

Resource & Capacity Management In Product Development

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* Welcome *

Welcome to this issue of 2PLM, an e-zine distributed every two weeks on a free subscription basis.

We would like to draw your attention to a survey being conducted by Goldense Group, Inc. (GGI), Needham, MA, a respected consultancy and research firm whose work we here at 2PLM have been aware of for many years now. 2PLM subscribers and friends may download a copy of the survey from our website <<http://www.johnstark.com/ggi.pdf/>>
<http://www.johnstark.com/ggi.pdf>.

Below is an article provided to us by Brad Goldense of GGI explaining why Resource & Capacity Management is the focus of the survey. GGI will write a second article for 2PLM summarizing the results of the survey in one of our November or December 2002 issues.

* Resource & Capacity Management in Product Development *

During the last two decades of the 20th Century, the practices of most business functions in industrial and high technology companies matured and became automated. Today, just about every business function uses automated systems within their function that are also integrated with the systems used by their cross-functional counterparts. ERP is the term that generally describes these systems.

Two functions however escaped the ERP movement, Engineering and Marketing. These two functions are quite different from most all other business functions in that are more "probabalistic" in their nature and not as "deterministic". The level of automation that exists today in these functions may be best described as "islands" of automation. Most of these islands of automation are not yet integrated within the Engineering and Marketing functions, nor integrated with their cross-functional counterparts. This too shall pass, sooner than later. Leaving the matter of automation of the Marketing function for another article, let us focus on Engineering.

Breaking Engineering into two "halves", technical systems and management systems, this article examines the state of automation using the Mechanical Engineering discipline as an example.

Will surface modeling, 3D design, CAD, CAM, finite/thermal, vibration, tolerance stack-up, kinematic, DFM/A, and numerous other specialty systems remain? Or, will these specialty technical systems be consolidated and integrated back into an overall "suite" of integrated technical systems? On the management systems side of the ledger, will existing process automation, project management, product data management, product costing, development costing, time recording, and metrics systems be consolidated and integrated back into an overall "suite" of integrated management systems? GGI thinks yes on both counts.



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The process of automation in industry typically occurs in "islands". In the long run these islands typically get tied together. First the islands are "independent", then they become "interfaced", then they become "integrated". We have watched this happen first in the financial and accounting functions, then in the order processing/distribution and common carrier functions, and then in the manufacturing and production functions. Then these three larger islands of automation became integrated into the ERP systems of today.

Why do the islands get tied together? Stand-alone islands of automation enable "effectiveness". The right result or outcome is achieved with greater certainty more frequently than manual processes alone. Why is this not enough? Because it is not "efficient". An equally probable positive result or outcome may be achieved with less input or cost.

The evolution of engineering and product development technical and management tools is going the same route as we have seen in other disciplines. For both technical and management systems, the first wave of automation is just about complete.

One of the exceptions is the subject of "resource planning & capacity management" for engineering and product development. At the present time, there are few suppliers that offer packaged solutions for this island of automation. Within industrial and high tech organizations, it is still one of the most poorly managed areas. It is well known that companies still routinely overload their engineering and product development resources to the tune of a 150% to 275% overload. It is not a surprise that product development schedules take twice as long as originally forecast when the resources are routinely scheduled to 2x or more than the actual capacity.

Every other year, on the even numbered years, GGI conducts a survey of hot topics in engineering and product development. The 2002 GGI Product Development Survey focuses on "Resource & Capacity Management". The 2002 Survey explores five Resource & Capacity Management issues:

1. Loading The RD&E Capacity Pipeline: The methods companies use to select projects and establish backlogs and priorities.
2. Providing Capacity For RD&E Activities: The approaches companies take to determine outsourcing requirements and the allocation of resources to sustaining activities.
3. Balancing Cross-Functional Resources: The resource ratios companies use between functional disciplines within RD&E, and between RD&E and cross-functional disciplines.
4. Using Systems, Tools, & Metrics To Manage Capacity: The infrastructure companies have put in place to enable resource and capacity planning and management.
5. RD&E Metrics Used In Industry: The metrics and measures companies use to plan, track, and manage resource and capacity allocation activities.

Completed surveys are due back to GGI in Needham by August 30, 2002. Participants who fully complete the questionnaire within the required timeframe will receive a complimentary copy of the results when they are completed in November. That report will describe the survey population and will contain analyses and graphs of the results. It typically averages 40-50 pages. All information provided by survey participants will be held strictly confidential.

Download a PDF copy of the survey <<http://www.johnstark.com/ggi.pdf>> here from <http://www.johnstark.com/ggi.pdf>.

The survey is available in several formats, including an interactive MS Office 2000, 97, 6.0/95 or .pdf. All survey format choices are available at <<http://www.goldensegroupinc.com/biannual.shtml>> <http://www.goldensegroupinc.com/biannual.shtml> for more information.

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