

# SUSTAINABLE PRODUCTIVITY NEWS

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

Volume 6 Issue 2

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## Data Collection Strategy for Fixing Underperforming Production Lines

A most common production challenge is a production line that does not provide the desired throughput capacity.

How can you fix this problem? By following the problem solving process to 1) determine failure points and inefficiencies that are eating up production capacity, and 2) implement solutions that address the root cause of the problem.

To do this, first observe the production line in action. Then, collect data to help identify the failure points and prioritize them by their impact on production capacity.

This article categorizes several types of data to collect to address the underperforming production line problem.

### **Downtime-Mechanical:**

- When downtime occurs
- How long before repair begins
- How long before repair finishes
- Category of downtime type

### **Downtime-Out of Material:**

- When do we run out of material

- Type of material
- How long before replenishment

### **Set up/Change Over Time:**

- How long change over takes
- How change over time varies based on type of change.

### **Scrap/Rework Percentage:**

- Percentage of work completed that is scrapped or reworked.

### **Work-Wait Time:**

- How long does each step in process take to complete
- How long work sits in front of a process step before it begins.

Collect the data for a sufficient amount of time to properly measure the impact of each failure points. Then, prioritize failure points by impact, and begin working to improve them one by one.

If you have any questions about these guidelines, please email us at [CPI.Support@ReduceOR.com](mailto:CPI.Support@ReduceOR.com)

Wishing you success with your operational improvement efforts.

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*“... The end result has been we work much more efficiently, with better communication and a lot less “falling through the cracks” ...”*

*- Jim Graham, Owner, Desert Racing Team*

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## In This Issue

Data Collection Strategy for Fixing Underperforming Production Lines	Page 1
Book Review: Intrinsic Motivation at work	Page 2
Conference Calendar	Pages 2,3
Effort Required for Building DC Models is Significant	Page 3
Public Seminars Schedule	Page 4

## Book Review: “Intrinsic Motivation at Work: What really Drives Employee Engagement” by Ken Thomas, 2009

This book is for those who want to increase employee engagement levels in their organization. It starts with clarifying the difference between traditional motivational techniques (also called extrinsic motivational tools), and what it takes nowadays to increase employee engagement (intrinsic motivational tools). The rest of the book explains different aspects of intrinsic motivation, and how to build a culture that promotes intrinsic motivation.

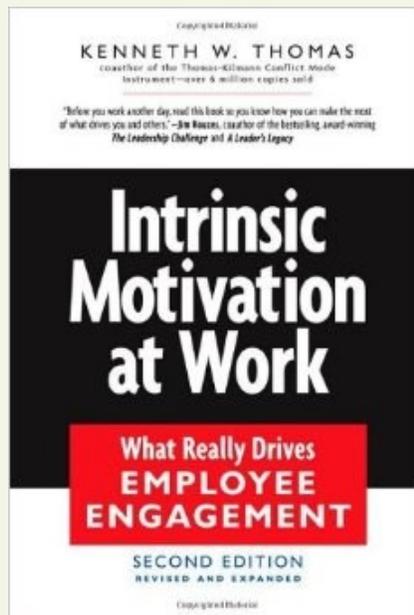
This book explains the thought process behind what has become a commonly accepted belief in the employee engagement field: “you can’t motivate a person, they have to motivate themselves”. The point being that you can establish a work environment that inspires people to be motivated, but each individual “chooses” their motivational level.

**Extrinsic motivational tools** (eg., salary, bonuses, perks, and rewards) are still needed in the work environment, and do work for the short term, but they are not effective at improving motivation for the long term. In fact, most people don’t work any harder or better after they get raises or bonuses.

**Intrinsic motivation** comes from within the individual. It deals mostly with creating a sense of choice, a sense of competence, a sense of

meaningfulness, and a sense of progress. It is the company leaders responsibility to build these into their culture. These “sense of” items give employees the energy needed to more effectively self-manage themselves.

**Sense of Choice** is created by delegating authority, not punishing honest mistakes, providing a clear purpose and providing information needed to do our work.



**Sense of Competence** is created by providing positive feedback, challenging people, providing needed training, and using high non-comparative standards.

**Sense of Meaningfulness** is created by having a non-cynical climate, providing an exciting vision of where we are going, and structuring “whole tasks” roles.

**Sense of Progress** is created by creating a collaborative climate, celebrating achievement of milestones, and measuring improvement.

It is not an either/or. We need to use extrinsic motivational tools on a sporadic basis, and use intrinsic motivational tools on a daily basis.

### Recommendation:

A **Must Read** for today’s leaders

## CONFERENCE CALENDAR

**Society of Manufacturing Engineers  
Westec Conference,  
September 15-17,  
2015, Los Angeles,  
California**

**American Public  
Transportation Annual Meeting, October 4-7, 2015, San Francisco, California**

**Michigan Simulation User Group Annual Conference,  
October 14, 2015,  
Troy, Michigan**

**Association for Manufacturing Excellence Conference, October 19-23, 2015, Cincinnati Ohio**

## CONFERENCE CALENDAR

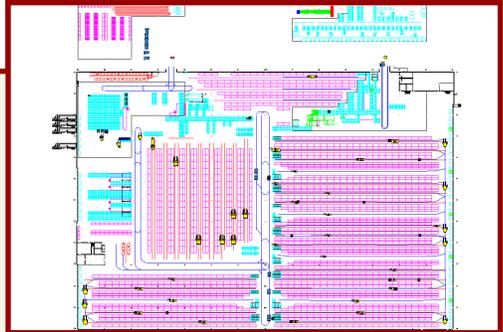
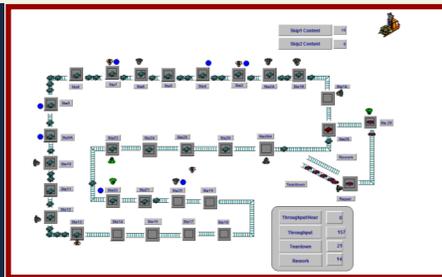
AnyLogic Conference, November 4-5, 2015, Philadelphia, Pennsylvania

Western Growers 90th Annual Meeting, November 8-11, 2015, San Diego, California

Winter Simulation Conference, December 6-9, 2015, Huntington Beach, California

LEAN Transformation Summit March, 2016, Las Vegas, Nevada

Institute of Industrial Engineers Conference, May 21-24, 2016, Anaheim, California



Simulation Model Animations (left: processing operations, right: distribution center)

### Effort Required for Building Distribution Center Models is Significant

Simulation modeling is used to evaluate both processing operations, and distribution centers (DC). The level of effort required to design and build a DC model is significantly more substantial compared to a processing operations model. The following are the key drivers of this significant difference in effort:

- 1) More physical resources are required when modeling a DC. A processing operations model requires modeling a few pieces of equipment, whereas the DC model requires modeling a few hundreds of storage locations.
- 2) Oftentimes, for processing operations, it is sufficient to model a few forklifts with specific capacity to move product to/from the production line. A DC model requires modeling numerous material handling equipment with the added complexity of incorporating varying capacity and flexibility.
- 3) Not only does the DC model require more physical resources but there is also a lot more information to manage because

you have to keep track of where each individual SKU and pallet is being stored. This requires significant model “design” effort.

- 4) Plus, you have to design and code a search algorithm in order to locate the product for when you need to pull it from storage to fill an order. Depending on the facility size, the storage location options can be quite extensive. In contrast, a processing operations model does not require storage locations or search algorithms because the product flows through one or more machines according to a pre-defined process flow logic.

Lastly, take with a grain of salt the claims by some simulation software products that it is easy to build DC models. Because while it may be easy to construct these models, it is not easy to “design” them. An elegant design will achieve the right balance between accuracy and practicality.

Submitted by Katy Griffin, Sr. OE, Sustainable Productivity Solutions

## Improving Productivity Seminars to be held at Grower Shipper Association of Salinas, CA

### **September 2 – Building a Continuous Process Improvement Culture**

For operations, supply chain, and finance leaders and managers. Learn the benefits of building a Continuous Process Improvement (CPI) culture, the steps needed to build a CPI culture, and how to use LEAN tools to improve operational performance.

### **September 9 – Simulating Processes and Distribution Centers**

For operational and supply chain leaders, and designers of processes or facilities. Learn to use simulation models to significantly reduce the risks associated with “new” processes, facilities, or flow, and what questions to ask to make sure your investment in simulation modeling and analysis produces needed results.

### **September 16 – Improve Efficiency of Equipment Maintenance**

For maintenance department managers mostly, some attendees from finance or operations. Learn operational improvement tools you can use to improve efficiency and effectiveness of maintenance processes.

### **September 23 – Improve Employee Engagement**

For managers and leaders from all departments. Learn to more effectively motivate people through intrinsic motivation skills.

**“Processes + People DRIVE Performance”**

## Contact Us

Give us a call for more information about our services

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