



# **CAPTURING PROJECT COST IN PROJECT ERP**



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# CAPTURING PROJECT COST IN PROJECT ERP

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Professionals involved with managing large industrial projects may attest to the fact that most enterprise resource planning (ERP) software is not well designed for this task.

In this whitepaper, we will examine some of the reasons that ERP and other enterprise software may perform in a sub-optimal fashion in a project environment, specifically when it comes to accurately capturing cost. The central importance of embedded, native project management functionality within ERP will be dealt with. We will also offer tips for selecting enterprise software that will perform these functions adequately.

## REASON #1: DISPARATE SYSTEMS

One of the greatest barriers to accurately capturing project cost is the fact that many project-oriented companies are running multiple enterprise solutions in different parts of their business. Finance data may be contained in ERP, equipment data in a maintenance software program, and so forth. In some cases, different divisions or parts of a business may be running different ERP packages altogether. In this setting, it is a challenge to simply get all of the information into one place so management can appropriately analyze the true cost and potentially true profitability of their business. There are a number of reasons a business may find themselves running a number of different enterprise software products. Merger and acquisition activity can certainly leave a business in this state of affairs, as can organic growth into new markets that are not adequately addressed by an existing software package. Some businesses also pursue a best-of-breed software strategy that involves purchasing multiple point solutions that each address a different part of the business.

Project Info: Facility Construction Project										Document Transmittals									
Project ID:	Project Name:		Status:	Company:	Base Currency:	Earned Value Method:	Baseline Revision:												
C0001	Facility Construction Project		Approved	130	USD	Baseline	2												
Facility Construction Project										Document Transmittals									
10 Budget Preparation										Garit Sub-Project Resource Analysis Summary History Planning Activity Hours Project Documents Document Transmittals									
20 REPERTISING										Sub-Project Sub-Project Activity ID Activity Description Calculated Progress Total Duration BCWS BCWP ACWP BAC SPI CPI ETC									
30 DESIGN ENGINEERING										5010 Rough-In for Control Station Building 0.00% 32 135 0.00 .00 .00 0 0 0									
40 CONSTRUCTION & CONTRACTOR PHASE										5011 Mechanical and Plumbing C&I Connect... 0.00% 30 42 19,743.00 .00 19,743.00 .00									
50 Define Contractors for Sub-Station										5012 Electric Wiring and Preparation Activity 0.00% 30 42 .00 .00 .00									
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70 Receive all Bids										400 DETAIL ENGINEERING 400 Mechanical Schematic 0.00% 40 54 4,000.00 .00 4,000.00 .00									
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140 General Engineering										600 PROCUREMENT 610 Station 10 0.00% 46 64 .00 .00 .00									
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160 Control Station Procurement Equipment										600 PROCUREMENT 630 Conditioning System 0.00% 46 64 .00 .00 .00									
170 Station 10										600 PROCUREMENT 640 Control From Station Location 0.00% 82 114 .00 .00 .00									
180 Purchasing/Procurement										600 PROCUREMENT 650 General Engineering & Supplies 0.00% 64 64 .00 .00 .00									
190 HOOK-UP & COMPRESSIONS										800 HOOK-UP & COMPRESSIONING 800 Final Supervisor Inspection 0.00% 5 7 .00 .00 .00									
200 CHARGE ORDER ITEMS										800 HOOK-UP & COMPRESSIONING 810 Pressure Test 0.00% 2 2 .00 .00 .00									
										800 HOOK-UP & COMPRESSIONING 820 PIG Inspection Geometry 0.00% 14 14 .00 .00 .00									
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										130 Construction PH (Pumping) 1330 Pre-Testing/Seep Test Injection 0.00% 85 117 3,000.00 .00 3,000.00 .00 3,000.00									
										137 137.72 16,255.47 7,947.00 145,375.00 0.31 3.83 66,000.00 32.05%									

It is essential for enterprise software used in a project environment to allow for comprehensive roll-up of project costs, as is shown here in IFS Applications.

These disparate systems may force a business to spend hours or even days to obtain things like daily logs and reports including materials data, incident reporting and time reporting. This leaves someone managing a project from a desk perspective without knowledge of the exact number of hours or the exact cost that has been incurred during a certain time period. They don't really have a true picture of everything until the end of the day, the end of the week or in some cases the end of the month.

Project information in these environments typically comes from a variety of sources, and is then often manipulated through various files and applications, possibly even Microsoft Excel®. One company I worked with had over 4,000 spreadsheets to manage the consolidation of their operational reporting! They were all linked together, had various hierarchies and rolled up into a consolidated report. But as you can imagine, if one spreadsheet was missed, if an error was made, it is very difficult to identify and remedy the problem. A great number of spreadsheets and point solutions force a company to undertake very costly interfaces or expend perhaps hundreds of hours of manual effort to consolidate from their various data sources. Batch update integrations, which require the data to be manipulated to adequately be used in the system of record, also present the problem of a time lag between an event and when it appears on a project manager's radar screen. Today, more and more industry demands are insisting on having accurate information more quickly and so they have their fingers on the pulse of the project.



## **REASON #2: MULTIPLE DIVISIONS/LOCATIONS**

Companies with multiple divisions and locations often have difficulty capturing project cost. Any industry that has a lot of global locations, or people working in very remote locations, will be hindered in this regard. This could apply to utility companies, where you have remote power stations, or mining companies, which almost always have operations far from a central office. Maritime industries and of course the oil and gas sector, which may have offshore communication requirements or remote land-based drilling locations, also present challenges. Organizations with many different locations, divisions and legal entities can find themselves at a disadvantage when it comes to accessing information required not for only project management but risk management as well. Companies in industries where organizational risks may affect not just profit and loss but the environment and surrounding communities will need to pay even greater attention to this. Following incidents like the Deepwater Horizon oil spill and the Massey Energy Big Branch Mine disaster, risk management, and the need for thorough real-time visibility of asset and operational data is of greater importance than ever.

## **REASON #3: MULTIPLE MODES OF OPERATION**

Some businesses, like manufacturers that operate in make-to-stock, make-to-order and engineer-to-order modes, are always running in multiple modes of operation—with multiple business models. Others, including mining, utility or oilfield service and machinery companies, may run in different modes of operation at different points in a business or asset lifecycle. With a single business application not designed to handle this diversity, it can be difficult to manage multiple modes or multiple stages of an asset lifecycle. Consider the challenge faced by a company that builds and maintains offshore oil rigs. They may do some fabrication or assembly, but a lot of their work revolves around services to the rig owners. Many enterprise software systems assume a manufacturing-centric business model, and aftermarket services work is built around the original product structure. That is not going to work very well for a service industry, and that means that many businesses need to augment their ERP package with ancillary systems that of course create challenges when it comes to capturing and managing project cost.

## **REASON #4: USABILITY**

Even when a company has a single system in place that is designated as the system of record, it may not be used widely by people throughout the organization. The single most likely reason for this will be a lack of intuitive usability. Throughout an organization, many employees frankly don't care what the person in the C suite or front



office worries about or what software they would like to force them to use. They may not see why these people so far removed from their work should have any influence on what they are using in their tool set. So often, despite the best intentions of management to institute a single system, data used to support day-to-day operations remains in disparate systems, presenting a barrier to adequate, real-time cost capture and control.

## WHAT TO LOOK FOR

The final reason cited above means that in order to achieve adequate cost control, software usability is in fact a chief concern. This is a matter that may not be immediately appreciated by an ERP project team but as a practical matter is of great importance. If the software your company selects and implements is not easy to use, then people are going to avoid using it, opting instead to return to their spreadsheets, point solutions or PC-based packages that allow them to happily run their individual functions, albeit as insular individuals rather than part of a corporate entity.

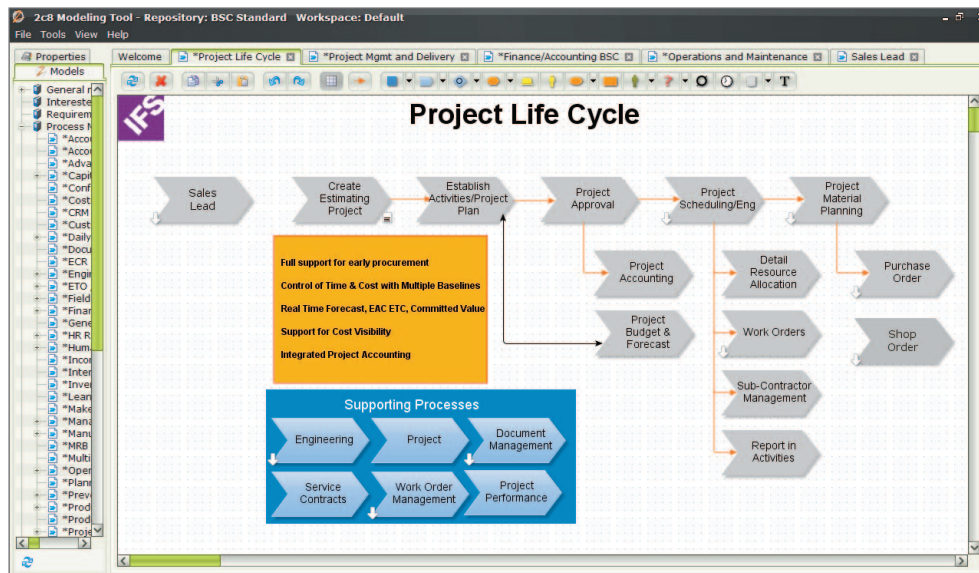
Specific usability features to watch for include:

- Google-like search functionality that allows users to find data throughout the system. In many enterprise software packages, paradoxically, you can only find things if you already know where they are!
- A user interface that emulates the look, feel and navigational conventions of the Web, with forward and back buttons, favorites and breadcrumbing.
- The ability to organize the user desktop in a way that is comfortable for each role in the company and each individual.

The ability to handle multiple modes and change is also crucial in order for an enterprise application like ERP to effectively capture project costs on a real-time basis. Research conducted by IFS North America and analyst Cindy Jutras of Mint Jutras suggest that businesses are adding manufacturing modes at a rapid pace. That means that the ERP that can meet your needs today may not meet needs in the future. As you add modes, as your business enters new phases of development, ancillary systems again will spring up that will harm efforts to capture project cost.

This means that ERP must support:

- Multiple modes of operation, all on the same application platform.
- Allow for easy configuration over time as needs change.
- Support the entire lifecycle of assets and projects so all data can remain in that one central repository.



Enterprise software must allow users to leverage best practice models for a variety of industries. This provides the flexibility to define and adapt to multiple business modes.

Perhaps no single application suite handles the above three points more completely than IFS Applications. IFS' project functionality is built around a single project structure which, for example, can be configured in many different ways to suit a diverse spectrum of projects. Included are tools to support remote access, reducing lag time between transactions or completed work and the ability to report information back into a central project structure quickly and easily.

This project structure will cut across multiple business models, ranging from traditional manufacturing projects including engineer to order to more exotic modes. An offshore oil rig servicing company, for instance, may purely be in the business of providing rig support services, buying materials and getting them off shore. So they would have more of an inventory procurement function. Companies involved in maintaining a rig of course must track projects involving maintenance activities like refits and lifecycle extensions. Those involved in bringing up a rig have a very different form and approach to the service and project structure and a whole different cost break down structure, a whole different work breakdown structure and a whole different financial reporting requirement. When your business model may change over an asset or project lifecycle or dynamically due to market forces, you need to implement a system that supports a variety of modes on a global enterprise level.

Capturing project cost in ERP really requires ERP with powerful, native project management tools that share data with the rest of the application suite.



Embedded project management functionality is not to be confused with ERP with a standard integration with a project management tool. When we use the word “integration,” we talk about interfaces, and that means that there will be less than complete interactivity between project functionality and other functionality in ERP. In order to determine whether project management functionality is truly embedded or just integrated, it is important to ensure that for every action in a project, there is a reaction in the rest of the system, and vice versa. So if I have to change something in my project, that change needs to impact the downstream applications such as purchasing, human resources, shop orders or work orders. Similarly, if your subcontractor reports progress against a job, how is that reflected in the project, in a subcontract module, in accounts payable and other key parts of the system. Do the work orders issued in your ERP software capture data on the work as it is performed? How well are those tied into your project updates and project costs? What is needed is embedded functionality to allow for actual costing in real time. In order to track your budget and forecast all the way through to the end of the project lifecycle, project management must be very heavily tied into the work breakdown structure and cost breakdown structure analysis. This is critical when it comes to managing the profitability of that project.



Project ERP must enable on-demand forecasting, monthly reviews and simulation to accurately visualize and capture cost trends on projects.

The importance of truly embedded project functionality should not be underestimated. Consider the challenge faced by an engineer, procure, construct (EPC) contractor. Whether they are involved with constructing an offshore oil rig, a coal-fired power plant or a copper mine, they have a definite need to track all of their costs during





that project or even asset lifecycle. If their purchase orders don't directly feed from or back to a project, they cannot successfully track those costs. If human resources does not integrate employee time back to a project, they cannot successfully track those costs. If work orders and items consumed from inventory do not tie back into a project, they cannot successfully track those costs.

Moreover, as contracts are signed with subcontractors, if that contract management functionality is not integrated with project management functionality, it is not possible to track not just actual cost but committed cost. The inability to track committed cost is one of the main pain points I hear about as I work with companies to identify their needs. And real-time committed cost can only be addressed by ERP with fully embedded project management functionality.

## SELECTING THE RIGHT SOFTWARE

ERP vendors are out to sell their software, and in some cases may try to sell a heavily project oriented business on a product that does not truly meet the needs outlined above. During a software selection process, it is therefore imperative to ask a lot of hard questions, ask to see exactly how project data flows through the system, and perform extensive due diligence.

It pays to ask a lot of questions. Here might be a procurement scenario:

- Is the demand for the project schedule driving the material demand schedule?
- Are my purchase orders truly connected to that project?
- As something changes on the purchase order, how is that change reflected in the project?
- If the budget changes, does the budget impact what I have committed on purchase orders?

Questions like these can help ferret out the extent to which ERP has truly embedded project management functionality or to what extent project management is integrated in more of a point-to-point fashion that might be suboptimal. Of course there is no substitute for a thoroughly scripted demonstration that requires a vendor to show, with your own data, exactly how your project data flows through the system.

One thing that seems to impress people in our own demonstrations of IFS Applications is how we can show something like a purchase order or receipt coming through the system, and when we go back and review the project cost, it has been immediately updated. We certainly encourage software selection teams to get very specific with their scripts. It is only fair, for instance, to ask a potential vendor to show the creation of a requisition and how it impacts the planned cost, or to show the release of that requisition to show that it impacts committed cost. Committed



cost is one of the most important analytics a project-based company can track as it is not just what is planned, but what you are obligated or committed to spend given agreements that are in place. It is imperative to see specific examples of committed cost flowing through the system.

### CONCLUSION

The difficulty many executives experience in adequately capturing project cost is a direct result of the fact that project management software is not a native part of their ERP system. They may be running some type of project management software that is integrated to some degree with their ERP application, but this integration is not complete or thorough enough to provide full visibility into important metrics like committed cost.

The logical solution is to select and implement highly usable enterprise software designed for the project environment, with project management functionality that shares data, in a natural, event-driven way, with the rest of an enterprise suite. Identifying this software during a selection process will require extensive due diligence. The effort required to examine in detail the project capabilities of each ERP package will pay dividends in the end, however, in the form of increased project control and profitability.

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## ABOUT IFS

IFS is a public company (OMX STO: IFS) founded in 1983 that develops, supplies, and implements IFS Applications™, a component-based extended ERP suite built on SOA technology. IFS focuses on agile businesses where any of four core processes are strategic: service & asset management, manufacturing, supply chain and projects. The company has more than 2,000 customers and is present in 50+ countries with 2,700 employees in total.

More details can be found at [www.IFSWORLD.com](http://www.IFSWORLD.com).  
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