synchrono® manufacturing software

# Common Barriers to Moving from Push to Pull Manufacturing

## *Overcoming Barriers to eKanban and Finding Solutions*

InSync Solutions Paper | 5

### CHALLENGES ADDRESSED:

- Organizations initiate material replenishment automation programs without properly analyzing processes and priorities for internal and external stakeholders.

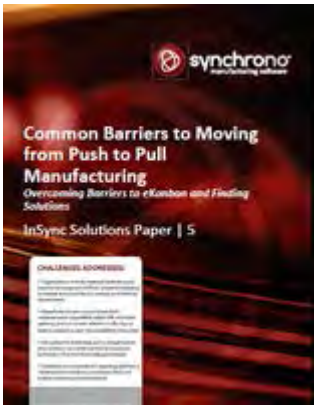
- Manufacturers are unsure about their replenishment capabilities within ERP and other systems, and are unsure whether to fix, buy or build a solution to gain the capabilities they need.

- Disruptions in leadership and a change-averse environment can create barriers to improved production flow and automating processes.

- Questions are unanswered regarding whether a replenishment solution can enhance flow and enable continuous improvements.

Contents:






## Overview of Paper Series

Lean manufacturers continue to address throughput issues by automating systems and creating better processes to eliminate waste in all of its forms. Throughout this white paper series, we have explored how to use an eKanban (electronic Kanban) system to gain clarity, control, confidence and greater competitive advantage. This is the fifth white paper in our series exploring Pull-based Kanban systems.

Each paper in the series looks at the manufacturing system from a different perspective. In the first paper, *Gaining Control: Exploring Push vs. Pull Manufacturing*, we looked at systems and workflow processes, exploring the nature of Push and Pull methodologies along with the difference between manual and eKanban systems within a Pull environment.

Next, we explored the benefits of a more predictable environment and the decision-making power gained through deeper access to data and analytics in *Gaining Clarity: Drive Productivity, Flow and Profit with Data that Matters*.

In the third paper, *Gaining Confidence: Syncing Supplier Delivery to Customer Demand*, we discussed how demand-driven concepts take Lean outside the four walls of the manufacturing operation to bring a forward-looking perspective. *Gain a Competitive Advantage for Bottom-Line Results*, our fourth entry, takes a different view by looking at the competitive edge gained by adopting a Pull-based approach through eKanban technology.

Even with the advantages of more control, clarity, confidence and the competitive gains outlined in these papers, many manufacturers still face challenges when transitioning to a demand-driven eKanban software solution. In this fifth paper in our series, we will examine these challenges and deliver practical advice about how to overcome them.

## Crossing the Chasm: Identifying and Overcoming Challenges

There are many market forces that are causing manufacturing organizations to take a fresh look at their Push-based systems. The on-demand requirements of today require Lean and more agile Pull-based systems. Manufacturers find that when they synchronize their resources using a Pull-based eKanban system,

they realize the best return on their materials investment. But before they got to that point, they likely had to overcome some barriers or challenges.

### Challenge 1: Misalignment

Aligning the materials support function with demand is key. Many manufacturers still perform planning and scheduling processes far away from actual orders and from execution on the shop floor. That's how suppliers can be divorced from almost every aspect of the business that they are supplying.

***Misalignment with suppliers is often caused by existing replenishment policies such as min/max order policy...***

Misalignment with suppliers is often caused by existing replenishment policies such as min/max order policy. When it was first devised, min-max was a brilliant solution and much better than what was used before. However, for min/max to work, one made several significant assumptions about demand, production, shipping costs, aggregation, and holding costs. Since that time, many of these assumptions about the true cost of inventory have been proven false. As a result of this change, and based on increased customer pressures for on-time delivery, min/max policies very often decouple suppliers from real demand. Instead of replenishing close to the actual demand signal, the signals are accumulated and then released "in batch" to the supplier. This creates a bullwhip effect in the supply chain, leaving vendors in alternating and very unpredictable modes of too much demand and too little supply.

eKanban eliminates this misalignment by recoupling suppliers with demand and giving them a view into your business and its true demand patterns. But don't think that just up and changing one day is the right way to go. Supplier alignment needs to be an active process with continuous focus and support from your company.

### Challenge 2: Leadership Turnover

Leadership disruptions often make it difficult to maintain a consistent Lean effort. Unless, of course, you create a business case that demonstrates Pull practices as the baseline of excellence from which your additional improvement opportunities flow.

A word of caution: Don't think your selling is done when you get approval to implement. Consistently gather metrics and continue to sell the

organization, keeping momentum going and fostering positive awareness. Later in this paper, you will see the specifics about how to lay out a business case that can outlast leadership churn and several change management tips that will help you succeed.

### Challenge 3: Status Quo

*But, we have done it this way for years!* Does this sound familiar? If your industry is suffering from inertia and change aversion, look at other industries and observe their Lean practices. Even if your entire industry is lagging behind in becoming more demand-driven, there are plenty of solid numbers that can prove to the powers that be that Pull is where you need to be. Only you know your culture and your roadblocks. However, taking some of the actions recommended throughout this paper can help you move beyond the status quo and affect meaningful change.

### Challenge 4: Implementation Fatigue

You might be emerging from an exhausting season of implementations. Perhaps your efforts to introduce new systems have taken longer than planned or have not yielded the rewards you expected.

Here is where you must keep your focus—celebrate your milestones and make sure communication of universal goals and system benefits becomes part of your strategy to keep everyone informed and charged up enough to avoid implementation fatigue. And remember, compared to an ERP implementation, a Cloud-based eKanban implementation is extremely easy and can produce quick organizational wins.

**Getting Started Checklist**

- ☐ Identify a Pilot Area
- ☐ Align the Team
- ☐ Assess Tolerance for Change
- ☐ Review Options

## You Know You Want to Become Pull-Based. Now What?

Transitioning to a Pull-based system can be a rewarding and profitable choice, but for some, the change includes both ingrained business process and cultural shifts. It's time to build a business case that addresses these challenges and helps you initiate internal selling activities. The initiator's imperative is to research options and evaluate conditions that will lead to proper decision-making by management. Consider the following points, which will help focus your project and create the right environment for a successful transformation:

1). **Changing the tide from Push to Pull will not happen overnight.** First, identify opportunities for a pilot implementation within an area that you are having issues with already. When you aim too high, it's easy to become immediately overwhelmed. Set an achievable scope for your first efforts and you'll have a good baseline level of activity that's easily managed. Moving to manual Kanban helps some companies, however, it can quickly limit your growth or cause your initiative to fail; not because Kanban isn't a good choice for you, but based on the burden of managing and executing it manually within complicated environments.

2). **If you don't clearly understand the problem, you won't be able to make a good business case.** Be sure to identify your problems and draw a straight line from them to the financial drain they are causing each production day. Address supply chain bottlenecks that are causing high carrying costs, discounting, weak customer loyalty, missed sales, shortages and emergency shipments. Avoid "chasing the symptoms" and try to get down to causes and conditions.

3). **Do your research with a trusted demand-driven consulting partner** to understand the range of transformation options and gauge what is appropriate. Some companies stop just short of achieving real operational excellence by taking on too much transformation, which leads to incomplete implementation efforts. The demands of their current production schedule overshadow the changes they are trying to make, so they put the plan on the back burner for some magical day when they will have more time. Avoid this pitfall by setting realistic timeline expectations. (Note that manufacturers who budgeted eight to twelve months to implement an eKanban system experienced full, Pull-based automation in as few as four months. Implementing eKanban within a specific, high-value product line will take fewer resources and deliver a quicker return on investment.)

4). **Complete an initial evaluation of your existing application platform** to understand the current replenishment functionality available, if any. If you clarify your capabilities now, you will be able to create a full fix vs. buy vs. build analysis that will be compelling to leadership.

## From the Ground Up? Fix vs. Buy vs. Build Analysis

Like any business investment, you'll want to demonstrate to leadership that you have weighed your options against your resources, requirements and timeline. When evaluating software systems, the process can be based on a fix vs. buy vs. build analysis.

Do you buy off-the-shelf and leverage industry best practices? Build your own solution, customized for your specific needs? Or do you stay the course, with modifications to (fix) your current system?

### Option 1: Fix What You Have

Even if your current solution isn't ideal, shouldn't you fix it? After all, you've already invested a lot of time, energy and training into the existing system. If the existing system has an eKanban component, does it meet your business requirements today? Can it easily scale to support your business in the future? Or would your business be better served with a more modern and feature-rich system? Chances are, if your current system has an eKanban or replenishment module, you would have used it by now if it met your needs. Review the table below to find out if a "fix" will meet your needs:


| Option 1: Fix what you have | |
|---|---|
| **Pros** | **Cons** |
| • Reduces costs if only minor changes are needed to meet your business requirements. | • System may lack capabilities common to pre-packaged solutions, thereby limiting gains. |
| • System is familiar and only moderate training is needed. | • Modifications could break the system, leading to out-of-sync signals between operations. |
| • There will be minimal disruption to your existing business operations. | • If there is custom code, or key users figure out how to "trick" the system into Pull methodologies, the process can come unraveled quickly when there is personnel turnover. |
| | • Shop floor develops work-around solutions for system shortcomings. |

## Option 2: Build Your Own

Why not try to build the better mousetrap yourself? Building your own solution may be the right approach when your business requirements are so unique that a pre-packaged solution cannot be configured to address your requirements. Think about Total Cost of Ownership (TCO), which is the cost associated with upgrades, administration, and technical support on a long-term basis. This cost can be easy to underestimate on a yearly basis, and over time, can end up costing more than a commercially available solution.

A TCO analysis may reveal that a home-grown eKanban solution isn't the best use of your time, money, and resources. A pre-packaged solution might address the majority of your requirements and need only minor modifications to address them all.


| Option 2: Build your own | |
|---|---|
| **Pros** | **Cons** |
| • A custom solution precisely addresses your unique business requirements. | • No economies of scale – every feature, every design fully funded by the company leads to:<br>  • Significant cost, time and effort involved to develop a custom solution.<br>  • High, long-term costs associated with ongoing product development and enhancements.<br>  • Training and support services and documentation must be maintained in-house. |
| • Build only what you need and don't pay for unwanted features. | • Ties up IT and forces other important projects to be deprioritized. |
| | • Risk of losing long-term support and maintenance when there is key personnel turnover. |
| | • Integrations with ERP and other systems will increase expenses and development time. |
| | • Software development is not typically a core competency of a supply chain and manufacturing organization. |

## Option 3: Buy an Existing Solution

Commercially available systems have the advantage of being built on thousands of hours of vendor development time as well as the functionality requirements of hundreds of customers. That is a large pool of intellectual capital that can benefit your company. Additionally, the commercial product has been tested in ways that are outside the scope of most home-grown systems. Let's take a look at some of the benefits and challenges you can expect when purchasing a pre-packaged solution:


| Option 3: Buy an existing solution | |
|---|---|
| **Pros** | **Cons** |
| • Time, money and resources are more easily contained. | • May require large, up-front payment, depending on deployment model (on-premise versus SaaS). |
| • Development costs are avoided. | • May still need some customization to get all the capabilities you desire. |
| • Product has been tested for quality assurance in a variety of environments. | • Annual product license, support, and maintenance costs (depending on deployment model). |
| • Web services have been developed for easy integration with enterprise systems. | • Dependent on continued viability of the vendor. |
| • Easier to scale and deploy. | |
| • Training is provided. | |
| • A product road map ensures continued development and enhancements from ideas that are not just your own, but from the entire market. | |
| • Support and maintenance are provided by the vendor. | |
| • ROI realized much faster – often in a matter of months, not years. | |
| • Software and hardware implementation expense may be capitalized. | |

Review the options to determine the best path for your business:

☐ Fix
☐ Build
☐ Buy


### Cost-Benefit Insights

In any of the previous scenarios, the costs of time, money and resources must be carefully measured before committing to any project to fix, build, or replace your system. Be sure to consider how your decision will impact the IT department and whether it will force them to defer other projects due to the time commitment, particularly with a solution you build yourself. A cost-benefit analysis will help you determine the financial impact.

Here's where TCO metrics come into play: SaaS-based solutions deliver more value over time because your internal resources need only support configuration and training. The software vendor takes on everything else, including the traditional resource drain of items such as hosting services, backup and recovery, upgrades and hardware. That's why it's easier to create and sustain training processes and continuous improvements for your eKanban system. Finally, companies with SaaS-based solutions become business-process experts based on the clients that they've helped. Once you have introduced these subject-matter experts to management, they will often help clarify your goals and outline a pragmatic path towards achieving them. After giving conscientious deliberation to your options, associated costs and business needs, you should be able to reach a conclusion that effectively supports your business and overcomes existing challenges. Whether the best option for you is to fix what you have, build your own or buy an existing solution depends on many factors. But the most important factor may be your determination to not settle for a substandard system. The right solution can provide both operational efficiency and competitive advantage. The best time to start down this path is today.

***"Business-speak" and "manufacturing-speak" are very different languages, and there was a sense that if executives could better understand "manufacturing-speak" and the potential impact that manufacturing can have on business success, then this two-way understanding could accelerate many more manufacturing initiatives to move forward.***

"Manufacturing LNS Research and MESA International, Metrics that Really Matter", pg. 38.

## Laying the Groundwork: Conversations to Have with Your Partners and Your Team

Conversations with your leadership team, your suppliers, customers and employees are critical to the success of your change management effort. Here are some ways to address these audiences:

## Leverage Leadership

When you are switching to an eKanban system, pull in your leaders from across your manufacturing sites to identify what they want from the new solution. Senior managers must buy in early in the process to sign off on the resources required for the rollout. Again, it is key to communicate quick wins along with the resulting key performance indicators (KPIs) to demonstrate the value vision for what you are trying to accomplish. The best way to engage leadership is to build a strong case for your recommendations through the fix vs. buy vs. build analysis.

Additionally, a Pull-based system means better results for the company's key stakeholders: customers, suppliers, partners and employees. Aligning to true demand means higher rates of responsiveness to every area of the supply chain. Commonly, this process starts a snowball effect that helps you address other improvements and better align with your enterprise's lean strategy.

## Soothe Suppliers

If you are like many manufacturers, you have experienced varying quality among your supplier relationships. Moreover, many manufacturers are consolidating multiple suppliers into just one or two suppliers with multi-year contracts. This makes it even more important to shore up these relationships with solid systems to support your partnerships.

Most suppliers will be very happy to hear that you are moving to a more automated, Pull-based system because they are well aware of the problems inherent in replenishment processes. They have fielded way too many emails and phone calls that boil down to one thing: "We need more—yesterday!"

Your suppliers, even though you are their customer, need some attention, too. Make sure you take the time to address supplier concerns well in advance of actually approaching them with new web-based software tools. They need to have a good grasp of the "why" before you overwhelm them with the "how"—and especially the "right now."

***"By providing customers with unrivaled benefits, demand-driven supply chains not only allow companies to better satisfy existing clients but also to win over the most profitable customers in new markets."***

Frohlich, Markum T and Westbrook, Roy, *Demand Chain Management in Manufacturing and Services: web-based integration drivers and performance,*

*"Deconstruct a recent problem that you had with an order that negatively impacted a customer, and show suppliers how the new eKanban system will avoid future instances of similar problems.*

*Your case study illustrates that supplier integration can fix a variety of ills: 'Integrated supply not only reduces costs but also improves lead times. Other benefits from supply integration include improved supplier reliability and communication. Studies have, therefore, consistently linked supplier integration to greater performance.'"*

Frohlich and Westbrook, pg. 3

### Calm Customer Fears

Let's face it: Your customers probably already know where you are experiencing problems in meeting their needs. Some manufacturers choose to be completely transparent when telling customers about their new eKanban solution. Others choose to do so only after they improve service or expand offerings based on eKanban improvements. Only you know your customers, so only you know what action to take. If you choose to discuss the change only after you have proven value, so be it. If you decide to educate clients, use your software partner's case studies to highlight enhanced performance metrics with eKanban.

### Excite the Shop Floor

The people feeling the most pain when it comes to your current processes are often on the production floor. Hold early conversations with these team members, because without complete engagement on their part, it is easy to lose end-user support. Some end users are already using a system that, although faulty, is the only one they may know. Quality software partners will get out on the manufacturing floor and gauge demand profiles for each type of customer. They will engage shop floor personnel in identifying opportunities to improve system rollout and effectiveness.

Many manufacturers are pleasantly surprised with the positive response on the shop floor. They relate that these employees, rather than being change-averse, were engaged and energized when they had more clarity and autonomy on the job from an eKanban system. Turnover was less of a problem as well, because employees were empowered with easy-to-use systems that supported their activities and processes.

## Scattered to Synchronized: Pulling Together the Effective Solution

Now it's time to look for a partner that can give you insight based on lessons learned and help you avoid mistakes in budgets, planning and execution.

Your partner must possess one thing above all others—a list of satisfied customers that are willing to talk to you or that have allowed your prospective

partner to compile a case study about their implementation. Although it mightnot be practical to expect to talk to all of these customers, be sure to ask the prospective partner about clients who come from similar environments.

Ask your partner about the common mistakes they see clients make when executing a new eKanban strategy and how to avoid them. Find out if they have checklists available for you to use that will help you line up your resources appropriately. Be sure to have them load some of your production data into their software to demonstrate how the system will work and offer real-life examples to the people that you are talking to about the project. Find out about common timelines and what kinds of resources should be allotted to each phase of the project. Finally, identify additional offerings that can extend your Pull-based efforts across other systems and platforms.

***"We are measured on our ability to control and utilize our cash appropriately; therefore excess inventory impacts the ability to invest in our business if the cash is tied up in slow-moving inventory.***

***Alternatively, in some cases we did not always have the right number of parts at the right time, causing shortages, again tied to the ability to manage our cash flow. Therefore, from a holistic standpoint, we wanted to right-size our inventory in an effort to maximize our cash management from an operations standpoint."***

Kevin Dailida, Dynisco Senior Director of Global Supply Chain and Operations

## Case Study: Dynisco Drives Sales

Dynisco used a primarily Push-based system and began working on the transition to a Pull environment in an incremental way. The Synchrono® team identified ways that Dynisco could demonstrate early wins to solve internal stress points on their production cycles. Both customers and suppliers benefitted because the enhanced control that Dynisco experienced smoothed interactions on each end of their supply chain.

Their goals included:

- Managing inventory better.
- Minimizing redundant activities in materials management, thus freeing up employees for more value-added activities.
- Using eKanban to generate more valuable reporting and analytics to address long-term issues and create better decisions, adding to their operational efficiency.

Their results? They were better able to manage inventory turns and inventory dollars. They focused on high inventory spend items and used eKanbans first in these areas. They also continue to monitor their metrics to guide them when choosing new processes to switch to eKanban. For many of their finished goods, demand was far too sporadic for eKanban to work. But they were able to meet and exceed KPIs where they could, using eKanban to track bar codes and eliminate mistakes in tracking receipt and consumption rates.

## Takeaways:

- Preparation and prioritization, along with solid change management policies, are key to moving from Push to Pull manufacturing.
- eKanban solutions can resolve process problems and constraints, starting with your most obvious pain points, and lead to greater profits and efficiencies.
- Build a compelling business case for an eKanban system, clearly delineating your fix vs. buy vs. build decision and outlining your total cost of ownership.

## Additional resources

Case Study
*Dynisco Plastics*

Video
*SyncKanban eKanban Software*

White Paper
*Gaining Control: Exploring Push v. Pull Manufacturing*

## Summary

It is often daunting to switch from acceptable (but definitely not optimal) Push processes to Pull processes. This is largely because managing change in this arena means disrupting the status quo and possible friction among stakeholders who are apprehensive about the outcome. Plan to sustain an internal communications program that not only sells the system, but keeps energies up for the team and fosters a positive tone for those who are most affected by the change.

Creating quick wins in small-scale pilots will allow people to see results from relatively small actions. Clearly plotting your TCO helps, too. In short, knowing how to plan properly for eKanban smoothes the transition and creates collaborative opportunities for operational improvement. We have seen that promoting change inside and outside your organization can be easier if you sustain a narrative about how eKanban helps your company gain a competitive advantage and delight your customers.

**About Synchrono and the Authors**

Synchrono® LLC is a leading provider of demand-driven manufacturing software and services that simplify complex manufacturing environments and transform business results. The company's planning, scheduling, execution, and eKanban inventory replenishment software are powerful on their own, and when combined with its operations systems under the Synchrono Demand-Driven Manufacturing Platform, clients synchronize their workforce, methods, machines, resources, information and more to enable flow from order inception through production and delivery. Aggregating information from its own applications as well as from both machine-level and disparate enterprise systems, the Synchrono Demand-Driven Manufacturing Platform provides a real-time visual information system that empowers everyone - from the top floor to the shop floor - with actionable information.

Synchrono helps clients manage constraints, improve flow, drive on-time delivery and maintain a competitive edge. Look to Synchrono for software that meets your demand. Sync with us atwww.synchrono.com.

**About SyncKanban**

SyncKanban software from Synchrono keeps instantaneous supply chain signals moving through your organization at lightning speed. This automated, Pull-based inventory replenishment system sends signals to suppliers to deliver materials, helping to reduce the costs and waste associated with excess inventory and replenishment process administration. For many, that means up to a 50% reduction in inventories, on-time production, improved cash flow and a distinct competitive advantage. See for yourself – try SyncKanban for free at www.synchrono.com.

**John Maher**

John Maher has more than 20 years of experience working in manufacturing environments and has been with Synchrono since the company's inception. John's subject matter expertise in ERP, MRP, APS, supply chain, manufacturing planning, and scheduling systems and constraints management drives continuous refinement of the company's Lean and constraints management-based software and services. John is responsible for providing strategic direction for the Synchrono product roadmap and oversees the technology and delivery functions within the organization.

John earned his BBA in production/operations management from University of Wisconsin, Whitewater, and an MBA from the University of Minnesota, Carlson School of Management. He has APICS CPIM certification in production and inventory management and Jonah certification in Theory of Constraints from the Goldratt Institute.

**Rick Denison**

Rick Denison is a software implementation consultant in Minneapolis/St. Paul, Minnesota. He is an operations and logistics professional with applied knowledge and hands-on experience in leading change in companies through Lean manufacturing, Six Sigma, and TOC techniques. This experience has been obtained through 25 years leading industrial operations in industry and consulting in a diverse range of manufacturing environments and products. Rick has a strong background in process improvement, change management, project management, information systems implementation, and profitability analysis. He currently serves as a Senior Implementation Consultant at Synchrono Manufacturing Software.