Avoid the Tower of Babel by Structuring Oracle® E-Business Suite to Remove Silos

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Large enterprises face significant challenges getting disparate parts of the business to work together. Inaccurate forecasts, contradictory information, and the inability to address compliance requirements result in increased costs and risks. Multiple instances, different charts of accounts, and a lack of governance and control result in silos of information known to few—but not available to all—and multiple sources of truth, resulting in decisions made and corporate actions taken based on misinformation. This article examines how silos impair financial operations, how they create barriers to growth and innovation, and what you can do to remove them.

Root causes of Silos

Building a cohesive enterprise software environment is extremely complex. Most large companies depend on hundreds of applications to run their business. Many of the systems automate similar business processes and utilize the same data. But even within a common system, i.e. Oracle® E-Business Suite (EBS), differences in configurations, duplicate data, and a lack of common structures and definitions result in inconsistent business processes and data that is "lost" to the organization because of the expense and effort required to retrieve it. These silos—information locked in disparate databases, separate ledgers, different operating units, and so on—are perhaps the biggest contributors to EBS complexity, making trusted and timely information inaccessible to many in the organization who need it. As Michael Vizard says in Solving I.T.'s Biggest Challenge, "…very few organizations have a real handle on the relationship between a business process…and the underlying I.T. system that powers [it]…And worse yet, if they did…they would probably discover that they have four sets of different systems handling overlapping business processes."

Silos that exist within an EBS environment originated in several ways:

- Early implementations were limited both by available technologies and the understanding of how a global business could or should operate. Companies allowed different divisions of the business to set up their operations so that each Division Head or General Manager could establish controls and operating standards to meet their own requirements. The ERP systems had separate ownership resulting in "silo" solutions with little synergy and little integration. Over time, integration was implemented in a fragmented way, leading to even more complexity and more isolation. Corporate only cared about having a consolidated financial statement (that was often pulled together on a spreadsheet and had little resemblance to the detailed transactions in EBS).
- The company grew by acquisition, adding new EBS instances with each acquired company. In the best scenarios, the acquired company was added as a new ledger, keeping the original chart of accounts or calendar. Consolidation was performed at the GL level, or through a financial consolidation software package, or through spreadsheets.
- The original configuration did not adequately support the current business, so the original set up of a ledger or an inventory organization or chart of accounts was abandoned (along with the history), and a new set up was defined without an efficient or effective way to cross-walk between the original structures and the new structure.
- Different departments tackled requirements or problems on their own, rather than working together to find a solution that fit everyone's needs.
- Corporate standards, governance, and controls were not in place, so many changes were done on-the-fly with little attention to the impact of the change on the rest of the organization or documentation of what changes were made.

- Information sources were in different formats without naming standards making integration difficult.. That means that there were different names and definitions for the same thing, different upstream and downstream requirements, and different parts of the organization responsible for the support and maintenance of the source data.

Negative Impacts of Silos on Performance and Agility

With the proliferation of silos and channels comes the problem of knowing whose version of the "truth" is correct: where did it originate, what data supports it (is it complete or accurate?)—which combine to lead to a seldom asked question—how trustworthy is it? Lack of confidence in the quality of data impacts operations, financial performance, increases resource, legal, and audit costs, and increases risks associated with regulatory compliance.

One example that comes to mind, at a basic level, is vendor management. A client who was maintaining the same vendor within multiple instances had a circumstance where they had a significant dollar credit memo with that vendor that was remaining unused. At the same time, this same vendor was being paid on other invoices maintained in another instance—a cash flow nightmare. Another common example of impairment due to silos is reconciling intercompany transactions. If all transactions are being maintained in the same instance, then intercompany transactions are reported correctly in real time. If not in the same instance, intercompany transactions can get out of synch resulting in understatement of expenses, or overstatement of income during the interim between full-blown instance reconciliations. At best, this is corrected during consolidated reporting, but at worse, these differences may be missed and compound, possibly resulting in misstated financial reporting.

In addition to these examples, poor data quality increases the risk of potential failures in other initiatives including business intelligence and CRM projects. Data quality problems are not just limited to inaccurate data. Corporate performance can be affected by executing the same operations multiple times in multiple environments, made worse when an organization lacks the ability to correctly consolidate operations or reconcile from one part of the business to another. These silos create inconsistency (multiple versions of the truth) and redundancy (duplicated efforts), resulting in additional management and compliance costs, and barriers to accurately tracking financial progress, growth and innovation. [i]

For decades, commercial and government enterprises have been held back from achieving their strategic goals in part because information silos frustrate business planners and decision makers with poor-quality data, inconsistent semantics, inconclusive results, excessive duplication, and lack of relevancy, among other concerns. [ii]

Let's look at an example of an EBS user. This company (referred to as XM) had 4 different EBS instances. A profile of the different instances is below:

Instance	A	B	C	D	Distinct
Release	11.5.10.2	11.5.10	11.5.10.2	11.5.9	**-**
Size (GB)	1,425	548	61	96	**-**
Languages	4	2	1	1	**4**
Sets of Books	104	48	1	30	**183**
Calendars	10	7	1	1	**19**
Charts of Accounts	40	43	1	18	**102**
Legal Entities	120	48	0	47	**215**
Operating Units	121	49	0	47	**217**
Inv Orgs	137	50	1	48	**236**
Modules Installed	9	17	4	5	**21**
Security Rules on Value Set	13,012	300	15	153	**13,480**
Security Rules X Responsibilities	17,350	445	6	75	**17,876**
Cross Validation Rules	86,845	39,925	25	165	**126,960**
Currencies	56	28	1	28	**64**
EBS Users	43,986	30,494	247	3,023	**N/A**

In addition to trying to operate from different versions of EBS with different modules installed, XM had multiple Sets of Books, Legal Entities, OUs, and Inventory Orgs that were redundant and configured differently. The following table shows those objects in each instance that could be logically consolidated into other objects (and therefore eliminated as separate objects) so that XM can conduct operations consistently and still comply with local statutory and regulatory requirements.

	Redundant Objects					
Instance	**COAs**	**Calendars**	**SOBs**	**LEs**	**OUs**	**Inv Orgs**
A	40	9	46	65	66	83
B	43	6	12	13	14	15
C	1	0	0	0	0	0
D	18	0	6	24	24	25
Total	102	15	64	102	104	123

With the multiple charts of accounts and calendars, it was virtually impossible to generate accurate and transparent financial results. In E-Business Suite R11i, there is no easy and no transparent way to operate across different sets of books or between instances. As an example, something as simple as intercompany transfers can be needlessly cumbersome. Instead of the ease of doing entries within one instance, a multi-instance EBS set-up means that the transactions are accounted for discretely, with no reference between the originating or recipient company. At best, this could cause errors where timing and or amounts are not consistent. This could result in overpaying or underpaying taxes, VAT, or other taxes due to incorrect regulatory reporting. Worse, because of the high number of manual reconciliations, intercompany revenues could be outright misstated and not properly eliminated on consolidation. Other problems that could arise are difficulties in providing organization wide management reports. When there is manual reconciliation having to be performed to get what should be readily available performance measures, time is lost and the information losses it decision usefulness. Instead of management being able to react quickly to changes, operations can become a series of reactions to late arriving information.

Each operating unit has individual freight carriers, matching tolerances, approval hierarchies, supplier terms, and contracts. With a multitude of operating units, it is difficult to determine how much business is conducted with a particular supplier, difficult to determine the enterprise cost of managing and maintaining different supplier relationships, and difficult to determine the burdened costs of different

inventories. Within a multi-org environment, much of the data must be set up by operating unit. While there are some advantages to having a multi-org environment, especially in regard to security, there are limitations that prevent obtaining an enterprise view of the data, especially the ability to leverage supplier relationships. By consolidating operating units to provide an enterprise view of the data, an organization may be able to reduce the number of suppliers or negotiate with current suppliers to obtain larger discounts and change payment terms—each of which contributes major amounts of money to the bottom line.

A silo mentality increases complexity, duplication of efforts, and different versions of the truth, all of which compromise the reliability, quality, and accessibility of vital information. In addition, silos increase operating costs substantially. These costs take the form of multiple license fees and support contracts for the same applications. Costs of silos also accrue because the technical differences among diverse implementations require the hiring of experts to create, implement, maintain, update, integrate, and secure the different applications as well as making all needed adjustments to systems that interface with them. The costs mushroom with the need to maintain multiple backup, restore, and replication functions with specialized hardware and software requirements.

The conflicting data sources, poor data quality, and higher costs prevent real-time information sharing, the inability to locate the right information, and the inability to extract data for accurate business intelligence, or to make organizational changes. For example, if the XM company mentioned above were to sell one of its product lines to a competitor, it would first have to extract all data related to that product line from each of the instances, from multiple sets of books, and from multiple operating units. If the definitions of the data are not the same, translation must occur in order to determine what data is relevant in each of the 4 instances. That would involve comparing different item numbers and descriptions for each of the products in that line. Second, the related data must be associated with every order, invoice, bill of materials, and payment across every operating unit. Next, the revenue, costs, and inventory valuation must be reconciled for every transaction with a different chart of accounts so that the accounting tallies across sets of books and the detail is available for the auditors and for the due diligence process. The process of separating the data is expensive and time-consuming, and it may adversely affect the valuation given for the sale of the asset.

Eliminating Silos in EBS

Bridging the silos starts with identifying the information that exists in the organization, and then determining what information needs to be shared and what information, due to regulatory requirements, must be maintained separately. In order to effectively eliminate silos, it is also necessary to identify common business processes in the organization. Any efforts to eliminate the silos must be championed from the top of the organization by someone with authority, a budget, and an ability to share the vision of a connected enterprise. Often driven by the CIO (Chief Information Officer), the efforts to remove silos must include defining clear responsibilities, especially for the business process owners. Maintaining the link between the business and the data needed to support the business processes creates opportunities to get the right information to the right people at the right time in order to enable better and more intelligent decisions.

Getting the Organization to Work Toward Common Goals

Many organizations resist integrating information silos. The value of information sharing must be communicated as a key enabler to open markets, improve transparency, and reach customers. Shared data of good quality can be the thread that unites the business community with a common purpose and mutual trust among those who need the data. The IT department can ensure buy-in by the business by aligning the data quality objectives to key business goals. Organizational change methods employed early in the process minimize the risk of push-back and reverting back to old "siloed" data and processes. Lessons learned include using an external consulting firm to provide a methodology, facilitate discussion, address issues, and remove some of the internal political barriers to shared data and common processes.

Starting a Data Quality Initiative with Oracle E-Business Suite

A data quality initiative is not just about Master Data Management (MDM). MDM historically has been defined to include customers, suppliers, employees, and products – the information that is critical to the business' competitive position and the data, as an information asset, that distinguishes one company from another in a like industry. Organizations, sensibly, place a very high value on the quality of their master data, but having consistent master data alone does not ensure that the business will be able to operate in a complete, consistent, correct, and transparent way. In order to ensure this level or transparency and agility, other data types and structures need to be included in the context of enterprise data. For example, having a common structure for a product doesn't necessarily include having common units of measure. If the reference data in various parts of the system allows a user to select "gram", "gr", and "g" from a list of values, there is an inconsistency in how orders are placed, how products are labeled, or how a bill of materials is constructed. If a transaction is recorded differently (with a different chart of accounts) or in different systems, or if costing is done differently for each of the subinventories, then operations are not consistent, economies of scale are lost, and reconciliations are required. The same happens if there are disparate roles, responsibilities, and levels of authority among jobs or positions with the same title. If data is housed in different systems or different instances, then the view of the enterprise data is not complete.

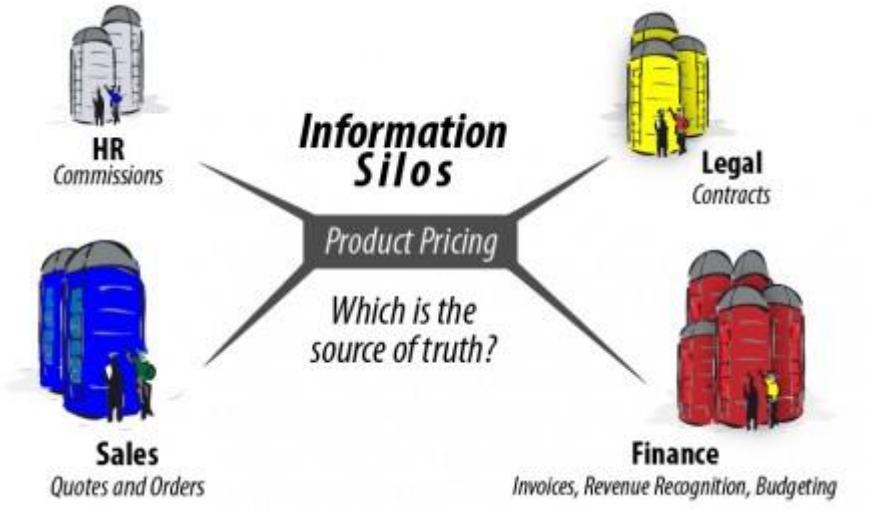
A crucial aspect of starting an effective data quality initiative in EBS is expanding the concept of MDM to include consistent reference data, consistent underlying data structures (such as calendars, organization units, ledgers, or charts of accounts), and even the elimination or control of spreadsheets as vital to ensuring the accuracy, accountability, uniformity, and ultimately the quality, trust, and usability of enterprise information. E-Business Suite lacks the capability to make changes to data structures in this category (as do other ERP systems), but there are software tools developed specifically for this purpose that assist in driving toward the concept of a single, global source of truth that is complete, consistent, and correct.

Begin with a Plan

Determine the information components that will need to work together. These include the data, the applications, and the business processes. This plan ensures that each of the components is aligned with the business, and that data quality is focused and prioritized. After there is a plan, create the business

case and the metrics in order to communicate the value to the business, and determine whether the efforts are successful.

Figure 1: Business Process Information Silos for Corporate Product Pricing Data



Define the Scope and Articulate the Expected Business Results

Understand the information assets of the organization: what is in scope, and what is not. Focus on the information that is most critical to the enterprise's business strategy. You may need to take an inventory of each EBS instance, the patches, the configuration, and the data that is to be shared along with the upstream and downstream systems that feed into or out of the EBS instance. Identify the key stakeholders, the parts of the business that will be involved in the initiative, and their levels of participation. Identify the actions and potential barriers that need to be considered when planning for and governing a data quality initiative. Develop the list of what is to be shared and what needs to remain with local controls. Focus on those information assets that are critical to supporting enterprise business strategies. Engage the business to develop an effective governance framework and to develop consensus.

Execute, Implement, and Manage

Focus on the fact that the information contained in your EBS environment supports strategic enterprise initiatives that require that complete, consistent, and correct data be shared across multiple business processes and geographic locations, and it must be governed responsibly. Define clear governance processes that engage stakeholders and still provide the ability to share a cross-enterprise view of both processes and information.

The first part of any data quality effort should be to ascertain the owner and original source of each type of data in an information flow. Only this single source of truth should be accessed for that data by all the other organizations in the system. It is also important to pay attention to the management of metadata, because metadata defines the architecture and properties of the data. Analyzing the metadata reveals the

lineage of the data and thereby provides transparency into common data and processes, allowing them to be changed or modified in a consistent way when the ERP system is re-configured.

Organizations need to consolidate systems and structures that provide data for similar business processes, identifying and resolving duplicate and incomplete data so that data is entered and updated consistently in only one place. Following this and the advice listed above, companies will find that their EBS will help—not hinder—their operational performance and growth potential. Some of the fundamental concepts included in managing shared information and standard processes include consolidating multiple instances where there are redundant processes and data into a single instance. Once the instances are consolidated, it is time to standardize on the common data structures that are used by all modules (i.e. chart of accounts, calendars, definition of system items). Once common structures are in place, an evaluation must be done to determine the distinguishing characteristics of each business group (e.g. different legislative codes, regulatory requirements) to determine how many business groups are required.

Next, unique ledger (or set of books) requirements should be assessed. Now that the charts of accounts and calendars are the same, different currencies, accounting methods, or document-sequencing requirements will determine how many ledgers need to be set up. A ledger may be a group of companies with a common legal structure. Within a ledger, different legal entities may be represented by distinct balancing segment values and have their own balance sheets. The legal entity level determines the taxes and ownership of bank accounts, and is the level at which intercompany processes are transacted. At the transaction level, establish the number of operating units required. Since operating units are not governed by legal or statutory requirements or currency, this is where you have the opportunity to uncover synergies between business processes; you have flexibility to structure the organization to gain operating efficiencies through shared services. Each operating unit controls setups including discounts for suppliers, credit limits for customers, and responsibilities for users.

When evaluating the requirements for separate operations, try to get different groups within the organization to agree on the operations that can work together to leverage purchasing and provide better service to customers. Finally, decide on inventory organizations and subinventories to maximize supply chain efficiencies, consolidate warehouse space, and reduce logistics costs. After the base configuration is restructured and the silos eliminated, then evaluate security requirements, define responsibilities, and add security rules and cross validation rules to limit data access as required.

Measuring the Results

Define a baseline for the organization against which you can measure the success of eliminating the process and information silos. This is the foundation for achieving results that are sustainable and can be communicated to the business community.

The baseline should consist of concrete metrics for all operating costs, including measures of days sales outstanding, days to close, number of manual adjusting entries, average number of invoices entered per month, number of payments made, number of discounts taken (and dollar volume), average daily cash-on-hand, number of allocations, intercompany entries, cross validation rules, security rules before the restructuring, etc. Measure the resource changes in terms of the number of personnel who are able to perform value-added activities instead of cumbersome manual activities like adjusting entries, the

reduction in close times for each of the subledgers and for the monthly close, the reduction of allocations, and the increase in number of invoices and payments processed in the same amount of time. Measure the reduction in license, HR, and consulting fees for routine system maintenance (not the one-time silo-busting effort). Consider surveys that evaluate less easily measured and often overlooked benefits of eliminating the silos – the finance team won't be as frustrated with the monthly grind, customers will receive better and timelier service, and, in general, the team will work together consistently. Because employees are aware that processes are being improved and key performance measurements are being collected, more people are taking personal responsibility for their part of the close process, or for achieving results.

Eliminating silos within Oracle E-Business Suite saves money, improves processes, adds value, and creates an environment of complete, consistent, and correct information.

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[i] Van Decker, John, Friedman, and Gomolski. CFO Advisory: Data Quality Overview. July 29, 2011. Gartner Research ID Number G00214157. Page 4.

[ii] Newman, David. Overcoming Silos: Evolving From Stand-Alone Information Architectures to Shared-Information Architectures for the Emerging Data Economy. Gartner Research ID Number G00213344. June, 2011.