Building Revenue Assurance Capabilities in the Telecom Enterprise

Author: Vasil Danchev
Adviser: Dr. Arnold Galloway

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Agenda

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

- 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

Examples of Revenue Loss

- 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.
**Research Objective**

**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

**Telecom Operational View**

**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

![Diagram of Telecom Operational View](image-url)
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
**Revenue Assurance Domain**

- **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

**Collateral Revenue Assurance Areas and Their Influences**

- Wholesale Negotiations
- Wholesale Collections
- Invoicing
- Network
- Mediation
- Rating
- Billing
- Retail Dunning
- Retail Collections
- Invoicing

**Risk of Revenue Loss**

- 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
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Opportunity Mapping Model

Network 1
- 15% 15,000E $450,000
  - Mediation 1
    - 40% 40,000E $1,200,000
      - Interconnect Billing
        - 25% 25,000E $150,000
          - Interconnect Dunning
  - 25% 25,000E $750,000

Network 2
- 20% 20,000E $600,000
  - Mediation 2
    - 60% 60,000E $1,800,000
      - Retail Billing
        - 95% 95,000E $2,850,000
          - Retail Collections

Network 3
- 20% 20,000E $600,000
  - Total 100,000E $3,000,000

Network 4
- 40% 40,000E $1,200,000
  - Total 120,000E $3,000,000

Retail Collections
- 5% 5,000E $150,000

Interconnect Collections
- 95% 95,000E $2,850,000

Interconnect Billing
- 25% 25,000E $150,000

Retail Billing
- 95% 95,000E $2,850,000

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Revenue Risk Model

Accuracy of telecom operations depends on
- Systems
- Processes
- Human Resources

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

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Revenue Loss Model

Network 1
- LRL = 10%
- Impact $200,000
- Risk $20,000

Network 2
- LRL = 2%
- Impact $600,000
- Risk $12,000

Network 3
- LRL = 2%
- Impact $700,000
- Risk $14,000

Network 4
- LRL = 2%
- Impact $1,500,000
- Risk $30,000

Total Risk
- $76,000

Interconnect Billing
- LRL = 2%
- Impact $150,000
- Risk $3,000

Retail Billing
- LRL = 3%
- Impact $150,000
- Risk $4,500

Retail Collections
- LRL = 2%
- Impact $2,850,000
- Risk $57,000

Mediation 1
- LRL = 3%
- Impact $800,000
- Risk $24,000

Mediation 2
- LRL = 1%
- Impact $2,200,000
- Risk $22,000

Interconnect Dunning
- LRL = 2%
- Impact $12,000
- Risk $240

Interconnect Collections
- LRL = 2%
- Impact $150,000
- Risk $3,000

Retail Dunning
- LRL = 2%
- Impact $2,850,000
- Risk $57,000

Total Risk
- $46,000

Total Risk
- $117,000

Total Risk
- $64,740

Revenue Assurance Approaches

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
Revenue Assurance Approaches (2)

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 Best Practice
- 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
Software Development Challenges

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

Revenue Assurance RFP

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
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RA Requirements Definition Practices

• 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

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Telecom Requirements Analysis Practices

• 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

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Conclusion

• 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

The End

Thank you for your attention!