



Self-Constructed Assets

Cost Accounting Fundamentals Series

Project Cost By Olympic Systems for Microsoft Dynamics GP



PROJECT COST BY OLYMPIC SYSTEMS, INC.

Self-Constructed Assets

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About Project Cost

Project Cost is a comprehensive project cost accounting system for Microsoft Dynamics - GP. Project Cost is composed of a series of modules and browser based web applications that focus on managing, recording and reporting of project Budgets, PO Commitments, Cost & Revenues.

Our goal was to build a fully integrated cost accounting extension to that would be Easy to Use, Easy to Understand and Easy to Manage.

Project Cost integrates with System Manager and extends functionality to the following modules:

General Ledger	Payables Management	Receivable Management	Payroll
Inventory Control	Sales Order Processing	Purchase Order Processing	SmartLists

Accuracy & Consistency: Project Cost allows users to efficiently and accurately charge costs to the appropriate Project and Task and the resulting correct General Ledger account. Limits imposed at the task level prohibit charges to incorrect cost categories. Users do not need to understand account coding requirements. By selecting the correct Project and Task the proper account coding is achieved.

Ease of Use: Project Cost extends standard Dynamics GP accounting transaction forms making assignment of Project and Task codes to all or portions of an accounting transaction both efficient and accurate. Reduced costs are achieved by single entry processing, fewer keystrokes, and easily understood and consistent extension of Dynamics GP processes.

Collect Cost by Asset Depreciation Type: Project Cost can collect cost details and quickly summarize cost by asset depreciation type for easy capitalization posting for complex projects.

Reduced Cost: Project Cost reduces costs with lower installation and training costs, fewer keystrokes, and fewer errors and corrections. Deploying Project Cost for Self-Constructed Assets can be completed in as little as 4 hours.

Reconciliation of Sub-Ledgers: Project Cost provides automated reconciliation between the General Ledger and the Project Cost Transaction Sub-Ledger.

Perfect Audit Trail: Project Cost provides a perfect audit trail between each Dynamics GP transaction, each GL transaction, and the associated Project Cost transaction. Project Cost also records the changes for each time and expense transaction, including those that are eventually deleted. This makes it easy to prove that users did not enter time before the work was performed or to identify transactions that may have been changed without appropriate review and justification.

Consistency: Project Cost supports cost accounting guidelines that require that cost based contracts consistently use identical costing techniques and policies across bid and proposal documents and invoices for products and services.

Introduction – Accounting for Self-Constructed Assets

Often a company will make the decision to build an asset rather than purchase the asset from a vendor. The reasons for this type of decision can be complex and varied - It could be less expensive or it could be the asset is unique to the firms proprietary manufacturing process or often it gives the company better control over the quality of the finished product. Needless to say, once the decision to build (or Self-Construct) is made, the company takes on the responsibility of tracking progress of the project and accumulation of the cost associated with the construction of the new asset.

The purpose of this paper is to provide a discussion of fundamental procedures and practices related to Accounting for Self-Constructed Assets. The information contained in this whitepaper has been gathered from multiple sources, text books, seminars, correspondence and other resources gathered over my 30+ years as a working accountant. The information presented here is intended to be used as a topic resource and guidance to assist organizations with their review their current accounting procedures for tracking Self-Constructed Assets.

This paper will discuss:

1. What is meant by 'Self-Constructed Assets'?
2. How do Self-Constructed Assets differ from other Fixed Assets?
3. What is CIP?
4. What Qualifies as a Cost When Constructing an Asset?
5. When do you 'Book' the asset?
6. 8 Basic Steps to Track 'Self-Constructed Assets'

What are Self-Constructed Assets?

A 'Self-Constructed Asset' is an asset that a firm elects to build on its own rather than purchasing it from another business. More specifically these are assets that are to be used in the operation of the business rather than inventory or stock that would be sold to customers.

In accounting we track two different types of asset accounts: Current Assets and Long-Term Assets.

Current Assets as a general category are distinguished by being short-lived in nature; generally, current-assets are likely to be used up or turned over during the course of business year.

Examples of Current Assets include:

- Cash
- Accounts Receivable
- Work In Progress (WIP)
- Product Inventory
- Various 'Prepaid' Accounts

Long-Term Assets or Fixed Assets as a general category are defined by the nature of their longevity – these are assets that will be used by the company over several years.

Examples of Long-Term Assets include:

- Land
- Buildings
- Construction In Progress (CIP)
- Production Equipment
- Office Furniture

'Self-Constructed Assets' - are Long-Term Assets that are tracked temporarily under a special category called Construction- In-Progress (CIP).

Construction-In-Progress assets, like Land, are treated differently than other Long-Term assets – the most prominent difference is that these two asset categories do not record depreciation.

How do Self-Constructed Assets differ from other Fixed Assets?

In most cases, companies will purchase a fixed asset such as a computer or a copy machine from a supplier – that asset will normally have the following attributes:

1. A Firm Cost of the Asset
2. A Specific Date of Purchase (or in service date)
3. Be Classified as a single asset depreciation type
4. Require little or no effort to install or place in service

When a company opts to build a 'Self-Constructed' asset – these attributes change:

1. The Cost of the Asset is built up from several cost events
2. The 'In Service Date' is established at the end of the build which could take weeks, months or even years.
3. An Overall Project such as building a new break room – may result in creation of several asset depreciation types.
4. By its nature will require some amount of Labor to build and placed in service.

What is Construction-In-Progress (CIP)?

Generally, Construction-In-Progress (CIP) is an account that is used to track the cost associated with the construction of the Self-Constructed Asset. This is a fixed asset account however; it is used as a temporary storage account and does not have any depreciation associated with the account value.

When the asset build out is complete, the value is moved from the CIP account and 'Booked' as a traditional Fixed Asset.

A well structured Chart of Accounts (COA) provides accounting professionals and auditors with the ability to quickly and easily navigate through an organization's financial data.

Below is a chart that represents a basic organization structure of the Balance Sheet Chart of Accounts. Notice the highlighted Current Assets and Long-Term Assets as well as Construction in Progress

Account Category	Natural Account Range
Current Assets	1000 - 1699
Cash AR Inventory	1000 - 1499
Work In Progress	1500 - 1599
Other Current Assets	1600 - 1699
Long-Term - Fixed Assets	1700 - 1899
Land	1700 - 1710
Buildings	1720 - 1729
Production Equipment	1730 - 1739
Office Equipment	1740 - 1749
Construction In Progress	1750 - 1759
Accumulated Depreciation	1800 - 1820
Other Assets	1900 - 1999
Current Liabilities	2000 - 2799
Deferred Revenue	2700 - 2799
Long Term Liabilities	2800 - 2999
Equity	3000 - 3999

What Qualifies as a Cost When Constructing an Asset?

When constructing a asset for internal use it is important to have an organized methodology for keeping track of all the cost incurred for the construction. Project Cost by Olympic Systems is a great tool to assist with the tracking of cost associated with a Self-Constructed Asset.

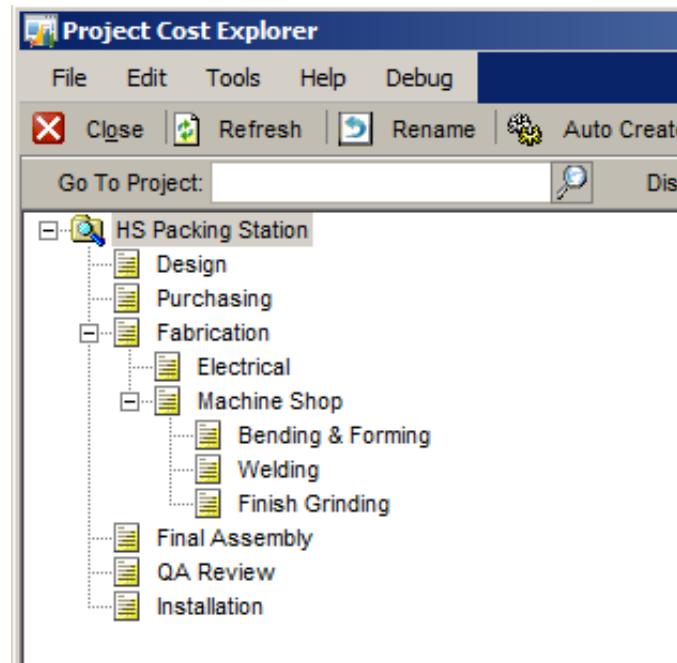
In order to better explain this topic we will examine the hypothetical **Acme Manufacturing Company**.

Acme needs a new high-speed packing station to improve operations on their production line.

Because this equipment needs to fit into a specific space and work with equipment that is no longer being manufactured – no ‘Off-the-Shelf’ equipment can be purchased to meet their needs.

Acme will build the packing station themselves.

Below is the Work-Breakdown-Structure (WBS) for this **High-Speed Packing Station** project:



Notice that there are multiple activities that need to be completed to build this new asset.

Some activities may be dependent on other steps being completed before that activity can be started, while others are independent.

For example one could not start the Installation until after the Final Assembly but Purchasing activities could take place anytime after Design phase and up to the Final Assembly.

When setting up a new project for tracking the construction of the new asset, we will need to consider all costs that are related to the construction. These cost falls into 2 general categories: Direct Cost and Indirect Cost

Direct Cost - Defined

Direct Costs are cost that can be easily and conveniently traced to a particular cost objective.

Direct Purchase or Material Costs are all purchases and/or materials that become an integral part of the finished asset and can be tracked in an 'Economically Feasible' way.

'**Direct Labor Costs**' are defined as labor expenses directly attributable to the construction of the new asset that can be tracked in an 'Economically Feasible' way.

Often managers will construe **Direct Labor Cost** as simply the employee's hourly rate and use this as a standard cost. This method however, does not provide a complete picture of labor cost nor does it provide managers with the most accurate tools to judge performance and control cost.

To measure **Direct Labor Cost**, you should consider all direct labor cost expenditures, not just a worker's salary or wages.

Labor Cost can be grouped into two major groupings:

Direct Salaries or Wages

- Wages (Regular, OT, Vacation, Sick Leave, Holiday, Jury Duty)

Direct Fringe Benefit Cost (*Some organizations will handle fringe as indirect labor costs*)

- Employer Paid Taxes (FUTA, SUTA, FICA, Medicare, Worker's Compensation)
- Employer Paid Benefits (Health Insurance, Contributions to Pension Plans, Tuition, Training Expenses, Bonuses)

Indirect Cost - Defined

Indirect Costs are costs that are not easily and conveniently traced to a particular cost objective.

Indirect costs charged to a Self-Constructed Asset can be controversial – it is recommended that these cost be reviewed with your auditing firm in order to assure that they are being applied using a consistent methodology. General & Administrative cost along with other period cost should normally be excluded from being indirect cost applied to Self Constructed Assets.

Indirect Material Costs are defined as expenses incurred for common or joint objectives and not readily identifiable to a specific objective. These expenses could include items like lubricants, glue, nails or other supplies used in the building process.

Indirect Labor Costs are defined as labor expenses incurred for common or joint objectives and not readily identifiable to a specific objective. These expenses should exclude costs associated with supervision, training, or facilities unless they are distinctly required for the construction of the asset.

Indirect Overhead Expense are all production cost incurred by the company for while the asset is under construction except for Material and Labor. Examples may include rent, taxes, insurance, and utilities. Depreciation Expense for any Equipment used in the production of the new asset can also be applied as an Indirect Overhead Expense.

Indirect Interest Expense is the amount of interest expense incurred by the company while the asset is under construction. Interest expense is computed by multiplying the interest rate times the average accumulated cost for each accounting period. Interest Expense cannot exceed the total interest paid by the company in each accounting period. (reference FAS34)

Self-Constructed Asset -Transactional Examples

Keeping with our example of building a High-Speed Packing Station, we will follow the accounting transactions through the construction process.

DIRECT LABOR COST- DESIGN PHASE

In April, the Acme Manufacturing Company starts the design work on this project. Design Engineers draw up the blue prints for the construction of the new packing station along with a budget for parts, supplies, direct labor and contract services. Total hours of labor are 35 hours at a 'Standard Cost' rate of 79.97 per hour for a total of \$2,798.95.

Description	Calculation Method	Annual Cost	Hours	Labor Rate
Direct Labor				
Amount Employee Views as Wages or Salary				
Can be Characterized as an Hourly Rate				
May Include Shift or Overtime Premium	Hours x Rate	\$118,040	2,080	\$56.75
Direct Taxes				
Fica, Futa, L&I, SUTA, etc.	Varies 12 & 16%	\$18,886	2,080	\$65.83
Direct Benefits				
Paid or Accrued by Employer for Employee Benefit				
Employer Funded Retirement		\$2,500		
Health Insurance		\$5,953		
Union Vacation & Sick Leave Pay	2 weeks of each	Included	-80	
Holidays	9 days per year	Included	-72	
Car Allowance		\$4,800		
Bonus Pool		\$4,000		
Direct Costing Std Labor Rate		\$154,179	1,928	\$79.97

Project Cost would post an entry something like this to account for the Direct Labor:

Account Title	Debit	Credit
Construction in Progress	\$ 2,798.95	
Engineering Department Labor Expense Offset		\$ 2,798.95

DIRECT PURCHASE & MATERIAL COST- PURCHASING PHASE

In May 2014, the Acme Manufacturing Company starts purchasing materials for this project. Purchase Orders are issued, materials are received and the vendors are paid.

Total Purchases amount to \$18,528.50.

Project Cost would post an entry something like this to account for the Direct Purchase & Material

Account Title	Debit	Credit
Construction in Progress	\$ 18,528.50	
Accounts Payable		\$ 18,528.50

DIRECT LABOR COST- FABRICATION PHASE

In June, the Acme Manufacturing Company starts the Fabrication of the Packing Station work continues thru October.

Total hours of labor are 925 hours and in this case there are multiple trades performing the work for a total of \$42,910.75.

Project Cost would post an entry something like this to account for the Direct Labor.

Account Title	Debit	Credit
Construction in Progress	\$ 42,910.75	
Engineering Department Labor Expense Offset		\$ 8,396.85
Electrical Department Labor Expense Offset		\$ 12,487.03
Machine Shop Department Labor Expense Offset		\$ 22,026.87

DIRECT SUB-CONTRACT – FINAL ASSEMBLY & INSTALLATION PHASE

In November, the Acme Manufacturing Company hires an outside firm to oversee the Final Assembly, conduct a QA review and Install the Packing Station into the production line. The Packing Station project is completed in December.

Total costs of these services are \$12,275.00.

Project Cost would post an entry something like this to account for the Direct Sub-Contract expenses.

Account Title	Debit	Credit
Construction in Progress	\$ 12,275.00	
Accounts Payable		\$ 12,275.00

IN-DIRECT OVERHEAD COST

Each period the Acme Manufacturing Company would determine the amount of Overhead Cost to be charged to the Project. Reasons and Methods for determining overhead vary widely.

[Consult with your Audit Firm for advice on Overhead Cost Capitalization.](#)

For this presentation we will assume the following cost: Material Overhead Expense \$875.29, Depreciation Expense \$1,520.00 (Note: this a portion of the Depreciation Expense on Plant & Equipment used in the construction of the asset), and Electricity Expense of \$600.00

Project Cost would post an entry something like this to account for the Indirect Overhead Cost – Note an Overhead posting should occur each month of the asset build – for ease of presentation we are summarizing the Overhead cost.

Account Title	Debit	Credit
Construction in Progress	\$ 2,995.29	
Accumulated Depreciation		\$ 1,520.00
Accrued Expense - Utilities		\$ 600.00
Material Overhead Applied		\$ 875.29

IN-DIRECT INTEREST EXPENSE

Self-Constructed Assets may qualify for Interest Capitalization as part of the Historical Cost of asset. Interest capitalization is required for those assets if its effect, compared with the effect of expensing interest, is material. If the net effect is not material, interest capitalization is not required.

"The interest cost eligible for capitalization shall be the interest cost recognized on borrowings and other obligations. The amount capitalized is to be an allocation of the interest cost incurred during the period required to complete the asset. The interest rate for capitalization purposes is to be based on the rates on the enterprise's outstanding borrowings." (FAS34)

Consult with your Audit Firm for advice on Interest Capitalization.

For this presentation we will assume the following a total weighted average calculation with an interest rate of 5.25% resulting in \$1843.46 in interest expense. (Note that the Period Overhead would normally have a different value each month – for ease of presentation we display the Overhead distributed straight line over the life of the build.)

Month	Period Charges	Period Overhead	Period Addition to CIP	Capitalization Period	Weighted Average	Rate	Interest Expense
April	\$ 2,798.95	\$ 332.81	\$ 3,131.76	9/12 Months	\$ 2,348.82	5.25%	\$ 123.31
May	\$ 18,528.50	\$ 332.81	\$ 18,861.31	8/12 Months	\$ 12,574.21	5.25%	\$ 660.15
June	\$ 8,582.15	\$ 332.81	\$ 8,914.96	7/12 Months	\$ 5,200.39	5.25%	\$ 273.02
July	\$ 8,582.15	\$ 332.81	\$ 8,914.96	6/12 Months	\$ 4,457.48	5.25%	\$ 234.02
August	\$ 8,582.15	\$ 332.81	\$ 8,914.96	5/12 Months	\$ 3,714.57	5.25%	\$ 195.01
September	\$ 8,582.15	\$ 332.81	\$ 8,914.96	4/12 Months	\$ 2,971.65	5.25%	\$ 156.01
October	\$ 8,582.15	\$ 332.81	\$ 8,914.96	3/12 Months	\$ 2,228.74	5.25%	\$ 117.01
November	\$ 6,137.50	\$ 332.81	\$ 6,470.31	2/12 Months	\$ 1,078.39	5.25%	\$ 56.62
December	\$ 6,137.50	\$ 332.81	\$ 6,470.31	1/12 Months	\$ 539.19	5.25%	\$ 28.31
Totals	\$ 76,513.20	\$ 2,995.29	\$ 79,508.49				\$ 1,843.46

Project Cost would post an entry something like this to account for the Indirect Interest Expense.

Account Title	Debit	Credit
Construction in Progress	\$ 1,843.46	
Interest Expense		\$ 1,843.46

When to Book the Asset?

Construction-In-Progress (CIP) should be capitalized as soon as it is ready to be put in service. This would be the date the construction is complete and not the actual date it goes into service. At this point the total value of the cost associated with this constructed asset is moved from Construction in Progress to the Fixed Asset account.

Project Cost would post an entry something like this to account for the transfer of the Construction in Progress to the Fixed Asset account.

Account Title	Debit	Credit
Fixed Assets - Equipment	\$ 81,351.95	
Construction in Progress		\$ 81,351.95

8 Basic Steps for Tracking Self-Constructed Assets

1. Determine the Construction-In-Progress (CIP) account to be used to track the cost associated with the construction of the Self-Constructed Asset.
2. Build a unique Project to track the construction of this asset
3. Collect purchases and other direct cost associated with the construction of this asset.
4. Collect labor cost associated with the construction of this asset.
5. Allocate Overhead cost associated with the construction of this asset.
6. Allocate Interest Expenses associated with the construction of this asset.
7. Close the Project to stop accumulating cost as soon as the asset is ready to be put in service.
8. Book the accumulated cost – transfer the cost from the CIP account to Fixed Asset account and start depreciation of the asset.

Other References

[Summary of FAS34 Capitalization of Interest Cost](#)

[Summary of FAS58 Capitalization of Interest Cost...Equity Method](#)

[IRS Publication 551 Basis of Assets - Uniform Capitalization Rules](#)

[IRS – Brief Overview of Depreciation](#)

[IRS – PUB 946 How to Depreciate Property – Section 179](#)

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