GUIDE

Parsec's Guide to Digital Manufacturing with TrakSYS

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Summary

This guide explores the current state of manufacturing, the importance of digitalization to operational resilience, and how implementing TrakSYS as part of a digital transformation effort helps optimize every facet of manufacturing operations.

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Part I: The State of Manufacturing

The importance of digital transformation in manufacturing is on the rise, though recent economic uncertainty may be slowing the pace[1]. Ongoing turmoil across markets and supply chains is giving pause to organizations considering how to modernize their operations with minimal impact on their existing workflows, workforce, and bottom line.

To build a strong foundation for long-term growth, manufacturing leaders must validate the consequence of placing digital strategies front and center in their business planning. They need to answer probing questions: How will implementation impact our existing infrastructure? How do we support our workforce during and after this transition? Will our data remain secure? Will there be significant downtime? Perhaps the most important question is, Where do we begin? As their system integrator, your guidance in their careful consideration of the answers to these questions will help ensure business leaders understand the actual cost of a solution's implementation as well as the intrinsic value[2] digitalization efforts will have for their organization.

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Part II: Beginning the Digital Transformation Journey

A manufacturer's digital transformation journey must be driven[3] by value rather than technology. Connecting implementation impact to both immediate and long-term benefits will help secure cross-functional engagement from top to bottom.

The answer to "Where do we begin?" should stem from the subtext of your client's top pain points. For example, "sub-optimal performance" is a general but common issue that can bubble up from any number of factors: resource allocation, machine wear and tear, or communication gaps, to name a few. Once you've identified the root cause(s), map out where in the infrastructure these issues originate and propagate. Determine whether they pose a threat to the safety, security, or productivity of the workers, equipment, or organization as a whole, and prioritize their importance accordingly.

Pivoting to a high-level view[4] will help you to understand how the existing infrastructure will be impacted by and benefit from digitalization, and it will inform what assets to preserve, augment, or replace. You can then begin to lay the groundwork for the technology deployment strategy. As the digital transformation evolves, it's essential that you work with your clients to provide consistent governance and support[5] for the implementation.

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Part III: The Power Of Connected Manufacturing With TrakSYS

While distinct in their own ways, batch, discrete, and process manufacturing all share an inherent trait: the creation of data at each step of production. By digitalizing their various production processes, organizations can extract, glean, and capitalize on the otherwise hidden insights[6] their data holds. Armed with this operational intelligence, business leaders can further leverage their acquired data to strengthen their overall operation and pave the way for connected manufacturing.

The TrakSYS™ MES platform[7] is a purpose-built manufacturing execution system that provides a wide array of selectable tools and functions for real-time, data-driven manufacturing operations management. Operating as the nexus, TrakSYS seamlessly integrates with existing shop floor infrastructure including ERP, SCADA, and PLCs. Leveraging its native interoperability, TrakSYS unifies disparate systems to provide users with a single source of truth and a method for interacting with the whole of their manufacturing operation.

Offering both industry-optimized, pre-configured solutions and solution customization, the low/no-code functionality of the platform ensures users can be up and running quickly and efficiently. In the case of multi-site usage, tailored TrakSYS solutions can be readily deployed across multiple facilities.

Client Benefits	TrakSYS Tools
Maintain tight control of inventory[8] to increase production efficiency and reduce working capital requirements	Warehouse Management, Inventory Management
Plan and schedule production[9] and delivery of goods as efficiently and effectively as possible	Algorithmic Production Scheduling, Visual Workflow, Production Management
Gain real-time insights into the causes of poor quality[10], and create a closed-loop system of statistical process control	Digital Signature, Quality Management, Electronic Batch Records, Track & Trace, TrakSYS-Enabled Smart Devices
Boost equipment performance and analysis of real-time data gathered from machines to help maximize overall productivity through predictive maintenance[11]	Maintenance Management, Alerts/Report, Performance Management

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TrakSYS features user-friendly, fully configurable dashboards that put your clients in control of their data and their operations. The TrakSYS 12 release[12] includes .NET Core containerization and extended IIOT capabilities, as well as preconfigured workflows that address common use cases while leveraging low/no-code functionality to make solution delivery as seamless as possible.

It's important to note that the idea of digitalizing operations may come as a culture shock to some manufacturers who are accustomed to doing things a certain way. There may be reluctance to embrace change if they don't understand the positive impact it can have on their processes or their workforce. It's incumbent on you, as their system integrator and partner in implementing their digital transformation, to convey that technology does not replace or eliminate the need for employees but rather extends opportunities to up-level skills and strengthen career paths.

In addition, with greater visibility and control[13] of resources, planning, and communications across the factory floor and supply chain, manufacturing leaders are empowered to increase production capacity, minimize waste, improve product quality, shorten delivery lead times, maximize workforce resources, and reduce environmental impact.

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Part IV: TrakSYS In Batch Management

A manufacturer's overarching goal, specifically in batch[14] production, is to save time and costs with consistent, repeatable efficiency and quality. TrakSYS provides versatile features that enable batch manufacturers to fully manage their operations while maintaining strict adherence to ISA-88 and other industry and regulatory standards.

With TrakSYS, your clients can oversee recipes, assign personnel, allocate assets, dispense and track materials, execute batch functions, and enforce SOPs.

TrakSYS connects to master data from your client's existing ERP system to define and manage batch functions and tasks such as setup, inspection, and quality checks.

With this contextualized information, TrakSYS enables full traceability so your clients can isolate cases of nonconformance, identify root causes, and devise strategies for process improvement. A complete electronic audit trail of transactions can be generated to meet 21 CFR Part 11 Compliance, cGMP, and the most stringent EBR requirements.

Spotlight on AstraZeneca[15]

As a leading global pharmaceutical company, AstraZeneca needed to gain performance visibility into their batch manufacturing operations spread across >100 countries. With the implementation of TrakSYS, the company was able to:

- **Produce 1,000,000 additional bottles per year**
- **Improve bottle line OEE by 10%**
- **Improve multiple line OEE by 40%**
- **Strengthen operator engagement**
- **Gain access real-time performance data**
- **Optimize plant-wide reporting**

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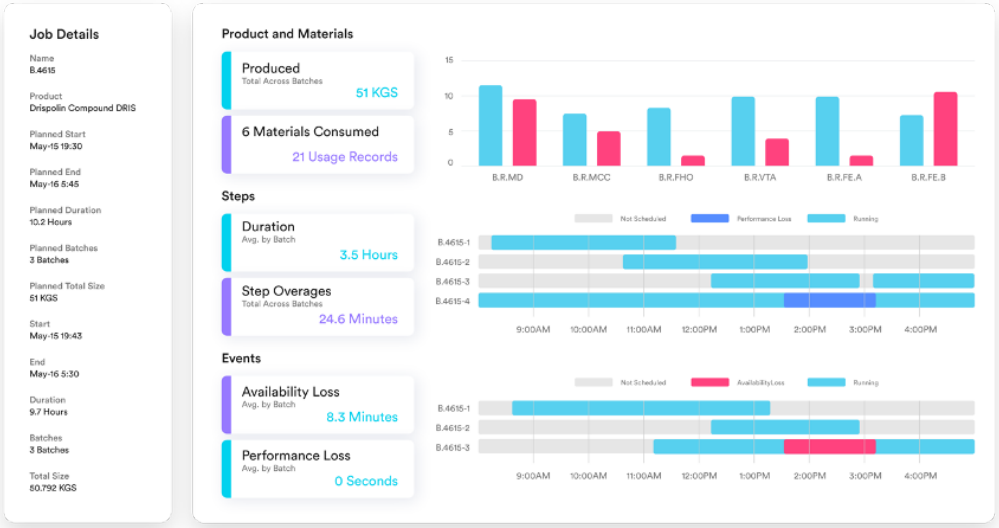
A Look Inside TrakSYS Batch Manufacturing

1. Take receipt of raw materials, schedule, stage, and prep
2. Begin and finish production
3. Perform quality checks, package finished goods
4. Packaging line down; dispatch alert and shift order
5. Perform maintenance, schedule periodic reviews
6. Review electronic batch records (EBRs) and statistical process control (SPC)
7. Ship product
8. Receive recall, quarantine remaining batch
9. Review overall equipment effectiveness (OEE) performance report



Manufacturing Operations Management with TrakSYS

The TrakSYS MES provides the necessary tools to capture and leverage the inherent data throughout and beyond an operation. As a unified platform, TrakSYS manages receipt of raw materials, production, product shipping, warehousing, and distribution.

With TrakSYS, manufacturing leaders are empowered to boost product quality, foster workforce engagement, optimize their supply chain relationships, and improve the bottom line. For batch, discrete, and process manufacturing, TrakSYS helps make the management of manufacturing operations as simple as possible.

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Appendix

1. The Top 5 Manufacturing Trends In 2023 (forbes.com)
2. Industry 4.0: Digital transformation in manufacturing | McKinsey (mckinsey.com)
3. Overcoming the Fear of Cultural Change with Digital Transformation | Parsec Automation Corp. (parsec-corp.com)
4. First Things First | Parsec Automation Corp. (parsec-corp.com)
5. What Comes Next After An MES Implementation? | Parsec Automation Corp. (parsec-corp.com)
6. Unlock Your Factory's Hidden Capacity with TrakSYS | Parsec Automation Corp. (parsec-corp.com)
7. TrakSYS Manufacturing Execution System (MES) | Parsec (parsec-corp.com)
8. Real-Time Warehouse Inventory Management Software | Parsec (parsec-corp.com)
9. Production Planning, Scheduling & Operations Management | Parsec (parsec-corp.com)
10. Quality Management System | Parsec (parsec-corp.com)
11. Predictive Maintenance Management Software | Parsec (parsec-corp.com)
12. Parsec Automation Corp. Launches TrakSYS™ 12 | Parsec Automation Corp. (parsec-corp.com)
13. MES Visual Workflow Tools: TrakSYS | Parsec (parsec-corp.com)
14. Batch Management Software Solution: TrakSYS | Parsec (parsec-corp.com)
15. Prescribing Efficiency | Parsec Automation Corp. (parsec-corp.com)

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About Parsec

Utilizing their 30 years of experience in manufacturing, Parsec created TrakSYS™: a best-in-class operations management software application and solution platform designed to significantly improve manufacturing operations. TrakSYS aggregates data from multiple sources to deliver real-time, actionable intelligence that helps manufacturers reduce production costs, decrease lead time, and improve profitability. TrakSYS is deployed at thousands of factories, in over 140 different countries.

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