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Oracle Data Hubs: "The Emperor Has No Clothes?"

Subtitle: **Considering Oracle's Data Hubs? Then Consider This …**

Monday, February 21, 2005

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Oracle Data Hubs. Do you know how many articles mention Oracle's customer data hub product each week? And already Oracle is pre-announcing other data hubs for citizen data, financial data, RFID data, etc. etc. This newsletter focuses on analysis of products that has not been rehashed *ad nauseum* in the press. We also provide the *story behind the story* that industry analysts such as Gartner/Meta and Forrester/Giga are unable to provide due to their internal editorial practices and retainer-based business relationships with the CDI vendors. And lastly, since our CDI Advisory Council has requested this, we will devote future space to ***data hub best practice strategies*** they must consider. The intent is to provide ongoing advice for enterprise data architects, CIOs, CTOs and CDI project leads in helping develop their CDI strategies – **independent, authoritative, and relevant analysis.**

- **What's All the "Hubbub" About Oracle Data Hubs?**
- **Are the Oracle Data Hubs "Ready for Prime Time"?**
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Something that you may not have realized from the trade press reporting frenzy is that **Oracle Customer Data Hub (CDH) is drawing yawns from serious CDI evaluation teams – unless the enterprise is an "all Oracle" shop.** We have not seen the product compete favorably in the 100+ evaluations we were a party to in the past 12 months despite Oracle's statement that they have sold 40+ in that same period.

BOTTOM LINE: **Oracle CEO Larry Ellison and president Charles Phillips have strongly emphasized Oracle's focus on customer data hubs. However, the CDI Institute believes Oracle will use its data hubs primarily to drive sales of Oracle CRM and ERP in the midsize enterprise market. Global 2000 enterprises seeking master data management for their customer data assets instead will continue to turn to other major CDI solutions providers such as: DWL, IBM, Initiate Systems, Siebel Systems, and Siperian.**

"Heads up" from the CDI front lines,

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DISCLAIMER – The info herein was obtained by conversations with users of Oracle's Customer Data Hub. The names of these organizations and individuals contacted were obtained via publicly available sources such as Oracle's web site, published Oracle user group proceedings, and IT industry trade press. No references were made available by Oracle despite repeated requests for these. It is our understanding that Oracle is about to release a new set of references to the world at large and to certain industry analysts. We suggest that these references be treated with the same courtesy but skepticism that awaits any "showcase" user of a "beta product". That is, these reference organizations are all major users of Oracle's products and need to maintain a good working relationship with their major IT vendors. As such, you should not expect any public reference of Oracle products to "rock the boat" by challenging the marketing assertions of Oracle's top executives. On the other hand, our job as CDI Institute research analysts is to ferret out the truth, rather than be yet-another-vanity-publisher that rehashes the PR and marketing of the vendor being discussed. We would also like to remind our readers that analyst firms typically have six figure relationships with IT vendors the size of Oracle. As such, they are also highly unlikely to challenge the marketing assertions of vendors which they have major financial relationships with.

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What's All the "Hubbub" About Oracle Data Hubs?

Oracle executive management is promoting the concept of "data hubs" vigorously, yet there is a dearth of references, or even success stories available. While Oracle's web site has some coverage of the data hub products, it lags in timeliness. And this is the state of affairs 14 months after Oracle announced "Data Hubs" and "Grid Computing" as the two big Oracle product initiatives for 2004-05.

There are three compelling reasons for Oracle to focus on data hubs in 2005:

1) **To stay competitive in the CRM market**. SAP and Siebel had their customer data integration (CDI) strategies well under way with SAP Master Data Management and Siebel Universal Customer Master respectively. Also both SAP and Siebel had well-regarded analytics products that Oracle tried to deflect by insisting that business intelligence was integrated within Oracle e-Business Suite and that there is/was no need for a separate data warehouse.

2) **To stay competitive in the database market**. Oracle needed to differentiate its RDBMS from Teradata, IBM DB2 and Microsoft SQL Server. Teradata has been busy with both CRM analytics and data mining and has been very successful in the high end of data warehousing with its Active Data Warehouse program. IBM recently acquired SRD for entity analytics. Microsoft is still stuck in the low end of enterprise scalability for its CRM products.

3) **To keep the stock price up**. Oracle needed to goose RDBMS sales as its apps business was floundering (pre-PSFT M&A). Its official financial statements proclaim that "We seek to be an industry leader in each of the specific product categories in which we compete and to expand into new and emerging markets." (10-K link) Many stock analysts believe not only must Oracle continue on its acquisition path, but it must also bring in mid-life kickers for its mainstay database business. "Data hubs" are part of the answer.

Are the Oracle Data Hubs "Ready for Prime Time"?

Through YE2005, the CDI Institute does NOT recommend that organizations outside the below two profiles take up Oracle customer data hubs:

- Sophisticated "Type A" IT organizations within very large enterprises
- Modest IT departments within midsize enterprises with major investment in Oracle's e-Business Suite (EBS)

Sophisticated "Type A" IT organizations within very large enterprises. Yes, there are several large CDH reference accounts who took the trading community architecture (TCA) data model product-as-a-framework several years and crafted sophisticated CDI solutions. These were organizations that saw the power of the TCA data model as it appealed to high tech vendors. These were also IT organizations that had the manpower, brainpower and budget to build out such a framework themselves and also understood the business advantage of being a development partner with Oracle. As such, they knew the risk of adopting such a pioneer product and took steps to insulate themselves from the possibility that the product might not perform or that a more strategic CDI solution might become available from a third party. Thanks to service-oriented architecture (SOA) development principles, these "type A" IT organizations have the ability to swap out the underlying engine if need be. However, these same enterprises have major business dealings with Oracle as technology partners and politically will be unlikely to make a move from their customized Oracle code base to a third party solution without compelling price-performance or reliability differences. More likely, they will migrate to the off-the-shelf data hub product as it becomes scalable to their requirements. In summary, **although their data hubs support millions of customers, the version of Oracle data hub that these very large enterprises have is not the off-the-shelf product being marketed.** The early adopter implementations may look very much like the current 11.5.10 version, and many of the capabilities these IT organizations customized are expected to be productized in 11.5.10 , yet there are not production sites using the new version.

Modest IT departments within midsize enterprises with major investment in Oracle's e-Business Suite. Many of the SMB references we spoke with also had the precursor product (not the currently shipping product) and as such gained early competitive advantage in embracing the basic principles of customer master data management. At the same time, these IT organizations found themselves hard put to justify the effort to migrate to the off-the-shelf product during the next 18+ months. These businesses believe they are benefiting from a customer data integration strategy in terms of reduced manual customer address processes, better quality data leading to cross selling and increased customer satisfaction. These same users typically did not perform an evaluation process as they are broadly committed to Oracle solutions, especially the e-Business Suite (and Oracle's On Demand ASP-style application hosting).

For a complex and powerful product such as an enterprise CDI solution to be generally usable, the product must have references and training:

- **References.** We have spoken with more than ten enterprises that either: (a) have Oracle's CDH "in production", or (b) gave the Oracle product a serious evaluation. Everyone in production is a satisfied user, with the usual hopes for eventual better performance, certain features on their wish list, etc. These were candid off-the-record discussions without Oracle personnel present. However, it should be noted the majority of these sites are NOT running the current product version. Instead they were running pre-GA versions with plans to migrate the off-the-shelf product within the next 18+ months. **These users are NOT truly references for the currently-shipping product (because it shipped less than a year ago), but rather references for the "concept of Oracle CDH" and their "faith in Oracle to deliver a quality strategic product in the near term"**.
- **Training.** Users overwhelmingly cited a lack of official training available from Oracle. If this were a strategic product such as Oracle management states, you would expect there to be formal training available from Oracle University given that the product was launched with full fanfare at Oracle Application World in January 2004. **There is no such formal user training available**, and the users we spoke with are not aware of dates or commitments for such training from Oracle. We are aware of TCA and Oracle Customers Online (OCO) training via Oracle University but there are no plans for data hub training at this point..

How does Oracle Rank Against the Other Major CDI Solutions?

We have been involved in 100+ CDI evaluations over the past year, and as a result we have been evolving a set of "top 10 CDI evaluation criteria" through our briefings and workshops with IT organizations around the world. Our client experience shows that in most cases there are ten key criteria categories that an IT organization needs to focus on during its assessments of CDI solutions. For this field report, we will highlight only several of the below top 10 evaluation criteria.

1. Data model
2. Business services
3. Identity management
4. Data management
5. Architecture
6. Infrastructure
7. Connectivity

8. Analytics
9. Developer productivity
10. Vendor integrity

Data Model. Oracle's data hubs actually work by splitting out the trading community architecture (TCA) data model from the Oracle e-Business Suite and embedding it in a new standalone database (FYI = as did Siebel with Siebel Universal Customer Master). In fact, TCA has been the underlying data model since 11i; as of 11.5.10, enhancements were made to enable TCA to not only function as the EBS customer model, but also as a standalone data model for non-Oracle applications and systems. Oracle gets high marks for its TCA data model. Especially from high tech manufacturers who have many of the same data modeling issues that the Oracle internal IT organization had. The main issue is that the TCA data model does not currently have specific support for other vertical industries such as Telco, Healthcare, and Financial Services (nor other business domains beyond customer master. In recent discussions with Oracle product management, we were advised that Government, Financial Services and Telco data model extensions are "on the roadmap" (via "attribute groups" concept), with Healthcare to follow.

Business Services. Oracle CDH currently offers the same level of business process granularity that products such as Siebel and DWL provide as web services – such as IDENTIFY CUSTOMER or RETIRE CUSTOMER. The current CDH business services model consists of 50+ public PL/SQL (or Java) APIs and their corresponding web services, with "logical web services" planned for 2H2005. Currently, CDH raises business events via Oracle Workflow (bundled with CDH). By YE2005, we expect TCA web services may be invoked from within a BPEL execution engine, such as Oracle BPEL Process Manager, to update a master customer record as part of a process flow definition. The applications workflow engine that is currently required to link applications' CDI services is gradually being supplanted by workflow provided by Oracle's acquired Business Process Language product (Collaxa BPEL).

Identity Management. CDM provides an native data quality tool called DQM (Data Quality Management). DQM is a sophisticated matching engine that finds "similar" records based on a set of pre-defined and configurable match rules. DQM is used for Searching, Duplicate Prevention, and Duplicate Identification. As stated, DQM is a native tool that comes free with the TCA data model (unlike the solutions of other vendors who partner with other vendors to use a non-native, cost-for-use solution).

The TCA model comes with a native cross reference mapping tool called Source System Management (SSM). SSM allows for entities within TCA to be cross-referenced with a Source System and Source System ID. Note that any TCA entity may have multiple cross references to the same or multiple systems.

Data Management (Scalability). The off-the-shelf Oracle CDH product's scalability is not publicly confirmed, i.e., it is unclear whether it can scale well enough yet for Global 2000 enterprises such as the larger banks, insurers, healthcare, telcos, government agencies, etc. with their millions of master customer records. However, we expect the performance to ramp up well over the next 18 months as the user base grows and the off-the-shelf product is fine-tuned by Oracle. A recent Oracle internal benchmark made available to analysts showed that "the TCA Customer Import Process is comfortably capable of handling high volumes of the order of 1 million rows per hour with a relatively small number of parallel threads". This benchmark utilized the multi table feature supported by Oracle 9i which enabled preservation of foreign key references across tables without resorting to PL/SQL. On the positive side, integrated data quality management (DQM) is provided as well as out-of-the-box integration with D&B (near term we expect similar partnerships with Firstlogic and Group/1). Although one criticism we hear is that such "database integration" too often causes the IT organization to jump into C++ and PL/SQL on the server side. Trillium also offers an out-of-the-box adapter to Oracle's address validation platform.

Note that most early adopters of Oracle's product-to-be typically require the data hub to handle no more than 10K to 100K customers. This is contrast to other solutions such as IBM's Client Information Integration Solution and DWL's Customer which have production installations supporting 10s of millions, and even 100-200 million master customer records. Due to Oracle's reference policy, we are aware of but could *not confirm: Dell (200 million customer records), Cisco (2+ million) and Telecom New Zealand (3+ million). Again, it should be noted that these sites are not running the current production CDH product yet.*

Analytics. One of the reasons Oracle might be accused of rushing CDH to market is the success that Siebel Systems has had with Siebel Analytics the past 18 months. In 2H2005, we expect Oracle will provide customer profitability, lifetime value, satisfaction, loyalty, and retention metrics as part of their Daily Business Intelligence offering. Also we expect a customer data mart that leverages the "single source of truth" (SST) generated by CDH and blends this SST with transaction summary information from a data warehouse to enable customer value assessments. Furthermore, while Siebel has OEMed Angoss data mining technology, Oracle acquired the Darwin data mining technology for several hundred million dollars in the late 1990s. We expect Oracle to combine these data mining technologies n with the data hub's SST to predict meaningful clusters or segments for grouping "similar" targets.

Vendor Integrity. Unfortunately, there are no references available that are using the current shipping product. Either the reference is "Type A" who took the TCA framework and customized it dramatically, or an SMB who likewise went into production with a customized precursor of the current product. We acknowledge that there is a similar lack of production references for master customer data management with the SAP and Siebel products, however, those vendors are (more or less) forthcoming about the state of their references. Our research identified twenty users of the Oracle product. This list is available upon email request to: editor@tcdii.com.

Given the complexity of installing and customizing a CDI solution, the systems integrators have generally jumped on board with the CDI concept. This is confirmation of the fact that there will be a tremendous uptake in CDI solutions during 2005-06. (Note - mid-2005, the CDI Institute will review and rank the systems integrators.) As with any relatively new technology, no matter the size of your IT organization, it is often the case that outside consultants are desirable for the usual business reasons. Oracle has often kept a lot of this SI business to itself via the Oracle Consulting Services group for database issues. However, to grow its application package business, Oracle realized that it needed the support of the major SI channels as did PeopleSoft, SAP and Siebel. Not that Oracle was tremendously successful in selling its applications to the Global 2000 enterprise, but again was mostly successful in the midsize enterprises and at the division level within large corporations. **It is good news for organizations considering CDH that the SIs are indeed attending official Oracle training classes in selling and supporting the data hubs. The same SIs that made a major business in installing and customizing Oracle application packages (e.g., Accenture, BearingPoint) are also ramping up to support CDH**. And we also see CDI specialty vendors such as Dun & Bradstreet providing SI support for the product.

For a detailed discussion of the above evaluation criteria and more, **see our recent report titled "Customer Data Integration: Market Review & Forecast for 2005-2006**" (download via this link).

Pricing Update

In our experience, most organizations do not know what they actually paid for the CDH product. In many cases, early CDH sites received the product more-or-less for free as co-development partners. In the majority of the other scenarios, the product was bundled in as part of an enterprise CRM or ERP deal – quite often added at the last moment at no extra charge. (NOTE – Oracle customers don't pay for CDH if they are implementing it in the same instance as another EBS application.) In certain competitive situations with other CDI solutions, the product is given away due to Oracle's desire to grow account revenue over the long term. That is, once you start using a product, at some point you become committed or locked-in, and the vendor charges either 20% annual maintenance fees, or one ends up purchasing the product as part of the next deal or upgrade. Jaded IT managers we know always question the cost of "free" software.

The Oracle list prices now reflect the new packaging for the former singular product with the new family known as "Customer Data Management" or CDM:

- **Customer Data Hub** – Priced at US$100K per processor; however, this pricing is NOT in addition to the former "per user" pricing of $5K or so per TCA business application user. Basically, the only time one pays for this is when the enterprise does not have any Oracle application packages at all. When upgrading from TCA, for example, there is no charge.
- **Customer Data Spoke** – Usage-based pricing of US$100K per integrated product/DB/environment (i.e., per Siebel or SAP application).
- **Customer Data Librarian** – Per user pricing of US$6K with minimum of 5 users.
- Notes
    1) TCA is now free; prior to this repackaging, TCA was regularly priced at US$5K per user for any application developed by the enterprise which was based on the TCA data model
    2) DQ engine has always been free as part of the TCA infrastructure and is now bundled with Customer Data Hub
    3) Oracle Workflow comes free with CDM and provides high-performance publish-subscribe connectivity

What's Next for Oracle CDH?

For starters, the CDH product is now officially part of a broader product family – Oracle "Customer Data Management". The vision is compelling, as we all agree; while the current reality trails the vision. There are a number of areas where Oracle needs to do its homework according to the early users of the pre-11.5.10 product.

Migration Tools. Given the number of Oracle Customers Online (OCO) installations serving as references for CDH, and their trepidation towards migrating into the off-the-shelf CDH product, Oracle would do well to provide training, professional services, and/or utilities to ease this upgrade.

Better Systems Management. Currently many users have their CDH product running on the same Oracle instance as their Oracle Applications. Keeping patch levels synchronized and harmonized is a major task. Given the vital nature of customer master data, and the need to ensure its high performance and availability, Oracle recommends that users run CDH and the applications on separate Oracle instances – both for performance tuning and for maintainability.

Training. As noted previously, it is noteworthy that while Oracle proclaims this 12+ month old product to be in General Availability status and a strategic product, there are as of yet no training courses available from Oracle University.

D&B Integration. Oracle has a very close relationship with Dun & Bradstreet for online DUNS-enabled data enhancement, yet a majority of users still report problems with the Oracle standard functionality that leverages this data service provider.

Better Scalability and Online Performance. Although Oracle is claiming 1,000,000 customer records per hour (link), we have found users still chafing re: overall performance.

Unmerging. Currently, CDH only supports the simplest of business cases for the unmerge process. For example, when a customer divests itself of certain divisions there is no straightforward means of unhooking subsets of a customer from the master – it is an "all or nothing" proposition with manual intervention required as well as the need to delete the entire hierarchy and re-add that business and its new entities.

BOTTOM LINE (Redux)

Oracle's Customer Data Hub will be a good CDI solution for midsize "all Oracle" installations. For most other enterprises, The CDI Institute's current view is "The emperor has no clothes" in that the product is not proven nor packaged as an off-the-shelf software product and will be not be so until YE2005. Large-scale enterprises in particular will need to closely monitor product scalability as CDH currently is performance-challenged to manage customer records in excess of hundreds of thousands. Additional business scenarios where CDH can provide long term value include:

- Enterprises that have not significantly invested in other enterprise suite applications (SAP, Siebel) may apply CDH as the foundation for an enterprise CDI solution – which in turn can provide the foundation for integrated CRM
- Enterprises with a mostly homogeneous enterprise application portfolio can still benefit from the centralized data quality processes arising from a standalone Oracle CDH – as well as the ROI derived from an enterprise CDI solution
- Enterprises with major investments in multiple enterprise suite applications should not consider Oracle CDH unless the plan is to consolidate around Oracle's TCA data model and workflow for future business process integration – and if so, then to be mindful of the costs of multiple overlapping middleware (app servers, integration brokers, EAI) required to integrate with CDH in such a way

Appendix A – History of Oracle Customer Data Hub

Oracle is notable for not being innovative but rather opportunistic in its product plans – i.e., when a software market begins to accelerate, in classic marketing style Oracle will hastily announce product in that space and then take its time to deliver meanwhile causing some slippage in the sales momentum of the early arrivals in that space.

One could say that is true also for Oracle's CDI product family, but there is an added twist that is important to acknowledge. That is, Oracle internally has the same problems as a software conglomerate that many of the Global 2000 enterprises have endured regarding fragmented customer databases and growth via acquisitions. Over the past 20 years, Oracle has grown from a small consultancy (Relational Software, Inc.) to become one of the largest IT vendors and its internal systems failed to keep up such that internal customer databases multiplied frantically.

In addition, Oracle's product set suffered from lack of a common technology base and common data/process model – remember SQL*Forms, SQL*Application Foundation and other dead-end 4GL paths. (This was rectified with the Oracle 11i release as all EBS applications moved to a common data model via TCA.)

For example, Oracle's call center application was purchased from Vitality, its manufacturing from DataLogix, its financial services applications from Treasury Services, Inc., etc. (And now its Employee Management System from PeopleSoft). Each of these application packages was developed with differing 4GL technology bases, different data models and as a result Oracle (more so than PeopleSoft or SAP) could not deliver on its evangelized E-Business Suite message of hyper integration. (That is, until circa 2000 when 11i with its common data model became available).

Appendix B – References

- CDI Institute MarketPulse™ In-Depth Report – CDI: Market Review & Forecast for 2005-2006
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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 an 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 450+ 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 2H2005. 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