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Wholesale Billing:

Ensure Interconnect Partners Pay for what they use
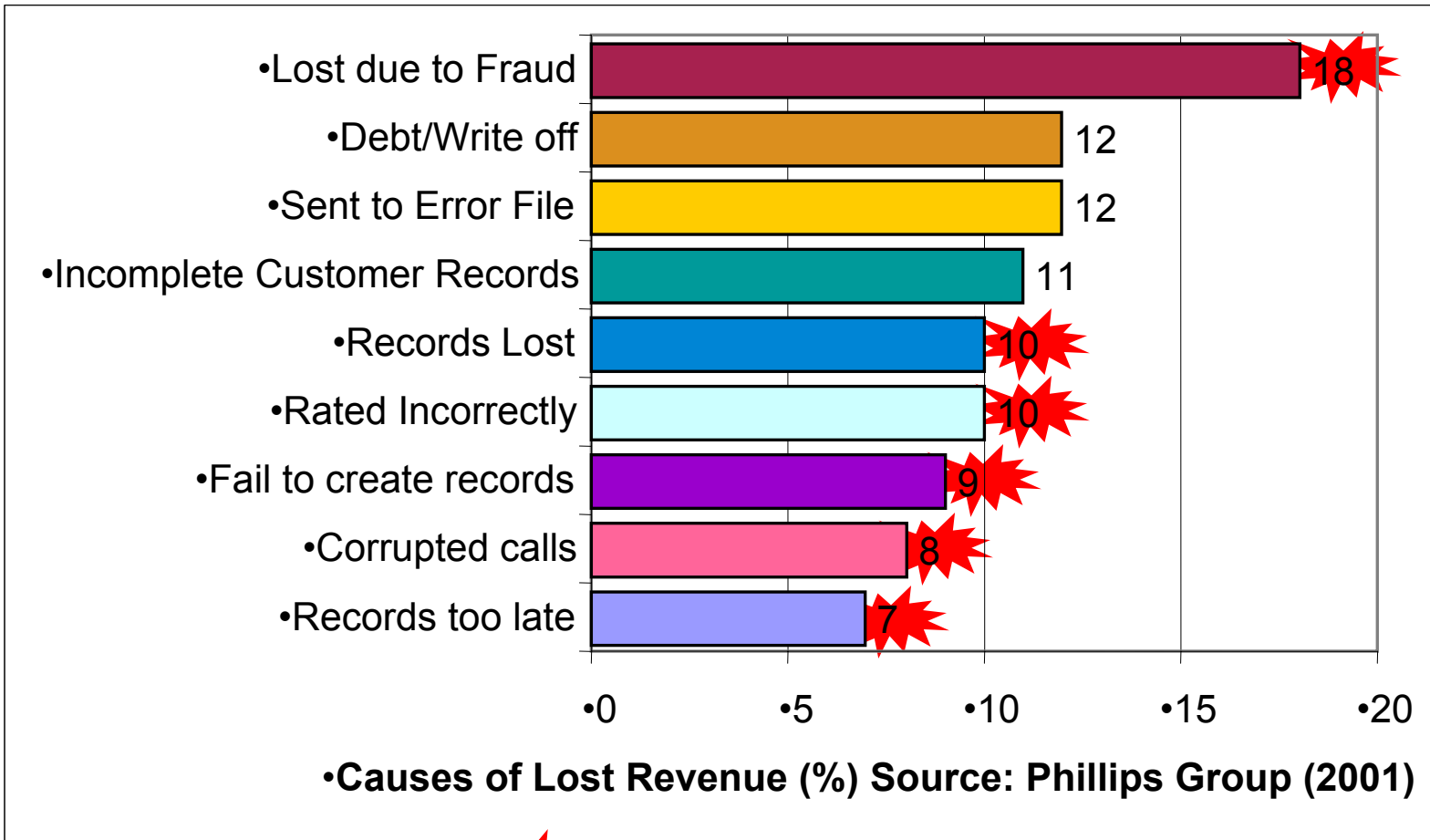
February 25th 2003

presented by:

Trina Watt

Agenda

- **Wholesale Billing: Main areas of Revenue leakage**
- **Current ways of addressing the problems**
- **Benefits of using Signalling to solve problems**
- **The Value of SS7 data**
- **Solving Wholesale Billing problems with SS7**
- **Benefits of Agilent's Business Intelligence solutions**

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Revenue Assurance Problem Areas

Causes of Lost Revenue (%) by problem area:

Problem Area	Percentage
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)

64% - Problem Areas which SS7 data helps address

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Main leakage sources that affect Billing

- ## Equipment configuration
  - **Service provisioning**
  - **Maintenance**
  - **Changes made to tariffs & infrastructure (switch coding and upgrades)**
- ## Billing System Limitations
- ## Inter-carrier Relationships

Revenue leakage varies widely from operator to operator

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Problems – Equipment configuration

- Problems with translations of switch to usage processes.

- Failures due to volume overloads during collection.

- Disconnect between the parsing systems and the hardware configurations. resulting in dropped data or incorrectly classified data.

- Wrongly putting records in error logs due to complexity problems.

- Administrative procedure that allow error logs to be flushed while still containing billable data.

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Problems – Billing System Limitations

- **Lost Billing Records.**
- **Correlation problems - matching events to accounts.**
- **Timing Expirations for matching calls.**
- **Legacy billing systems may reject records with long start-stop durations.**
- **Potential Billing System rejects – due to incorrect service set-up.**
- **Services not performing as expected due to billing issues.**
- **Releasing of products before able to bill – result in products not generating appropriate revenues.**
- **Records on signalling but not registering on the billing system – customer services not correctly set up.**

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Problems - Inter-carrier Relationships

- Inaccurate recording of other carriers usage.

- Mis-jurisdictionalisation of calls – wireline or wireless.

- Intercarrier relationships – are you being billed correctly?

- Are you getting the best service for the cost?

- Problems with carrier-to-carrier billing with interconnect partners – check the bills you are receiving.

- Unusual interconnect billing trends – can indicate potential arbitrage instances.

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Current ways of addressing the problem

- **Equipment configuration**
  - **Difficult to track failures in the tracking , volume overloads and records rejected by the billing systems.**
- **Billing System Limitations**
  - **Manual comparison of billing records several days after the call has been placed**
  - **Identify unbilled usage due to wrong translations – missing network usage records**
  - **No end-to-end revenue monitor within the existing systems – revenues can fall between collecting, parsing, storing, matching and delivering records to the billing system.**
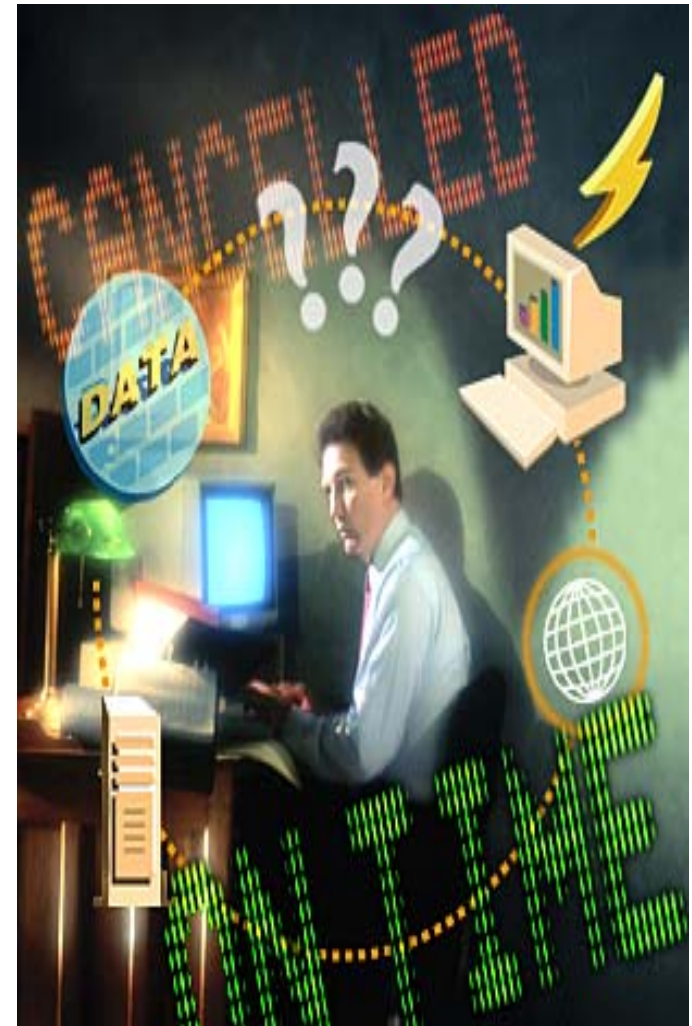
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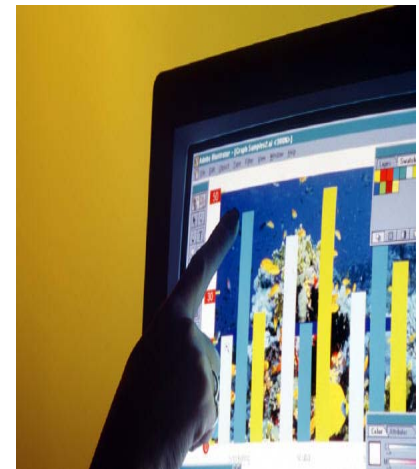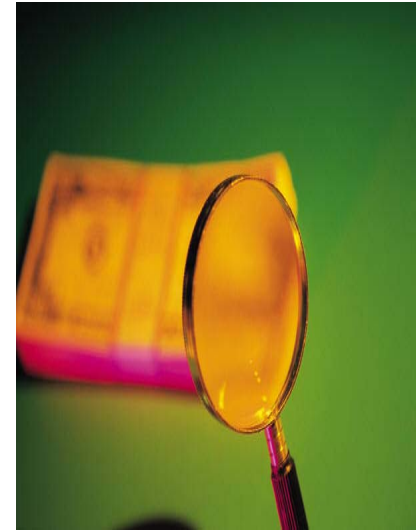
Current ways of addressing the problem

- **Inter-carrier Relationships**
  - **Diverse set of data that requires to be sourced from different parts of the organisation.**
  - **Sporadic reporting.**
  - **Fire fighting of hot spots – potentially missing other important areas .**
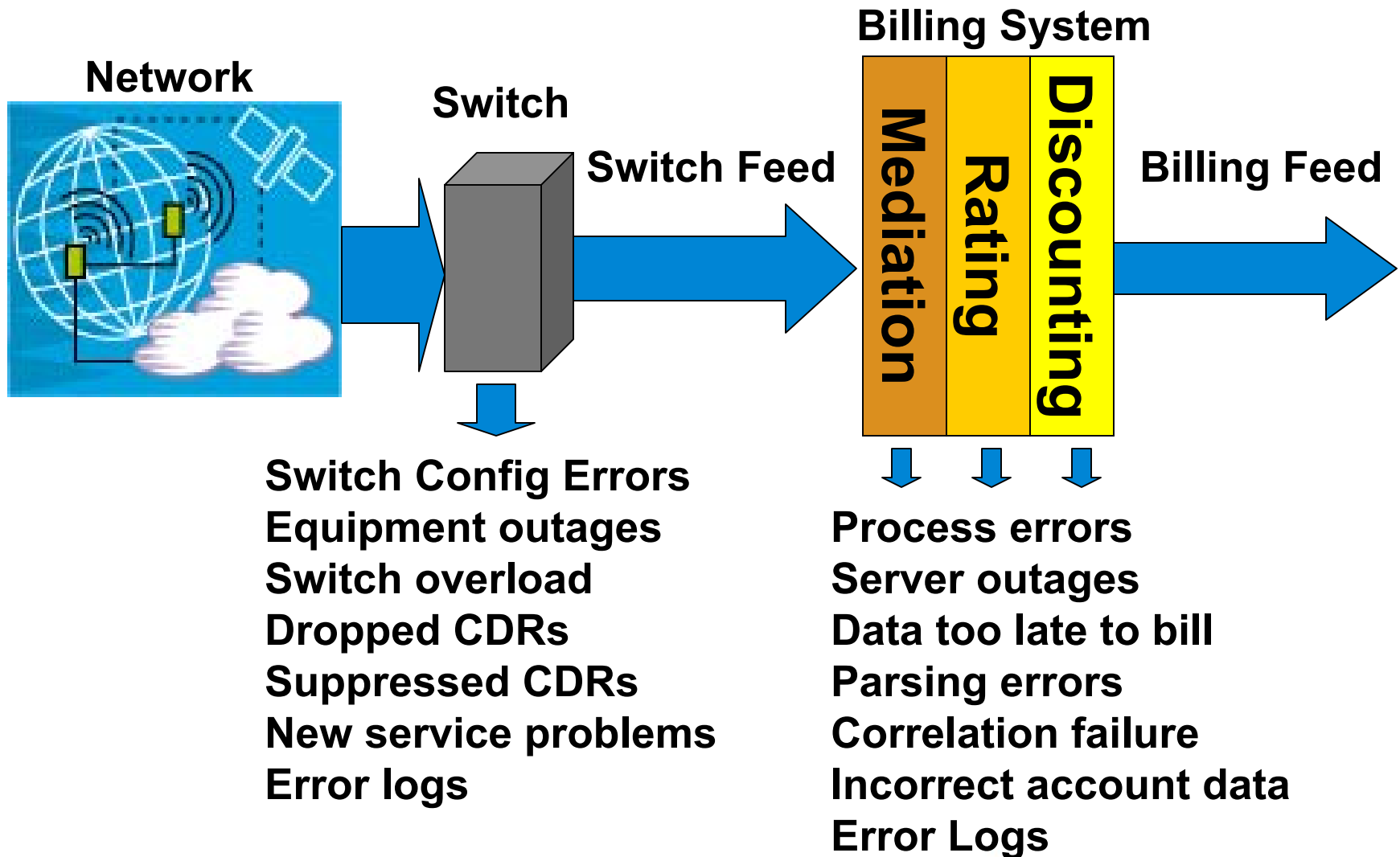
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Problems that many systems experience

- **Not able to collect data fast enough.**
- **Not able to correlate enough data.**
- **Problems with complex relationships between data.**
- **Not able to cope with changes in services and the type of records they produce.**

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Limited Visibility without Signaling data

Network

Switch

Switch Feed

Billing System

Mediation

Rating

Discounting

Billing Feed

Switch Config Errors
Equipment outages
Switch overload
Dropped CDRs
Suppressed CDRs
New service problems
Error logs

Process errors
Server outages
Data too late to bill
Parsing errors
Correlation failure
Incorrect account data
Error Logs

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What a Signaling Monitoring system gives you

- **Independent view of what is happening on your network.**
- **Independent record of calls that can be compared to billing records.**
- **High quality data feeds.**
- **Central Repository of a wide range of data types.**
- **Easy access for a wide range of users to pull reports from the same set of data.**
- **Compare CDRs at the main points of leakage - network, switch, mediation, rating & billing.**

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The Value Add of SS7 Data

COMPREHENSIVE

- ✓ **Correlates complex calls (AIN, 800)**
- ✓ **Captures calls switches don't (Incomplete)**
- ✓ **Shows abnormal call events (Unanswered)**
- ✓ **Record of outbound & incoming calls**
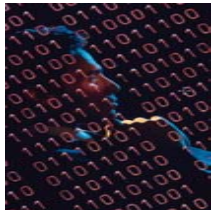
ACCURATE

- ✓ **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**
- ✓ **No load on network equipment**
- ✓ **Scalable - superior to sampling**

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Value of SS7 Data Records

For Revenue Assurance:

- **Switch CDRs (and SS7 CDRs) provide basic data:**
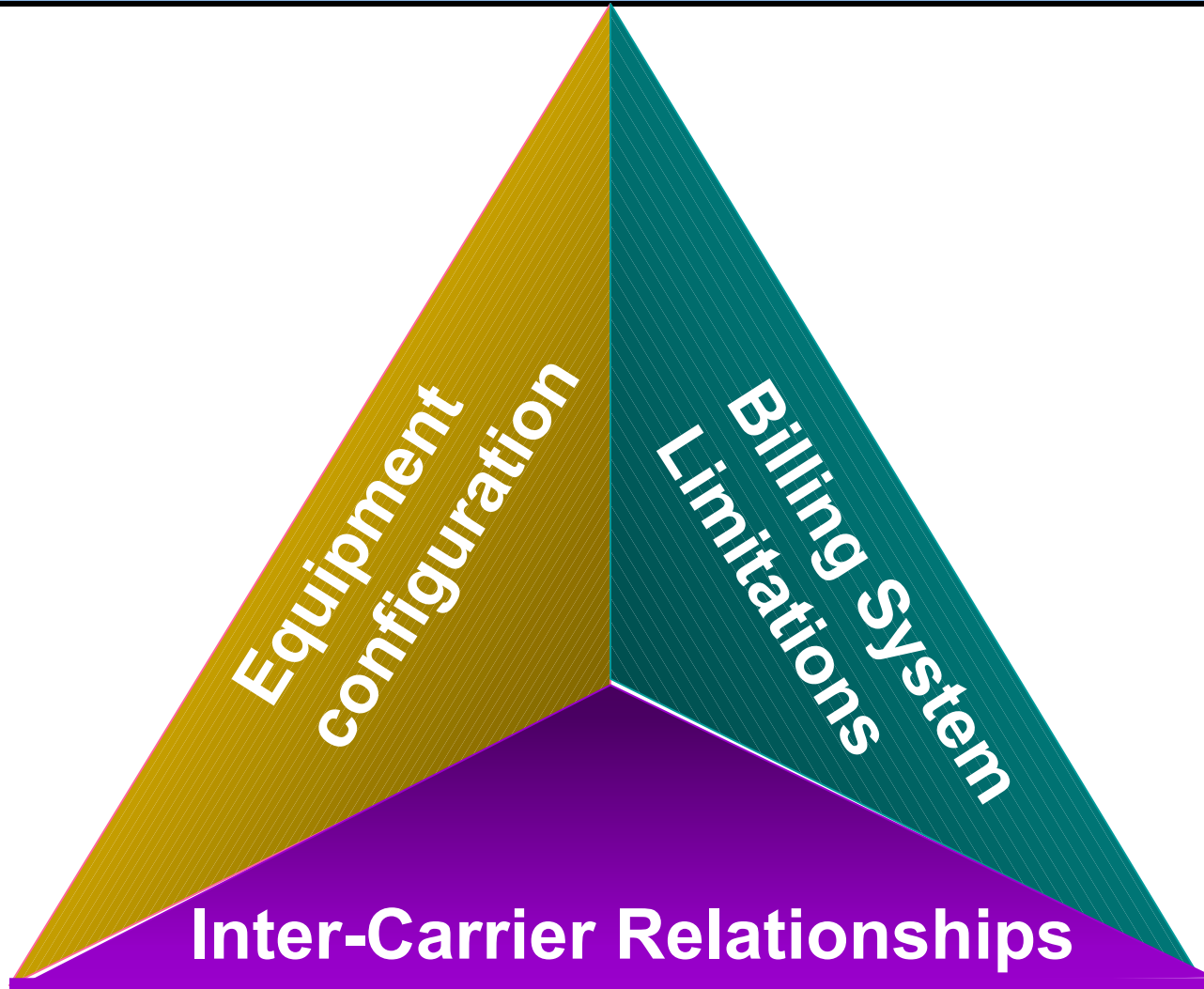   - **Outgoing calls**
    - **Completed calls**

- **SS7 CDR Features provide additional value for Revenue Assurance:**
    - **Data Independent of Billing System** → **Lack of Billing Records**
    - **Unanswered calls**
    - **Incomplete calls** → **Inter-Carrier Trunk Usage Billing**
    - **Incoming calls**

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Solving Problems with SS7 CDRs

Equipment configuration

Billing System Limitations

Inter-Carrier Relationships

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Solving Problems with SS7 CDRs

Translation switch->usage

Volume Overloads

Records in error logs

Wrongly Classified data

Equipment configuration problems

Independent data collection - identify holes

Measure traffic volumes and network conditions

All data collected even if calls are incomplete or unanswered

Archived data source , easily auditable & reclassification of calls

Agilent solutions benefits

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Solving Problems with SS7 CDRs

Lost Billing Records

Independent data collection - identify holes

Correlation problems

Legacy system rejecting long duration records

All data collected even if calls are incomplete or unanswered

Services not performing as expected

Ability to easily compare billing records with acceeSS7 CDRs

Billing System Limitation problems

Agilent solutions benefits

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Solving Problems with SS7 CDRs

Inaccurate recording of other carriers usage

Measurement of all incoming & outgoing traffic

Mis-Jurisdictionalisation of calls

Jurisdictionalise inter-carrier traffic quickly

Quality issues with other carriers

Negotiate more profitable agreements

Identification and prevention of arbitrage

Identify no CPN;

Intercarrier Relationship problems

Agilent solutions benefits

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Customer Success Story - Billing Errors

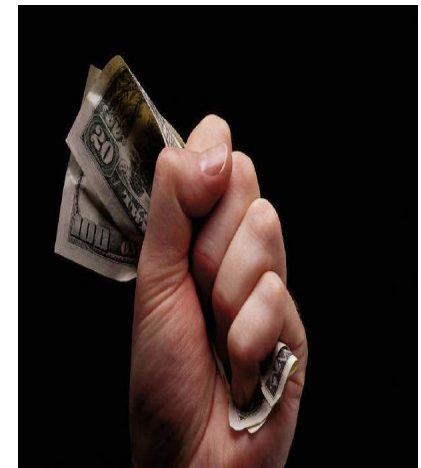**Problem:**

- **Rating platform hiccup causes in-process records to be lost. Some post-pay long-duration calls not billed.**

Solution:

- **Presence of acceSS7 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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Customer success story - InterCarrier Billing Verification

Problem:

- Due to lack of billing records for inbound calls, LEC was unable to verify volumes of terminating traffic to be paid at varying rates.

Solution:

- By using SS7 CDRs, LEC was able to accurately measure the volumes of different call types attracting different inter-carrier payment rates for termination.

Result:

- LEC has generated >$60 million in new annual revenues.

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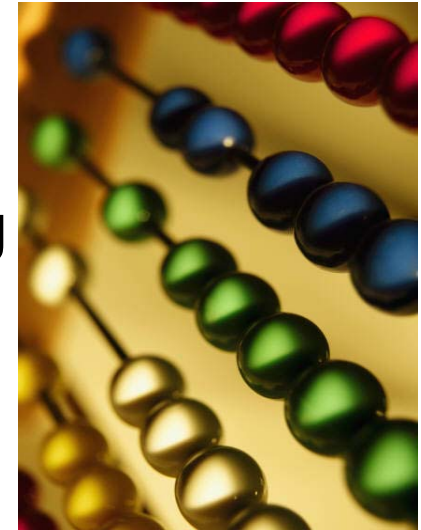
Customer success story –Arbitrage detection

Problem:

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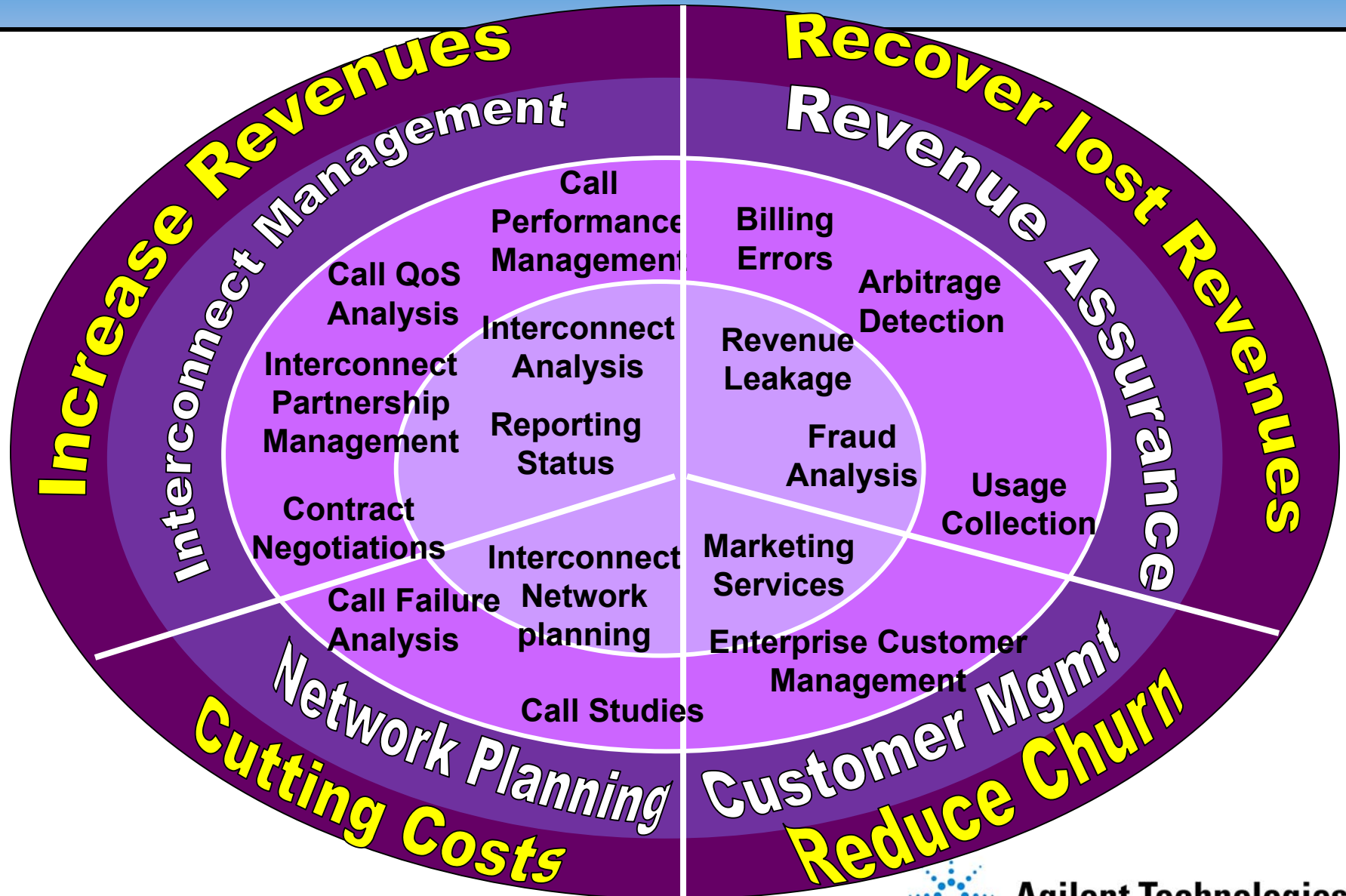
Solution:

- **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 over $20M**

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Agilent OSS acceSS7 Business Intelligence

Increase Revenues

Recover lost Revenues

Interconnect Management

Revenue Assurance

Customer Mgmt

Network Planning

Cutting Costs

Reduce Churn

Call Performance Management

Call QoS Analysis

Interconnect Partnership Management

Contract Negotiations

Call Failure Analysis

Interconnect Analysis

Reporting Status

Interconnect Network planning

Call Studies

Billing Errors

Arbitrage Detection

Revenue Leakage

Fraud Analysis

Usage Collection

Marketing Services

Enterprise Customer Management

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Agilent Business Intelligence Value Pyramid

Valuable Information to run network & services and make timely decisions

Historical Analysis

Real Time Analysis

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 Transportation of Data**

Reliable Data Feed — ISUP CDRs, Switch CDRs — **Real Time Data Feed**
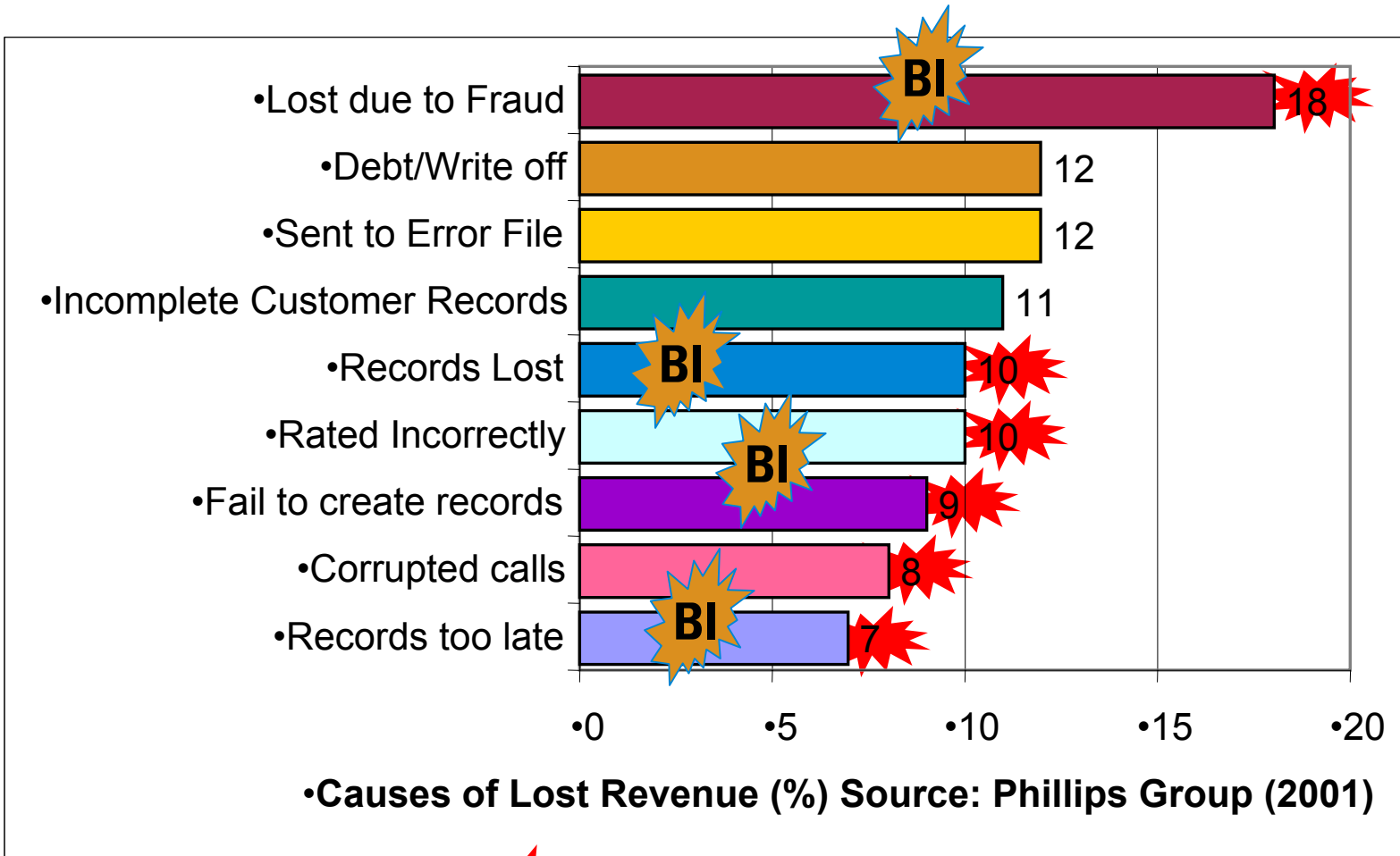
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Agilent Business Intelligence Advantages

- **Flexibility**
- **Experience**
- **Proven solution**
- **Range of applications using one infrastructure**
- **Ability to look at the same data from different perspectives**
- **Protected investments**

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Revenue Assurance Problem Areas

Causes of Lost Revenue (%) Source: Phillips Group (2001)

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64% - Problem Areas which SS7 data helps address

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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

TODAY

Wholesale Billing

Ensure Interconnect Partners Pay for What They Use

Exposing Unscrupulous Activity Thursday February 27th 11:00am PST

Fraud & Wholesale

Sales & Marketing

Network Management & Planning

Target and Keep Those Valuable Customers Tuesday, March 4th 11:00am PST

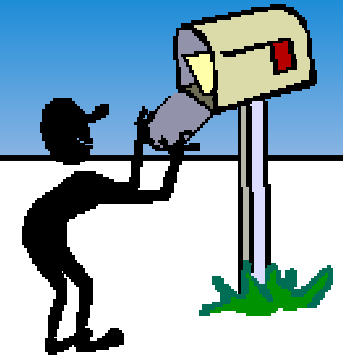**Optimise Your Traffic & Profit from the Results Thursday, March 6th 11:00am PST**

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