

Sourcing and Managing Contractors on a World Class Construction Project

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95th ISM Annual International Supply Management Conference, April 2010

Background

KBR (NYSE: KBR) is an Engineering, Procurement, Construction (EPC) contractor in Hydrocarbons, Power, Mining, and Government Services and Infrastructure. KBR is one of a handful of contractors capable of managing complex capital projects in excess of \$20BB. Current projects include large-scale petrochemical and Liquefied Natural Gas (LNG) plants in Africa, Middle East, and Asia Pacific. Typical projects range between \$500MM and \$5BB. KBR's 2008 revenue was \$11.6BB.

KBR Subcontracts – a subset of KBR's Global Procurement Department – actively manages all subcontracted work for the Hydrocarbons businesses, and provides subcontracts oversight and tools to all other areas of KBR. KBR Subcontracts annual spend was \$3BB in 2008 and \$8BB in 2009. The group is currently comprised of over 100 employees located in 12 countries.

In 2004 KBR purchased and began deploying a contract management system. However, the application proved to be overly expensive, inflexible, complex, user-unfriendly and would not interface with other KBR systems. After an incomplete and unsuccessful deployment, the application was discontinued.

In early 2007, KBR developed the requirements for a new Subcontracts Management System. The wish list covered the basics. The Subcontracts Director had seen a "Cadillac" system fail. This time he ordered a "Ford".

The basic requirements were:

- A database of current and potential subcontractors and the capability to perform prequalification for specific work scopes
- A library of document templates for contracts and exhibits
- Web-based and capable of securely sending and receiving solicitations and bids

- Capture and reporting on commitment data
- Manage change orders and budgets
- Capability to interface with KBR's document vaulting (*Documentum*) and financial (*SAP*) systems

For this system, KBR worked with AECsoft USA, Inc. to customize their existing Supplier Management, RFx and Contract Management solutions and provide a KBR branded Contract Management System – “CMS”. KBR had good prior experience with AECsoft from using AECsoft's Supplier Management, Pre-Qualification Vetting and eSourcing RFx solutions, and found them to be very flexible and responsive in delivering EPC project supply management solutions.

Opportunity

As is common in KBR's industry, the scope of the CMS effort changed quickly when KBR was awarded front-end engineering on a new mega project in the Asia Pacific region. The project partners, both Owners and EPC contractors, were acutely aware that this project required a comprehensive solution to manage the sourcing and post award execution of subcontractors. To accommodate, KBR quickly modified the “Ford” design to a “Porsche”.

The additional functionality included:

- full feature post award administration
- comprehensive management of all correspondence
- workflow-driven approvals with e-signatures (limited “wet” signatures)
- ability to create and track site instructions (SI's), requests for information (RFI's), and technical queries
- comprehensive claims management, including flagging and tracking of “issues”
- complete budget tracking and reporting
- tracking of local content, including a tool for gathering the data
- interfaces with multiple project systems
- robust ad hoc reporting

Delivering the new functionality was further complicated by the nature of this project: KBR is part of a four-party EPC joint venture; the Owner is a three-party joint venture; management is located in multiple locations and time zones; there is a high degree of modularization of the plant; the construction site is geographically isolated; there is a large mix of international contractors, contract types, and currencies; the work processes and project organization are “blended” in an integrated Owner/EPC team. The list goes on. The project would also require a high degree of rigor for all approvals. For example, a subcontract award would pass through two committees and require 32 signatures. Additionally, the project had not yet been fully funded and there were many unanswered questions about how it would be set up. The procedures were envisioned and discussed, but not formalized. To make it worse, the system go-live was expected in 6 months from the approval start date.

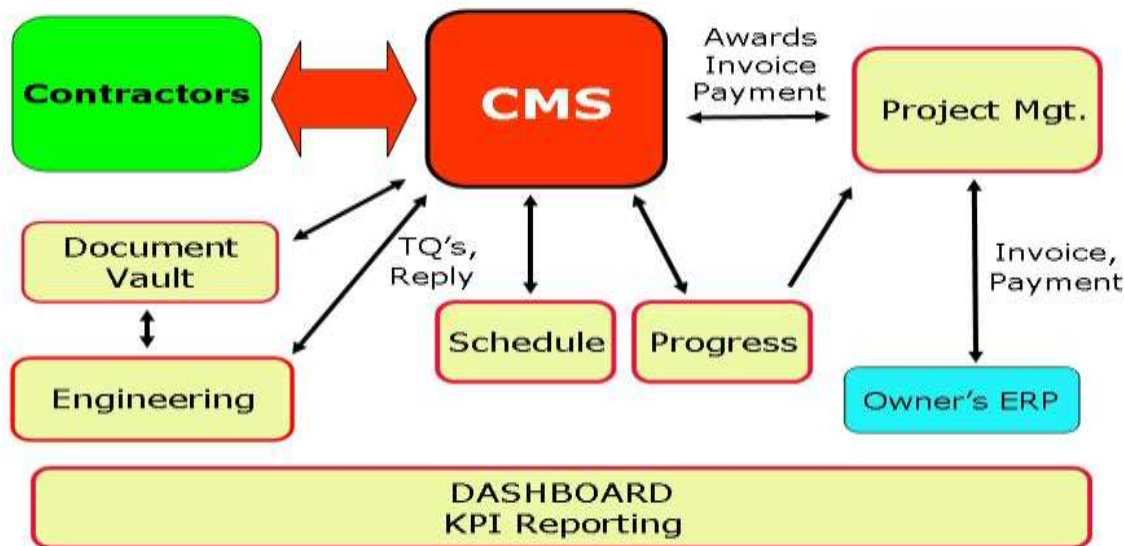
The Solution

On approval to start, a dedicated KBR team was quickly mobilized to begin the development and deployment. AECsoft also dedicated programming resources that would support the KBR team's 13-hour time zone difference.

At this time a critical activity was to communicate to stakeholders, both internal and external, that a contracts management system would be deployed. These communications were designed to inform, but also create an expectation and buzz to help engage the many diverse participants required for success. This communication was reinforced throughout the deployment process and continues today with updates on CMS status and features.

The first development step was to create a vision to extend the planned CMS functionality by leveraging the existing platform, adding features and building interfaces to other project systems.

Backed by senior management, the deployment team corralled stakeholders and “negotiated” the vision. From that vision, the new functionality and interfaces were scoped and built in a rapid development process with AECsoft. That was the “easy” part.



The difficult part was to configure the new system to the dynamic needs of the project's Subcontracts environment. To accomplish that, the KBR team prepared a detailed blueprint mapping of the Contracts work processes and developed a delegation of authority (DOA) matrix for every action. (Getting those agreed and approved was a project within itself.) The blueprints and DOA were the basis for system configuration, but were also used to develop end user (contractors, contract administrators, and approvers) training. Naturally the standard system deployment activities (strong project management, lots of overtime, gallons of coffee, detailed training, etc.) were employed. But the critical success element were the blueprints and DOA matrix which required engagement by end users and stakeholders to complete.

Results

The CMS solution went live **on schedule** August 31, 2009. Twenty-eight (28) major contracts are currently managed with forecasted total value exceeding \$10B. CMS has +400 users (contractors and contracts administrators). At peak on this project, CMS will support +70 major contracts and have over 750 users.

While the stats are impressive and reflect CMS acceptance, the value CMS provides is best indicated by the system's full featured functionality which supports the contractor vetting, compliance, sourcing, contracting and post award execution. The CMS post award navigation menu and summary are below.

The screenshot displays the CMS interface for Contract JCM4. On the left is a navigation menu with icons and labels for various contract management functions. On the right, the 'Contract Detail' and 'Contract Dates' sections provide specific information about the contract.

Contract JCM4

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Contract Detail

Contract No:	JCM4: Food Services
Project:	Gorgon LNG Project
Sub Project:	TRAIN
Short Description:	To provide Cafeteria services to camp.
Contract Status:	Active
Document Status:	Pending Change Order
Contract Document:	TEST DOCUMENT.pdf
Signed Contract:	TEST DOCUMENT.pdf

Contract Dates

Agreement Date:	27 Jul 2009
Effective Date:	27 Jul 2009
Commencement Date:	27 Jul 2009
Notice to Proceed Issue Date:	
Expected Notice to Proceed Date:	
Actual Notice to Proceed Date:	06 Aug 2009
Expected Start Date:	
Actual Start Date:	
Original Completion Date:	02 Aug 2009
Forecast Completion Date:	05 Aug 2009
Actual Completion Date:	
Expiration Date:	30 Jul 2010
Review Date:	
Renewal Date:	

CMS – Post Award Execution Functionality	
Contract Document	A summary of the Contract Details including signed agreement, exhibits, change orders, and other contract details.
Change Management	Site Instructions - Supports both online and offline Site Instructions.
	Issues - Maintain costs, schedule, or other changes that are forecasted to impact the Contract.
	Change Order - Facilitates the execution of Change Orders.
Contract Journal	Ability to record both public and private comments and other contract documentation.

Post Award Compliance	Customizable schedules to manage contractor deliverables.
Contract Financials	<i>Commitment</i> - Track real time contract forecasting and current commitments against the Not to Exceed Value.
	<i>Budget</i> - Compare project budgets against contract commitments.
	<i>Not to Exceed</i> - Maintain Not to Exceed Value of contract
	<i>Invoice</i> – facilitates progress payment applications, internal verifications, and interim progress payment certificates to ultimately execute an invoice.
Communications	<i>Email</i> - Records all system generated emails and User emails with Contractor
	<i>Contract Query</i> - Messaging tool to facilitate communication regarding Technical, Commercial, and Change Order Queries.
	<i>Formal Communication</i> - Facilitates issuing formal letters that require a signature by either the Owner or the Contractor.
	<i>Alerts</i> - Customizable System generated emails that alert individuals on events that occur in the contract.
Contract Schedule	<i>Contract Dates</i> - Tracks forecast and actual contract dates including effective and expiration dates.
	<i>Contract Milestones</i> - Track milestone dates of contract giving the ability to compare those dates with actual invoiced payment dates.
Contract Users	Maintain security of Contract by controlling user access rights.
Contract History	Full audit trail tracking.
Contract Closeout	Facilitates closeout procedures between Owner and Contractor.
Reports	Customizable reporting capabilities by both project level and contract level.

Lessons Learned

While CMS is a success, the deployment process did provide lessons for future projects.

- Process, process, process. When blending technology and processes – good process definition is 90% of the battle
- Communicate the good, bad, and ugly – balance the good buzz with managing expectations

- Condition Subcontractors
- Identify Key Users early – both CA's and Subcontractors
- Training is continuous

KBR – We Deliver