

BWH News Letter

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The Most Important Piece of Documentation in Your IT Department

There are very few businesses today that do all their IT development internally. Most often, organizations have purchased a combination of an ERP Solution and a variety of point solutions for specific functions such as warehouse management, point of sale, or transportation management. There may be no in-house application development at all, or in-house solutions are integrated with the purchased applications.

Much has been said about application integration and much technical effort has been expended to build "data busses" that allow different applications to plug into the flow of transactions within an organization. By plugging into the data bus, applications from various sources can all "hear" an inventory adjustment transaction and react to it according to their individual requirements. This is true for all the transactions that are transmitted along the bus. A better term for some busses might be "bridge". These types of busses not only store and forward the transactions, they also have the ability to enhance or transform the transaction so that it contains additional data or is in a format acceptable to more "listeners" on the bus.

So if we have the capability to convey transactions and transform them if necessary, what is the big challenge with data integration?

Communicating between applications is very similar to communicating among people. Each person comes to a conversation with their own perspective of the world. Words, just like data elements, don't mean the same thing to all the listeners. So when applications begin to communicate, the first thing business and technical people must do is make sure that they share common definitions of the data. This is often left to the technician who goes through the two applications comparing field sizes and precision to understand what capabilities exist. One application may carry cost to two decimal places and another uses four. Is this a show stopper? Does it require a modification of one of the applications? What is the business reason that one application developer thought two

decimal places were sufficient and another planned for four? These are all questions that need to be answered, but not by the technician. The technician needs to convey the requirements of a new application to the businessman and together they must decide what corrective action must be taken.

There are other ramifications when an organization mixes applications from different developers. Screen and report headings may be different. One application may call it "item number" and another application may call it "item code". Worse, "price" might mean cost in one application and retail in another. These differences can be an on-going source of confusion within and between organizations.

This is where documentation becomes important. Users and technicians need a common source of "meta data" which describes all the values that may be stored or reported by the IT systems. This is the "Data Dictionary" of an organization. Ideally, the data dictionary will be self sustaining. If the organization uses relational data bases, the data base will have its own catalog to describe all the tables in the data base. Most of these catalogs will allow extensions to their proprietary data so that reference to a central dictionary can be maintained. The business organization must work with their technical department to maintain the central data dictionary.

So what needs to be in the central data dictionary? First of all, the business and technical people should agree on the field sizes and level of precision (decimal places). It may be necessary to have multiple definitions for field size depending on the aggregation level. Thus "sales" for a single store is a much smaller field size than sales for a whole company. The challenge with precision is that it may be necessary to mix levels of precision because of category differences. Case cost is usually dollar and cents, but variable measure items may need to carry cost to four decimal places. The central dictionary must be sensitive to both these issues and clearly indicate the circumstances for both.

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Besides the technical issues, the central dictionary must answer the business questions. For our example before, when we talked about the definition of "price", the business has to decide what it means. A simple decision could be that price is not a term the business wants to use in their conversations. Instead, they will only use cost and retail. This eliminates the ambiguity and for various applications "price" can be cross referenced to either cost or retail depending on what it means in that application. This kind of implies one of the primary features of the central dictionary. In addition to having the standard data elements of the organization, it contains the data elements of all the various applications supported by the organization. The first step in integrating a new application is to cross reference its data requirements to the central dictionary.

Another feature of the central dictionary should be the ability to both create data definitions and load data definitions from various sources. This means relational data base catalogs, software source code libraries, and XML Schemas. The basic goal is to drive all applications off of the central data base in order to create a common vocabulary across the organization from both a technical and business perspective.

Data dictionaries have been recognized by several standards organizations as critical to conveying the terminology for their industry. In the Supermarket Channel, the Association for Retail Technology (ARTS), the Global Commerce Initiative (GCI), and GS1 are all working on various dictionaries in conjunction with process management and EDI. These may also be referred to as Glossaries and include a lot of non-data related terminology. XML schemas have been developed by GS1 for communicating business transactions. A schema contains the technical definition for data elements but does not always convey the business implications.

Some of the details in the central dictionary could be:

- Field Name
- Aliases or synonyms

- Default label
- Description
- Owner (what application)
- Owner (what business unit)
- CRUD (what applications:
 - Create
 - Reference
 - Update
 - Deletea data element)
- Change security
- Access security
- Data type
- Length
- Units(cm., degrees C, etc.)
- Range of values
- Precision (decimal places)
- Allowable Values
- Report Heading
- Screen Heading
- Applications where used
- Conversion Requirements

It is important for business management to understand the existence of the data dictionary and the role it plays to foster communication within the organization. Managers joining a new organization should ask to see the data dictionary. They should spend time with their technical people to understand its contents and how the various terms are used in the new organization. This can save a lot of time and avoid misunderstandings down the road as the "new guy on the block" avoids terminology that may be confusing.

The central data dictionary is important and must be understood by both the technical organization and the business organization. If you don't have a central dictionary you need to begin developing it now. It can even be a series of spreadsheets for now. Whatever the source, the data dictionary will give you all the information you need to integrate applications.