

# WHAT IS THE VALUE OF REAL-TIME DATA?

Whitepaper

## WHAT IS THE VALUE OF REAL-TIME DATA

What do you consider real-time information? For some manufacturers, accurate data can only be acquired when a shift ends and the production reports are logged or the data from the shop floor is uploaded, resulting in an unfortunate up to eight hour “real-time” reality. For others, the real-time information range is shorter, spanning between four to six hours, depending on the design and technology limitations of their reporting software.

Today’s competitive manufacturers need to ask themselves, “Why is that an acceptable margin?” The answer is: It’s not! When you pull information from your shop floor and back office, your reports should be run against live data, not data that is delayed. Too many manufacturers miss out on critical decision-making pieces of the puzzle because of a lack of timely production details.

Is real-time data all that important? It is not like you are pulling money from an ATM or booking a flight. This whitepaper discusses the importance of actual data and demonstrates how a lack of real-time information can cause crippling effects throughout your entire enterprise. Read on to learn how live data can help you reduce the loss of time, resources and ultimately money from your bottom line.

### How the Internet of Things is changing the concept of real-time.

Real-time of the past is not the real-time of today. Out on the shop floor, your robots and work centers are gathering tremendous amounts of data. Production details regarding performance and maintenance are being tracked and in-depth information about the products you are making is being gathered. In the past, this data was trapped within your high value production equipment because of a lack of connectivity back to a central location.

Today, thanks to the Internet of Things (IoT) movement, sensors and programmable logic controllers (PLCs) are able to capture that data and communicate it, through highly connected IP networks, back to a central enterprise-based system (such as ERP and MES solutions) in real time. This machine to machine (M2M) technology allows manufacturers to finally access critical data in the here and now for thorough analysis in modules such as Statistical Process Control (SPC) or through powerful user-defined graphs, gages and reports.

### Then why am I experiencing a data delay?

Armed with the power of the Internet of Things, what do you now consider real-time information? Your answer should be: Instantaneous. But that is not the case with some ERP vendors who claim to provide “real-time” information. The best real-time data these ERP vendors can offer is hours later! There are a couple of reasons why your reporting information is delayed. The first is the ERP vendor offers a **third-party, interfaced together reporting solution**. Not designed as part of a single system, the programs are not integrated or comprehensive, resulting in data that is not only delayed, but also potentially not even complete.

The other reason is **batch transfers due to technology limitations**. For example, some Cloud ERP software does not allow user defined reports, queries or KPIs to report against live data. Instead, these systems rely on a data warehouse that is only updated hours later in batches.





## A BETTER SOLUTION

So what is the answer to this information delay? The solution is an Online Transaction Processing (OLTP) system. OLTP efficiently facilitates high transaction-orientated applications, such as ERP software, for immediate feedback and concurrency. The very nature of OLTP is characterized by high performance data transactions and processing, much of which can happen in near real-time (sub-seconds) in order to provide accurate data for many users.

By capitalizing on OLTP capabilities within a database such as Oracle, accurate real-time data is provided to all departments within an organization. This allows for immediate response to alerts, trends and opportunities which would otherwise be missed in non real-time systems. Without this capability, users would not be able to respond to quickly changing needs or requirements throughout the enterprise, which can result in costly rejects or rework.



## Wave good-bye to your most painful manufacturing challenges

Can you imagine if something goes wrong on your shop floor and no one is made aware for several hours? The pitfalls of operating with even slightly outdated information are great. Let's consider some examples of common challenges where real-time information can greatly increase performance and operational efficiency.

### Inaccurate scheduling

On the shop floor, you live and die by your production plan. Many manufacturers survive with dispatch lists and organize their schedules based on the fixed production time on the Bill of Material (BOM). This average time only delivers an estimate as to how long a job is expected to take and the process of work center juggling scheduling involves a heavy amount of proprietary knowledge, rough cut capacity charts and often a bit of prayer.

If you cannot view what is occurring on the shop floor until hours after it has occurred, how can you properly schedule? For example, if you are producing an unusual amount of rejects, then your good products are not coming off the line and you are going to run late, pushing the next job out. Alternatively, what if you are performing better than expected, but were not aware, so when the job finishes early, you have an idle work center because you did not prep the next job. All of these scenarios could have been avoided if you had up to date information.



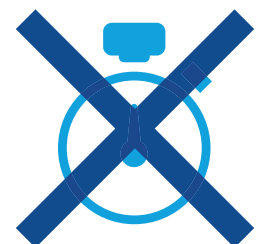
### Trending out of specification

One of your work centers is processing a long running, automated job with no operator. Because you only receive data every couple of hours, it could be half way through your first shift before you receive a production report. You take a look at the data and a quarter of the products have been rejected! They are not meeting specification. You pull up the data in your SPC module (provided the enterprise system is linked and you have that option) and the parts started to trend out of specification two hours into the run. If only you could have accessed that data in real time! You would have adjusted much earlier on. How many tens of thousands of dollars were lost in corrective actions because your data was old? Add in the expense of wasted material, rework, lost hours and the cost of your next job starting late and that old data came at a high price.



### Late KPIs

Collecting data is easy. In today's modern manufacturing environment, it is virtually everywhere. But getting accurate, timely, contextual data? That is a bit harder. If you don't rapidly transform the data you are gathering into applicable analytics, you can easily get lost in it. Today, it isn't so much about big data as it is the ability to quickly sift through the big data to access the specific data that you actually need when you need it. Key Performance Indicators (KPIs) are much more effective when the information is not delayed. Sure, some reports can be analyzed later (such as OEE, cost against standard, etc.), but what about production process rate, part count and actual production time? How useful are reports if the data is old?



### Incorrect inventory

Real-time data can positively influence so many aspects of inventory control that it is difficult to mention them all here. For example, real-time information allows employees to offer accurate capable to promise calculations when quoting a job or check packing slips and current work orders for inventory availability when placing a sales order. With real-time inventory requirements gathered from forecasted work orders, received shipments and current WIP, a more detailed, accurate picture of MRP is gained to create accurate purchase orders. Supply chain control takes on a whole new meaning with up to the second (or sub-second) actual data.



### Unplanned downtime

The saying goes that minutes cost millions when work centers go down. Controlling costs on the shop floor begins with work center reliability and continuous uptime. Unplanned or unexpected downtime can be incredibly expensive, but with the ability to actively monitor and diagnose what is happening with each work center in real time, you can react more quickly and ensure that you maximize the output of your assets.



### CONCLUSION

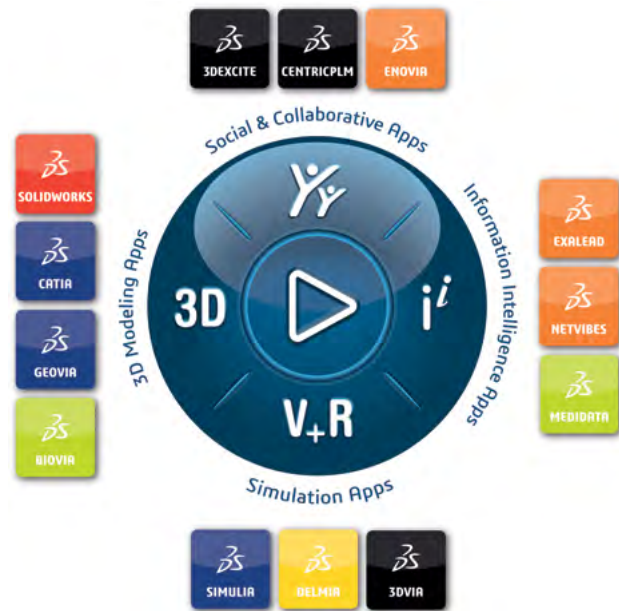
The point has been made - Getting your information, data and reports in real time is crucial to the growth and success of your manufacturing facility. It is time to stop reacting and begin proactively making decisions about what is occurring on your shop floor. When selecting a new ERP solution, don't settle for a less than real-time existence. Search out the provider who can offer immediate answers to the challenges that plague you the most.

For more information, please visit [www.3ds.com/delmiaworks](http://www.3ds.com/delmiaworks) or call 1.866.367.3772

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