Analysis

Environment

Initiative

January 17, 1998

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System Scorecard

I. Background

A. Database Analysis Overview

Databases and database analysis have been an integral part of business for many years. These data systems have primarily focused on operational processing of transactions. While the importance of these operational systems has not diminished, the need for informational databases to support analysis and management *decision support systems (DSS)* has emerged. While the traditional database systems dealt with data this new environment focuses on information. This information requires both primitive data and derived data such as summaries and calculations.

This new look at database architecture is best understood as a flow of data across the organization.

Operational Data   Data Flow Conduits   Analysis Environment   End-Users
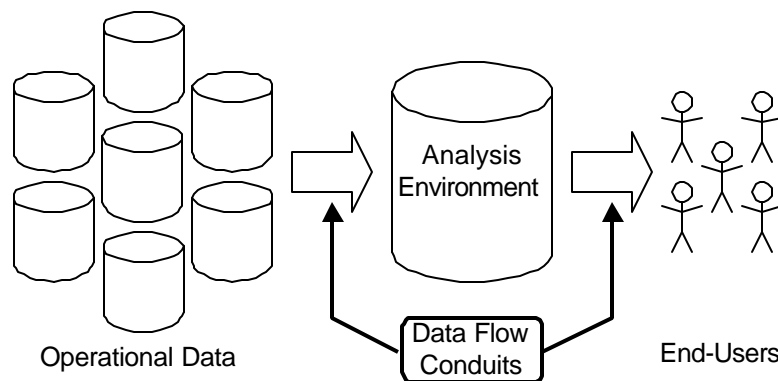
We are already familiar with the operational data we produce. This initiative will focus on the availability of that data and its connection to the analysis environment. We are less familiar with the needs of end-users in the competitive marketplace. The other focus of this initiative is to clearly identify the short term and probable medium and long term needs of the individual users and design the necessary analysis environment connections and tools to ensure their success in performing DSS analysis for the management of our company. This Analysis Environment initiative is the framework with which Entergy's Distribution Business (DB) organization will develop the processes, culture, and tools to truly become intimate with its customers. This initiative will address system elements and business process elements that include personnel, training, and software and system solutions. The primary goal of the initiative will be to enable Entergy to establish a level of intimacy with its customers that will allow us to effectively address issues of customer profitability and retention in the competitive marketplace. This will be the first step in establishing a flexible structure to support an ongoing learning relationship with our current and future customers.
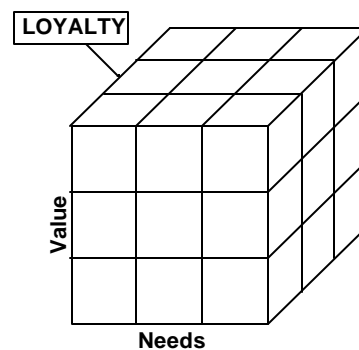
B. Distribution Business Strategies

The vision of Entergy's Distribution Business is to become a wires and pipes distributor and retail provider in our current service area that:

- Delivers service and reliability that customers believe is clearly better than other service delivery businesses
- Provides cost per customer that is equal to the best DB's in the United States
- Establishes significant customer loyalty that retains residential and small business customers after they have a choice of electric and gas retailers.

Entergy's DB will accomplishing this through dedicated and effective employees that understand and support superior customer service delivery through well-designed and executed business processes and their support systems. While this is taking the form of an "initiative", the end result will be culture change and new business processes which support Entergy's leadership position in a competitive energy market. This means that within the parameter of the initiative there will be an infusion of new skill sets and training, which has already begun. In addition, this initiative will provide the technology tools that will support our people and processes. This means tools, platforms, and linkages that are flexible enough to evolve with the business and marketplace. Business processes and systems will be changed to support this new level of customer intimacy, which requires accurate timely information about every facet of our customer's behavior and preferences.

This vision for the DB depends on a degree of customer intimacy that is a level of magnitude ahead of where the company is today. This is especially true within the consumer and small business markets. We know that all customers are not created equal. In order to better understand them and meet their diverse needs we will be segmenting them in three dimensions:

Value:	Value to Entergy
Loyalty:	Potential/projected loyalty to Entergy
Needs:	Met or unmet needs

C. Distribution Business Marketing Requirements

The DB will place several significant requirements on these systems as it seeks to navigate its course to a deregulated future. The data requirements will include internal data, external data and several forms of derived data.

1. Internal Data

Many questions already being asked focus on information available from our internal systems. How many customers do we have? Where do they live? How much revenue do we get from them? Beyond these basics we would like to be able to know more than our current internal systems can answer. What types of interactions are our customers having with Entergy? Who is having them? Do our customers perceive them as being high quality transactions?

2. External Data

In addition to the questions based on internal data there are other questions we have about our marketplace that are not available from our internal systems. There is a need to acquire information from external sources of information about our customers. This could be either primary research like the Walker/Intersearch studies or secondary information such as household demographics. Some of this information is already used for various functions in the company, such as forecasting. This could include load shape information, specific customer needs, revenue and cost trends, multiple product purchases, buying patterns and behaviors.

3. Derived Data

Successful marketing will depend on our ability to go beyond facts and data to reveal customer learning's and insight. How do consumers in multiple segmentation dimensions feel about us? How do customer react to key service attributes? Which new value propositions should be applied to each geographic area and segment? Which customer satisfaction results tracking with outage and commitment fulfillment? Do our operational results link directly to Intersearch measurements? What is the lifetime value of this customer? These and other questions must be answered to support our business.

While we are dealing with a large mass of customers, it is becoming increasingly difficult to reach them effectively through mass channels of communications. We must develop methods of mass customization that deliver our message to the specific customers our message is targeted for. This is both a cost and effectiveness issue. It is also completely beyond the capabilities of our current systems.

d. Current Gap Analysis

We do not currently have the ability to easily perform basic analysis on consumers to understand basic facts about them and their behaviors. We have identified the following gaps:

1. Easily accessible, integrated and validated information

Data at the individual customer level for the Consumer and Small Business marketplace is not easily accessible. It exists in numerous systems and is not integrated or validated.

2. Tool sets to analyze and model data

Data analysis is currently an ad hoc process. While there have been significant improvements in the availability of some data, it still requires a new effort every time a question is posed. The every increasing need for decision support analysis and modeling dictates a user-friendly tool set that routinely poses new questions and provides timely answers.

3. Cleansed data sources

Data is often cleansed outside of our systems to meet external requirements. We must internalize the cleansing we are already purchasing, and develop processes to capture better data from our constant interaction with our customers.

4. Skill sets to effectively use consumer learning's

We do not currently have the tools or the training to develop more sophisticated understanding and modeling of customers. External data such as demographics and firmographics have not been utilized or integrated. Market research and survey information has not been leveraged across the customer base. We must integrate the tools to give analysts, managers, and front-line personnel the knowledge they need to do their jobs

E. Utility / Affiliate Relationship

The market and corporate structure that Entergy will compete under for retail customers is still very much undetermined. The DB business plan recognizes how critical that the future regulatory framework will be for Entergy's success. Of equal importance is the transition period and how well Entergy can position itself during this time frame. Thus, Entergy must develop a strategy to maximize the transition yet be well positioned to succeed in the future state. The physical database and certain external data sources could be owned by regulated or affiliate entities. Therefore, we must build systems and knowledge during the transition that can be transferred as used and useful assets in the future state.

Our proposed approach to this issue is outline in detail in Appendix X.

II. Requirements, Objectives and Benefits

a. Business Requirements and Objectives

The Analysis Environment project is a key driver that will enable the DB to meet its Strategic Goals. The aspirations of the DB depend on creating customer intimacy and operational excellence, both of which require vast amount of customer and operational knowledge. The systems to be developed within the context of this project will provide the basic infrastructure to develop customer intimacy. The required skill sets, learning, culture change, and business processes will also be developed within the context of the Analysis Environment Initiative.

1. Segmentation

. We know that all customers are not created equal. Beyond the basic requirements for customer identification (Name, Address, etc.) the key data points will include sales, product usage, marketing costs, conversion rates and churn rate in the deregulated future. Segmentation of our customers will allow us to address the various needs or our customers in cost effective manner. It will also identify when we should not pursue unprofitable customers. Our profitability in the deregulated environment will be a direct function of our ability to target our marketing efforts to acquire and maintain profitable customers.

2. Campaign Management

Mass marketing is being replaced by mass customization. We must be able to target our messages to specific groups of customers. We must also be able to track our messages to customers and their response to them. How much money do we waste by sending mail to customers who only respond to direct telemarketing offers? How many opportunities to buy does this customer need? What is our customer acquisition cost this month? Properly applied campaign management is only as good as the record keeping behind it. Mass customization demands detailed campaign records and advanced analysis if profitability is to be assured.

3. Market Research

We conduct a great deal of market research currently, but do not capture that information in an actionable format. We also expend resources to develop numerous customer lists for research. We have on occasion asked a single customer to respond to four surveys in the same month. We should be developing our research from a data source that remembers who was asked what and when if we truly want to learn about our customers and increase their satisfaction with us. We should also be able to project our learning's across our population with other research results or external data to uncover market potential and identify common needs and wants for our customers.

4. Product Development

Product development is based on customer research and discovered needs. However, product profitability is based on the ability to project that need to a group of customers. We must be able to identify key groups of customers with common needs to product financially viable products. External data sources may well produce a gold mine of needs if we can learn to pan for them with new product offering.

5. Strategic Analysis

Where we are and whom we serve has historically been a function of our monopoly status. We will soon face choice in market entry and exit, and strategic decisions of this nature require a great deal of analytical support. The foundation of this work should be the intimate relationship we already have in our incumbent service area. The value of this relationship is a function of our ability to translate it into strategic information and decision support. These are both functions of a well-developed analysis environment.

6. Markets and Competitive Analysis

Even as we prepared for deregulation, other companies in established markets are preparing for fundamental shifts in their markets. They are exploring vertical and horizontal market and product shift to exploit profitable segments or defend against competitors. We must develop this analytical capability before we enter this aggressive market place. And we must face competitors who already know how to play the game.

B. Benefits

This initiative creates strategic and tactical benefits. In general, the strategic benefits are required to help exploit the incumbent mass-market retail opportunity. The DB feels that a functional analysis environment is essential to its successful transition to a competitive marketplace. The strategic benefits include:

- The identification of valuable customers and their relative importance to us
- The analysis component necessary to develop differentiated value propositions
- The understanding of value drivers and financial levers needed to improve business profitability
- More strategic and in-depth analysis of customer satisfaction and revenue results and trends
- The development of targeted loyalty programs

These strategic benefits create adequate rational for the immediate approval and rapid implementation of this project. However, since they do not easily lend themselves to quantification we have also developed preliminary tactical benefits, which will accrue to this project. These items have more potential to drive out cost or make our people more efficient.

These tactical benefits include:

- Minimize direct marketing costs for mail pieces by achieving NCOA compliant addresses resulting in lower postal costs
- Maximize the efficiency and effectiveness of promotions through scenario testing, intelligent selection and targeting of customers
- Improve our marketing competitive intelligence
- Standardize and simplify analysis throughout the market with consistent data definitions and accessible sources
- Leverage Market Research information to allow for cost savings synergies

With these tactical benefits it is possible to create financial assumptions, which can be translated into projected cash savings. An ROI estimate can then be developed. For example, we can estimate the postage related to customer direct mailings if we do not cleanse our addresses. We can also approximate efficiency increases for Entergy analysts multiplied by their annual cost and the reduction in contractor fees to conduct similar analysis. In addition, the amount of current data extraction from CIS should be significantly reduced so as to eliminate several contractors/employees.

A conservative estimate of these improvements is a NPV of **$XX.X** million over the next five years. With an estimate investment and on-going staffing costs of **$XX.X** we will be able to produce a preliminary ROI of **XX.X**. The basic assumptions supporting these figures are located in Appendix X.

While these preliminary tactical savings support proceeding with the project, the real value of the project is its strategic value to the retail business.

3. Scope

A. Project Descriptions and Phases

This initiative will be realized through several cross-functional teams of Marketing, IS/T, Operations, and Financial personnel, as well as their support systems and tools. They will work together in a flexible and iterative structure, which will support the learning process. They will augment their teams with subject matter experts as needed. The initiative will be organized into several sequential and parallel phases to facilitate clear decision-making and minimize scope creep in this effort.

Phase Sequence Diagram

Task Name	Nov 97	Dec 97	Jan 98	Feb 98	Mar 98	Apr 98	May 98	Jun 98	Jul 98
Phase 1A: System Exploration	███	███	███						
Phase 1B: End-User Needs Identification	███	███	███						
Phase 2A: Data Warehouse				███	███	███			
Phase 2B: Data Marts				███	███	███			
Phase 3: Data Warehouse & Data Marts							███	███	███

A detailed overview of the key issues, major deliverables and team membership for each phase follows.

1. Phase 1A: System Exploration

This phase will "blaze the trail" for the initiative. It will focus on the system options, which could be used. The team will address the issues surrounding this task and identify the critical success issues for priority treatment. It will involve a learning process with the vendors in the market place, the development and execution of a request for proposal and preparation of a formal systems proposal for the corporation.

Other corporation's efforts involving analysis environments have revealed a number of challenges and issues that organizations must take into account if they are to reap the benefits they desire. These key issues include:

> Manageability
> Ease of Use
> The Economic Consequences
> Query Management
> Ease of Use for End Users
> Web-Based Warehouse Access
> Security Management
> Compatibility and Connectivity
> Summary Table Management

End-User Management Tools

These issues are described in more detail in Appendix X.

This phase of the project will involve the evaluation of the numerous software and hardware systems currently available with a scorecard approach related to the key issues identified above, as well as any other issues identified by the team.

Key deliverables for this phase are a formal proposal for the software and hardware systems for the data warehouse and data marts projects, including cost projections, proposed personnel requirements, an implementation schedule and work plan.

This team will be lead by an IS&T representative. It will include several technical area experts in database, PC environment and communications. The C&SB Marketing representative will be the leader of the Phase 1B Team.

2. Phase 1B: End User Needs Identification

This phase will seek to document the numerous needs of the known and potential users of these systems in the short and medium range time frame. It will also require the categorization and prioritization of these needs to produce a concise list of the short and medium range data acquisition strategies. This effort will also contain the ongoing efforts to supply the needs of the Consumer and Small Business Markets in the interim period until the data warehouse and data marts are operational.

Key deliverables for this phase include a list of the data items and report items needed for the design of the data warehouse and departmental data marts. It should also reflect the magnitude of data acquisition from outside sources required in the near future. General requirements for data access and analysis will be identified and provided to the Phase 1A team as part of the design criteria for the systems.

This team will be lead by a C&SB Marketing representative. It will include several marketing segment managers and representatives from Market Research, Forecasting and New Product Development. The IS&T representative will be the leader of the Phase 1A Team.

2. Phase 2A: Operational Data Conduit Systems


Operational Data → Analysis Environment
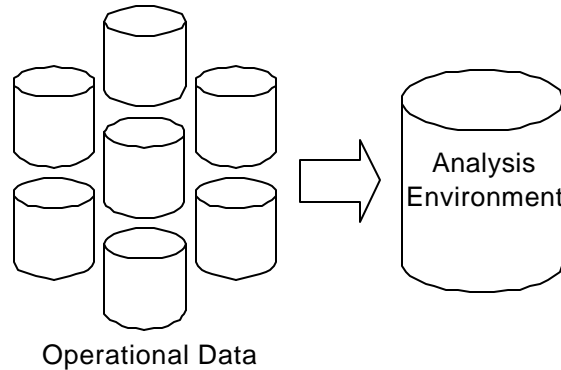
The corporation has a great deal of operational data. However, a subject needs such, as customer revenue can be somewhat complex. There are rate codes, contract types, receivable types, billing components, adjustment types, etc. The analysis environment can have all options or this project team can define, up front, the several definitions or dimensions the business requires. The key issue will be the inclusion of large quantities of transaction data for an extended period of time. All significant customer data should reside in the data warehouse.

The key deliverables for this effort will focus largely on the connectivity of our production data systems to the analysis environment and the automation of those connections.

This team will be formed from the Phase 1A Team. Additional experts will be added as needed to provide the technical expertise needed to complete the project.

3. Phase 2B: End-User Data Conduits and Tools

Analysis Environment → End-Users
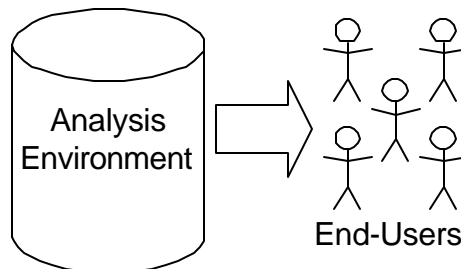
The corporation is already conducting very basic market analysis using end-user PC equipment, Microsoft Access and database tables available through network servers. This data is largely simple extracts from our CIS system with some enhancements from

external data sources. Initial work will focus on identifying the raw data, summary data and internal and external data needed to conduct decision support analysis.

The data flow conduits will then be developed using the design from Phase 1A. This effort will largely focus on the connectivity between the data and the initial end-users. Key data design will include developing summaries of analysis environment data and the purchase of external data. The corporation will need to pay special attention to the source of the data in these data marts to maintain the source identity of utility and affiliate data.

The tool sets for end-users will address the tools with which analysts and managers will access the data and perform analysis. This will include data extraction as well as the analysis tools. These two needs should be integrated or at least complementary so that the organization is best equipped to support decision-making. One potential solution would be a web enabled query tool for standard data extractions and reports. A combination of tools choices would define the skill sets and training needs of the marketing analysts.

The key deliverables for this team are the end-user data conduits and analytical tools sets.

This team will be formed from the Phase 1B Team. Additional experts will be added as needed to provide the technical expertise needed to complete the project.

3. Phase 3: Integrated and Automated System
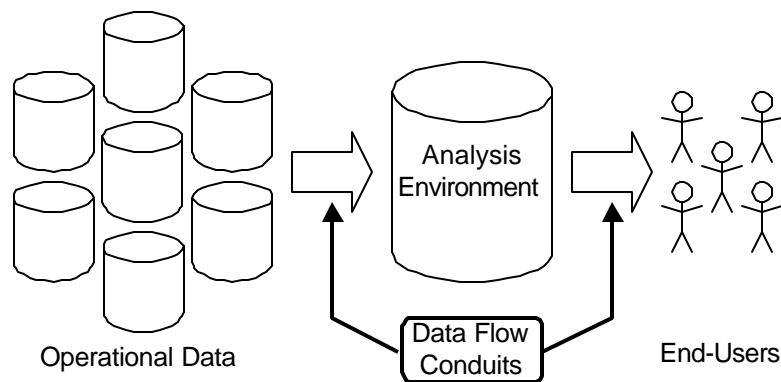
This final phase of the initial effort will focus on the full automation of the conduits and linkages between these systems. It will also identify future enhancements for both data systems and provide for ongoing review of the system and processes and implementation of enhancements.

The key deliverable is system automation. This team will be formed from the Phase 2A & 2B Teams. Additional experts will be added as needed to provide the technical expertise needed to complete the project.

b. Items Out Of Scope

There will be many additional subject areas, which will eventually be added to the data warehouse. However, while the overall needs of the end state will be considered in the system design, the actual work to extract, develop, clean, and analyze these subjects will not be included in the scope of this project.

Several problems with the data sources have already been identified. As development and testing begins, more problems with the data will undoubtedly be found. It is very important for the success of this entire project, that source data problems are not only detected but also corrected. It is possible to do some minor transformations during the load process, this relates to data cleansing (perhaps creating default values, changing date formats etc.) but it is very desirable to correct such things as invalid rate codes or incorrect ones in the source system.

There will also be teams chartered to address data cleansing and related business processes, but these processes within operations will not be in the scope of this project.

4. Initiative System Context

A. System Context Diagram
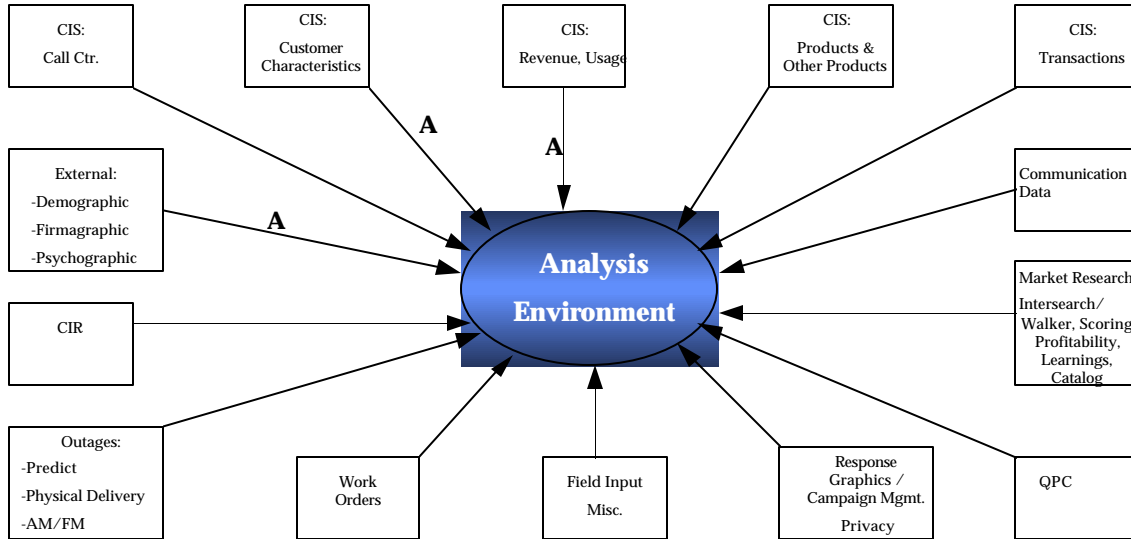
B. System User Requirements

C. Information Requirements

D. System Features and Functions

5. Approach Summary