VOLUME 5, ISSUE 2 – March 2010



EPICENTRAL

A Newsletter from Epicenter Development Group highlighting ideas that improve organizations

Welcome to Epicenter Development Group's newsletter, EPICentral. The purpose of this newsletter is to highlight fundamental ideas that have helped organizations develop and maintain great manufacturing and service operations. We hope that you find our EPICentral newsletter helpful, and we would welcome your comments on its content.

Simulation Modeling - Taking Your Design on a Test Drive

Back in 1986 when I first began using discrete simulation modeling (Simulation) as a design tool, it was expensive and difficult to use, and ran on mainframe computers. Although recognized as a powerful tool for designing new systems and making better decisions, Simulation was not accessible to smaller companies. Today, however, Simulation has become much more accessible to all-sized organizations and can be integrated with more main-stream business applications like MS Visio, Excel and AutoCAD. This month's article outlines some of the benefits of using Simulation and a general approach for making simulation projects more successful.

When to Use Simulation:

- A Big Investment Ahead If you're about to spend a lot of money to purchase new equipment or implement a new system, Simulation can help you to evaluate whether your new system will meet your needs. Along the way, Simulation can also help identify opportunities for improving your design concept so that you can get the most value for your money.
- Lots of People Involved As they say, a picture is worth a thousand words, and an animated Simulation can help your team to collaborate on creating the best design concept possible. In addition, Simulation projects often help to clarify assumptions and identify potential design issues before they become reality (and are more expensive to address).
- Several Options to Consider As organizations try to get the most value for their investment, Simulation offers a method for evaluating several options at a low cost. The project team can run several "experiments" to understand the trade-offs between design options and the system performance (capacity, costs, quality, and lead-time, for example).

Simulation Approach for Success:

- Begin with the End in Mind Identify the objectives of the project before getting started. The worst thing that can happen is to create a model that won't meet your needs. For example, if you want to estimate the ongoing labor costs associated with a design option, then the model needs to be designed to accurately portray labor activities.
- Garbage In Garbage Out It's important to recognize that the simulation results won't be valid unless the data and assumptions used to drive the model are accurate. Take time at the beginning of the project to identify and summarize the design assumptions into an approved "Assumptions Document" and identify the source(s) for accurate information that will be used.



- Keep It Simple (KISS) With simulation, it's easy to get caught up into creating a powerful model that is so complex that it becomes unmanageable. For that reason, I always suggest starting simple and increasing the complexity of the model only as necessary. If a simple model satisfies your needs then go no further.
- **Make It Visual** Nothing helps to improve the credibility and usefulness of a simulation model than seeing things happening on the screen people, parts or orders moving between stations; equipment running, blocked and down; and key information updated on a real-time basis. If a simulation model is well designed, the model becomes a valuable <u>team</u> tool for visually recognizing potential design issues, system interferences and process bottlenecks.

Considerations:

- In most cases, the cost to complete a simulation project pays for itself in savings down the road.
- There are several simulation modeling packages available in the marketplace. If you are
 interested in purchasing a package, be sure to consider the reputation of the vendor (support and
 how long in business); how well the software will meet your unique needs; and the TOTAL cost of
 the software (upfront plus maintenance costs).
- Although most simulation modeling software packages are easy to learn, there is an investment in time to be able to effectively build models that will be useful. For this reason, consider using experienced, outside resources as needed until you have developed your own in-house capabilities.
- For more information on Epicenter's capabilities in the area of simulation modeling, please visit us at <u>www.epicentergroup.com</u>.

Next Steps

If you would like more information on this topic or other similar types of tools, please contact Bill Proctor with your request at wproctor@epicentergroup.com or 216-702-0952. You can also find previous issues of EPICentral at Newsletters.

Mr. Proctor also speaks on a variety of problem-solving and system design topics that can help companies significantly increase the success and profitability of their businesses. If you are interested in having Bill speak at one of your upcoming meetings/events or would like more information on any of the speaking topics, please visit <u>Speaker Services</u> or you can email

sales@epicentergroup.com.

Epicenter Development Group is a unique consulting firm that seamlessly integrates the disciplines of Systems Engineering and Organizational Analysis & Development to create practical design solutions to your toughest challenges. It is on the cutting edge of problem-solving solutions and the creator of a unique process called GreenRoom Engineering. This process adds greater value and cost savings for clients as compared to traditional engineering methods.

William Proctor, Epicenter's founder and president, has provided services around the country to more than 100 companies consisting of a variety of organizations; and Epicenter continues to grow as a resource for firms of all sizes.

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