



Industry Warehouse Studio™ For P&C Insurance

A Sybase IWS White Paper

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Introduction

The Sybase® Industry Warehouse Studio™ (IWS) for P&C Insurance is an excellent choice for those insurance organizations that need to implement a working data warehouse in the shortest amount of time with a minimum of risk. The IWS approach to implementation of a data warehouse allows the organization to take advantage of the opportunity to buy a data warehouse as an effective alternative to the more traditional approach of designing and building a data warehouse from scratch. Experience tells us and industry experts remind us, that the process of building a data warehouse is typically a time- and resource-consuming activity, making it a risky endeavor in the fast changing world of today's business.

Putting an organization in this risky position is no longer necessary. Today's data warehousing technology has evolved through the earlier phases of data warehouse development ... the Guru era, the Tools era, and the Methods era ... to a new era ... specifically, the Solutions era. The Solutions era is characterized by analytic Business Intelligence (BI) applications built upon a packaged data warehouse infrastructure.

The concept of an evolution from build to buy is not new in the area of software technology. Take, for example, some of the operational systems such as accounting, payroll and human resource systems. Years ago it was not uncommon for individual organizations to design, build and implement custom solutions to meet their individual needs. Over time, software vendors recognized that these were common business problems and common solutions could be developed. That same process as applied to data warehousing has identified that within industries there are common industry workflows, common industry measurements, common industry reporting requirements, common industry terminology and common data structures.

However, selection of the right packaged data warehouse to buy still requires a careful analysis of the scope and content of the product as well as its capability to be extended and customized so that the final solution may be tailored to meet the specific requirements of the buying organization.

This paper provides a comprehensive overview of the key functionality delivered in the IWS for P&C Insurance. This document covers the core customer-centric applications for customer relationship management (CRM) as well as the industry-specific extensions unique to insurance organizations. The scope of this paper does not include customization, which is typically a part of every IWS implementation. This customization process can be defined during a gap analysis to identify the gap between the pre-packaged features of the IWS and the specific requirements of the purchasing organization. The gap analysis identifies opportunities for enhancement and customization that may increase the base level of IWS functionality to meet an organization's unique requirements.

The Insurance Data Warehouse

The insurance industry is still in the early stages of leveraging the vast amounts of data that is collected through its operational processes. Many insurance organizations found early benefit in implementing data marts, which served as the analytical platform for meeting the targeted needs in departmental operations like marketing, call centers and sales.

These incremental platforms can be implemented in phases that are manageable, affordable and solve their analytical needs. But from the enterprise view of an insurance organization, these data marts tend to be harder to maintain and usually require storage of large amounts of redundant data. And they significantly fragment the data needed to provide a 360° view of the customer or business performance.

The data mart approach makes it very difficult to “close the loop.” Where a marketing campaign’s data mart may provide the analytics needed to support lead generation, it likely lacks the ability to track what happened with the lead and whether it resulted in a sale over time.

A better way to address the need for incremental implementations is to build from an enterprise-wide plan for a data warehouse even if the phases are being implemented one department at a time. At the end of this process, the organization will have enterprise-wide, integrated data upon which to perform a data analysis. (See page 18 of this document to get a deeper understanding of the value of an enterprise data warehouse vs. incremental heterogeneous data marts.)

Data warehousing is a management tool that enables executives to access the information they need to make informed business decisions. A data warehousing system pulls together information from disparate sources to construct an integrated view of business activities. These systems then transform the data into a consistent, easily accessible format and distribute the data to where it is needed for decision making. Although the actual data warehouse itself may be the responsibility of the IT department, the project should be driven by business management because a data warehouse is only as good as its ability to guide management in making strategic and informed business decisions. Business users can then efficiently analyze vast quantities of data, uncover hidden opportunities and enhance their organizations’ competitive advantage.

In fact, a successful data warehouse actually expands dramatically over time. And since data warehouses are strategic tools, they should be designed to serve as wide a variety of information needs as possible. Therefore, the data warehouse design should be expandable and flexible. The most successful analytical applications focus on specific business problems. To do that, a data warehouse needs to be composed of the company’s basic data building blocks stored at the atomic level so that the design can meet the need of unanticipated information needs.

A data warehouse should embody six basic principles or characteristics:

- Separate the data warehouse from the transaction processing applications
- Load the data warehouse with the raw data at the lowest level of detail practical (atomic detail)
- Store time series (historical) data and make provisions to archive old data
- Update the data warehouse periodically, according to a predefined schedule, with new data
- Provide access to the widest range of potential users
- Create the data warehouse using data models that promote flexibility and facilitate expansion

The range of data sources and information uses in a typical insurance organization:

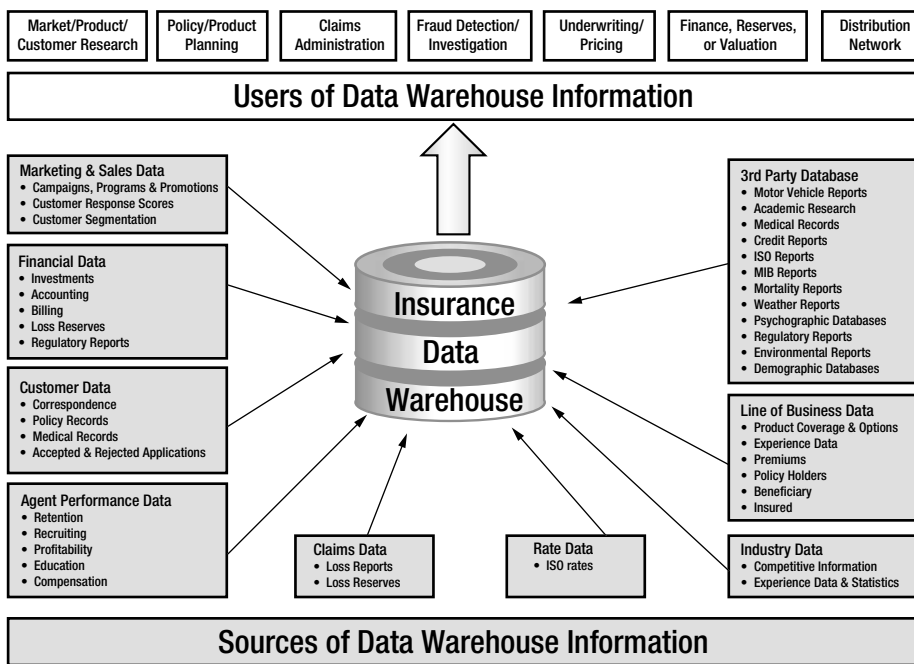


Diagram 1: Insurance Data Sources

The next section of this document will discuss the application capability that is enabled by a comprehensive enterprise data model that has been designed specifically to meet the needs of property & casualty and multi-lines insurance companies.

Application Capability

Addressing the required functionality

The IWS delivers a wide scope of functionality within a data warehouse architecture. This section describes that functionality in two parts. The Business Performance analysis focuses on the specific functionality needed to measure and manage key areas of business performance in an insurance organization. The second section details the functionality provided in the category of CRM.

P&C Insurance Business Performance Analysis

Business Performance analysis represents a major decision support activity that has a requirement for a data warehouse as a source. These applications provide key insights and analyze the industry-specific business events that drive the business for an insurance company. Detailed information that comes from policy quotation, issuing, renewals and claims serve as the source data for information to be analyzed. By its very nature, due to its heavy reliance on customer-initiated activity, the data warehouse must have a fully integrated customer-centric focus. This focus extends the typical analysis of the Customer Relationship Management to incorporate the impact that the customer has on the industry-specific business events that drive business performance.

The Sybase Industry Warehouse Studio is unique in that the IWS design includes this all-important feature as a standard part of its integration design.

Policy and Underwriting Analysis

The Policy Analysis module is focussed on the types and risk profiles of policies that are in force. This analysis can provide insight on the effectiveness of the underwriting procedures in place.

Policy Analysis enables the comparison of terms, lengths, premiums and risks. In addition to this, effective underwriting analysis requires extremely flexible access to all information regarding the policies in force, including:

- **Customer:** The customer for which the policies are active. All information about the customer can be analysed, including demographic, geographic and financial characteristics, as discussed in Customer Relationship Management.
- **Agent:** The success of the various channels to market is critical to the entire organization's success. It is likely that particular channels are best suited to particular market segments or product lines. The IWS therefore enables policy quotation procedures to be analysed for each channel, including direct sales forces, call centers, internet Web sites and agent networks. Much benefit can be gained from this analysis, including a working knowledge of exactly how beneficial Web-based quotation systems are. For example – does the Web site lead to simply information gatherers, great low risk customers, or higher risk customers that have been refused elsewhere?
- **Product:** Of course different insurance products will have widely varying statistics and must be analysed for underwriting purposes. Comparison of similar products as well as differing lines of business can be achieved through an integrated product perspective. The IWS stores products from a variety of operational systems in the same store, enabling a truly integrated perspective across the organization.
- **Time:** Weeks, months, quarters, seasons, holidays and years all have dramatic effects on the policy measures obtained from the market. National and international operations can be analysed together to analyse the trend in performance over time.

- **Geography:** The geographical location the policy was written at or written for. The risk profile of different geographies may lead to a mismatch in the market – that is either lower or higher than average premiums compared to the competition.
- Many other areas of information can be analysed, including payments, insured item details, insured amounts and premiums to name a few can be analysed in this area.

Claim Analysis

Claim Analysis involves analysing the circumstances that lead to claims being paid or declined on differing policies. Each individual claim applied for as well as paid or declined is stored in the IWS. It is therefore possible to analyse the rates of payment in comparison to all the dimensions noted above in Policy Quotation Analysis, including time, geography, channel, customer and product.

This module can be used as the basis for many different types of analysis within the IWS, including verifying the validity of claims and payments, analysing the rate of claim for policies in different geographies, risk profiles, customer segments etc., as well as analysing the effectiveness of the organizational channel in place for dealing with claims. In determining the validity of claims, triangulation analysis can be employed to compare the number of policies having claims made against them in each month, comparing the date of incidence to the dates covered by the policies.

In analysing the organizational channel performance in handling claims, the time taken from claim to payment can be analysed, as well as the detail of each communication with the customer when integrated with the Customer Care application as described in the Analytical CRM section. By integrating these applications, it is possible to see the effect of different communication mechanisms (e.g. phone, fax, email, Internet) on the claim process, as well as the number of distinct communications between the organization and the claimant.

Reinsurance Analysis

The IWS can be used to analyse the reinsurance structure of the insurance company. This includes details such as:

- **Reinsurer:** Various reinsurers will be used for different reinsurance purposes, for example different geographies, products, risks etc.
- **Reinsurance type:** The characteristics of the reinsurance, such as amount of reinsurance, type (e.g. limit based reinsurance, percentage based etc).
- **Underwriting details:** All of the analytic elements mentioned in Policy and Underwriting Analysis above can be stored and analysed in the reinsurance module.

Agent Analysis

Insurance companies typically have a range of contacts with the market, including direct sales people, call centers and external agents or planners. The IWS can be used to analyse the entire channel to market, whether that is internal, external or mixed. This provides a true picture of the organization's performance across different sales channels.

Specific elements that can be analysed in regard to the agents include:

- **KPIs:** These are Key Performance Indicators for the agents, including but not limited to earned premium, proposals, applications, lapses, claim details, targets and commissions.
- **Categories:** These KPIs can be analysed by a wide variety of categories, that are integrated (conformed) to those mentioned above, including time, geography, product, customer demographics and geography among many others.

It must be noted that this agent analysis may be integrated with other business lines (e.g. financial management, life insurance etc.) to gain a perspective of agent performance across multiple product lines.

Policy Quotation Analysis

The quotation process for an insurance company defines the major source of policies for most insurance companies. The success of the quotation procedure is critical to the success of the organization as a whole. Issues such as the number of quotations accepted and rejected is critical to ensure that the process is as efficient and effective as possible.

The Sybase IWS offers a detailed insight into the policy quotation process, by storing and enabling analysis of every quotation performed throughout the company and channels to market (i.e. agents, brokers etc.). A variety of measures can be stored and/or calculated from the IWS including:

- **Conversion Rate:** The rate of successful quotations that result in policies accepted by customers.
- **Rejection Rate:** The number of quotations rejected compared to the total number written.
- **Adjustment Rate:** The number of times a quotation is adjusted or re-issued before acceptance or rejection by the prospect.
- **Time to conversion:** The time taken (usually in days) from time of quotation to time of policy acceptance and/or start.

In addition to the dimensions listed in the Policy and Underwriting Analysis section, you can also analyze the data by **prospect**. The prospect for which the quotation is being made can be analysed. This assists with analysing cross-selling success – for example many successful quotations may be made for a particular type of prospect. When combined with Customer Profiling as described above, the particular details of each prospect can be stored and analysed to determine the success of quotation for different segments of the target market. For example, the IWS will demonstrate which particular products/channels/geographies are most effective for different market segments.

Multiple Industry Lines

Extending the IWS to include analysis focused on the wider financial industry (e.g. retail banking, credit card provision, capital markets) would require sub-models from the other IWS model designs and stands as a good example of the flexibility and extensibility of the IWS architecture. The Sybase IWS is unique in the market place at being able to integrate analysis from multiple vertical industries to a single data warehouse easily and flexibly. This capability extends to the different lines of insurance in the market place. The above discussion has been primarily focussed on the requirements of a P&C Insurance company. However, the requirements of a Life or Healthcare insurance company are similar in many respects. With the IWS for Life Insurance or IWS for Healthcare Insurance, the specific requirements of these types of organizations can be catered to in much more detail.

Analytical Customer Relationship Management

Managers in insurance organizations must feel like they're under siege from all sides. There is pressure everywhere — deregulation, globalization, mergers and acquisitions, intense competition, price pressures, and new technology.

And then there are the fickle customers. Customer loyalty is difficult to maintain in an increasingly competitive marketplace. Account churn is on the rise as customers succumb to a barrage of clever ad campaigns, new product offers and innovative delivery channels. How do organizations maintain customer loyalty when there's minimal differentiation between the products offered by the organizations and its competitors?

Increasing costs are threatening profits. Headaches are multiplying — charge-offs due to credit losses are soaring, transaction costs are increasing, technology investments are crucial, complying with government regulations is taxing, the list of rising expenses goes on and on.

So how can Sybase BI help insurance companies to survive and thrive in this jungle? Read on.

In this consumer-focused world, more and more organizations need to understand their customers if they are to survive. This involves a paradigm shift in measurement of business success from product-focused analysis to customer-focused analysis. This process of analyzing the customer relationship is referred to as analytical customer relationship management, or Analytical CRM.

Analytical CRM vs. Operational CRM

In many of today's business organizations, CRM describes the operational point solutions that typically address operational problems and relate to customer touch points such as:

- Marketing Automation
- Sales Force Automation
- Call Center
- Contact Management

In the majority of today's organizations, the operational solutions that have been implemented have been chosen to make the business more effective and more efficient in executing tasks. They typically have been chosen for their tactical strengths.

While these operational point solutions may include analytical reporting aspects, they are not suitable to address the analytical aspects of CRM because of their physical data design and scope of data focus. In fact, many of today's organizations, may have one vendor for marketing automation, a second for sales force automation and perhaps even multiple vendors to address their call center requirements.

Each point solution was chosen because it was the best choice to meet the current needs for that particular management team. This "best of breed" approach, while making great business sense in solving the operational problem, nevertheless results in what we might call stovepipes of customer data or information and fragmented views of the customer relationship.

Analytical CRM is the focused analysis of data created by the operational and legacy applications and integrated for CRM. An effective Analytical CRM solution enables organizations to view the customer's touch points throughout the organization and to identify and balance the needs, patterns, opportunities, risks and costs associated with existing and potential customers to maximize the overall enterprise value.

Therefore it is critical that the Analytical CRM solution integrates data throughout the enterprise, including each point operational CRM system. The IWS is focused on integrating this data and providing the following analytical capabilities:

- Customer Profiling
- Campaign Analysis
- Customer Loyalty
- Sales Analysis
- Customer Care Analysis

Customer Profiling

Customer Profiling allows organizations to distinguish, in the mass of customers, the many microsegments that make up the whole. Increasingly, customer segmentation is forming an essential element of marketing strategy as markets become more fragmented — especially where customer segments exhibit distinct and different characteristics. Customer profiling and segmentation enables organizations to facilitate the building of genuine customer relationships in an era of one-to-one marketing.

Bottom line, customer profiling is all about understanding the customer both as individuals and in terms of categorizations. Customer profiling and segmentation take into account all aspects of the customer's life cycle. Therefore, profiling can be applied to suspects, prospects, existing and lost customers enabling a multitude of opportunities for analysis. The customer can also be several different types, including individuals, organizations and households.

Customer profiling is thoroughly dependent upon the amount of information that an organization can collect and access that describes the customer and records the touch points with the customer. Customer profiling in many organizations is restricted solely to demographic profiling, which, when the customer is viewed as an individual or household includes details such as age, income, gender and number of people in the household. In the case of some organizations, especially those in a business-to-business category, the scope of demographics relates to characteristics of the purchasing organizations that might include industry code, employee count, revenue and other information attributes that help to categorize them.

Customer profiling attributes of individuals included in the IWS are address, affiliation, behavior scores, geography, language, assets, demographics (income, disposable income, age band, gender, marital status, high-value indicator, accommodation, highest grade completed), psychographics (activities people are interested in, for example, fishing, camping, smoking, stock market etc.) and profession. The flexible nature of the IWS ensures that other profiling attributes can be added to the system quickly and simply.

Most data warehouses today are typically focused on segmenting customers by profiling characteristics such as those above. The more important analysis that should take place is to analyze these customer attributes in context with customer product usage patterns. In fact, understanding this relationship of product usage in relation to customer segmentation may be the critical key to the success or failure of today's customer-focused data warehouse. It is only by analyzing product usage that organizations can get a true picture of customer preferences and accompanying actions, and therefore begin to understand what customers want and what they require from the organization.

In profiling customers, it is also critical to understand the relationships between individual customers. This could include personal relationships such as marital status and number of dependents, which help to provide a view of experience with relationship to the household. It might also include professional relationships such as employees/employers, suppliers and so on. Understanding relationships is critical as it may provide a different view on the value of the overall relationship with a specific customer. For example, a single individual customer may seem to be of little importance; however if the customer is married to the manager of a major corporate account or the spouse of a high-volume customer, the relationship may be worth more attention than previously thought.

Of course this entire customer profiling capability is only as good as the data available. Therefore, it is critical that high-quality data be obtained from the source systems where data related to customer touch points is stored throughout the organization. Be it a large company or small, the necessary information may be distributed in multiple source locations:

- **Operational Systems:** The operational systems within an organization are typically the best source of information that documents the touch points and usage information required for the customer analysis process. This includes systems that address sales and marketing automation as well as call centers for sales and customer support. While newer operational systems technology may capture the information needed for analysis, a danger does exist in that older, traditional operational systems were not built with customer profiling in mind. This is especially true in the case of homegrown legacy systems. Therefore, quite often the quality and extent of profiling type data is very poor within these systems. And even when the systems in place are newer technology that captures the required information, as mentioned earlier, more often than not organizations that have implemented best of breed systems to solve point problems are faced with integrating data that has been collected and entered using many different coding schemes and unique conventions.
- **Surveys:** Surveys conducted against the customer base can be a good source for the profiling data required for analysis. Surveys have the flexibility to collect just the right information required simply by tailoring the questions in the survey. However, surveys do have several disadvantages, including the fact that the data can quite quickly become out of date, especially if the surveys are not conducted regularly. In addition, depending on the survey and the perception of its value to the customer, the customer may not be inclined to share personal details such as personal preferences, tastes and habits.
- **External Bureaus:** Many companies worldwide specialize in providing profiling data that may be used for analysis. This data can be provided based on an individual or a demographic area. Acquiring profiling data in this way has the benefit of providing high-quality profiling data that is potentially wider in reach than might be acquired through an individual organization survey method. The disadvantage here is that the data acquired from the external bureau must be integrated with the data collected within the organization. This can be a complex task, particularly if there is no common point of reference between the two data sets.

Customer profiling therefore may be used to satisfy many different needs. The most common reason for customer profiling is to identify lists of individuals, households or organizations to serve as source input to marketing automation systems. An existing prospect list, for example, could be generated using customer profiling to analyze which prospects in a source list did not already purchase a particular product. Then the resulting list could be analyzed segmenting prospects by where they live and other demographic attributes to determine which subset of prospects are most likely to purchase the particular product or service at some point in the future. Another use of customer profiling may be to create higher levels of service for the customer. For example, profiling can indicate which customers in the customer base are the most profitable or most valuable to the organization. A list of these customers then may be used to target your best customers with superior service.

Campaign Analysis

Accurately targeting customers in campaigns and promotions and subsequently analyzing the response to promotion episodes are key elements of the learning process that enables an organization to move from a strategy of mass marketing to mass customization. Most organizations launch many different kinds of promotional campaigns for many different products using many different media. A successful Campaign Analysis application enhances an organization's understanding of the entire process — from selecting customers to be targeted to analyzing how they responded. Campaign Analysis is clearly an analytical application and a pre-requisite for any operational marketing automation software package to manage the campaign effectively.

First and foremost, Campaign Analysis is a process by which any organization can understand how well it is communicating its message to the market. Many different types of campaigns must be analyzed ranging from mass marketing campaigns that might be conducted via television and radio commercials, to direct marketing campaigns where the campaign is directed to specific targeted individuals selected from a prospect base.

IWS analyzes campaigns based upon the contact events that occur between the organization and their prospects. Each time the organization contacts the prospect or the prospect contacts the organization, a separate contact event is recorded in the database with relevant information attached about the nature of the contact.

Mass Marketing Campaigns

Often it is quite difficult to analyze the success of a mass marketing campaign given that no direct contact is made (or recorded) between the prospects and the company. The success of such campaigns must therefore be determined by external techniques. These techniques may include surveys of the market such as one that determines the impression that has been made on the public and what the company's brand means to the individuals being surveyed. Other techniques include measuring and comparing any increases or changes in sales or product usage that may have occurred concurrent with or subsequent to the campaign.

Determining success also is dependent on the goals and objectives established for the campaign. For example, a goal may be to increase sales or product penetration, or to impact high product usage. This brings an important issue to the surface. Simply measuring the responsiveness to a campaign should not be the sole success criterion applied to your campaign analysis. The effectiveness of the campaign should be measured in terms of how well it was received and how it impacted the bottom line. That means that the measurement of success or failure should be related to other measures within the data warehouse, such as sales revenues and product usage.

Direct Marketing

Direct marketing campaigns are somewhat easier to manage when it comes to measuring success. In the case of IWS, it is possible to store each individual contact made during each and every direct marketing campaign episode. These contacts may be measured in terms of duration, quality, purpose of contact, and more. The contacts may be analyzed and related to other categories in many ways, for example:

- **Customer Profiling Characteristics:** Includes all of the characteristics previously mentioned in Customer Profiling.
- **Organizational Reporting Structure:** The organizational structure responsible for conducting the direct marketing campaign can be analyzed. This analysis may lead to an understanding of the success of call centers, various marketing teams and management strategies, etc.
- **Campaign Structure:** Any campaign (direct or mass marketing) can usually be broken down into a hierarchy. At the top level of the hierarchy is the strategic campaign. The strategic campaign refers to a strategic initiative inside the organization for some particular purpose. For example, the objective of the strategic campaign could be to become the number one supplier of landline systems in the country. The strategic campaign is then divided up into several tactical campaigns. Each tactical campaign is a specific, measurable campaign for a particular product or service. For example, one tactical campaign could be to increase the number of sales of a particular landline package by 20% in the next six months. Each tactical campaign can be broken down by various success measures, for example, number of new sales, number of new customers, increase in product usage and so forth. And tactical campaigns can be further broken down into episodes. Each episode represents a particular marketing technique that was used. For example, for the above tactical campaign, a television commercial may have been run as well as a direct marketing campaign involving letters sent out to a select group of prospects. Each of these marketing techniques represents a different episode within the tactical campaign. In the IWS, it is possible to analyze marketing campaigns at any of these levels as well as to analyze the individual contacts made during the marketing campaigns.

- **Product Usage:** Usage of an organization's products and services is an important area to analyze in judging the success of the campaign. Product usage is one manner in which an organization can determine the value of the customer to the organization. One method used by many organizations is to segment their customers based on a Recency, Frequency and Monetary (RFM) factor. Recency relates to the last time a customer purchased this product or any other product from the organization; Frequency is how often the customer purchases; and Monetary is how much a customer spends when he does purchase. This information may be used in many ways. For example, an organization can analyze the responses to determine how many positive responses were recorded from high value customers, low value customers and prospects who have never purchased from the organization in the past. Depending on the campaign objectives, a different campaign that yields the same results might be interpreted differently. If a campaign was to increase cross sell and up-sell activity with high value customers and that was the group with the best response rate, then it may be viewed as a success. On the other hand, if the objective was to expand the customer base and the only good responses were from those already considered to be high value customers, maybe the campaign was not so successful.
- **Demographic Attributes of the Campaign:** These attributes include information related to the campaign, such as where the campaign took place, when it was conducted, what language it was run in and what media was used, to name a few. Some examples of the type of media used include direct mail, telemarketing, Internet, e-mail and ads in publications, radio and television.

Using time-based analysis to evaluate marketing campaigns enables organizations to understand how effective their campaigns have been over time. Few companies today have the ability to determine how successful their marketing campaigns have been based on criteria such as the media in which they were executed, the time of the year they are conducted and the prospect base that was targeted. For most organizations, an analysis conducted using IWS will dramatically impact their effectiveness in assessing the success or failure of their marketing campaign strategy. This capability is a critical requirement in today's competitive environment where it is more likely than not that an organization's current customers will be the target of their competitors' marketing strategies and therefore must be defended. In addition, new customers and new markets will be the subjects of aggressive competition and an organization must be as effective at acquiring new customers as in retaining existing customers.

Customer Loyalty

Customer Loyalty is a critical and vital concept to CRM. Understanding the length and quality of the relationship with the customer is the key to identifying the customers in your customer base that are your most valuable. These are the customers who must be retained and cultivated.

Many organizations have different definitions of customer loyalty. Indeed, many people within the same organization may have competing views about the meaning of customer loyalty. And they all may have a valid point. Therefore it is critical for the successful data warehouse or BI application to be able to serve the needs of all of these different and varied views of customer loyalty.

Some of the views of customer loyalty supported by IWS include:

- **Length of Relationship:** Customers by nature have different lengths of relationships with a company. Duration of relationship, however, must recognize that a customer relationship is not necessarily a continuous state. For example, a customer may contract with an organization to purchase goods and services. Then at the end of six months, the customer may cancel, then return to purchase again six months after that and continue purchasing for six additional months. What is the duration of this relationship? Some would say that the relationship has been in effect for 18 months; others would view the duration as being 6 months. Most operational systems (and for that matter, many data warehouses) would show this customer to have had two separate six-month relationships with the company. This may seem minor, but what if the customer had consistently purchased on a monthly basis for 10 years but stopped buying for six months and then resumed monthly purchases? Or another customer has made one purchase per quarter for the last year. Whose relationship is longer?
- **Breadth of the Relationship:** Another loyalty factor is related to the number of products and services purchased and used by the customer. For example, a customer who purchases a variety of products and services from an organization for a long period of time would be considered more loyal than a customer who uses only one product or service over the same length of time. This type of analysis involves what is called “share of wallet analysis.” To understand breadth of relationship, one must consider all of the products and services that a customer may consume. For example, a university student who regularly makes use of only one fairly inexpensive product may in many cases be considered more loyal than a customer with a high income who consumes the same products at the same rate and level of purchase as the university student. Why? Because the customer with the high level of income may be considered to have more latency or untapped purchasing power, to purchase more and/or different products. But given the customer’s product usage, the customer is likely choosing products and services from some other organization.
- **Quality of Relationship:** Quality of relationship can be measured by a variety of criteria as well. Quality may be measured in terms of the number of contacts that an organization has had with the customer over the life of the relationship. For example, consider a customer who complains often and loudly and requires a lot of maintenance consuming a lot of resources. This individual would be categorized as having a lower quality relationship than a customer who exhibits the same product usage patterns over the same length of time without the troublesome calling patterns. Quality of the relationship may also include how much the products are used. For example, consider a customer with a high value in terms of RFM and product usage who creates a lot of revenue for a product. This customer may be considered to be of higher value than a customer using the same products for the same period of time but with lower RFM and product usage.

Since different individual business users may define loyalty differently (according to their own viewpoints and circumstances), an effective loyalty analysis application must be flexible enough to account for varied business users’ views. An individual business analyst may have a bias on customer loyalty based on his or her own particular interests. For example, for some business analysts, loyalty to one particular product or product line may be their sole interest; others may be interested in analyzing loyalty in terms of geography, time of year, organizational structure and channel.

IWS is capable of analyzing loyalty in terms of all of these criteria.

Sales Analysis

A Sales Analysis application must provide an integrated perspective on sales throughout the organization. This application must also support the analysis of trends and patterns that exist in the sales event database. Sales measurements may be viewed and analyzed with respect to a variety of sales measurements, including sales revenue, quantity sold, currency evaluations and more. Each sales event that occurs within an organization must be categorized and broken down by:

- **Sales Channels or Organizational Unit:** This categorization allows an organization to identify the high-performing and low-performing organization units and channels in the enterprise in relation to sales performance.
- **Products, Product Category or Product Group:** Understanding the success of the product group is critical in today's constantly changing market when new technology product offerings are being released at a very fast rate.
- **Sales by Customer:** Categorizing sales events by customer and product allows you to analyze the relationships that may exist between customer categories and product preferences. All of the profiling characteristics mentioned in Customer Profiling must be accessible. This analysis provides the organization with the critical knowledge of which customers are its critical buyers and most valuable customers as well as enabling the organization to identify whether it is actually impacting the buying patterns of the customers and prospects that it has targeted with marketing campaigns.
- **Satisfaction:** Another impact on sales analysis important to consider is that of customer satisfaction. New sales must be considered in context with customer churn as well as related to any abnormal experience in the area of customer contacts that may be represented by an unusual number of problem reports or customer complaints. Key clues may exist here to explain unusual or unexpected patterns in the sales analysis.
- **Chain of Events Leading to the Sale:** A thorough sales analysis solution will enable an organization to track the entire sales cycle for a sales event for a customer, including the process of changing status from "suspect" to "prospect" to the "successful sales event." Since each of these events is discrete, all of the events involved in this process must be able to be considered in the analysis. This is particularly important in the course of analyzing the effectiveness of marketing campaigns and their relationship to new or increased sales. Some marketing campaigns are executed to raise awareness and are not expected to directly influence sales but to have some long-term indirect impact. Many more tactical marketing campaigns are executed with the express and specific purpose of increasing revenues. It is this latter campaign type, that must be measured in terms of success in relation to impact on sales.
- **Product Mix Analysis:** Some products have an affinity with the sales of other products, while other products have a direct dependency. In fact, certain add-on products such as accessories are only sold when products upon which they are dependent are sold with them or prior to them being sold. These products may fall into an up-sell or cross-sell category. In either case, analyzing the results of your sales in terms of how well goals are met in this category may be extremely important and have a definite impact on profitability since in many cases, the profit margins on add-ons is extremely favorable.
- **Other Factors Affecting the Sale:** Many others factors can affect sales events, including region, geography, season and market segments. Depending on the type of business, any or all of these factors may need to be considered when analyzing the sales experience of the organization.

IWS Sales Analysis enables the analysis of sales in respect to all of the viewpoints described above. This breadth of sales analysis may be critical to achieving a full and accurate picture of how successful the sales goals of the organization are being met.

Customer Care Analysis

Customer Care Analysis is concerned with analyzing all of the touch points between the organization and its customers. A touch point occurs any time that the organization contacts the customer or the customer contacts the organization for any reason. This may include sales contacts, campaign contacts, complaints or inquiries. An organization's touch point strategy may include various interaction platforms, including the Internet, a direct sales force and call centers. It is critical to understand the effectiveness of each of these touch point platforms. For example, the Internet could well be a very cheap way of interacting with customers but it may not provide the same level of service as the call center or direct sales force. On the other hand, with 24x7 availability, the Internet populated with the correct level of information may prove to be the best answer when it comes to information accessibility.

Along with the customer interaction platforms, it is critical to understand several other aspects related to any touch point:

- **By Individual Customer:** Analyzing an individual customer and its characteristics must be a minimal level of granularity when it comes to analyzing and reviewing touch point strategy. Some customers by nature will require more touch points than others due to their particular unique situation. An analysis of touch point activity that allows both detail and summary level analysis means that common characteristics may be searched for and uncovered, which may lead to a strategy on how to interact best with certain classes of customers in the future.
- **Positive vs. Negative Contacts:** Each touch point conducted between the organization in the customer base can be broken into positive and negative contacts. Positive contacts can include sales contacts, product inquiries and marketing campaigns. Negative contacts can include product fault reporting and complaints about other issues related to product quality or service problems.
- **Duration of Contact Event:** The time taken to follow up and provide successful closure to a customer contact is extremely important when analyzing the touch points experience. It is always important to successfully resolve customer contacts as soon as possible, especially those that are negative. In addition, it may be very valuable to understand the number of contacts made in either case, positive or negative, during the length of time the contact event is in an unresolved state. For example, when a customer contact event reports a fault or problem it may take several days to resolve the problem. Surveys have shown that if the customer is kept up-to-date over the course of those several days, then the satisfaction level of the customer will be much higher than if he is simply told the resolution of the issue when the problem is solved, or worse, not told at all of the resolution.
- **Resolution:** It is critical to understand the resolutions put in place for customer issues. A problem may have several different outcomes based upon each inquiry, suggestion or complaint, and it is critical to understand which resolutions result in a better position for the company. This is also critical to analyze when establishing effective communication and resolution strategies for customers.
- **Product Usage Patterns:** The level and diversity of product usage from a customer will have an effect on the type and frequency of contacts with the organization. It is important to understand the different products and services that are used by customers conducting different types of interactions. This is critical for ensuring the appropriate amount of time is spent with different types of customers and for establishing service level agreements with customers.
- **Organizational Structure:** The employee and department of the organization responsible for interacting with the customer are important to understand. The comparison of different call centers, direct sales forces and the Internet will only be successful if the corporate structure responsible for interacting with the customer is known.

In all cases, it is good to be able to relate the touch points to other activities and events that involve the organization. For example, an increase in the number of negative contacts may be related to the usage of a particular product or geography and therefore may be an isolated problem and not a sign of a general increase in dissatisfaction. In addition, some types of inquiries or complaints, if handled properly, can be turned into a sales opportunity leading to an up-sell or cross-sell event.

The Enterprise Data Warehouse Challenge

In an ideal world, with unlimited access to money and people skills and no time pressures at all, each organization could evaluate its own specific needs and requirements and then custom design, build and implement an enterprise data warehouse to service its analytical needs.

But in the real world, everyone's competing for customers. While the organizations are trying to acquire new customers in parallel they are also trying to keep the ones they have. The customers are typically the most beneficial source of profits. A central goal is to up-sell and cross-sell them, but organizations must also ensure that they don't lose customers to the competition.

So what is the best data warehouse approach for an organization? Some say enterprise data warehouse, others favor data marts and yet others recommend a hybrid approach. The remainder of this section summarizes information about the more popular alternative approaches to implementing a business intelligence solution.

Enterprise Data Warehouse

Many organizations throughout the 1990s attempted to implement enterprise-wide data warehouses. This entailed consolidating and integrating data from across the enterprise into a single data store for reporting and analysis. The benefit of such a system was obvious: completely integrated information available to all employees of the organization (see following diagram). This approach, however, typically had a major flaw: designing an enterprise data warehouse capable of integrating data across an organization as complex as an insurance organization is an extraordinarily difficult if not impossible task.

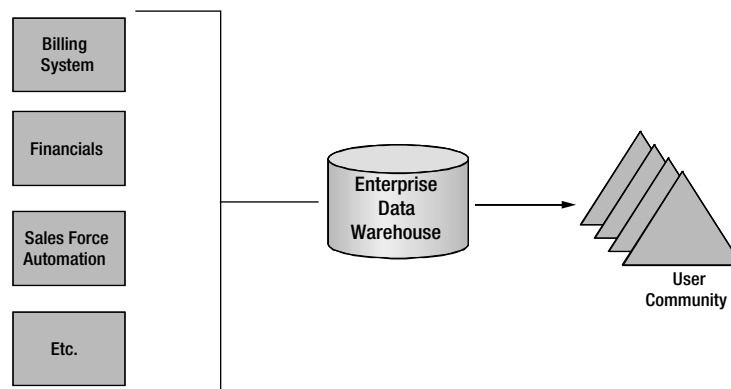


Diagram 2: Enterprise Data Warehouse

The skills required to successfully design such a system were in short supply and the truth is, they are still in desperately short supply today. And if the skills were available, the time taken to complete the warehouse design and implementation is unacceptable in today's fast paced marketplace. Indeed, it was common for many organizations to spend several years agreeing to an integrated design. Many never made it out of the stage of "analysis paralysis," and the few who did found that the experience was painful and costly. Indeed for many organizations, the cost in terms of time, resources and money for the "build" approach is unthinkable in today's business environment.

With the highly publicized problems of building an enterprise data warehouse, it's no wonder that the market was ready for a better alternative.

Independent Data Marts

In the recent past, data marts have represented the only way of successfully implementing analytical applications. The data mart approach targets a business unit within an organization and focuses on implementing an analytical application that addresses providing a targeted analytic application solution to solve a specific point problem within the business, with a view to extending the application to serve the needs of other departments within the business organization in subsequent phases.

This approach addressed a significant and primary flaw of the enterprise approach: scope. With its focus on solving the analytical needs with a point solution to a point problem within the business, the data mart could typically be implemented and running within three to six months. Since the data mart application enabled business users to realize business value within an acceptable timeframe at an acceptable cost, the data mart approach has proved to be popular in many organizations. However, in most implementations, the data mart approach has proven to result in solutions that come with severe limitations.

Because the typical implementation of a data mart application is focused on solving a point problem within the organization, the overall application design tends to be biased toward that area. For example, if the initial data mart implementation is focused on Customer Care or Call Center and you go back and try to extend to include Marketing Campaign Analysis, a typical problem is encountered. If the first phase data mart application was designed to handle customer service contacts and was based on one definition of a customer, it may be difficult if not impossible to extend the models to handle campaigns, episodes and potential customers.

Incorporating these different views can take several months of redesign, before the second phase implementation can even commence. Of course, many organizations find this time consuming process to be unacceptable and therefore choose to implement a second stand-alone data mart independent of the first. This approach was prevalent for many organizations over the last several years, resulting in an increasing number of independent data marts, none of which have the scope to represent an integrated view of the organization for analytical reporting. And since the point data mart solutions came from different vendors in many of those cases, it is near impossible to integrate and consolidate the information "on the fly."

This approach, while solving the point problem for which the data mart was implemented in the first place, fails to solve a fundamental need of the organization: a single view of customer information across the enterprise. (See Diagram 3.)

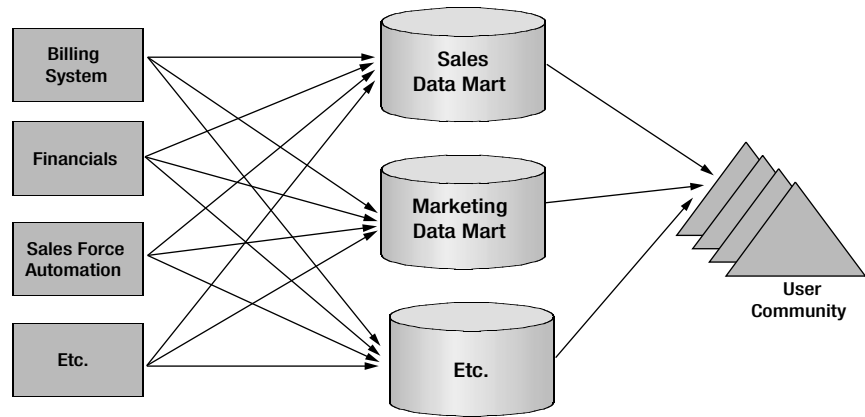


Diagram 3: Independent Data Mart Approach

So to succeed in providing a single, consistent view of the data, the data marts must be implemented with a design that conforms to an enterprise design. This solution may seem contradictory since the enterprise design is a very complex and risky approach. But this is where the value of buying an enterprise data warehouse design can be a huge benefit.

Architected Data Marts

The Architected Data Mart approach is based on the utilization of a data warehouse design. From this enterprise design, the necessary tables, columns and relationships of data are chosen to subset the design and build the data marts. Using this approach, data marts can be constructed that meet the particular needs of a business analyst to address a particular business requirement. In addition, this approach ensures that integrated information will be available, as the following diagram illustrates.

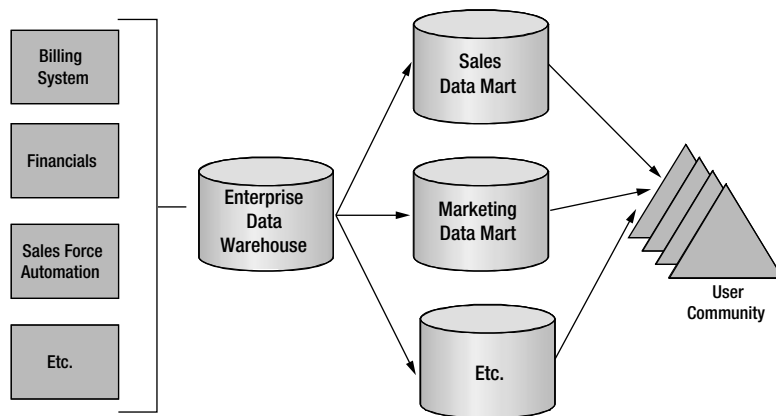


Diagram 4: Architected Data Mart Approach

There is a major flaw in any approach that focuses analysis through data marts, architected or not. The problem is that providing answers to many questions that relate to the organization overall by their very nature requires information that is stored in separate and independent data marts. According to proponents of this approach, the solution is to create a new data mart from the integrated source for each new analytical requirement. This approach is also unreasonable because designing and implementing a new data mart every time an organization encounters a complex query requirement can be resource-intensive and time-consuming.

For example, in Diagram 4, it is next to impossible to create a query that would report the impact marketing campaigns would have on sales this year. Increasingly in today's business, it is critical to have the ability to ask enterprise-spanning questions of the analytical application.

The IWS Approach

The IWS approach is based upon the an enterprise-wide design that enables direct analysis for enterprise spanning questions as well as targeted, departmental questions. The integrated design ensures that all integrated, enterprise questions can be answered. Implementing pieces of the whole architecture as virtual data marts enables the business return to be achieved quickly. Enabling direct access to the central system as well as to the architected data marts ensures flexibility to answer all business analyst questions.

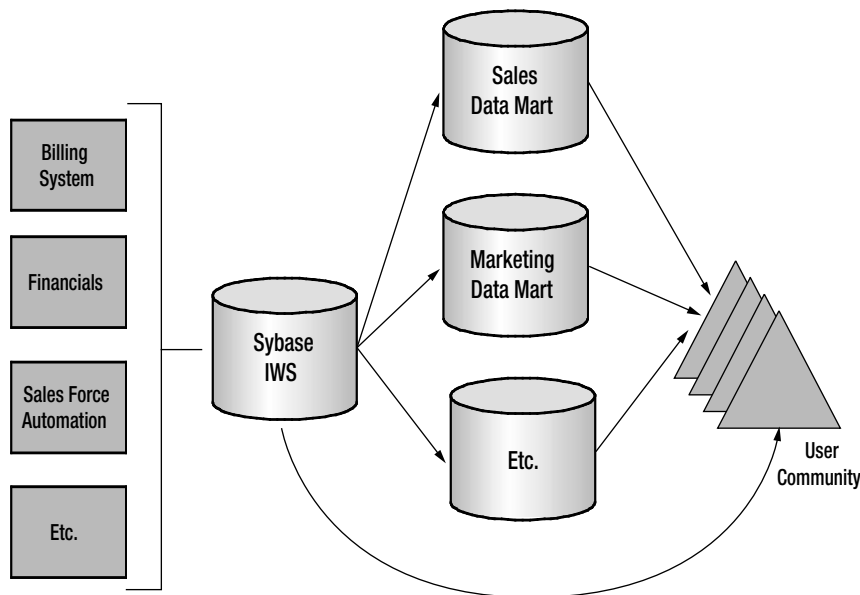


Diagram 5: The IWS Approach

Sybase Industry Warehouse Studio

IWS has defined a new wave for BI. IWS is a pre-built, packaged data warehouse infrastructure with a vertical-oriented business model, a database structure, application capabilities, a methodology and metadata as well as tools to manage the metadata and customize the models to enhance or tailor the models to meet the needs of a specific IWS customer. IWS is designed as a flexible and open system that integrates with companies' existing technology investments.

It provides ready-made application capabilities for a variety of vertical industries, including banking, insurance, credit cards, telecommunications, healthcare treatment and capital markets. Its enterprise-wide view also allows companies to build data warehouses that can integrate data from several different industries, providing the flexibility that is required in today's increasingly complex business environment.

The IWS approach offers significant advantages over traditional approaches to data warehouse development, including:

- **Built on Experience:** IWS is a product of many years of data warehouse experience in a variety of different industries.
- **Reduced Risk and Time:** The time taken to implement a data warehouse is dramatically reduced, along with a massive reduction in the risk of implementation.
- **Open Architecture:** IWS is designed to work in varied technology environments. Although a product of Sybase, Inc., it does not require a Sybase database to operate. This allows a company to take advantage of its existing investment in technology, whether that is a database, a front-end tool or an ETL tool.
- **Business Focus:** The IWS infrastructure was conceived to support enterprise-wide BI solutions. The IWS gives decision makers access to the information they need to more effectively manage their organization's operations and customer relationships. It can help companies reach specific business goals, from becoming more competitive, increasing revenue, cutting costs, to improving customer satisfaction.

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