



Business Intelligence – What Actuaries Need to Know

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VP and Actuary

Information Delivery Services

CAS Seminar on Reinsurance

June 6 -7, 2011

■ Background

- Information Architecture
- Data Warehouse
- Information Delivery

■ Business Intelligence Less the Hype

■ Real World Examples

- Actuarial, Claim, and Sales

Introduction to get our Brains working!

Start Video Clip

IDSTV

- **Business Intelligence Tools**
- **Data Governance**
- **Data Warehouse**
- **Dimensional Data**
- **Master Data Management**
- **Metadata**
- **Metadata Repository**
- **Relational Data**
- **Staging**

Data Requirements

Solving for five data requirements is critical to the success of any initiative

Data Requirements

Description

Scalability

- Increased usage and appetite for additional data elements from other parts of the enterprise and from 3rd party sources will initiate a virtuous circle - increased use of data will lead to more **sophisticated questions** which **will lead to the need for more data** to make decisions, complete transactions, and conduct research. Increased capacity in people, process, and technology will enable capture of additional data **at decreasing marginal costs**. Scalability enables a shift from being extremely parsimonious in our data capture to capturing all potentially useful data

Trustworthy

- Knowledge of what data exists, where it is located, and confidence that the **quality level is sufficient for** conducting **analysis and making decisions**

Accessibility

- Easier and speedier access to existing data. All 2010 workstreams assume that data, 3rd party and internal, will be **available wherever and whenever needed** in the future processes

Granularity

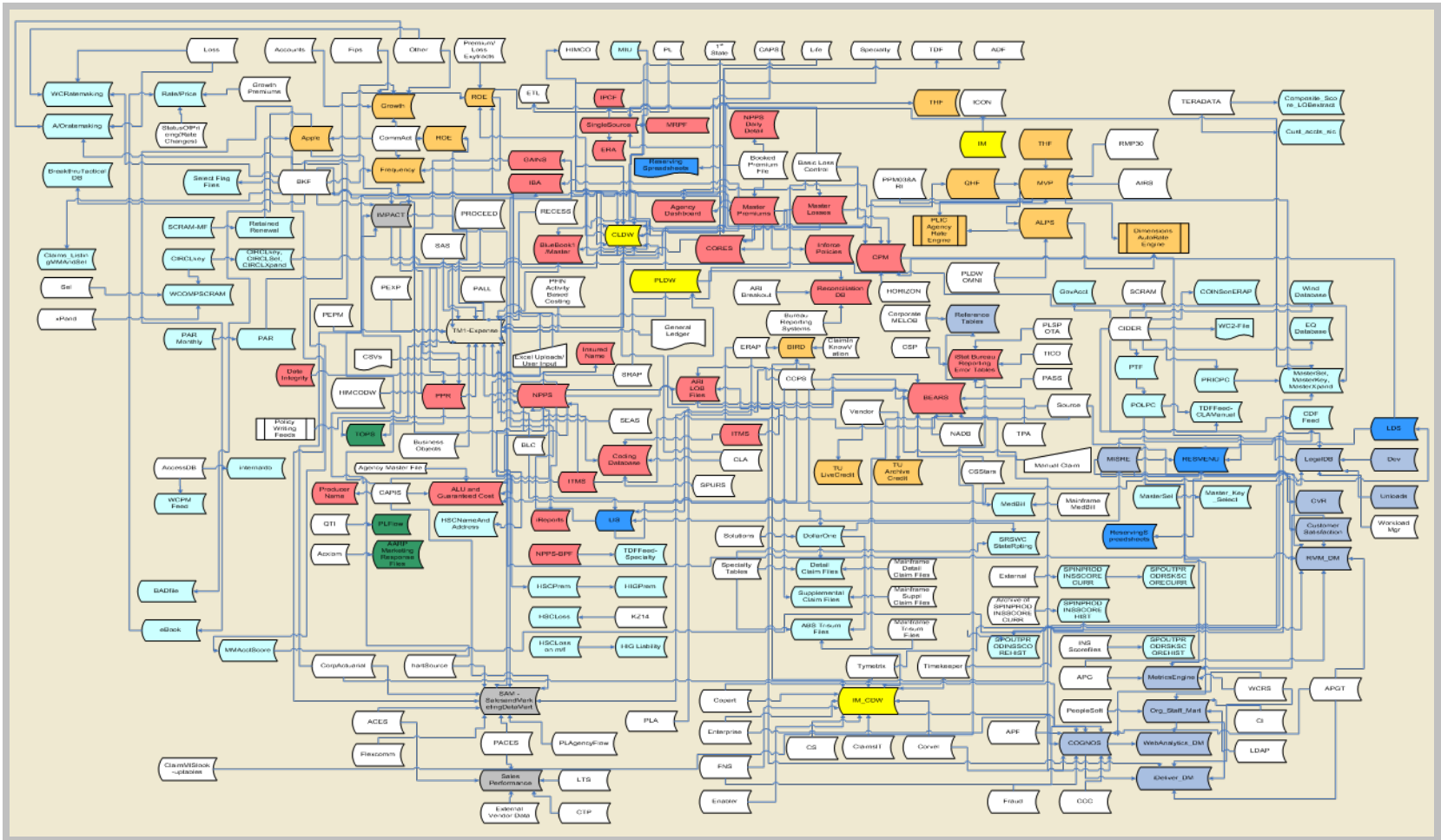
- Data acquired by the customer interaction processes (New Business, Claims, etc.) and 3rd party providers are **detailed enough to meet research and transactional needs** of product, marketing, sales, and pricing

Connectivity

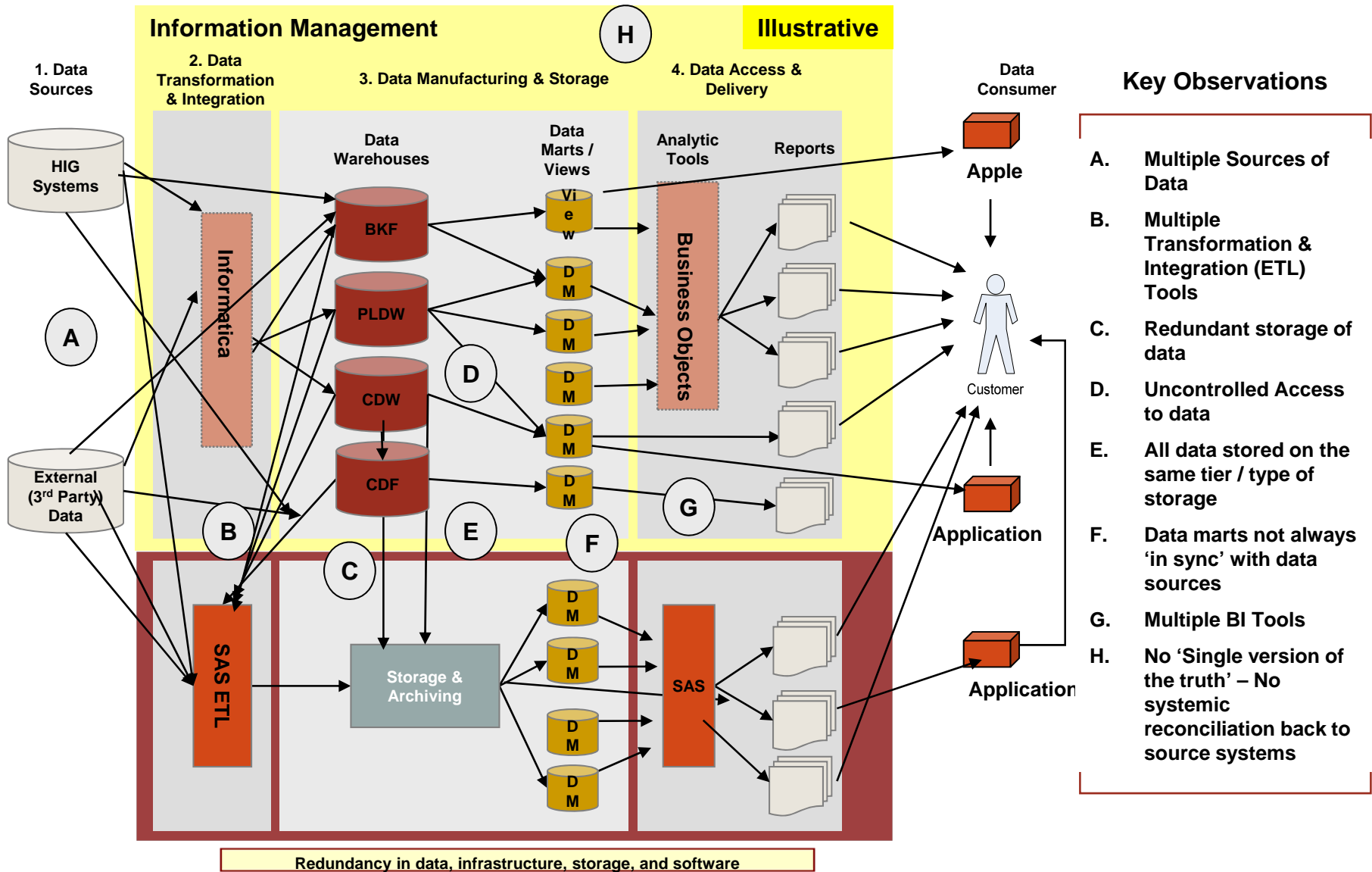
- Ability to **link data across** the **enterprise and** from **3rd parties** at a granular vs. summary level, to enable research, analysis and transactional processing

Achieving the five data requirements will make data available and useable across the enterprise.

Typical Multi-line Insurer Current Data Architecture

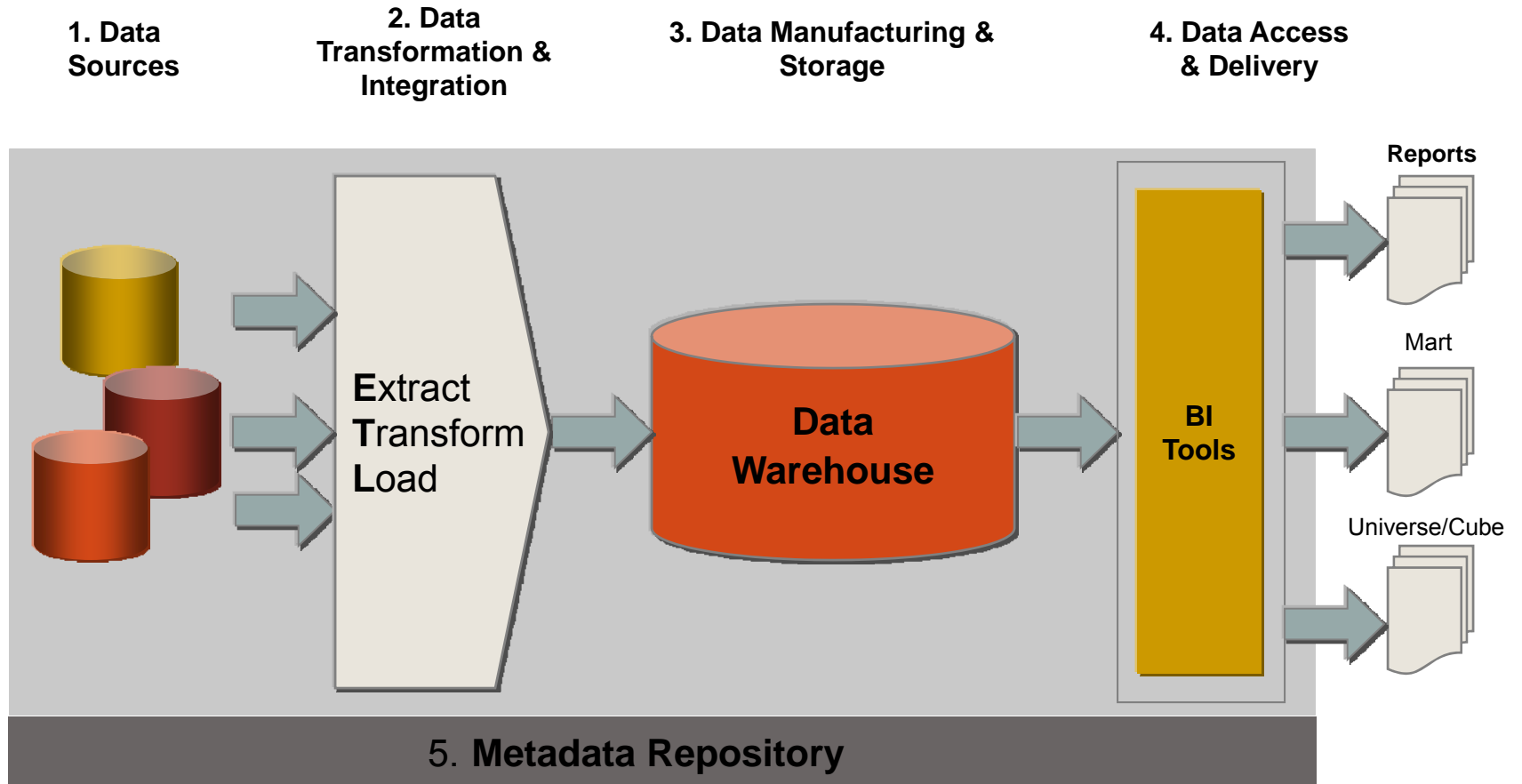


Data Warehouse Environment Example of Issues



Five Elements of Data Management

Conceptual Data Warehouse Architecture



Data Sources from a Source System

Refers to any electronic repository of information that contains data of interest for management use or analytics.

Operational / Transactional Databases

Databases used to manage and modify data (add, change or delete data) and to track real-time information.

Source Systems

Quote

QTI (QHf/THF/
DQF)
PLIARS/ICON

External/Vendor

Experian
InfoUSA
Questerra
MarketStance
Vendor data

Policy

PLA/PAVE
DBME
CLA
ASPIR
OMNI
NPPS
(Premium)

Financial

TM1-Expense

Customer

PLA/PAVE
DBME
CLA
ASPIR
OMNI
AIF

Reference data

ITMS
DI

Agent/Agency

CAPIS
EAP
hartSource
PASCE
IMPACT

Marketing

Business
database

Billing

SNAQS
TABS
CCC/CS-MCM

Claims

Source
CI
CCPS
BLC (Loss)

External

Axciom
ISO
Choicepoint
...

Multiple Sources of the Same Data

(i.e. lack of authoritative data source)

- Personal lines premium is 'Sourced' from three different sources
- PAVE policy admin system for CDF
- CIDER for BKF
- Corporate Actuarial for HSDM

Data Transformation & Integration (ETL)

ETL (Extract, Transform and Load) is a common 3 step process designed for this purpose



- **Extract data from multiple legacy sources**
- **Extract may be via**
 - Intermediate files
 - Databases
 - Directly connecting to sources
- **Multiple extract types**
 - Full extract (refresh)
 - Incremental extract
- **Works with the extracted data set**
- **Applies business rules to convert to desired state**
- **Cleanse and standardize data**
- **Inserts / updates the data warehouse database tables**
- **Intelligently add new data to the system**

Data Manufacturing & Storage

Atomic Data Store

A shared, analytic data structure that supports multiple subjects, applications, or departments

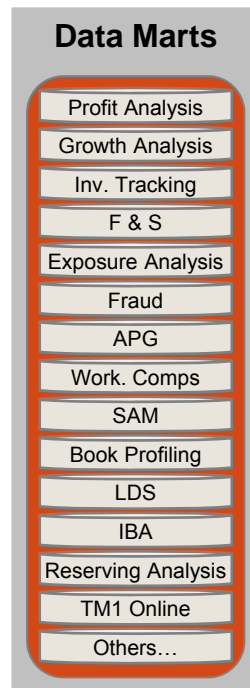
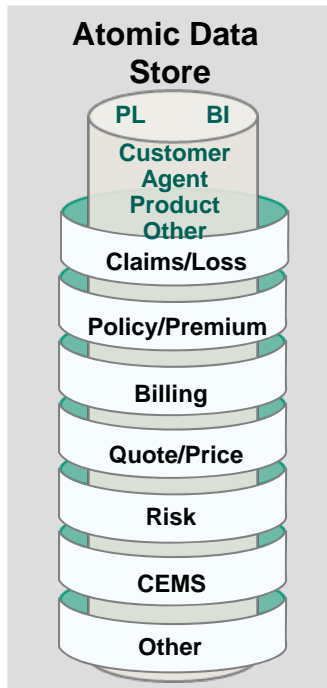
Data Mart

A shared, analytic data structure that generally supports a single subject area, application, or department

Data Warehouse Architecture

There are different types of data warehouses and platforms, e.g.:

- centralized vs. federated
- Superdome v. Teradata v. Exadata



Potential Issues

- Redundant Storage of Data**
- Uncontrolled Access to Data**
- All data stored on the same tier / type of storage**
- Data marts not always in-sync with data sources**



Business Intelligence (BI)

An umbrella term that encompasses the processes, tools, and technologies required to turn data into information, and information into knowledge and plans that drive effective business activity. BI encompasses data warehousing technologies and processes on the back end, and query, reporting, analysis, and information delivery tools (that is, BI tools) and processes on the front end

Potential Issues

Multiple BI Tools

- Five Business Intelligence tools are in use
- Reports and Analytics cannot be easily reused
 - Dueling “Truths”
 - Reconciliation Efforts

	Purpose	Usage
Standard Reports	Provides a pre-made document to provide information needed by user	Reports that require infrequent structural changes, and can be easily accessed electronically
Queries	Provides ability to data using a pre-defined query, or on an ad hoc basis	Research, analysis and reporting
Analytical Applications	Provides ability to easily access key performance indicators or metrics	Monitoring and accessing performance
OLAP Analysis	Alerts users to pre-defined conditions that occur	Research and Analysis
Exception Based Reporting	Provides ability to perform summary, detailed or trend analysis on requested data.	Notification without the need to perform detailed analysis
Data Mining	Ability to discover hidden trends with the data	Research and analysis of hidden trends with in the data

Metadata can provide a semantic layer between IT systems and business users—essentially translating the systems' technical terminology into business terms—making the system easier to use and understand, and helping users make sound business decisions based on the data (i.e. A Data Yellow Pages)

A *metadata repository* is: the logical place to uniformly retain and manage corporate knowledge (meta data) within or across different organizations in a company

Various types of meta data include:

Data Definitions

- List of common data elements and standard definitions

Business Rules

- Rules define data use, manipulation, transformation, calculation and summarization
- Business rules are mainly implemented by the ETL and reporting tools in a metadata dictionary

Data Standards

- Rules and processes on data quality

Data context

- Use of and dependencies on data within business units and processes

Technical Metadata

- Information on configuration and use of tools and programs

Operational metadata

- Information on change/update activity, archiving, backup, usage statistics

Potential Issues

No Single Version of the Truth –

No systemic reconciliation back to source system

- Metadata is the crux of many of our data problems
 - Time would not be wasted
 - Less reconciliation
 - Not gathering useless / redundant data
 - Less storage

Metadata - What is Metadata?

Metadata is 'data about data'. It tells us the meaning and context of a piece of data.

■ Who?

- Who owns this data?
- Who's responsible for its quality?
- Who has access to it?

■ What?

- What's the definition of this data element?
- What are the valid values?

■ When?

- When was it last updated?

■ Where?

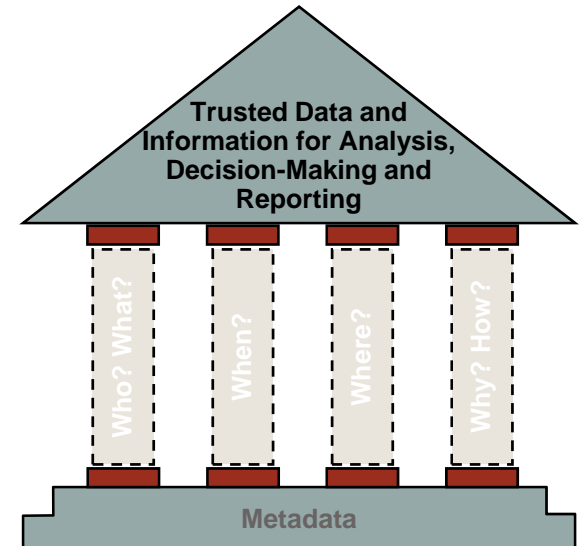
- Where is this data stored?
- Where does it originate from?
- Where is it used?

■ Why?

- Why is this piece of data important?

■ How?

- How is it calculated?
- How is it manipulated?



Example of Metadata:

- What does **"Total Earned"** mean?
- What is the definition and who is accountable?
- How is **"Total Earned"** formulated?
- Where does this data originate from?
- What software, hardware, and databases are involved?

Often metadata is agreed-upon **definitions and business rules** stored in a centralized repository so that common terminology for business terms is used for all business users – even those across departments and systems. It can include information about **data's ownership, source system, derivation (e.g. profit = revenues minus costs), or usage rules**. It prevents data misinterpretation and poor decision making due to sketchy understanding of the true meaning and use of corporate data.

Metadata - What are the benefits of implementing a Metadata Strategy?

Benefits

Common, embraced language between Business and IT

Substantial opportunity to improve data quality through greater understanding of HIG data

Improved business intelligence

Reduced redundancy

Consistency of data elements

Reduced reconciliation efforts around data definition

Alleviate loss of knowledge when staff transfers, retires or leaves the company

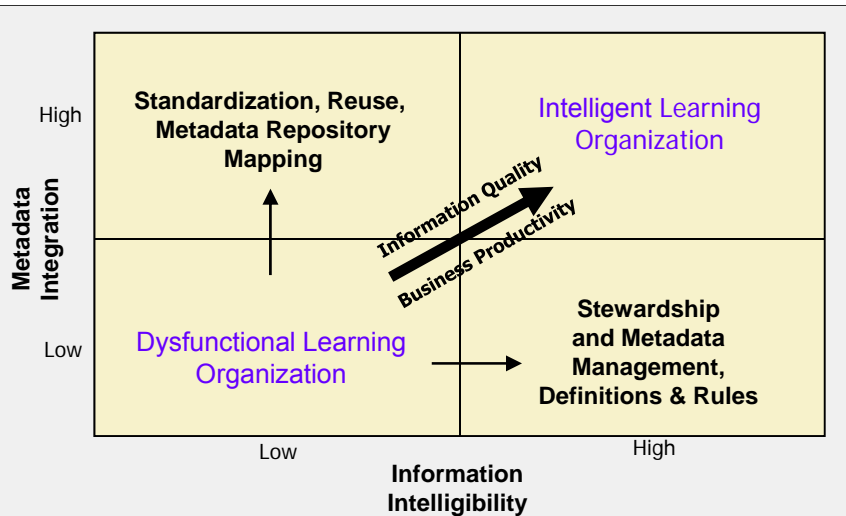
Minimize the effort on learning new data sources

Reduced development cycle times for new and existing systems

Economies of scale

Increased efficiencies via short data searches

Improved efficiency of analysis



Imagine sending all of your most experienced employees away for a month.

- *What would happen to your business?*
- *Where would your employees go to get answers?*
- *How long would it take and how many resources would have to be involved?*

The costs would be mitigated if you had a centralized metadata repository.

Business Intelligence (BI)

An umbrella term that encompasses the processes, tools, and technologies required to turn data into information, and information into knowledge and plans that drive effective business activity. BI encompasses data warehousing technologies and processes on the back end, and query, reporting, analysis, and information delivery tools (that is, BI tools) and processes on the front end.

Translation: Business Intelligence turns data into information.

Business Intelligence as Deployed for the Actuarial Department - BI Tool Microstrategy

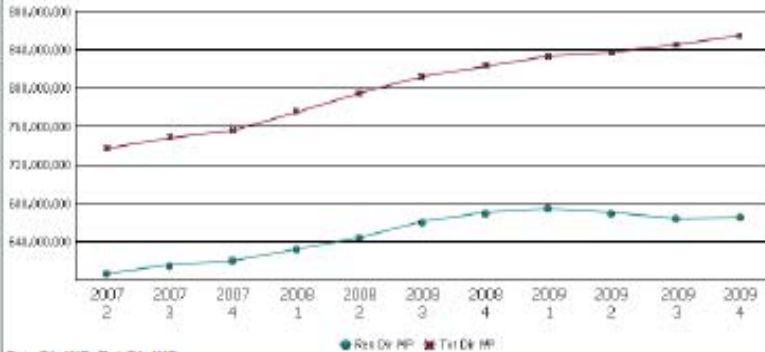
SELECT CUSTOMER DASHBOARD

CHOOSE PANEL Written Premium

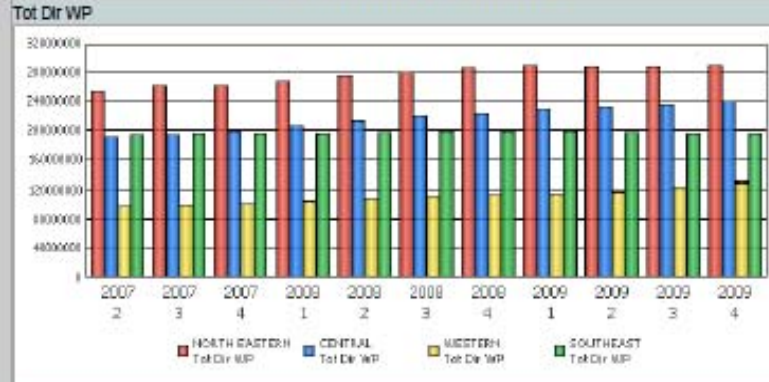
Select BUS SEG:

6/27/2010 1:45:02 PM

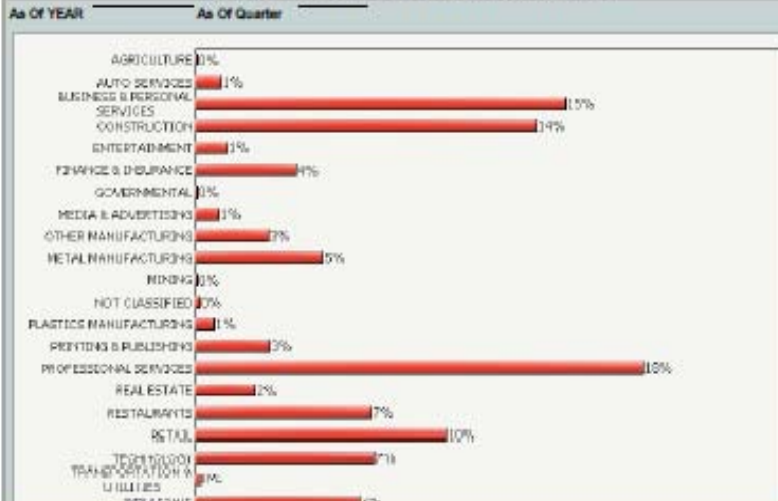
Countrywide Premium Performance



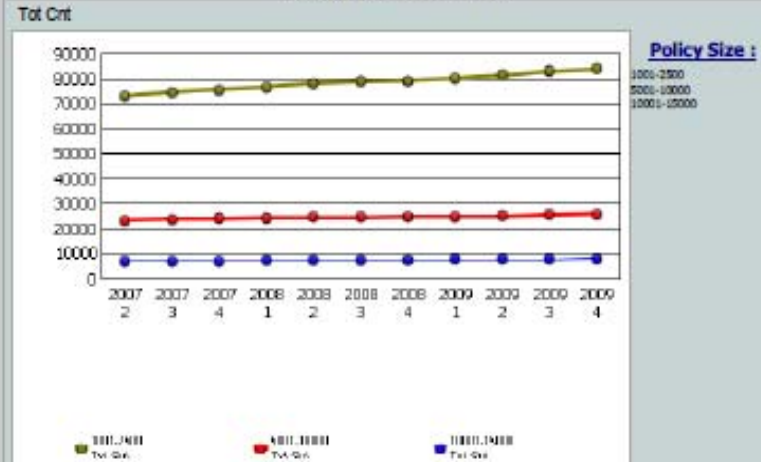
Divisionwide Premium Performance



Industry Division Premium MIX Performance



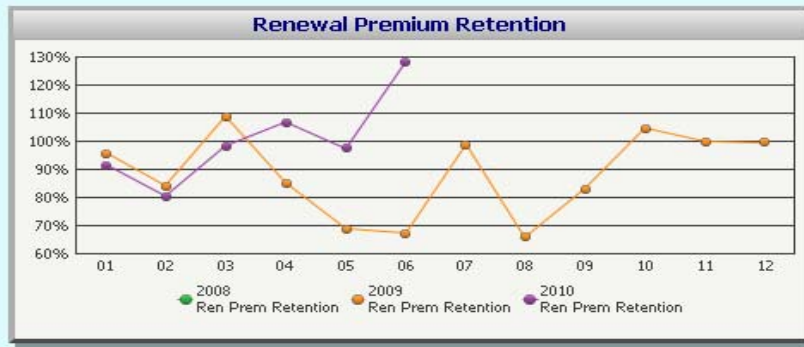
Policy Size Performance





olesale Trade-durable Goods INDUSTRIAL SUPPLIES - 5005	53,636
olesale Trade-durable Goods SERVICE ESTABLISHMENT EQUIPMENT - 5087	5,129,454
olesale Trade-durable Goods SPORTING AND RECREATION GOODS - 5091	1,785,026
olesale Trade-durable Goods TOYS AND HOBBY GOODS AND SUPPLIES - 5092	984,191
olesale Trade-durable Goods JEWELRY AND PRECIOUS STONES - 5094	2,156,591
olesale Trade-durable Goods DURABLE GOODS, NEC - 5099	1,656,704
al	140,211,175

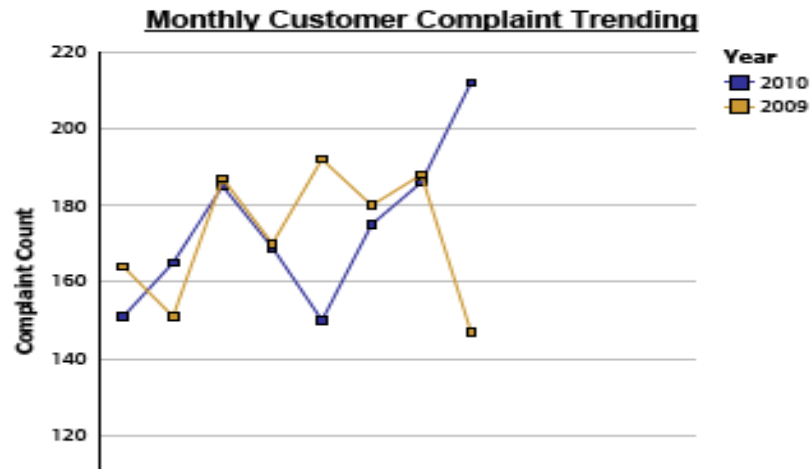
- 3578 :CALCULATING AND ACCOUNTING EC
- 3579 :OFFICE MACHINES, NEC - 3579
- 3651 :HOUSEHOLD AUDIO AND VIDEO EQ
- 3652 :PRERECORDED RECORDS AND TAPE
- 3661 :TELEPHONE AND TELEGRAPH APPAF
- 3663 :RADIO AND T.V. COMMUNICATIONS



P&C Claims
YTD Customer Complaint Volume - Top 10 Reasons

August
2010

	Current YTD			Prior YTD		
	Complaint	Intake	%	Complaint	Intake	%
(504) Claimant Not Happy With Settlement Or Settlement Offer	192	664,922	0.03%	189	669,997	0.03%
(509) Claim Denial - Full Or Partial Disclaimer Of Coverage	180	664,922	0.03%	194	669,997	0.03%
(549) Civil Remedy Notification	118	664,922	0.02%	97	669,997	0.01%
(513) Third Party Unhappy With Liability Decision	111	664,922	0.02%	128	669,997	0.02%
(550) Insured Not Happy With Settlement Or Settlement Offer	103	664,922	0.02%	90	669,997	0.01%
(506) Delay In Issuing Check/Paying Claim, Benefits, Annuity Endow	102	664,922	0.02%	74	669,997	0.01%
(543) Follow Up And Process Delays	84	664,922	0.01%	109	669,997	0.02%
(512) Failure To Handle Claim In A Professional Manner	49	664,922	0.01%	19	669,997	0.00%
(514) Insured Unhappy With Liability Decision	49	664,922	0.01%	34	669,997	0.01%
(500) Unhappy With Auto Appraisal Amount	40	664,922	0.01%	48	669,997	0.01%
<i>Top 10 Totals</i>	1,028	664,922	0.15%	982	669,997	0.15%
<i>Total Complaints</i>	1,393	664,922	0.21%	1,379	669,997	0.21%



EIT Dashboard

EIT

Cost Value Creation Production Stability Delivery

Improve the value of our growth and transformational initiatives and provide a great place to work.

Portfolio Return

Strategic initiative MIRR

Available in 2011

Transform and Grow Index

% Of Technology Costs For Transform & Grow
(Transform + Grow Costs / Total Technology
Costs)



History



Credibility



WEI

WEI Score Percentile of the Pulse Survey
Results*



History



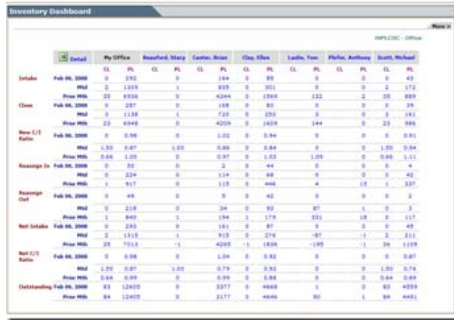
Credibility



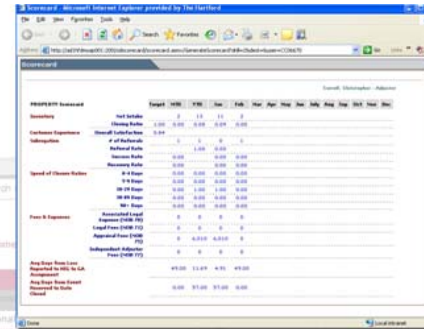
Business Intelligence as Deployed for the Claim Department - BI Tool Cognos

KPI Strategy > Dashboarding

The faster and more accurately KPIs can be accessed, reviewed, analyzed, and acted upon, the better the chance an organization has for success.



Inventory Dashboard

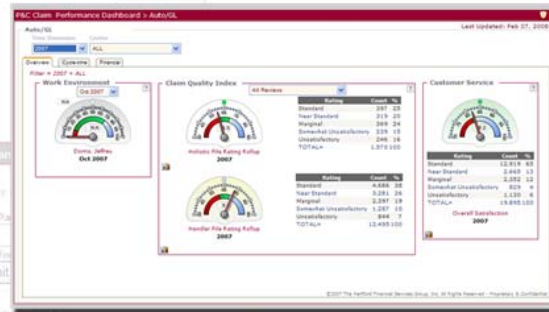


Handler Level Scorecard



Customer Role

Business Agility is “the ability of an organization to sense environmental change and to respond efficiently and effectively to that change.” – Gartner Group



Claim Performance Dashboard

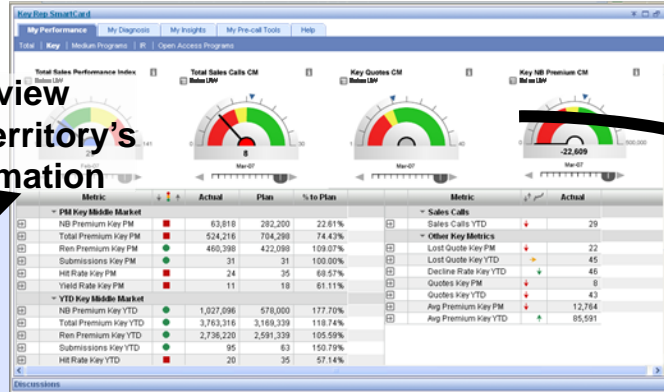
Single Point of Access –one stop shopping

From Results Evaluation to Taking Action

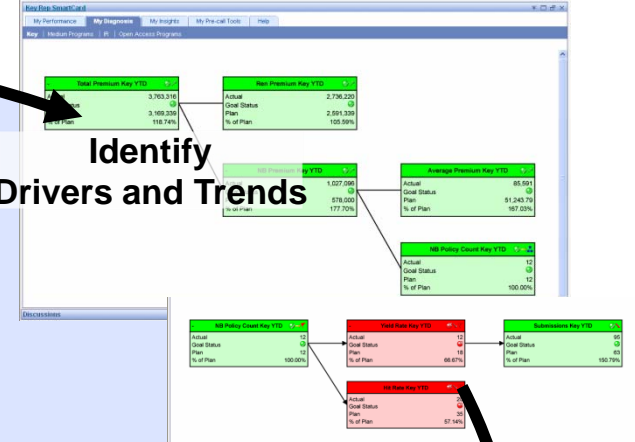
Start Here

Review
Your Territory's
Information

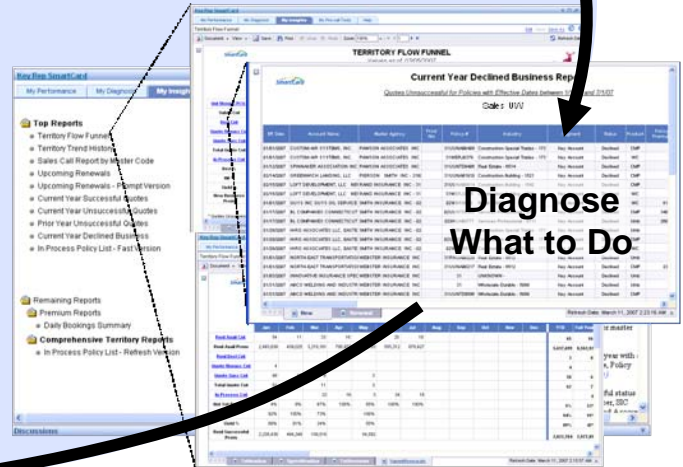
Take
Action



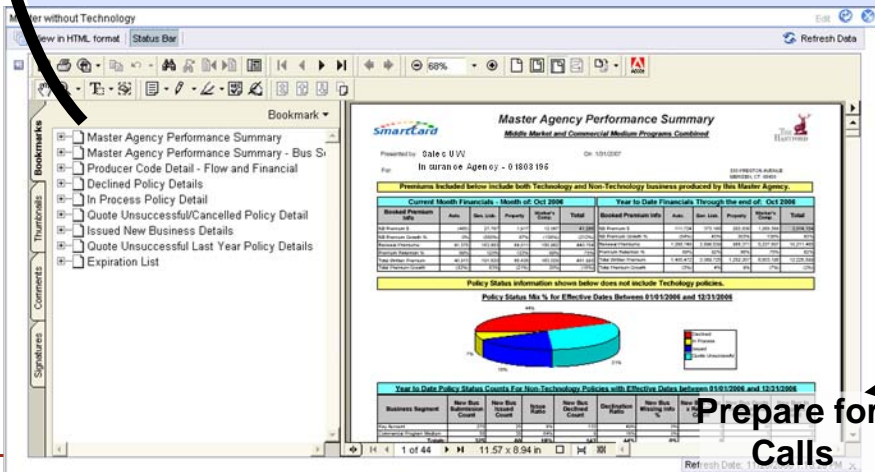
Identify
Drivers and Trends



Diagnose
What to Do






Prepare for
Calls






Performance Dashboard Success Factors

Organizational Needs

Alignment – Focus on commonly agreed upon goals and objectives		Business defined goals aligned with strategic objectives
Visibility – Organization can track KPI's by department and enterprise		At a LOB level only – looking at an executive level in a future release that will aggregate results across lines
Collaboration – Provide single view of defined objectives enabling joint decision making		Excellent tool for line level analysis, common definitions at a LOB level allows for analysis across common KPI's (i.e. WEI, CQI, CSI)

Business User Needs

Intuitive – Ease of use		Strong feedback on usability, trend charts and metric definitions linked with each gauge
Personalizable – Provide users with specific indicators and functions necessary for their jobs		Role based delivery
Powerful, interactive insight – Communicate actionable information to robust KPI's and advanced analytics		Ability to drill across the organization and into specially designed Cognos cubes for analytics

- **Roles based – Handler, Supervisor, Manager, Director, Oversight**
- **Top down filtered drill path**
- **Cognos cube access by gauge**
- **Trending charts by gauge**



Sequential filtering (e.g., Select a Director and the Manager filter drop-down box appears with the selected Director's direct reports listed as filtered values.

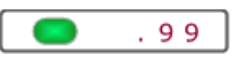
Home Office Oversight

Time Dimension Center
Jan 07 All Offices

Overview Cycle-time

Filter = Jan 07 + All

Closing Ratio



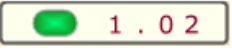
Jan 07

Budget Spend



Jan 07

Staffing Accuracy



Jan 07



Trending Line Chart accessible by clicking on the chart icon

Rating	Count	%
Satisfactory	5656	50
Near Satisfactory	787	10
Marginal	3333	30
Slightly unsatisfactory	XX	XX
Unsatisfactory	XX	XX
TOTAL =	XXX	XXX

Rating	Count	%
Satisfactory	5656	50
Near Satisfactory	787	10
Marginal	3333	30
Slightly unsatisfactory	XX	XX
Unsatisfactory	XX	XX
TOTAL =	XXX	XXX

Customer Service

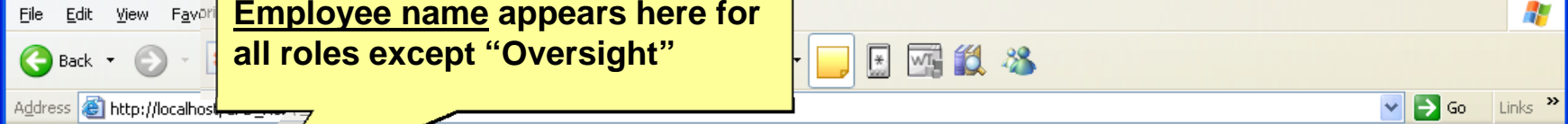


Rating	Count	%
Satisfactory	5656	50
Near Satisfactory	787	10
Marginal	3333	30
Slightly unsatisfactory	XX	XX
Unsatisfactory	XX	XX
TOTAL =	XXX	XXX

Direct COGNOS Access by clicking on the gauge



Employee name appears here for all roles except "Oversight"

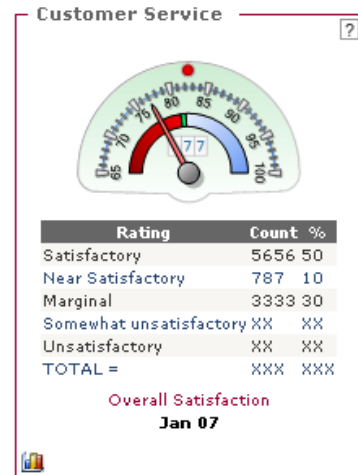
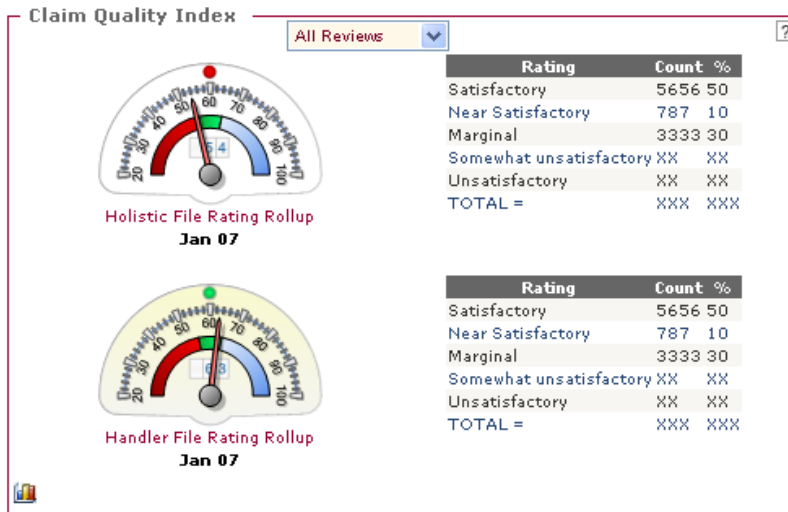
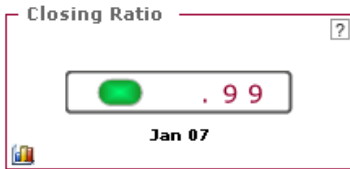


Home Office Oversight

Time Dimension: Jan 07
 Center: Shelton NECLCSC - Lamb, Philli
 Manager: Demos, Charles C
 Team Leader: Lee, Robert E
 Handler: Swamy, Gayatri

Overview Cycle-time

Filter = Jan 07 + Shelton NECLCSC - Lamb, Philip B. + Demos, Charles + Lee, Robert E. + Swamy, Gayatri





P&C Claim Performance Dashboard - Microsoft Internet Explorer provided by The Hartford

File Edit View Favorites Tools Help

Address http://localhost/CPD_Rel2/_AutoGL_VER2.aspx Go Links

P&C Claim Performance Dashboard > Auto/GL Last Updated: June 4, 2007

Home Office Oversight

Time Dimension: Jan 07
Center: Shelton NECLCSC - Lamb, Philii
Manager: Demos, Charles C
Team Leader: Lee, Robert E
Handler: Swamy, Gayatri

Overview | **Cycle-time**

Filter = Jan 07 + Shelton NECLCSC - Lamb, Philip B. + Demos, Charles + Lee, Robert E. + Swamy, Gayatri

Report to Inspection

% within 3 days
Year to Date

Report to Closed - APD

% between 15 days
Year to Date

Intake Based Settlement - BI

% @ 3 months
Year to Date

Handler view does not have target ranges of red, green & blue.

Discussions | Discussions not available on <http://localhost/> Local intranet



P&C Claim Performance Dashboard - Microsoft Internet Explorer provided by The Hartford

File Edit View Favorites Tools Help

Address http://ad1hfdtfs001:105/_Prop_VER2.aspx

Role filter is disabled when a role is selected at the LOB (parent) level.

P&C Claim Performance Dashboard > Property Last Updated: July 01, 2007

Home Office Oversight

Time Dimension: Jan 07 | Role: Inside Claim Re | Center: NEPCO - Percopo, Robert J | Role: Inside Claim Re | Team Leader: Tiffany, Hunton S | Role: Inside Claim Re | Handler: Goodfield, Cindy L

Overview | Cycle-time

Filter = Jan 07 + NEPCO - Percopo, Robert J + Inside Claim Rep + Tiffany, Hunton S + Goodfield, Cindy L

Closing Ratio

Jan 07

Claim Quality Index

All Reviews

Holistic File Rating Rollup
Jan 07

Handler File Rating Rollup
Jan 07

Rating	Count	%
Satisfactory	5656	50
Near Satisfactory	787	10
Marginal	3333	30
Somewhat unsatisfactory	XX	XX
Unsatisfactory	XX	XX
TOTAL =	XXX	XXX

Rating	Count	%
Satisfactory	5656	50
Near Satisfactory	787	10
Marginal	3333	30
Somewhat unsatisfactory	XX	XX
Unsatisfactory	XX	XX
TOTAL =	XXX	XXX

Customer Service

Rating	Count	%
Satisfactory	5656	50
Near Satisfactory	787	10
Marginal	3333	30
Somewhat unsatisfactory	XX	XX
Unsatisfactory	XX	XX
TOTAL =	XXX	XXX

Overall Satisfaction
Jan 07

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Done Local intranet

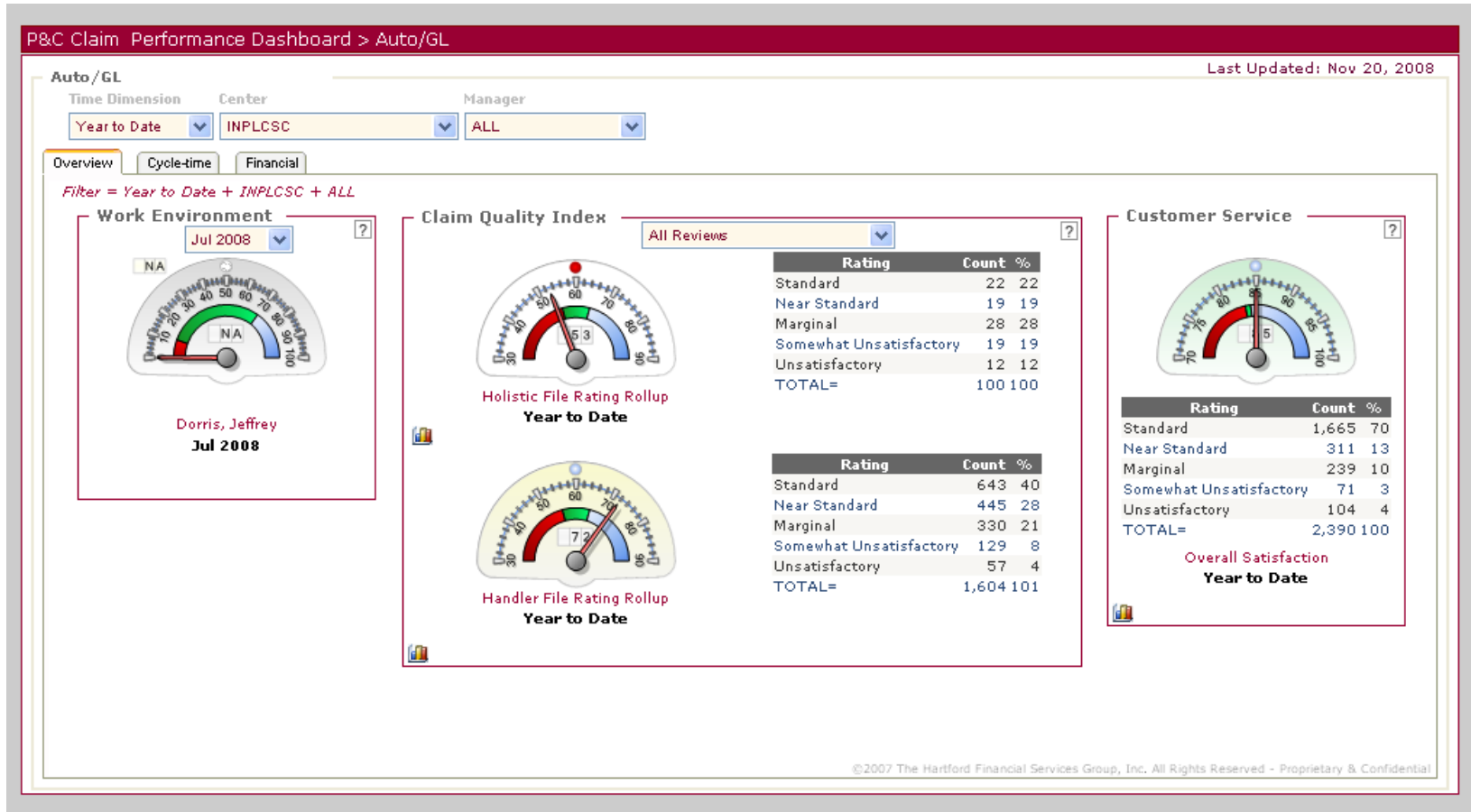
Alignment of Business Strategy and Company Goals

The 3 key Claim strategic elements:

Work Environment

Claim Quality

Customer Service



It is the detail behind it that provides the insight and understanding of how to take action.

Business Intelligence Deployed For the Sale Department – BI Tool Business Objects

- **Structures Reports with Drill Down Capabilities**
- **Top down filtered drill path**
- **Business Object Universes**
- **Trending charts**

Key Sales UW SmartCard – “My Insights”

“My Insights” contains actionable information for your territory at a greater level of detail. Each element in the folders on the left is a link to a report. There are explanation of the reports on the right. All reports can be saved to Excel



Key Rep SmartCard

My Performance | My Diagnosis | **My Insights** | My Pre-call Tools | Help

Top Reports

- TSP Monitoring Report
- Territory Flow Funnel
- Territory Trend History
- Sales Call Report by Master Code
- Upcoming Renewals
- Upcoming Renewals - Prompt Version
- Current Year Successful Quotes
- Current Year Unsuccessful Quotes
- Prior Year Unsuccessful Quotes
- Current Year Declined Business
- In Process Policy List - Fast Version

Remaining Reports

- + Premium Reports
- + Comprehensive Territory Reports

Middle Market SmartCard Reports – “Quick Reference” Guide

TOP REPORTS

Territory Flow Funnel: This report will show your territory’s Siebel production. Report features effective month info including : Submissions, Issues, Declines, Issue rate, Decline Rate, Hit Rate and Siebel Successful NB Premium and renewal premium. *(Source for all = Hartsource)*

Territory Trend History: This report will show by booked month, your territory’s Siebel production both New Business and Renewals. Report features, Submissions, yield, policy counts, flat cancels, mid term cancels, DWP, Average Policy Premium, Count and Premium Retention. *(Source for all = Hartsource)*

Sales Call Report by Master Code: Breakdown of all agents in territory shows YTD results for NBWP, TWP, date of last Sales Call, YTD Sales Calls, Premium and Policy Retention. Also includes Decline rates, Submission and NB Growth. *(Source: Calls = IMPACT, Flow = Hartsource, Premium = PPR)*

Upcoming Renewals: For each UW’s agents this report shows all of your upcoming renewals for 2007. Data provides an overall agent summary by WP and month, a segment summary level breakdown and an additional tab with policy level breakdowns for Expiration Date, Account Name, Producer Name, Policy Number, SIC Code, MM Industry Name, Do Not Renew Indicator, Product and Total Premium. *(All Data = Hartsource)*

Upcoming Renewals-Prompt Version: Same report as above, just this version allows you to pick a specific time frame or master code for renewals. *(All Data = Hartsource)*

Current Year Successful Quotes: For each UW this report shows all of your issued business for the current calendar year with a breakout by New and Renewal. Data included is Expiration Date, Account Name, Master Agency Name, Producer Name, Policy Number, , SIC Code, MM Industry Name, Product LOB, Policy Premium and Account Premium. *(All Data = Hartsource)*

Current Year Unsuccessful Quotes: For each UW this report shows all of your quotes that are currently in unsuccessful status for NB and Renewals in 2007. Data included is Expiration Date, Account Name, Master Agency, Segment, Policy Number, SIC Code, MM Industry Name, Quote Last Reason, Successful Carrier, Successful Premium, Product and Policy


Discussions

The top report is the TSP Monitoring report. It displays information by agency including agency profiling, sales calls, plan values and agency

Key Rep SmartCard
My Performance | My Diagnosis | **My Insights** | My Pre-call Tools | Help

TSP Monitoring Report
Edit | Save | Save As | Refresh Data


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Middle Market TSP Monitoring Report

Sales UW

Sales Groups Detail



[Go to your TSP](#)

Agency Name <small>on links to enter Impact call reports view/modify ACES profiles)</small>	(cli)	P&C TAV (000's)	CL TAV (000's)	ACES Flow Cnt	ACES Iss Cnt	YTD Calls / Mo	YTD Quotes	YTD Issues	Issue Rt	YTD TWP Act	YTD TWP Gr%	YTD NB Act	YTD NB Gr%	YTD NB Obj	YTD Var
Smith Insurance	IMPACT ACES	30,000	15,000			1.0	5	3	60%	444,583	831%	350,788	(498%)	50,000	300,7
							5	3	60%	444,583		350,788		50,000	

Priority Plus

[Go to your TSP](#)

Agency Name <small>on links to enter Impact call reports view/modify ACES profiles)</small>	(cli)	P&C TAV (000's)	CL TAV (000's)	ACES Flow Cnt	ACES Iss Cnt	YTD Calls / Mo	YTD Quotes	YTD Issues	Issue Rt	YTD TWP Act	YTD TWP Gr%	YTD NB Act	YTD NB Gr%	YTD NB Obj	YTD Var
Pierson & Smith	IMPACT ACES	40,000	29,000			2.0	3	1	33%	9,378	(158%)	4,474	(126%)	66,667	(62,1
The John M Glover Agency	IMPACT ACES	65,000				2.0	3			169,835	40%	3,794	(89%)	58,333	(54,5
Webster Insurance	IMPACT ACES	250,000	222,000			8.0	33	7	21%	2,672,499	16%	638,180	109%	379,167	259,0
							39	8	21%	2,851,712		646,448		504,167	

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Grp Trnd
Grp Summ Tot PL

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Key Sales UW SmartCard - My Insights – Flow Funnel

Key Rep SmartCard

My Performance My Diagnosis

Top Reports

- TSP Monitoring Report
- Territory Flow Funnel
- Territory Trend History
- Sales Call Report by Master Code
- Upcoming Renewals
- Upcoming Renewals - Prompt Vers
- Current Year Successful Quotes
- Current Year Unsuccessful Quotes
- Prior Year Unsuccessful Quotes
- Current Year Declined Business
- In Process Policy List- Fast Version

Remaining Reports

- Premium Reports
- Comprehensive Territory Reports

Discussions

Key Rep SmartCard

My Performance My Diagnosis **My Insights** My Pre-call Tools Help

Territory Flow Funnel

Document View Save Find Undo Redo Zoom 100% 1 Refresh Data

TERRITORY FLOW FUNNEL
Values as of 03/05/2007

Sales Underwriter: Sales UW
Key Account

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD	Full Y
Out Unsucc Pr Yr *	29	6	12	17	18	14	26	11	9	12	18	14	35	
Subm Cnt	49	28	26	18	6								77	
Decl Cnt	15	19	12	7									34	
Quote Unsucc Cnt	26	4											30	
Quote Succ Cnt	7	2											9	
Total Quote Cnt	33	6											39	
In Process Cnt	1	3	14	11	6								4	
Decl %	31%	68%	46%	39%									44%	
Hit %	21%	33%											23%	
Yield %	14%	7%											12%	
New Business Prem	1,003,944	33,522											1,037,466	1,037,466

* Quotes Unsuccessful Prior Year includes new business and renewal quotes

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TERRITORY FLOW FUNNEL
Values as of 03/05/2007

Sales Underwriter: Sales UW
Key Account

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD	Full Year
Rent Avail Cnt	54	11	33	16	6	25	18						65	16
Rent Avail Prem	2,493,838	439,025	3,210,161	795,977	190,183	555,312	878,427						5,617,699	8,562,922
Rent Decl Cnt													3	8
Quote Unsucc Cnt	4		3										4	
Quote Succ Cnt	48	10	8		3								58	6
Total Quote Cnt	52	10	11		3								62	7
In Process Cnt			22	16	3	24	18						6	8
Hot Yet Renew%	4%	9%	67%	100%	50%	100%	100%						5%	53%
Hit %	92%	100%	73%		100%								94%	91%
Yield %	89%	91%	24%		50%								89%	42%
Rent Successful Prem	2,338,438	484,348	100,516		54,592								2,822,784	2,977,85

Key Sales UW SmartCard – Drill Down from Flow Funnel

Key Rep SmartCard
My Performance | My Diagnosis | **My Insights** | My Pre-call Tools | Help

Territory Flow Funnel
Edit | Save | Save As | Refresh Data

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TERRITORY FLOW FUNNEL

Values as of 03/05/2007

Current Year Declined Business Report

Declines with Effective Dates between 1/1/2007 and 7/1/07

Sales UW

Eff Date	Account Name	Master Agency	Prod Nm	Policy #	Industry	Segment	Status	Product	Policy Premium
01/01/2007	CUSTOM AIR SYSTEMS, INC.	PAWSON ASSOCIATES INC		31UUNAB0409	Construction-Special Trades - 173	Key Account	Declined	CMP	
01/01/2007	CUSTOM AIR SYSTEMS, INC.	PAWSON ASSOCIATES INC		31WERJ0379	Construction-Special Trades - 173	Key Account	Declined	WC	
01/12/2007	SPINNAKER ASSOCIATION INC	PAWSON ASSOCIATES INC		31UUNTD9406	Real Estate - 6514	Key Account	Declined	CMP	
02/14/2007	GREENWICH LANDING, LLC	PIERSON SMITH INC - 3180		31UUNAB1910	Construction-Building - 1521	Key Account	Declined	CMP	
02/15/2007	LOFT DEVELOPMENT, LLC NE	RAND INSURANCE INC - 31		31UUNAB0814	Construction-Building - 1542	Key Account	Declined	CMP	
02/15/2007	LOFT DEVELOPMENT, LLC NE	RAND INSURANCE INC - 31		31WERJ2625	Construction-Building - 1541	Key Account	Declined	WC	
01/01/2007	GUYS INC GUYS OIL SERVICE	SMITH INSURANCE INC - 02		02WBR19662	Retail - 5989	Key Account	Declined	WC	81
01/17/2007	BL COMPANIES CONNECTICUT	SMITH INSURANCE INC - 02		02UUNTD9465	Services-Professional - 8711	Key Account	Declined	CMP	348
01/17/2007	BL COMPANIES CONNECTICUT	SMITH INSURANCE INC - 02		02XHUAB0777	Services-Professional - 8711	Key Account	Declined	Umb	260
01/29/2007	HIRO ASSOCIATES LLC, EASTE	SMITH INSURANCE INC - 02		02RHU	Construction-Special Trades - 171	Key Account	Declined	Umb	
01/29/2007	HIRO ASSOCIATES LLC, EASTE	SMITH INSURANCE INC - 02		02UUNTD9767	Construction-Special Trades - 171	Key Account	Declined	CMP	
01/29/2007	HIRO ASSOCIATES LLC, EASTE	SMITH INSURANCE INC - 02		02WER18511	Construction-Special Trades - 171	Key Account	Declined	WC	
01/01/2007	NORTH-EAST TRANSPORTATIO	WEBSTER INSURANCE INC		31RHUAB0229	Real Estate - 6512	Key Account	Declined	Umb	
01/01/2007	NORTH-EAST TRANSPORTATIO	WEBSTER INSURANCE INC		31UUNAB0217	Real Estate - 6512	Key Account	Declined	CMP	23
01/03/2007	INNOVATIVE INSURANCE SPEC	WEBSTER INSURANCE INC		31	UNKNOWN -	Key Account	Declined	Umb	
01/31/2007	ABCO WELDING AND INDUSTR	WEBSTER INSURANCE INC		31	Wholesale-Durable - 5099	Key Account	Declined	Umb	
01/31/2007	ABCO WELDING AND INDUSTR	WEBSTER INSURANCE INC		31UUNTD9596	Wholesale-Durable - 5099	Key Account	Declined	CMP	

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Hit %	92%	100%	13%	100%	94%	91%
Yield %	89%	91%	24%	50%	89%	42%
Renl Successful Prem	2,338,436	484,348	100,516	54,592	2,822,784	2,977,89

My Pre-Call Tools tab of the SmartCard contains packaged reports with extensive flow and financials information about a single agency



Key Rep SmartCard

My Performance | My Diagnosis | My Insights | **My Pre-call Tools** | Help

Pre Call Reports

- 2007 Master Report without Technology
- Enterprise Report

Middle Market SmartCard Reports - "Quick

PRE-CALL REPORTS

2007 Master Report without Technology: Report provides complete background information for a particular rep. Includes Master roll-ups and sub producer level Key, Medium Programs, IR and Specialty Programs. This report excludes technology. Detail provided includes Declines, In Process, Quote Unsuccessfuls, Cancellations, and Quote Unsuccessfuls for the prior year and a complete list of upcoming quotes. *(Source: Premium and Flow = Hartsource)*

Enterprise Report: Report provides an overall Enterprise view of a single manager for the current year as well as the prior year and includes NBWP, TWP, Growth, Loss Amounts among other metrics. All metrics are displayed for PL, SC, M where available. *(Source: This is a HartSource report)*

Key Sales UW SmartCard - Per-call Report

The 2007 Master Report package contains reports that can support business discussions with agents. The reports can be viewed in .pdf format (easy for printing and e-mailing). The list of reports is similar to territory wide reports in My Insights (see left panel below), but with additional information and focusing on a single agency.

Key Rep SmartCard
Edit

Master without Technology
Refresh Data

View in HTML format
Status Bar

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Bookmark

- Master Agency Performance Summary
- Master Agency Performance Summary - Bus S
- Producer Code Detail - Flow and Financial
- Declined Policy Details
- In Process Policy Detail
- Quote Unsuccessful/Cancelled Policy Detail
- Issued New Business Details
- Quote Unsuccessful Last Year Policy Details
- Expiration List

Master Agency Performance Summary

Middle Market and Commercial Medium Programs Combined

Presented by: Sales UW
On: 1/31/2007

For: Insurance Agency - 01803195
530 PRESTON AVENUE
MERIDEN, CT 06450

Premiums Included below include both Technology and Non-Technology business produced by this Master Agency.

Current Month Financials - Month of: Oct 2006						Year to Date Financials Through the end of: Oct 2006					
Booked Premium Info	Auto.	Gen. Liab.	Property	Worker's Comp.	Total	Booked Premium Info	Auto.	Gen. Liab.	Property	Worker's Comp.	Total
Net Premium \$	(465)	27,787	1,917	12,067	41,288	Net Premium \$	919,724	373,185	283,436	1,203,368	2,014,134
Net Premium Growth %	0%	(250%)	97%	(133%)	(212%)	Net Premium Growth %	(54%)	43%	303%	(130%)	83%
Renewal Premiums	41,378	163,853	84,511	150,962	440,704	Renewal Premiums	1,288,746	2,086,538	988,371	5,237,607	10,211,455
Premium Retention %	89%	120%	123%	89%	75%	Premium Retention %	89%	92%	89%	79%	82%
Total Written Premium	40,913	191,629	85,429	163,020	481,091	Total Written Premium	1,403,472	3,089,729	1,252,207	6,903,195	12,225,588
Total Premium Growth	(82%)	83%	(21%)	20%	(18%)	Total Premium Growth	(3%)	4%	9%	(7%)	(2%)

Policy Status information shown below does not include Technology policies.

Policy Status Mix % for Effective Dates Between 01/01/2006 and 12/31/2006

Year to Date Policy Status Counts For Non-Technology Policies with Effective Dates between 01/01/2006 and 12/31/2006									
Business Segment	New Bus Submission Count	New Bus Issued Count	Issue Ratio	New Bus Declined Count	Declination Ratio	New Bus Missing Info %	New Bus Canc x Rewrites Count	New Bus Quote Unsuccessful Count	New Bus In Progress Count
Key Account	270	20	9%	133	49%	0%	0	96	16
Commercial Program Medium	35	33	94%	9	26%	0%	0	0	6
Totals:	325	60	18%	142	44%	0%	0	96	22

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Appendix

1. Data Sources

- **Source System: Source System or Data Sources refers to any electronic repository of information that contains data of interest for management use or analytics**

2. Data Transformation & Integration (ETL)

- **ETL: The data transformation layer (aka Extract, transform, load - ETL or some variant) is the subsystem concerned with extraction of data from the data sources (source systems), transformation from the source format and structure into the target (data warehouse) format and structure, and loading into the data warehouse**

5. Metadata Management

- **Metadata:**
 - Metadata, or "data about data", is used not only to inform operators and users of the data warehouse about its status and the information held within the data warehouse, but also as a means of integration of incoming data and a tool to update and refine the underlying DW model.
 - Examples of data warehouse metadata include table and column names, their detailed descriptions, their connection to business meaningful names, the most recent data load date, the business meaning of a data item and the number of users that are logged in currently

3. Data Manufacturing & Storage

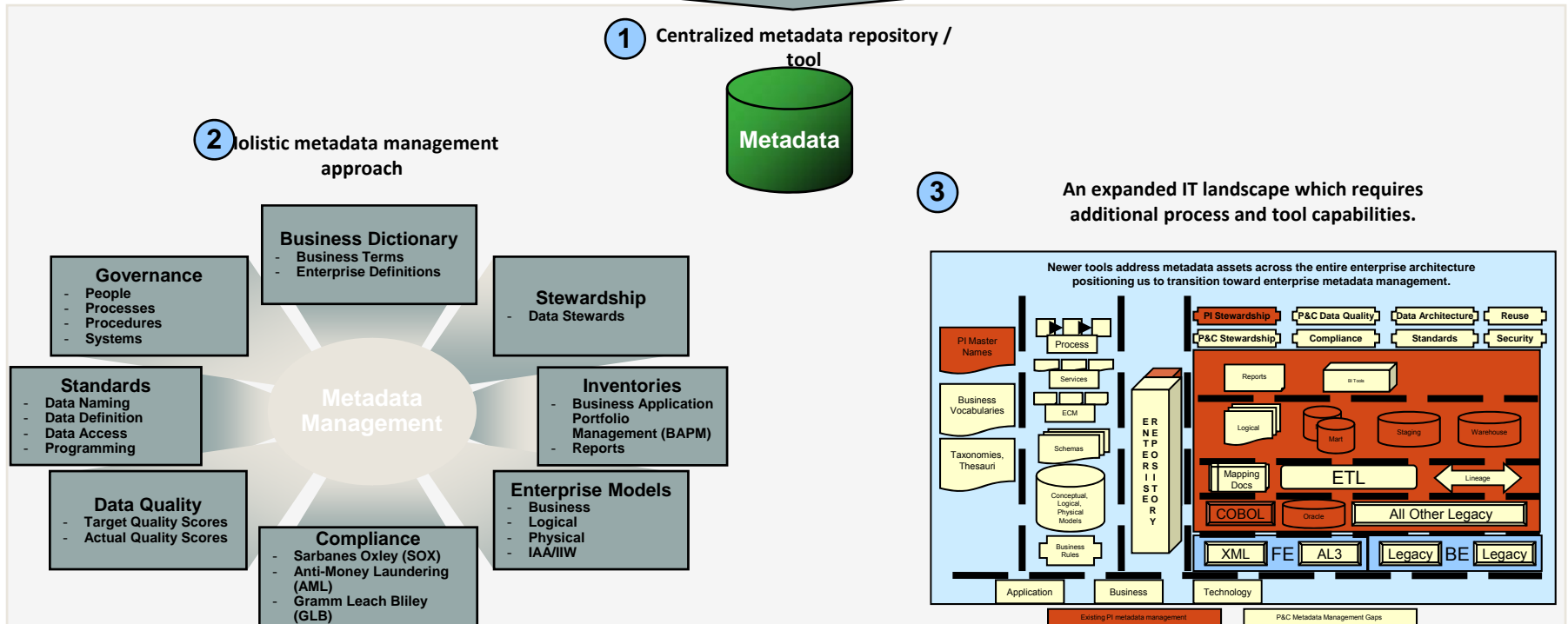
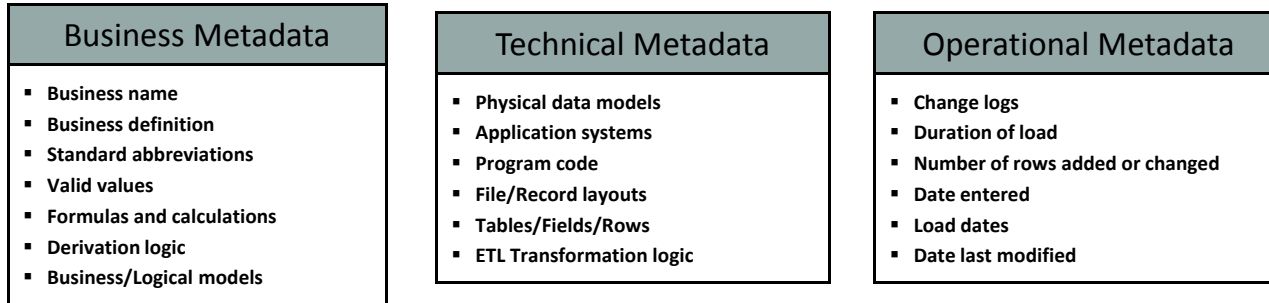
- **Data Warehouse: A shared, analytic data structure that supports multiple subjects, applications, or departments. There are three types of data warehouses: centralized, hub-and-spoke, and operational data stores**
- **Hub-and-Spoke Data Warehouse: A data warehouse that stages and prepares data for delivery to downstream (i.e., dependent) data marts. Most users query the dependent data marts, not the data warehouse**
- **Centralized Data Warehouse: A data warehouse residing within a single database, which users query directly**
- **Federated Marts or Environments: An architecture that leaves existing analytic structures in place, but links them to some degree using shared keys, shared columns, global metadata, distributed queries, or some other method**
- **Data Mart: A shared, analytic data structure that generally supports a single subject area, application, or department. A data mart is commonly a cluster of star schemas supporting a single subject area**
- **Dependent Data Mart: A dependent data mart is a physical database (either on the same hardware as the data warehouse or on a separate hardware platform) that receives all its information from the data warehouse. The purpose of a Data Mart is to provide a sub-set of the data warehouse's data for a specific purpose or to a specific sub-group of the organization. A **data mart** is exactly like a data warehouse technically, but it serves a different business purpose: it either holds information for only part of a company (such as a division), or it holds a small selection of information for the entire company (to support extra analysis without slowing down the main system). In either case, however, it is not the organization's official repository, the way a data warehouse is**
- **View: Is a 'logical' provisioning of a subset of the data warehouse similar to a Data Mart**
- **Tiered Storage: Data is stored according to its intended use. For instance, data intended for restoration in the event of data loss or corruption is stored locally, for fast recovery. Data required to be kept for regulatory purposes is archived to lower cost disks**
- **Operational Data Store (ODS): A "data warehouse" with limited historical data (e.g. 30 to 60 days of information) that supports one or more operational applications with sub-second response time requirements. An ODS is also updated directly by operational applications**

4. Data Access & Delivery

- **Business Intelligence (BI): is an umbrella term that encompasses the processes, tools, and technologies required to turn data into information, and information into knowledge and plans that drive effective business activity. BI encompasses data warehousing technologies and processes on the back end, and query, reporting, analysis, and information delivery tools (that is, BI tools) and processes on the front end**
- **Business Intelligence Tools:**
 - Business intelligence tools are a type of [application software](#) designed to help the [business intelligence](#) (BI) [business processes](#). Specifically they are generally tools that aid in the analysis, and presentation of data. While some business intelligence tools include [ETL](#) functionality, ETL tools are generally not considered business intelligence tools
- **Reporting:**
 - The data in the data warehouse must be available to the organization's staff if the data warehouse is to be useful. There are a very large number of software applications that perform this function, or reporting can be custom-developed. Examples of types of reporting tools include:
 - [Business intelligence tools](#): These are software applications that simplify the process of development and production of business reports based on data warehouse data
 - [Executive information systems](#) (known more widely as [Dashboard \(business\)](#)): These are software applications that are used to display complex business metrics and information in a graphical way to allow rapid understanding.
 - [OLAP](#) Tools: OLAP tools form data into logical multi-dimensional structures and allow users to select which dimensions to view data by.
 - [Data Mining](#): Data mining tools are software that allow users to perform detailed mathematical and statistical calculations on detailed data warehouse data to detect trends, identify patterns and analyze data
- **OLAP:**
 - OLAP is an acronym for On Line Analytical Processing. It is an approach to quickly provide the answer to analytical queries that are dimensional in nature. It is part of the broader category [business intelligence](#), which also includes [Extract transform load](#) (ETL), [relational reporting](#) and [data mining](#). The typical applications of OLAP are in business reporting for sales, [marketing](#), management reporting, [business process management](#) (BPM), [budgeting](#) and forecasting, financial reporting and similar areas
- **Spreadmart: A spreadsheet or desktop database that functions as a personal or departmental data mart whose definitions and rules are not consistent with other analytic structures**

Metadata - Scope

A **Metadata Management** program enables our ability to find, understand, manage, govern, rationalize, share, reuse, and leverage information about data, business, applications, services, hardware and software.



Metadata Implementation Program - The Five Deliverables

1. **Tool**: Acquire a metadata tool that will meet our business and IT requirements for Metadata Management
2. **Governance**: Implement the proper roles, responsibilities, policies, processes, procedures, and standards to most effectively manage our information assets
3. **Organization**: Consolidate various data management resources into a data asset management organization
4. **Communication Plan**: Establish an ongoing effort to educate and communicate to our employees all metadata strategy related initiatives
5. **Roadmap/Implementation**: Develop a preliminary roadmap with key implementation strategies for moving forward

Metadata: Current State vs. Possible Future State Scenario

Current State: Information Chaos

- Multiple definitions for the same data element
- Multi-use data fields
- Excessive time & resources required to search for needed data
- Pockets of excellence
- Lack of enterprise data governance and stewardship
- One shot mapping efforts
- Not shared or reusable
- Use of incorrect sources
- Data redundancy

Future State: Metadata Management

- Agreed upon enterprise definitions
- Single-use data fields
- Increased efficiencies via short data searches
- Enterprise organizational effectiveness
- Centrally captured / reduced redundancy
- Shared and reusable
- Authoritative & certified sources
- Unlimited potential for creative use of data
- Provides competitive advantage
- Trusted data
- Provable, repeatable processes / results

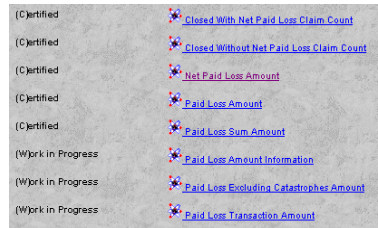
Future State Process Flow

1

Analyst types the term “**Paid Loss Amount**” into the P&C Metadata Search System

2

He/she is quickly presented with a list of **exact name matches** and **synonyms**



3

He/she determines “**Net Paid Loss Amount**” is the right field to use, it is an “**approved source**” and who the **Steward** is.



4

He/she is able to conduct an **impact analysis** and determine the **data lineage**, where it was created, and the rules used to calculate it.

