

SUSTAINABLE PRODUCTIVITY NEWS

“for improving operating margin with *Continuous Process Improvement tools*”

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Simulation Facilitates Optimization

As companies have increased their ability to gather useful data from their operations, the interest in optimization has increased. In this article, we share a high level strategy for how to successfully utilize optimization tools to improve our operations. We also share some critical concepts to help increase our success when using optimization. The example used is for optimizing a supply chain network.

Simulation Facilitates Optimization

Optimization is used to select optimal locations for DCs (distribution centers). It can also be used, in combination with simulation, to determine the volume to carry of each product at each of our DCs to support demand.

To simplify the effort to develop an optimization model, a simulation of the network should be first developed to allow us to reduce the number of critical factors (dimensions) to be modeled. The simulation will also improve our understanding of how the distribution network behaves; making us better decision makers.

Optimization Facilitates Simulation

Once you have used optimization to select optimal DC locations, and have determined which products are to be stored where, simulation can help us with the detailed design of the DC layout and flow, to optimize productivity, and minimize capital expenditures.

Critical Optimization Concepts

The solution space is multi-dimensional.

Most of us are used to looking at 2 dimensional graphs when analyzing data. We have a X and Y axis. We also might have been exposed to 3

dimensional graphs, with an additional Z axis. The actual solution space, though, is a multi-dimensional graph. Imagine a solution space graph that looks like a Mountain range, with greater than 3 dimensions.

Understanding this concept motivates us to limit the number of critical factors in our model. We can pay attention to a many metrics that go into or come out of our model, but we need to identify which factors are the most critical drivers of operational performance.

You have reached a “local” optimal.

Let’s assume that our solution space is 3 dimensional and looks like a Mountain range. When we are at the top of a peak, the best we can assume is that we are at a local optimal. There could be many peaks “higher” than the one we are on, but we can’t see them since we haven’t yet discovered them.

Understanding this concept motivates us to maintain a continuous improvement mentality to our optimization efforts. We reach a local optimal, then use the learning achieved, to reach out for the next mountain top.

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Driscoll's Delights Internal Customers With Process Improvement

This is an excerpt from an article about Driscoll's work with their suppliers to improve supply chain efficiency and effectiveness.

Beginning in 2013, Sambrailo Packaging established a team to map the processes for managing Driscoll's complex and unique packaging operations. Every detail from forecast and procurement, through vendor and inventory management, to issuance and invoicing was dissected. This analysis identified how Driscoll's could more effectively manage operating costs, minimize risk, improve scalability, and enhance quality.

This analysis also identified the areas where Sambrailo Packaging can provide enhanced operational support to Driscoll's, above and beyond what would be considered standard packaging procedures. From this, Sambrailo Resource Management was born. This team now works with Driscoll's and other customers to improve their operational performance in five key areas: product development; vendor and supply chain management; product testing and qualification; packaging operations management; and product traceability.

Out of this process mapping, collaboratively both companies also designed a core process template that is adaptable to global expansion in the future. As part of this core template, it became evident that quality assurance and quality control protocols early on in the packaging supply chain would mitigate risk and reduce cost implications further downstream. Focusing on product testing and qualification, Driscoll's and the Sambrailo Resource Management

Team initiated an Inbound Packaging Inspection Program in November 2015.

The Inbound Packaging Inspection Program was first implemented at two of Driscoll's facilities in Central Mexico. Through this program, Sambrailo Regional Packaging Quality Inspectors conducted initial cursory inspections of supplier pre-build inventories and provided training and support to Driscoll's warehouse operations staff. Driscoll's trained warehouse staff then conducted full inspections of all inbound packaging. Over 40 characteristics of the packaging features were inspected with data and images uploaded to a cloud-based database in real time.

The goals of this program are to provide objective data to all parties involved, to push greater accountability back to the supplier base, and for everyone to work together towards a "zero defect culture." The data from the program allows Driscoll's and Sambrailo to evaluate suppliers' manufacturing capabilities against stated quality expectations. The program filters out quality-related issues before packaging goes out into the field, giving suppliers time to make necessary adjustments prior to the start of the season and minimizing packaging quality issues for Driscoll's growers.

Sambrailo Resource Management and Driscoll's are currently implementing the Inbound Inspection program at many of Driscoll's locations in the U.S. as well. Driscoll's has found that it allows their growers to be more efficient because they do not have to interrupt the harvesting process to resolve packaging defects in the field.

CONFERENCE CALENDAR

**Central Coast
Greenhouse
Growers Annual**
December 1, 2016
Arroyo Grands, CA

**Winter Simulation
Conference**
December 11-14,
2016
Washington, D.C.

50th World Ag Expo
February 14-16,
2017
Tulare, CA

**HIMSS Annual
Conference**
February 19-23,
2017
Orlando, Florida

**Granular Ag GROW
2017 Symposium**
February 21-23,
2017
San Francisco, CA

CONFERENCE CALENDAR

**Health Care
Systems Process
Improvement**
March 1-3, 2017
Orlando, Florida

**IISE Annual
Conference**
May 20-23, 2017
Pittsburgh,
Pennsylvania

**79th Annual Grower
Shipper Golf &
Gala Event**
June 22-24, 2017
Salinas, CA

**IISE Engineering &
Lean Six Sigma**
September 25-27,
2017
Orlando, FL

**Association for
Manufacturing
Excellence**
October 9-13, 2017
Boston, MA

SPS Engineers Share Knowledge

The following are upcoming conferences & symposiums where SPS engineers will be sharing their knowledge. Let us know if you would like to learn more about any of these.

"Improving Greenhouse Productivity with Operational Engineering Tools". Central Coast Greenhouse Growers Annual meeting.

Brief review of operational improvement tools that best fit in a Greenhouse environment.

"Applying Continuous Process Improvement (CPI) to Produce Farming". World Ag Expo.

Review of various applications of operational improvement tools in Produce Farming. As well as sharing of SPS approach for building a CPI culture.

"Improving Farming Labor Utilization With Lean Tools". GROW 2017 Symposium

Review of SPS approach for building a CPI culture. Includes simulation exercise on improving labor efficiency.

"Lean to CPI - An Evolving Journey". Healthcare Systems Process Improvement Conference 2017

Review of history of Industrial Engineering combined with lessons learned about effectively utilizing lean tools.

"Improving Irrigation System Usage for a Produce Farmer". IISE Annual Conference.

Review of project where lean tools were used to improve irrigation system usage.

"Optimizing Berry Packaging Supply Chain Simulation". IISE Annual Conference.

Review of simulation modeling and analysis project for improving supply chain network design.

Operational Improvement & Design Speakers

Sustainable Productivity Solutions can provide speakers for your company's symposium to help educate your team on how to improve operational productivity. If you would like to know more, please contact us. This following is a list of topics covered.

- Improving productivity using Lean, Six Sigma, and CPI
- Strategy for building a Continuous Process Improvement (CPI) culture
- Using Simulation to ensure new facilities/automation deliver to spec
- Improving Employee Engagement levels through Intrinsic Motivation

2017 Seminar Schedule

Building a Continuous Process Improvement (CPI) Culture -

Improving productivity improves our bottom line. Learn to use the most commonly used LEAN tools and the critical Continuous Process Improvement principles.

Improve Employee Engagement - Employee engagement is critical to increasing productivity. Learn how to use praise, delegation, and conflict resolution to improve employee engagement.

Our **2017 Seminar schedule** is as follows. Please email lym@ReduceOR.com to learn more.

February 8 & 9 - Scotts Valley, CA

March 8 & 9 - Arroyo Grande, CA

April 12 & 13 - Scotts Valley

May 10 & 11 - San Jose, CA

June 14 & 15 - Arroyo Grande

September 6 & 7 - Scotts Valley

October 11 & 12 - Arroyo Grande

November 8 & 9 - San Jose

These seminars can be held on-site at your facility. In addition, we can deliver the CPI seminar in Spanish.

Simulation Training Center Opens March, 2017

With the increasing need for process flow simulation use in the Bay Area, Sustainable Productivity Solutions is opening a Simulation Training Center in San Jose March 2017. The goal of the training center is to provide Bay Area professionals with a mechanism for developing their simulation modeling & analysis skills.

The initial offering will be a six week one evening per week training class where participants learn the basics of how to properly execute a simulation study. In addition, the participants will also go through the process of building and analyzing a model that is related to their current job.

The weekly class will run from 6:30pm to 8:30pm, and the training center will be available from 6pm to 10pm for participants to work on their model. A variety of simulation software will be supported.

Our Instructor has over 20 years experience training simulation engineers, and has taught Simulation at multiple universities. In addition, he has experience with 9 different simulation software products.

Initial class will start Wednesday March 22. If you are interested in learning more, please email kmabrouk@ReduceOR.com.

Contact Us

Contact us when you need to generate sustainable productivity solutions for challenging operational issues.

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