigned to one person within the organization.
- ***Part of Existing Control Functions vs. a Separate Control Function*** Management may wish to include a RACD as part of Internal Audit or similar compliance function. Conversely, it may determine that it should exist as an independent function within the corporation reporting through Finance.
- ***Shared Services Center (SSC), Center of Excellence (COE), or Revenue Operations Center (ROC)*** A RACD can be part of any shared processing environment or as a stand-alone functional team.
- ***Central vs. Distributed Support*** Some large organizations may need separate revenue assurance teams to support individual business commodities. However, the organization may need one central function containing separate teams trained to support specialized commodities or business units.
- ***Temporary or Permanent Activity*** It may be advantageous to use the services of an external provider on a contract basis to implement a RACD program, thus avoiding the recurring permanent costs of a formal function. However, a permanent team can be the best option in certain cases for larger organizations.

Note that other forms are possible and the process selection should be based on the company's objectives.

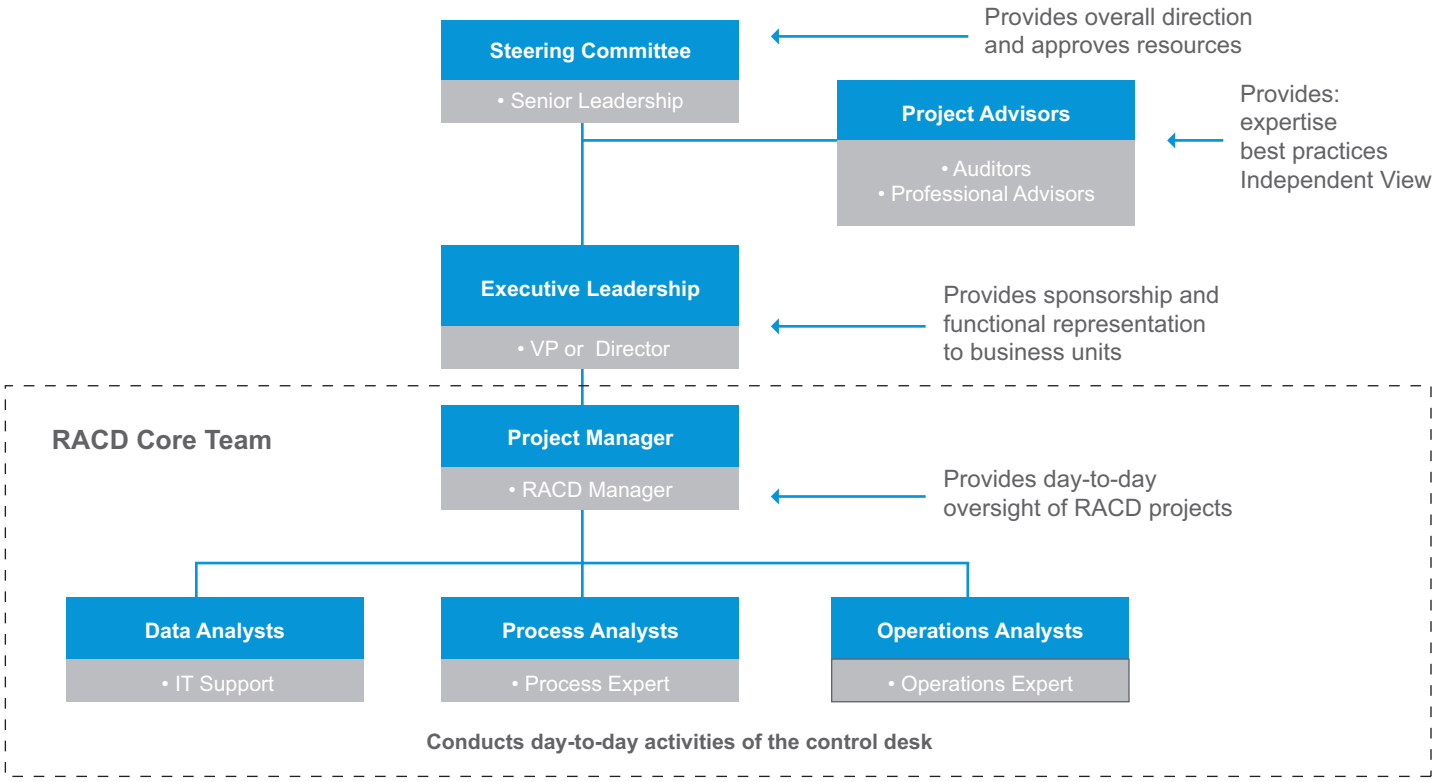
25. *What a RACD organization looks like and to whom it should report*

There are three types of structures that may be considered for a RACD: a project (temporary) structure, a permanent structure, and a variable structure. Management's decision should be based on the size or other unique needs of the organization. For example, the smaller municipal utility or cooperative may not require a formal project structure to implement a successful program.

1. Project (Temporary) Structure:

The initial structure of the RACD should support the initial design, assessment, and pilot for the RACD function. A team of core RACD professionals should be part of a pilot team and eventually transition to the permanent structure. A Steering Committee, Project Sponsor, Project Manager, and technical advisors should support the overall transition team. The primary purpose of the project structure is to provide communication, organization buy-in and support. Long term, this contributes to a successful pilot and the build out of a sustainable and permanent RACD. Refer to Exhibit 11: RACD Organizational Structure.

Exhibit 11
RACD Organizational Structure



Steering Committee

The Steering Committee should be cross functional with executive leadership from Operations, Finance, and Information Systems who will provide guidance and strategic direction. The Steering Committee is responsible for the following:

- Scoping requirements and change requests
- Finding resources, funding, and timing
- Identifying major expectations, formats, and reporting
- Championing the RACD concept and communicating the program's benefits to the organization and external parties as needed (i.e. operations, board of directors, internal and financial auditors)
- Identifying and commissioning key contacts and Subject Matter Experts (SME)
- Providing insight into systems, processes, and organizational issues
- Preemptively contacting people throughout the organization to clear the way for the pilot team
- Communicating with direct reports the importance of a pilot and RACD function
- Preempting and resolving potential roadblocks
- Providing input on project management, change management, and solution development

Project Advisors

Project advisors contribute insight on industry, technical issues, and offer alternative perspectives. Advisors can be internal or external to the company and include internal auditors, the company's financial auditor, consultants, customers, and suppliers. Primary responsibilities are as follows:

- Providing technical guidance on accounting and information systems issues
- Providing analysis, reports, and policies for understanding the process
- Providing recommendations for solutions
- Participating in facilitated sessions as needed
- Providing industry insight

Project Sponsor

The Project Sponsor is the executive leader who will have ultimate authority and responsibility for the RACD function (e.g. Director, VP Finance, VP Controller, or CFO). The project sponsor is the key day-to-day contact for the project leader and is usually a middle-to-upper-level manager responsible for the following:

- Providing a single point of contact for the RACD project leadership
- Resolving project or solution issues
- Reviewing steering decisions for action
- Identifying key contacts and Subject Matter Experts (SME)
- Identifying internal resources to work as part of the team on a full time or as-needed basis
- Providing insights into systems, processes, and organizational concerns
- Responding to project timing, budget, and milestones issues on a daily or weekly basis
- Providing direction on scoping and approach
- Communicating and providing updates to the steering committee as necessary

Project Manager

The project manager is an internal or external professional that manages all field aspects of the project to completion. Their primary duties are as follows:

- Planning project timing and resources
- Planning and designing the approach for completing work
- Assigning authority and responsibility to team leads and staff
- Addressing project quality, risks, communication, and change management concerns
- Designing and presenting project status reports to project sponsors and management
- Providing active daily project leadership
- Leading major technical or business workshops
- Staffing the project as needed
- Completing and reviewing daily and weekly project status updates

Analysts

Analysts are experts in usually one or more areas: 1) accounting and auditing; 2) information systems and data analysis; and 3) operations. Analysts meet day-to-day requirements of the project by:

- Documenting processes and key issues
- Interviewing process and control owners
- Analyzing data and trends
- Participating in meetings
- Preparing reports and offering data analysis for management

For larger projects, analysts can also function as team leads. Team Lead responsibilities are as follows:

- Scoping segments of the project based on size, geography, or functional discipline
- Assigning workload to analysts
- Leading facilitated sessions, interviews, or documentation sessions
- Designing templates, tools and solutions to deliver project results
- Providing input to solutions and communicating concerns to the Project Director

2. ***Permanent Structure***

Roles of the permanent structure are much the same as those for the temporary structure. Over time the Steering Committee can be disbanded and the roles of project advisors and other consultants will be reduced and a full-time revenue assurance manager assigned.

3. ***Variable (Flexible) Structure***

Organizations can create a flexible structure that lies somewhere between temporary and permanent. Organizations that wish to retain only a core staff for the RACD may decide to use the services of a consultant or accounting firm on an as-needed basis much like co-sourcing an internal audit professional. The organization will assign a full time RACD manager or director who will serve as the relationship manager for any external resources used or resources obtained from other departments such as accounting or internal audit.

26. RACD is a forensic-like undertaking

A revenue assurance control desk uses elements of forensic analysis. Much like an accounts payable recovery project, it relies heavily on extraction and analysis of detailed transaction data using company revenue, customer, and billing data. Moreover, like fraud or forensic analysis, it makes the general assumption that controls are weak or not operating. It therefore tests a significant number of transactions from segmented populations on a sample basis. This permits a statistical extrapolation of errors to the entire population. As data capabilities improve, the entire population can be analyzed. This detailed approach enables the accurate sourcing of process errors.

27. RACD is an industry best practice

Kopac Consulting believes that revenue assurance, whether implemented through a control desk or implemented by other means, will become an accepted future practice for utilities and retail energy providers. Revenue streams for energy providers are becoming more variable and complex. Therefore, the trend is for more formal mechanisms to be in place to provide capabilities necessary to manage this risk.

Part 4: Designing and Implementing a RACD Function

28. Mission or purpose statements for revenue assurance function

The RACD should develop statements of purpose, vision, or charters, with approval from the organization's executive leadership. This is critical for defining the function's goals and reasons for existence. As part of functional design, these statements can be developed, modified, and presented for management approval.

29. Time needed to implement a RACD function

The time it takes to implement a revenue assurance function depends on several factors:

- The level of assurance management desires over its revenue processes
- The scope of revenue to be covered (i.e. number of markets, dollar coverage, geographic areas, selected high risk areas only, and so on)
- Current capabilities of the organization's staff and availability of SMEs
- Budget

An adequate initial assessment, pilot, and functional build-out could range from 4 to 12 months. Further, a very large implementation could be longer depending on availability of resources and scope.

30. The RACD staff

Similar to other functions within the organization, the RACD should be staffed appropriately. The manager and staff should have skills in operations, information systems and data analysis; process redesign, auditing, and controls. Individuals that have experience within the company in revenue accounting, billing operations, and audit are excellent choices.

The organization can also benefit from establishing the function as a career rotation program for promising professionals. This provides an opportunity for individuals to learn the business, understand end-to-end revenue processes; develop technical skills in data extraction and analysis; develop processes; learn risk and control documentation, and accounting. Additionally, this is an opportunity for the organization's staff to develop soft skills in interviewing, report writing, and presentations.

A critical element of the functional build-out is the development of job specifications, job descriptions, and roles and responsibilities with the organization's Legal and Human Resources functions. Outcomes from the risk assessment process can assist in determining the number and level of staffing needed to obtain adequate market coverage of revenue projects.

31. Reporting relationship within a RACD

There are two key aspects of reporting within a RACD: One is setting up a temporary structure that includes internal or external project leadership that will be in place for the duration of the initial risk assessment and functional implementation. Another is setting up a permanent structure that will manage daily activities as the RACD implementation transitions from a temporary project to a permanent practice.

However, management may decide to outsource some activities to make the function a fully variable activity from a cost perspective and leverage up-to-date capabilities.

To whom the full time RACD Manager reports is determined within the company. In the telecommunications industry the function usually reports up through the Finance organization. Other options are Information Systems, Internal Audit and Operations.

32. *Profile of the RACD professional*

General Skills

Skills in data extraction and analysis, accounting or auditing, process redesign, and forensics are desirable. Broad experience in finance and operations is desirable as well. Auditors and operations analysts are typically well suited for these roles.

Education

Undergraduate and graduate degreed professionals in Accounting, Information Systems and Analysis, or Operations fit the profile well for a revenue assurance department.

Certifications and Designations

Certifications in Information Systems: (CISA, CITP), accounting (CA, CPA, or CMA), and auditing (CFE or CIA) are desirable for team members. The Global Revenue Assurance Professionals Association or GRAPA offers a revenue assurance certification program (although it is primarily for telecommunications professionals). Additional designations include Six Sigma Greenbelt and Black Belt, and TQM certifications.

The RACD leader should have project management, leadership, change management, facilitation, and presentation skills, in addition to technical knowledge.

33. *Training needed for a functioning RACD*

Much of the training that occurs within the RACD will be on-the-job. It will be important for the team to learn as much as possible about the following areas within the organization:

- Market structure
- Key strategies of the organization and its business model
- Organizational structure
- Products and services
- Revenue processes
- Revenue, billing, and collections policies
- Control owners
- Information systems
- Accounting entries and flow
- Key metrics
- Contract Administration and credit review/default policies

Core Training

- Microsoft Excel, Word, PowerPoint, and Visio
- Basic writing, presentation, and interviewing skills
- Process mapping

Intermediate Training

- Access database
- Accounting for revenue
- Enterprise Resource Program (ERP) training
- Industry training in gas and power fundamentals

Advanced Training

- SQL or other programming languages
- Advanced auditing and forensic auditing
- Advanced industry understanding

34. Main RACD processes

Key operational processes within the RACD include those found in other accounting and auditing functions: planning and risk assessment, baselining, data gathering, auditing and analysis, reporting, assessment, and monitoring.

Support or administrative functions include the following: training, employee evaluations, document storage, and reporting.

35. How to structure reports and analysis within the RACD

Data assessments and reports can be structured similar to other audit or process improvement projects. The report should outline an executive summary, an outline of the market reviewed, the amount of revenue recovered or at risk, and any operational or control improvement suggestions.

36. Supporting technologies for a RACD

Documentation and Work Paper Management

Traditional audit work paper software and Microsoft Office products (Excel, Access, Visio, and Word) can be used for basic documentation and analysis. Additionally, the audit industry has a number of electronic work paper tools that can be used.

Data Management

Currently, there are no technology solutions available to support revenue assurance for the energy industry. Current market solutions for revenue assurance data analysis are tailored for telecommunications organizations. As the revenue assurance industry matures, Kopac expects more advanced monitoring software will be developed to permit real-time revenue monitoring.

Because of the large amount and types of data to be analyzed as part of the RACD, the data manager should be proficient in data identification to determine relevant data needed for analysis. After data is identified, a pilot sample of data should be

extracted to ensure all necessary fields are obtained before loading the full data set. Data extraction, validation, loading, parsing, warehousing, and analytical tools will be needed for the analysis stage. Revenue assurance will need to have the ability to house RACD data independent from the organization's production data to prevent system or data corruption. In larger pilots or implementations, a separate server and one or more workstations would typically be set up for the RACD team.

Some current revenue assurance professionals (in telecommunications) suggest warehousing the data for analysis. They believe warehousing provides the needed discipline and structure for correctly analyzing the data. Efficiencies may be gained by doing simple extracts and updates as needed. This method also avoids errors and wasted time associated with data duplication being transferred to another server when making essential updates.

However, a segment of revenue assurance professionals believes access to live production data and its replication into dedicated revenue assurance systems for monitoring is a benefit because revenue assurance depends on obtaining an understanding of business rules and provides a live view of the data. Each organization's policies and risk factors will determine which approach is used.

Data Analysis and Testing

The core of a good revenue review is the billing template. Templates will serve as the foundation for recalculating the billings on a sample basis. These can be created in basic spreadsheet programs such as Excel. As RACD functions within the energy industry mature, more automated templates can be developed and used to analyze larger sample sizes and ultimately perform some level of data testing on 100% of the data.

As the revenue assurance organization matures more emphasis can be placed on business rules auditing. The assurance processes emphasize auditing not only for a recovery or leakage amount, but also to identify where the errors occurred and build proactive controls and monitoring controls into the process.

Archival and Retrieval

Good data archiving and record keeping are essential to the RACD function as well. Folders can be created to house key files maintained on the RACD server and periodically backed up by IS.

37. RACD policies

Three categories of policies, procedures, and documents form the foundation of a well functioning Revenue Assurance function. These include 1) departmental documents; 2) general policies and documents; and 3) templates that are core to daily revenue assurance activities. Core documents form the basis of an established revenue assurance function. General polices and procedures are those company policies most relevant to revenue assurance. Revenue assurance documents and templates provide tools the assurance team will use to execute daily responsibilities.

Core Documents

- Organizational Structure of the Revenue Assurance Function
- Departmental Charter

- RACD Mission and Vision Statements
- Revenue Assurance Operating Policy
- Revenue Assurance Standards
- Departmental Metrics

General Company Polices and Procedures

- Company Mission and Vision Statements
- Travel Policy and Guidelines
- Code of Ethics
- Software Policy

Revenue Assurance Templates and Documents

- Positions Descriptions
- Training Programs
- Performance Assessments
- Risk Assessment Methodology
- Audit Program and Checklists
- Documentation Standards

38. RACD organizational reporting responsibilities

The question of where revenue assurance should report is critical. Some believe that organizational structure drives function. For a properly functioning RACD, it is important that a company define its scope, responsibilities, reporting relationships, and organizational alignment of the revenue assurance function in order to determine its proper structure. Overall, the decision on where the RACD should report should be based on where it will provide the most benefit to the organization. Refer to Exhibit 12: RACD Ownership Comparison.

1. Scope

Current Assurance Activities

Revenue assurance is a monitoring activity within an organization. The core revenue assurance activities include monitoring, baselining, auditing, synchronization, investigation, and correction. Many of these activities are already done by organizations at some level, usually by Operations, Finance, Internal Audit, or IS. The question then becomes, at what level should a revenue assurance function or RACD be installed to effectively reduce risk or maximize revenue recoveries, given cost benefit constraints? Centralization of some monitoring activities will allow a better understanding of the revenue cycle.

Size, Risk, and Complexity of the Organization

Certainly the smaller, less complex or well-controlled organizations have less need for a formal or large RACD function. Additionally, the more ownership the traditional functions of Finance, Operations, Quality, and IS take for revenue assurance activities, the less the need for a formal RACD function. Therefore, more of these activities can be removed from the RACD.

Conversely, for a large company with distributed processing functions or complex billing calculations, the need for a central revenue assurance function (or one with a more expanded role) is more appropriate. A company must match its need for formal structure to its revenue loss risk.

Tools for Assessing Current Alignment

Risk maps and revenue assurance matrices can be created to assess the current scope and effectiveness of revenue assurance activities across the company. This exposes opportunities for risk mitigation or recovery. Ultimately, any gaps will need to be filled by existing control owners in operations, a RACD within operations, or an operationally independent RACD function.

2. ***Responsibilities***

Generally speaking, the roles and responsibilities of a formal revenue assurance group will be needed (or expanded for those already in place), if the risk of loss in revenue is not adequately addressed by operations or some other control function. Thus, revenue assurance function augments those revenue assurance activities currently not being performed within the organization.

Regardless of where it reports, revenue assurance is a shared responsibility within the organization.

3. ***Reporting Relationships***

An organization with an emphasis on accounting and finance may desire to structure the reporting relationship within the finance function. An organization that is highly centralized and specialized may decide to place a RACD within a special group.

4. ***Organizational Alignment***

The organization's culture, structure, and current control environment will determine where the RA function resides. If more independence and a holistic view of the revenue chain are necessary, the company may find it appropriate to maintain separate functions within finance, a shared services center, or other group.

Center of Excellence (COE)

If the organization desires to build out a world-class revenue management function, creating a separate Center of Excellence (COE) may be the answer. A COE consolidates expertise and capabilities for the organization. Moreover, it standardizes practices, policies, and metrics to achieve efficient and effective results for the organization. COEs can exist in the corporation for nearly all functions. For example, a company may set up a COE to address health and safety concerns in a high-risk industry.

Revenue Operations Center (ROC)

Telecommunications use Revenue Operations Centers (ROC) to centralize testing, monitor revenue leaks and fraud, and serve as the hub for resolving issues across the company.

For the small or well-controlled organization, a function built within existing operations may suffice. Utility and retail energy providers may explore a ROC as an option.

Shared Services Center (SSC)

A shared services function is a central processing center for large volumes of basic transactions such as accounts payable, travel and entertainment, and billing invoices. Benefits are derived by concentrating processing in a central function. The SSC may be an option for certain RACD operations because of the central nature and finance focus of the function.

Exhibit 12
Revenue Assurance Ownership Comparison

	Exclusively Operations	Exclusively RACD	Shared Responsibility
Description	Revenue assurance is limited to operations control.	Revenue assurance is exclusively owned by a RACD group outside operations.	A RACD group is created external to operations with shared ownership between the RACD, Operations, Finance, and other functions. Each group shares in the evaluation and monitoring of revenue.
Control Philosophy	Control is limited.	Control is full time job.	Control is fit for purpose based on the needs of the organization.
Ownership	Ownership of revenue controls would be limited due to operations being tied up with normal daily duties, limited independent oversight, and limited understanding of interfaces outside of operations (e.g. accounting and finance).	Operations may not accept ownership in something they have no authority or responsibility over. The trend would be for operations to expect the "QA group"—(i.e. RACD) to catch all the issues.	Balances the ownership of roles and responsibilities thereby permitting a single point of ownership that is cross-functional and addresses interface issues (holistic view).
Effectiveness	Limited to operational issues. Could create a moral hazard due to limited independence.	May be limited based on resources and understanding of technology and marketing.	Provides an end-to-end focus from contract to cash. The RACD will lead the assignment of assurances throughout the organization.
Efficient	Yes	Not efficient	Both effective and efficient

Fractured revenue assurance can lead to duplicate efforts or counter-active efforts between groups or functions. A holistic approach that reports to senior management is paramount.

39. The RACD fills any gaps left by operations

Well-controlled organizations, or those with relatively simple billing structures will have fewer operational revenue gaps, making the need for a formal assurance function less critical. However, reasons for implementing a RACD include the following:

Control Mindset Traditionally managers are responsible for planning, organizing controlling, and directing. The reality is that most managers and incentive plans are tied to execution of daily duties, not controls. In fact, how often do managers earn incentives for improving or implementing controls? They get penalized for lack of controls, but positive incentives don't exist for improving control or recovering dollars that were their responsibility initially. *This built-in disincentive creates a moral hazard for the manager.*

Independence Creating an independent view of the revenue and billing operations for those organizations with complex billing processes provides a wider view of issues and a more direct line to senior leadership for communicating revenue challenges.

Visibility Visibility drives accountability. If a metric or issue is reported openly and repeatedly, it will get assigned ownership at some point. A single RACD focus encourages this accountability.

Interfaces It is a well-known fact that many process control breakdowns occur at the intersection of system or functional interfaces. However, these interfaces are least likely to be owned by any single individual or team.

Priorities Meeting customer needs, limited budgets, quarterly targets, employee turnover, and leadership requirements stress resources. This means controls, including revenue control—are often overlooked.

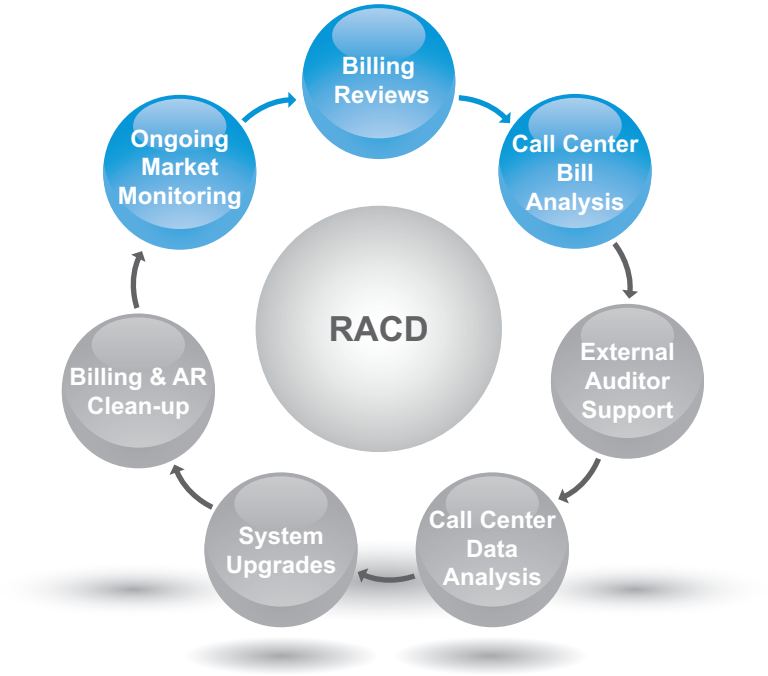
Holistic View Companies need a holistic view of processes and their associated metrics across the organization. The revenue or demand chain crosses multiple areas including Customer Service, Metering, Product Structuring, Billing Operations, Credit and Collections, and Accounting.

40. Scope and roles of the RACD within an organization

The primary scope of responsibilities for a RACD will be limited to completing ongoing sample programs of billing data, monitoring activities of new markets or previously audited markets, and analyzing trends of current billing data. (Refer to Exhibit 13: RACD Range of Scope). Special projects involve supporting the organization's ongoing efforts related to external and internal audits, system upgrades, testing monthly and daily operational controls, and other special projects.

The scope and depth of these special activities will evolve based on the experience of the RACD staff, the organization's trust in the abilities of the RACD group, budget constraints, and competing factors from other support functions. As the RACD matures it should become the hub of multiple revenue initiatives for the organization.

Exhibit 13
RACD Range of Scope



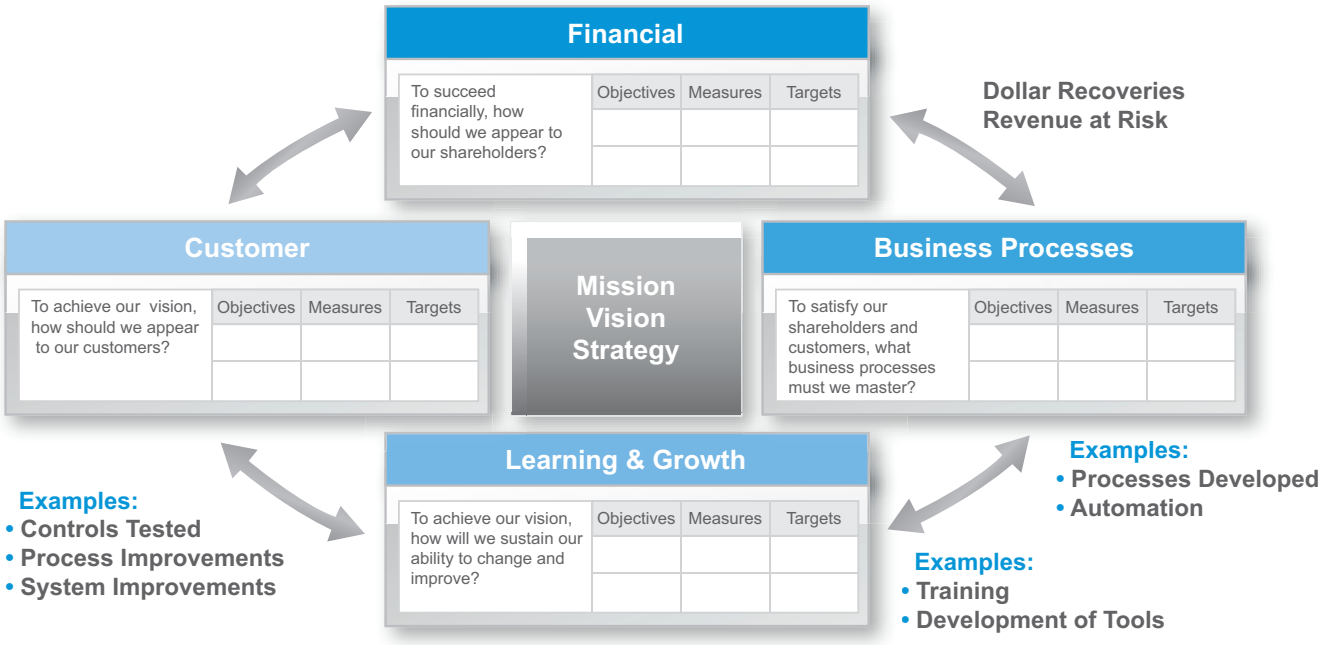
41. Measuring RACD effectiveness

Revenue assurance is effective when it meets the following objectives:

1. Identifies and recover hard dollars
2. Calculates revenue at risk
3. Provides a view of revenue leaks and control issues
4. Provides recommendations for control improvements

A RACD must establish a foundation to meet these objectives, including assignment of a full-time, accountable team. The Balanced Scorecard™ is a good tool for providing the visibility and therefore accountability of RACD operations. The Balanced Scorecard was developed by Robert S. Kaplan in the early 1990's as a useful tool for integrating and measuring performance. Refer to Exhibit 14: Balanced Scorecard for RACD Function. The Scorecard is a tool for gauging RACD effectiveness. It helps balance the goals of the key elements of financial, customer, people, and processes.

Exhibit 14
Balanced Scorecard for RACD Function

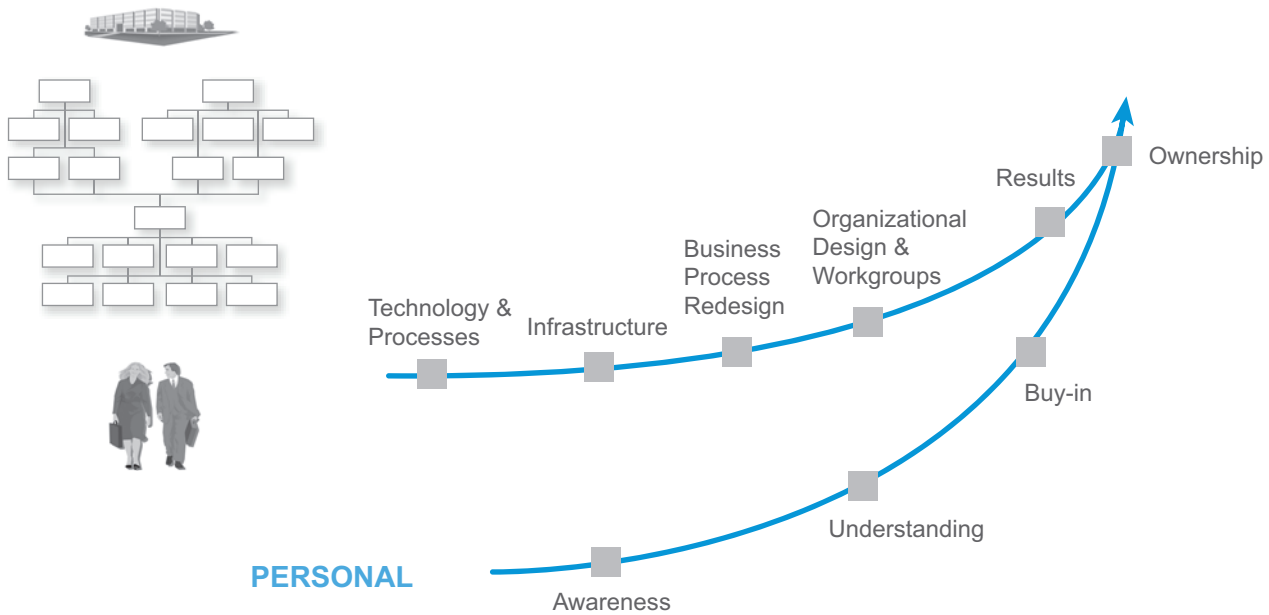


Each domain of the balanced scorecard includes sections for objectives, measures, targets and initiatives.

42. Issues associated with implementing an RACD

Successful change enablement optimizes the transitions of both people and organization over time to create ownership. Refer to Exhibit 15: Change Management Migration

Exhibit 15
Change Management Migration



Like other recovery programs—sales and use taxes, accounts payable, and telecommunications and utility bill recoveries—change management is internal and thus less problematic. Unlike other implementations such as supply chain and treasury projects, there is little or no inter-organizational integration with external trading parties such as suppliers, customers, and trading partners.

Additionally, because of the control nature of the project and potential for capturing or improving revenue recoveries, the RACD concept is well received. However projects are managed by people. So management principles for integration of new functions or processes do apply. The fundamentals include sound application of change management, communication management, and project management:

I. Change Management

- Assess readiness of the organization for change
- Identify sponsors for the initiative
- Assign a change management representative to build out the change management infrastructure
- Align human resources with processes—recruiting, training, measuring and rewarding—to influence new behaviors in support of the organization's vision
- Align leaders' values and behaviors with the organization's vision. Leaders need to possess the skills necessary for driving the change process to completion and accept responsibility for that change
- Create incentives to increase individuals' and teams' abilities to enact the organizational vision and operate effectively in the new environment
- Assess alignment of the current culture with the change process and build appropriate new values and behaviors for supporting the desired change

II. Communication Management

- Communicate purpose and goals of the RACD process
- Build awareness through creating an infrastructure and a plan to change goals, communicate progress toward attainment of these goals, and encourage collective ownership of the change process and outcomes

III. Project Management

- Create an executive steering committee
- Obtain appropriate funding for the capability
- Define a clear Project Management Office (PMO) with a single manager and sponsor
- Integrate Operations, Finance and Accounting as well as Information Systems into the project from the beginning
- Appoint a project administrator for larger projects or implementations to handle administrative functions such as booking travel, scheduling meetings, tracking time and expenses, and handling general communications
- Build in basic data controls for receiving, transmitting, extracting, and validating data
- Assess the capability of the RACD group and the organization's IS capabilities to obtain billing and related data on time, completely, accurately, and in the correct format

Exhibit 16: RACD Organizational Effectiveness highlights the dynamics of the relationship between Change Management, Communication Management, and Project Management for achieving organizational effectiveness.

Exhibit 16:
RACD Organizational Effectiveness

Note that maximum project effectiveness is achieved at the intersection of change management, project management, and communication management.

43. How the RACD fits into an organization's overall governance model

Questions to consider:

- Will the RACD be exclusively part of Operations or a separate function from Operations?
- Will the RACD group be an independent group reporting directly to senior management?
- Will the RACD be set up to address billing issues and test billings on an ad hoc or project basis only, or as a permanent function?
- Will the RACD address cost of commodity and inventory/storage issues, as well as revenue issues? What is the scope of service?
- Do the current monitoring activities of Internal Audit and other assurance functions within the company adequately address the needs of revenue processes?
- Does management desire to start small and grow the scope of the RACD function over time based on benefits recovered?
- Does management see a greater benefit in assigning control ownership to those who perform the operations daily?
- What is a realistic assignment of resources to a RACD (cost/benefit)?
- What information and results will be shared?

Organizations usually have three levels of governance: executive, senior, and process or functional.

Executive

Executive governance includes structures or representation in the form of the audit committee of the board, external audit, and internal audit. Their effectiveness resides in the fact that each is independent of operations and management, reports directly to executive management, and has authority to directly address areas of concern within the organization.

Senior

Senior governance includes structures or representation in the form of risk committees, risk management and insurance functions, and system and process control groups. Their effectiveness is in the deep-skill level and industry support for their disciplines and reporting relationships to senior management.

Process/Functional

Process level governance includes structures or representation in the form of special fraud groups, International Organization for Standardization and process or continuous improvement teams, Billing Operations, and Quality Assurance. Control groups within operations and accounting are included as well. Their effectiveness is in being on the front lines of daily transaction processing.

The choice of where to place the RACD in the governance model will be based on the questions raised above, the current effectiveness of existing governance groups, and the company culture. Factors that will provide for an effective RACD function and contribute to the existing governance model include the following:

1. ***Independence*** A RACD group that is independent from Operations creates a strong accountability structure. However, this should not create the impression that all revenue monitoring must be shouldered by a single group. Operations will still have authority and accountability for certain revenue control issues.

2. ***Reporting to Executive or Senior Leadership*** Functional strength can be enhanced by reporting directly to senior or executive leadership.

3. ***Shared Integration with Operations*** Regardless of where the RACD resides in the organization, revenue assurance responsibility should be shared across the organization. When gaps in an operation's control responsibilities are large, the organization will need a more robust RACD function. The other extreme—a well-controlled operations function will require a less encompassing RACD. Monitoring and oversight may become a shared responsibility. Over time, all responsibilities will become better defined. The best model is one of partnering RACD with operations.

4. ***Holistic but Specialized Skills*** The ultimate test of RACD effectiveness will be that a team provides a holistic view of operations. A holistic view means a view of the market, products, Customer Service and Call Center Operations, Operations, Information Systems, Billing, Accounting, and Collections. Since the RACD requires significant data analysis, specialized data extraction and analytical skills are necessary. Skills in marketing and operations are also beneficial.

44. Industry standard for revenue assurance

A good place to start in forming a RACD is to determine which standard or guideline to use. A standard is the single benchmark by which quality is measured.

Several audit or audit-related organizations have standards that can be adopted as a guideline for quality and professionalism in the revenue assurance industry:

The Global Revenue Assurance Professionals Association (GRAPA)

"The Global Revenue Assurance Professional Association, Inc. (GRAPA) is a not-for-profit corporation, incorporated in Illinois, USA, in 2007. The association is managed by volunteers who are interested in the promotion of professional standards in the telecommunications revenue assurance industry. All team members volunteer their time and expertise." (From GRAPA's web site: www.grapatel.com)

Note that although GRAPA primarily supports the telecommunications industry, it includes members from several industries. Its tools and techniques are applicable to energy. *GRAPA provides revenue assurance standards, benchmarks, frameworks, training, and professional support to professionals from revenue assurance through committee membership.*

The Institute of Internal Auditors (IIA)

The IIA provides excellent thought leadership in auditing principles that can be applied to revenue assurance. The IIA offers training, certification, and industry standards that can be applied in implementing and maintaining an effective assurance program. (www.theiia.org)

The American Institute of Certified Public Accountants (AICPA)

The AICPA is the primary certifying body for Certified Public Accountants (CPA's). Like the IIA, it offers standards, training, tools, and technical resources that can provide the foundation for a new RACD function. (www.aicpa.org)

45. Relationship between RACD and revenue recognition

Revenue recognition continues to be a top-ten issue raised by the U.S. Securities and Exchange Commission (SEC), auditors and finance professionals. Revenue processes continue to be one of the top areas driving materiality when errors occur. Risk in revenue reporting is driven by the following factors:

- Complexity of contracts and revenue accounting
- Treatment of deferred revenues
- Treatment of accrued revenues
- Netting of costs and revenues in certain transactions (e.g. trades)
- Timing of recognition based on delivery and receipt of services, contract acceptance, etc.
- Assignment and allocation of cost to revenue
- Contra revenue events—credits and rebates

Process standardization, automation, training and expertise, and oversight mitigate these risks.

A RACD's role should be to understand these issues as part of its revenue reviews. Moreover, as transactions are traced from contract to cash and vice versa, the underlying accounting can be validated and challenged.

46. Internal Audit and RACD must collaborate

Internal Audit's (IA) role within the organization is to monitor the activities and controls of the organization's functions to ensure each function, program, or business unit meets its goals as presented to management. To that end, IA should be involved in overseeing the activities of the RACD and evaluating its effectiveness to the organization as a whole.

An argument could be made to place RACD within the Internal Audit (IA) function. This is possible if the function does not perform operational duties but rather exists primarily as an oversight function. However, if the RACD's mission is to be an additional control within Operations or outside Operations, then placement outside IA is best. Although the IA group may recommend process improvements and serve as a value-added consultant to the organization, it does not traditionally oversee recovery or process improvement projects. IA's role commonly serves as a compliance function.

47. Role of Sarbanes-Oxley in the revenue assurance process

Sarbanes-Oxley Act (SOA) certifications provide a standard framework for management to audit for the purpose of ensuring basic controls that support financial reporting are in place. There are multiple frameworks to consider: internal audit checklists, SOA frameworks, ISO frameworks, and others. The premise of

these compliance frameworks is that if the objectives are met through documentation and testing, then a standard is met, thereby qualifying the entity or department as certified to a minimum standard.

However, a RACD project, like other recovery projects (e.g. accounts payable, sales and use taxes, telecommunications audits, and fraud recovery), works under the premise that dollars are exposed and creates plans for direct recovery, not necessarily only risk mitigation. Additionally, *the essence of a RACD involves setting up a sustainable process to baseline operations, monitor revenue risks, audit for recoveries, investigate inquiries, and recommend process improvements.*

48. Internal Audit's role in the RACD

Because the RACD is a monitoring control for the company over a major area—revenue—the RACD concept should be well received by the organization's internal auditors. The organization's internal auditors can leverage and rely on the control work and testing completed by the RACD.

49. External audit's role in a RACD

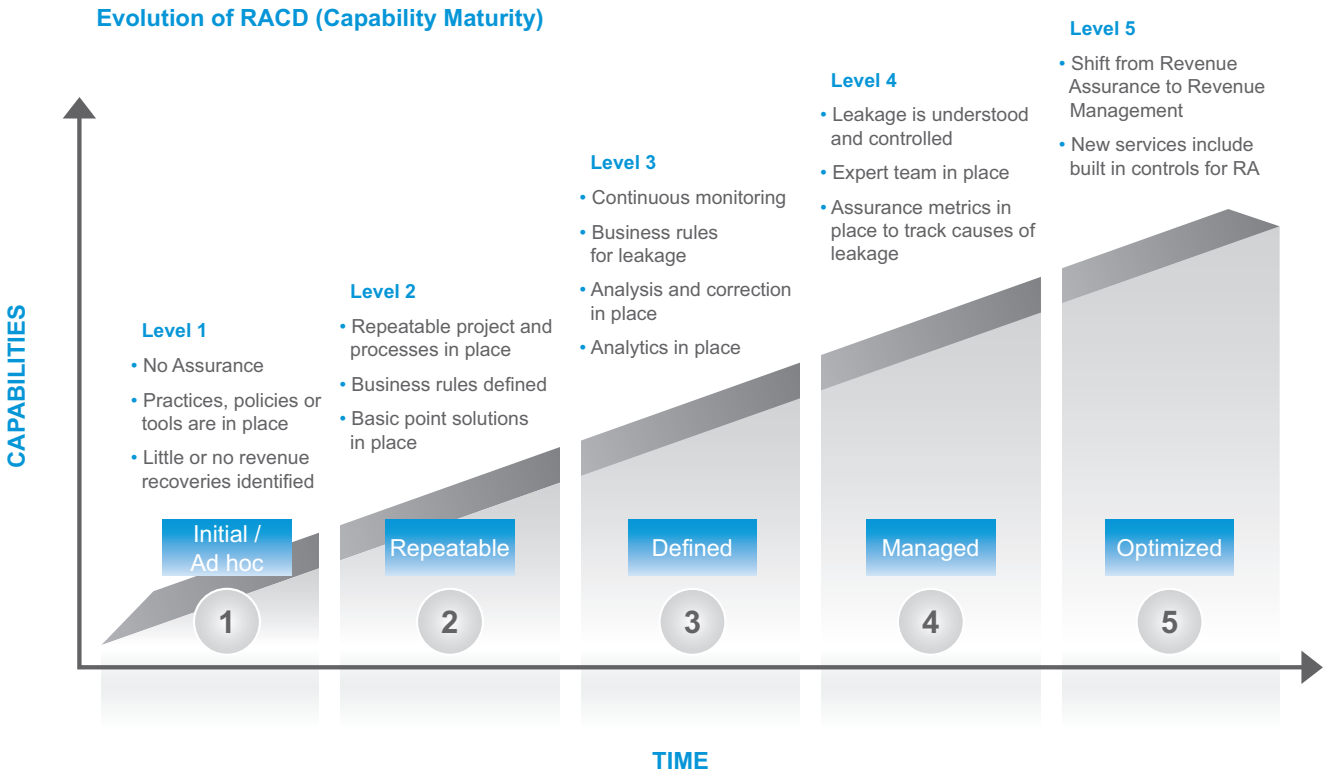
The financial auditor should work in an advisory role to the RACD. A RACD should consider its recommendations as it builds out its recovery plan. Financial auditors should be able to rely on detailed testing and controls that the RACD provides in meeting revenue objectives that will support the opinion letter.

Part 6: Future of RACD

50. Evolution of RACD functions

The RACD function for utilities and retail energy providers will continue to mature. Several models can be used to outline this maturity including the Capability Maturity Model or CMM. The CMM was developed by Carnegie Mellon University (CMU). The CMM has its roots as a software development model for managing the effectiveness of large projects. The overarching purpose of any capability model is to set a standard or expectation for the future. The model's assumption is based on five levels of capabilities, each advancing from one level to the next and prefaced on meeting certain standards at each level. Refer to Exhibit 17: Evolution of a RACD for a basic application of the model to revenue assurance.

Exhibit 17
Evolution of a RACD



Assumptions for a capability are as follows:

- Capability for an organization, person, or activity takes time to develop
- Capabilities accumulate with experience, and one set of capabilities may depend on mastery of another capability set
- Standardization, processes, visibility, and accountability create and improve capability

From a revenue assurance perspective, three major shifts within the capability are as follows:

Need for Assurance to Recovery This includes basic risk assessment and ad hoc risk reports and is generally associated with levels 1 and 2 of the model. Companies at this level have no RACD, or are in the early stages of an implementation.

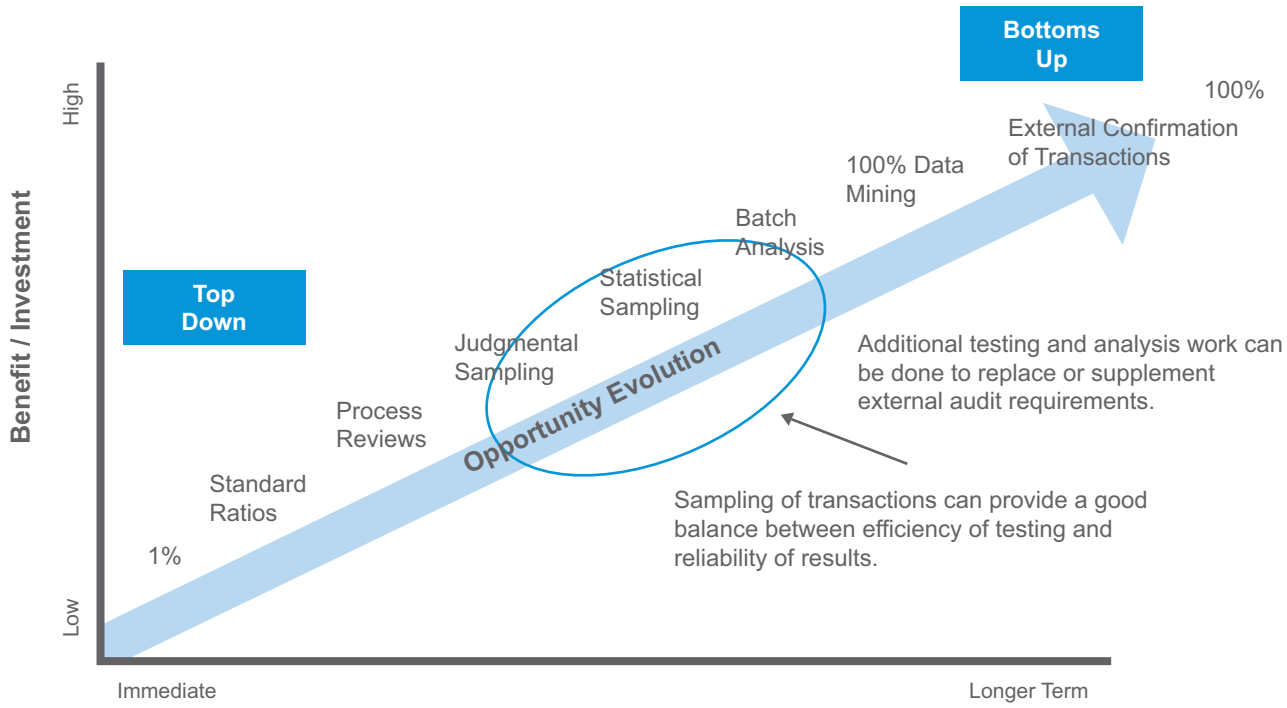
Revenue Recovery to Revenue Assurance At this stage (levels 3 and 4) the emphasis in on continuous auditing, sampling, leakage tracking, and root-cause analysis.

Revenue Assurance to Revenue Management This is the final stage (level 5) and represents full, real-time monitoring of transactions, continuous improvement, and integration of the revenue assurance function with other corporate initiatives. Additionally, an end-to-end view of the revenue process is tested and monitored for leakage points.

The Global Revenue Assurance Professionals Association (GRAPA) and TeleManagement Forum (TM Forum) have revenue assurance frameworks and Revenue Assurance Maturity Models (RAMM) that can be used as a foundation for goal setting.

The foundation of an effective RACD function rests on the ability to extract, validate, and analyze large amounts of data. Over time the RACD for utility and energy providers will migrate from a top-down analytical procedure to statistical sampling and from sampling to bottoms-up, 100% real-time monitoring of all market and billing related data. Refer to Exhibit 18: Data Testing Migration.

Exhibit 18
Data Testing Migration



As noted in the Exhibit 18, the pivotal point for analysis that currently provides the best return for investment is a complete statistical sample of data for analysis. As RACD software and data analysis techniques mature, 100% extraction and analysis of the data will be possible.

51. *The future of RACD: common and best practices*

The RACD of the future will move from a simple test of completeness of customer counts and billing to real-time continuous monitoring of transactions with the market (market settlement system). Refer to Exhibit 19: Evolution of RACD Testing Methodology.

Exhibit 19
Evolution of a RACD Testing Methodology

Fully functional revenue assurance functions of the future will include the following practices for a RACD serving the utility and retail energy provider:

1. The solution will be an integration of external market, and internal operations and finance processes
2. Any solution will need to be three-pronged: people (structural issues and reporting), process (business rules auditing and bill templates), and technology (data management)
3. An integrated industry framework for revenue assurance will emerge
4. Coverage will be from contract to cash
5. Integration will migrate from within the company to external market participants to validate and confirm revenue and cost data against multiple parties
6. An industry practice group under GRAPA or another new organization with strictly an energy focus will emerge to support revenue assurance for the energy industry
7. Revenue assurance could expand to include cost settlement and storage contracts
8. Service Level Agreements (SLA) for some RACD models may be appropriate
9. Assignment of a full-time executive (officer level) to lead revenue assurance will be more common

10. Return on Investment (ROI) will be based on actual results of leakage prevention or recovery
11. An action program will be created to address real-time exceptions—similar to continuous monitoring in the audit profession

Best practices, benchmarks, and reference materials can be obtained from the following organizations:

1. Global Revenue Assurance Professionals Association, Inc. (GRAPA)
2. American Productivity and Quality Association (APQC)
3. Shared Services & Outsourcing Network (SSON)
4. Technology Management Forum (TMF)

52. *Impact of Advanced Metering Infrastructure (AMI) and other technologies on revenue assurance*

There are several leading technologies in the utilities and retail energy provider segment:

- Automatic Meter Reading (AMR) modules
- Radio Frequency Identification (RFID)
- Smart Metering (SM) or Advanced Metering Infrastructure (AMI)
- Meter Data Management Systems (MDMS)
- Tracking physical meters from supplier to customer
- Auto theft detection of meter tampering

While these technologies contribute to real time and more accurate data integration with partners, risks will need to be addressed through the RACD group.

There will be larger amounts of data transferred across systems through a process that will need to be controlled. An analogy of this is seen in the telecommunications industry, which is highly automated. This is a good example of the need for more sophisticated assurance monitoring systems, including real-time monitoring protocols:

- Appropriate testing points will have to be established
- A RACD team will be part of any implementation processes for these technologies

Part 7: How Kopac Consulting will create RACD opportunities for your organization

1. ***Project sizing*** Highly skilled and experienced energy consultants will conduct an initial on-site review, analyzing data and making detailed interviews with Operations, Information Systems, and Finance staff. Our assessment will help determine where potential revenue losses are likely. Your entity's transaction volume, market distribution, and billing complexity will determine the time and scope of our assessment.

2. ***Proof of concept*** After the initial assessment has been presented to senior management, they will decide the size and market parameters for conducting a pilot assessment. By statistical extrapolation from the assessment results, your organization's baseline revenue at risk is established.

3. ***Sustainability*** After extrapolating the data, the last step involves designing and building-out a permanent, or variable RACD structure. A RACD solution will be designed to suit the size and complexity for your organization. Kopac will present senior management with practical recommendations that fit your company's needs. For example, small organizations may need only one dedicated RA professional. Large companies will need personnel commensurate with their size. Lastly, management will decide how best to proceed. They may choose to implement an organization-wide RACD, gradually phase in a RACD installation over a longer period, or outsource the function to Kopac Consulting for periodic review and maintenance.

Kopac helps management define the key elements of a successful RACD function: Refer to Exhibit 20: RACD Strategy, Structure, and Policies.

Exhibit 20
RACD Strategy, Structure, and Policies

I. Customer

Define the customer.

1. There may be multiple customers:
   - Executive Management (Ops)
   - Executive Management (Finance)
   - External Customer

II. Strategy

1. Determine Mission and Vision
2. Complete Charter or other Statement of Purpose. RACD Charter should outline
   - Introduction and Scope
   - Standards
   - Authority and Responsibility
   - Reporting/Actions
3. Define Critical Success Factors (CSF): Recoveries, Customer service, Risk management

III. Policies

1. Create Revenue Assurance Control Desk (RACD) Policies and Procedures based on the scope and purpose of the RACD

IV. Organization

1. Define organizational reporting structure
2. Define key responsibilities
3. Create basic training program in order to define a consistent standard

No two organizations are exactly alike. Your company's unique revenue assurance needs are developed in concert with management using the above system of thinking. In addition to mapping out where a RACD originates, and to whom it reports, Kopac will assist management in deciding if your company is best served by a permanent or variable RACD structure. With proper planning and oversight, your RACD function will mature and become successively more efficient in protecting your company's revenue stream.

ABOUT KOPAC CONSULTING, LLC

KopacConsulting®

Providing Business Solutions to the Energy Industry

How is Kopac different?

Kopac Consulting is a Houston based company providing solutions to energy related companies in North America. Our leadership has more than 55 combined years of consulting, professional accounting, and industry experience. We are measurably improving companies with disciplined thought and impeccable execution. Our integrated teams of experts in business, accounting, information technology, and operations will deliver permanent answers to your company's challenges. Kopac will work expeditiously and efficiently to strengthen your company, then leave.

Innovative Services

Kopac Consulting provides four groundbreaking tools for lowering costs and increasing revenues:

1. ***Revenue Assurance*** - Our proprietary Revenue Assurance Control Desk (RACD®) solution
2. ***Capital Planning & Investment***^{SM} - Our method to provide maximum visibility of investment decisions and deal flow
3. ***Managed Project Solutions***^{SM} - Special project management and technical support for your accounting reconciliations, implementations, recoveries, and due diligence support
4. ***Supply Chain Management*** - Our SCM solutions support key systems such as:
   - Supply Chain Risk Management
   - Strategic Sourcing
   - Process Improvement
   - Inventory Control and RFID

Commitment to Success

Kopac consultants will exercise individual initiative in solving your company's problems. Our consultants are trained to make value judgments. They will separate the essential from the non-essential and prioritize their time and attention in tackling the biggest problems first.

Kopac only hires experienced proven problem-solvers. All full time employees have masters or professional degree, a CPA or another professional designation; and extensive energy industry and professional service firm experience.

Energy Industry Expertise

Kopac offers specialized energy expertise across multiple segments including geological and geophysical; oilfield services, exploration and production; transmission and distribution; refining and marketing; power generation, regulated utility and deregulated retail energy providers; and trading and marketing.

Integrated Perspective

Successful business improvement must integrate throughout your entire organization. Any new project must work harmoniously with your organization's current Operations, Accounting and Finance, and Engineering departments.

Integrity and Confidentiality

Kopac adheres to strict business conduct and industry standards of confidentiality. We will complete your project expeditiously and leave. When you engage Kopac you enlist a partner. You should expect our help in permanently improving your business. Your company will receive what it needs to prosper.

APPENDIX I: REVENUE LEAK POINTS AND MITIGATING TOOLS

Exhibit 21
Revenue Leakage Points

	Leakage Description	Mitigating Tool	Originating Function
1	Line Loss	• Transformer optimization • Demand Response Programs (DPR) • Meter Data Management Systems (MDMS)	Engineering
2	Commercial Losses Due to Natural Disasters and Plant Failures	• Contingency plan • Insurance • Back-up power and alternative energy • Regulation and cost recovery	Operations
3	Improper Meter Hookup and Net Meter Installation	• Photographs • Training	Operations
4	Meter Change Outs and Upgrades	• Training	Operations
5	Incorrect Meter Read	• Training and RACD sampling	Operations
6	Theft (Tampering) From Known Accounts	• Seals • RFID • Advanced Meter Reading (AMR) with reverse rotation indication • AMR with data pattern analysis • Work Management Systems (WMS)	Operations
7	Theft Via Stolen Meter	• RFID tagging & Global Positioning Systems (GPS)	Operations
8	Theft From Unclosed or Other Account	• Compare billed versus delivered energy to energy service providers	Operations
9	Unmetered Accounts	• Compare billed to delivered energy	Operations
10	No Customer Assigned to Active Meter and Active Usage	• Compare billed to delivered energy	Operations
11	Timing Delays in Reading Meters	• Policies & procedures • Training	Contracting
12	Incorrect Tariff Code Used	• RACD sampling	Customer Service
13	Outdated Tariff Code Used	• RACD sampling	Customer Service
14	Plan Switches & Upgrades	• RACD sampling	Customer Service

Exhibit 21:
Revenue Leakage Points Continued

	Leakage Description	Mitigating Tool	Originating Function
15	Duplicate or Missing Customer Files	• Contract testing • Contract Management Solution (CMS)	Contract Management
16	Data Input/System Errors	• Control checks and monitoring	Information Systems
17	Unit Changes	• Control checks and sampling	Information Systems
18	Improper Netting of Trade Activity	• RACD reviews and controls	Settlement
19	Variances between Actual and Forecasted COGS	• Isolate and understand variances between actual and forecasted COGS	Settlement
20	Incorrect Volume Assignments	• Reconciliation of trades to consumptions	Settlement
21	Ineffective or inefficient Hedging	• Defective hedges	Portfolio Management and Hedging
22	Customer Walks From Account	• Credit scoring, modeling, pre-pay and deposits • Aging of accounts	Collections
23	Customer Fails to Pay	• Credit scoring, modeling, pre-pay and deposits where allowed by regulatory authority	Collections
24	Liquidated Damages for Contract Terminations	• Training	Collections
25	Customer Moves	• Tracking	Collections
26	Customer Post Shut off for Non-payment	• Credit scoring, modeling, pre-pay and deposits	Collections
27	General Ledger and Sub Ledger Interfaces	• System access control	Information Systems & Accounting
28	Credit and Debit Memo Application	• Accounting controls	Accounting
29	Manual Entries to Accounts	• System controls	Accounting
30	A/P (Trades) Netted with AR Accounts	• Accounting and system controls	Accounting
31	First Bills and Last Bills	• Accounting and system controls	Accounting
32	Billing Corrections	• Reconciliation of accounts	Accounting
33	Duplicate Postings	• Reconciliation of usage data to accounting data	Accounting
34	Budget Billing and Fixed Billing	• Reconciliation of accounts	Accounting

Exhibit 21:
Revenue Leakage Points Continued

	Leakage Description	Mitigating Tool	Originating Function
35	Unbilled, Accrued and Unearned Revenue Accrual	• Training • Reconciliation of accounts	Accounting
36	Data Input/System Errors	• Training • Testing of timing/algorithms	Accounting
37	Cash Applications in Bulk or to Incorrect Account	• Training • Reconciliation	Treasury
38	Security Deposits Netted with AR and Other Accounts	• Training • Accounting control	Treasury & Accounting
39	Regulatory Reporting Inaccurate	• Test market trading partners for compliance with standards	Regulatory
40	Improper Allocation of Revenue to Markets or Business Units	• Reconciliation with commodity trades	Reporting

A RACD will identify losses not picked up by conventional mitigating tools.

Exhibit 22
Key Leakage Areas

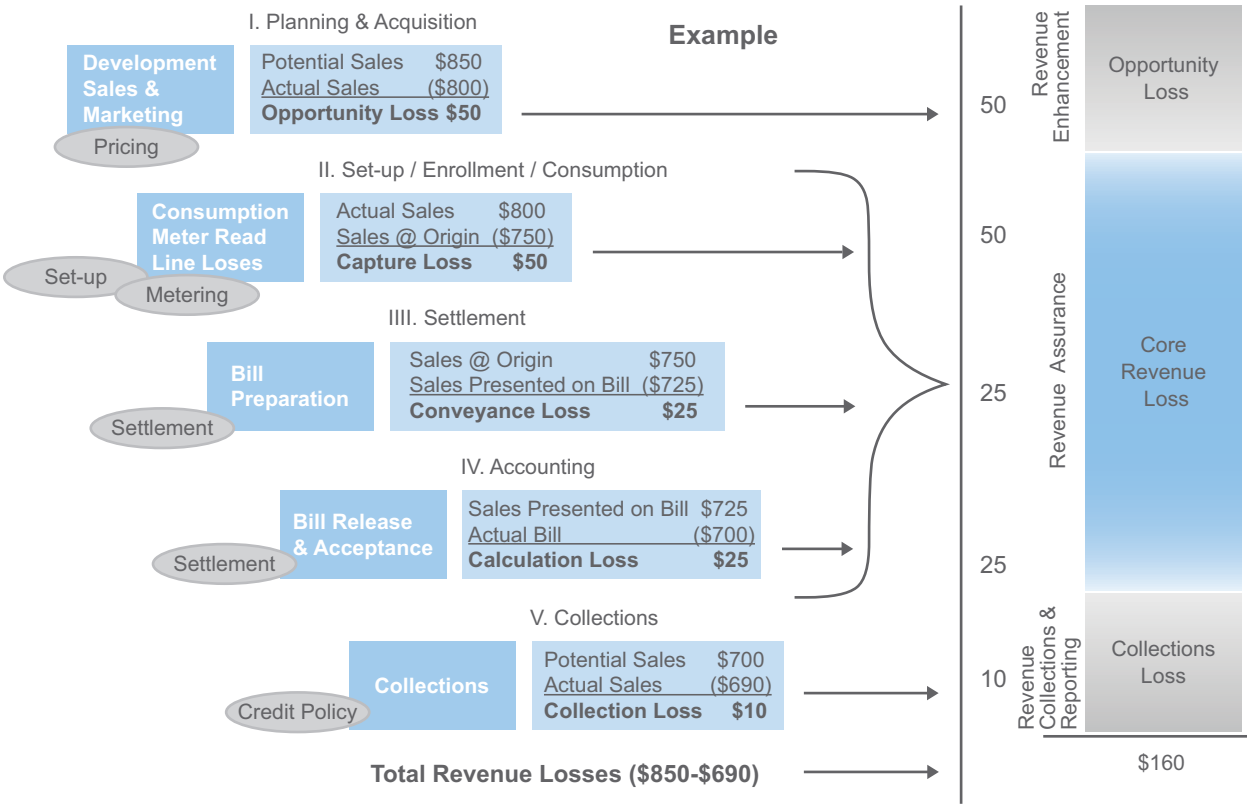


Exhibit 22: Key Leakage Areas highlights potential revenue recovery across the entire revenue service chain—enhancement, assurance, and collections. Management needs to create a holistic view to provide visibility to risks and opportunities.

Each company will need to determine the scope of service for its RACD program. Risk can exist or be mitigated as part of the up front pre-contract and contract stages of the revenue cycle as many revenue assurance and billing issues can be traced to the origination of transactions. Adequate reporting within the call center or other function is critical for ongoing monitoring of the revenue process.

Pre-contract Stages

The pre-contract processes set the stage for future revenue transactions. The RACD will need to evaluate the risks and opportunities for improvement within the pre-contract function.

The commercial function often has control of the terms and conditions that the sales team will work under.

Variation from standard contract terms and conditions creates the risk of missed revenue or losses in customer satisfaction.

Sales teams should be adequately trained on product structures, and contract terms and conditions. Additional training may be required on company policies, and regulatory rules so that what is stated during door-to-door visits with actual or potential customers is factual. The sales team should be adequately trained by Marketing. This will avoid offering products and services that are not supported by the company which can result in unnecessary fines, adjustments, and dissatisfied customers.

Contract Stages

Contracting The contracting process should be standard yet flexible. A process to control amendments, updates and customer plan changes should be in place. Invoicing procedures tied to agreements should be present to ensure billing is efficient and accurate. Approvals and supervision should be in place.

Credit Processes and controls should be in place to ensure necessary credit approvals are secured.

Contract Administration A process should be in place to ensure contracts can be tracked, reported, managed, amended, and changed. Additionally, failure to meet margin requirements on deals or charge correctly can increase the revenue at risk for transactions.

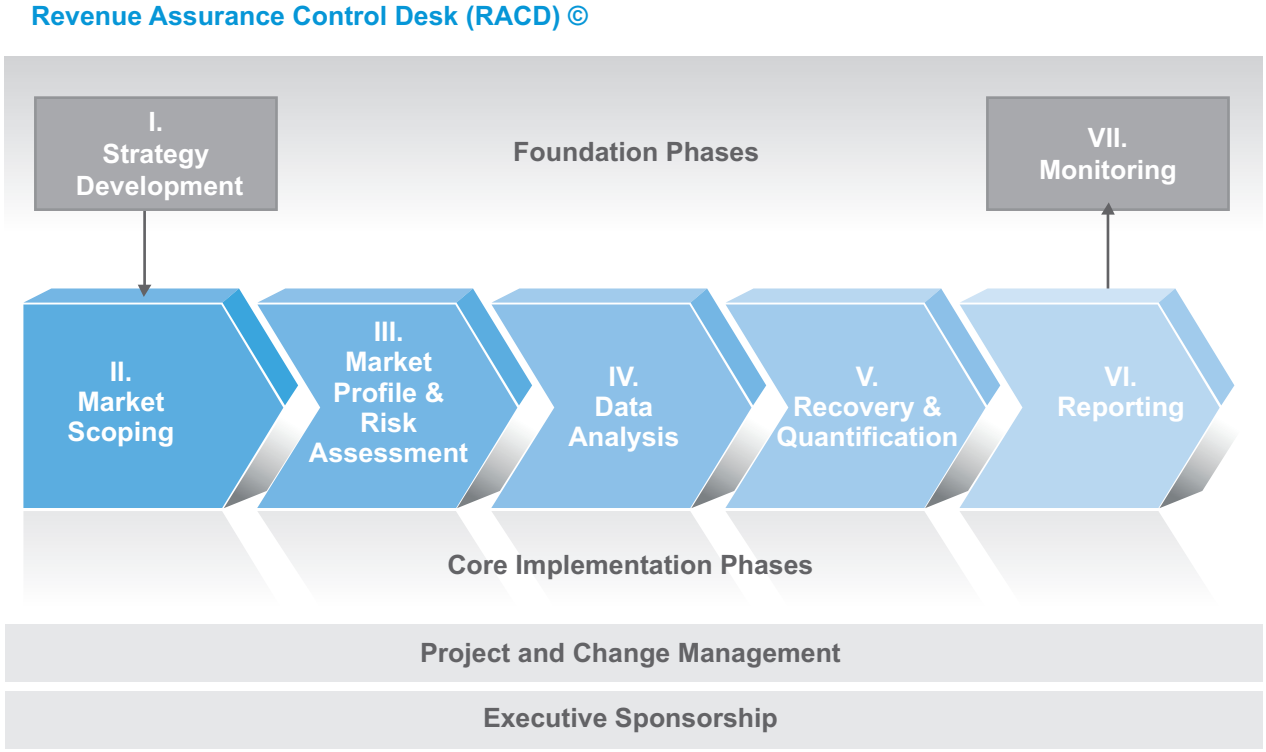
Reporting
Credit default reporting credit risk can be a factor driving losses for the company. In addition to upfront credit approvals and procedures, risk and default scoring and reporting should be in place that serve to highlight gaps within the organization.

Call center data can include reporting on potential or actual credit defaults. These scores can serve as an internal measure of the effectiveness of the strategy and business model which drive revenue assurance.

APPENDIX II: RACD SOLUTION

The RACD solution model pioneered by Kopac Consulting is outlined below.

Exhibit 23
RACD Framework



I. Strategy Deployment

Strategy questions originate by defining the identity of your company and its future direction. Defining the overall purpose for your revenue assurance function is critical for a successful implementation and maximizing future results. Typical questions and objectives at this stage are as follows:

1. Define mission, vision, and objectives of the function.
2. Define the scope of the revenue assurance function.
3. Define the structure of the function and how the function will fit into the current governance model of the organization.
4. Adopt an industry model, framework, or guideline.
5. Define revenue assurance's customers and articulate their requirements.
6. Define roles, responsibilities and structure of the revenue assurance function.

II. Market Scoping

Because of the size and complexity of energy companies, management should scope their revenue assurance plan based on multiple risk factors. Risk analysis helps organize and prioritize those markets deemed to have the most revenue at risk. A market is an auditable unit which includes an individual profit center, geographical, and commodity market. Regulated markets can be included as necessary. Risk assessment refers to an overall assessment of the organization's units at risk, not individual process risks.

III. Market Profile and Risk Assessment

A traditional two-factor weighting of materiality and impact is helpful in determining residual risk by market. Factors to consider include the following:

Exhibit 24
Risk Factors

Materiality	Impact
Revenue	***Finance***
Revenue/ID or Revenue/meter	Prior Period adjustments (PPA's)
Number of customers	Year-end adjustments
	Days Sales Outstanding (DSO)
	Collections risk
	Number of profit centers rolling up to units
	Customer
	Customer ID's
	Number of billing errors
	Customer turnover or churn percentages
	Call center complaints related to billing
	Number of products
	Process & System
	Complexity of billing
	Number of systems
	Number of adjustments to the ledgers
	Management Subjective
	Based on other factors such as management's assessment of leadership within the billing and revenue processes

Pilot Market The Risk Assessment phase forms the basis for supporting which market to select for a pilot and which should be subsequent markets to review. Changes in the plan can be made if necessary. Management and the implementation team should balance the organization's desire for obtaining quick results with minimizing project risk.

For example, choosing a market that is high risk, but also overly complex or large could result in significant project risk. Deadlines are likely to slip as the implementation team works through its understanding and the peculiarities of its new process—revenue assurance. However, selecting a market that's too small or simple to "get the revenue assurance process down" can result in management and the implementation team not challenging or appreciating revenue leakage assumptions and complexities. This may result in conclusions that are underwhelming at best. At worst, the validity and efficacy of the function may be undermined.

Consideration should be given to performing more than one pilot or a series of pilots to address critical assumptions and test the new revenue assurance process.

Market Profile and Risk Assessment To effectively manage, change, or implement any activity you must thoroughly understand its required steps. Process mapping can prove fundamental. Not an end in itself, process mapping is merely a means to understand an activity.

Due diligence involves a pilot market documentation of the following:

A. Market Environment and Participants

B. Revenue Processes and Key Process Risks

C. Products and Services

D. Organizational and Reporting Structures

E. Systems Architecture and Database Relationships

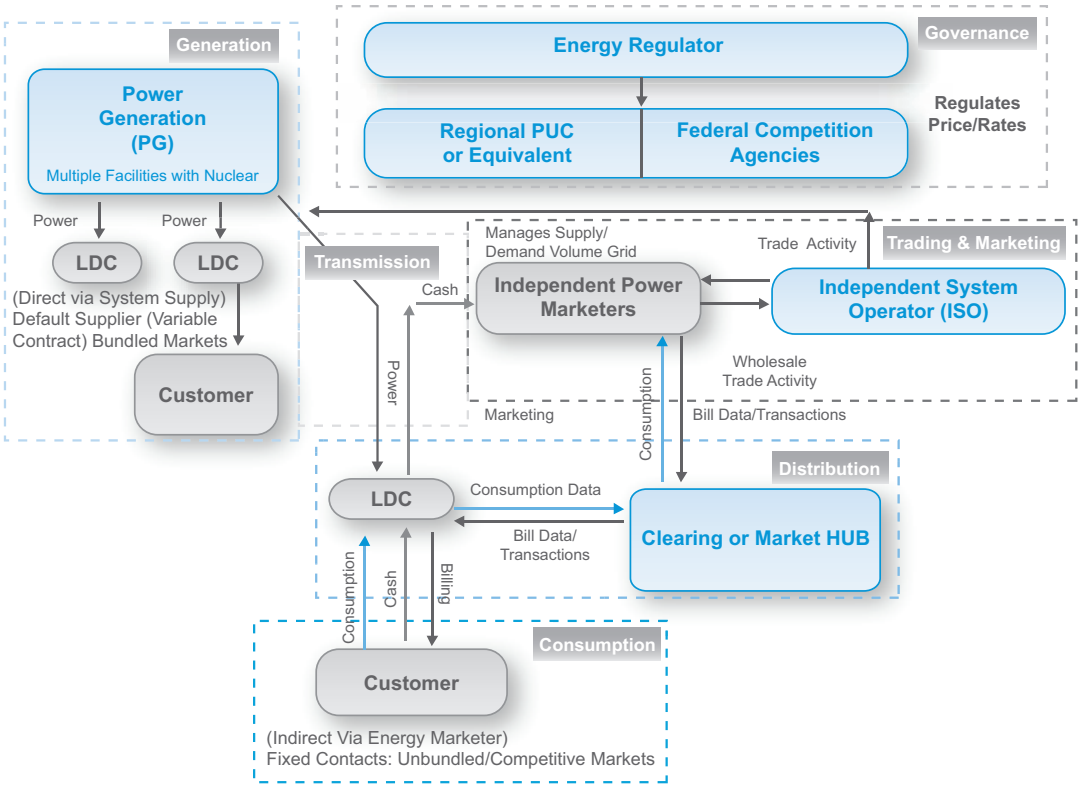
F. Cycle Times and Costs

A. Market Environment and Participants

Exhibit 25: Market Participants highlights entities in a market that includes competitive providers. This diagram provides context for understanding relationships and interactions of market participants. Examples of parties to include are as follows:

- Federal regulatory agencies
- Regional or local regulatory agencies
- Supply (power) providers
- Data or clearinghouse hubs
- Transmission providers
- Local distribution companies (utilities)
- Retail and wholesale customers
- 3rd party transactions processors (off-shoring organizations)

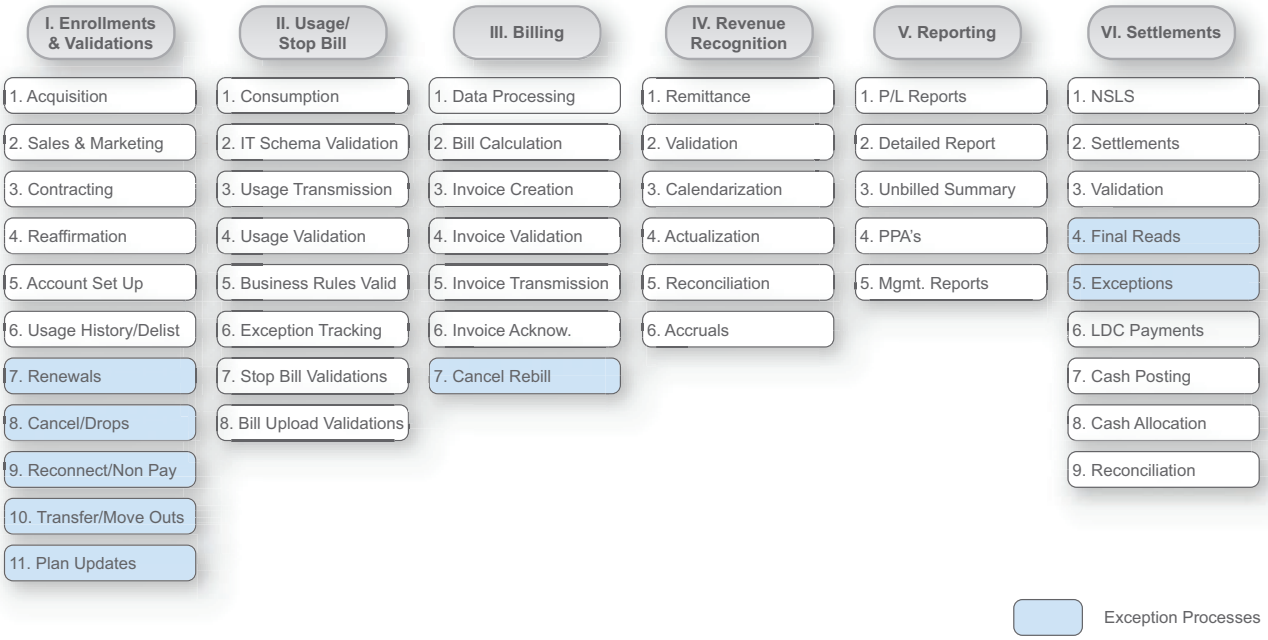
Exhibit 25
Market Participants



B. Revenue Processes and Key Process Risk

The foundation for conducting a review for potential recoveries should involve documentation and understanding of detailed processes for the entire revenue cycle. Exhibit 26: Revenue Processes lists many core and exception processes that need to be considered for a utility or retail energy provider as part of the market-profiling phase.

Exhibit 26
Revenue Processes



The RACD team will also document the key risks and leakage areas based on interviews with company professionals.

C. Products and Services

The organization needs to have an in-depth understanding of its key products and attributes that drive those products. For example, in the utility and retail energy industry, key products range from full market-protected to market-float-pricing to financial hedge products.

D. Organizational and Reporting Structures

This phase involves documentation of reporting relationships along the entire billing process, including operational, financial, and information technology functions.

E. Systems Architecture and Database Relationships

As noted in Exhibit 27: Systems Architecture and Database Relationship, the RACD team should document all primary systems and interfaces.

Exhibit 27
Systems Architecture and Database Relationships

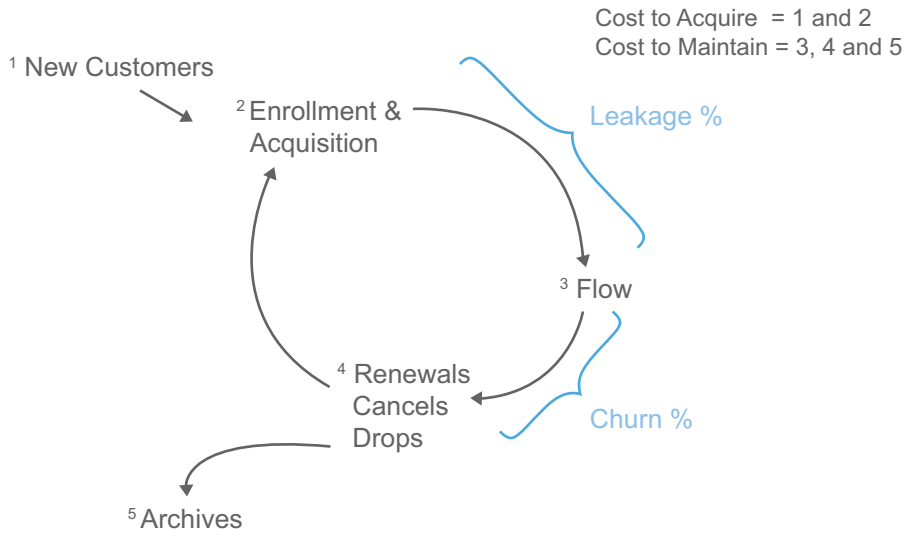
F. Cycle Times and Costs

Typical cycle times can include the following:

- Usage to Cash cycle times and cost
- Cost to Acquire and Cost to Enroll cycle times and costs

Exhibit 28
Cycle Times

Customer Life Cycle Diagram



IV. Data Analysis and Testing

Note: Although risks and controls are important, the underlying assumption of revenue assurance is forensic-based, bottoms-up testing. Controls are assumed not functioning and therefore work involves detailed auditing based on knowledge of the process.

The primary processes in doing the analysis are as follows:

1. **Bill Walkthrough** walking through sample billing types
2. **Highlight Exception Processes** meter change outs, cancel rebills, rate changes, plan changes
3. **Template Design and Documentation** creating a billing template to recreate billing calculations for a sample of transactions
4. **Test Sheet Design** creating a sheet that will summarize the results of exceptions including all details about the bill that was tested: customer name, premise, debtor location, amount, plan, market, etc.
5. **Data Gathering** involves sampling, extracting, parsing, sorting, loading and validating the data for review
6. **Population Determination** determines the population from which to sample, based on risk assessment
7. **Sampling** selection of the sample based on statistical parameters such as population size, expected error rate, and confidence intervals (in some instances 100% of the date can be reviewed.)
8. **Directional Testing** testing the billing by documenting each bill sample on a testing template for recalculation
9. **Follow-up** basing initial exceptions the team will need to use for follow-up on exceptions requiring validation

V. Recovery or Quantification

This step involves extrapolating the dollar value of exceptions to the population to determine dollar error exposure or revenue at risk. These can be presented to management in the final report for their correction in the system and, if possible, identified for recovery.

VI. Reporting

The final report should indicate the following areas:

1. Name of market that was reviewed
2. Size of market in dollars and meters
3. Known dollar error (potential hard dollar recoveries)
4. Extrapolated errors
5. Any other issues
6. Potential process and control improvements

VII. Next steps

Suggested control enhancements, recoveries, next steps, and management buy-in.

VIII. Monitoring

Executive Sponsorship Implementation or change of any major function, system, or organization requires management sponsorship. Senior leadership should be committed and vocal about implementing a revenue assurance activity within the organization.

Project and Change Management Successful management initiatives require professional project and change management. The intention of this paper is not to provide a detailed PMO and CMO approach. Essential elements for implementing a successful revenue assurance program include the participation of an active steering committee, accountability to a single project director, adequate project resources, and timely and accurate progress reporting.

APPENDIX III: RACD CASE STUDY

Company Profile Multi-billion dollar North American retail energy provider of natural gas and power to more than 1.9 million residential and commercial customers.

Information contained in this case study is used for illustrative purposes only and does not reflect any proprietary or confidential client information. Care has been taken to protect confidentiality of client data while providing a simplified and conservative view of the results of an actual RACD engagement.

Background Based on risk factors and control issues within the revenue area, the organization wanted to explore creative ways to better control revenue by:

- Providing visibility to revenue exposure
- Identifying and recovering potential under billed revenue dollars
- Highlighting key risk areas within the revenue process
- Considering a permanent solution to monitor the end-to-end revenue processes for its 20 markets
- Reducing the cash cycle time

Analysis Working with our client, a Kopac Consulting team did the following:

- Performed a revenue risk assessment that ranked all 20 markets in which the provider competes. This ranking provided areas to focus revenue recovery efforts
- Documented the end-to-end revenue process from contract to cash including: metering, billing, pricing, settlement, accounting, and reporting of the pilot market
- Documented systems, products and key risk areas for the pilot market
- Created testing templates for a sample of billings
- Sampled billing data
- Tested billings from contract to cash (through the accounting ledger)
- Statistically extrapolated results to the population
- Assisted the client in building out a permanent RACD function of 3-4 people recruited from other accounting roles within the organization
- Selected one pilot market with sales of approximately $210M for analysis (Note that this represents reviewing one of twenty markets)

Results Based on our analysis of only one market, the results were as follows:

- Identified $3.1 million of revenue at risk based on an extrapolation of billing errors (Table 3)

Kopac Solution

Kopac's solution involves use of the Revenue Assurance Framework (patent pending).

Assessment

Kopac's solution framework involves an assessment of your markets by product and customer within a reasonable period. We document, at a fit-for-purpose level, the key revenue processes end to end.

Templates & Testing

Testing process involves creating a billing template for analyzing a sample of bills.

Results

Our team can quickly calculate any revenue exposure by market. We work with our clients to recover hard dollars, close system gaps, and correct system and accounting issues.

- Identified approximately 10 key control or process improvement areas for management consideration
- Validated the cash cycle to be 80 days to collect based on current accounts receivable balances, yet based on transaction testing the true turn was determined to be less than half

Assumptions

- NPV calculations were based on conservative three-year time frame with no residual returns
- 8% cost of capital was used in discounting cash flows
- Simplified estimates of implementation fees and corporate costs (outflows) were not escalated
- Statistical sampling assumptions:
  - 2.5% sampling error
  - 90% confidence interval
  - 5% maximum tolerable error
- Example data highlights analysis of a single market served by the case study company
- Initial implementation for partial market assumed to be $500,000 and ongoing client investment in internal personnel assumed to be $250,000 in subsequent years
- Revenue assumed constant over the three-year analysis period with discounted income stream of $553 million over that period

Detailed Methods and Results

Method

The pilot market was determined by the client, in consultation with Kopac Consulting. The selected pilot represented $210 million in revenue and 250 terrawatt hours annually with 10% customer churn. In this market, the client offered five main products to customers. Products will vary by market, regulatory environment, and company.

In this project, four primary steps were followed to determine potential revenue at risk:

1. Identification of population
2. Determination of sample size
3. Test results
4. Extrapolation of results to determine potential recoverable revenue or opportunities for reduced revenue related errors

Step 1 – Identify Population to Test

Through a series of client interviews and market research, Kopac Consulting determined the appropriate data set to be used for analysis. In this example, multiple products are offered with each having specific characteristics which affect risk and sample size. The following table summarizes key data from the sample market:

Table 1
Population Size

	Product 1	Product 2	Product 3	Product 4	Product 5
Customers/Sites	100/450	5/45	400/1500	5/600	1300/3500
Revenue	$41MM	$2MM	$33MM	$24MM	$110MM
Complexity	High	Low	High	High	Low
Hedged	Yes	Yes	Partial	No	Yes
Forecast	No	No	Yes	No	Yes

Step 2 – Determination of Sample Size
A test plan was developed and sample sizes were determined according to perceived risks. Tests for completeness (contracts billed completely and accurately), existence (billed usage exists and is supported by a valid contract), and reporting (revenue is valued or estimated and annualized appropriately) were performed as shown. Statistical sampling was performed utilizing the statistical parameters outlined in our assumptions (i.e. sampling error, confidence interval and maximum tolerable error).

Table 2
Sample Size

	Product 1	Product 2	Product 3	Product 4	Product 5
Sample Size	100	5 (100%)	168	5	240
Completeness	80	5	138	5	200
Existence Tests	20	5	30	5	40
Reporting Tests	No	No	Yes	No	Yes

Step 3 – Test Results
A summary of the test results (and extrapolated estimate of total errors) is as follows:

Table 3
Results

	Product 1	Product 2	Product 3	Product 4	Product 5
Sample Error Rate	0.18%	0	0.45%	0.07%	1.3%
Total Revenue	$41MM	$2MM	$33MM	$24MM	$110MM
Extrapolated Error Estimate	$72,500	$0	$141,500	$17,800	$2.9MM

Step 4 – Extrapolation of Results and Calculation of Benefit
Based on an estimated project budget of $500,000 for initial RACD implementation for the sample market (including client internal resource costs) and an estimated cost of $250,000 (internal staffing) to operate the RACD on an ongoing basis for this particular client, Kopac developed high, low, and mid estimates of the savings (and associated costs) over three years.

The following table summarizes the low, mid, and high dollar costs and savings:

Table 4
Estimated Savings

Category	Low	Mid	High
One-Time Project Cost (one time)	$(500,000)	$(500,000)	$(500,000)
Staffing, 1 Year @ 250k/year (recurring real dollars)	$(250,000)	$(250,000)	$(250,000)
Total Staffing, 3 Years @ 250k/year, Net Present Value	**$(691,600)**	**$(691,600)**	**$(691,600)**
One-Time Working Capital Recovery	$1,600,000	$3,400,000	$5,200,000
Annual Savings/Recovery	$1,300,000	$2,400,000	$3,600,000
Total Savings, 3 Years, Net Present Value	**$3,596,320**	**$6,639,360**	**$9,959,040**
Net Cost/Benefit, 1 Year	$2,150,000	$5,050,000	$8,050,000
Net Cost/Benefit, 3 Years, Net Present Value	$4,004,720	$8,847,760	$13,967,440

Key Results and Summary:
As illustrated in the following cash flow analysis and accompanying chart, results of the case study analysis highlight the benefit of implementing a RACD. In this case, the RACD yields a benefit (net of costs) in a range between $4 and $14 million on a three-year present value (PV) basis. As compared to the PV of implementation and recurring corporate costs of approximately $.7 million, a RACD provides significant returns to the company. Assuming the PV of revenues is approximately $553 million, the RACD uncovered between 1.9% and 6.65% of revenue at risk on a PV basis in this example using conservative results. Results in this case are within the range of outcomes described within the text of this document and highlight the value of implementing a RACD.

For illustrative purposes assume the case study company earned $5B in revenue for the analysis period. Assuming the test market range of loss is consistent over the remaining markets, the total revenue at risk would extrapolate to $95M and $332M.

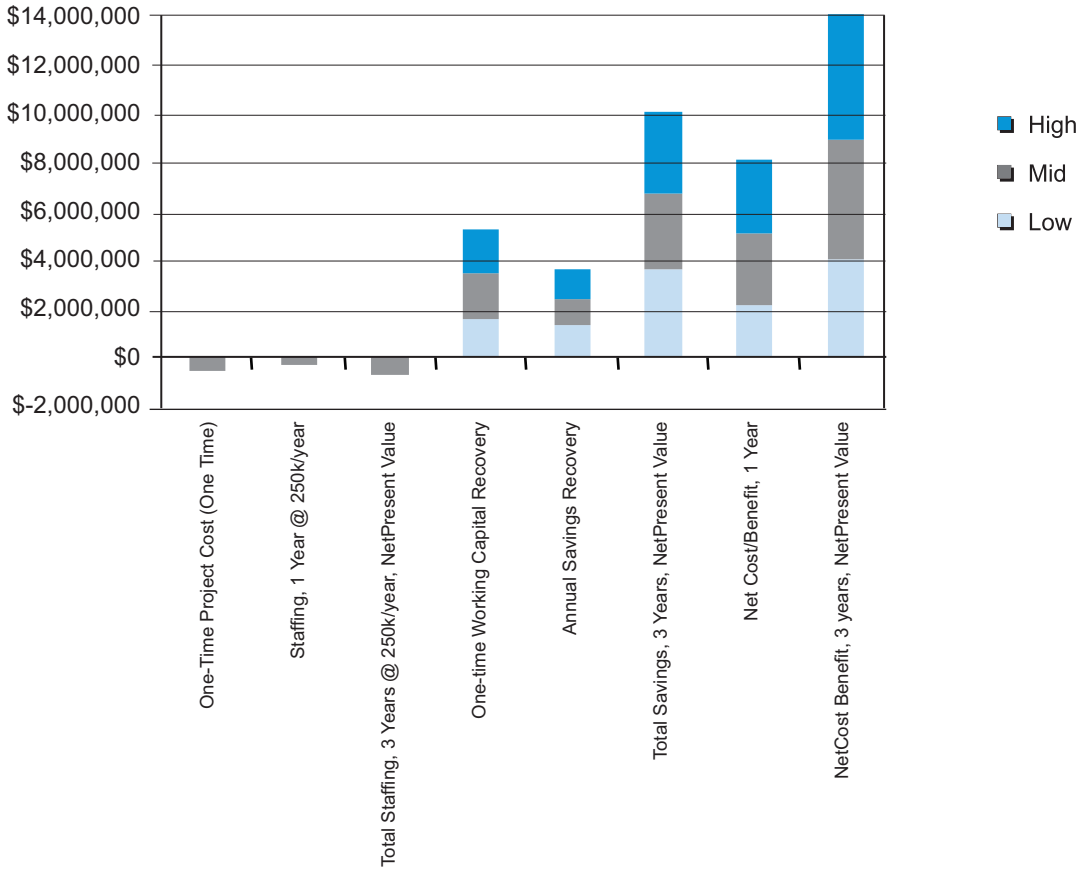
Table 5
Cash Flow Summary

Simplified Cash Flow for Case Study
(Real Dollars)

	Year One			Year Two			Year Three		
	Low Case	Mid Case	High Case	Low Case	Mid Case	High Case	Low Case	Mid Case	High Case
Cash Outflows									
Initial Implementation (Consulting / Corporate Employees)	$(500,000)	$(500,000)	$(500,000)	$ -	$ -	$ -	$ -	$ -	$ -
Ongoing Investment (Corporate Employees)	(250,000)	(250,000)	(250,000)	(250,000)	(250,000)	(250,000)	(250,000)	(250,000)	(250,000)
Total Outflows	$(750,000)	$(750,000)	$(750,000)	$(250,000)	$(250,000)	$(250,000)	$(250,000)	$(250,000)	$(250,000)
Cash Inflows									
Working Capital Recovery (Year One)	1,600,000	3,400,000	5,200,000	-	-	-	-	-	-
Recovery (Year One)	1,300,000	2,400,000	3,600,000	-	-	-	-	-	-
Recurring Recoveries / Benefits	-	-	-	1,300,000	2,400,000	3,600,000	1,300,000	2,400,000	3,600,000
Total Inflows	2,900,000	5,800,000	8,800,000	1,300,000	2,400,000	3,600,000	1,300,000	2,400,000	3,600,000
Net Cash Benefit (Undiscounted)	$2,150,000	$5,050,000	$8,050,000	$1,050,000	$2,150,000	$3,350,000	$1,050,000	$2,150,000	$3,350,000
Net Cash Benefit (Discounted)	$2,150,000	$5,050,000	$8,050,000	$966,000	$1,978,000	$3,082,000	$888,720	$1,819,760	$2,835,440

NPV Low Case	$4,004,720
NPV Mid Case	$8,847,760
NPV High Case	$13,967,440

Table 6
Summary of Results (PV at 8%)



Other Qualitative Benefits

- Increased customer satisfaction
- Decreased call center load
- Decreased control risk for revenue cycle
- Higher confidence in financial reporting
- Visibility of errors

APPENDIX IV: REVENUE ASSURANCE RESOURCES

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APPENDIX V: KEY WEB SITES

ABB Electrical Systems Technology Institute: **www.ABB.com**

American Gas Association (AGA): **www.aga.org**

American Institute of Certified Public Accountants (AICPA): **www.aicpa.org**

American Productivity and Quality Association (APQC): **www.apqc.org**

Association of Certified Fraud Examiners (ACFE): **www.acfe.com**

Association of Energy Services Professionals (AESP): **www.aesp.org**

Capability Model Maturity Integration (CMMI): **www.sei.cmu.edu**

Edison Electric Institute (EEI): **www.eei.org**

Energy Information Administration (EIA): **www.eia.doe.gov**

Energy Insights (EI): **www.energy-insights.com**

Global Revenue Assurance Global Revenue Assurance Professionals Association, Inc. (GRAPA): **www.grapatel.com**

IDC Energy Insights: **www.idc-ei.com**

IDC Health Insights: **www.idc-hi.com**

Institute of Internal Auditors (IIA): **www.theiia.org**

International Utilities Revenue Protection Association (IURPA): **www.iurpa.org**

Kopac Consulting: **www.kopacconsulting.com**

RFID Journal: **www. Rfidjournal.com**

Risk Center: **www.riskcenter.com**

Shared Services & Outsourcing Network (SSON): **www.ssonetwork.com**

TeleManagement Forum (TM Forum): **www.tmforum.org**

Ten Step: **www.Tenstep.com**

United States Government Accountability Office (GAO): **www. GAO.gov**

APPENDIX VI: INDEX OF EXHIBITS

Graphic Design and Illustration by
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Providing Business Solutions to the Energy Industry

January 2010

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