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Optimize Your Traffic & Profit from the Results

March 6th 2003

presented by:

John Clark

Agenda

- **What is Revenue Assurance – and how does it impact Network Management & Planning?**
- **Garbage In, Garbage Out – The value of good data**
- **The Challenge**
  - **Ensure the accuracy of Billing data**
  - **Manage Interconnects for Profit**
  - **Maximise asset utilization**
- **Delivering the data to Meet the Challenge**

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What is Revenue Assurance?

- **Considerable debate**
  - **A new business discipline in its own right?**
  - **Just good business management?**
  - **An issue only for the telecoms industry?**
  - **Getting your billing right?**

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What is Revenue Assurance?

- **Considerable debate**
  - **A new business discipline in its own right?**
  - **Just good business management?**
  - **An issue only for the telecoms industry?**
  - **Getting your billing right?**
- **"Everything we do to ensure we bring in the full, realisable, profitable revenue from our current and future business"**

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What is Revenue Assurance?

…and why is it suddenly a hot topic?

- **Because of the state of the industry**
- **Virtually every dollar added to the top line flows straight to the bottom line**

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What is Revenue Assurance?

…. And how important is it?

"Lost" Revenue as a Percentage of Actual Revenue

BT-Azure:	**12%**
Cerebrus:	**10%**
Connex:	**20%**
FML:	**10%**
Telecoms Consultancy & Solutions:	**15%**
Telenor:	**12%**
Average	**13%**

Source: IIR Revenue Assurance Conference February 2002

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What is Revenue Assurance?

Revenue Loss by Category

Category	Percentage
Fraud	3.20%
Processes	2.20%
Interconnect	1.60%
New Products	1.40%
CDRs	1.20%
Other	1.20%

X-axis: 0.00% 0.50% 1.00% 1.50% 2.00% 2.50% 3.00% 3.50%

As percentage of Total Revenue
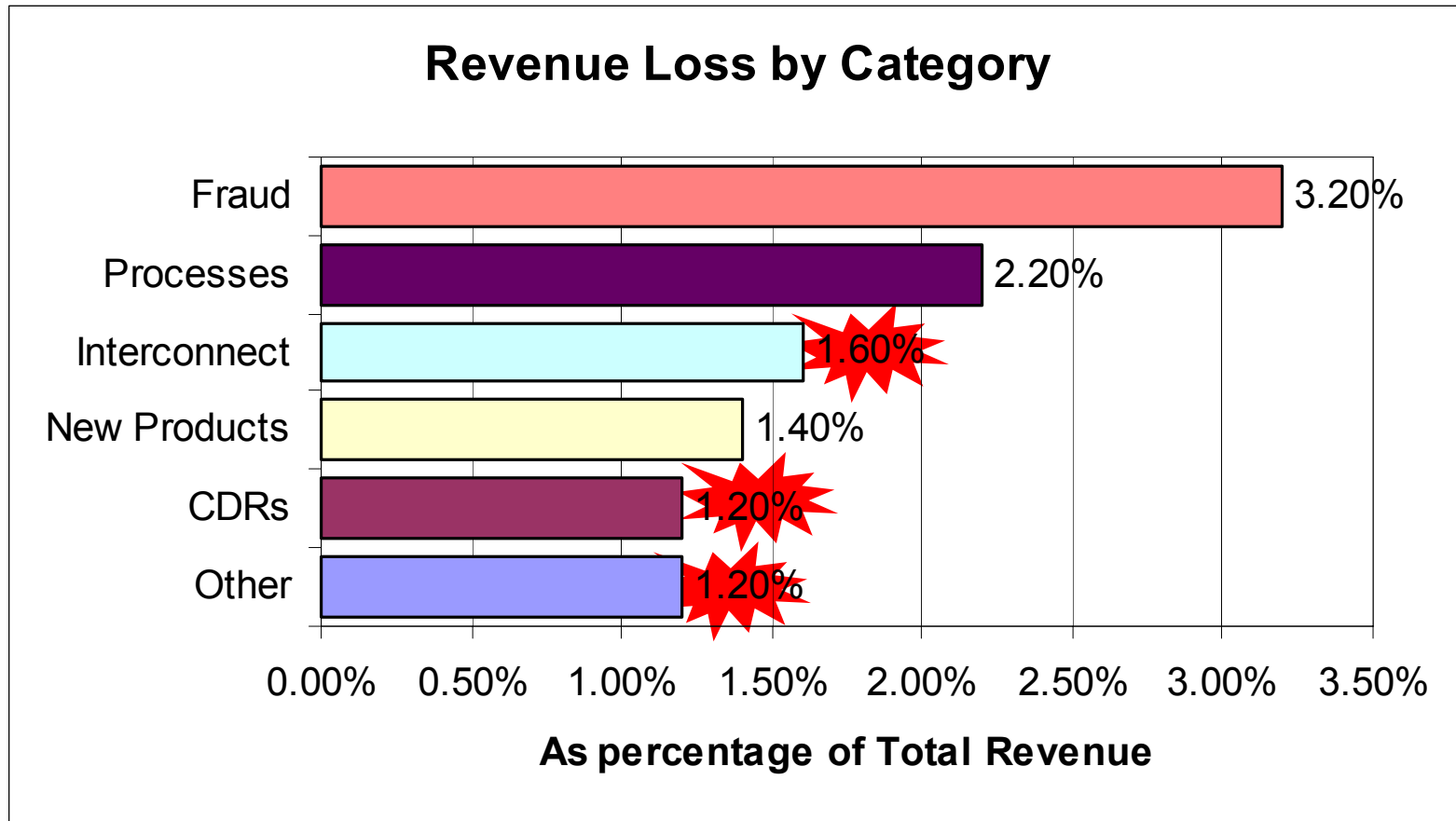
Source: BT Analysis Survey May/June 2001 of 150 representative telecoms service providers worldwide

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What is Revenue Assurance?

Lost due to Fraud — 18%
Debt/Write off — 12%
Sent to Error File — 12%
Incomplete Customer Records — 11%
Records Lost — 10%
Rated Incorrectly — 10%
Fail to create records — 9%
Corrupted calls — 8%
Records too late — 7%

Causes of Lost Revenue (%) Source: Phillips Group (2001)
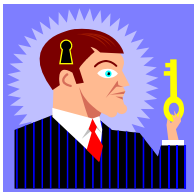
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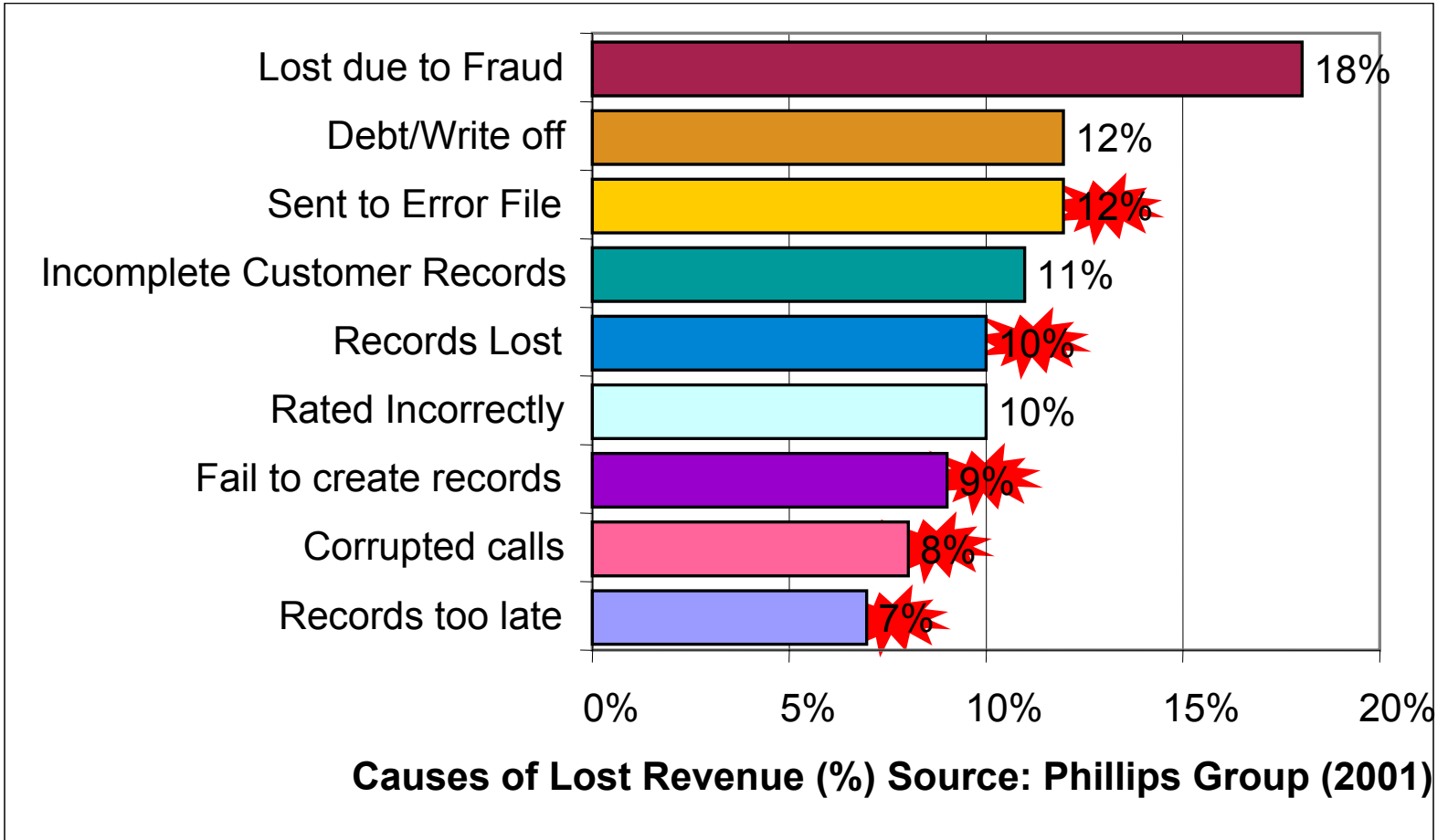
What is Revenue Assurance?

.... And how should Network Management & Planning respond?

- **Ensure the accuracy of billing data**
- **Manage inter-connects for profit**
- **Maximise asset utilization**

How can quality data help maximize network contribution?

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The value of good data

The characteristics of the perfect data source

- **Timely**
- **Aggregated**
- **Dis-aggregated**
- **Inexpensive to collect**
- **Reliable**
- **Consistent**
- **Objective**

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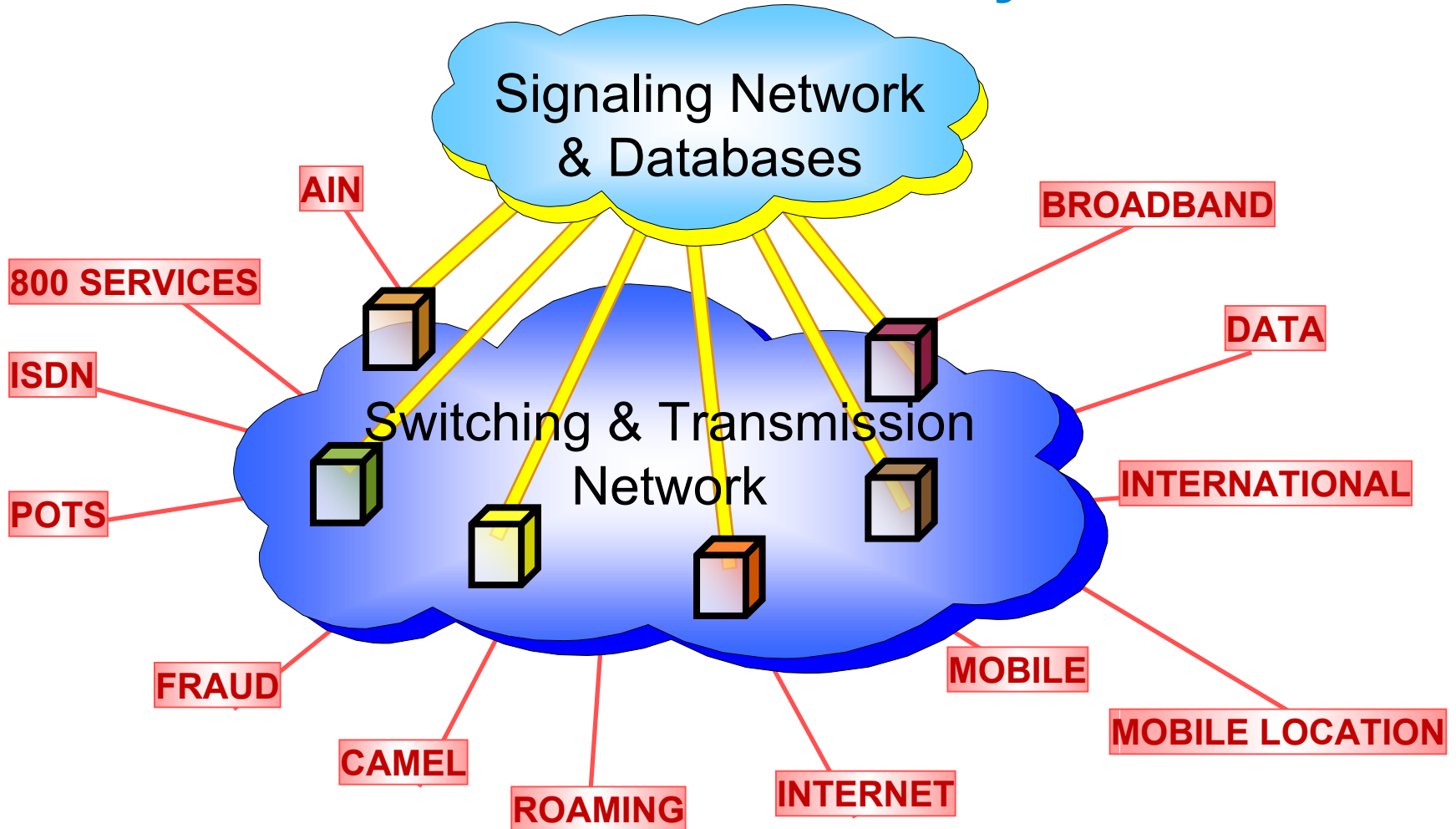
The value of good data

Existing data source

- **Billing/Switch data**
  - **Non-timely**
  - **Incomplete**
  - **Processed**
  - **Difficult to obtain**
- **SS7 data**

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The value of good data

SS7 is the network's nervous system….

Signaling Network & Databases

Switching & Transmission Network

AIN

800 SERVICES

ISDN

POTS

FRAUD

CAMEL

ROAMING

INTERNET

MOBILE

MOBILE LOCATION

INTERNATIONAL

DATA

BROADBAND

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The value of good data

SS7 is the enabler of many "new" services

- **Without SS7, there would be no:**
  - **Toll-free/Split-charge/Local Rate/National Rate Calls**
  - **Charge Card Calls**
  - **Caller ID**
  - **Number Portability**
  - **Text Messaging**
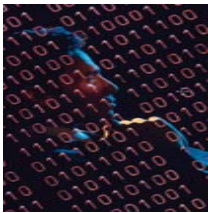 - **Wireless Authentication & Roaming**
  - **… and much more besides …**

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The value of good data

The Value Add of SS7 Data

COMPREHENSIVE

- ✓ **Correlates complex calls (AIN, 800)**

- ✓ **Captures calls switches don't (Interconnects)**

- ✓ **Shows abnormal call events (Unanswered)**

ACCURATE

- ✓ **Complete record of service usage**

- ✓ **Times call events precisely**

- ✓ **Available immediately (not batched)**

- ✓ **Provides in-progress call data**

EFFICIENT

- ✓ **Consistent output format**

- ✓ **No need for complex mediation**

- ✓ **Imposes no load on network equipment**

- ✓ **Scalable, superior to sampling**

"SS7 data is richer, faster, cheaper than any comparable switch or billing data…
…acceSS7 allows every record to be analyzed, avoiding the limitations of the
aggregation and sampling techniques traditionally used for subscriber analysis"

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The value of good data

Tools to Manage the SS7 Network

Protocol Analysis

Network Investigator

Traffic Monitor

Call Trace

Additional acceSS7 tools can be used to further pinpoint the problem
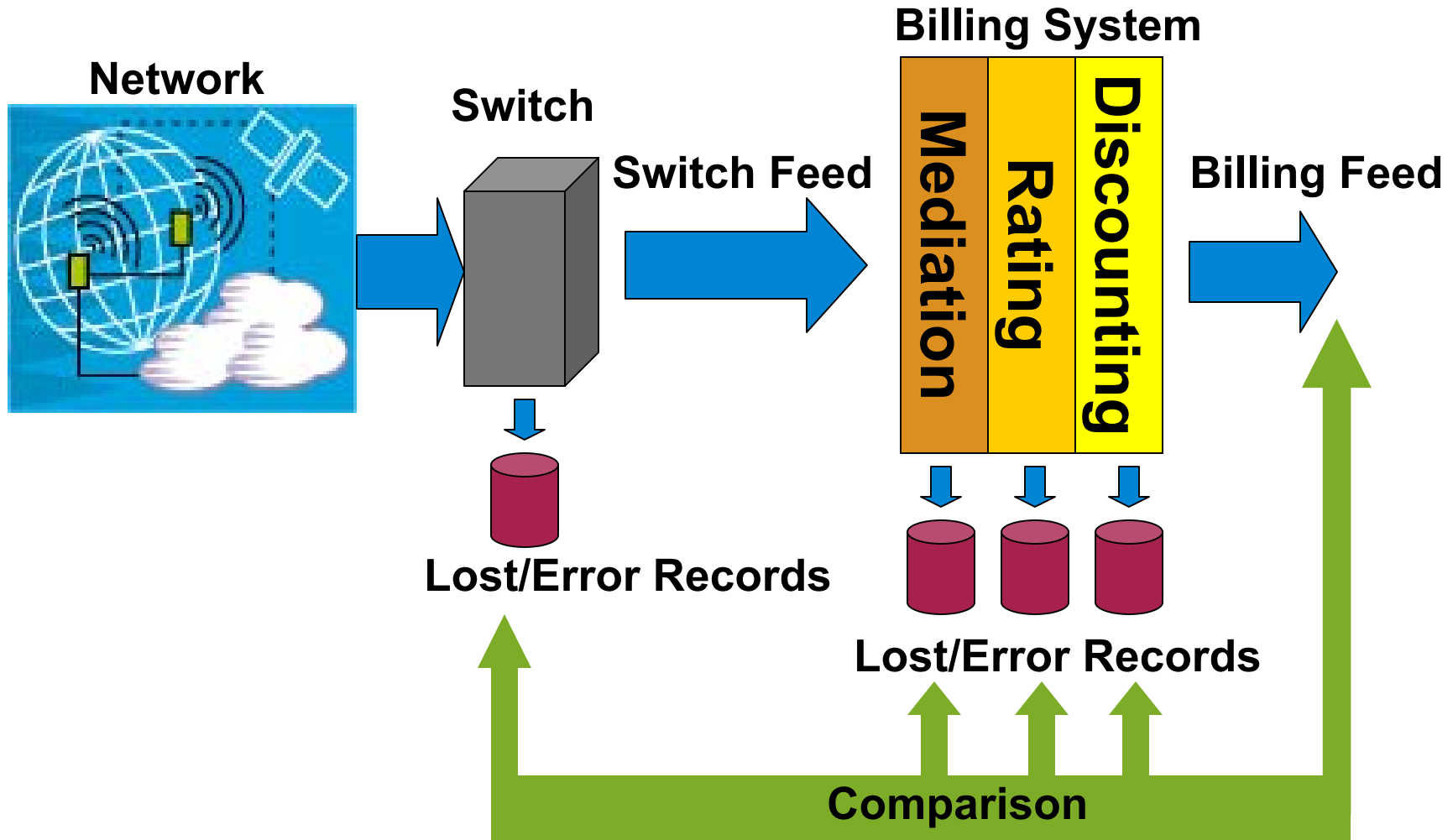
Other Services

Other Services

VPN

Telesales

800 service

"service disruptions are totally unacceptable to us. We need to be on top of everything in our network and be able to prevent problems before they occur"

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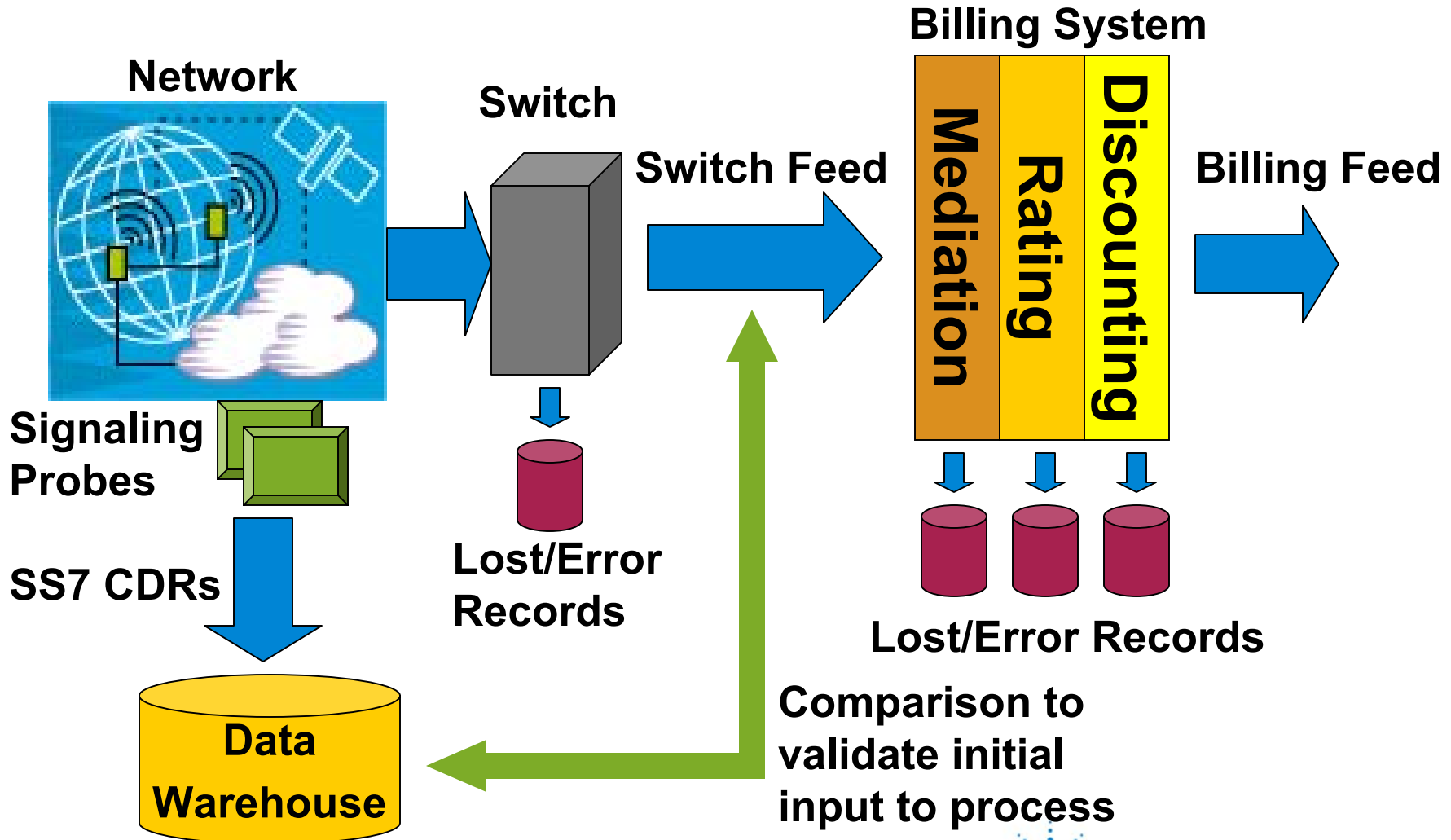
The Challenges

Ensure the accuracy of Billing data

Network

Switch

Switch Feed

Billing System

Mediation

Rating

Discounting

Billing Feed

Lost/Error Records

Lost/Error Records

Comparison

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The Challenges

Ensure the accuracy of Billing data

Network

Switch

Switch Feed

Billing System

Mediation · Rating · Discounting

Billing Feed

Signaling Probes

SS7 CDRs

Lost/Error Records

Lost/Error Records

Data Warehouse

Comparison to validate initial input to process

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The Challenges

Ensure the accuracy of Billing data

Problem: Rating platform hiccup causes in-process records to be lost. Some long-duration calls not billed.

Solution: Presence of SS7 CDRs for these calls (and no corresponding billing records) indicate a problem with billing system.

Result: Process improvement identified for rating system. Revenue leak plugged.

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The Challenges

Managing Interconnects for Profit

Problem: Due to lack of billing records for inbound calls, carriers unable to verify terminating PIU and PLU Rating Factors supplied to them

Solution: Using Agilent's Interconnect Analysis application, carriers have monitored inbound traffic and calculated actual terminating PIU and PLU on a per-carrier basis

Result: Carriers have generated tens of millions of dollars in additional inter-carrier revenue

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The Challenges

Managing Interconnects for Profit

Problem: Other carriers exploiting rate differentials for various traffic types by disguising one type of traffic as another

Solution: Using SS7 CDRs, the LEC was able to demonstrate that calls were being tampered with in order to disguise their true nature, e.g. by changing CPN party numbers

Result: LEC recovered $22M

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The Challenges

Managing Interconnects for Profit

Problem: Long-haul traffic (e.g. international) is frequently routed via 3rd parties on the basis of cost, with no consideration of effectiveness

Solution: Using Agilent's Call Performance Manager, carriers measured the actual Call Completion Rate achieved by each of their partners and have re-negotiated agreements and re-routed traffic to take account of both cost and completions

Result: Increased profits

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The Challenges

Maximize asset utilization

Problem: Tandem exhaustion. Tandem offices operating at or near capacity

Solution: Build node-centric and point-to-point load data using SS7 CDRs to capture data at several points, including data on incomplete and unanswered calls

Result: Options identified for relieving load by use of direct trunks; tandem load reduced without expense of deploying new tandem

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Delivering the Data

Valuable Information to run network & services and make timely decisions

Historical Analysis   **Real Time Analysis**

| Historical	Pyramid Level	Real Time
Track & threshold alarms	Data Alarming	
Historical Trends to help planning	Data Trending	**Real Time Network trends trackable**
Flexible Reporting tool – easy to use	Data Analysis	**Standard Reporting Interface**
Flexible Business Models to make decisions	Data Summarisation	**KPIs**
Correlation of Data types	Data Management	**Automated Data Transportation**
Reliable Data Feed	SS7 CDRs & TDRs	**Real Time Data Feed**

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Delivering the Data

- **Data Management Component (DMC)**
  - **Central Repository of SS7 CDRs & TDRs,**
  - **Correlates different data records relating to one call or transaction**

- **Data Mining Toolkit (DMT)**
  - **Easy to use product enabling flexible reporting on top of the DMC.**
  - **Make it easier to make business decisions based on the available data.**
  - **Provide a route to make decisions based on complex multidimensional elements.**
  - **Provide access to consistent set of data for multiple departments.**
  - **Generate any report the way you want – seamless interface with Microsoft tools.**

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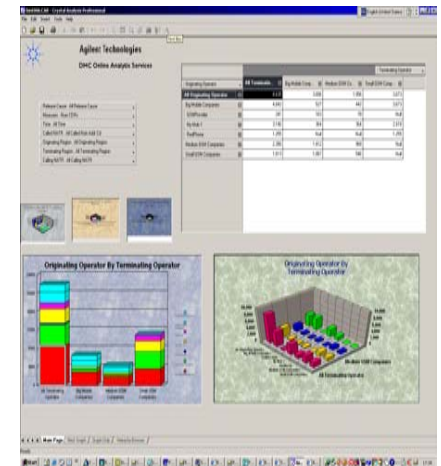
Summary

- **Verify the basic inputs into billing systems**
- **Ensure all due inter-connect revenues are received**
- **Increase profitability of outbound inter-connect traffic**
- **Reduce network expenditure while growing with the traffic and maintaining quality of service**
- **Minimal cost: gain leverage from existing acceSS7 infrastructure**

Using SS7 data to support Network Management & Planning can improve your core business results

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Revenue Assurance Workshop

Would you like a FREE customized Revenue Assurance Workshop at your site that will explain how to find more revenue from your network?

- **Enable cross functional understanding of how the solutions can directly affect your business**
- **Show functional examples of how Agilent solutions address specific problems**
- **Demonstrate how Agilent's solutions can help identify problems faced by your company**

**Fill out the evaluation form at the end of this presentation and check" yes" for our free workshop.
An Agilent Representative will contact you soon.**

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Agilent Revenue Assurance eSeminar Series

Archived

Ensure Interconnect Partners Pay for What They Use

Archived

Target and Keep Those Valuable Customers

Archived

Exposing Unscrupulous Activity

TODAY

Optimise Your Traffic & Profit from the Results Thursday, March 6th 11:00am PST

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