Helping EPC companies to manage their engineering resources

EPC companies provide Engineering, Procurement and Construction (EPC) services to the Oil & Gas and Petrochemical sectors. They are large organizations that can have several thousand engineers working on major turnkey projects and a range of proposals. The complexity of each project warrants the use of heavyweight software, such as Oracle Primavera, to manage the complex scheduling requirements of manpower, equipment and sub contractors for each project.

The Engineering Services departments must build project teams, based on their engineer's skills, competencies, location, and current commitments, for which the heavy duty project planning software is inappropriate. They need their own specialist software, but too often these resources are managed by regionally based spreadsheets, which are difficult to maintain and consolidate, The quality of information too often falls far short of what's required to effectively manage such a large and expensive pool of resource.

Replacing these spreadsheets with Resource Management Software provides the necessary capabilities, enabling the data to be maintained centrally and producing management reports on demand. Having a central database helps to keep the resource and planning data complete, current and consistent. For example, nominating staff can be problematic where competency grading is inconsistent across different regions, and black holes can easily appear in regional spreadsheets when engineers transfer between offices.

Whilst such a system will be operated by Engineering Services, it needs to draw data from a variety of systems managed by other departments, such as:

- The project planning system, which should supply time phased profiles of resource demand for proposals and projects, with subsequent changes to these profiles as they arise.
- Resource data from the HR system,
- Individual's timesheet data, for staff utilization measurement and reporting.

Resource Management Software

Specialist resource management software, such as that from Innate (www.innate.co.uk) provides a web based spreadsheet interface, with a central database and on demand reporting. Its specialist functions can be tailored to support the key process steps:

1. Maintain the details of the engineering resources, with automated import from the HR system.

2. Enter time phased demand profiles for projects and proposals. This is generally best done at a generic resource level, such as a combination of department and discipline, to give meaningful visibility of skill bottlenecks. Where the project planning system does not reflect the required generic coding, the time phased input will need to be re-categorized in the resource management software. Simpler project management software, such as Microsoft Project, may be more suitable for planning proposals, and should be accommodated.

   Innate provides a web based spreadsheet and interactive Gantt chart that is suitable for planning engineering work at the required generic level, and for re-categorizing the demand data as it is imported from the planning system(s).

3. Identify skills or other resource type bottlenecks, as profiles of demand (new and amended) are layered on top of the current resource commitments.

4. Enable Resource Managers to allocate staff to projects and proposals, based on a search of required resource attributes, such as particular skills and competencies, and current

commitments. Soft or provisional bookings of staff may be required, to ring fence candidates for forthcoming projects.

5. Provide business development with a longer term look ahead, so that potential skill or experience bottlenecks can be identified. This will provide a recruitment profile for HR. As recruitment campaigns are agreed, specific vacancies can be added to the system, which will be updated with real resource names and details from the HR system, as they are filled.

6. Show project managers a list of their outstanding requests for engineering resource, and remind them of the dates that Resource Managers are expecting the return of individuals from their projects.

7. Support 'What if…' analysis so that the resource impact of potential projects being won, or proposals slipping, etc, can easily be seen.

Once implemented, these capabilities will significantly improve the accuracy of the resource utilization information, giving confidence for future project commitments and hiring programs. The overhead costs of a thousand engineers makes implementing resource management software a rapid payback investment.

About the Author

Barry Muir is managing director of Innate, the resource management software company that has been trading for more than 17 years. You can see more detail of Innate and its products at www.innate.co.uk

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