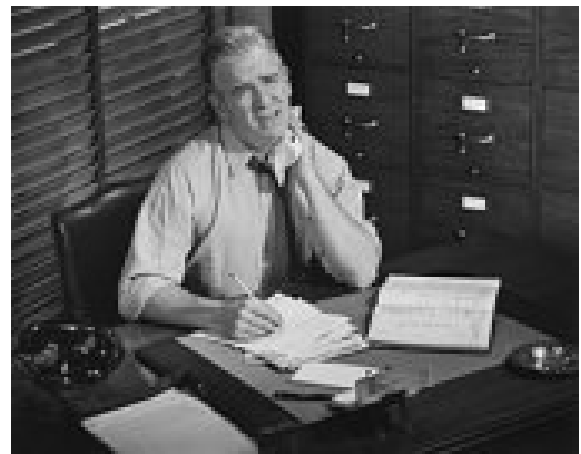
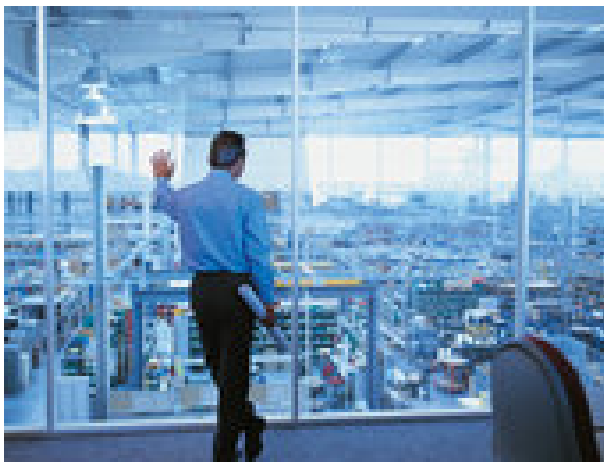


Six Reasons Why Your Manufacturing Organization Needs Real-time Manufacturing Information

Reduce the frustration whenever accurate and timely information is needed from your shop floor.



(Which manager relies on real-time manufacturing information to manage their plant?)

By

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Introduction

People working in manufacturing organizations cannot seem to find the production information they need fast enough. They are continually seeking accurate and timely feedback about production jobs or other shop floor activities. Or they are being asked for items such as completion dates, whether a job has started/finished, or requested schedule revisions from customers.

And to obtain the information they often *have to* enter into a vicious cycle of phone calls and waiting before receiving their answers. Finally, relying on the information's accuracy can be another adventure into futility, since by the time an answer is received the information may no longer be valid. Consequently there is usually a lot of frustration and wasted time associated with obtaining timely production information. Why? More likely than not the processes used to acquire, assemble, and distribute the information are built on outdated, manual methods of data collection.

In most manufacturing organizations people obtain job status or production feedback by: 1) Viewing outdated ERP or similar shop floor data; 2) Phoning someone else and interrupting them to obtain the information; or 3) Getting up from their chair and walking out to the shop floor. Each of these routines has shortcomings that create waste and even customer dissatisfaction either directly or indirectly.

But innovative, technology-based solutions are available that provide the detailed or summarized manufacturing information people are seeking in real-time. These tools help significantly reduce or even eliminate the frustration and delays associated with receiving accurate production status information whenever it is needed.

The following six (6) material reasons reveal why investing in technology that delivers accurate, real-time manufacturing intelligence, and moving away from error-prone, manual-based data acquisition will help your organization survive and compete well into the future.

1. Reducing manufacturing costs enables reinvestment in new products and markets

In today's economy, the pressure is on to constantly look for more effective ways to optimize your resources. Today, more than ever, manufacturers must profitably balance price and value, decrease the cost of goods sold, improve operational efficiencies, and deliver their products to market quickly, effectively, and profitably. Consequently the #1 goal of manufacturers in our globally-competitive world is controlling and, hopefully, reducing costs associated with manufacturing.

One of the top market pressures facing manufacturing organizations is to increase capacity without making additional investments in expensive machinery. However many manufacturing organizations lack the ability to accurately measure and understand available capacity. If plant managers knew where and when lost machine time occurs they could address the losses.

But most manufacturers lack adequate tools that can fill this gap. However industry leaders who are applying technology solutions are realizing capacity gains resulting from being able to identify and remove wasteful process variation.

Manufacturers that continue to rely on outdated, manual data collection and entry processes continue to perpetuate waste estimated at an additional 15% to 40% of their operating costs. Noted quality guru Armand Feigenbaum called this wastage "The Hidden Factory". Investments in

real-time EMI technology will help uncover the sources of profit leakage, enabling your organization to support its growth rather than continue to slowly dissolve its financial foundation.

A recent Aberdeen Group¹ study indicated that “best-in-class” manufacturing organizations were almost twice as likely to be investing in enterprise manufacturing intelligence (EMI) technology as “laggards”. This same study discovered that leading manufacturers are realizing an average profit margin of 25% while laggards are about 18%. Could this be coincidence? Perhaps not.

2. Eliminate costly, manual data collection and entry processes

Whether seeking a job’s status to relay the news to a customer, assessing available capacity, or determining if overtime is needed second shift, accurate and timely information are crucial inputs to decision-making.

However the great majority of manufacturing organizations obtain production data by having your machine operators manually log their daily results on to a job ticket or similar form. The forms are then periodically collected by administrators who manually enter the essential production data into transactional software such as ERP---sometimes after the data sat in an in-box all day.

Since data lacks timeliness, and may contain errors or operator bias, everyday decision-making becomes reactive and typically not based on enough factual knowledge. With manual-based approaches data integrity issues range from simple inaccuracies, to missing/incomplete records. Is it any wonder that people become frustrated in this environment?

Shouldn’t your machine operators be producing quality parts on time instead of recording production results? Imagine being able to eliminate the tasks and resources associated with recording/entering production data and reducing your organization’s costs associated with these transactions. Enterprise manufacturing intelligence (EMI) solutions help to ensure these scenarios are possible.

Investing in EMI technology is creating game-changing competitive advantages for manufacturers, improving customer satisfaction and increasing productivity while dramatically improving decision making. Manual forms are being replaced with event-driven, digital information that has been configured for individual needs. Recent advances in computing power and networking reliability have enabled technology-based solutions to replace manually-based data collection processes with “real-time” intelligence.

Access to real-time enterprise manufacturing intelligence (EMI) is quickly gaining popularity within manufacturing and visionary manufacturers understand technology’s strategic advantage. EMI software tools enable manufacturing organizations to make more accurate, informed decisions, gain valuable capacity through improved coordination of resources, and identify/correct sources of variation that are affecting their processes. And the really good news: returns on investment of 12 months or less are being realized and dramatic improvements in both efficiency and effectiveness are well-documented.

¹Aberdeen Group, *Event Driven Manufacturing Intelligence: Creating Closed Loop Performance Management*, May, 2008

3. Link value stream resources and improve communication channels

If you work in manufacturing think about how many times people, especially your production planning team, are interrupted by someone who needs production-related information? They usually have to stop what they are doing, determine where to obtain the information, spend time contacting and interrupting other persons, and finally re-contact the requestor. And there is a good chance that by the time the final information is relayed to the requestor it is no longer valid because something else has changed. Not a very efficient process, wouldn't you agree?

EMI enables real-time information to be accessible and secured through a simple web browser. And innovative solutions do not require client software to be deployed on user's personal computers nor be maintained by your IT staff. Since IT staffs do not have to deploy nor maintain additional software, total costs are lowered. Browser-based solution's cost effective flexibility offer global access to real time manufacturing information through your organization's secured intranet. These benefits can also significantly increase the productivity of traveling executives who need quick information.

4. Event-based versus transactional-based manufacturing information

What is event-based software? Simply stated, event-based software "listens" to prescribed business activities waiting to detect specific user-defined transactions such as an out-of-tolerance condition. Once these data or data patterns are detected the software's rules then instruct, create, and issue a response. Responses can range from generating simple email alerts to tripping audible/visual alarms to shutting down processes.

Think about the business activities (events) that take place within your organization. Events are occurring continually, and many cross multiple disciplines. Few events are independent---once an event takes place it usually triggers others. Whether a single event or multiple, predetermined rules instruct the software to alert one or multiple people, turn on an alarm or indicator light, or email/text page.

ERP on the other hand is transaction-based. These transactions are dictated by accounting rules established to accumulate costs associated with the many types of business transactions. Since it is updated as various transactions take place ERP's information is only as accurate as the last transaction. Consequently there are always gaps between ERP and the shop floor.

Reducing the gaps between ERP and plant floor synchronization is possible with real-time, event-driven EMI. Innovative EMI solutions should be able to acquire data directly from production machines and then be capable of updating ERP software as frequently as necessary using flexible integration tools. These advanced solutions eliminate the manual efforts, delays, and inaccuracies introduced into ERP data from manually derived capture and record processes.

5. Measure process performance – Implement real-time key performance metrics (KPIs)

“Things that are measured tend to improve”. This assertion usually proves to be true. Measuring and tracking your organization’s meaningful performance measurements with accurate, timely information does help improve decision-making. And experience shows that most manufacturing companies would like to implement KPIs. However many organizations attempt to track various metrics, but soon learn the myriad difficulties and effort required to maintain them.

One of the main reasons is that implementing and maintaining KPIs is resource intensive. Manufacturers tend to be staffed fairly lean, and these time-consuming tasks are given lowest priority. Also companies may not have data in the proper format needed for entry into a spreadsheet or similar tool. The frustration arising from reformatting or correcting obvious errors is another key reason measurements are neglected.

Finally even though certain performance is being measured, the information is not woven into an organization’s business strategies and its standard operating procedures. As a result measurement initiatives deteriorate over time and are eventually abandoned. Consider a technology-based solution to help your organization overcome these obstacles and integrate real performance measurements into your decision-making processes.

The flexibility of most EMI solutions enables your organizational team to accurately measure KPIs ranging from machine utilization to data-intensive calculations like overall equipment effectiveness (OEE). EMI’s that generate the information in real time from manufacturing processes eliminate manual data collection and re-entry into spreadsheets. Be aware, however, that many EMI or MES software products simply transfer the data entry from your admin staff to your machine operators. Again, choose a product that is capable of acquiring data directly from your machines, one that does not rely on machine operator entry.

6. Reduce cycle times, increase throughput, and lower inventories

Your production machines are stopping during production runs more frequently than you think---much more frequently than what is being reported as down time. Without technology, recording these miscellaneous stops is virtually impossible. A minute here, two minutes there, negatively affects productivity, increasing cycle times and reducing throughput. An EMI solution capable of acquiring data directly from machines will capture idle time throughout each shift without human intervention.

Other factors affecting productivity impacts that could be captured with an EMI solution:

- Operator fatigue---Are you able to isolate this kind of data with your current methods of production reporting?
- Re-work jobs, R&D/engineering development time interrupting normal production
- Expedited customer orders and other similar production schedule disruptions
- Comparing standard direct labor hours to actual in real-time.
- Quality data could be acquired, viewed, stored, and retrieved for future reporting.
- Performance of setup technicians.
- Performance of indirect human capital.
- Monitoring temperatures, humidity levels, motor speeds, and other ambient variables.

In conclusion, people working in manufacturing organizations are continually seeking accurate and timely feedback about production jobs or other shop floor activities. More likely than not the processes these organizations rely on to acquire, assemble, and distribute the information are built on outdated, manual methods of data collection. But there are technology-based solutions available that can end the vicious cycle of phone calls and waiting before receiving their answers.

Continuing to rely on inaccurate, outdated, manual-based production data collection processes will not help your manufacturing organization become more competitive. These error-prone methods may be creating as much of a challenge for your organization to survive as your competition.

For more information

For additional information on helping your manufacturing organization obtain real-time information within your enterprise, please visit the Manuvis Corporation website at <http://www.manuvis.com>, or contact us at the phone number on the last page of this paper.

About Manuvis

Manuvis is a leader in delivering innovative, real-time, event-driven enterprise manufacturing intelligence software solutions that enable manufacturing companies to lower operating costs, improve customer service, and increase profitability.

Manuvis has a proven reputation for excellence, helping companies meet their productivity goals while reducing cost of poor quality. Our main goal is to provide our customers with solutions that help increase operational efficiencies and profitability by leveraging latest technologies.

FactoryMRI's innovative service oriented architecture and event messaging provide fast, simple, and yet powerful unique configurations, depending upon customer requirements. These benefits translate into quicker return on investment, superior resource efficiency, and improved productivity for our customers.

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