

Magic Quadrant for Customer Data Integration Hubs, 2Q06

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The CDI hub market is maturing. IBM is first to enter the Leaders quadrant. Best-of-breed vendors such as Initiate Systems and Siperian, as well as Siebel Systems, rate as Visionaries. New entrants continue to join the market; Oracle and SAP have made progress, but remain in the Niche Players quadrant.

WHAT YOU NEED TO KNOW

Organizations that lack a consistent, complete and accurate single view of the customer should evaluate packaged customer data integration (CDI) hub products, as opposed to taking a build-it-yourself route. The market for CDI hubs is evolving quickly, with a constant stream of new market entrants, a degree of consolidation and increasing market dominance by the big infrastructure players. Potential first-mover advantages exist when adopting a CDI hub at this stage, but there are also risks because of the immaturity of many products and concerns about the long-term direction of the smaller vendors. Except in some well-proven vertical markets, such as healthcare provision, the products are most suitable for early adopters and fast followers.

Evaluate vendors based on a defined set of objective customized criteria that rate each vendor's vision and ability to execute. Customer references can offer valuable insight into a vendor's capabilities and are key evaluation criteria. Supplement your own detailed needs assessment, based on the initial and long-term use case scenarios, with this Magic Quadrant. Adequate and well-directed preparation will result in better evaluations and end results. Balance risk with reward and consider the strategic nature of CDI hubs in the context of the evolution toward service-oriented architectures (SOAs).

CDI is a complementary market to product information management (PIM), with a different subject area focus and different characteristics. These two markets represent different domains within an organization's overall goals for master data management (MDM), as part of its enterprise

information management (EIM) initiative. Consider your wider MDM and EIM goals when evaluating CDI hubs.

STRATEGIC PLANNING ASSUMPTION(S)

Through 2010, the creation of an accurate, timely and rich single view of the customer across channels and lines of business (LOBs) will be a key enabler for reducing costs, managing risk, and increasing revenue and profitability in customer-centric organizations (0.8 probability).

By 2008, 50 percent of large organizations with a heterogeneous customer data environment will begin to implement a solution for CDI (0.7 probability).

Through 2010, less than 33 percent of global organizations will have an enterprise view of the customer (0.7 probability).

Through 2010, the creation of a master customer information database will deliver the most-accurate, up-to-date and complete single view of the customer across multiple channels and LOBs in heterogeneous IT environments (0.8 probability).

Through 2010, less than 20 percent of large organizations will satisfy their single view of the customer requirement solely by using the data model and database beneath a vendor's application suite (0.7 probability).

By 2010, the CDI hub software market will achieve new software license revenue of more than \$400 million (0.7 probability).

By 2010, the major application infrastructure vendors – IBM, Microsoft, Oracle and SAP – will command more than 50 percent of CDI hub software license revenue (0.7 probability).

By 2010, following market consolidation, the CDI hub market will mainly consist of a mixture of extended enterprise-scope application platform suite vendors that offer broad EIM solutions, and a number of smaller CDI hub specialists that focus on specific vertical markets and CDI scenarios (0.7 probability).

Through 2008, 30 percent of single-customer-view projects will be perceived to have failed because of factors such as inadequate business backing, lack of change management, insufficient organizational focus on data quality and data stewardship, lack of governance processes, overly ambitious projects and immature or inappropriate technology (0.7 probability).

MAGIC QUADRANT

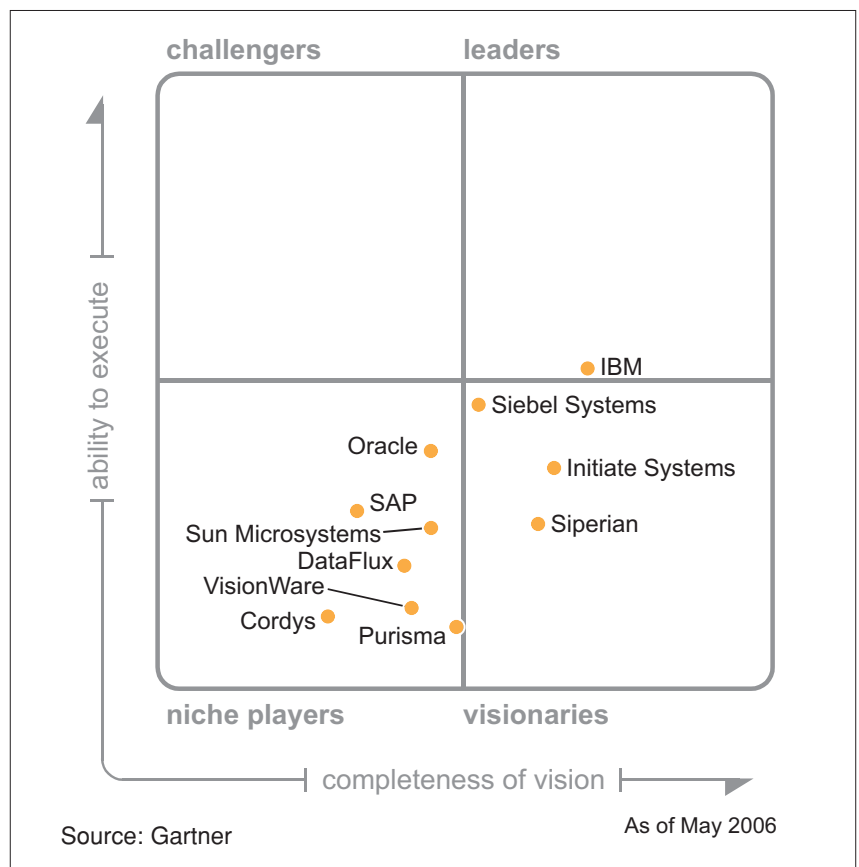
Gartner’s Magic Quadrant for Customer Data Integration Hubs, 2Q06 (see Figure 1) provides insight into the evolving CDI hub market. It positions CDI hub technology providers on the basis of their completeness of vision relative to the CDI hub market and their ability to execute that vision. It is based on the new Gartner Magic Quadrant process introduced in July 2005.

Market Overview

The creation of the single view of the customer is not a new aspiration; however, most organizations have struggled throughout the years to meet the goal. In the past two years, interest in CDI (see Note 1) has grown dramatically as organizations revisited the need for a single view of the customer and their capability to achieve it. A combination of supply and demand factors has driven this interest. On the demand side, many

organizations have accepted that their prior investments in CRM and ERP systems have not fully met the challenge. Although those projects provided many benefits in terms of new functionality and improved customer data, they also created more silos of customer data. Early adopters and fast followers are now investigating new approaches, such as CDI hubs. These software products support the global identification, linking and synchronization of customer information across heterogeneous data sources; create and manage a database-based system of record, and enable the delivery of a single customer view. The main demand-side issues are:

Figure 1. Magic Quadrant for Customer Data Integration Hubs, 2Q06



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- CRM systems helped, but often didn't fully address the single-customer-view challenge.
- Many "homegrown" customer information file systems need a functionality upgrade and technology refresh.
- Cross-industry and industry-specific compliance requirements often involve customer data and need solutions by set dates.
- A realization that it makes sense to manage policy information, such as increasingly complex privacy rights and preferences information, centrally.
- The creation and leveraging of a central customer profile can help drive value from customer interactions.
- Increasing interest in holistic MDM (see Note 2) strategies, including the CDI domain, with the focus varying by industry.
- Increasing focus on the governance of enterprise information and EIM (see Note 3) programs, as information is increasingly recognized as a strategic asset to be maintained like any other asset.
- Organizations realize that SOA initiatives cannot succeed without a strong focus on data services.
- Increasing focus on addressing data quality issues and attempting to tackle them upstream from the analytical environment in the operational systems.
- "Google addiction." Users expect to be able to key in a customer name or number and have a holistic view handed to them, which is what they think Google provides them on the Web.

Wherever multiple systems contain customer data, there may be a need for a CDI hub solution, but different vertical industries and sectors will have different scenarios and needs.

On the supply side, an increasing number of vendors, with their own interpretations of meeting the requirement, are offering value propositions around CDI and CDI hubs, and the more widely embracing concepts of MDM and EIM. The main supply-side trends are:

- The CDI hub market is still not fully mature, but it is growing quickly. The hype level is high; however, potential business benefits exist for early adopters.

Note 1. CDI Definition

CDI is the combination of the technology, processes and services needed to create and maintain an accurate, timely and complete view of the customer across multiple channels, business lines and organizations, where there are multiple sources of customer data in multiple application systems and databases.

Note 2. MDM Definition

MDM is the consistent and uniform set of identifiers and extended attributes that describe the core entities of the enterprise and are used across multiple business processes. Some examples of core entities are parties (customers, prospects, people, citizens, employees, vendors, suppliers or trading partners), places (locations, offices, regional alignments or geographies) and things (accounts, assets, policies, products or services). Groupings of master data include organizational hierarchies, sales territories, product roll-ups, pricing lists, customer segmentations and preferred suppliers.

MDM is a workflow-driven process in which business units and IT departments collaborate, cleanse, publish and protect common information assets that must be shared across the enterprise. MDM ensures the consistency, accuracy, stewardship and accountability for the core information of the enterprise.

Note 3. EIM Definition

EIM is an organizational commitment to define, secure and improve the accuracy and integrity of information assets, and to solve semantic inconsistencies across all boundaries, thus supporting the technical, operational and business objectives in a company's enterprise architecture strategy.

- A degree of consolidation is taking place; the first acquisitions of CDI hub vendors occurred during 2005. For example, IBM acquired DWL.
- The application infrastructure vendors (for example, IBM, Oracle and SAP) have realized the strategic importance of MDM generally and CDI specifically.
- New entrants continue to join the CDI hub market, including application infrastructure vendors (for example, Cordys) and best-of-breed specialists (for example, Purisma).

- An increasing number of vendors are announcing an MDM strategy without a specific CDI focus (for example, Kalido).

Through 2008, the CDI hub market will continue to see major changes, including more acquisitions and changes of vendor direction; this will cause problems for end-user organizations that want to make a strategic commitment to the market before it settles down.

Gartner has defined a market for CDI hub software: strong growth will occur in the CDI hub market during 2006. The market is still relatively small, and although it hasn't reached maturity, it is in a high-growth phase. Based on our estimates, new license revenue for packaged CDI hub software solutions was about \$30 million in 2003. The market grew at more than 100 percent, to about \$70 million, in 2004. CDI hub new license revenue exceeded \$120 million in 2005. The market will continue to grow healthily for several years, but with gradually reducing growth rates. By 2010, the CDI hub software market will achieve new software license revenue of more than \$400 million (0.7 probability). Increasingly, CDI hub revenue will be viewed together with solutions for PIM and other forms of MDM.

Gartner published its first Magic Quadrant for CDI hubs in April 2005. At that time, no vendor had the sufficient mix of completeness of vision and ability to execute to warrant placement in the Leaders quadrant. Several specialist vendors that operated across vertical markets were rated as visionaries. Siebel Systems was the only challenger, and the niche players consisted of enterprise application and infrastructure suite vendors and specialists with a limited vertical-industry focus or ability to execute.

Market Definition/Description

Markets are a set of actual or potential customers for a given set of products or services that have a common set of needs or wants, and that reference each other when making a decision. Market segments are portions of that generic market that are qualified by more exact criteria that more tightly group potential buyers. Segmentation may take two forms:

- A generic market may be divided into a recognizable entity where the rules for defining a market still hold.
- An individual vendor may segment the market to target its products more precisely and differentiate itself from (or avoid competing with) other players addressing the same overall market. However, the targeted buyers may not know they are part of the same market segment. Such segmentation will not be reflected explicitly in the Magic Quadrant, although it may be reflected implicitly (via placement of a vendor in the Niche Players quadrant, for example).

CDI hubs, as in "hub and spoke" architecture, are software products that:

- Support the global identification, linking and synchronization of customer information across heterogeneous data sources through semantic reconciliation of reference data.
- Create and manage a central, database-based system of record.
- Enable the delivery of a single customer view.

CDI hub architectural forms vary in terms of:

- Instantiation of the customer master data – varying from the maintenance of a physical customer profile to a more-virtual, metadata-based, indexing structure.
- The use of the customer master data – varying from supporting operational requirements to supporting analytical requirements.
- The latency of the customer master data maintenance – varying from real-time, synchronous reading and writing of the master data in a transactional context to batch, asynchronous harmonization of the master data across systems.

Vendors have different "sweet spots" relative to these architectural forms and a number of scenarios exist – see Note 4 for some of the main examples.

CDI hub technology forms part of an organization's overall CDI strategy and it is analogous to the use of PIM technology in an organization's product content and data management strategy. CDI hubs are

examples of MDM solutions for the customer data domain.

Inclusion and Exclusion Criteria

Inclusion Criteria

In view of the relative immaturity of the CDI hub market, we have set the bar for inclusion criteria relatively low. As the market evolves and matures, these criteria will become more stringent. We include specialist vendors, as well as large enterprise software vendors with a product in the market, along with additional vendors that have a unique vision or position in the market worthy of inclusion, even if they do not fully meet the all inclusion criteria, such as the number of live references.

Regarding market traction and momentum, the vendor should have:

- At least five live customer references for CDI hub product functionality
- At least four new customers for CDI hub products in the past four quarters
- Generated at least \$5 million in total revenue related to CDI hub product software in the past four quarters

Regarding near-term viability, the vendor should have:

- Sufficient professional services to fulfill customer demand during the next six months
- Enough cash to fund a year of operations on current burn rate – that is, companies spend their cash reserves if the year of operations is cash-flow-negative

Exclusion Criteria

This Magic Quadrant excludes:

- *Vendors focused on a single vertical market.* We have excluded Cegedim and Dendrite on the basis that they only focus on the life sciences industry. Similarly, we have excluded Cicada and GoldenSource because they only focus on the financial services industry.
- *Marketing service providers or data providers* that provide a CDI external reference database service, but don't provide a CDI hub product that can be implemented within an organization's

firewall. We have excluded Acxiom, Dun & Bradstreet and Experian on this basis, while recognizing that their CDI external reference database services are potentially valuable complementary services to the CDI hub products rated here.

- *Vendors reselling other vendor's CDI hub.* We have excluded BEA Systems because it only offers CDI hub solutions based on products from its partners Initiate Systems and Purisma.
- *MDM vendors that solely focus on analytical requirements.* Although we will increasingly see interest in solutions that tackle the analytical environment aspects of CDI and MDM, in the 2006 CDI Hub Magic Quadrant, we are excluding products that solely focus on MDM issues for analytical requirements. This includes Hyperion MDM, Kalido 8M, Orchestra Networks and Stratature +EDM.

We continue to include Oracle Customer Data Hub (CDH) and Siebel Universal Customer Master (UCM) on the basis that following its acquisition of Siebel, Oracle continues to market and sell both products.

Added

Relative to the 2005 CDI Hub Magic Quadrant, we added the following vendors:

- Cordys, a European application platform suite vendor, following the introduction of Cordys MDM in 1Q06
- DataFlux, an SAS company specializing in data quality, following the introduction of DataFlux CDI in 1Q06
- IBM, following its acquisition of DWL in September 2005
- Sun Microsystems, following its acquisition of SeeBeyond in August 2005

Dropped

Relative to the 2005 CDI Hub Magic Quadrant, we dropped the following vendors:

- DWL, following its acquisition by IBM
- SeeBeyond, following its acquisition by Sun Microsystems
- Dendrite, because it solely focuses on the life sciences industry

Evaluation Criteria

Ability to Execute

Gartner analysts evaluate vendors on the quality and efficacy of the processes, systems, methods or procedures that enable vendor performance to be competitive, efficient and effective, and to positively affect revenue, retention and reputation. Ultimately, vendors are judged on their ability and success in capitalizing on their vision.

Vendors will be rated on the basis of:

Product

Software products offered by the vendor that compete in/serve the CDI hub market. This includes product capabilities, quality, feature sets and skills, as defined in the market definition and detailed in the subcriteria.

Vendors will be measured on the ability of the product release to support the following CDI hub product subcriteria:

1. *Data modeling capabilities* – The applicability of the data model to your organization is a fundamental requirement. It must:
 - Model the relationships between the organization and its business and consumer customers, as well as intermediaries and other parties, with the ability to handle complex hierarchies
 - Map to the master customer data requirements of the entire organization, not just to selected areas
 - Be configurable, customizable and extensible, but also upgradable
 - Support vertical-industry-specific requirements
 - Provide a base for the required workload mix and level of performance
 - Be expressed using commonly accepted logical data model conventions with associated metadata
2. *Data quality and data stewardship capabilities* – A good data model is of little value unless it contains accurate, up-to-date data for a customer. The CDI hub product should:
 - Have strong facilities, in batch and real-time mode, for cleansing, matching, linking and

identifying customer master data in different data sources to create and maintain the “golden record.” These facilities may be provided by the CDI hub vendors or by offering tight integration with products from specialist data quality partners.

- Support a “data steward” role, enabling it to manage customer data throughout its life cycle and provide data governance, including the ability to:
 - Configure rules for matching and linking the data
 - Review data quality metrics and take corrective actions
 - Determine where to source data and under which circumstances, including the ability to give preference to the most-dependable source
 - Manage the merging or unmerging of customer data with full auditability and survivability
 - Manage the policies and rules associated with potentially complex privacy access rights
 - Configure and manage different rules of visibility, providing different views for different roles
 - Ensure that business rules and associated metadata related to data cleansing are sufficiently visible to satisfy compliance requirements
- *Loading, integration and synchronization capabilities* – The CDI hub product needs to provide facilities for loading the customer data in a fast, efficient and accurate manner. There will also be a need for integration middleware, including publish and subscribe mechanisms, to provide a communication backbone for the bidirectional flow of customer data between the central database or hub, and the spoke systems. These facilities may be provided by the CDI hub vendor or by offering tight integration with products from specialist middleware partners. The CDI hub product should be able to:
 - Leverage a range of middleware products to data sources, including legacy data sources, and expose industry-standard interfaces
 - Support integration with different latency characteristics and styles (for example, real time and batch)
 - Support integration with downstream business intelligence and analytical requirements

3. *Business services functionality* – Many leading organizations will plan to use the new customer master database as the basis for new business applications. In the new SOA world of enterprise architecture, service-oriented composite business applications may consume CDI hub business services through Web services standard interfaces. The CDI hub should protect and complement the data layer with a layer of business services for accessing and manipulating the customer data that is built for an SOA environment, and exposing Web services interfaces.
4. *Performance, scalability and availability capabilities* – If the CDI hub supports operational applications and is tightly integrated with established systems and new applications, serious demands are likely to be made on its performance, scalability and availability. The CDI hub should have:
 - Proof points, preferably through live references, of different aspects of performance and scalability that match your current and future requirements
 - Appropriate availability characteristics regarding planned and unplanned downtime
5. *Technology, architectural and manageability considerations* – CDI hub solutions should be capable of flexible configuration into a range of architectural styles in terms of instantiation, latency and use of customer master data to enable it to satisfy different use case scenarios, such as the registry, coexistence and transaction hub scenarios (see Note 4). The vendor will also be measured on the ability of its architecture to support global rollouts and localized international installations and the availability of facilities for management of the CDI hub.

Overall Viability

Viability includes an assessment of the CDI hub vendor's financial health, the financial and practical success of the organization or business unit in generating business results in the CDI hub market on a global basis, and the likelihood of the organization or individual business unit to continue to invest in development of CDI hub products and continue offering CDI hub products.

Note 4. Architectural Styles of CDI Hub

Registry style: This style matches and links customer master data to create a metadata-based system of records. It physically stores a global identification, as well as links to the fragments of master data in spoke systems and the transformations necessary to achieve semantic reconciliation. The single customer view is dynamically assembled and is often read-only. The registry-style hub provides a central real-time reference point.

Coexistence style: This style physically stores the master data that makes up the single customer view. The hub is used to create and publish the single customer view. It is not usually used for transactions, but is updated after the event in batch. It harmonizes customer master data across databases and acts as a central reference point.

Transaction hub style: This style physically stores the up-to-date customer master data that makes up the single customer view. It directly supports new and legacy transactional applications, typically through a business service layer designed for SOAs. It centralizes customer master data and provides a key foundation for transactional applications and a transition to an SOA.

Sales Execution

The vendor's capabilities in all CDI hub-related pre-sales activities, on a global basis, and the structure that supports them. This includes deal management, pricing and negotiation, pre-sales support and the overall effectiveness of the sales channels.

Market Responsiveness and Track Record

Ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change within the CDI hub market. This criterion also considers the vendor's history of responsiveness.

Marketing Execution

The clarity, quality, creativity and efficacy of programs designed to deliver the vendor's message, on a global basis, to influence the CDI hub market, promote the brand and business, increase awareness of the products, and establish a positive identification

with the product/brand and organization in the minds of buyers. This “mind share” can be driven by a combination of publicity, promotional, thought leadership, word-of-mouth and sales activities.

Customer Experience

Relationships, products and services/programs that enable organizations to be successful, on a global basis, with CDI hub products, plus a measure of organizations’ success in implementing CDI hub products.

Implementation and Support:

- Professional services – Provide internal professional service resources or partner with external service providers with vertical industry expertise, CDI hub domain knowledge, global and localized country coverage, and a broad skill set (for example, project management, system configuration) to support a complete project life cycle
- Customer support – Provide satisfactory prompt service to its customers worldwide with ranges of service-level agreements to meet different requirements
- User groups – Provide support to an active user group

Customer References:

The vendor must produce a sufficient number of production-level references, on a global basis, with varying levels of scenario complexity and workload to demonstrate the viability of its CDI hub product in the marketplace.

Total Cost of Ownership:

The total cost of ownership for the CDI hub product over a three- to five-year span, including purchase of software license, implementation, and ongoing maintenance and administration, should provide a good balance between cost and value obtained.

Operations

The ability of the vendor to meet its goals and commitments, on a global basis. Factors include the quality of the organizational structure, including skills,

experiences, programs, systems and other vehicles that enable the vendor to operate effectively and efficiently on an ongoing basis.

This criterion was not explicitly rated, but was rolled into the viability and sales and marketing execution criteria.

Table 1. Ability to Execute Evaluation Criteria

Evaluation Criteria	Weighting
Product/Service	high
Overall Viability (Business Unit, Financial, Strategy, Organization)	high
Sales Execution/Pricing	high
Market Responsiveness and Track Record	standard
Marketing Execution	standard
Customer Experience	high
Operations	no rating

Source: Gartner (May 2006)

Completeness of Vision

Gartner analysts evaluate vendors on their ability to convincingly articulate logical statements about market direction, innovation, customer needs and competitive forces, and how well they map to the Gartner position. Ultimately, vendors are rated on their understanding of how market forces can be exploited to create opportunity for the vendor.

Vendors will be rated on the basis of:

Market Understanding

Ability to demonstrate a strategic understanding of CDI hub opportunities (for example, new application functionality or customer segments) and ongoing vendor market dynamics (for example, consolidation trends) on a global basis, and translate these needs into products and services. Also, an understanding of the wider implications and position of CDI within a company’s MDM strategy and EIM program is valuable to customers taking the strategic view. Vendors that show the highest degree of vision listen to and understand buyers’ wants and needs, and can shape or enhance those wants with their added vision.

Marketing Strategy

A clear, differentiated set of CDI hub messages is consistently communicated throughout the organization and externalized globally through the Web site, advertising, customer programs and positioning statements.

Sales Strategy

The vendor's strategy for selling a CDI hub product that uses the appropriate global network of direct and indirect sales, marketing, service and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

Offering (Product) Strategy

Vendor's published "statement of direction" (or Gartner's understanding of it) for the next two product releases needs to keep pace with or surpass Gartner's vision of the CDI hub market. Gartner's main product-oriented criteria focus on data modeling capabilities; data quality and data stewardship capabilities; loading, integration and synchronization capabilities; business services functionality; performance, scalability and availability capabilities; and technology, architectural and manageability considerations.

The vendor needs to offer a CDI hub product that can be configured into a range of architectural styles, in terms of instantiation, latency and use of customer master data, to enable it to satisfy different use case scenarios, such as the registry, coexistence and transaction hub scenarios.

The vendor must also understand major technology/architecture shifts in the market and communicate a plan to leverage them, including migration issues that may affect customers on current releases. Specifically, the vendor should have a vision to support mainstream software infrastructure technology, as opposed to a proprietary stack, and have an evolutionary path toward service-oriented architecture.

Business Model

This reflects the soundness and logic of a CDI hub vendor's underlying business proposition. The vendor has a well-articulated strategy for revenue growth and sustained profitability. Key elements of strategy include the sales and distribution plan, internal investment priority and timing, and partner alliances, such as with external service providers.

Vertical/Industry Strategy

This is the vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including vertical industries. Included are reviews of the vendor strategy for meeting the needs in specific vertical industries, such as banking, communications and government.

Innovation

Vendors need to be able to lead this market and, in so doing, provide customers with an innovative solution and approach to service customer needs in a complex, heterogeneous environment. Innovation here implies a well-rounded and well-thought-out road map for solving CDI issues.

Geographic Strategy

Vendor's strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the "home" or native geography, directly or through partners, channels and subsidiaries, as appropriate for that geography and market. Includes sales, marketing and support for complex global companies.

Table 2. Completeness of Vision Evaluation Criteria

Evaluation Criteria	Weighting
Market Understanding	high
Marketing Strategy	high
Sales Strategy	standard
Offering (Product) Strategy	high
Business Model	standard
Vertical/Industry Strategy	high
Innovation	high
Geographic Strategy	standard

Source: Gartner (May 2006)

Leaders

Leaders have strong results and delivery capabilities now, and will continue to do so in the future. They typically possess a large and satisfied customer base (relative to the size of the market) and enjoy high visibility within the market. The size and financial strength of leaders enable them to remain viable in a challenging economy. Leaders have mature offerings and a track record of successful deployments, even in the most challenging environments, across all geographies and many vertical industries. Finally, leaders have the strategic vision to address evolving client requirements. However, leaders are not necessarily the best choice in all cases.

Challengers

Challengers demonstrate a clear understanding of today's CDI hub market, but they have not demonstrated a clear understanding of the CDI hub market direction or are not well-positioned to capitalize on emerging trends. They often have a strong market presence in other application areas.

Visionaries

Visionaries display healthy innovation and a strong potential to influence the direction of the CDI hub market, but they are limited in execution or demonstrated track record. Typically, their products and market presence are not yet complete or established enough to reach leadership status.

Niche Players

Niche players do well in a small segment of the CDI hub market or have limited ability to be innovative or outperform other vendors in the market. They may be focused on a specific functionality, domain or industry, or have gaps relative to broader CDI hub functionality requirements. Niche vendors may also have limited implementation and support services, or have not yet achieved the necessary scale to solidify their market positions.

Vendor Comments

Cordys

Cordys is a Dutch software infrastructure vendor, founded in 2001, that has rightly identified MDM as a key part of the infrastructure-for-SOA story. It has a vision for managing all types of master data,

including customer and product data, using a flexible framework approach, and is leading with a focus on customer data. The Cordys MDM product was a new entrant to the CDI hub market during the first quarter of 2006. Cordys has a flexible approach to data modeling, giving an organization the ability to define its own data model or import an industry template and then customize it. It is not clear how well Cordys can model complex party relationships and business hierarchies. Over time, the company will need to provide a range of templates directly or via partners. It has more work to do in the data quality matching, linking and cleansing areas and in the data stewardship and survivorship areas. Cordys is just starting to build a relationship with Human Inference and plans to embed matching logic and integrate with cleansing functionality. In line with the background of the company, integration, data transformation and synchronization are strong points of the solution. Cordys does not provide a business services layer, but services can be created during implementation. Cordys MDM is still relatively young as a product and Cordys needs to establish reference sites and improve the data quality area. Most implementations will probably adopt a coexistence architectural style (see Note 4). Cordys is still a relatively small company, but has a presence in the U.S., Europe and the Asia/Pacific region. Consider Cordys MDM if you are buying into a wider Cordys infrastructure.

DataFlux

DataFlux, an SAS company, is a recent entrant to the CDI hub market, introducing its packaged DataFlux CDI Solution in March 2006. It has only a few references so far, but is leveraging its data quality heritage and expanding and packaging what it has learned from many years of involvement in custom-made CDI projects. DataFlux plans to offer a range of MDM solutions, but its initial focus is on CDI. The main components of its CDI solution are the Master Repository database, built on a multiparty data model, the DataFlux Integration Server, which handles batch and real-time integration, and dfPower Studio. They are based on the DataFlux Data Quality Integration Solution v7. The data model is extensible, but to date, DataFlux does not supply industry templates, and it will need more work on hierarchy management. Not surprisingly, the data profiling, data quality and identity management aspects are strong

points. Integration is based mainly on DataFlux's own data access, movement and transformation capabilities and its workflow facilities; it also provides a set of customizable business services for real-time integration. Architecturally, the product's sweet spot is coexistence-style scenarios. DataFlux does not have a strong presence outside the U.S. yet, but partnerships and ownership by SAS gives it additional reach and good staying power. SAS typically focuses on business intelligence, analytics and marketing applications, and DataFlux is likely to have success in those areas vs. competing with large software infrastructure vendors in transaction-oriented, operational areas. Consider the DataFlux CDI Solution if you want to leverage established DataFlux or SAS investments, or like the combination of flexible data model and data quality capabilities from a single vendor for data consolidation and reporting, or for coexistence purposes.

IBM

IBM WebSphere Customer Center (WCC) – the one-time-DWL Customer product – is positioned as a high-performance transaction hub that is designed for an SOA world, and is the most-proven product for that architectural style. Together with WebSphere Product Center (WPC) – the one-time-Trigo product – it forms the centerpiece of IBM's MDM solutions. WCC has a pre-defined data model, originally designed for the complexities of the insurance industry, with a range of configuration and extensibility options. WCC's business services layer is particularly strong, but on the data quality side, it has been weaker and dependent on partnerships with Acxiom, Trillium and FirstLogic. It needs to improve its data quality (matching and cleansing) capabilities through the integration of Ascential's QualityStage and IBM's Entity Analytics Software. The data loading is also due for improvement with the integration of Ascential's DataStage ETL product, and IBM will need to rationalize metadata and business services for its WCC and WPC products. IBM is investing heavily in the development of WCC and the rest of its Information on Demand portfolio. The company needs to improve the integration of the various acquired and homegrown technologies, particularly in the metadata area. The MDM group has a strong vision to standardize and extend its

MDM offerings and integrate them with data warehousing, process and business service models for the banking, insurance, retail and telecommunications industries. IBM has successfully kept the DWL team together, is investing heavily in sales and marketing worldwide, and we expect to see strong momentum in 2006. Consider IBM WCC for coexistence or high-performance transaction hub purposes, where it has excellent references, but its relatively fixed data model and business services and its focus on a physical transaction hub and relatively high cost will not fit the requirements of all organizations.

Initiate Systems

Initiate Systems is a well-established best-of-breed provider of Enterprise Master Patient Index (EMPI) systems to healthcare providers and is the largest pure-play CDI hub vendor. The company has successfully extended its core business to provide CDI hubs to other areas of the healthcare ecosystem, such as healthcare insurance and retail pharmacy, and is also gaining a presence in many areas of the government market, as well as more opportunistic sales in financial services and other vertical industries. Its Initiate Identity Hub software is a "registry" style architecture with well-proven performance in high-volume situations, but Initiate will need to extend the product to support the complexity demands of business data, such as hierarchy management. It does not supply a pre-defined data model or a business services layer. Historically, the company has had a light footprint, but its most recent product release (v.7) offers an innovative approach to extending the data model and configuring the degree to which customer data is held virtually or physically in the hub. Its proprietary probabilistic data-matching algorithms are well-respected for their accuracy and performance in real-time scenarios. Initiate Identity Hub can be attractive to organizations with consumer data wanting a customer-recognition facility, a less-invasive and easier implementation than products favoring a more physical hub architecture, such as the coexistence and transaction hub style, and fast "time to value." Initiate does most business in the U.S. and Canada, but has a small presence in the U.K. and in Australia. Most of its business is direct, but Initiate Identity Hub is also embedded in many

partner products. Initiate should continue to do well in healthcare-related markets and in government, but in other vertical industries it will face more competition from infrastructure plays by the mega vendors. Consider Initiate Identity Hub for EMPI purposes in healthcare or more widely for managing consumer data in registry-style implementations that can extend to a more-federated or physical approach.

Oracle

Oracle plans to offer a range of data hubs, including the existing Customer Data Hub, and the PIM Data Hub, as part of a broad MDM strategy. These data hubs form part of Oracle's Fusion Middleware platform and have a key role in integrating heterogeneous environments and in helping integrate acquired application packages, such as PeopleSoft. CDH has an extensible data model based on Oracle's Trading Community Architecture (TCA), which provides good support for consumer and business data, but doesn't include industry templates. CDH can be attractive for organizations with wider Oracle investments and skills wanting a well integrated single vendor approach, but several aspects – for example data quality and business services– don't stand out as best-in-class functionality. Oracle provides its own set of data quality functionality – Data Quality Manager (a matching and cleansing engine), Data Librarian (a data stewardship application) and Oracle Customers Online (a useful data visualization tool). CDH makes increasing use of Oracle's integration and synchronization facilities (Oracle 10g application server, ETL tool – Oracle Warehouse Builder, and workflow – Oracle BPEL Process Manager), but it can also work with third-party middleware. During 2005, Oracle could only show midsize implementations of CDH, but now it is beginning to offer references in more-complex and demanding environments. CDH had good revenue growth in 2005, mostly in the Oracle installed base. It is most often used in coexistence-style architectural scenarios. Oracle will need to improve the data quality capabilities, the privacy management and the business service enablement, as well as evolve CDH, together with Siebel UCM, to a Fusion CDI hub, which is due to make its first appearance by the

end of 2008. In the meantime, Oracle has the challenge of how to sell CDH in concert with UCM. It is positioning CDH as the main CDI hub offering for the Oracle applications customer base and product-centric industries. It will continue to support and develop CDH, coming out with release 12 by the end of 2006 and two interim releases that share new functionality with UCM and ease the path to the Fusion CDI product. Consider Oracle CDH if you have significant investment in Oracle applications and technologies, and are in a product-centric industry. Consider migration to the Fusion CDI product after 2010.

Purisma

Purisma is a small, but fast-growing, CDI hub specialist that focuses on the problem of managing complex business entity relationships (in business-to-business environments) for which it has strong hierarchy management capabilities. It will soon be able to start addressing the needs of consumer data. The Purisma Customer Registry product is innovative and positioned for customer identity management, seeking to deliver many of the benefits of CDI without many of the challenges of a more-physical transaction hub approach. It has established its first reference sites with attractive cost and time-to-value characteristics, and has had most success in the high-technology area, as well as some success in communications and healthcare. It has a flexible approach to data modeling, but is not planning to provide industry data models or business services because it prefers the registry-style architecture. The product's built-in matching and correlation engine is effective and the data stewardship facilities are very good, although security needs improvement. It provides Web service interfaces, but is dependent on third parties, such as Informatica, for integration. Purisma mostly focuses on the U.S. market, but it has a small presence in the U.K. It has been slightly late to the CDI hub market and, as the market starts to mature, needs to ramp up its market presence, including leveraging partners, such as BEA Systems, Hyperion and Informatica, building a differentiated and sustainable presence. It recently announced a partnership with Business Objects and will perform a role in Business Objects' Enterprise Information Management solution set that underpins its business

intelligence and corporate performance management vision. Consider Purisma if you are in a business-to-business situation and want to provide a single customer view of your complex business relationships (through consolidation and analysis or harmonization across systems.)

SAP

SAP offers the MDM product as part of its NetWeaver application infrastructure suite. MDM has a broad scope and is designed to manage product, customer, supplier and other objects. The MDM core engine is written in C++ and is based on technology from A2i, which is the PIM vendor SAP acquired in 2004. MDM v.5.5 SP3 has been generally available since November 2005, and we expect the first CDI implementations to occur by mid-2006. The MDM core engine enables flexibility in expressing data models and SAP has used its Business Partner Object model, leveraged from the mySAP applications suite, for its base CDI data model. It has not been “verticalized” yet. Organizations have the ability to create their own data models or extend the SAP-supplied data model. The data quality side is relatively weak and needs improvement. SAP’s integrated deterministic matching will need to be improved and augmented by probabilistic matching. SAP will also need to provide interfaces to third-party cleansing tools such as Trillium Software. Deficiencies in the auditing, survivorship and data stewardship areas are in the road map and due to be addressed. SAP does not supply a layer of business services yet or a framework to create it; this is also in the road map and is a key issue as SAP moves toward Enterprise Services Architecture (ESA). MDM uses XI and open application programming interfaces for integration, and supports Extensible Markup Language (XML) and Advanced Business Application Programming (ABAP) messaging. It contains prepackaged interfaces to SAP’s ERP, supplier relationship management and CRM applications, but doesn’t use SAP’s business process management (BPM) product for workflow associated with CDI yet. Overall, SAP MDM lags competitors in many areas, but there was an upsurge in MDM licensing during 2005, mainly within the SAP base. As SAP continues to enhance MDM in an annual release cycle, and it

establishes more references, mainly in Gartner’s coexistence style of CDI hub architecture, it will become increasingly attractive to SAP clients and be a major player in the CDI hub market. Consider SAP’s MDM if you are making a strategic commitment to mySAP and NetWeaver, but be aware that it lags many other CDI hub products and you may have to wait until it has all the functionality that you need.

Siebel Systems

Siebel Systems, now owned by Oracle, had great sales success with UCM during the second half of 2005, garnering some big-name clients in financial services, telecommunications, energy and the public sector. However, some of that success was driven by the impending acquisition and Siebel lost some key UCM personnel during the months before the acquisition. Oracle now has the challenge of how to sell UCM in concert with Oracle CDH. It is positioning UCM as the main CDI hub offering for the Siebel CRM customer base and for service industries. Siebel will continue to support and develop UCM; it will release v. 8 by the end of 2006 and two interim releases that share new functionality with CDH to ease the path to the Fusion CDI product, which is due to make its first appearance by the end of 2008. The Nexus UCM initiative was canceled, superseded by the Fusion CDI project. UCM remains on Siebel’s application server. UCM’s data model is based on the Siebel application party model and has the benefit of verticalization, but lacks strong hierarchy management functionality for business data. In the data quality area, Siebel UCM can interface to all the leading data quality vendor solutions, as well as offer embedded technology from Identity Systems. Siebel planned to move to embedding matching and cleansing technology from FirstLogic in v.8. However, Business Objects’ acquisition of FirstLogic has made Oracle reconsider its options, and plans have not been finalized. No mention has been made of standardizing on Oracle DQM, but in the long term Oracle will need to create a strong Oracle-owned set of data quality services. In the middleware area, increasing integration with and use of Oracle Fusion Middleware are likely, although Oracle will continue to support third-party middleware, and this will include

the porting of Siebel Universal Application Network (UAN) processes across to Oracle BPEL Process Manager. UCM customers tend to use UAN for process integration and not make direct calls to a business services layer. During 2005, Siebel improved UCM's capabilities in the data survivorship and privacy management areas. The number of live references, including some large-scale, is improving. Consider Siebel UCM if you have substantial Siebel investments and increasingly see Oracle Fusion CRM applications and Oracle Fusion Middleware as a strategic direction. Consider migration to the Fusion CDI product after 2010.

Siperian

Siperian positions itself as a master data integration and management platform for building hubs containing customer and other related entities. Its Siperian Hub XT platform consists of the master reference management foundation, hierarchy management capabilities and a facility for managing associated activity data. Siperian's adaptive hub vision is strong on innovation and attractive to organizations wanting to express their own data models or build on a supplied vertical industry template data model with a high degree of flexibility. It is strong in modeling business data hierarchies. Siperian does not supply a business services layer, but it is introducing a framework for building business services to complement the chosen data model. On the data quality side, Siperian licenses matching technology from Identity Systems, provides integration with third-party cleansing technology such as Trillium, and provides some good data stewardship facilities. Siperian depends on third parties for data loading and middleware. Siperian continues to advance well in the pharmaceutical industry, with recent expansion into Europe, and has made progress in the publishing, manufacturing and high-technology industries. The company is starting to break into areas of financial services, where its flexibility and its vision for fine-grained security access and distributed hub architecture are differentiators. Most implementations are coexistence style, but Siperian has released transaction-oriented benchmarks to demonstrate its potential scalability and has established its first transactional hub references. Siperian is growing at a healthy rate, but

is still a relatively small company, with most success in the U.S. It is setting up a small presence in Europe, following its first sale there. In the long term, the company faces challenges as the CDI hub market consolidates and becomes increasingly dominated by the large infrastructure vendors. Consider Siperian Hub if you are in life sciences or more widely, including financial services, if you are looking for a coexistence or transaction hub architecture with strong data model and business services flexibility.

Sun Microsystems

Sun Microsystems has carried forward SeeBeyond's eView Studio and eIndex Global Identifier products as part of its Sun Java Composite Application Platform Suite (CAPS), which is an integration platform to build and manage composite applications in an SOA world. SeeBeyond had many years of experience in building EMPI, with some high-volume references. Sun is continuing that strong focus on EMPI with good momentum among healthcare providers and payers. Beyond healthcare, however, Sun has been slow to push a horizontal CDI or MDM message, although it is starting to talk about "Pragmatic CDI." This is a vision of CDI as part of a wider composite application proposition, which is the scenario where Sun has gained its CDI sales outside of healthcare. The eView Studio product is Java 2 Platform, Enterprise Edition (J2EE)-based and is flexible in terms of the different architectural styles supported, ranging from registry style (the sweet spot) through to transactional data hub style. It also enables a flexible data model approach and generates a complementary layer of fine-grained business services. It is more proven for consumer, as opposed to business, data. eView Studio includes Sun's probabilistic matching engine and provides a good range of data stewardship facilities. Other components of Java CAPS provide integration and BPM support. Sun is likely to continue its success in the expanding healthcare market, but will not make a significant impact on the wider CDI and MDM markets unless it makes more serious investments in sales, marketing and development. Consider Sun's eView product in the healthcare provider area if you are making a wider commitment to Sun Java CAPS or if you have an open-source strategy.

VisionWare

VisionWare is a small U.K. CDI hub vendor that has done well in the U.K. market. It has had particular success in the local government space, where it has shown a strong ability to respond to the needs of that market – for example, it provides single views of the citizen or the at-risk child. The company is expanding into other vertical markets, such as healthcare provision, law enforcement and central government, as well as through partnerships into the North American market. VisionWare's MultiVue Identification Server product can manage people, property and asset entities, and is based on Microsoft's .NET infrastructure. Microsoft has been a valuable partner and promotes MultiVue as its preferred CDI product in some markets. The fact that MultiVue is based on .NET, unlike most other CDI hubs, and tends to come at a competitive price relative to other CDI hubs, often leaves the field open for it in price-sensitive, Microsoft-oriented environments. MultiVue comprises a lightweight, but extensible, data model. It relies mainly on probabilistic matching algorithms, giving it an ability to quickly deliver results. It uses Microsoft SQL Server facilities for bulk loading, and v.2 (due in late 2006) will have a stronger integration with BizTalk Server. An increasing number of its customers are using MultiVue Web services interfaces to access the central index directly at runtime, as well as using middleware publish and subscribe mechanisms. VisionWare should continue to grow well in its chosen market niches. Its challenges are its small size, dependency on partners and the management of its expansion. VisionWare would face a major challenge if Microsoft introduced its own CDI hub product. Alternatively, VisionWare could become an acquisition target for Microsoft. Consider VisionWare's MultiVue if you are looking for a .NET-based CDI hub.

Note 5. External Reference Database

In this scenario, a marketing service provider (for example, Acxiom, Dun and Bradstreet or Experian) buys in and integrates customer data from many sources. The provider uses this data to build a trusted source of master data on the entire customer population in a geographic region. Access to this reference database is provided as a service, and organizations are able to match their customer data to the external reference database. Matching is usually in batch and sometimes in real time, and global identifications and links are assigned to the customer data. The purpose is for absolute identification. This style of CDI is not classified as a CDI hub because it does not provide a centralized, in-house, database-based system of record for an organization's customer data. It is seen as a valuable complementary offering.

Acronym Key and Glossary Terms

ABAP	Advanced Business Application Programming
BPM	business process management
CAPS	Composite Application Platform Suite
CDH	Customer Data Hub
CDI	customer data integration
EIM	enterprise information management
EMPI	Enterprise Master Patient Index Systems
ESA	Enterprise Services Architecture
LOB	line of business
MDM	master data management
PIM	product information management
SOA	service-oriented architecture
TCA	Trading Community Architecture
UAN	Universal Application Network
UCM	Universal Customer Master
WCC	WebSphere Customer Center
WPC	WebSphere Product Center
XML	Extensible Markup Language

Evaluation Criteria Definitions

Ability to Execute

Product/Service: Core goods and services offered by the vendor that compete in/serve the defined market. This includes current product/service capabilities, quality, feature sets, skills, and so on, whether offered natively or through OEM agreements/partnerships as defined in the market definition and detailed in the subcriteria.

Overall Viability (Business Unit, Financial, Strategy, Organization): Viability includes an assessment of the overall organization's financial health, the financial and practical success of the business unit, and the likelihood of the individual business unit to continue investing in the product, to continue offering the product and to advance the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The vendor's capabilities in all pre-sales activities and the structure that supports them. This includes deal management, pricing and negotiation, pre-sales support and the overall effectiveness of the sales channel.

Market Responsiveness and Track Record: Ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the vendor's history of responsiveness.

Marketing Execution: The clarity, quality, creativity and efficacy of programs designed to deliver the organization's message to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This "mind share" can be driven by a combination of publicity, promotional, thought leadership, word-of-mouth and sales activities.

Customer Experience: Relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups, service-level agreements, and so on.

Operations: The ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure including skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

Completeness of Vision

Market Understanding: Ability of the vendor to understand buyers' wants and needs and to translate those into products and services. Vendors that show the highest degree of vision listen and understand buyers' wants and needs, and can shape or enhance those with their added vision.

Marketing Strategy: A clear, differentiated set of messages consistently communicated throughout the organization and externalized through the Web site, advertising, customer programs and positioning statements.

Sales Strategy: The strategy for selling product that uses the appropriate network of direct and indirect sales, marketing, service and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

Offering (Product) Strategy: The vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature set as they map to current and future requirements.
Business Model: The soundness and logic of the vendor's underlying business proposition.

Vertical/Industry Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including verticals.

Innovation: Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes.

Geographic Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the "home" or native geography, either directly or through partners, channels and subsidiaries as appropriate for that geography and market.