Customer Data Integration

Reaching a Single Version of the Truth

Jill Dyché
Evan Levy

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For Sophie, Nia, and Spike.

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Foreword

Customer data is the most basic raw material required for building customer relationships. Ironically, while the raw material itself has never been in greater supply, converting it into usable customer information and insight has never been more challenging.

CRM has been defined in many ways, but the very words *customer relationship management* imply that a company is thinking about and acting toward its customers individually, one customer relationship at a time—in essence, taking customer-specific action by *treating different customers differently*. (After all, the term isn't *market relationship management* or *segment relationship management*.) Of course, as more companies adopt CRM as a business strategy, more customers will demand that all businesses should do it. Any company that values long-term customer relationships will learn quickly that customers want four basic things:

1. They want you to know who they are and to remember them from one event or transaction to the next, no matter what part of the selling organization is engaged. They want you to stop asking the same questions over and over.
2. They want you to remember what they need or what their specific preferences are. They want you to stop asking the same questions over and over.
3. They want a reliable and convenient way of communicating with you. They want to be able to tell you things about themselves and know you will respect that information and remember it. They want you to stop asking the same questions over and over.

4. They want you to provide a product or service that meets their specific needs and their specific definition of value, and to anticipate what they may want next, when, for how much. Above all—they want you to stop asking the same questions over and over.

Providing individualized service the way customers want it is surely one of the oldest strategies for commercial success, but today's computer technologies have given businesses of all kinds an unprecedented ability to keep track of and interact with their many customers, individually and cost-efficiently. In effect, companies can now process individual customer inputs cost-efficiently, across millions of customers measured one customer at a time, allowing them to maintain an individualized and profitable relationship with each one.

Even on a fully allocated basis, it costs less than a penny to handle one incremental automated customer interaction on a high-volume, commercially capable Web site. The Internet, in other words, has quite suddenly siphoned off a great deal of the friction encountered when executing commercial interactions and transactions. This has generated a level of transparency sufficient that customers can find out everything they need to know to make the best decisions, if they want to. And, of course, we've seen a phenomenal increase in the volume and velocity of interactions between customers and companies, and in the blizzard of customer data generated.

Companies everywhere are now awash in customer data—swimming in it, barely able to stay afloat. Names, titles, billing addresses, shipping addresses, e-mail addresses, phone numbers. Householding data, affiliated companies, associated parties. Credit card numbers, payment records, invoicing requirements, due dates, receivables dates. Products purchased, sizes, colors, transactions, and interactions. Services commissioned, complaints handled, referrals, inquiries, channel partner information, specifications, requirements, warranty and repair records, delivery options. You can try to organize it and simplify it, but the sheer volume of customer-oriented data collected and recorded by companies today is, well, mind-numbing.

Businesses do have a specific objective for this customer data. They have a purpose for it. They want to be able to retrieve it at will, analyze it, and use it to make better business decisions, execute better communication programs, deliver better customer service, and operate their businesses more cost-efficiently. They want to use the data to *understand* their customers better—not just *all* their customers, and not just the *average* customer, but *each* customer. They want to strengthen and deepen their relationships with individual customers, treating each one in the way that's best for that particular customer.

Why does this matter? Because nothing less is at stake than *all* of a company's revenue, today and tomorrow. Customers are the only source of revenue any company has. Products don't pay us money. Neither do brands. Only customers do. And so, whatever industry we list when we file corporate income tax returns, we are *really* in the business of finding, getting, and keeping the most valuable customers in our industry, and then maximizing the value that we can realize from each one. There's only one way to do that: maximize our value *to each customer.* The only way we can do *that* is take each customer's point of view. And the only way to do *that* is to turn the incoming tide of data into usable, coherent information.

Companies crave the understanding promised by their vast oceans of customer data, because customers represent any firm's most precious value-creating asset, and should not be frittered away through uninformed decisions or incompetent service delivery. Making the right decisions and delivering the right service can dramatically increase the value created by these financial assets. A company whose decision-making DNA is geared up to use customer information will be eager to generate as much value as possible from each customer, maximizing its Return on Customer℠ [1] to ensure that its customers create value not just in the form of this quarter's earnings, but also in the long run, to preserve and enhance the value of the enterprise.

The problem at most firms is that these oceans of customer data lie about in randomly distributed, separate and uncoordinated electronic reservoirs, often poorly maintained or updated. Formats are different, data specifications are different, and the data reservoirs themselves are often placed within different organizational jurisdictions, subject to different rules, available on different terms to different organizational actors. The data in the reservoirs can be subject to different hierarchical and organizational constraints.

- A pharmaceutical firm's sales force may call on general practitioners who are members of a broader health provider organization or network, and who have relationships with individually identified patients as well as specific pharmacists.
- An insurance company may have several agents selling to the same business client, and some of those policies could be provided by reinsurers. The customer might have different beneficiaries across policies.
- A business services firm may track the different divisions and purchasing units at an enterprise client, as well as the various decision makers and influencers who play roles within these divisions, linking this information as appropriate to specific reseller and service partner records.
- There may be multiple identified individuals within a single household, one of whom has recently gone bankrupt, but all of whom are now subject to increased financial risk.
- A phone company may need to make a decision regarding a customer's value, but the only consolidated data on the customer is 90 days old. It may be able to determine whether the customer disconnected service last month, but what it really needs to know is whether the customer has disconnected within the last few hours. It needs to know not only the customer's credit score, but his relevant characteristics and preferences, and it needs this data immediately, before it assigns someone to call him back to try to reinstate him as a customer.

Over the years there have been many attempts to help companies organize the raw material of customer data. The fact is, however, that it is still a nearly insurmountable obstacle for most firms to make enough order out of this chaos to gain substantial leverage from the volumes of customer data they all have readily available.

This is where customer data integration (CDI) comes in. CDI represents a new set of technologies designed to help companies turn the raw material of customer data into usable, reliable customer information—and to do this cost-efficiently and conveniently. CDI technologies automate the access, reconciliation, quality checking, and correlation of customer data from many different operational systems without requiring that the data be copied onto (yet another) database platform. Using CDI, a business gets individual customer data from its various sources and correlates it in real time.

CDI alleviates a lot of the brute-force work of data reconciliation, which at many firms involves hard-coded extraction programs and other custom applications. It automates the difficult and time-consuming work, eliminating both the need to apply the heavy lifting of massive data manipulation *and* the time delay inherent in scheduled runs and batch processing.

CDI can help you spend your time making business decisions about how best to treat different customers and how to help make sure they are helping you create the maximum value for your firm, rather than trying to pin down which particular system contains the best customer data for making the decision.

And that, in turn, will allow you to concentrate on strengthening your customer relationships, rather than trying to understand why the billing records don't jive with the service log.

Don Peppers
Martha Rogers, Ph.D.

ENDNOTE

1. Return on Customer^{SM} *and* ROC^{SM} *are registered service marks of Peppers & Rogers Group.*

Introduction

In 2000, one of the coauthors of this book, Jill Dyché, wrote a book called *e-Data*. While certainly exploiting the "e" that prefaced almost everything in those days, *e-Data* focused less on "electronic" data and more on "enterprise" data. The book explained how smart companies could leverage data across their various siloed systems to make better business decisions. The book profiled companies like Hallmark, Bank of America, and Twentieth Century Fox—all of which were integrating data on data warehouses to differentiate themselves and improve their business operations.

The Internet had claimed its place as a bona-fide business phenomenon. The dot-com explosion had provided executives with a brand new vocabulary. They were focused on complementing their companies' traditional brick-and-mortar storefronts with e-commerce capabilities. Meanwhile, information technology (IT) departments were trying to Web-enable just about everything.

At the same time, another business movement was also afoot: customer relationship management (CRM). Companies were realizing that their burgeoning e-channels were changing how they interacted with their customers. The competition, as the well-worn aphorism went, was only a mouse-click away. Customer relationship management vendors were sprouting up like so many saplings in a forest of enterprise software firms, and executives began shedding their budget constraints and frolicking amidst the fertile landscape of vendors.

Trouble was, the companies that had invested in CRM technology naïvely believed that they could "install" CRM. Flip a switch, the logic went, and we can automate our customer relationships. "CRM out-of-the-box!" crowed one vendor. Would it were that easy.

Most companies didn't reap what they'd sown. Executives began asking questions about drawn-out implementation time frames and payback. Industry analysts fueled the disappointment, igniting the debate on scary statistics about CRM failures. In 2001, Gartner reported that it expected an increase in CRM failure rates from its current estimate of 65 percent to 80 percent. Bain and Company reported that out of 451 executives surveyed about their satisfaction with new technology initiatives, CRM ranked at the bottom. Other surveys bemoaned the high cost of CRM implementation. Analysts and consultants took to finger-wagging their clients about creating CRM strategies and securing executive sponsorship at the get-go. The refrain of "people, process, and technology" rang hollow as project managers began reluctantly to "descope" their CRM efforts.

By late 2002, the industry gurus began realizing that the unfulfilled dream of customer information on demand had less to do with lack of process or organizational rigor and more to do with the availability of data. Integration became the *cause celebre*. "Integration is the dominant technical obstacle to CRM progress," Forrester Research crowed. Responding to a Morgan Stanley Dean Witter survey that asked chief information officers what their "top strategic project" was for the coming year, integration was the number one response. ("E-business" was number two.)

By then, Jill's second book, *The CRM Handbook*, had been published. The case studies in the book featured the likes of Hewlett Packard, Verizon, Eddie Bauer, and Harrah's Entertainment—companies that had deployed customer management initiatives in a deliberate, requirements-driven way, and were generating some well-deserved buzz. The projects themselves were vastly different, but the common denominator was that the executives charged with getting CRM right understood that integrated data wasn't a luxury—it was a mandate. "We needed to stop wasting money on duplicate yet disconnected efforts that ultimately clouded the CRM landscape," said Beth Leonard, Verizon's then-vice president of database marketing.

The discussion in the CRM community thus turned to data. Data modelling and design were hot topics, as was data quality. "We didn't know our data was dirty!" was the surprisingly surprised refrain from IT practitioners whose missed deadlines and cost overruns were attracting the attention of executives. Peeling back the layers of their aging legacy systems, companies realized that customer data was redundant, contradictory, meaningless, missing, and ubiquitous. And it still is. Thus the third book—the one that you're reading now.

WHO SHOULD READ THIS BOOK

The aim of this book is twofold. Our first goal is to define customer data integration (CDI)—describe what it is and why it's a critical solution to customer-focused business programs. We'll put it in context with other emerging trends like master data management (MDM) and data governance, and distinguish it from other technologies you might already have in-house. Our second goal is to describe how CDI works. Our hope is that this will inform decisions you'll make around vendor selection, data management, CDI development, and usage. We think that the promise of CDI is nothing less than making your company—on both the business and IT fronts—more agile.

Because this book explains the "whys"—why customer data integration is so important for business strategy and growth—it can be read by executives and managers seeking to launch a CDI project or justify CDI to their organizations. Included in this group will be:

- Executive managers, including chief executive officers, chief operating officers, chief strategy officers, or any other executive who needs comprehensive customer information in order to provide business insight.
- Privacy professionals, including chief privacy officers, who have a mandate to individualize constituents on behalf of their companies.
- Marketing executives, including marketing vice presidents, directors, product managers, and anyone else who needs to target the right customers and prospects for meaningful interactions.
- Program managers who are responsible for customer-focused initiatives like CRM, target marketing, voice-of-the-customer projects,

market research, and customer surveys. Most of these initiatives require customer detail that can be delivered through CDI.

- Sales managers and field salespeople, for whom customer relationships can mean the difference between a good year and a bad year. These professionals need to understand customers as individuals.
- Financial analysts who need to understand not only company performance, but the contribution of customers to their company's bottom line.
- Customer support managers and representatives. Simply put, they need to know who they're talking to. Customer data integration helps determine "who's who"—an important capability, especially when you've got the customer on the telephone.

Information technology professionals responsible for implementing CDI will also find value in these pages, particularly as they embark on what may well be their first CDI journey. These professionals might include:

- Chief information officers or chief technology officers who need to deliver the technology to implement CDI or who may be interested in how CDI differs from their other strategic technology initiatives.
- Information technology project managers who will be tasked with choreographing the resources and activities of a CDI project and thus should understand its various components and success factors.
- Information technology architects who need to support the introduction of new CDI technologies and thus understand where and how CDI fits into their companies' existing technology infrastructures.
- Data administrators and data stewards responsible for customer reference data or MDM. As a delivery vehicle for integrated data, CDI should be well understood by these data professionals.
- Information technology practitioners who need to cut through the complexity inherent in data integration. Often, CDI is new to even experienced developers, and thus the concepts and development processes may be new to them. This list includes programmers, database administrators, and network administrators.

Other professionals—many of whom may straddle the fence between the business and IT—will also benefit from reading this book, including:

- Industry consultants who need to understand the specific vertical applications for CDI
- IT consultants who might specialize in data-enabling solutions such as data warehousing, business intelligence tools, CRM software, or enterprise application packages, all of which might benefit from the newly reconciled data CDI offers
- Systems integrators who need to understand CDI product and architectural details as they relate to their clients' specific technology needs
- Software vendors who might be interested in understanding how CDI functionality complements their product offerings
- Hardware vendors who might consider positioning their products as CDI platforms

HOW TO READ THIS BOOK

This book can be read in a linear fashion, chapter by chapter. Alternatively, individuals with specialized areas of interest might choose to go directly to the chapters that interest them. In either case, the material in each chapter can stand on its own with minimal context from the other chapters. It is recommended that everyone read Chapters 1 and 2 to get a sense for the business problems CDI addresses, and to understand how it differs from other data-enabling solutions currently available.

Following is a description of each chapter and its audience focus:

Chapter	Description	What You Will Learn
1. Executives Flying Blind	With all the buzz around CRM, executives know less than they ever did about what makes their customers tick—or not.	*What the business issues are behind the need—more urgent than ever—for information about what our customers want from our companies, and vice versa.*

Chapter	Description	What You Will Learn
2. Master Data Management and Customer Data Integration Defined	There's a lot of noise around what CDI is, as some vendors hang the shingle and others claim they've done it all along.	*Formal definitions and comparisons of CDI and MDM and an explanation of their boundaries.*
3. Challenges of Data Integration	If it were easy, we'd all have done it by now. Here are the barriers and challenges around CDI that continue to vex the companies that need it so badly.	*There are some common "gotchas" on CDI projects that represent the major roadblocks to success. Learn from the early adopters, many of whom failed in their first forays because of the challenges described here.*
4. "Our Data Sucks!": The (Not So Little) Secret about Bad Data	The impact of inaccurate, bad, and missing data transcends CDI and arguably has far-reaching effects on how companies operate. Almost all of the CDI solutions on the market have data quality built in, so it's an essential topic.	*Data quality is more than a goal—it's a process and a corporate culture. Here are some critical success factors for ensuring that your CDI effort is synonymous with "good data."*
5. Customer Data Integration Is Different: A CDI Development Framework	CDI implementation involves a specialized implementation process that probably differs from your company's tried-and-true system development lifecycle. These differences are described here.	*In order to deliver CDI successfully the first time out, you should understand what the steps are and why they're unique. You'll also learn what you can adapt from other projects, and what you might have to create from scratch.*
6. Who Owns the Data Anyway?: Data Governance, Data Management, and Data Stewardship	Data ownership is an area fraught with confusion and politics. Here's how you can put some policies in place in order to start managing data as an asset.	*It's not easy to create new job roles. It's even harder to change existing ones. You'll learn how to put a structure around data governance and establish roles to*

Chapter	Description	What You Will Learn
		ensure the quality and availability of customer data.
7. Making Customer Data Integration Work	There are different types of CDI. They have their own processing and architectural characteristics. This chapter explains how CDI works and what you should know to determine where it fits.	*Understanding a bit about CDI functionality can help you choose the solution that's right for your company and retrofit that solution into your existing IT environment.*
8. Making the Case for Customer Data Integration	Most companies require some sort of cost-benefit analysis, and CDI can be expensive and resource-intensive. Or not. But one thing's for sure—you won't get a blank check for CDI. Here's how to justify the need.	*You're probably going to have to explain why your company needs CDI. Here are some tips for doing this right the first time—while not stepping on anyone's toes.*
9. Bootstrapping Your Customer Data Integration Initiative	This chapter explains how to avoid the most common CDI mistakes and launch your initial project for optimal results.	*Knowing the questions to ask to gauge your "readiness" level for CDI is a great start. Knowing what to do to prepare is even better.*
Glossary	Any new movement worth its buzz adapts a vocabulary or creates a new one. Here's a little of both.	*You'll have a trusty reference guide for new terms, buzzwords, and three-letter acronyms at the ready.*

You'll find a list of "manager do's and don'ts" at the end of each chapter. Each list summarizes some of the points made in the chapter for executives who might be skimming certain sections, and provides some experience-based tactics for putting some of the chapter's concepts into practice. Since much of this book provides some real-life lessons learned, we think the accompanying scenarios, checklists, and questionnaires should help readers evolve the CDI vision in their own workaday worlds.

More importantly, we've interviewed seasoned managers across industries about their CDI journeys, the challenges they confronted, and what the successful delivery meant at their companies. They told us their stories, and shared the wins and the "gotchas." In the spirit of "a picture is worth a thousand words," we think the case studies featured throughout this book teach valuable lessons you can use to avoid the mistakes of those who have gone before you—or compare yourself against CDI best practices. And be on the lookout for the "What Works: Tips from the Experts." We think you'll find some golden nuggets.

Acknowledgments

There are a lot of drops of water in a reservoir. The individuals listed here represent a veritable wellspring of fresh ideas and expertise, which we are grateful to them for sharing.

Our friends in the vendor community have been a tremendous resource for us. The vendors listed here all walk the CDI walk, and have real, bona-fide customers using their products to do the hard work of customer data integration and master data management. We thank Gina Sandon and Bill Conroy from Initiate Systems; Bob Hagenau and Karen Styres of Purisma; and Karen Leightell of IBM. Siperian's Anurag Wahedra and Ken Hoang engaged early to help shape our CDI paradigm. Arvind Parthasarathi from Informatica; Scott Schumacher and Sean Cassidy at Initiate Systems; Dave Butler at Oracle; and John Radcliffe from Gartner all provided important feedback on our initial drafts and served as sounding boards for our theories.

Of course, we're thrilled with our Foreword writers, Don Peppers and Martha Rogers. We have traveled in the same circles as Don and Martha and know that many of our projects at Baseline have involved the tactics of implementing their vision. It's fulfilling to know that CDI is so symbiotic with the concepts of one-to-one marketing and Return on Customer℠.

We also thank Teradata's Kim Dossey and Informatica's Shauna O'Boyle for putting us in touch with some key experts. Susan Spencer from Spencer Communications had tenacity to spare. David Loshin at Knowledge Integrity did QA on our quality content. CRM guru Cathy Burrows from RBC Centura pointed us toward some best practices—it takes one to know one. Beth Leonard and Linda McHugh made sure that, where data management and governance are concerned, our words reflected our deeds. And a hearty shout-out to Tamara Dull and Susan Welton of Noetix, who built us a handy dashboard, stalwarts of the consolidated app world that they are.

Hooray to our case study subjects for telling their CDI stories—and revealing their battle scars. Thanks also to the many practitioners and executives who have made comments during our conference presentations and seminar talks, and who approached us afterward to share their own experiences and insights.

Katie Fabiszak from DataFlux shines forth amidst this constellation of friends and colleagues. Katie had a vision for the role that CDI would play in the marketplace—a vision that's been borne out in the months since our first meeting. Katie and DataFlux President Tony Fisher have been intrepid supporters of our work. Thanks, too, to Joyce Norris-Montanari for connecting us.

We're grateful to Sheck Cho, our editor at Wiley, for his patience and clarity, and to Julie Platt at SAS for encouraging us to put pen to paper in the first place.

We collaborated on this book in fits and starts, in airport lounges and remote hotel rooms, with both dial-up and broadband, often from opposite sides of the globe. We'd like to thank Gordon Levy, David Rankell, and Tiffany Sainton for their ongoing and ever-nimble support during a crazy few months, as well as Bryan Rockoff, Kim Stanick, and John Earle for picking up the leadership reigns at some critical times.

Last but not least, we'd like to thank all our colleagues at Baseline Consulting, mostly for your patience with us as we extracted ourselves from our day-to-day responsibilities to write this book, but also for contributing your knowledge about the steps involved in delivering integrated data at our clients. "We couldn't have done it without you" is an understatement.

Jill Dyché
Evan Levy

CHAPTER 1

Executives Flying Blind

You can't understand the future without knowing something about the present. Knowing the characteristics of your customers, partners, and suppliers—who they are, where they are, how they interact with your company, and how you support them—can shape every aspect of your company's strategy and operations, right down to the individuals you target and the products you pitch.

As customer relationship management (CRM) enters the mainstream, companies continue to struggle with finding, gathering, and integrating information about their customers. Unlike other business challenges that require automation, integrating customer data isn't an obvious call for brute force programming—it's clearly a problem for management.

What executives don't know can not only hurt them, it could send them to jail. In the "information age," there are fewer excuses for ignorance, especially when it comes to corporate performance. But there are also significant barriers to knowledge, and these barriers haven't been toppled by the latest juggernaut of packaged software solutions like CRM. In this chapter, we examine what's holding companies back from understanding their customers at a holistic level. Customer information isn't destiny, but it's close.

SLOUCHING TOWARD CUSTOMER FOCUS

Nothing has as much impact on a company's operations as an executive who declares a new strategic direction. Such declarations were common in the early 2000s, when many CEOs proclaimed that their companies would henceforward become "customer focused."

Of course, major strategy shifts invited analysis of how the company did business prior to its becoming customer focused. Many companies paid large consulting firms big bucks to help them migrate from a state of "customer aware" to the nirvana of being "customer intimate." While the distinction itself was up for debate, what was clear was that executives had to reexamine how their firms were building products, managing business operations, and interacting with customers.

Mature companies understood that in order to reach customer-centricity, they needed to understand who their customers were. More to the point, they needed to engage in an ongoing dialog with customers and continue to track their interactions and responses. This in turn allowed businesspeople across the company to understand who their good customers were, what made them good customers, and how to motivate other customers to share some of those traits. They needed to understand customers' various demographics, income levels, existing product mixes, tenure, and the tried-and-true "recency, frequency, and monetary" analysis[1] that could all foretell purchase behaviors. In doing so, managers were finally heard admitting that no two customers were the same.

Companies that had been product-centric since their inception had to endure significant changes to business processes, technologies, job roles, and their very corporate cultures in an effort to become customer-centric. The trouble was that executives expected their organizations to turn on a dime.

Such lofty expectations took the form of new business discussions that informed a new crop of strategic goals. One of those discussions centered on the emerging concept of one-to-one marketing. Made popular by the best-selling book *The One-to-One Future* by Don Peppers and Martha Rogers, as well as their subsequent writings, one-to-one marketing brought the term *mass customization* into the popular business lexicon, and set the expectation that every customer was unique and thus should be communicated and sold to accordingly.

Part of one-to-one marketing meant engaging customers on a one-to-one basis, not only "pushing" communications out to them via direct mail and Web messages, but recording their comments via surveys, solicitation