

The Changing Role of ERP in Manufacturing




For years manufacturers have acquiesced to the “single vendor” mantra and bought into the manufacturing component of their ERP provider. The problem with these transaction-based systems is that they are, well, transactional. They don’t account for the unique dynamics of individual manufacturing environments – or the inevitable variability.

ERP: The Financial Backbone of the Organization

Enterprise Resource Planning (ERP) software is a very important tool for manufacturers. It forms the transactional backbone of the organization, gathering transaction information from every corner of the enterprise and translating it into financial data and insights. As a “system of record” for the financial health and management of the organization, ERP is hard to beat. But, ERP often falls short when it comes to managing the activities behind those transactions.

Production scheduling is one of the most common shortcomings. Because of their origins as *financial* systems of record, many traditional ERP companies often take a transactional, materials-based approach to production scheduling. When an order is entered into the system, the manufacturing module (usually some form of Material Resource Planning or MRP system) looks at the materials and components on hand. Available inventory is allocated. Any additional inventory or components needed are either ordered or scheduled for production. Each of these



events then creates a financial transaction that flows through the system all the way to the general ledger.

This transactional, materials-based approach doesn't work well with the reality that is modern manufacturing where available capacity is just as critical as material availability and when demand changes or events require schedule adjustments at a moment's notice.

ERP Manufacturing Attachments Are Not Enough

Over the years, manufacturers have added attachments to their transactional tools, such as Advanced Planning and Scheduling (APS) and Finite Capacity Planning (FCP), to address the needs of manufacturing operations. Many of these attachments fall short because the primary transactional design of the ERP software still takes precedence. Often, this transactional design leads these solutions to be too complicated or not agile enough for the modern manufacturing environment. Or, they don't allow for the manufacturer to evolve, using modern manufacturing philosophies like Lean, Theory of Constraints, and Demand-Driven/Pull Manufacturing.

To compensate, many production managers and planners have dismissed these solutions and resorted to working with spreadsheets. This approach also quickly becomes unworkable as multiple spreadsheets mean different people are working from different versions of the truth, all of which contain outdated data to some degree. Visibility into the entire supply chain isn't even within the realm of possibility, leaving decision makers in the dark and putting the organization at a distinct disadvantage compared to their more agile competitors.

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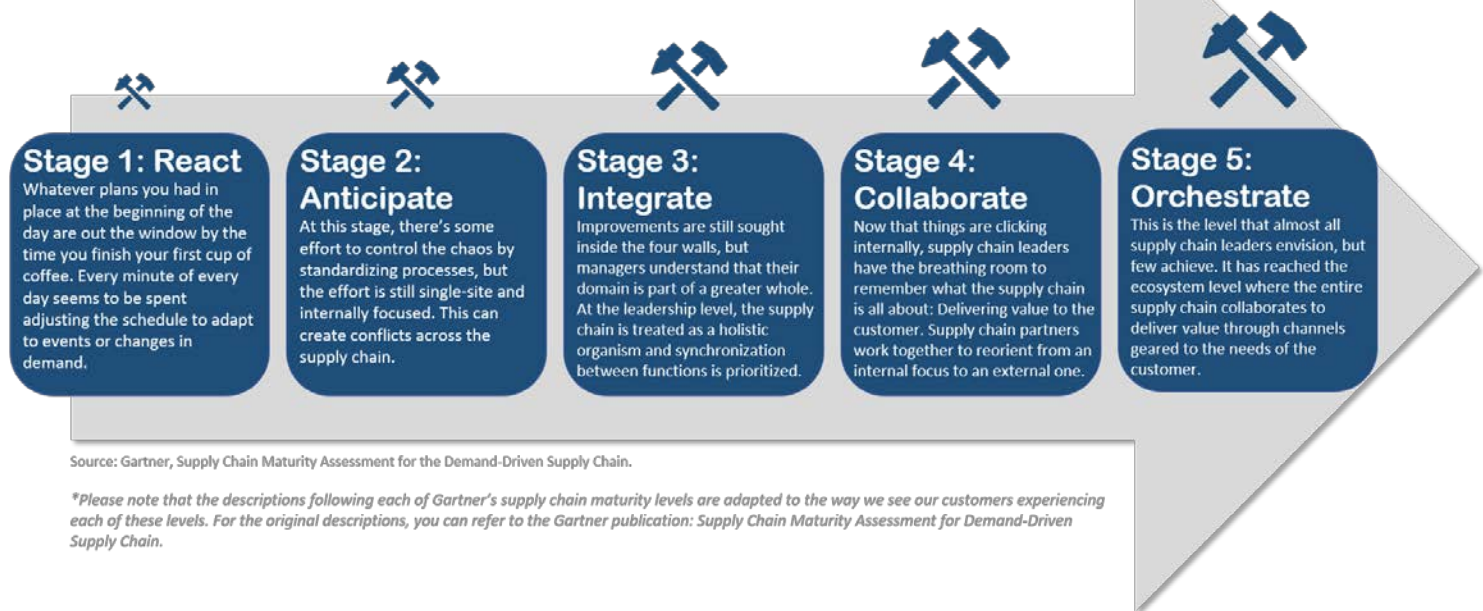
The Supply Chain Planning System of Record

Manufacturing is all about synchronizing supply and demand across the supply chain in a way that most profitably allows you to meet your customers' objectives. An organization's stage of supply chain maturity reflects their ability to accomplish this goal.

Gartner research describes an organization's Supply Chain Planning maturity in five phases. In phases one and two, manufacturers rely on spreadsheets and ERP attachments. In phase three, manufacturers take a giant leap forward with a supply chain planning System of Record (SOR). Phases four and five go even further, with ever-more sophisticated algorithmic planning and innovation garnered through the vast amount of curated data available through the Industrial Internet of Things (IIoT). To get to phase four and five, however, an organization must achieve

maturity in phase three. This is best accomplished by optimizing and aligning their manufacturing operations and the extended supply chain through a Supply Chain Planning SOR that sits on top of the ERP system. This provides the agility and “single version of the truth” needed by today’s manufacturers.

Supply Chain Maturity Stages*



Layered Technology Approach

The Synchrono® Demand-Driven Manufacturing Platform takes the layered technology approach recommended by Gartner, allowing manufacturers to progress all the way to stage five at their own pace. The first step for many manufacturers is to layer SyncManufacturing™ software on top of their existing ERP implementation to synchronize planning, scheduling and execution across manufacturing operations and the extended supply chain based on real-time demand. (This software achieved “Gartner Cool Vendor” status and gets manufacturers to stage three maturity and beyond.) Additional Platform components can then be layered on to further maturity, allowing manufacturers to leverage the IIoT and Big Data by aggregating actionable data from disparate sources, such as shop floor devices and business applications, then analyzing and serving it up in real-time via customized dashboards reflecting status, metrics, alert notices, and more.

Get to Work Faster; Get Results Faster

Ever come home from the hardware store with a new tool? I bet you couldn't wait to use it. Manufacturers understandably feel the same way when they've invested in new technologies

Manufacturer Starts Seeing a Return on Investment in Just Four Months

While searching for an MES to manage production, a trailer manufacturer ran across Synchrono® and decided that demand-driven or pull-based manufacturing made a lot of sense for their business. Originally, the company's senior management team had assumed they wouldn't see a return on their investment for at least a year. But within four months, they had replaced their old processes and manual systems with Synchrono software. The impact could be seen throughout the organization almost immediately.

The company's Controller described their experience this way. "Going into the project, we thought there was no way on earth we could implement in four months. Our owners were expecting implementation to take eight to twelve months. The process went very smoothly. The Synchrono team showed us what we needed to do and kept us focused on what was happening. We were able to get the software into the hands of the shop floor guys right around four months."

for their business. The problem with ERP solutions is that after you spend six figures (or more) with the vendor, you have to wait a year (or more) before the implementation is far enough along to add any value. ERP add-ons like APS and FCS aren't typically even included in phase one of most implementations, so your ROI is delayed even longer.

The average implementation of SyncManufacturing™ takes anywhere from three to four months per site. The software is an enterprise class, web-based solution, meaning it offers a comprehensive set of capabilities that are all easily configured to a manufacturer's unique environment. Another reason we can implement our solution so much faster than your typical ERP implementation is because we are not replacing anything. We are ERP agnostic, so you can keep using your current ERP system just as you do today. We'll work with you to change any necessary parameters in your system, such as switching from ROPs for material replenishment to eKanban. We'll also help you put together a program for bringing your people up to speed on how Demand-Driven Manufacturing works and any changes to their processes they need to follow. *(Please refer the overview of the Synchrono® Six-Phase Implementation Process provided on the next page for more information.)*

Gaining real value from the age of manufacturing digitization, starts at the core – where and how you deliver value to your customers. Replacing manual processes (or technologies that don't allow you to work the way you need to) with smart, adaptive technology that delivers value to both you, and your customers, is worth exploring. [Contact us for a demo here.](#)

Below are some additional resources you may find helpful:

White Paper: [The Next Generation of Planning and Scheduling Solutions](#)

White Paper: [Enterprise Impact of SyncManufacturing™ Software](#)

Brochure: [SyncManufacturing™ Software](#)



Six-Phase Synchrono Implementation Process

1. Pre-Implementation Assessment. Synchrono® works with your business and IT experts to understand the manufacturing and application landscape of your company. Then together, we create a high-level vision of how the software will be modeled and implemented in your environment. This phase may also include the creation of a foundational data set, which helps identify any data gaps before we begin design.

2. Design. In the Design phase, Synchrono® maps your manufacturing processes and assesses how all your business systems need to work together to address your challenges and achieve your goals. During this phase, we gain a complete understanding of what you do and how you work, including an examination of role-based functionality. An initial training session is also conducted with your super-user team so that they become effective project team leaders throughout the Design phase - and beyond. Your super-users increase their knowledge of the system and the choices available to adapt the software to your environment. Their functional expertise and added understanding of the system, coupled with best practice insight from the Synchrono® team, creates the most comprehensive software configuration to drive your goals.

“The knowledge and understanding of the Synchrono team is just outstanding compared to what you find in most places.”

Tom Howard,
Pyrotek Division Manager

3. Model Build-Out. During the Build-Out phase, Synchrono® develops business scenarios to determine the models we are going to create (starting with our standard models and tailoring them to your specific needs). Then, we create documentation around your systems and processes to accomplish the defined scenarios that we work through together. Stakeholders from all functional areas who will use the system and impact the process are involved, including (but not limited to) engineering, scheduling, operations, procurement, sales, and quality. During build-out, we also configure the system and develop ERP integration paths.

4. Testing and Validation. Every business scenario we create is tested to make sure all processes are functioning as expected. We test all integrations and configurations and run various simulations to prepare for go-live.

5. Go-Live. After working through an extensive pre-go-live checklist developed during earlier phases, Synchrono® establishes a migration plan for existing transactions and data - including active work orders – and moves it into the live production environment. During go-live, clients not only experience minimal disruptions, but also experience immediate benefits that continue to grow, providing ongoing and long-term value to their business.

6. Post Go-Live Support. Following go-live, Synchrono® is present both on- and off-site to ensure the client is gaining the performance and value needed. Following this support, many clients engage us for ongoing, InSync™ consulting and specialized support services.

Synchro® Demand-Driven Manufacturing Platform

- **SyncManufacturing™**
Demand-Driven planning, scheduling and execution software
- **SyncKanban™**
Pull-based inventory replenishment and supply chain collaboration software
- **SyncView™**
Self-service manufacturing visualization and communication software
- **SyncOperations™**
Smart monitoring, data connectivity and synchronization of equipment and processes software *(Powered by Savigent)*
- **SyncAlert™**
Alert notification and escalation management software

SOR

System of
Record

SOD

System of
Differentiation

SOI

System of
Innovation



Synchro Demand-Driven Manufacturing Platform software modules are available individually or collectively to enable Smart Manufacturing, Industrial Internet of Things and Industry 4.0 transformation.

About Synchrono®

The Synchrono Demand-Driven Manufacturing Platform digitizes, synchronizes, and visualizes the enterprise and extended supply chain, bringing the Internet of Things to life. Combining end-to-end planning, scheduling and execution with automated inventory replenishment, manufacturing operations, self-service visualizations and more, Synchrono synchronizes people, processes, machines, materials and data orchestrating flow and enabling real-time visibility.