Manufacturing Excellence Methodology

Now more than ever, today’s successful businesses depend on collaboration, a command of leading practices, and the deployment of agile technologies. No longer can a company be good at one or two things to achieve market supremacy. The competitive landscape is unrelenting with innovations in products, services, process capability, technology, and an improved focus on delivering value to the customer. These innovations are rendering legacy business operating models obsolete, creating the ultimate competitive threat. The Strategic Services capability at mcaConnect was created to enable strategically minded executive teams to proactively address threats and position them to successfully compete for the future.

mcaConnect’s Manufacturing Excellence methodology is a cornerstone in our Strategic Services offerings. It provides our clients with the knowledge transfer necessary to lean out their enterprise and attain or strengthen competitive differential advantage in their marketplace. The methodology consists of four major phases; Product Family Definition, Value Stream Transformation, Lean Enterprise, and Strive for Perfection.

Product Family Definition

One of the major factors in a successful manufacturing excellence transformation is the ability to successfully define your product families from a “process” perspective rather than a “customer oriented grouping” perspective. During this phase, mcaConnect will develop a product/process matrix to propose product families grouped by commonality of process rather than customer group.

mcaConnect will then complete a demand analysis of the new product family structure. We will analyze actual shipment history to identify “runners”, “repeaters”, and “strangers” in the product mix. This involves reviewing levels of volume and mix variability over time. The outcome of this phase is the identification of potential candidates for finished goods stock to buffer for the variations in the product mix.

Value Stream Transformation

The first two phases of the methodology will identify the value streams that have the most potential payback. Once those value streams are ranked, mcaConnect will take our clients through a Value Stream Transformation process for those value streams. During this phase of the implementation, mcaConnect will ensure the knowledge transfer necessary to ensure our clients are able to replicate this process for the remainder of their value streams. The Value Stream Transformation process consists of the following steps:

1. **Value Stream Mapping Workshop** – Develop a current state map and identify a series of kaizen improvement events in order to design the ideal future state map for the value stream.

2. **Lean Data Readiness** – Audit data accuracy for bill of materials, routings, process time, downtime, etc. Develop a Data Quality Assessment and Remediation Plan.

3. **Visual Factory Workshop** – Educate client team on the principles of visual factory management with flow, FIFO, pull signaling, pacemaker, and value stream orientation for the identified value stream.
4. **Mixed Model Simulation** – Apply principles of high mix, low volume manufacturing to the value stream. Isolate runners, repeaters, and strangers while understanding takt time and shared resources. Complete mixed model simulations.

5. **Resource Sizing** – Develop takt time and every part every interval for the value stream. Develop labor requirements in order to produce to takt time.

6. **Fulfillment Strategy/Inventory Alignment** – Develop make to stock, make to order, or hybrid strategies. Identify opportunities for postponement. Review lead time through operations versus customer quoted lead time.

7. **Flow Implementation** – Gain understanding flow and FIFO concepts and how they apply to the value stream. Review techniques to determine the size of FIFO lanes. Flow through shared resources. Simulate complex flow scenarios.

8. **Pull Implementation** – Develop understanding of pull signals and different pull strategies (one bin, two bin, multi-bin, etc.). Perform Kanban sizing calculations to determine inventory required in WIP and raw material supermarkets.

9. **Demand Leveling at the Pacemaker** – Build on visual factory concepts to gain an understanding of how to level demand to ensure a consistent flow of work through the value stream. Develop a Heijunka schedule.

10. **Performance Modeling/Lean Metrics** – Identify the ongoing operational metrics for each process in the value stream and define the pitch period for reporting, including visual reporting for operators.

11. **Setup Reduction Workshop** – Understand the opportunities for setup or changeover reduction and apply techniques that allow for externalizing the setup as much as possible.


13. **Kaizen Workshop** – Examine the process of identifying kaizen events, running the event, team dynamics, documenting the results, and following through on the implementation of identified improvements.

14. **Targeted Kaizens** – Review strategies to ensure Kaizens are aligned to overall value stream performance. Understand how to target Kaizens to specific performance levels.

15. **What-If Analysis Workshops** – Understand how to use target EPEI to properly respond to What-If requests.

16. **Implementation Planning** – Develop plans to smoothly implement the future state include education and cross-training for staff and inventory “burn-down” plan.
Lean Enterprise

As value streams are being leaned out across the enterprise, additional enterprise-wide capabilities can be addressed. These begin to introduce a comprehensive lean business management system that allows the lean gains at the value stream level to be sustained and drive lean principles beyond operations to product development, sales and marketing, and to the extended supply chain. During this phase, mcaConnect will provide the knowledge transfer and targeted direction necessary to assist our clients to implement the following capabilities:

1. **Sales and Operations Planning** – Develop a formal Sales and Operations Planning process to align sales forecasts, production plans, and inventory plans. This may include product life cycle planning for new products through product retirement and planning for seasonality.


3. **Strategy Deployment** – Strategically align improvement efforts across the organization to support each unit’s specific goals and targets. Develop “Catch Ball” techniques between managerial levels to align enterprise initiatives to value streams and ultimately to processes.

4. **Lean Accounting** – Develop managerial decision-making with “plain English”, cash-based financial statements for each value stream. Implement value stream “Box Score” to summarize operational performance, capacity, and financial profitability.

5. **Lean Performance Measurement** – Develop strategy maps that align KPIs across the organization to support each unit’s specific goals and targets. Identify leading and lagging indicators and standardize on metrics across all value streams.

6. **Supply Chain Pull** – Collaborate with suppliers to create pull signals for ongoing replenishment. Kanban sizing calculations to determine inventory required for raw material supermarkets. Collaborate with customers to manage inventory on their premises and align ordering frequencies with your customer’s true usage patterns.

7. **Lean in Services** – Lean in office and administrative functions presents challenges due to the more abstract and less concrete world of support services. However, value stream mapping, takt time, and performance metrics remain key techniques to identify and eliminate waste in every process.

8. **Lean Product Development** – Develop products through systems thinking, functional integration, and an entirely incremental approach to design decisions and design risks. The result is reduced design cycles with increased engagement and productivity.

9. **Lean Sales and Marketing** – Apply lean principles to the Sales and Marketing processes, which involves developing the Voice of the Customer and linkage between customer needs and our capabilities as we seek to serve our customers’ customers.
Strive for Perfection (Managed Services)

On his first day as head coach of the Green Bay Packers, Vince Lombardi stated: “Gentlemen, we are going to relentlessly chase perfection, knowing full well we will not catch it, because nothing is perfect. But we are going to relentlessly chase it, because in the process we will catch excellence.”

mcaConnect offers a wide variety of ongoing managed services that can be tailored to our clients’ needs. These services complement our Manufacturing Excellence offerings by auditing our client’s progress towards their goals and assisting them to apply the techniques they learned to other areas of their operation. The following is a subset of Strive for Perfection services that mcaConnect offers:

1. **Value Stream Audit** – Complete audit of value stream to ensure all areas of Manufacturing Excellence strategy are being properly implemented.

2. **Demand Audit** – Update demand analysis and assess impact on changes to runner/repeater/stranger variability.

3. **Capacity Audit** – Recalculate EPEI, labor, and capacity (from the latest demand forecast). Identify opportunities for strategic performance breakthroughs.

4. **Trend Analysis** – Monitor the trending towards shorter lead time, higher turns, higher on-time delivery, and higher quality.

5. **Sales & Operation Alignment** – Monitor effectiveness of the Sales and Operations Planning process to properly align sales forecasts, production plans, and inventory plans.

6. **Lean Accounting** – Review and monitor lean accounting financial statements for each value steam. Ensure that non-value stream costs are properly allocated.

7. **Strategy Deployment** – Monitor and coach our clients towards a deeper alignment of improvement efforts across the organization to support each unit’s specific goals and targets.

8. **Continuous Improvement** – Monitor the number of Kaizens being run and their source. Monitor the number of opportunities for improvement being surfaced and monitor follow through to action. Audit 5S activities to build disciplines and compliance.

9. **Operational Excellence** – Train to make every value stream both visible and self-healing.

Strive for Perfection services will be analyzed for applicability and bundled into a monthly subscription based service for each client specific to their needs and requirements.

mcaConnect’s Strategic Services offerings provide executive teams a fresh look at their business through the lens of world class experts. Our innovative approach to business excellence allows executive teams to augment their management capabilities to rapidly transform and capitalize on changing markets. As the saying goes, there is the quick and there is the dead. With our executive coaching, strategy advisory, and training services, the mcaConnect collaborative model will enable you to finally make the moves you knew had to be made. Our approach to collaboration and shared benefit will enable our team to elevate performance rapidly and sustainably. The competitive advantage this brings will translate into profits.