

# **The New E-Business Analysis Imperative:**

An In-Depth Report on Broadbase EPM  
Determining the ROI of Customer-Centric Analytic Applications



# INTRODUCTION

In an increasingly competitive business environment, companies everywhere realize the value of their customer relationships, and are implementing software solutions to improve and manage those relationships. The Internet provides a new source of customer interactions for most companies, with online stores, corporate Web sites, and web-based support offerings all generating new and valuable customer contacts.

Each customer contact provides vital information into a customer's business, but accessing that information, and getting a consistent view of the customer across all of the enterprise data, is a significant challenge. This challenge is addressed by analytic applications focused on customer relationship management. To be effective in today's environment, these applications must integrate a company's e-business activities with traditional operational data sources.

ROI Analysis Group has researched the quantifiable and qualitative benefits of e-business and customer analysis, comparing the costs and benefits of the various approaches to analyzing customer information across all customer touch points.

Specifically, we have examined the costs and benefits of analytic applications for e-business from Broadbase Software, a leading e-business analysis solutions vendor. The Broadbase solutions include application-specific analysis modules for sales, marketing, customer service and e-business. This paper details our findings in terms of the cost justification and Return On Investment (ROI) offered by these different solutions.

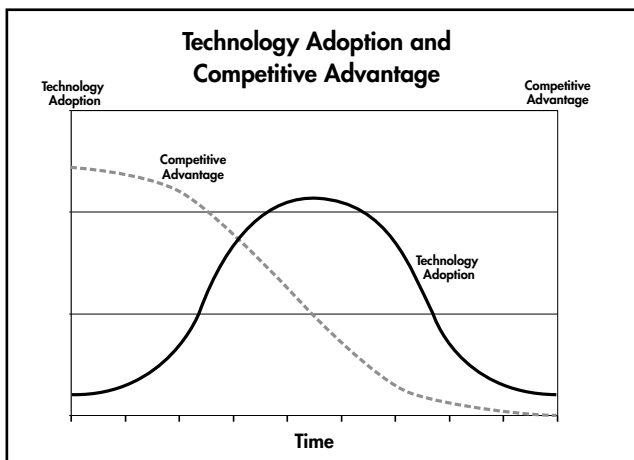


Figure 1

## Moving Beyond Process Automation

Companies everywhere are realizing the benefits of optimizing their front-office, customer-facing operations. Witness the success and growth of the Customer Relationship Management (CRM) application market. Like Enterprise Resource Planning (ERP) applications that manage back-office functions, operational CRM applications can automate and manage vital processes in the enterprise for improved efficiency.

However, as more companies deploy these front and back office applications, the relative competitive advantage gained from process automation decreases. In effect, the playing field levels when competitors roll out similar operational applications and automate the same processes in the front office.

After implementing significant cost cutting and business process re-engineering efforts, executives at companies of all sizes – from the Fortune 1000 to the mid-market to emerging start-ups – are seeking new competitive advantages through technology. These companies realize they must now move beyond efficiency to *effectiveness*. These businesses are looking for ways to optimize the effectiveness of their efforts, specifically the critical customer-facing operations such as sales, marketing, customer service and e-commerce.

Companies are seeking to enhance customer value and maximize the lifecycle of the customer relationship through CRM applications. CRM represents a concerted and ongoing effort to improve customer identification, conversion, acquisition, Internet commerce, and retention. This is no temporary management trend.

To date, most customer relationship management initiatives feature client-server, operational business applications that automate key processes in front office functions such as: sales, telesales, marketing, customer support, call centers and field service. Some of the software vendors to offer solutions in this space include Siebel, Aurum (now part of Baan), Vantive, and Clarify. This list grows every day.

## Web-based Customer Interactions

At the same time that companies are implementing relationship management and automating front office processes, the Internet is introducing a whole new dimension to customer interactions. Whether it's through online shopping and sales, online content publishing, advertising, or Internet marketing, the Internet opens up a whole new way of doing business that must be integrated with the existing, traditional lines of business.

A number of vendors provide packaged or custom e-business systems for implementing these processes. Some of the major vendors in this space include BroadVision, InterWorld, Open Market, Kana, and Microsoft (Site Server).

## Integrating Customer and E-Business Analysis

Operational CRM and e-business applications provide valuable improvements in efficiency and corporate processes. However, they do not help organizations analyze and understand their customer interactions to improve business effectiveness. This second wave of CRM and e-business is what is now required to improve business competitiveness.

Operational CRM and e-business systems are transaction-based systems. Providing customer intelligence and e-business optimization from their data requires next-generation decision support systems. OLTP applications on their own are unable to provide the sophisticated analysis that companies need to understand customer interactions across the enterprise.

To get this perspective, companies require a new breed of analytic applications that can integrate customer information across all customer points, including traditional on-line sales channels, phone and web-based support systems, print and online advertising, and financial and accounting systems.

## Moving Beyond Traditional Decision Support

Just as OLTP systems moved from servers and tools to packaged applications for specific business purposes, so the decision support industry is moving toward packaged analytic applications,

with similar compelling results. The need for packaged applications was driven in part by the challenges associated with data warehousing and traditional decision support.

The difficulty and long time frame of data warehouse projects led in part to the evolution of the data mart, a smaller, department- or function-specific version of the warehouse that offers a faster deployment and quicker payback period. However, like data warehouses, traditional data marts require integrating various "piece part" decision support tools (e.g., tools for extraction & transformation; data storage; OLAP servers; reporting; tuning).

### Both data warehouses and piece-part data marts suffer from many of the same weaknesses:

- **Resource Intensive:** The scope and complexity of data warehouses and piece part data marts, and the multiple software products required to create them, make these solutions highly resource-intensive. The initial implementation can last years, and the data store requires ongoing technical maintenance and support.
- **High Cost & High Risk:** Enterprise data warehouse and data mart projects generally cost upwards of several million dollars, in part due to the many different components required. Significantly, many data warehouse projects are unsuccessful. A Tandem study determined that almost a third of the data warehouse projects are cancelled and over half cost almost twice the original estimate. Research by The Data Warehouse Network and Price Waterhouse concludes that 70% of data warehousing projects are considered unsuccessful. Data marts have a lower risk than warehouses, but the "hard wired" nature of the piece part data mart platform makes it costly to manage and adapt.
- **Incomplete Data:** Business users often want to analyze data not in the data warehouse or mart. This may be because the data is (1) not yet integrated into the warehouse or mart, though planned, (2) resides in "autonomous"

smaller, department level systems and user desktops, or (3) is in changing sources (such as external demographic data) and difficult to access with complex and inflexible piece-part systems.

- **Isolated from Business Users:** Perhaps most significantly, data warehouses and even many data marts cannot easily be used by business users. IT departments are burdened with analysis and reporting, wasting resources and delaying valuable information for time-critical business decisions.

Data warehouses are valuable, centralized sources of clean data and a critical backbone of a company's information architecture. However, for the above reasons, data warehouses are not the ideal vehicles for analytic applications targeting business users and function-specific analysis.

### Analytic Applications

Analytic applications not only integrate previously discrete DSS tools, but also package business logic and function-specific analysis and metrics. The result is a packaged solution that can start delivering a clearly identified business value very quickly.

Henry Morris of IDC has identified three key requirements or attributes of analytic applications:

1. **Process and Function Specific:**  
Application structure and business logic automate analytic tasks associated with the optimization of specific functions, such as sales, finance and budgeting, or procurement.
2. **Distinct from Transactional Applications:**  
An analytic application can function independently of core operational or OLTP applications, even if they send results back to them.
3. **Time-oriented, Integrated Data from Multiple Sources:**  
Analytic applications abstract and integrate data from multiple sources, creating a data mart platform supporting comprehensive analysis, such as trending over time.

These requirements are largely the same to those outlined by Arthur Andersen, LLP in their case study "Using Packaged Analytic Applications to Maximize the Value of ERP".

There is broad agreement that turnkey data marts are the ideal platform to develop or deploy analytic applications.

Because of the incredible value analytic applications can deliver to business, this software category is experiencing rapid growth. IDC estimates that the market for analytic applications will top \$3.6 B in 2002, dramatically outstripping the growth of DSS tools (see figure 2).

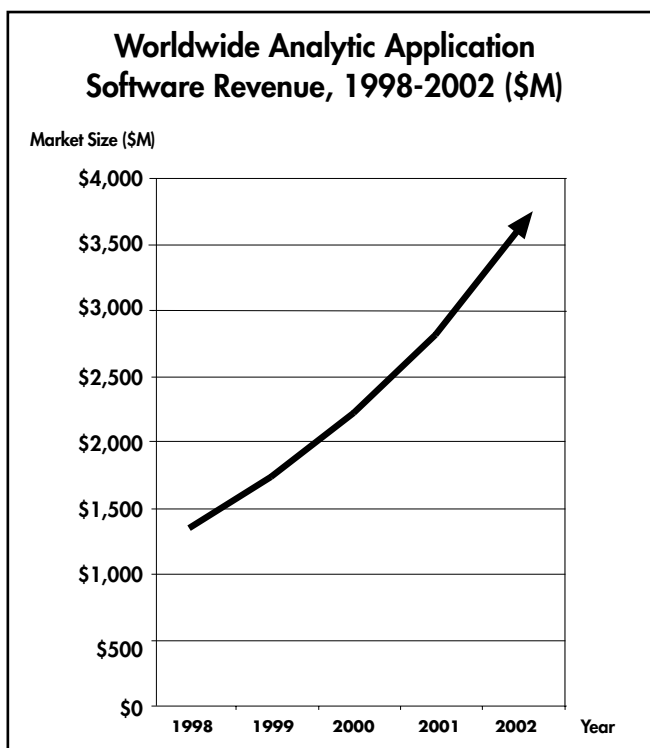


Figure 2

### Customer-Centric E-Business

Although analytic applications have been used for a few years by finance departments to perform budgeting and forecasting, customer-focused and e-business analytic applications represent a new opportunity for companies to gain competitive advantage with next-generation decision support. IDC identifies analytic applications for front office functions – sales, marketing and customer service – as the fastest-growing segment in the analytic applications market.

### A Customer-Centric View of the Enterprise

The Patricia Seybold Group also recognizes the imperative of delivering information and analysis in a CRM initiative, specifically for use by managers, executives and other business users.

A recent Seybold Group report on Customer Relationship Management comments:

***“The key is the effective management of information systems to capture and consolidate millions of customer transactions and present them to corporate decision makers in easily digestible format that leads to action.”***

***-Seybold Group***

Integrating and analyzing customer transactions and data from across the enterprise creates a customer-centric view for businesses. This is in contrast to the traditional "product-centric" view of traditional business management that, in many cases, is oblivious to changing customer needs and purchasing behavior.

In today's business environment, customers send real-time clues to needs and purchasing behavior in their interactions with e-business systems. One challenge to understanding these interactions is integrating information generating in online transactions and events with data locked in disparate enterprise systems.

Understanding and optimizing the entire customer lifecycle, from prospect to lead to customer, requires integrating data from front and back office systems and across all customer touchpoints, traditional and online.

Broadbase offers e-business analysis solutions that integrate data related to customers and operations from packaged and custom enterprise and e-business systems, including:

- Sales, Support and Marketing.
- Finance, Human Resources, and Supply Chain Management.
- Enterprise Data Warehouses and other key data resources.
- Electronic Commerce Servers and Corporate Web Sites.
- External demographic data.

## **E-Business Specific Analysis & Best Practice Metrics**

Analytic applications improve front office business performance by using packaged analysis, key metrics and function-specific process to drive best practices across the enterprise.

Broadbase's solution, Broadbase EPM (E-Business Performance Management), helps companies use valuable front office resources most effectively by identifying bottlenecks, measuring performance against industry- or business-specific metrics, and pinpointing problems and opportunities. With e-business-ready analysis integrated with the traditional customer data sources, companies can:

- Remove process bottlenecks in sales funnels by analyzing deal velocity and revenue attainment.
- Analyze "abandoned shopping cart" behavior to understand barriers to online purchase.
- Identify and leverage the most popular web site content and advertising.
- Fine-tune online promotions and personalization by profiling behavior based on customer segmentation.
- Share information and best practices in sales and marketing by analyzing successful marketing campaigns, product promotions, vertical markets, or win/loss trends.
- Improve support throughput by analyzing backlogs, case volumes, and scheduling.
- Improve support quality control by measuring performance against key metrics, such as first call closures and time to close.
- Measure marketing campaign effectiveness in terms of leads generated, click-through or online purchase, deals, revenue generation, and resulting customer profitability.
- Increase and accelerate sales revenue with deal analysis, funnel optimization, and cross-sell/up-sell analysis.

## Focus on Most Valuable Customers

The Patricia Seybold Group analyzed how small percentages of customers represent large percentages of profits. For example, a Seybold study of the Fleet Bank in New England identified that up to 40% of its customers and products are unprofitable at any time. Accordingly, successful companies not only aim to acquire and retain more customers, they also focus on their most profitable ones.

Broadbase EPM meets this need and helps companies prioritize, grow, and satisfy high-value customers.

- Rank and profile customers by critical dimensions, such as revenue, lifetime customer value, and profitability.
- Segment and profile customers based on demographics, online session behavior, and propensity to respond to marketing campaigns.
- Grow existing customers with up-sell and repeat business, online personalization and cross-promotion offerings.

## Accelerated Decision Making with Web-based Applications

Analytic applications targeted at business users can increase the responsiveness and agility of large organizations by making them alert to changing customer or market patterns. Using traditional decision support products, this information is often delayed, for a number of reasons:

- Business users are isolated from complex data warehousing solutions, and must request reports or analysis from resource-constrained IT or MIS departments, delaying real-time access to information.
- Information in client-server applications is incomplete or inaccessible.

By packaging analysis, speeding deployment, and putting information in the hands of the business users, analytic applications have the potential of delivering significant “time-to-market” value. The “time value” associated with decision-making may be the most important, although difficult to quantify, factor in figuring the ROI for an analytic application.

## WHAT IS ROI AND WHY IS IT IMPORTANT?

With today’s competition for IT resources, managers must justify the cost of large IT investments. This is particularly true for data warehousing projects, which have high failure rates and extremely high costs.

*“Management will increasingly pressure IT to cost-justify initiatives and evaluate ROI for alternative architectures”*  
–Meta Group

Most organizations now use accepted ROI modeling techniques to cost-justify requests for solutions and resources. ROI modeling helps organizations identify and quantify potential benefits, build internal support for IT initiatives, and create metrics for ongoing project assessment.

The Meta Group identifies three key factors to consider in determining a project’s return on investment (Source: Desperately Seeking ROI; Meta Group Presentation on June 22-24, 1998):

- The total cost of ownership (TCO) associated with the purchase, implementation and support of the solution.
- The actual ROI achieved with quantitative and qualitative business benefits and payback period.
- The time to value.

These financial metrics are defined as follows:

### TCO (total cost of ownership)

is the total lifecycle costs associated with the purchase, implementation, and support of a software application. This includes the software license fees, hardware costs, integration and design costs, training costs, and ongoing annual maintenance and support costs. TCO is ongoing; this paper uses a discounted three-year lifecycle TCO for comparisons.

### ROI (return on investment)

is a tool or methodology used to cost-justify enterprise investments. There are two primary financial calculations used in ROI modeling:

**Time to Payback** is the elapsed time required to recover the capital invested in the solution. It is the point at which the discounted cash flow benefits exceed the initial capital investment.

**ROI** is the return on a business investment. It is the ratio of the expected cash benefits (increased revenue or decreased costs) during a specified time period to the expected costs associated with that investment. In this case, those costs are the same as the TCO. For the purposes of this paper, we calculate a three-year ROI.

**Time to Value** is the time elapsed between the purchase data and when the system is operational and delivering value to users and the business overall. This includes the amount of time needed to design, customize, and integrate the solution.

$$\text{ROI} = \frac{\text{Benefits (NPV*)}}{\text{TCO (NPV*)}}$$

\*NPV is Net Present Value

Figure 3

## THE ROI OF CUSTOMER-CENTRIC ANALYTIC APPLICATIONS

### Total Cost of Ownership (TCO) of Broadbase Solutions

Turnkey data marts and packaged analytic applications have a lower average TCO than traditional decision support and data warehouse projects because:

- Software costs are lower.
- Development and integration are faster and easier (because you do not have to integrate a number of different “pieces” of the solution).
- Ongoing support costs are lower.

### Lower Software Costs

A piece-part data mart platform and custom analytic application can require as many as seven different software tools or more, all potentially purchased from different vendors. These piece-part tools may include data movement tools, OLAP servers, data mining and statistical analysis products, query and reporting tools, administration and tuning products, data storage, and application design tools.

Broadbase provides a turnkey solution, with all of these functions already integrated for an out-of-the-box implementation. As a result, the overall software license fees required to implement the analytic application are reduced. With as many as six fewer license fees, the average software cost savings can be between 50% and 80%. These savings are continued through lower annual maintenance fees, typically a percentage of the initial purchase cost.



## Easier Development and Integration

Analysis shows that Broadbase’s analytic applications and turnkey data mart can be installed and operational in about half the time required for a piece-part solution. There are several reasons for this difference:

- Broadbase products have packaged, pre-integrated functionality.
- Broadbase provides a common management environment for data acquisition, analysis, information delivery and scheduling, and application management.
- An easy-to-use, graphical “drag and drop” environment speeds deployment.
- Integration in the enterprise is aided by a completely open and standards-based architecture, including open languages, open APIs, the use of leading relational databases, and compliance with key industry standards such as ODBC and the Microsoft Metadata Repository.

## Lower Ongoing Support Costs

Ongoing maintenance and support costs can be a significant component of an analytic application’s TCO. This is particularly true for traditional piece-part solutions that need IT staff and analysts to run analysis and reports for the business users. Dedicating IT staff to analytic application work represents an expensive, ongoing cost of ownership, and may have significant opportunity costs for a resource-constrained IT department.

This study clearly shows that custom applications delivered on piece-part platforms require significantly more support time than do Broadbase’s packaged analytic applications delivered on a turnkey platform. The Broadbase solution has lower support costs because:

- Business users have “self-service” access to reports and analysis, reducing the need for ongoing IT support
- An integrated management environment supports all platform and application functionality.
- The solution adapts easily to changing technical requirements (e.g., changing system mix among source systems; implementation of new packaged operational applications; etc.).
- The solution adapts easily to changing business requirements (e.g., need to adjust core application metrics, analytics and features; add and train more user groups; etc.).

These benefits reduce average support costs for Broadbase analytic applications by approximately 50%.

## The Effect on TCO

As defined earlier, the TCO combines the above cost elements (software, integration, and annual support costs) with annual software maintenance, hardware and training costs. These numbers are discounted over the lifecycle of the solution to attain an estimated TCO figure.

Through research with Broadbase’s installed customer base as well as Broadbase’s system integration partners, the various cost components calculate the average three-year TCO of a Broadbase packaged analytic application to be approximately 50% of a piece-part solution’s costs. This difference can be attributed to the reduced software, integration and support costs outlined above. *Figure 4* shows the average three-year discounted TCO and the relative cost components of the three approaches to CRM analytic applications.

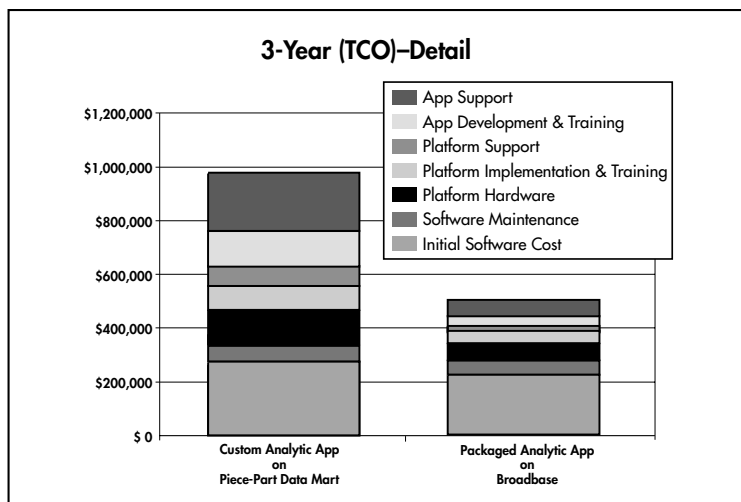


Figure 4

## Business Benefits & ROI of Broadbase Solutions

By understanding its customer base, a company can better sell, market, and support its products and services. Broadbase's e-business-enabled analytic applications provide the robust analysis and integrated customer view required for a customer-centric view of the business. By enhancing all facets of customer identification, acquisition, conversion, retention and growth, Broadbase EPM offers a more compelling ROI than competing piecepart approaches (see figure 5). The potential benefit of better customer understanding is longer and more profitable customer relationships.

Obviously, the exact benefits vary for each company, driven by company-specific strengths and weaknesses, business processes and goals.

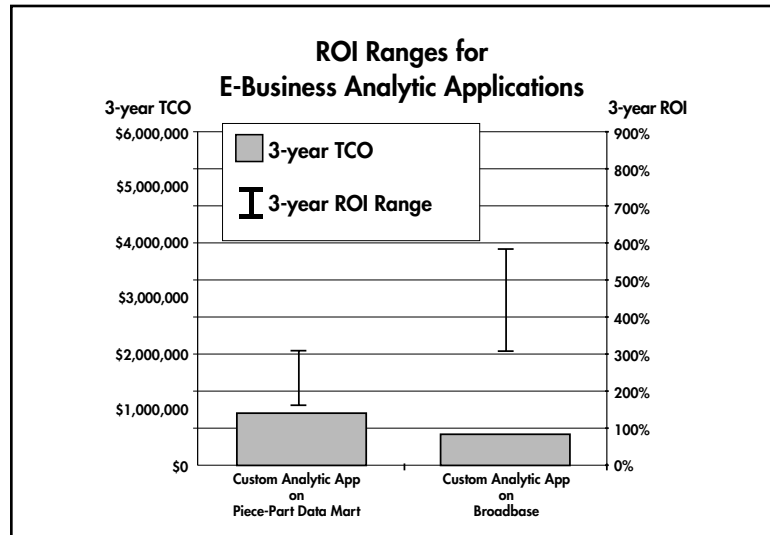


Figure 6

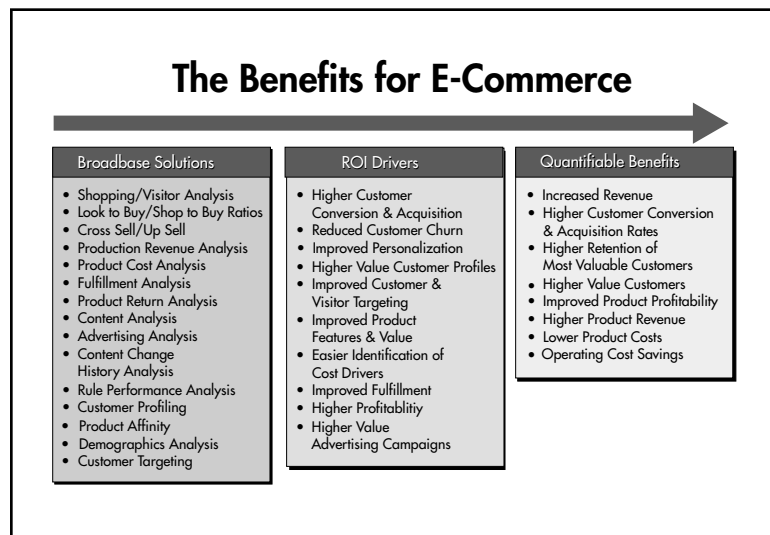
**“Enhancing all facets of customer identification, acquisition, conversion, retention and growth, Broadbase EPM offers a more compelling ROI than competing piecepart approaches (see figure 5). The potential benefit of better customer understanding is longer and more profitable customer relationships.”**

**–ROI Analysis Group**

By identifying the key drivers of ROI in the sales, marketing and support organizations, a company can assess the overall impact of an existing or potential analytic application.

## Internet Commerce

Companies invest significant resources and money in their online business efforts, whether online stores or advertising, web-based customer support, or corporate web sites. Analyzing the performance of the e-business lets a company leverage its online efforts for better results (see figure 6). Increasing cross-sells and upsells in online stores, maximizing advertising exposure and click-through, and eliminating barriers to online sales can all deliver top-line revenue improvements.



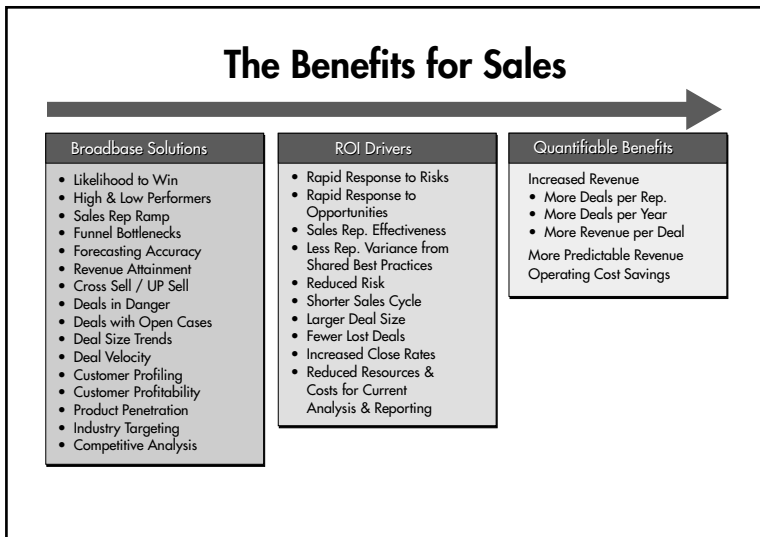


Figure 7



Figure 8

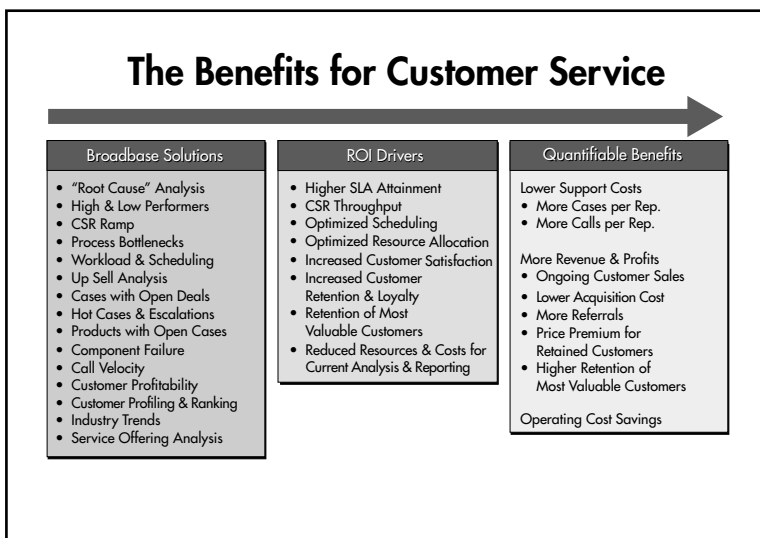


Figure 9

## Sales

The best way to improve sales force effectiveness is to empower them with pertinent information on their target market. The various types of analysis in figure 7, provided by Broadbase EPM, fuel the ROI for a sales organization by creating a comprehensive view of the customer base, across all customer touch points. The quantifiable benefits of a sales analytic application come from improving the sales rep's effectiveness, reducing the risk exposure during the sales cycle, and enabling the rep to sell more product. These key drivers of ROI all lead to increased revenue.

## Marketing

The ability to track responses to marketing campaigns and profile target customers yields significantly greater returns on marketing dollars. ROI is traced through improved response rates or click-through for marketing campaigns and advertisements. The various types of analysis in figure 8 fuel improvements in ROI, which can be measured by more and better customers for your marketing dollar.

## Customer Service

The customer support functions in an organization have significant influence over a company's recurring revenue stream. By enabling support organizations to track service levels for top customers, products requiring the most service resources, and bottlenecks to problem resolution, a company can optimize service levels, focus support efforts on the most costly problems, and increase customer retention and satisfaction. These ROI drivers (see figure 9) deliver longer customer relationships, reduced customer turnover and lower overall support costs.

## Additional Benefits: “Soft” or Qualitative Benefits

A decision support solution will also deliver a number of benefits that are difficult to quantify. Although difficult to measure, they are important to consider in determining the true business value of a solution:

- Faster, more informed decision making.
- Faster delivery of products to market.
- Improvements to corporate culture.
- Broad improvements in decision-making and response to opportunities and risks that are difficult to quantify.
- Productivity of business users in decision support, analysis and reporting usage.
- Improving managerial ability.

Value in the CRM space comes from increasing the quality and quantity of customer relationships. Taking the time to determine the benefits of the decision support solution will not only help you through the cost-justification phase, but also keep your company on track in its efforts to find and retain more profitable customers.

## Additional Benefits: “Million Dollar Questions”

In many instances, the development of a decision support system can be justified by *one* question that the system is able to answer. Many success stories highlight the value of one query, such as deals in danger, which justified the total investment in the decision support solution. It is impossible to know what that question will be, but do not underestimate the likelihood of finding and answering it.

## The Loyalty Effect & Profitability

Greater customer loyalty, achieved through improved customer service and by more targeted and effective marketing and sales, delivers significant benefits to a company’s bottom line. In the ground-breaking book and study, “*The Loyalty Effect*”, Frederick Reichheld of the management Consulting firm Bain & Company determined that on average a 5% increase in customer retention can result in a 100% increase in a company’s profits. There are several drivers behind the

impact of loyal customers on profitability (see figure 10). In short, the dramatically lower costs of customer retention over acquisition, combined with increased sales opportunities, prove a powerful combination for driving profitability.

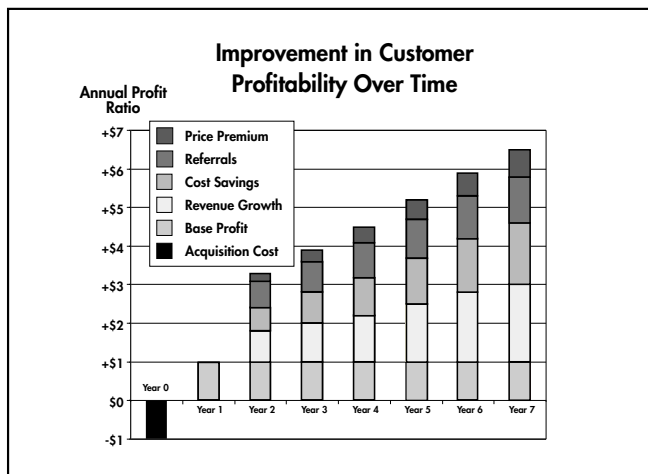


Figure 10

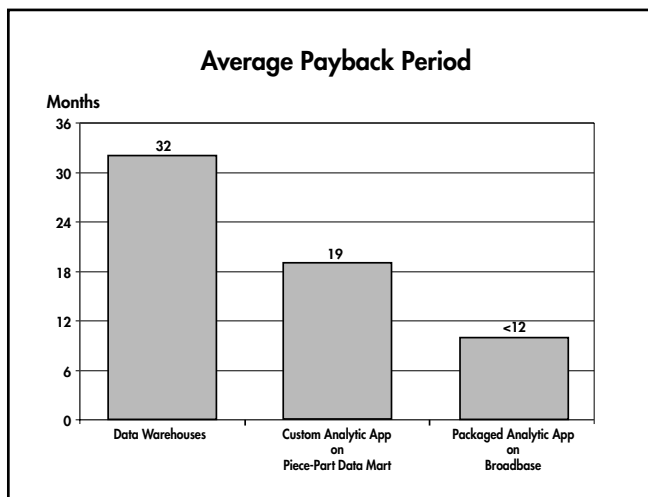


Figure 11

## Payback Period

Payback period incorporates both quantifiable benefits and TCO. In non-financial terms, it explains how much time it will take for the future benefits of an investment to negate the initial costs.

In general, data marts have a shorter payback period than data warehouses, due to the reduced size and complexity of the solution. Turnkey data marts and package analytic applications further reduce the payback period by speeding deployment and reducing initial costs. Figure 11 shows the reduction in average payback period for decision support solutions that provide greater out-of-the-box functionality. Enterprise data warehouses take 2.7 years, on average, to achieve full payback, while preliminary data shows that

*“With Broadbase's end-to-end approach... we are able to show return-on-investment value for our customers in a fraction of the time it would take with a multi-vendor, piece-part solution.”*

*- ZAC Technologies*

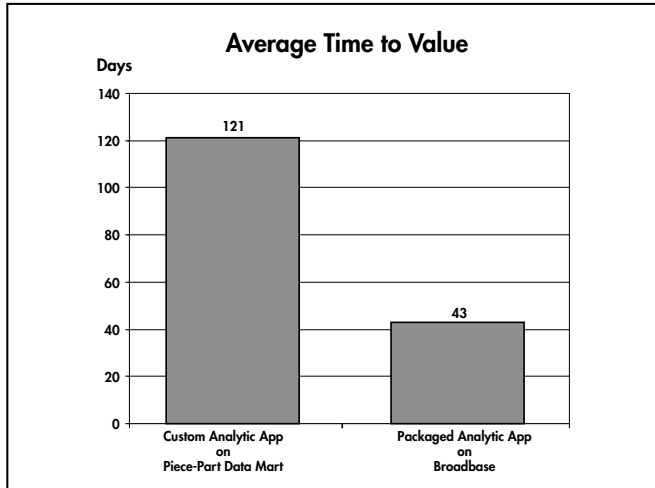


Figure 12

packaged analytic applications on turnkey data marts will pay themselves off in less than a year. (Source: IDC report Foundations of Wisdom; ROI Analysis Group)

### Time to Value

Packaged analytic applications deliver a faster time-to-value because there is less integration required to make these systems operational. Pre-defined queries and reports reduce application development time, while pre-configured cubes and fields make ETL (extraction, transformation and loading) significantly easier. On average, a packaged application on a turnkey datamart such as the Broadbase solution delivers value in one-third of the amount of time of a multi-vendor customized solution (see Figure 12).

## CONCLUSION

As companies move from a product-centric to a customer-centric orientation, and as they add new e-business channels to traditional customer interactions, they need the tools to analyze and optimize their efforts. Traditionally, performing analysis across the many different systems and information sources about the customer has been a difficult decision support task, involving significant data integration, data mart or warehouse implementation, and extensive IT support for analysis and reporting.

Packaged analytic applications such as the Broadbase solution, with prepackaged analysis and an easy-to-use interface, deliver the competitive advantage of better business performance information without the expense and time of traditional decision support solutions. In fact, our research shows that no matter which ROI metric you choose to model (ROI, TCO, or Time to Value), the benefits of a packaged analytic application on a turnkey data mart platform are numerous and plentiful. The ROI is high, the payback is short, and the time to value is exceptionally fast in comparison to other piece-part solutions.

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