# Financial Analytics: Delivering

# *"Metrics That Matter"*

**By Claudia Imhoff and Raymond Pettit**

Appropriate, accurate and timely accounting is critical to long-term business success. Just ask Enron. It is understandable, therefore, that business first embraced computers in the middle of the last century to handle accounting tasks. It's also understandable that computing, or information technology (IT), was originally placed (and often remains) under accounting/finance in many organizations.

As computers became less expensive, decentralized, more powerful and easier to use, they slowly permeated other departments until it became feasible and desirable to implement integrated, enterprise-wide software systems. Even so, many organizations were hesitant to buy expensive enterprise systems and replace nearly all of their various application systems at once – especially when it wasn't clear that the replacement systems adequately supported their full business process requirements. On the other hand, for the organizations that built custom enterprise systems, rapid technological advances made standardization challenging and expensive, and many struggled to integrate a hodgepodge of disparate subsystems.

Whether they built or bought, what became clear to many was that although their operational systems did a good job of storing, processing and integrating their operational data, they couldn't get the operational data out quickly and cheaply enough to adequately support their tactical and strategic decision-support needs. Over time, as they were forced to implement point solutions for specific problems, the need for data warehousing grew – and history repeated itself.

Given accounting/finance's historically mandatory role in business and strong control over IT, it's understandable that most of the early data warehouse projects were accounting/financial in nature. As data warehousing matured, it also spread to other departments.

## Qualitative Customer Data

Today, business is more analytically architected and enabled than ever before; and, for now at least, the focus is on the customer. The push is to strategically apply analytics to comprehensive customer data via customer relationship management (CRM) initiatives.

To complicate things, "comprehensive" customer data includes qualitative or intangible data, such as customer attitudes and behaviors, not just the quantitative or tangible customer data typically used in financial analyses.

Although qualitative data has been historically difficult to integrate and analyze and is rarely found in a data warehouse, its value is maximized when combined with quantitative data from accounting/finance. Without it, we lack comprehensive customer data.

The technical realities of bringing together disparate silos of data are usually challenging, as are those of making the integrated data accessible to analysts, researchers, advisors, knowledge-workers, managers, etc. The same holds true for qualitative customer data. Obviously, the Corporate Information Factory (CIF) architecture is our choice for responding to these challenges and for integrating and delivering comprehensive customer data. By adequately archi-

tecting enterprise business intelligence to include qualitative and intangible data, organizations can achieve and leverage new, sophisticated "metrics that matter."

## Customer Understanding/ Profit Link Process

Corporations and businesses around the world are gradually acknowledging that intangibles do indeed have a significant impact on business performance.[1] More and more companies are coming to realize that both the hard and soft measures – tangibles and intangibles – are the keys to an effective and efficient assessment of business strategies, efforts and plans. As examples, the evaluation of marketing, sales and customer service outcomes and the determination of the return on investment
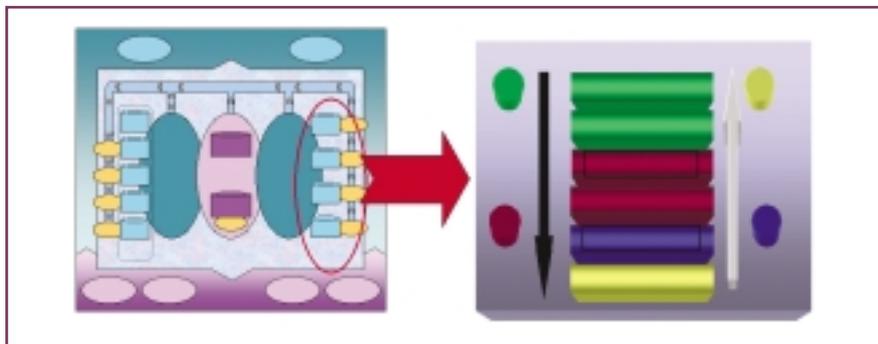
(ROI) of IT and CRM installations can be substantially improved with this more holistic view of measurements. However, for many companies, habit, ennui, practice or even culture holds back any action. A few companies, however, are breaking through layers of habit and business practice to recognize that a solution to better assessment and improved business is feasible. These companies are ready to do the tough work needed to obtain this level of sophistication.

One of the best ways to increase the usefulness of strategic analyses is to perform a Customer Understanding/ Profit Link study. This process establishes empirical links between the primarily intangible qualitative measures of customer understanding (e.g., customer satisfaction, brand perception/strength and customer loyalty) with the critical business outcomes or quantitative data (e.g., market share, profitability or life-

time customer value).

The solution, simply put, is to create a well-conceived and extended enterprise business analytics and metrics system that leverages the enabling technology and architecture for market measurement, financial metrics and consumer insight. Figure 1 demonstrates the how the CIF supports the linkage, permitting the creation of these important new integrated customer metrics. With access to data of all kinds – attitudinal, behavioral, financial, demographic, etc. – it then becomes possible to create, build or develop linkage models that produce the "metrics that matter" for C-level executives as well as division and unit managers and, ultimately, all knowledge-workers. It is through the integration of technology



*Figure 1: CIF and its Relationship to Integrated Customer Metrics*

(CIF), marketing science (the intangible data) and financial metrics (the tangible data) that you get a full understanding of all the influences on your organization's performance.

All the pieces for the solution exist today. Missing is the difficult integrative work needed to fill in the gaps between the technical, analytic and delivery aspects. In short, executives, marketers, technologists and financial experts need to be talking, planning and working together at a common table. Let's look at these aspects in more detail.

## The Corporate Information Factory

On the technical side, the CIF (Figure 2) is a well-planned realization of the data integration and decision-support work required. In fact, the CIF actually becomes the back-end support and front-end delivery mechanism for the analytic or business intelligence

component. That is, properly configured, it brings both tangible and intangible data together in a usable fashion and then delivers information, intelligence and insight directly to the corporate knowledge worker or decision-maker. The key elements are:

- The CIF Road Map: a blueprint of the system(s) that will support and drive business analytics.
- Administrative Processes: ways to update, maintain and evolve the technical infrastructure as business needs change.
- Information Feedback: the integration engine that enables data, intelligence and knowledge gathered throughout the enterprise to be shared with other data stores allowing for intelligent business analysis, interaction and collaboration.
- Information Workshop: the mechanism, probably Web-based, to route, manage and present information, insight and reports to corporate knowledge-workers at all levels.

An analytic solution can only be considered if the information feedback component of the CIF is in place. Just having the data all in one place still doesn't tell you:

- What data is important.
- What to do with the data.
- What analytic methods work best for your objectives.
- Where to find "nuggets of insight."
- What to do with the results.

While a book could be written on this subject, we will focus on a simple but effective way to leverage the data streaming through the CIF. Figure 3 shows the detail of the integrated customer metrics process generated from data in the CIF. Let's look at what this really means.

## Integrated Customer Metrics

Communicating with, studying and thinking about the customer – that is, building customer understanding – is all about taking information pulsing within the CIF to determine knowledgeable ways to:

- Attract customers.
- Satisfy customers.
- Keep customers.
- Build customer bonds and loyalty.

Figure 4 demonstrates these four

"pillars" of customer understanding. At most corporations, the value of "understanding customers" would appear to be self-evident. However, in the world of business, concrete proof is sought of this "understanding." This is where most organizations falter. They cannot formalize the construction of the links between measures "of the customer" (attitudes, satisfaction, feelings, perceptions, etc.) and measures of financial performance (what is the dollar payoff or value of our business efforts or customers – CRM included).

Today, we have the opportunity to merge "the best of all worlds." That is, we have the opportunity to link the power of the CIF, with its data organization and management features, with equally powerful analytic techniques from the marketing sciences. We can infuse CRM, SCM, SFA and marketing automation with the broad continuum of marketing research techniques, processes and methods that drive customer understanding *and* linkage to profit measures.

The last piece of the architecture consists of the delivery mechanism for

enabled by the ability of the CIF to bring together the right data to the right place at the right time. The three primary analytic procedures are:

- **Projection**: This is the technique championed by Frederick Reichheld and his work on "customer loyalty."[2] It is a fairly simple method, but has been criticized for being somewhat subjective. It is based on estimates of the financial worth of a customer and combined with customer satisfaction or propensity measures to pro-ject the future "value" of a customer.
- **Direct Linkage:** This is a more complicated way to merge customer behaviors and attitudes directly with market results, generally using straight-line thinking. It has a "correlational" foundation that
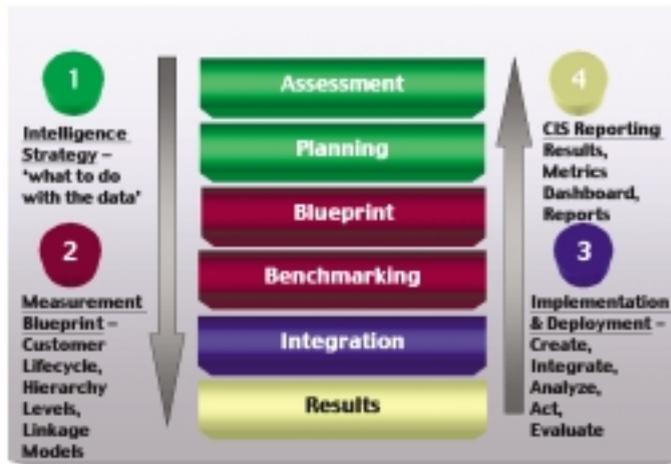
Figure 3: Integrated Customer Metrics

of powerful metric models that can encompass attitudinal, behavioral and financial performance measures. This overarching model contains multiple measures that can quantify a causal relationship network or framework. It actually encompasses the familiar regression modeling techniques used by economists and the factor analytic procedures employed by psychologists and sociologists to understand attitudes, emotions, traits and more intangible facets of human and group behavior. For example, customer satisfaction (an attitudinal state) can be related to measures of purchase activity to quantify the degree to which changes in satisfaction affect the bottom line.

The strengths and weaknesses of the three approaches are varied. The simplest approach (projection) is obviously straightforward and easy to understand. However, the assumptions (estimates) employed may be faulty or too simplistic. In addition, the measures suggested by experts often contain a large amount of variance and are difficult to evaluate without benchmarks or a point of comparison.

Let's look at projected revenue assumptions as an example. Statistically, there are many ways to do this beyond a simple straight-line measure. Efforts to project IT revenue by analyst firms exemplify the wide variance that can result. This situation is then further compounded when no reference point is provided and the projections are not thoroughly depicted. Indeed, every-
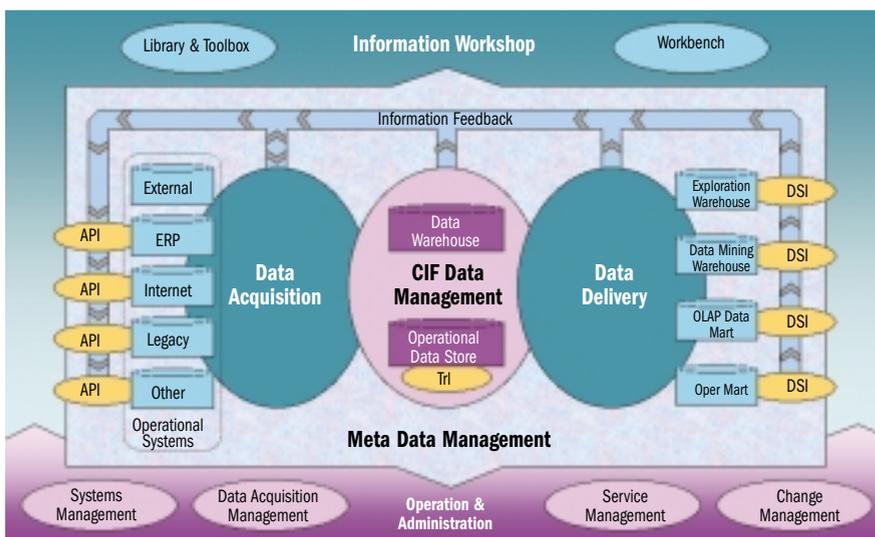
Figure 2: Corporate Information Factory

these analyses. Figure 5 depicts the three ways to link measures of customer satisfaction, customer value and customer loyalty to financial performance. These techniques go from the simple to the complex and from "estimates" to more precise metrics. All are

suggests how customer segments, for example, are related to increases or decreases in market share.

- **Structural (Causal) Models:** This is an emerging technique, drawn from psychology and econometrics, that allows the creation and testing

thing appears to be "going up" or, in today's economic environment, "down" dramatically when, in fact, the projection shown is perhaps just part of a longer cycle of ups and downs.

The direct linkage model has some compelling pluses. It often holds "face validity" because it employs actual market results in its measurement. In addition, testing, prediction and simulations (called what/if models) are feasible with this approach. However, increased validity and precision also brings limitations. Linkage models are more complex in both data preparation and data analysis, require a time commitment for certain types of tracking or trending studies, and rarely include attitudinal data. Thus, a key component of customer understanding is missing. Direct linkage models' greatest weakness, however, is that they are based on correlational techniques, which can result in different (or sometimes nonsensical) relationships appearing as "important" depending on what measures are being used. Most of us have encountered these techniques when we shop or surf the Internet, where they were (and still are) used in "personalization" attempts that have received sharp criticism.[3]

Finally, structural modeling is the most complex of the techniques to integrate customer understanding and knowledge with financial performance outcomes. This technique requires that a causal framework be in place to build effective models. It fits well with strategic explorations and assessments of what companies are attempting to accomplish in CRM projects. Unfortunately, the path often suggested by experts in this field is not always the approach that businesses actually follow to deploy technology or even new measurement efforts. The bottom line is that structural modeling requires thinking, studying and hard decisions. The resultant benefit, however, is a tight and precise measurement of the factors driving profitability or market share and a way to assess the effect of intangible and tangible facets of a business on its bottom line. A recent and successful example was Sears' "value-profit chain" model that
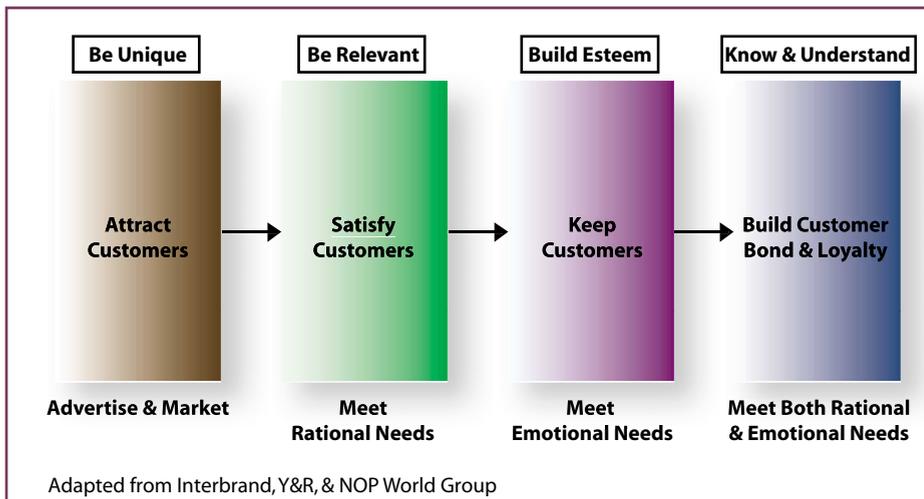


| Be Unique | Be Relevant | Build Esteem | Know & Understand |
|---|---|---|---|
| Attract Customers | Satisfy Customers | Keep Customers | Build Customer Bond & Loyalty |
| Advertise & Market | Meet Rational Needs | Meet Emotional Needs | Meet Both Rational & Emotional Needs |

Adapted from Interbrand, Y&R, & NOP World Group

*Figure 4: Customer Understanding*

set up a causal sequence from drivers of value to profitability measures.[4]

## Delivering Results

Regardless of the analytic method used, results need to be made actionable. At this point, we look to the CIF again to solve this problem. Analytic results must now be put in a format for "insight" delivery while the enabling technology must support the "technical" delivery of results/data to the corporate desktop. Let's look at what is involved here.

Analytic results of linkage models, in particular, are so rich that various levels of reporting sophistication may be necessary. At the highest executive or investor level, indices or metrics can be delivered as simple number relationships (e.g., customer satisfaction dropped two percent which equaled a ten-percent drop-off in revenue by corporate, division or unit). At a mid level, more detailed reports can be disseminated with analytic insights included with the numbers and graphics. Finally, at a granular level, the actual models can be distributed for evaluation, revision or study.

With a mature CIF architecture in place that includes the information workshop technical delivery capability (see prior *DM Review* articles on the information workshop), the strength of enabling collaboration, interaction and communication of this sophisticated knowledge is realized. Capabilities found within these measurements can be incorporated that

support a corporate dashboard for high-level metrics, in-depth graphical and text reporting (including knowledge management, library and additional research features and toolboxes), and special deliveries of deeply rich statistical results. Thus, the much-needed "closed loop" or information feedback found in the CIF can finally be realized, enabling the full business decision-making and planning processes.

## Getting Started

The implementation of this environment is best approached by first performing a thorough technical and analytical assessment. This assessment and its resultant plan become the road map for achieving this new level of customer and revenue understanding by overcoming the weaknesses found in many CRM initiatives and for addressing the key issues described in this article.

The assessment contains both technical and analytical evaluations that combine the results and findings into an integrated "action plan." Currently, a documented and established methodology exists for performing a technical and cultural CIF assessment. This assessment is used in planning and strategy creation that has proven effective on numerous "real-world" field tests. Likewise, a CRM analytic assessment is available that yields similar results.

Because CRM analytic assessments are in a relatively new state today, they are best handled by advi-

*Figure 5: Types of Analytic Linkage*

sors or counselors with in-depth marketing science and measurement background and experience. It is extremely important – just as with the technical assessment – that a mixture of business people be involved in the strategy and planning stages. Common sense tells us that the solution being sought encompasses multiple functions of the company. At the very least, the CIO, market research director and CMO should be involved to insure that these key functions impacted by CRM are represented in the assessment. (Note: we assume that the CMO includes the sales and customer care areas. If not, then they should also be included in the assessment.) In addition, the CFO's role is rapidly emerging as a key role in helping to guide and verify ROI determinations, as well as other necessary financial performance metrics that are needed by the company. This person may be included as well.

Of course, change management, implementation and training activities that ensure the best use of new processes, information and insights are also highly recommended. In fact, these may prove to be a vital part of the overall assessment.

CRM promised a closed-loop system of corporate knowledge that held much potential. The CIF and proven techniques of marketing science can take this "promise" into the realm of reality. Many corporations and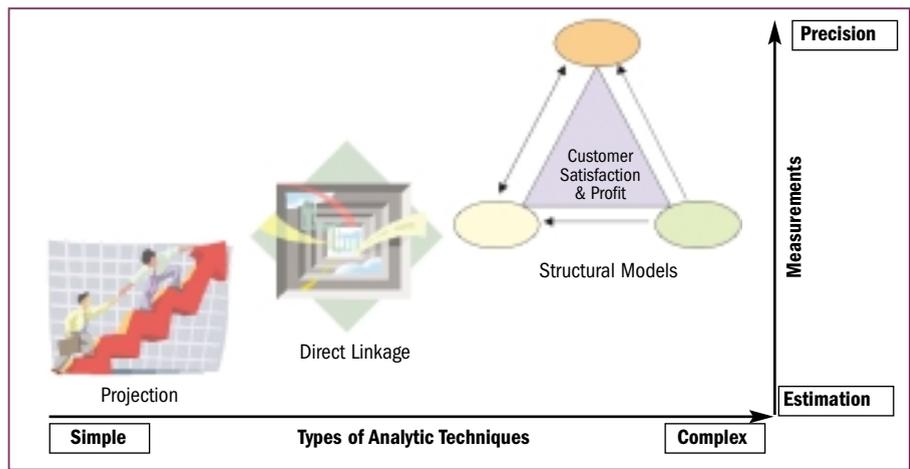 businesses support expensive installations and information system implementations that lack the sorely needed linkage between financial data and customer behavioral and attitudinal data, rendering the implementations with much less potential. A remedy that evaluates the technical, analytical and delivery issues, and infuses the type of intelligence and insight that businesses vitally need for success is realized in the application of marketing science to the CIF concept.

By working with the major components of a "closed-loop" data *and* information system, key objectives in understanding customers and determining the real value of CRM, IT, marketing and sales efforts are enhanced. It is through the linking of the "best of the new" (the CIF architecture) and the "best of the old" (marketing science) that progress can be made in today's business information-driven world.

*References:*

1. Low, Jonathan and Pam Cohen Kalafut. *Invisible Advantage: How Intangibles Are Driving Business Performance.* Cambridge: Perseus Publishing, 2002.
2. Reichheld, Frederick. *The Loyalty Effect: The Hidden Force Behind Growth, Profits, and Lasting Value.* Boston: Harvard Business School Press, 1996.
3. Mena, Jesus. *WebMining for Profit: E-Business Optimization.* Boston: Digital Press, 2001.
4. Rucci, Anthony, Steven Kirn and Richard Quinn. "The Employee-Customer-Profit Chain at Sears." Harvard Business Review. January-February (1998): 83-92.

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