

Building Revenue Assurance Capabilities in the Telecom Enterprise

Author: Vasil Danchev
Adviser: Dr. Arnold Galloway

December 7, 2009

- **The Problem**
 - Examples of Telecom Revenue Loss
- **Research Objective**
- **Solution**
 - Revenue Assurance
- **Conclusion**

- **Telecoms transition from growth-based to value-based operations**
 - Success depends on the ability of the enterprise to optimize the performance of existing assets
- **Telecom service providers offer consistent level of services but often recognize less revenue than they are entitled to**
 - Revenue losses are worth between 3% and 15% of the entire business
 - The average global level of revenue loss for 2007 was 13.6% of the telecom potential income
 - That equaled \$218 billion of the estimated \$1.6 trillion in global turnover for operators
 - On average, telecoms recover only 1/3 of the identified revenue losses

Conclusion

- Telecom are incapable of preventing significant revenue losses
- Revenue losses cannot be recovered fully even if they were timely discovered

- Service activated but no billing account created
- Billing account deactivated but service still provided
- Data files transferred late to mediation repository
- Billable call records incorrectly filtered by mediation system
- Call records not billed because of unknown destination
- Missing long duration call segments in billing
- Incorrect charges applied to events
- Customer data incorrectly transferred from legacy to new billing system
- Interconnect partners billed incorrectly
- Etc.

Define solution for mitigating telecom revenue losses

- Revenue assurance scope
- Revenue loss model
- Revenue assurance approaches
- Best practice approach
- Revenue assurance system development challenges in the requirements definition and analysis domain

RA Definition by TeleManagement Forum

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

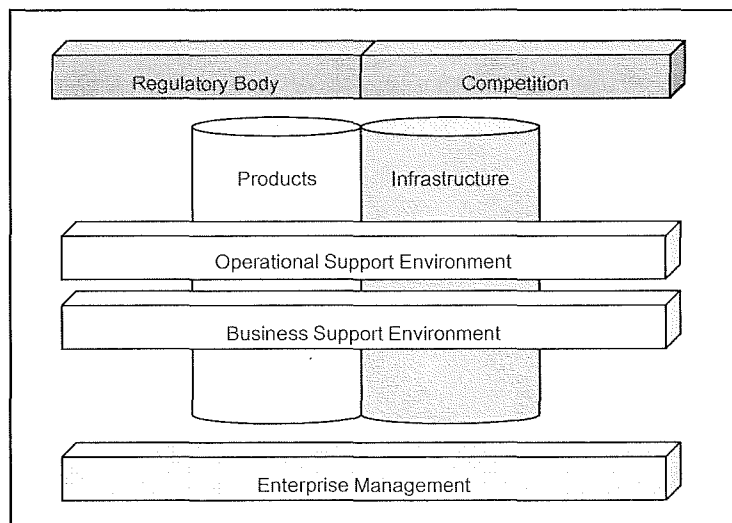
OSE supports network processes

- Maintain network inventory
- Configure network elements
- Provision services
- Etc.

BSE supports business process

- Taking customer orders
- Process customer bills
- Collect payments
- Etc.

EM provides core business support



Operations Development

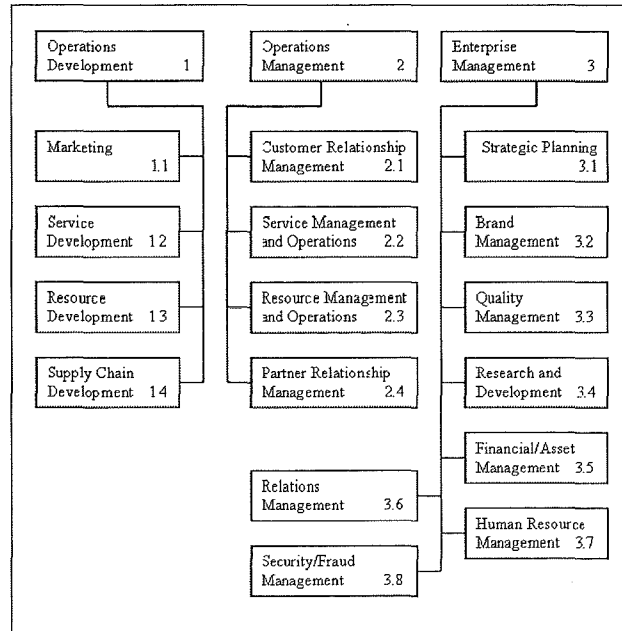
- Includes activities associated with high-level planning and execution

Operations Management

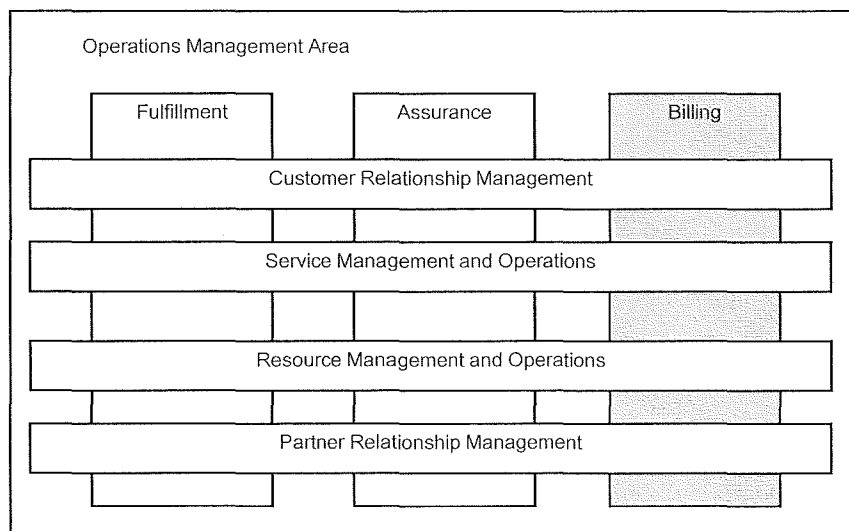
- Includes operational activities performed on a daily basis

Enterprise Management

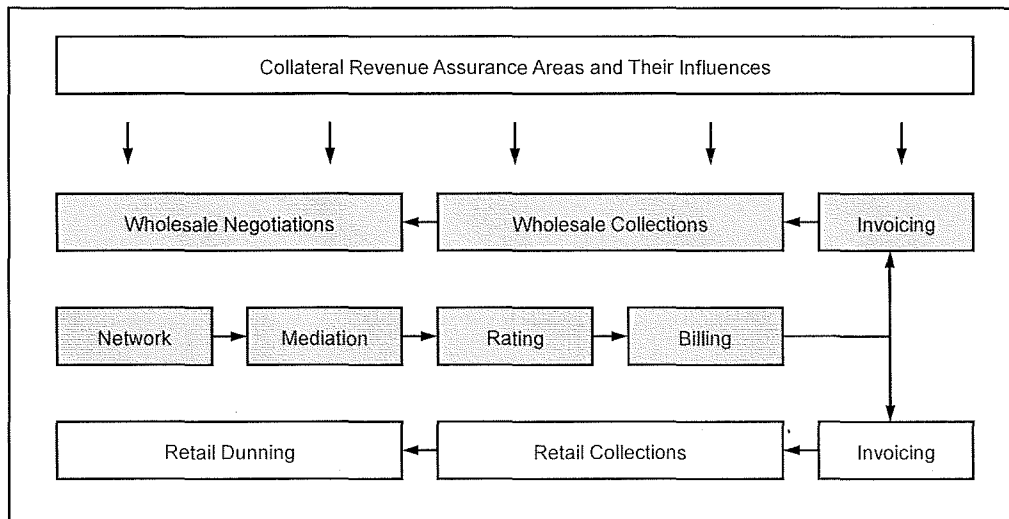
- Encompasses business processes necessary to support the rest of the enterprise



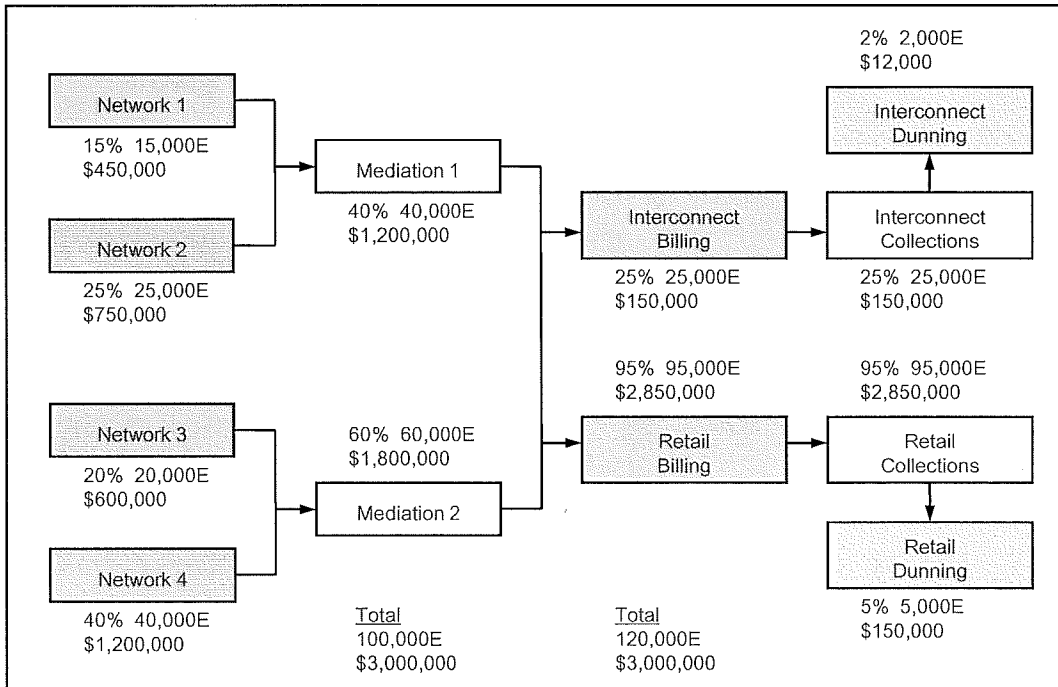
- Fulfillment** – the process of initiating new services
- Assurance** – the process of assuring that customers get the services that they requested
- Billing** – the collection process for delivered services



- **Core Revenue Assurance** – all processes, systems and organizations, associated with the direct capture, processing and collection of revenues
- **Collateral Revenue Assurance** – all processes, systems and organizations, associated with customer and product information storage and processing



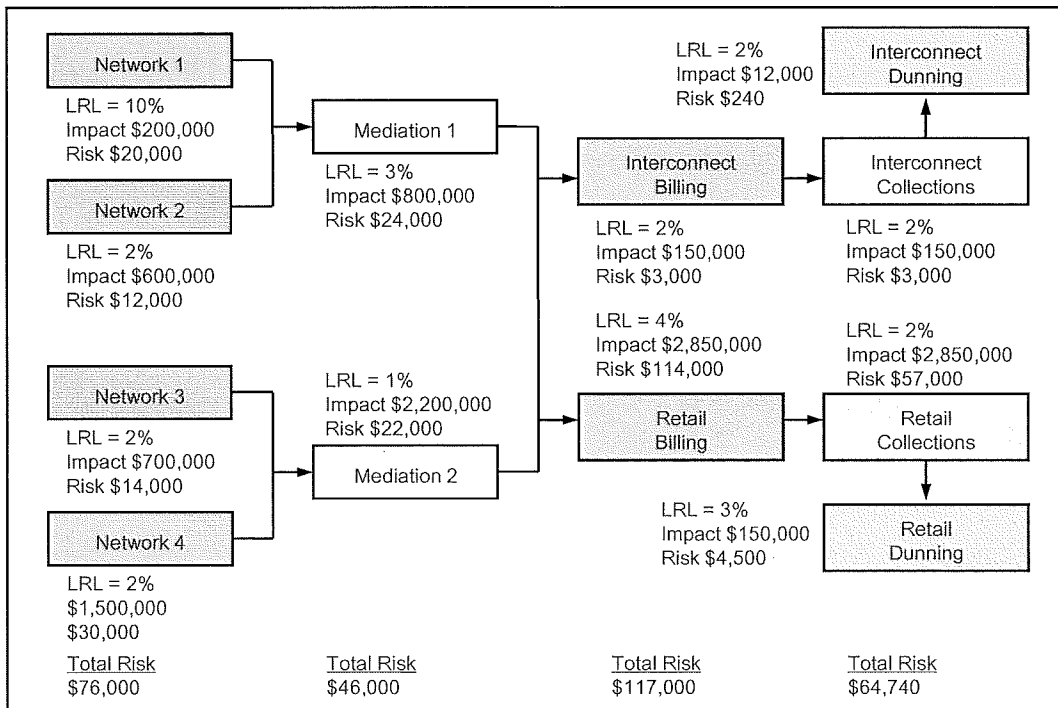
- **In the context of revenue assurance, risk of revenue loss is the measure of the probability and the consequence of system fault or process error**
- **Estimating the forward risk of revenue loss is difficult**
 - Historical data to base assumptions of likely error rates is not available
 - Historical data to base assumptions of the consequence of an error is not available
 - The complexity of an error is not well correlated to its financial impact
 - RA team will lack skills to evaluate the risk of failures for systems and processes that fall outside of the teams experience
- **The calculation of the expected revenue losses is highly subjective**
 - Risk assumptions are largely based on guesstimates
- **A formal risk assessment approach is needed**
 - Opportunity mapping model solves the consequence part of the risk analysis
 - Revenue risk model solves the probability part of the risk analysis



Accuracy of telecom operations depends on

- Systems
- Processes
- Human Resources

Revenue Loss Factor	Factor Ranking	Qualitative Rank	Quantitative Rank
1. Technology	Unstable	High	10%
	Somewhat Stable	Medium	5%
	Stable	Low	1%
2. Operational procedures	Poor/No	High	10%
	Some	Medium	5%
	Mature	Low	1%
3. Employee training	Poor/No	High	10%
	Some	Medium	5%
	Proper	Low	1%
4. Access to communications	Poor/No	High	10%
	Some	Medium	5%
	Routine	Low	1%



Information Technology approach

- The correctness of the revenue management operations depends on the integrity of the data processed by the revenue management chain
- Involves extraction of data from various points along the revenue management chain and validation of its consistency
- Promoted by IT vendors including Ericsson and Subex Azure

Benefits

- Does not affect core telecom operations
 - Creates parallel revenue management operations environment
- Does not require in depth knowledge of the revenue management operations
- Revenue losses can be quantified and corrective actions can be prioritized

Weaknesses

- Requires specialized software support
- Analysis depends on the correct capture and interpretation of business rules
- Identifying data inconsistencies does not disclose the root cause of the problem

Business process re-engineering approach

- The correctness of the revenue management operations depends on the integrity of the business processes enabling the core telecom operations
- The goal is to ensure that the processes are designed properly and perform as expected
- Promoted by consultancy businesses including Ernst & Young and Deloitte

Benefits

- Does not depend on the potential vagrancy associated with data analysis
- Fixing a process eliminates the root cause of the problem

Weaknesses

- Requires detailed knowledge of the revenue management operations
- Creating revenue assurance business case requires data acquisition to confirm that the process has failed as expected
- Fixing a process requires the consensus of all stakeholders

- Revenue assurance adds the greatest value to the telecom enterprise when information technology and process improvement methods are combined

Best Practice Approach

- Create the map of the revenue management operations
- Evaluate the risk of revenue management operations failure
 - Probability & Consequence
- Extract data from the operations areas identified as critical by the revenue risk analysis
 - Traffic data & Business rules
- Apply business rules to data extracts and match the result to the actual data processed by the monitored system
- Identify data inconsistencies and quantify their financial impact
- Rank failures according to their financial impact
- Identify the process that failed (or is not in place)
 - Use the "5 whys" technique
- Fix the root cause of the problem
- Provide training to users
- Confirm that the process is performing as expected

The Standish Group Chaos report establishes that

- Software development success rate, in 2003 was 34%
- Today, the success rate is estimated to be ~ 44%
- The larger the project is the more likely it is to fail
- 37% of the software project are challenged due to lack of user input and incomplete or changing requirements and specifications

In software development requirements drive almost every activity

- Project scoping and scheduling
- Cost estimating and budgeting
- Software design and testing
- Documentation and training

Bottom line

- Requirements analysis and management is one of the most important and unfortunately most neglected activities in the software development lifecycle

TeleManagement forum provides a guideline for the information that a good RFP should include

- **Benefits expected from the revenue assurance solution**
 - Primary benefits
 - Secondary benefits
- **Business environment**
 - Macro parameters – regulations and competition
 - Micro parameters – customer types and segmentation, services and their net values
- **Existing revenue assurance organization**
 - Size, location, interactions with internal as well as external organizations
- **Revenue management operations**
 - Data volumes
 - Data formats and context
 - Rates of data creation
 - System interfaces and data retrieval mechanisms
 - System vendors and software versions
- **Enterprise IT policy**

- **Pre-sale meetings agenda**
 - Customers business needs
 - Vendors portfolio
 - Requirements
- **Documenting requirements**
 - Vendor's involvement
 - Constraint by costs and customer unwillingness to involve vendors
 - Customer's challenge
 - Balancing and reconciling diverse stakeholders' interests
 - Potential negative effects
 - Defining unfeasible requirements
 - Requiring functionality not needed by the business
- **Negotiating requirements during bid tender**
 - Vendors believe that discussing requirements puts them in disadvantage
 - Vendors believe that impractical requirements could be modified later in the project life cycle
 - Customers accept bids with "over-promises" based on unrealistic or impractical requirements

- **Requirements analysis**
 - Goal
 - Analyzing requirements for clarity, completeness and consistency
 - Practices
 - Telecom vendors do not use special methodology
 - Vendors do not formally identify critical requirements
 - Identifying stakeholders and discussing requirements specs is never easy
 - Customers are not willing to spend too much time with the RFP
 - Result
 - Requirements analysis is somewhat neglected
 - Translating requirements into a product which does not perform as expected
 - Disgruntled customer
- **Maintaining database of RFPs and proposals**
 - Some vendors keep historical data as a reference for future projects
- **Testing**
 - Not all requirements are tested
 - Restricted to common sense

- **Revenue assurance practice needs standardization**
 - Know what you are dealing with
 - Know how you are dealing with it
 - Improve your performance

- **When procuring a revenue assurance system**
 - Recognize the importance of good requirements specification
 - Include vendors in requirements definition activity
 - Use systematic approach for requirements analysis
 - Dedicate at least 20% of the project lifecycle to requirements definition
 - Do not cover up mistakes

Thank you for your attention!