

Enabling Value-Based Decisions Through Shipment Level Profitability Analysis

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Enabling Value-Based Decisions

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Executive Summary

Transportation logistics companies know that business decisions based on customer value will yield stronger profits. But the information they have, typically stored in disparate data marts, does not lend itself to the kind of detail-level analysis that enables true insight into customer and shipment-level profitability.

Over the past two years, however, advances in enterprise data warehousing technology, combined with proven methodology for creating a transportation logistics relational database, have made it possible for transportation companies to realize their vision.

They can store detail-level revenue, cost, customer behavior, and service partner attributes. They can perform complex analysis across all components of their business. They can segment and analyze customers by industry, commodity, geography, and service requirements. They can study complete views of customer hierarchies from the corporate parent level down to the transportation of an individual piece for one division's facility. Moreover, the technology has progressed to the point where these types of reports and analysis can be completed with extraordinary speed.

This white paper outlines a proven methodology for building the database and a logical data model tailored to the needs of transportation logistics companies. It also describes software that performs the essential analyses and the benefits of making value-based decisions that emerge from this process. Those benefits include:

- > A greater yield from assets through an improved understanding of the relationship between demand and shipment profitability.
- > Improved pricing decisions, negotiations, and administration.
- > Operations strategies that support value optimization.
- > Alignment of sales resources based on customer contribution.
- > Value-based customer acquisition and retention strategies.
- > More targeted marketing campaigns.
- > Improved rating, billing, and collections.
- > Allocation of corporate resources based on customer value, thus improving service to most profitable clients.

In short, companies can get a single, consistent view of the enterprise and, so, support corporate goals to improve customer service and satisfaction, generate profitable revenue growth, and improve shareholder value.

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Introduction

Once a Dream, Now a Reality

“If, in fact, a **single version of a customer’s worth** was evident throughout the organization from a dock worker and driver all the way through senior management, tactical decisions could be made based on the true value of the customer to our organization.”

– One of the largest U.S. transport providers

For one forward-thinking transportation company, the “if” in the above statement no longer applies. This company can send a salesperson, a set of questions, and a laptop to a meeting with a long sought-after client and emerge with not only a price per item contract, but also confidence that the contract will yield profits for the company and a high level of customer satisfaction.

The confidence comes from the salesperson having rapid access to a wealth of information about his or her company’s operation, the competition, and this particular customer’s needs and behavior, as well as the means to merge that information into actionable intelligence. After the salesperson transmits shipment-level specifics, the combination of an enterprise data warehouse (EDW) and analytical software can provide, in minutes, a range of acceptable prices and details about what type of service to include in any offer.

1 Source: TVA User Group 2001, V.G. Narayanan, Harvard Business School

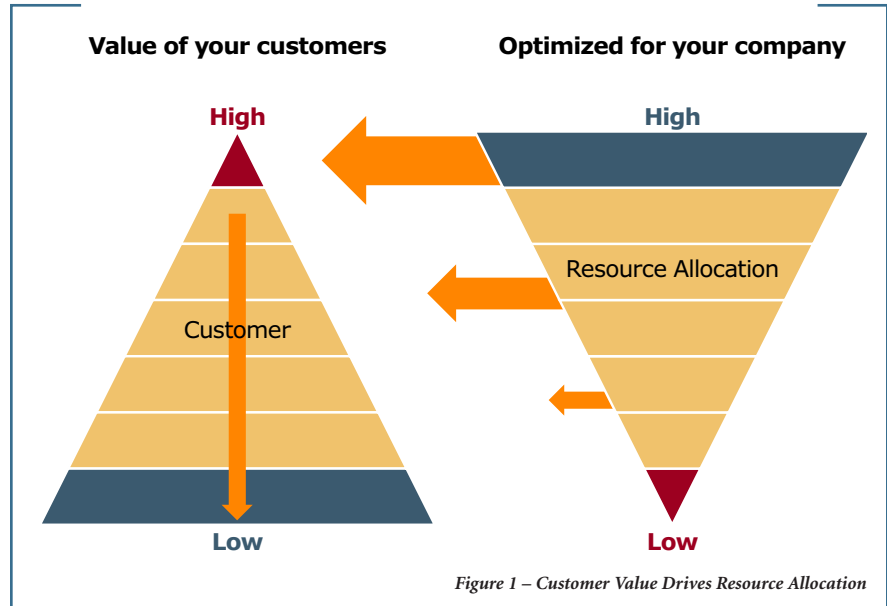


Figure 1 – Customer Value Drives Resource Allocation

That capability delivers an enormous competitive advantage in an industry where intense competition has caused executives to seek a way to make value-based decisions using precise insights into customer behavior.

Capturing the Critical Components to Measure Profitability

When large organizations analyze the profitability of their customers, they typically find:

- > 20% of customers provide 300% of profits.
- > 60% of customers break even.
- > 20% of customers destroy 200% of profits.¹

For the transportation logistics industry, such numbers make truly understanding the profitability of their customers – and each and every shipment – essential to success.

Yet profitability analysis is a matter of degrees: the more information, the more precise and actionable the measurement. Most companies have plenty of information about revenue, but because they cannot tie cost data to specific customers or shipments, they tend to rely upon traditional measures such as tonnage – as well as gut reaction – to measure a customer’s value. That can be extremely misleading.

And even if companies capture cost data, too often it is stored in disparate data marts,

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with no easy or cost-effective way for the companies to connect the dots. It's easy enough, of course, to aggregate details and generate a report with a summarized view, but without an EDW, it's virtually impossible to take summarized information and drill down to perform root cause type analysis that sheds light on customer value.

To derive real value from profitability analysis, all relevant information – including revenue, costs, customer behavior, and service partner information – should be captured at the lowest level of detail and carefully stored in a central location where it's available to all levels of the organization.

Revenue Components

Revenue falls into two main categories; linehaul movement and special service charges, or what are commonly referred to as accessorial charges.

Most transportation companies offer a wide range of linehaul services (i.e. standard, expedite, specialized, intermodal). Charges may or may not include the actual pickup and delivery segments depending on mode. In Less Than Truckload (LTL), Truckload or Parcel/Post services, linehaul charges typically include pickup at origin and the delivery at destination. Other modes (Ocean, Rail or Intermodal) may involve multiple service providers to perform the actual pickup and/or delivery, so there will be a separate revenue component.

Special service charges are one of the few differentiators available to carriers, who

use this category to bring customized or unique transportation value propositions to the marketplace. Special services include residential delivery, inside delivery, or storage, as well as “white glove” services where specialized providers not only deliver a product but perform some light assembly. The added charges come to the EDW from billing, rating, and invoice processes.

Cost Components

Because costs are more difficult to allocate than revenue, most carriers summarize costs to gauge profitability and simplify allocation. Very few have the capability to assign costs down to the shipment level. Yet it is that capability that adds power to a customer value model.

The onset of radio frequency identification (RFID) technology will, of course, revolutionize the precision of measuring movement and allocating appropriate costs. Yet even before RFID is in widespread use, segmenting costs by physical assets and labor is merely a starting point for a strong customer value model.

Operations costs segment into individual service events that include dispatch, pickup, linehaul movement, cross dock/reship activities, and delivery functions.

Wherever possible, *sales and marketing costs* should be tracked and allocated for each specific customer, even each specific shipment.

Companies typically allocate *administrative costs* across the entire shipment profile, but if they know that a particular customer behavior (see below) results in, for example, excessive collections expense, they can allocate additional costs to that customer.

The bottom line is that capturing the lowest level of detail – at the shipment, container, package, or piece level – can provide enormous insight into the costs truly dedicated to transporting each customer's products and, so, offer a much more precise measure of each customer's value.

Customer Behavior Components

Customer behavior attributes are rarely considered when evaluating customer value, but there's little doubt they play a significant role. By carefully designing the transportation database, companies can capture and integrate these attributes into the analysis, thus gaining a more precise measure of customer value.

Consider what each of the following could add to customer profitability analysis:

- > The cost of capital when evaluating the customer's timeliness of payment.
- > The cost of sales if it's known that a specific sales person or administrative staff is dedicated to a specific account.
- > In the LTL industry, the customer's contribution to freight mix. (The key to profitability in LTL is the optimum mix of heavy, dense, palletized floor

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freight with medium and light/bulky top fill freight to maximize capacity use while at the same time reaching legal weight limits.)

- > Lane balance. Empty expense or the cost to return equipment back to where it's needed can be allocated more precisely if the customer's impact on lane balance is understood at the shipment level.
- > Shipping form.
- > Packaging.
- > Dimension and weight (density).
- > Frequency.
- > Propensity for cargo loss or damage.

Companies can choose to manually weigh in these factors as they appear in reports, or they can set up their analytics in such a way that certain characteristics receive a certain value.

Service Partner Component

Since de-regulation in 1980, third- and fourth-party logistics companies have brought an entirely new approach to managing transportation. Many carriers across all modes have developed logistics components to take advantage of this growing market.

As a result, most transportation carriers need to integrate information from their service partners into their customer value model. For example, in the rail intermodal business, multiple service partners are involved in the transportation and management door to door. To develop a

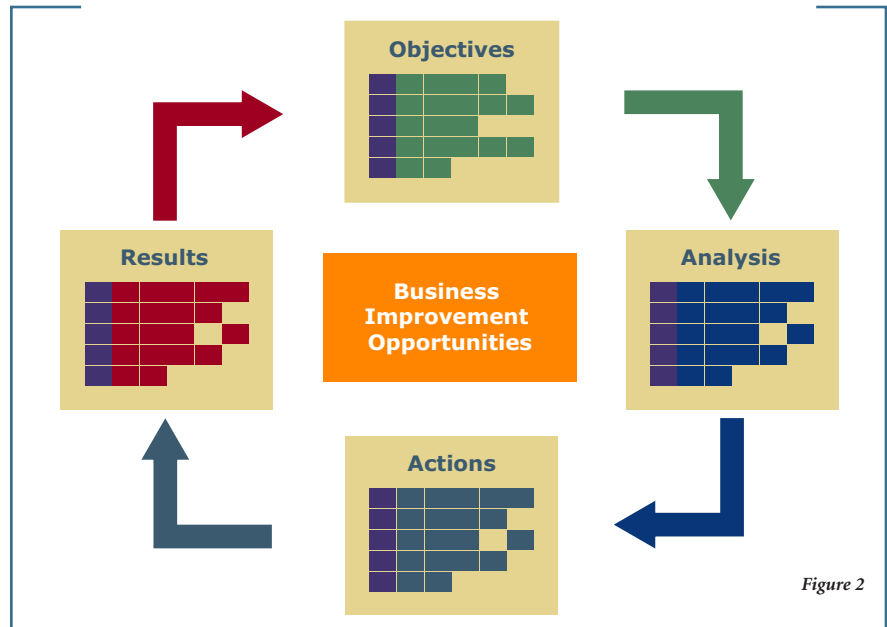


Figure 2

complete customer value model, revenue and cost components for these service partners should be integrated into the model. This integration becomes more and more critical if the intermodal service provider takes on an increased role in managing the customer relationship themselves, rather than relying upon lead logistics providers or intermodal marketing companies.

Building the Foundation and Framework

Advances in EDW technology have enabled Teradata Corporation to develop transportation logistics relational databases using proven data integration techniques, data modeling based on the needs of the business, and visual modeling techniques. This technology brings the data together

and facilitates the types of analyses that lead to true value-based decisions.

The EDW Roadmap

An EDW enables users to gain actionable insight into the business by using information not previously available. Companies start with a specific business improvement opportunity and build on that to support other areas of the enterprise. Wal-Mart,[®] FedEx,[®] Continental Airlines,[®] and Bank of America[®] are among those who've used this approach.

The first critical concept in the EDW Roadmap is to "store once, and use many times." This minimizes the costs of gathering and cleansing the data, since in a data mart environment, each new initiative requires a new storage process.

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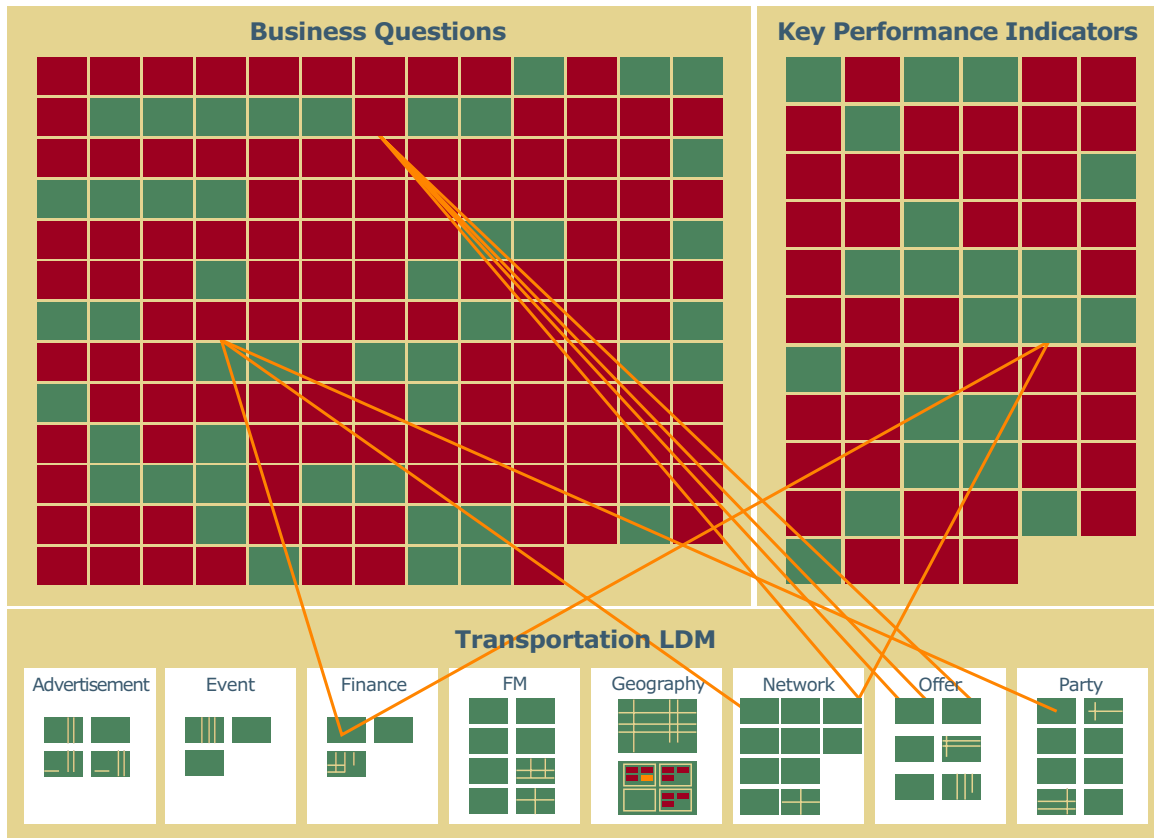


Figure 3

Perhaps even more importantly, once companies combine critical masses of data from the various sections of the business, new insights become available. As one example, some Teradata customers have conducted analyses that have virtually flipped their understanding of who their most profitable customers are. In response, they've improved their targeting of profitable customers, driven incremental revenue from existing customers, garnered a 15% increase in high-value customers, and improved customer retention.

In addition, as depicted in Figure 2, the EDW Roadmap links the strategic levels of a company all the way down to the basic business facts captured in operational systems. We start with business objectives at the top. Use analysis on detailed data to the right converts to actionable information. Finally, companies take the actions, resulting in measurable results. The middle box of the model is the collection of business questions, key performance indicators (KPIs), and business analytics.

A primary assumption is that as data sources grow, the information improves, supporting more answers to more questions, stronger understanding of KPIs, and higher value/lower cost actions that deliver higher value returns.

In Figure 3, the business questions and KPIs are linked to supporting data. The model is color coded, so if, for example, the calculation of a KPI or business question does not have all the supporting information or business attributes, the KPI

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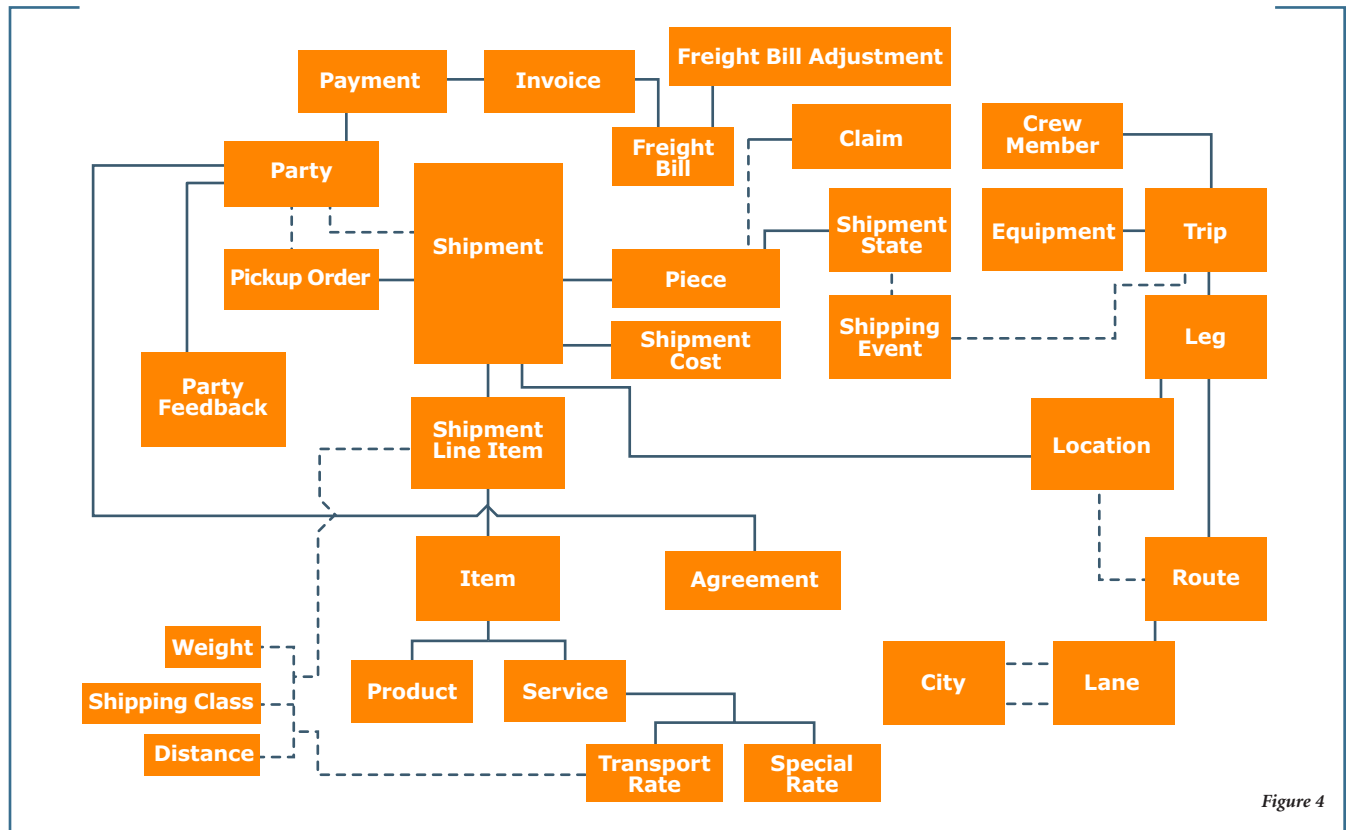


Figure 4

or business question object remains red until all attributes are noted and sourced. Another option is for companies to use business analytics where the colors in the model can slowly change as the data becomes enriched.

A Logical Data Model Framework

To be optimally effective, the EDW must contain a logical data model (LDM) that is tailored to a specific industry. The Teradata® Transportation Logical Data Model (TLDM) can provide a comprehensive, flexible

blueprint of how a transportation company can organize data within the EDW to support business insight.

It diagrams the relationships of data extracted from all of the source systems that contribute to an enterprise-wide view. Its modular structure not only provides the foundation to address questions from a full range of business users, but also has the flexibility for phased implementation, as business needs grow. The Teradata TLDM also significantly reduces a company's internal effort to structure the relationship of business attributes. In short, it's the

foundation for developing business intelligence applications such as a customer value model.

Figure 4 provides an example of business attributes within the TLDM.

The Value Analyzer

Precise insights about individual customer behavior – everything from transactional frequency to channels used – lead to more global insights about a company's bottom line. Once data is in a central location and organized in such a way that

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it's completely accessible for industry-specific business analytics, Teradata Value Analyzer helps companies gain those insights.

Using transactions, events, and activities (in short, all the data described above), the value analyzer compiles detailed Profit and Loss statements that consider:

- > Operational revenue – all revenue streams relating to your business.
- > Direct Expenses – costs that apply to customer behavior or events through various channels at various locations and times.
- > Indirect expenses – costs of doing business that are not driven by customer transaction activity (overhead).
- > Risk and Loss Provisions – the analysis of an individual customer for risk, fraud, loss provisioning, and exposure management.
- > Equity Capital Allocation – capital allocation down to the customer or account level.
- > Indirect Revenue – revenue accrued through interest bearing activities and settlements between partners.

Teradata Value Analyzer performs calculations based on user-defined rules – in other words, its work is driven by the specifics of each company's data. When the calculation engine runs, it links the appropriate revenues and expenses to every transaction. Once complete, it can aggregate the detailed information into

the views the business demands, including customer, product, and channel views across the entire organization.

In addition, Value Analyzer completes all of its processes and calculations – and stores all necessary data – right in the warehouse. By working in a single, integrated database, companies get an exhaustive review of the data. In contrast, most other processes produce only samples that tend to offer misleading insights about customer profitability. Moreover, despite the complexity of the calculations and the vast amount of data, the value analyzer completes its work quickly because there's no need to extract and cleanse data from disparate data marts.

In addition to its contribution to shipment-level profitability analysis, the information that Value Analyzer provides lends critical support to CRM initiatives, which can use the information to target high-value customers and then, design service initiatives that meet their needs without compromising profitability.

Benefits from Leveraging Shipment Level Profitability

The EDW Roadmap, along with the Teradata TLDM and Teradata Value Analyzer, facilitate creation of a customer value model that offers thorough and reliable insights about customer and shipment level profitability. Those insights are the connecting thread that ties together

er a company's strategic goals and objectives, individual business improvement opportunities, business questions and key performance indicators, and a wealth of company- and customer-specific data. The benefits accrue throughout the organization in a series of value-based decisions.

Pricing

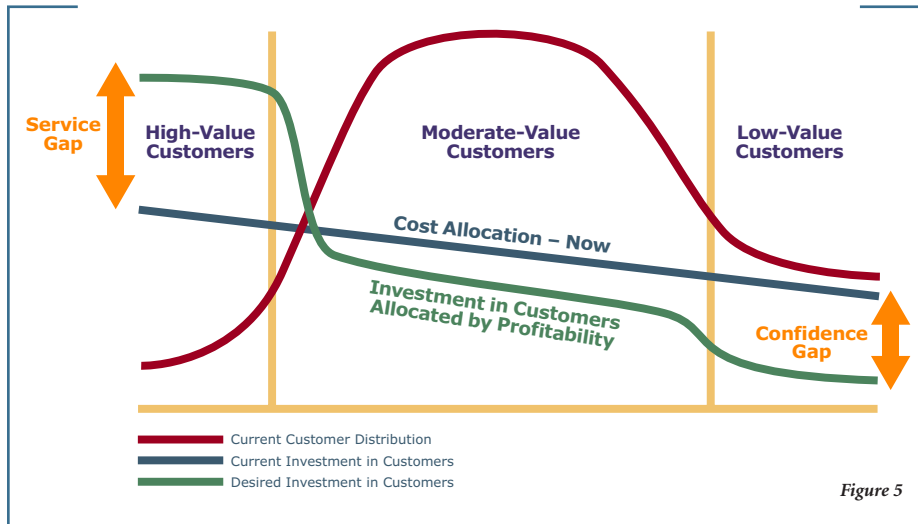
Until now, very few carriers have used an integrated customer value model to make pricing decisions. Instead, they rely on the marketplace, competition, or management intuition about the desirability of a piece of business. More than likely, business volumes are a major factor in the decision rather than the customer's true contribution to the bottom line.

With a detailed, shipment-level profitability analysis, companies can understand and weigh into pricing decisions, such things as:

- > The likelihood the customer will follow through on the committed level of business.
- > How often the customer changes service providers.
- > New or recent changes in products or services requested.
- > Ability to pay invoices on time.
- > History of loss or damage claims.
- > Impact on lane balance and equipment repositioning.

An integrated model that considers all the interactions with the customer and the consequences of providing service will

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improve the pricing decision leading to an increase in customer profitability and overall corporate yield.

Operations

A major benefit to clearly understanding customer value is the unique ability to allocate assets including equipment, labor, and the placement of facilities based on the service requirements of high-value customers. Redistributing the transportation company's investment in the high-value customer might look something like Figure 5.

Sales

Sales personnel at transportation logistics companies struggle to understand the interplay among competitive pressures, customer loyalty, and the variety of service alternatives. Too often sales efforts and commissions are based on tonnage volumes and/or revenue quotas rather

than a known contribution to corporate profits.

The sophisticated transportation company with a fully-integrated customer value model can target high-value customers and arm sales staff with crucial customer information for improving the productivity and profitability of their sales. Creating compensation programs tied to customer profitability can further strengthen the organization's portfolio and overall profitability.

Marketing

Similar to sales, the key to marketing is an ability to target customer segments that are known to bring value to the organization. Pinpointing profitable customers with specific services, as opposed to a more "shotgun" approach, can vastly improve market share and build on the corporate brand.

Finance

For finance, the biggest concern in transportation logistics is in controlling accounts receivables. Integrating the customer's ability to pay and days outstanding into a customer value model can bring immediate and detailed visibility to the root cause for late or default payments of invoices. In many cases, if companies know the cause, they can correct it by communicating actionable information to sales, operations, and/or pricing.

For example, customers who provide inaccurate descriptions, weight or cube create invoice disputes and an expensive reconciliation process. Having details of inaccurate bill of lading information provides an excellent vehicle for sales personnel to take immediate corrective action directly with the customer.

Another example is when clients misinterpret complex pricing agreements leading to rating discrepancies, disputes, and ultimately a receivables problem. The sooner these situations are identified and resolved, the better the chances of reducing administrative costs and improving days outstanding. If finance can identify those moments when operations performs services not originally requested, it can streamline the assessment of proper charges for the services rendered and then, improve receivables.

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Segmenting revenue, cost, customer behavior attributes and, where necessary, service partner information allows for an intensive study of the impact of conducting business with a customer. Companies can then base critical decisions on value rather than intuition or summarized views. This approach results in:

- > A greater yield from assets through an improved understanding of the relationship between demand and shipment profitability.
- > Improved pricing decisions, negotiations, and administration.
- > Operations strategies that support value optimization.
- > Alignment of sales resources based on customer contribution.
- > Value-based customer acquisition and retention strategies.
- > More targeted marketing campaigns.
- > Improved rating, billing, and collections.
- > Allocation of corporate resources based on customer value, thus improving service to most profitable clients.

Conclusion

Vision Becomes Reality

Value-based decisions achieved through shipment level profitability analyses have long been a dream of transportation companies. But it has been an elusive dream, one often frustrated by an inability to gather the appropriate data and subject it to the type of analysis that enables genuine business insight.

The dream is no longer elusive. Companies now can transform the vision into a reality. An EDW that contains a Teradata Transportation Logical Data Model and Teradata Value Analyzer allows companies to gain and take full advantage of a single view of the enterprise. With that capability well in hand, transportation logistics companies will increase quality revenue, reduce costs, improve efficiencies, drive increased profits and, ultimately, improve shareholder value.

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