Busting Digital Transformation Barriers:

Three Digital Manufacturing Projects for Rapid ROI

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Nearly every business has made plans for Digital Transformation but most have not realized nearly enough value. **What if manufacturers found previously unconsidered shortcuts around the barriers holding them back?**

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DIGITAL TRANSFORMATION PROMISES AND BARRIERS

A considerable majority of the world's manufacturers believe that Digital Transformation (DX) is necessary to achieve their growth plans. However, just 35% report that they have achieved or are on track to achieving digital transformation goals. Gartner[1]

Executives at these companies naturally feel pressure to shorten the timeframe to deliver on the promise and realize the value of DX. The potential impact for DX is significant across every business metric of a manufacturer and its supply chain. Surveys consistently show that driving operational efficiency and growing revenue via market share are the primary business objectives. DX plans will not yield these benefits or competitive advantage until they are implemented.

What's holding manufacturers back when digital capabilities offer ways of doing more with less? Why have efforts stalled? Despite the best laid plans, executives face several barriers in moving toward the future-state of a digitally transformed business. Unsurprisingly, the larger the enterprise the more numerous and higher the hurdles.Individual entities certainly have their own list of barriers but a recent survey identified these two nearly unanimously cited categories[2]:

- **DX as a primary responsibility:** The most common challenge is "employee availability of time devoted to digital transformation execution around their other job responsibilities."
- **Focus on technology skills over application functionality:** Solutions need to be an expression of your business goals based on knowledge of actual activity.

These barriers are particularly painful for those in charge of driving transformation; the board expects you to live up to mutually agreed upon strategic plans to accelerate growth, margins and profitability. Is your executive committee confronting the organization's barriers or is it paralyzed by caution and indecision?

Despite the slow progress towards digital manufacturing, the C-suite remains optimistic. The majority believe that companies that began their DX journey later than others still have a chance to beat their competition.But how long can you wait to boost adaptive and agile manufacturing capabilities? Is there a more rapid approach? A shortcut?

THE FAST PATH OF SPEED-TO-VALUE

The shortcut approach does not, by any means, advocate skipping strategy, change management or resource allocation. Those pursuits are necessary for long-term operational and financial excellence and survival in a world of repeated disruption. The shortcut approach, rather, offers manufacturers a way of jump-starting their DX execution while enjoying substantial near term benefits.

The right kind of digital projects can realize up to 30 percent return on invested capital within a calendar year in several critical areas, while energizing the organization's digital manufacturing momentum.

Such tightly scoped projects begin moving the enterprise beyond theoretical, altruistic

continuous improvement to true step-change advancement. The rapid ROI of conservatively scoped projects not only has immediate payback but can stimulate the organization to tear down the barriers and move forward more quickly with its broader digital plans.

OPPORTUNITIES HIDDEN IN PLAIN SIGHT

Manufacturing technology trends over the last several cycles have focused on back-office productivity, improved planning and isolated plant-level automation. Little has been done, however, to optimize collaboration between business-level systems (IT) and operations-level systems (OT). For well over a decade dialog about IT/OT convergence has been a hot topic but unfortunately often suffers from the technology-first approach.

The friction points between systems are almost always attractive opportunities for true digital transformation. For example, poor collaboration between the planning and operation disciplines restricts a manufacturer's ability to meet customers' demands. Manufacturers often lack timely and accurate insight into the operational status of planned production. This lack of insight interferes with production's ability to respond effectively to unpredictable customer situations such as inventory shortages, equipment failures and supply chain interruptions.

Better coordination between the planning and execution side of manufacturing will likely be the biggest near-term winner of DX investments. Filling IT-OT gaps with spreadsheets may feel like progress but spreadsheets actually inhibit real progress. Spreadsheet gap-fillers are customizations that fly under the radar, do not foster true coordination between planning and operations and lead to data integrity problems - excellent data quality is an absolute requirement for successful digital manufacturing efforts.

Do you know to what extent your operations rely on spreadsheets and other manual workarounds? Doesn't automation of these weak links seem like a great place to jump-start your business with data-driven decisions and metrics?

There is good news that helps all kinds of manufacturers, regardless of where they stand in terms of DX. Given the maturing nature of digital technologies and solutions, several proven projects and business use cases offer fast ROI and don't require large investment. Most of these projects take place at the juncture of IT and OT. When planning and operational organizations collaborate on a common understanding of priorities and on-going progress, the result is actionable insight that drives better decisions, higher efficiency, lower costs, happier customers and healthier margins.

Here are three examples of short duration digital manufacturing projects that deliver real benefits rapidly and can jump-start manufacturers on their respective digital journeys.

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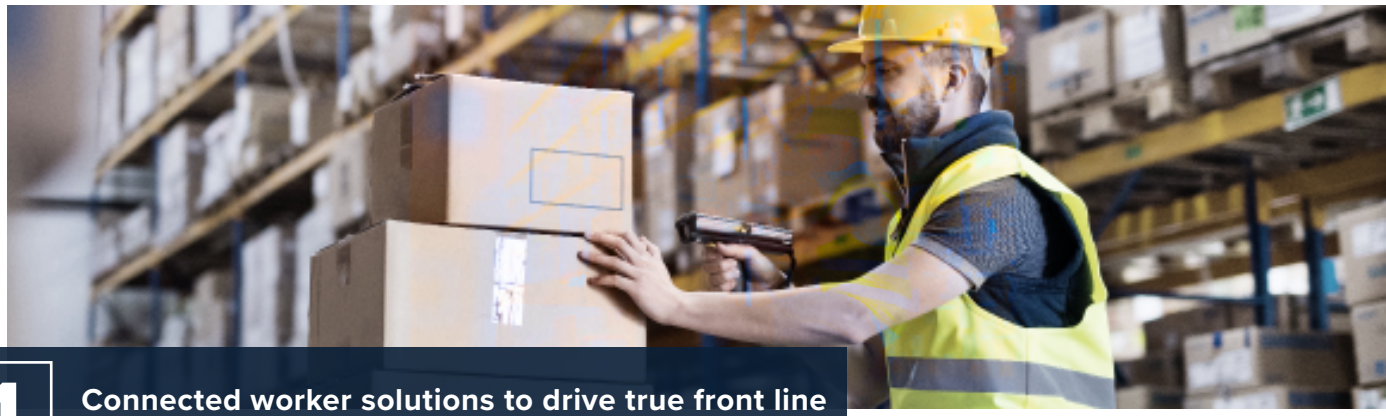

1 Connected worker solutions to drive true front line collaboration on the shop floor

It is universally understood that there are real challenges around labor in nearly every manufacturing enterprise. Hiring and sustaining the right workforce is currently the bane of every plant manager. This issue is neither new or surprising, but only recently are we better understanding the real issue and potential solutions.

Equipment control, robots, part feeding and other forms of automation have removed the larger community of operators further from the actual processes. The next generation shop floor operator is more of a generalist. The common generational thread is that problem solving and adaptability are still paramount characteristics. The distinction is that the modern operator needs to use problem solving and adaptability as they move fluidly from role to role on a dynamic shop floor.

The contemporary shop floor requires a "connected" worker. The key word here is connected. Certainly the advent of IIoT allows for better connectivity to equipment and key sensor data. Perhaps more important is the connection of the shop floor operator with other operators and the extended shop floor team. Connected workers can share information and collaborate more effectively, which can help improve overall productivity and quality. In many ways the connected workforce is also a "collective" workforce. As operators become more generalists, the collaboration and knowledge sharing is critical to success.

Some primary positives from a connected worker approach:

- A connected workforce solution can be applied to many semi-automated team oriented production environments without the layers of complexity and time barriers of deep integration efforts.
- Focus on operator collaboration often results in both 25% productivity increases AND 30% reduction in staff turnover. (https://rzsoftware.com/results/) Clearly better productivity means higher output from a finite set of operators and a constrained labor pool.
- Productivity gains are further complemented with the inclusion of quality and maintenance personnel with a unified view of shop floor operations.

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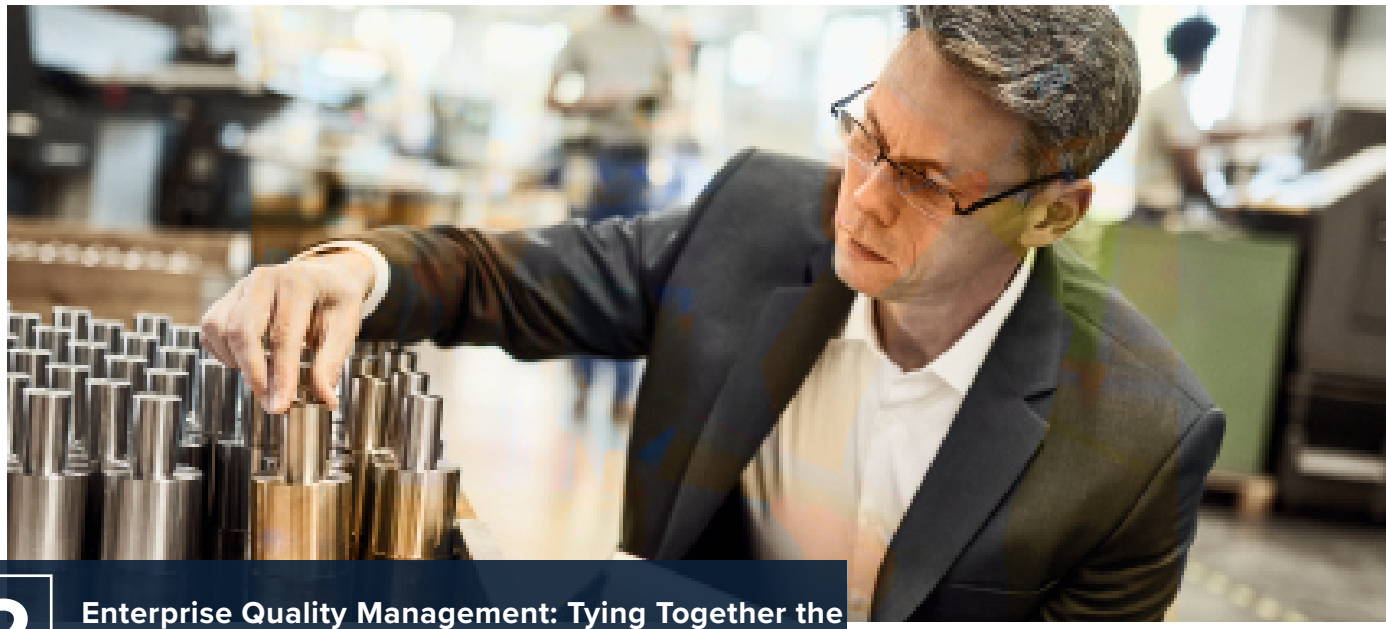

2 Enterprise Quality Management: Tying Together the Patchwork With Digital Thread

Too often, the systems supporting manufacturing quality are numerous and disjointed, and have evolved as a patchwork of temporary fixes over time. When quality operations are only manually (spreadsheets should be considered “manual”) connected with quality planning functions there are inefficiencies in terms of quality processes and related data access.

A more integrated, adaptive manufacturing approach ties a digital thread between new product introduction (NPI) planning and the definition of end product delivery processes. The resulting quality planning communicates audit and inspection activities that then clearly and systematically the plant floor on the highest defect(s). As a result, and this is an area of considerable cost savings, plant personnel can shift away from an “inspect everything” approach and gain useful insights that strengthen product design. This approach typically results in a 10-20 percent reduction in overall inspection costs. In addition the rate of nonconformance issues can be reduced 10-25 percent with better planning in the early phases of NPI through the elimination of repeat issues and overall knowledge sharing.

A more digitized approach to quality planning and quality operations yields significant benefits in reducing the manual effort across the organization, driving to true root cause analysis and transitioning quality efforts from a perceived burden to a strategic initiative of the adaptive manufacturing enterprise. Find a short video detailing a recent success story around EQMS here. (https://qad.wistia.com/medias/bgo5kgq638)

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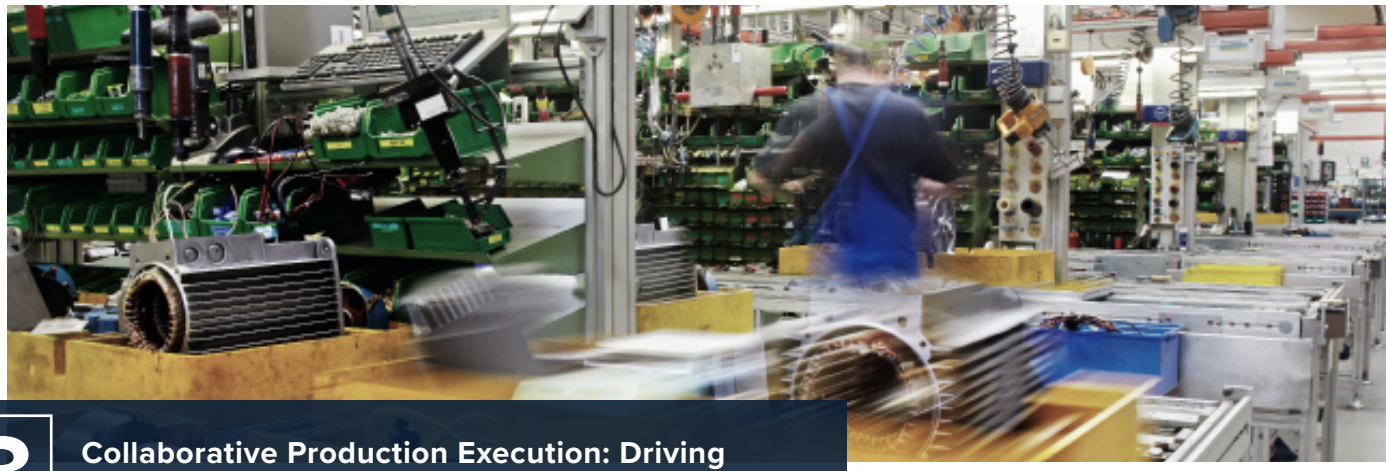

3 Collaborative Production Execution: Driving Real-Time Knowledge-Based Decisions

Often the coordination of plant-level production personnel and the planning team consists of daily or weekly production meetings that revolve around the comparison of red-lined spreadsheet printouts. The resulting lack of operational insight interferes with tactical business decisions and actions. It also indicates strategic exposure for the manufacturer in terms of waning customer satisfaction and ineffective inventory management.

Many early digital manufacturing efforts revolved around automating an existing function or process, e.g., the evaluation of large volumes of ERP data that couldn't be evaluated using older technologies. These kinds of point digitization efforts may actually be the necessary foundation for downstream DX projects.

For example, production execution solutions using widely available operator-centric shop floor interfaces that capture IoT-class data to deliver production-level insights. While valuable on a limited basis, the real challenge involves broadening the enterprise visibility and data scope of these insights. Extending the production execution solution by connecting ERP data and related processes turns point benefit into enterprise benefit.

Similarly, deploying a truly integrated operational extension of the ERP planning system significantly benefits both the plant and the planning functions. The approach is based on rapid information sharing with released orders promptly made available to the plant, and progress against those orders immediately available to the planners. The plant has a deeper understanding of the most current and true priorities of the business. The planning function has the ability to adapt to the inevitable changes from the plant floor and rapidly respond to customer requirements.

This solution replaces a myriad of manual data collection systems and complex overly- rigid interfaces to MES or other shop floor solutions. Industry reports indicate that this approach results in greater than a 20 percent increase in on-time shipments and that over 80 percent of these systems pay for themselves in under a year. Find a short case study detailing a recent success story around shop floor execution here. (https://www.qad.com/documents/case-studies/noble-biomaterials.pdf)

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GET ON THE FAST PATH

Manufacturers face an increasingly unpredictable and turbulent world that requires continuous and rapid iteration of their game plan to maintain competitive advantages. Those that adopt adaptive digital strategies can more rapidly respond to, and even plan for, increasing disruptions to their business.

The sample projects listed herein, (1) digitally coordinating material management and warehousing, (2) deploying a data-driven enterprise quality management system and (3) augmenting production execution capabilities with rich data from ERP, offer pragmatic digital efforts that can all be accomplished in months. All offer palpable measurable near-term ROI. They also are true digital manufacturing projects that accrue in terms of employee expertise and solution architecture to better support business strategy and adaptive manufacturing imperatives.

We call manufacturers that are able to innovate and change business models at unprecedented speed Adaptive Enterprises. Traditional tactics, processes and systems often hinder a company's ability to rapidly respond to change and keep or gain competitive advantage. How do you stack up against the ideal Adaptive Enterprise?

https://www.qad.com/adaptive-manufacturing-enterprise/diagnostic

To see how prepared you are to survive today's disruptions and provide the flexibility needed to address tomorrow's challenges, take the Adaptive Enterprise Diagnostic.

If you would like more detail on the three short duration digital manufacturing projects or you're ready to meaningfully move your Digital Manufacturing efforts at a broader level, , call us at +1 805 566 6100 or email us at info@qad.com.

1 Gartner Press Release 11/2022: Gartner Says 89% of Board Directors Say Digital is Embedded in All Business Growth Strategies

https://www.gartner.com/en/newsroom/press-releases/2022-10-19-gartner-says-89-percent-of-board-directors-say-digital-is-embedded-in-all-business-growth-strategies

2 Digital Transformation: The Not-So-Secret Sauce To Getting The Basics Right

https://www.forrester.com/blogs/digital-transformation-the-not-so-secret-sauce-to-getting-the-basics-right/

[1] "The Drive to Transform Powers a More Inclusive Buying Dynamic," IDG, 2019.

[2] "Digital Transformation Survey: 2019," Wipro Digital, 2019

[3] IDG, Wipro Digital, QAD analysis

[4] Wipro Digital

[5] "2020 Middle Market Industry 4.0 Benchmarking Survey / Manufacturing Connectivity," BDO, 2020

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