

Deployment case study

June 2013



Granite Construction is a leader in the construction industry with experience in the oil and gas, power and water, and industrial and commercial sectors.

Results

- Control costs
- Optimize staffing per project
- Meet unique construction industry requirements in a single solution

Industry

Construction

Country or Region

United Arab Emirates

Customer Size

2,000 employees

Number of Users

65 employees

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International Construction Powered by Microsoft ERP

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Project Controls Manager, Granite Construction

Based in Abu Dhabi, Granite Construction draws on a staff of international workers for major construction projects, such as those for the oil and gas industry of the Emirate of Abu Dhabi. The company's expertise in estimation and total cost management has been the cornerstone of its steady and progressive growth for more than 40 years, helping the company win many prestigious jobs amid stiff competition.

Recently, Granite's Board of Directors determined to retool its business management solutions/technologies to establish an even greater competitive edge, especially in the area of cost management. As part of

this initiative, the company sought to retire its bespoke project management and project costing systems in favor of a full-fledged, fully integrated enterprise resource planning (ERP) package.

A Project Controls Manager for the company says, "We had many requirements for a new ERP system, but almost all of them pointed back to cost control. We wanted to be able to very easily see the true cost status of any project at any given time."

But the scope and scale of their projects can make job costing an extremely complex task. For example, Granite must frequently maintain large camps of international workers at its job sites and house, feed, and transport thousands of workers. When a project's scope expands, management must decide whether to provide overtime pay, food and lodging, and transportation to its own employees or to outsource hired manpower to manage the crisis. Making the right decision can directly affect the project outcome.

Effective camp management and insight, however, is only a part of the challenge of true job costing. In addition to tracking its workers, Granite also needed a way to perform more traditional construction tasks, such as fixed asset management, project management, subcontracts management, tracking and managing scaffolding, and processing vendor invoices pertaining to concrete. Only with all the areas of its business being tracked and monitored in a single, integrated system could Granite begin to truly understand its costs and make appropriate decisions in a timely manner.

Microsoft Dynamics versus SAP

In looking for an ERP system, Granite Construction considered both SAP and Microsoft Dynamics AX and, ultimately, chose the latter. A Project Controls Manager says, "I came to know that SAP can be very complex and expensive in terms of infrastructure requirements and customization. By comparison, Microsoft Dynamics AX was simpler to use, simpler to manage, and offered the flexibility to customize to the unique needs of our business. Microsoft Dynamics AX also fit with our Microsoft-based infrastructure, so we knew that we wouldn't encounter compatibility issues or complex integrations. SAP, on the other hand, felt like it would be a white elephant for an organization of our size."

From an IT support and development perspective, the Project Controls Manager adds, "The other ERP systems out there were not as cost-effective when it came to support and development. They also required a much more expensive infrastructure. In addition, Microsoft offered a very clear roadmap for Microsoft Dynamics AX, so we could be confident that it would support us in the future."

To deploy the solution, Granite Construction engaged Microsoft Partner CEM Business Solutions, an ERP consultancy with expertise in large-scale construction and knowledge of the Middle East market.

Granite Construction's Technology Environment

Servers	Virtual blade servers running Windows Enterprise Server 2008.
ERP system	Microsoft Dynamics AX
Business database	SQL Server 2008
Deployment strategy	On premises

A Vertically Aligned Solution

Although the deployment of Microsoft Dynamics AX is still underway at Granite Construction, the company is already impressed by the degree to which it can tailor the solution to the specialized requirements of its complex construction projects. The core Microsoft Dynamics AX solution provides robust business management capabilities ranging from financial management to human resources (HR) management. In addition, custom modules developed by CEM support the following industry-specific capabilities:

- **Camp management.** This functionality allows the check-in and check-out of every hire in real time. Staff use the solution to manage resident resources, camp capacity, and occupancy, as well as to perform capacity planning and to book internal transfer costs.
- **Labor-to-hire.** Often, Granite needs to manage hired employee timesheets and track them along with details about food and lodging and PPE for each employee. The solution facilitates booking of costs associated with labor hiring, and processes invoices received from staffing agencies.
- **Subcontract management.** Granite can use this capability to effectively manage subcontract scope, scope breakup, and payment milestones, change orders, etc. This functionality also allows for advance payments and deduction against advance with retention and retention release with greater flexibility.
- **Concrete.** This capability enables Granite to track concrete from receiving to pouring. It also enables the company to directly expense that concrete to the appropriate project.
- **Plant, machinery, and vehicles (PMV).** With the solution, Granite can track owned and hired PMV to log their worked, idle, and downtime hours and to process related expenses to projects. The solution facilitates placing purchase orders to PMV supply agencies, validating and booking of invoices, and booking the transfer price of owned PMV.
- **Scaffolding.** Using the solution, Granite can effectively manage the hiring of scaffolding to projects and then analyze the requested scaffolding versus that consumed and invoiced. Similarly, the system tracks scaffolding that has been purchased outright using a cost center approach, and books the transfer price to the appropriate projects.
- **Project management.** This tool enables Granite staff to monitor the overall performance of the project by logically dividing the scope into control accounts and allocating budgets for labor, material, and manpower. It also facilitates monitoring productivity of deployed resources. Further, it manages customer invoices, change orders, and estimate at completion.

With the help of CEM Business Solutions, Granite also built an integrated HR application, which conforms to UAE labor laws. In this way, the company can understand its costs completely, without the need for tedious manual processes to account for its diverse, global workforce.

Benefits

After the Microsoft Dynamics AX solution is fully deployed, Granite Construction will be able to track the true cost of every project and execute more effective cost control at every stage of a project to maximize profitability.

Looking back on the deployment thus far, the Project Controls Manager says, "Consolidating finance and accounts, HR, purchasing, operations—and projects, assets, and stores—enables us to determine achievement of business objectives through stringent process controls in respective modules"

Meet Industry Requirements in a Single System

The flexibility of Microsoft Dynamics AX enabled Granite Construction to customize the system to meet its unique industry requirements, from camp management to concrete pouring to the association of scaffolding to a project.

"Microsoft Dynamics AX exhibits greater flexibility to integrate core business management modules of complex and varied nature, and empowers our end users to maintain our competitive edge," the Project Controls Manager states. "In addition, Microsoft Dynamics AX itself surpasses the benchmarks set by all other ERP products."

Optimize Resources

The solution will help Granite Construction better align its workforce to the needs of its demanding projects. The Project Controls Manager says, "With Microsoft Dynamics AX, we can get the operating costs of the laborers engaged and very quickly decide if it would be better to give staff overtime or hire more staff and then pay for their accommodations."

Similarly, the company can use the system to optimize the usage of its fixed assets, such as tools, vehicles, and heavy machinery.

Understand True Costs and Improve Decision Making

With Microsoft Dynamics AX in place, Granite Construction will have real-time access to project cost information. From materials to labor and accommodations, the company is able to track the cost of every aspect of its business and understand how those costs impact the bottom line.

Says the Project Controls Manager, "With Microsoft Dynamics AX, we will know what kind of profit to expect from a project at any stage, based on reports generated by the system and by evaluating estimate-to-completion and thereby estimate-at-completion outside the system."

"Every minute component and detail is tracked in Microsoft Dynamics AX. Project managers will have control of all resources, people, machines, tools, and vehicles, and understand the costs associated with them, so they can help us run as profitably as possible, all while avoiding schedule overruns."

Project Controls Manager,
Granite Construction
Company

This understanding also drives greater ability to control costs at the account level, which is determined at the beginning of the project based on the work breakdown structure. The costing division at Granite Construction will soon be empowered to drive the company's success with even greater control.

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What's more, the Project Controls Manager adds, "Our employees manage multiple projects with budgets in the millions of dollars. But no matter what the size of the project, we don't expect we'll need to increase the size of our cost control division because Microsoft Dynamics AX can help us run as efficiently as possible, while handling many of our processes for us."

Next Steps

- [Connect with Microsoft Dynamics](#)
- [Become a Dynamic Business](#)
- [Read about ways other construction firms use Microsoft Dynamics AX to harmonize global operations](#)

For more information about Microsoft Dynamics, go to:
www.microsoft.com/dynamics