

IMPLEMENTATION OF MANAGED INVENTORIES FOR SPARE PARTS

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ABSTRACT

Advances in technology have allowed many companies of all sizes to implement Enterprise Resource Planning (ERP) software. Although cost-efficient, ERP systems may create a few challenges within themselves due to the design of these programs. This paper details one such problem and discusses a potential solution. Specifically, this paper covers the problem created when an ERP system requires capitalization of parts and supplies that were historically expensed.

Implementation of Managed Inventories for Spare Parts

Many larger manufacturing companies maintain spare parts supplies (items such as belts, motors, gears, oil, and grease) which remote facilities maintain on site that allow for quick maintenance and repairs of key equipment. These inventories are typically housed in one or more fairly secure areas and managed either by maintenance or parts departments, by individual operating departments, or by a combination of both. In many cases, the initial treatment is to capitalize the purchase of these parts and supplies along with the capital asset with which they are associated. Afterwards, all subsequent purchases are considered to be a repair and expensed when purchased. As a control point, manual records are kept to facilitate material resource planning. The entity then periodically takes inventory of the parts supplies and adjusts a special ledger accordingly.

Increasingly, these companies are implementing Enterprise Resource Planning Systems, integrated software systems that link internal and external management information across an entire organization facilitating information flow while embracing finance/accounting, manufacturing, sales and service, customer relationship management, etc. (Bidgoli, Hossein, (2004). The Internet Encyclopedia, Volume 1, John Wiley & Sons, Inc. p. 707.) With the implementation of ERP systems, the procedures associated with spare parts inventories has now become more complicated. In order for many of these ERP systems to work efficiently, they are designed to handle parts as a true inventory item and incorporate such automatic functions such as minimum order thresholds, automatic cycle counts and standard guidelines for equipment maintenance and repairs. The management staff of facilities with large values of stored parts and supplies are faced with a decision, do they capitalize the parts inventory and affect profitability with adverse tax and cash flow consequences, or develop a mechanism or 'work-around' for the ERP System that will allow functionality while incurring little or no financial statement impact.

Several larger companies have faced this very decision. They had several million dollars of spare parts and supplies that had previously been expensed. Although the decision to implement ERP was beneficial for the company as a whole, the accounting personnel faced the task of developing a system which would allow the previous treatment to continue without incurring a one-time gain on the financial statements. The following procedure is what one such company implemented.

To begin, an item or material number is assigned to specifically identify each type of part or supply, such as a certain type of motor (Motor, 50 Amp, Three Phase, Explosion Proof, 2" Diameter Shaft) or a certain type and length of drive belt ('V' Belt, 36" Length, 1/2" wide). The item number is unique to the particular part or supply and the description should outline specific characteristics in a manner that an individual with relative knowledge should recognize the item immediately simply by looking at the item number and/or description.

When an item is ordered, the order is placed on an Open Purchases Report (this report lists purchase orders with items listed that have not been delivered) to monitor both the delivery of items ordered and the receipt of a corresponding invoice. Upon delivery of the item ordered, an individual in the receiving area will access the ERP system, match the items delivered against the appropriate line item on the purchase order (for this to function effectively, the purchase order

number should be listed on the vendor’s delivery document), and then mark the items as being “received” from a system perspective. A journal entry is automatically created that debits the spare parts inventory account and credits a liability holding or clearing account. The spare parts remain inventoried until used, at which time an appropriate expense account or overhead account will be debited and the spare parts inventory account is credited. The credit in the holding liability account remains until an invoice is received.

Once the invoice is received and reviewed for accuracy by a person in an accounts payable function, an invoice “receipt” is recorded debiting the invoice directly against the delivered line item for the purchase order in the liability holding account (any subtle differences between what was received and what was invoiced would be written off or adjusted accordingly) and accounts payable would be credited pending subsequent payment. The liability holding account will now have a zero balance for this particular purchase order.

The issue now is how to handle the inventory account representing items that have been historically expensed. A conversion to this method requires a journal entry crediting an expense account and debiting the inventory account to reflect the beginning inventory balances, hence distorting the current period financial statements.

To overcome this problem and to allow the continued use of the system’s mechanics, a contra-inventory account must be established to offset the spare parts inventory balance and keep from understating expense account activity. The system functions normally during the operating period; however, during period end closing, a journal entry should be posted to the contra account effectively rendering the balance sheet effect as nil. The offset to the entry is then posted to an expense account, such as spare-part adjustment expense, which allows the income statement to reflect the amount of parts purchased, not used. The individual accounts that are debited when items were used would provide usage information.

The chart below is a recap of the series of journal entries through the process.

Parts and Supplies Inventory		Accounts Payable	
1 Initial Set-up of Inventory			3 Receipt of Invoice
2 Receipt of Part			
	Part Usage 5		
Parts and Supplies Inventory (Contra Account)		Liability Holding Account (GR/IR)	
6 Adj to Zero Part Inventory	Adj to Zero Parts Inventory 6	3 Receipt of Invoice	2 Receipt of Part
		4 Adj to Zero Purchase Order Bal	4 Adj to Zero Purchase Order Bal
Parts and Supplies Expense			
5 Part Usage			1 Initial Set-up of Inventory
Parts Inventory Adjustment Expense			
4 Adj to Zero Purchase Order Bal	Adj to Zero Purchase Order Bal 4		
6 Adj to Zero Part Inventory	Adj to Zero Part Inventory 6		

The end effect is that the accounting treatment of spare parts remains consistent with previous treatments without a one-time jolt to the financial statements as a result of implementing the ERP system.

References

Bidgoli, Hossein, 2004. *The Internet Encyclopedia, Volume 1, John Wiley & Sons, Inc.*

Endnotes

¹ (Bidgoli, Hossein, (2004). *The Internet Encyclopedia, Volume 1, John Wiley & Sons, Inc.* p. 707.)