



# Cultural Evolution

*New management operating system drives productivity increase*



Last year, Upstate Niagara Cooperative, Inc., a dairy cooperative owned by 385 farmers, was faced with a tremendous challenge. The good news was that demand for its cultured products like cottage cheese, yogurt, sour cream and dip was consistently exceeding forecasts. The bad news was that, with overall equipment efficiency (OEE) consistently below standards, it was turning away business.

Even with its new state-of-the-art plant, designed only four years earlier to accommodate anticipated growth, the cooperative simply couldn't afford to add capacity to keep pace with burgeoning volume.

COO Larry Webster recognized that in order to increase productivity and throughput to be able to capitalize on the opportu-

nities at hand, he would have to urgently stem traditional productivity losses exacerbated by frequent and lengthy equipment changeovers and start-ups, less-than-optimum scheduling, and workforce utilization. "We knew what needed to be done but we didn't have the time or the manpower in-house to achieve it," he admits.

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At a facility with eight filling and packaging lines that generate over 100 million pounds of product annually facing higher-than-expected volume, this was no small task. It was even more complex due to the fact that all products made by the cooperative are subjected to a rigorous quality

process to ensure that they continuously meet and exceed the very highest industry standards.

As Plant Manager Dan Dunn recalls the situation, "The pace of our growth was so fast we were constantly adding new equipment to support volume. Under the circumstances, we were skeptical of the idea that our management team could develop a management operating system to improve the flow of information coming from the plant floor up to cost accounting. We obviously wanted and needed a system to identify our capabilities at the fillers because you can't constantly keep throwing capital at new volume opportunities. We wanted to get a better handle on the capabilities of our existing equipment, so as we moved forward with our sales, marketing, and finance activities, everybody was on the same page. We needed an outside group to help us develop that system."

After an in-depth competitive review of several consulting firms, Mr. Webster's team decided to bring in USC Consulting Group (USCCG), an operations management consulting firm known for its ability to

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effectively address such issues.

Once on board, the consultants performed a detailed review of existing information flows and manufacturing processes across the facility. USCCG team members worked side-by-side with the client's management and operations teams to obtain a detailed understanding of processes and methodologies.

Their objective was to identify opportunities for improvement in productivity and throughput that would result in lower overall operating costs and greater output.

According to Mr. Dunn, the USCCG team, "...was part of our team. They were omnipresent, attended our staff meetings, and were like a part of us after a while. It was pretty neat."

To meet the established goals, the project ultimately combined traditional USCCG process improvement efforts; a LINC<sup>S</sup>® (Lean Information Control System) implementation; and the installation of a strategic partner's technology solution to provide real-time scanning/tracking of production results, including downtime events, to the production supervisors on all filling and packaging lines.

An Employee Involvement Prototype, wherein suggestions for improvement were solicited from all levels of the organization, was the first step toward implementation. Prototype meetings were held with each department on the floor and made highly visible to all operators. Everyone was engaged in these meetings to encourage and stimulate active participation. USCCG Operations Manager Greg Zawacki explains, "We were simply trying to get ideas off the floor regarding how we could make jobs easier and how we could keep fillers running in a way to improve capacity and efficiency."

Installing a visual management system so everyone would always know how the plant was performing at any given time was

identified as key to increasing productivity.

"At each of our filling lines," Mr. Dunn recounts, "we placed display boards that are highly visible to the filler operators, as well as to our packaging department, so everybody has a feel for the current status of all fillers. It's live, it's real-time, and it helps us identify where issues really lie. It helps get the maintenance department and our production supervisors on the same page."

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Understanding and remedying the root causes of downtime was another key to success. This was where USCCG strategic partner Shoplogix' Plantnode® solution proved invaluable. Plantnode connects to any machine or line, automating plant floor data collection and replacing the need for manually recorded production data that was found to be cumbersome and often inaccurate.

Now that they're scanning downtime with Plantnode, Upstate Niagara's operators are more likely to enter the correct diagnostic. Previously there were no set categories for the operators to choose from and the language used to describe what was wrong with their filler varied by shift and operator. Standard, bar-coded root causes of downtime, developed in collaboration with USCCG, helped narrow the issues and focus the remedial action where it was most effective.

For example, prior to the installation of Plantnode, a filler line operator might

write, "We were down for 30 minutes because of cups." But, once the company dug into the issue, the problem was not at the filler at all, rather at the entrance to the case packer, where cups were tipping over. When the team understood that the real issue was tipping cups, they redesigned the process to solve the problem. Before Plantnode, the team would likely have missed the actual cause for the delay and wasted valuable time and effort trying to fix things that didn't need to be fixed. That is no longer the case. Detailed downtime categories now help to quickly identify and remedy the real root causes of production problems.

This enhanced reporting heightened operators' awareness of the amount and causes of downtime. Once these causes were identified and prioritized using Pareto analysis, they were systematically eliminated by the maintenance department through an action item management system and process. The mechanics fill out daily activity reports; measure unplanned versus planned downtime; record how many hours were spent on work orders and PMs; and input that information into a system.

Through a series of inter-departmental meetings, the company tracks work done by mechanic; monitors it against PMs, among other factors; and makes the information readily available on area boards in the form of highly visible bar charts and downtime Pareto charts that speak specifically to mechanical issues on the filling lines.

In addition, with the help of the consultants, the company developed detailed Clean-in-Place procedures and then trained managers and supervisors so that different people would consistently be doing the same job the same way to minimize downtime.

"Matrices and measurements were

developed for certain types of changeovers,” reports Mr. Dunn. “If an operator is supposed to take 30 minutes for a changeover but is actually taking 60, we have a tool to use to work with that operator and find out what went wrong and set it right. The matrix really helped streamline things, allowing us to get a lot more consistency out of our production line.”

The consultants also configured LINCOS to provide the Upstate Niagara team with direct access to detailed information for each line, as well as operating reports and trend analyses. The resulting management operating system gave the cooperative the capability to manage at the most appropriate level, i.e., minute-by-minute or for longer periods of time such as by shift, daily, or weekly.

“LINCOS can pull data by filling line, by SKU, by shift, and can retrieve it quickly. It has incredible capability for creating reports on anything that’s happening on these production lines right now. It puts everybody in our company on the same track with regard to sales, marketing and finance. With LINCOS, any type of data necessary to support decisions relating to what potential profit we may need, what we may need to support that, or anything else when we’re considering additional business, for example, is at our fingertips,” adds Mr. Dunn.

“I think the overall system has created a better situation for our line supervisors because it streamlined their daily lives. We have the ‘Day in the Life’ reports and the shift reports. The high visibility, scanning capability and detailed root causes of downtime armed them with more and better information to work with the maintenance department and I think that has helped us out a lot. It certainly gave them a platform from which to manage their day-to-day responsibilities less subjectively. It has also helped me in holding some of these guys a little more accountable to their functions.”

Plant Superintendent Phil Massey admits that, “The management operating system has made us all look at our jobs differently, focusing on the tasks each of us complete every day. Through action items submitted off the production floor, we have identified areas where we could improve capacity and efficiency. Over 150 action items have already been completed since the management operating system was implemented.”

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“The management operating system had a positive impact on shaping and changing our culture, both for operators and management. It not only defines but strengthens our cooperative’s mission statement and core values. This program has given us the tools to adequately and effectively redefine our business practices while maintaining and improving on our very high product quality standards,” Project Manager Jeff Faulks adds.

“It all goes back to those high visibility display boards,” Mr. Dunn says. “I was surprised how much that meant to our team and how everybody understands now that it’s a key component of our business. If a filler is down, why is it down, and what do we do about it? I think it created a higher sense of urgency to understand and be aware of the status of production at all

times. Everybody is not necessarily working any harder but certainly they’re working a little smarter.”

“The management operating system USCCG helped us develop allowed us to nail down the capabilities of each packaging line. Our line supervisors, the area meetings, the action items, the high visibility of the displays on the floor – all of that is part of how we do business now and that’s why it sustains itself. I tell our team that, if we’re not getting action item ideas off the plant floor from our associates, and we’re not providing them with feedback on their ideas, the system does not work.”

He adds, “We’ve improved our case count per hour across the board and have maintained that. How did we do it? Well, the Plantnode devices and plant displays are highly visible. Everybody is constantly engaged in what’s going on with the fillers and their status. Certainly our processing department felt it too because as our output increased, they had to keep up. We developed key measurements and installed Plantnode devices in that department as well. So increased visibility and better information served to heighten awareness.”

Although cautious with proprietary information, the company does admit to achieving and sustaining at least a 15% efficiency gain on higher volumes and that it does not foresee a day when it would operate without its new management operating system anchored by USCCG’s LINCOS and Shoplogix’ Plantnode® technology.

# Better-Performing Assets Make Better-Performing Companies

Asset performance management encompasses all forms of maintenance activities that extend the lifespan of mission-critical assets to ensure an organization achieves its strategic goals and objectives.

- Scheduled restoration;
- Scheduled discards;
- On-condition tasks (CLAIR) – cleaning, lubrication, adjustment, inspection, repair or replacement and;
- No scheduled maintenance (run to failure).

Asset performance management is as much the responsibility of the C-level executive as it is the tradesman. Both must make sure that the machinery and equipment a company depends on to fulfill its mission runs smoothly and efficiently, at or near rated capacity, to achieve optimal throughput and ROIC.

Some of the world's most renowned companies have found that implementing a proactive asset performance management philosophy, and applying world class maintenance management principles, is one of the factors that separates companies considered "best in class" from all others.

A basic understanding of these concepts will make it easier for you to fulfill your responsibility to your company, whatever your role, level, or title.

## Definition and Underpinning Methodologies

Asset performance management is the systematic planning and control of a physical resource throughout its life. This may include the specification, design, and construction of the asset,

its operation, maintenance and modification while in use, and its disposal when no longer required. Asset Reliability is the controlled process of ensuring that physical assets continue to do what they are needed to do when they are needed to do it.

World Class Maintenance Management is a collection of maintenance standards and practices used to benchmark and conduct maintenance within an organization.

Reliability Centered Maintenance (RCM) is a process used to determine what must be done to ensure that any physical asset continues to do what its users want it to do *in its present operating context*.

RCM II focuses on the understanding that the majority of failures are not age related, and that the most effective maintenance strategies rely on a combination of maintenance tasks to mitigate against the consequences of failure. These include, condition-based, scheduled restoration, scheduled discard and "no scheduled" maintenance tasks.

## Some Condition-based Examples

*On Condition* – Assets remain in service on the condition they continue to perform at or above a predetermined level. Example: Visually inspect tires for wear. Remedial Action: Replace tires when tread wear mark exceeded.

*Scheduled Restoration* – Assets are overhauled at fixed intervals regardless of condition. Overhaul must restore asset to its original condition. Example: A nitrogen producer executes a scheduled restoration on its turbine generators every four years.

*Scheduled Discard* – Assets are discarded at fixed intervals regardless of condition. Example: Replace filter every 3,000 operating hours.

*No Scheduled Maintenance* – Run to failure. Example: A light bulb. (Most companies don't find it cost effective to have someone running from room to room checking lumen levels, particularly in a room lit with multiple lighting sources.)

Quality asset management practices keep operations running smoothly and profitably. Poor asset management practices can hamper productivity and adversely affect a company's Overall Equipment Effectiveness (OEE) and bottom-line.

Creating and articulating a strong strategic vision in which people, equipment, and inventory all play an appropriate role in optimizing OEE is a fundamental first step to improving and sustaining asset performance.

An understanding of best practices and how world class maintenance management, total productive maintenance (TPM), Lean maintenance, autonomous maintenance, and other methodologies fit with Reliability Centered Maintenance (RCM) is essential to becoming a world class asset manager.

## What is World Class and Why is it Important?

Establishing, tracking and analyzing key performance indicators (KPIs) as part of an asset reliability strategy is an important step in making the transition from reactive to proactive maintenance. Only by closely monitoring and managing

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leading and lagging indicators do you have a realistic chance of driving measurable results without significant capital investment.

Superior asset performance is a direct result of World Class Maintenance Management which has at its core Reliability Centered Maintenance, also known as RCM II.

But what is considered World Class and what will it mean to your company if you achieve it?

At the macro level, World Class looks like this:

- Percentage of maintenance work that is planned >95%
- Percentage of planned maintenance work completed = 100%
- Reactive unplanned/emergency maintenance work <5%

-Proactive work as % of planned maintenance work (including PdM) = approx. 45%

-Actual maintenance hours compared to planning estimate = 100%

-Overall Equipment Effectiveness (reliability x utilization x quality) > 85%

### Enabling Technology

As the amount of condition-based monitoring increases through the application of advanced asset performance management practices, the amount of data fed to the maintenance management team increases exponentially. Asset reliability systems allow for storage, retrieval, analysis, interpretation, and prioritization for action. They help ensure that the right maintenance is scheduled on the right equipment at

the right time, thereby increasing production, lowering cost, and improving profit margins and ROIC.

Whether an organization needs a quick solution to address the performance of a single asset, entire plant, or bring about a cultural change at the enterprise level, a flexible and scalable asset reliability program, used in conjunction with world class maintenance management principles, can produce world class results.

Implementing best-in-class methodologies and proprietary business intelligence tools, can leverage existing assets and reduce costs to improve EBITDA by as much as 15-25%.

# JV Formed to Better Serve Clients on Both Sides of the Atlantic

USC Consulting Group (USCCG), Ermes and Aizoon Consulting, operations management, interim management, and information technology consultants respectively, have formed a joint venture to meet the need for world class management consulting services on both sides of the Atlantic. The new entity, USC Consulting Group, Europe, will be headquartered at Via Lanzone 31 in Milan, Italy and serve clients throughout Europe, the Middle East and Africa.

Historically, USCCG has deployed North American-based delivery resources overseas to work with and through local employees to achieve project goals and objectives. However, faced with an improving global economy that is triggering a growing demand for its services on both sides of the Atlantic, the firm has decided to add experienced

European-based business development and delivery resources as part of an effort to strengthen its ties to the international business community and meet the needs of its increasingly global clientele locally.

“Our North American-based clients have frequently asked us to deploy internationally on their behalf. Over the years, we’ve provided experienced resources, subject matter expertise, and enabling technology to their operating subsidiaries in 23 countries on five continents,” said USCCG President George Coffey. “We see this trend accelerating as companies increasingly look for comparable operating efficiencies and attractive returns on invested capital across their global networks.”

According to USC Consulting Group Europe’s Managing Director Massimo Cungi, “With a pool of talented resources

available to us on both sides of the Atlantic, we are now able to deploy more rapidly on behalf of clients throughout the world, giving both of us the competitive advantage of time.” In addition, the firm will now pursue growth opportunities bi-laterally by leveraging existing multi-national client relationships and its principal’s business development resources in Milan, Turin, Rome, and Genoa.

Besides USCCG, principals in the joint venture include Massimo Cungi, founder of Ermes, Franco Cornagliotto, founder of Aizoon, and former USCCG Eastern Canada/New England regional manager, John Hannan, who will serve as the venture’s sales manager. For more information visit the firm’s web site at [www.usccg.com](http://www.usccg.com).



*First we make it work. Then we make it last.®*

For more information contact us at **800-888-8872** or [www.usccg.com](http://www.usccg.com).

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