ROI strategies for mergers and acquisitions in the communications industry:

Customer data integration (CDI) as a foundation for unifying strategic customer-facing systems

"The market for CDI software and services will reach $1 billion by 2008. Communications industry market leaders' growth-by-M&A strategies will be a key factor in this explosive software market."

Aaron Zornes
Chief Research Officer
The CDI Institute

ON **DEMAND BUSINESS**™

Contents

Executive summary

M&A as the "normal" state of business

Merger and acquisition (M&A) has become an invaluable business strategy used by many communications service providers (CSPs) to bring incremental business to their coverage areas, and to increase their competitive advantage. During 2005-06, the pace of M&A continues to accelerate, and the importance of organizational agility – from both an IT and business standpoint – continues to grow. However, inability to respond to such change in a timely and effective manner, combined with unrealized economies of scale in IT and in various business functions (i.e., product marketing, business continuity) are a looming threat to the success of these mega mergers.

CSPs (e.g., telcos and cable/satellite companies) are increasingly falling victim to a number of typical M&A integration problems - including lack of M&A process, over-integration, loss of IT staff, and not realizing assets and economies of scale (both post-acquisition and post-divestiture). Coping with multiple operational systems to support line of business-centric customer and product lines has been a way of life for most communication conglomerates whether they evolve organically by adding new product/services or customer segments or by M&A-driven agglomeration. It is historically clear that such M&A deals add new products and customers subsystems to an already overtaxed IT landscape.

This costly outcome is greatly exacerbated when the scale of the customer and product support systems approaches that of the mega M&A that is taking place in the CSP world. The good news is that these CSPs have tremendous incentives to pioneer the use of new software technologies as they look to reap the benefits of their M&A activities.

Specifically, the greatest restructuring of the worldwide communications industry since the Bell system breakup in 1984 is now under way via the gargantuan SBC/AT&T and Verizon/MCI mergers. This market consolidation is in its early stages and over the next several years there will continue to be major M&A and other major partnering among CSPs of all sizes and in all regions of

the world. The current network and business model landscape poses serious challenges for the status quo as the pervasiveness of IP has revolutionized the rules of the game. CSPs must rise above the role of commodity player to create next-generation services - as well as pricing and partnership models - that will survive and thrive.

Most large businesses (e.g., the Global 5000 largest firms) are moving towards account administration by "customer view" across channels rather than LOB-centric "product line". This is very common when we look at the customer and product landscapes resulting from business mergers occurring in the worldwide communications industry. Historically, telcos added to their product stacks each time they introduced a new product - i.e., they have to add yet another operational environment to support the sales and service for that product. All of which further contributes to the business's inability to have one view of the customer. This creates latencies in business processes, impacts workforce optimization strategies, and ultimately has an impact in sales/marketing and overall customer service. And the rate of new product introduction is not slowing down. Today, the CSP marketplace evolves rapidly as both telcos and cable companies roll out voice over IP (VoIP), video on demand, IP television (IPTV), et al. In virtually every major telco there is such a proliferation of new products and channels that both the IT landscape and the staff are increasingly stressed to rapidly deploy such products. In particular, the CSPs are looking to roll out many different low-end products that captivate consumers by the stickiness of that application - i.e., once you've integrated such specific functions into your consumer lifestyle, it is increasingly unlikely that you will switch CSPs and, therefore, the consumer becomes "captive" and prone to buy more up-scale, higher margin services as well rather than switch CSP and migrate to yet another CSP's services. Such product "bundles" are compelling when they work and is a well known CSP technique as a way to reduce churn.

Further stressing the CSP are the regional disparities caused by regulatory issues that require continuation of product bundling artifacts. Generally speaking there is a proliferation of segmentation across consumer/residential, small-to-medium business (SMBs) and large enterprise customer segments. Historically each of these segments has had their own provisioning/

engineering support systems, billing systems, etc. All of this growth has contributed to an inability of the CSPs to rationalize their view of the customer/ product portfolio. From a customer service perspective this has led to an uncoordinated treatment depending upon which channels and which products you are calling in about.

Business process integration strategies such as customer data integration (CDI) are increasingly essential to ROI realization of the M&A.

What is CDI?

Master customer data is a critical corporate asset that must be increasingly managed within and beyond the enterprise. During the early 1990s, most enterprises deployed "data warehouses" which were primarily large scale, batch-oriented analytical databases. These business intelligence systems provided valuable insight into patterns and trends but failed in providing an up-to-the-minute "unified view" of the customer.

Recently, many enterprises have been embracing enterprise customer relationship management (CRM) as a strategy to coordinate the "operational databases" of their sales, marketing and customer service organizations. However, enterprise CRM does not provide the ability to manage master customer data – resulting in costly integration to keep Service, Product, and Customer definitions and data synchronized. Moreover businesses determined that these enterprise CRM systems could not scale up as a "system of record" for enterprise-wide use.

Today customer data integration (CDI) solutions are coming to market which provide master data management as a highly scalable and available "business service". These "customer data hubs" recognize that master customer data must be shared between both front-office and back-office processes – as well as with the next-generation business-to-consumer and business-to-business Internet-enabled systems. The CDI solutions market is comprised of process and technology solutions for recognizing a customer at any touch point – while aggregating accurate, up-to-date knowledge about that customer and delivering it in an actionable form 'just in time' to touch points. Such CDI technology frameworks are based on a service-oriented architecture (SOA) to provide enterprise-wide infrastructure for managing and harmonizing master "customer data" such as: customers, products, and suppliers.

However, CDI is much more than a combination of the discrete technologies heretofore applied to this problem such as batch-centric master file systems, data warehouse, middleware, and workflow. While there are multiple CDI implementation styles, one of the most compelling is the enterprise customer hub. Such a trusted "hub" serves as a central master repository of customer information reconciled from multiple data sources – both internal and external. CDI solutions typically consist of a series of tools that address the entire customer management lifecycle.

CDI strategies also systematize a panoramic, or 360 degree, view of the customer by aggregating and analyzing multiple sources of master customer information into a master "system of record. Such "master data hubs" represent the pinnacle of CRM products as they enable a single version of the truth across the enterprise's customer-facing processes. Toward this goal, it is now a realizable goal for IT organizations to "buy" rather than "build" such infrastructure with over 95% of communications service providers, financial institutions, and life sciences enterprises actively looking to replace homegrown CDI solutions. Lastly, many IT professionals are clearly looking to such long term and large scale IT initiatives as "career longevity insurance" given that such enterprise-scale infrastructure is not amenable to offshore outsourcing, etc.

CDI is the next $1 billion software market
Based on 2Q2005 in-depth market research, the CDI institute projects that the market for CDI software and services will reach $1 billion by 2008. Specifically, CDI spending increased 36% during 2004-05. Due to IBM BCS's great success in implementing CDI solutions in Financial Services, Retail, Telecom and other industries, IBM put a large stake in the CDI market this year with the acquisition of strategic partner DWL -- thus rounding out its BI Customer Data Integration offering with a WebSphere J2EE/WBI platform in addition to acquiring Ascential's foundation platform. Mega vendors Oracle and Siebel also ramped up their marketing to create CDI mindshare during 1H2005. Additionally, extract-transform-load (ETL) vendors such as Informatica, and as mentioned above, Ascential (IBM), as well as enterprise information integration (EII) vendors such as Composite Software and Tibco,

evolved their marketing and product strategies to embrace CDI. Concurrently, data quality vendors such as DataFlux and Trillium also announced near term data hub-like product launches. To further round out the mélange, enterprise resource planning (ERP) vendors i2 Technologies and SAP extended the capabilities of their "master data management" solutions to include customer data.

IT spending on CDI solutions increased more than 33% from 2004 to 2005 with systems integrators being the primary beneficiaries of CDI implementation. The typical large scale CDI project requires systems integration (SI) fees ranging four to six times the amount spent on the CDI software. During 2006 the market for CDI software and services is projected to increase its growth rate to 50% while slowing down modestly to 40% annual growth during 2007 as the majority of the Global 2000 corporations deploy their third-generation CDI solutions.

During 2Q2005, the CDI Institute conducted a multi-client study of twelve early adopters of CDI solutions in the communications industry. Clearly, market-leading enterprises plan to add CDI capabilities to their list of 'strategic IT investments' to: increase customer satisfaction and retention, increase profitability, and create operational efficiencies.

Why an industry scorecard survey?
The data reported on in this white paper represents a series of MarketPulse™ surveys performed during 2Q2005. The survey sample included both in-depth interviews with the CDI Institute's fifty Advisory Council members in addition to web-based and email surveys of twelve North American communications service providers. A number of the CDI Institute's fifty Advisory Council members assisted in the survey creation process by helping identify the major trends and issues which would help them in their own efforts. In summary, the vital questions that this semi-annual survey addressed included:

- *What are the business drivers for CDI in our industry?*
- *What are the technology challenges in implementing CDI for our size business problems? Which architectural implementation models have the greatest success?*
- *How do we evaluate CDI solutions? How do we justify ROI? Which constituencies are funding the various CDI projects?*

It is the CDI Institute's belief that the following "communications industry CDI scorecard: 2005-06" represents the best knowledgebase available for the justification and evaluation of CDI solutions.

During June 2005, survey interviews were held with IT management of twelve North American communications conglomerates – 75% were traditional telecommunications businesses (adding Internet services and video) and 25% were traditional cable companies (adding Internet service and telephony such as VoIP). The resulting whitepaper focuses on the issues of these early adopters and summarizes the Customer Data Integration lessons learned from the current round of CSP mergers.

Of the 50+ IT and business professionals from around the world who participated in the survey, over 83% work at large CSPs with revenues in excess of US$1 billion per year. Moreover each CSP had more than one million subscribers/customers and were evenly distributed between "Actively evaluating a vendor CDI solution" and "Currently in production with a vendor solution". Additional summary findings include:

Business findings
- *Over 66% of respondents indicated that their businesses "have a stated corporate target to reduce the level of infrastructure investments". 50% of the respondents stated that CDI is either critical or important to that objective.*
- *66% of the CSPs expect to spend in excess of US$5 million on their CDI solutions in the first year; 33% expect to spend US$1 and US$2 million in their first year.*
- *The primary strategic driver for M&A is "Market dominance" with 50% identifying this as "most important"; followed by "Customer retention" at 30% and "Operational efficiencies" at 20%.*
- *The primary tactical drivers for M&A are: "add new revenue streams to voice" at 66%, followed by "Identify and seize new growth opportunities" at 16% and "Reduce churn" and "Optimize existing operations" each at 8%.*
- *The marketing organization is most often the funding lead for CDI projects, therefore it is vital to know that 50% of the CSPs stated "Enable product bundling" to be the most important marketing result of M&A, followed closely by "Enable solution selling" and "Expedite time to market of new products" – each at 25%.*

- *33% had more than 100 master customer databases; 66% had more than 50 master customer databases; and yet still 33% had only between two to five master customer databases. The latter group are known to be relatively young cable or telephone service providers.*
- *Yet 75% of all the CSPs expect to utilize CDI software to manage the number of master customer databases down to between two and three; 25% expect to take this down to a single customer database.*
- *IT professionals are clearly looking to CDI as a long-term and large-scale IT initiative to provide 'career longevity insurance' given that such enterprise-scale infrastructure is not amenable to offshore outsourcing.*

Technology findings
- *Half of the CSPs already had a formal Data Steward role; 25% of the CSPs had this role staffed in the business units – not in the IT organization.*
- *While 25% of the CSPs were planning on CDI to become the keystone of their future Service-Oriented Archiecture to deliver enterprise-wide business services, an equal number cited "call center consolidation" and "software license consolidation" as major technology benefits of their CDI strategy.*
- *100% of the CSPs plan to use their CDI solution as the "Common method and rules across the entire company" rather the choices of "Only within one area of the business" or "Multiple areas of the business but using different methods and rules"*
- *"Composite (Hybrid Hub)" architecture is preferred by 55%; "Transactional/ Operational Data Hub" favored by 30%, and 15% favor the "Persistent Data Hub" approach; none of the CSPs are exploring either "Registry/Virtual Hub/Federated Query", "External Service Provider" or "Data Quality Service/Tools"*
- *"Call Center Consolidation" and "Service-Oriented Architecture" tied (75%) as the greatest technology benefit of an enterprise CDI solution applied to M&A, followed closely by "Software License Consolidation" (68%), and both "Data Center Consolidation" and "Server Hardware Consolidation" (58%).*
- *The perceived three top technical challenges are: "Legacy Application Integration" (42%), "Business Process/Workflow Integration (21%), and "Database/Data Model Integration" (17%).*
- *The top three technical evaluation criteria were: "Customer Data Model" (92%), "Business Services Layer" (67%), and "Customer Identity Management" (58%).*

The ongoing juggernaut of mergers and acquisitions (M&A) activity in the Communications industry will dramatically stress the IT landscape through 2005-06, with most IT departments spending three to five years post-M&A before deriving appropriate IT efficiencies.

M&A ROI: "hang over" or "make over"?

Portfolio management of the customer role is critical and is increasingly being met by off-the-shelf CDI capability. Telcos are notorious for having tried this for years on a custom-built basis. The good news is now there are off-the-shelf software packages available for such customer hubs as they are often called and these have proven track records. Whether the business outcomes of the M&A result in hang over or make over critically depends upon the ability of the IT and Business organizations to consolidate their staff, operations, data and processes. CDI is critical to these efforts and ultimately are the tipping point as to whether the business outcome is a success.

Often, the rationale for M&A can be summarized as:

• *Ensure survival*
• *Increase market share (and international/national/regional strength)*
• *Achieve sustained competitive advantage (for super normal profits)*
• *Satisfy executive hubris (M&A is sometimes characterized as "murder and acquiescence")*

The CSP's issues will sound familiar to those undergoing M&A in other industries as well:

• **Business continuity** - *The need to shorten the integration life cycle for customer, product and service operations*
• **Marketing leverage** - *The challenge to overcome latencies in marketing functions (e.g., lack of action-oriented, real-time marketing)*
• **Customer satisfaction** - *Need to reduce customer churn by offsetting inconsistent or undifferentiated service due to lack of 360 degree view of customer, and product/service history*
• **Brand leverage** - *Need for predictive churn capabilities based on total customer portfolio and experience to increase overall wallet share*
• **Operational cost reductions** - *Difficulties in administering "once and done" end-to-end customer events across the organization (e.g., change of address)*
• **Regulatory compliance** - *Challenges in meeting governmental and societal norms in respecting and adhering to customers' privacy preferences*

Communications industry M&A demands comprehensive, integrated customer profiles

Clearly, integrated master customer information is key to addressing the challenges of M&A in any industry. As CDI pioneers, CSPs further need to acknowledge that:

- *CSPs' customers currently managed on a line-of-business (LOB) basis such as internet services, VoIP, residential, wireless, etc. must ultimately be managed on a "balanced" portfolio basis*
- *CSPs' customers increasingly operate through a multi-channel environment which today exacerbates the inability to view and treat the customer as a "portfolio" rather than a series of non-integrated accounts*
- *CSPs' marketing efforts are neither integrated nor optimized as effectively as possible for upselling, cross-selling and creation of "sticky" service bundles*

The master data management solution to best support large-scale M&A has these requirements:

- **Customer data hub** - *A persistent enterprise-scalable customer master file that supports a single trusted and authoritative source of critical customer data*
- **Product data hub** - *A persistent enterprise-scalable product master file that supports a single authoritative source of critical product and service bundles*
- **Service-oriented architecture** - *Support for Web service-style transactions to identify, view, add and update trusted master data across the enterprise*
- **Extreme RAS (Reliability, Availability, Scalability)** - *Infrastructure capable of reliable, high volume, real-time performance to support mission-critical master data management processes*

The business case for CDI capabilities is driven primarily by competitive market requirements – e.g., economies of scale promised by M&A, increased cross-selling and up-selling capability, ability to rapidly deploy product "bundles", reduce back office costs, increase levels of customer service, and enable customer-directed self-service. These business drivers mandate ever closer attention to the synchronization and quality of master customer data.

Why are market-leading enterprises adopting CDI strategies?

Multiple market forces are driving the emergence of a standalone market for CDI solutions as industry-leading enterprises must be able to react intelligently and instantly to changing customer information. Competition is also escalating the focus on customer-centricity and consistent end-to-end business processes across organizational units, points of entry and business partners.

To make matters worse, loose integration between front office and back office application subsystems often exists, reducing organizational ability to move towards customer centricity. This will generally require a fundamental change in the way customer information is handled within the enterprise. Businesses should focus on improving the integration among customer-facing processes, by unifying the business response to the customer event (through the use of both structured and unstructured data).

The benefits of a CDI solution are compelling, as enterprises profit from ability to:

- *Understand and manage customer retention and profitability*
- *Increase operational efficiencies*
- *Provide for organizational flexibility*
- *Enhance regulatory compliance*
- *Improve overall business intelligence and strategic reporting*
- *Deliver ROI on historical CRM initiatives*

The heterogeneous nature of large-scale enterprises dictates the provisioning of IT solutions from a broad range of providers. In addition to such broad requirements being painfully beyond the functional scope of a single IT vendor, the "information supply chain" that increasingly constitutes the corporate "product" requires end-to-end processes that transcend internal organizational (and application package) boundaries. Moreover, a lifecycle-based approach to managing master customer info is needed to support enterprise-wide identification, matching and distribution of customer information across an increasing number and variety of data sources.

Clearly, the synchronization and delivery of a single customer view to the diverse corporate stakeholders is an on-going strategic investment. Businesses must transform themselves away from a customer-hostile, batch business model to give their customers actionable information via real-time, "once and done" end-to-end business processes.

Custom-built CDI solutions are no longer a risk-averse option

There are a number of related but insufficient software solutions that can feed and participate in an enterprise master data management infrastructure, but by themselves cannot provide the functionality outlined above which is clearly critical to the consolidation and evolution of IT systems during the M&A process:

- **Enterprise application integration (EAI)** – *While providing the near real-time response required for customer identification, such systems are too weak on the batch aspects of customer data management functionality*
- **Enterprise information integration (EII)** – *These tools lack persistence and have tended to focus on unstructured content management at the expense of other more vital CDI capabilities such as identification management*
- **Enterprise data warehouse (EDW), active data warehouses, operational data stores (ODS), and data marts** – *Such business intelligence capabilities each lack real-time performance required for master customer data management*
- **Standalone data quality tools** – *These solutions do not provide the metadata, business process models, data models and real-time performance required for a trusted master system of record*
- **Data service providers** – *These service bureaus (e.g., Acxiom, Experian, Harte-Hanks) provide reference databases and data augmentation facilities but are finding themselves on the wrong side of the corporate firewall concerning the increased need for customer data security*

Business requirements for "master" customer data systems

Numerous market-leading communications service providers (CSPs) are frustrated with their current CDI processes and are turning to off-the-shelf solutions to assist in dealing with these overarching business trends:

- *Increased competition*
- *Frequent regulation and de-regulation cycles*
- *Shorter economic cycles*
- *Ongoing globalization*
- *Ever increasing customer expectations in quality of service experience*

At a more granular level, business unit managers involved in the CDI solution decision-making processes state another set of business needs as fundamental to their CDI initiatives:

- *Integrate customer and product master databases resulting from M&A*
- *Achieve competitive advantage via customer behavior insight and predictive modeling*
- *Realize more accurate marketing campaigns, better service, and more productive sales interactions across business lines (upsell/cross-sell)*
- *Increase the quality of service/sales/marketing via 360° view of customer to support end-to-end, seamless business processes for call centers, etc*
- *Forecast and increase customer retention*
- *Identify and reduce customer fraud*
- *Centrally manage privacy policies*
- *Provide compliance and transparency for C-level executives concerning 360° product view, financial exposure, risk management, customer census; identify which customers put financial reporting at risk (Sarbanes-Oxley mandate)*
- *Reduce the IT and business cost of manual customer data management*
- *Evolve to near "real-time" (just-in-time) enterprise to better compete via new product introduction, especially "product bundles"*

CDI Institute MarketPulse™ Survey
12 Communications Service Providers (June 2005)
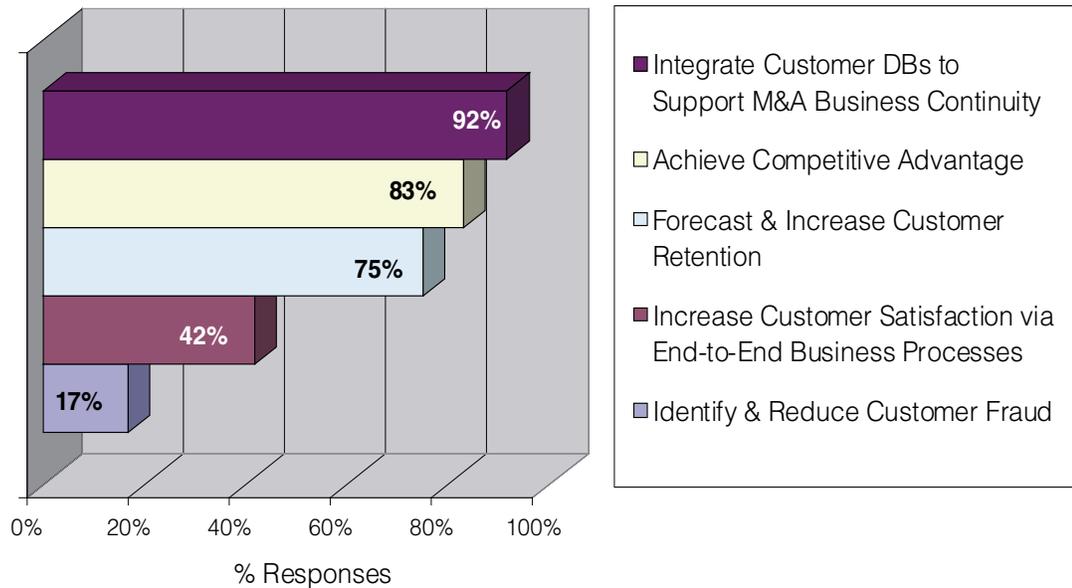
Figure 1 – "Top 5" business priorities driving CDI adoption

The evolution of the telecommunications industry will be radical as intense competition in wireless, long distance, Internet, and local service commoditizes products and slashes profits – not to mention VoIP further cannibalizing heretofore protected revenue streams.

Among the business and technology challenges associated with customer management, our CSP clients highlight these ongoing CDI-related needs:

- *Self-service to drive down customer service costs*
- *Real-time marketing*
- *Integrated campaign management using predictive analytics*
- *Fraud detection*
- *Bill presentation*
- *Effective management of IT infrastructure mergers driven by M&A*

Technology challenges in implementing CDI

Most CSPs and other large enterprises still rely upon homegrown CDI solutions to synchronize and integrate customer data across business units and channels. Most in-house CDI infrastructure currently ranges from semi-batch operational data stores to near real-time rules engines. However, current IT infrastructure cannot cope with the wide spectrum of dynamic master data requirements across the enterprise as most current solutions were designed to manage low-velocity customer data in a single mode – either batch or online – and are not flexible enough to economically add new channels and sources of customer information. Although many organizations have improved end-to-end business processes through CRM implementations, the challenge of developing a unified customer view has not been fully addressed by the application suite vendors

The IT objectives of an enterprise CDI strategy include, but are not limited to:

- *Develop an enterprise-wide customer data model suitable to provide a "system of record" for all master customer data*
- *Manage the implementation politics and business processes of centralized or federated customer data management while allowing for appropriate autonomy over specific master customer attributes*
- *Develop supporting technology strategies for business intelligence, data modeling, enterprise application integration, and interoperability*
- *Ensure consistent and accurate customer identities across the enterprise with full and transparent compliance of regulatory and cultural privacy directives*
- *Expand the use of incumbent application systems (such as CRM) via an enterprise customer identity service (universal key) across all other systems and extending the user functionality of these applications*
- *Increase flexibility to add new channels, data sources, touch points, etc. via service-oriented architecture (SOA)*
- *Deliver rigorous facilities for cleansing, matching, linking and identifying master data (member, provider) as well as ongoing continuous customer data quality*

In the same June 2005 CDI MarketPulse™ poll (see figure 2 below), the survey captured the top five technical priorities these "early adopters" identified.

CDI Institute MarketPulse™ Survey

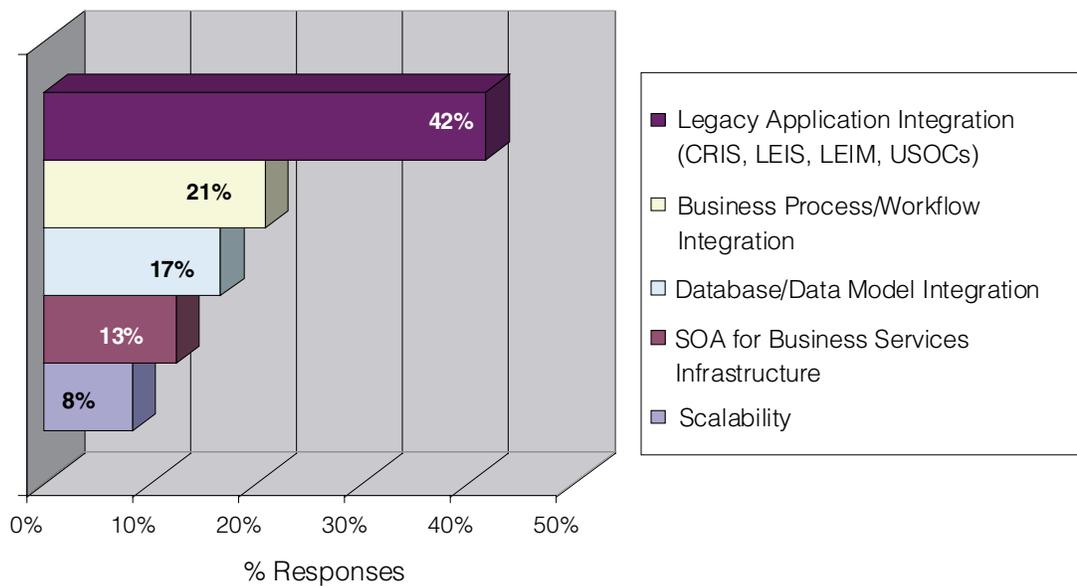### 12 Communications Service Providers (June 2005)

Figure 2 - "Top 5" technology challenges inhibiting CDI adoption

To further explore the technical challenges, we also engaged the survey respondents in more detailed conversations about these outcomes which we have summarized below:

- **Legacy applications and database integration**
  - *Support ongoing data and process integration with legacy OSS/BSS applications such as LEIS, LEIM, CFRIS, and USOCs*
  - *Provide for ongoing data exchange with in-house systems that are too complex or expensive to update*
  - *Increase regulatory compliance by providing transparency for C-level executives concerning 360° view of product lines (financial exposure, risk management, customer census)*

- *Positive customer identification at every point of encounter translates directly into improved staff productivity, billing accuracy and customer satisfaction*
- *Enterprises must also be super conscious about the need to protect sensitive information – whether legal or cultural requirements*
- *IT staff must understand the need to have future flexibility in identity management for ongoing regulatory issues*
- *A CDI solution typically supports both operational and analytical processes and must be tightly integrated with both legacy systems and yet-to-be-built customer-facing applications. Clearly, there will be acute demands regarding reliability, availability, and scalability with major infrastructure requirements (application server, database management system, operating system and server hardware).*

- **Business process/workflow integration**
  - *Support once-and-done, end-to-end customer-facing processes across business lines and products lines, e.g. name and address change*
  - *Provide consistent customer experience across product lines based on lifetime value segmentation*
  - *Integrate channels to provide "blended agent" agent capability in call centers*
  - *Ideally, enterprises would like to provide internally-standardized business processes for identifying customers, adding new customers, changing customer name (marital status, phone, email, etc.) to drive down costs and provide increased quality of service to the customer*
  - *The current IT vision of service-oriented architectures (SOAs) is gaining critical mass in acceptance as "the" future-proofed architecture for large-scale enterprises. SOAs consist of discrete application services that support multi-modality invocation (batch, on-line, real-time, loosely-coupled, tightly-coupled)*
  - *By utilizing web service standard interfaces, third-generation CDI hubs insulate the enterprise's master data and business processes via a layer of granular business services (Add Customer, Promote Customer, Retire Customer, etc.).*

- **Database/data model integration**
  - *Support conceptual metadata models to link together (previously) unrelated business lines and customer databases resulting from M&A*
  - *Provide for hierarchy management across both corporate entities and households*
  - *Integrate both structured data (e.g., billing data) and unstructured data (e.g., email text)*
  - *The customer data model is required to model the complex many-to-many and hierarchical relationships between the enterprise, its business and consumer customers, as well as any intermediaries and other parties such as suppliers and brokers/distributors.*
  - *It is vital that the CDI solution and associated vendor support the data model extensions of the enterprise's specific industry and has experience with the relevant types of customer relationships. It is reasonable to expect that a CDI vendor will provide data model mappings as well to import and integrate with the most common sources of industry standard data that needs to be aggregated with the enterprise's own data.*

- **SOA for business services infrastructure**
  - *Increase flexibility to add new processes via service-oriented architecture*
  - *Centrally manage privacy policies*
  - *Incorporate new data sources rapidly (e.g., new product bundles)*
  - *Understand that "Business Services Infrastructure" is a very broad topic that includes: scalability issues, consolidation and survivorship rules, definition and management of privacy rules, and data cleansing. Additionally, audit trails are critical to privacy and merge/purge operations. For many businesses, the goal is to create end-to-end data management processes that may be invoked by other major customer facing subsystems in addition to the CRM package. Among the requirements are seamless integration with 3rd party data sources for "watch lists" and "do not call" registries*

As a stepping stone into the next generation of IT architectures collectively termed Service-Oriented Architecture, DWL Customer™ fits into the CSP's Customer Master File (CMF) and Customer Identity Management requirements. DWL Customer™ provides a Business Service library of 430 + services for the Service Application Layer and a robust data model for storing master customer data.

- **Scalability and availability**
  - *Provide extreme scalability in data volumes*
  - *Accommodate massive data volume increases due to periodic data deluges such as healthcare provider network changes*
  - *Smooth out batch data processes to enable better capacity management*
  - *The internal infrastructure to support CDI data management has all the requirements of mission-critical applications and must be evaluated so.*

Case study – major North American communications service provider

A Global 1000 communications service provider (CSP) made the strategic decision to shift from product centricity to customer centricity. This CSP's vision is to create a consolidated "Holistic View of the Customer" as a means of enriching and improving customer interactions and insights across all channels. This presents significant sales and retention uplift, operational savings, and risk management opportunities. In practice, the CSP is executing on a solid convergence strategy such that they are able to empower their customer services representatives (CSRs) to successfully cross-sell and up-sell in real-time based on customer information aggregated from the multiple divisions that particular customer is (or is not) a customer of. Thus, the CSP takes advantage of the approximately 14 million calls per year received by its wireline consumer business to cross-sell other products such as wireless and Internet, as well as product bundles (caller ID, three-way calling).

This CSP recently further evolved their convergence strategy by deploying a single client ID for all their lines of business. The CDI Solution being deployed is DWL Customer™, a "customer data hub" that has had previous large scale success in the Banking and Insurance industries. While the business case for this strategic investment in CDI did not initially focus on cost justification, the CSP has found substantial cost reduction in software license consolidation. The top five technical evaluation criteria for their CDI solution choice centered on: (a) ability to integrate existing business services; (b) data model; (c) business services; (d) integration with existing infrastructure; and (e) vendor

integrity. Additionally, peak match/merge rate was a consideration given that such customer data management capability becomes mission critical as it is woven into the fabric of the CSP's core enterprise applications. Because the CDI solution is responsible for the provisioning of customer data and customer business processes across all channels, it represents a critical Single Point of Failure.

Additionally, data quality vendor Trillium's software is used as a back-end matching capability across wireline, wireless, and Internet, etc. with a positive match rate of 45-60% across the divisions

The next major CDI upgrade for this strategic initiative is to integrate the remaining critical touchpoints/channels – i.e., the CSP's web site interface and the IVR interface. Additionally, this CSP is looking to develop similar capabilities in the redesign of its non-integrated billing systems. This is expected to provide even greater reduction in infrastructure costs as 100+ diverse/specialized billing systems (homegrown, Amdocs, CDSS for older telecom billing, etc.)

One of the prime requirements was the need for a "householding view" to boost CSRs' sell through rates. Thanks to the CDI capabilities of DWL , CSRs can now promote a customer into a higher segment for marketing purposes – in real-time. This powerful marketing capability empowers CSRs to promote "classic " (basic) basic customers to "premier" status which in turn generates differentiated offers in real-time based on the new customer status.

IBM and BearingPoint are the prime systems integrators assisting in this multi-year, multi-million dollar project. The joint DWL / IBM implementation methodology for the CDI project phases generally differentiates between the Enablement Phases, Augmentation Phases, and Client Experience Phases which enables the CSP's implementation partners to avoid linear, single threaded implementation scenarios. Additionally, IBM established a North American DWL Customer™ competency group with local expertise to support the CSP's endeavors.

Moreover, the DWL Customer™ solution is targeted as the first phase of this CSP's enterprise shift to VoIP products and bundles.

Clearly, CDI is considered a success at this major communications provider as it is the enabler of key next- generation bundling and marketing capabilities.

CDI Dimension	Specifics
Number of customers	• *10+ million local access lines* • *5+ million wireless* • *1+ million dial-up Internet subscribers* • *1.5+ million broadband subscribers* • *1.5+4 million satellite TV subscribers* • *5,000+ contact center agents*
Primary application vendors	• *Amdocs Ensemble and homegrown billing systems* • *Amdocs Commerce Broker* • *DWL Customer™* • *Epiphany recommendation engine and reporting data mart* • *Genesys call center* • *Siebel SFA in 20+ contact centers* • *Siebel CME for order management* • *Siebel Universal Product Master* • *Trillium and DataFlux for data cleansing* • *Unica Affium for database marketing*
Databases sharing master customer data	• *Three master databases (Consumer ; Enterprise; SMB)* • *Active data warehouse* • *Homegrown operational data store*

Figure 3 - Case study CDI landscape

Bottom line

The synchronization and delivery of a single customer view to a diverse audience of corporate stakeholders within a communications conglomerate is an on-going strategic investment.   Moreover, communications industry leaders must acknowledge the inevitable state-of-affairs that continuous M&A confronts them with.

As with all industries undergoing major M&A cycles, communications service providers must achieve operational efficiencies through IT streamlining and outsourcing. Through it all, executive leadership must control the basic

economics of the business while facing major strategic and operational challenges: rapid ROI on new systems development, and general systems upgrades and consolidation.

It is comforting news that market leaders in other industries have been implementing customer data integration (CDI) solutions for a number of years to provide a cogent answer to ongoing M&A activity. Whether the business outcomes of an enterprises' M&A result in "hang over" or "make over" depends upon the ability of the IT organizations to consolidate their staff, operations, data and processes. CDI is critical to these efforts and ultimately is the tipping point as to whether the business outcome achieves its intended ROI.

During 2005-06, market-leading CSPs must add CDI capabilities to their list of strategic "IT purchases" – not "IT investments" – as the market has proven that commercial off-the-shelf solutions are more cost-effective than custom-built middleware infrastructure. Those CSPs investing in CRM or other similar enterprise solutions must understand the value of weaving CDI into the fabric of their overall solution to achieve their business benefits. Furthermore, they must recognize the cost and risk of following the historical path of their peers and competitors that has exacerbated the problems identified in this White Paper (i.e., multiple customer masters, over-integration, latency in basic business functions such as updating customer address, etc.).

The business case for CDI capabilities is driven primarily by competitive market requirements – e.g., economies of scale promised by M&A, reduced back office costs, increased levels of customer service, and customer-directed asset management. The enterprise's master customer data must be the most accurate, up-to-the-minute source of customer information and must feed downstream systems (e.g., billing systems and provisioning).

During 2Q 2005, the CDI Institute interviewed twelve North American CSPs to extract lessons learned which point the way to the most effective "best practices" for CDI solution evaluations. In summary, industry leaders and early adopters both need to:

- *Improve shareholder value, efficiency, quality and decision making by sharing and integrating master customer data across the enterprise*
- *Beat the competition by improving quality of service while concurrently reducing costs – both back-office and front-office*
- *Increase levels of regulatory compliance and financial transparency*

The IT vice presidents and enterprise data architecture teams in charge of these CDI projects reflected the mission-critical nature of this infrastructure – they want working, proven products from vendors that have proven track records. References are essential when determining if the CDI solution can meet the business's mission-critical reliability, availability, and scalability requirements ("production references" not "proof-of-concepts").

This report has highlighted some of the most representative experiences and lessons learned. To summarize these as prescriptions, the CDI Institute recommends that enterprises:

- *Evaluate the CDI solutions vendor as a long-term strategic supplier*
- *Focus on customer data model extensibility (e.g., corporate business hierarchies, large scale enterprise, small-to-medium business, consumer/ residential)*
- *Evaluate functionality and extensibility of the identity management capability*
- *Insist on an open-ended and future-proofed CDI solution based upon services-oriented architecture (SOA) principles*
- *Mandate performance benchmarks supportive of the most critical scenarios (i.e., go beyond proof of concepts and insist on high availability and scalability reference checks)*

Clearly, the synchronization and delivery of a single customer view to the diverse constituency within a CSP is an on-going strategic investment. The evaluation process of such an enterprise CDI solution needs to accommodate the reality that such infrastructure is "mission-critical".

Aaron Zornes is chief research officer of The CDI Institute. For additional info on this topic or other CDI Institute offerings, please contact info@tcdii.com.

IBM

Bibliography

1. *CDI Institute MarketPulse™ survey* <u>questionnaire</u> *for Communications Service Providers – June 2005*
2. *"The Forrester Wave™: Customer Data Integration, Q2 2005" – Forrester Research, June 13, 2005*
3. *"Magic Quadrant™ for Customer Data Integration Hubs" – Gartner Group, April 20, 2005*
4. *"CDI Spending Increased 36% in 2004-05: Market for CDI Software and Services to Reach $1 Billion by 2008" – market analysis report by The CDI Institute, March 31, 2005*
5. *"Closing the CRM Loop Through Customer Data Integration" – META Group, March 31, 2005*
6. *"CDI Market Review and Forecast for 2005-06" –* <u>market analysis report</u> *by The CDI Institute, December 2004*

About The CDI Institute

To provide feedback on our client's CDI initiatives we have two levels of sponsorship for IT organizations: (1) free membership (by invitation) in our CDI Advisory Council providing unlimited CDI consultation by phone, and (2) free membership in our CDI Business Council (survey base) which provides bi-weekly updates on key CDI trends and issues via the CDI Alert email newsletter.

• **CDI Advisory Council™** *of fifty organizations who receive unlimited CDI advice to key individuals, e.g. CTOs, CIOs, and CDI project leads*

• **CDI Business Council™** *of 750+ Global 2000 IT organizations who receive a limited distribution, bi-weekly newsletter with CDI industry updates*

• **CDI Alert™** *bi-weekly newsletter provides IT organizations, CDI vendors, and investors hard-hitting insights into best practices as well as market observations derived from interactions with the* **CDI Advisory Council™** *and the* **CDI Business Council™**. *Initially free to qualified individuals, the* **CDI Alert™** *is expected to become a fee-based product in 2006. The intended audience includes: CDI project managers, CIOs, CTOs, chief customer officers, chief privacy officers, data quality managers, data stewards, market analysts, metadata managers, and project teams responsible for CDI solutions and infrastructure, data quality, data warehousing, customer relationship management (CRM), enterprise resource planning (ERP), product data management (PDM), supply chain management (SCM), partner relationship management (PRM), and business intelligence.*

• **CDI MarketPulse™** *monthly survey results, e.g. budgets, success/failure rates, mindshare based on ongoing surveys of the CDI Advisory Council and the CDI Business Council*

• **CDI Fast Track™** *quarterly 1-day workshop – fee-based and rotating through the major North American metropolitan areas*

G299-0758-00