



Manufacturers Alliance Seminar

Learning to See Waste

Hear what local manufacturing leaders have done to significantly accelerate the pace of improvement.

Welcome



**Kirby Sneen, Vice President
Manufacturers Alliance**

Please silence your phones during the presentations and discussion.

A PDF of today's presentation will be available in our Archive.

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Learning to See Waste

Loading...



Don't let technology
WASTE your time!

Make IT
EaaS!



Join The Movement!

- **Technology** should help drive OUT waste & increase productivity
- **Education** to help facilitate the dialog between IT & Executives
- **Information** to apply to different business situations you may be facing




What will you find there?

DOWNLOADS	ASSESSMENTS	BLOGS/VLOGS	NEWSLETTER	SOCIAL MEDIA
 <p>Download a variety of eBooks, white papers, survey studies and more.</p>	 <p>Evaluate your business with interactive assessments.</p>	 <p>Keep up with trending topics and ideas with thought provoking blogs and vlogs.</p>	 <p>Subscribe to the newsletter to receive information about what's new with MakeITEasy.com</p>	 <p>Follow Make IT EaaS on social media for events and interactive discussions.</p>




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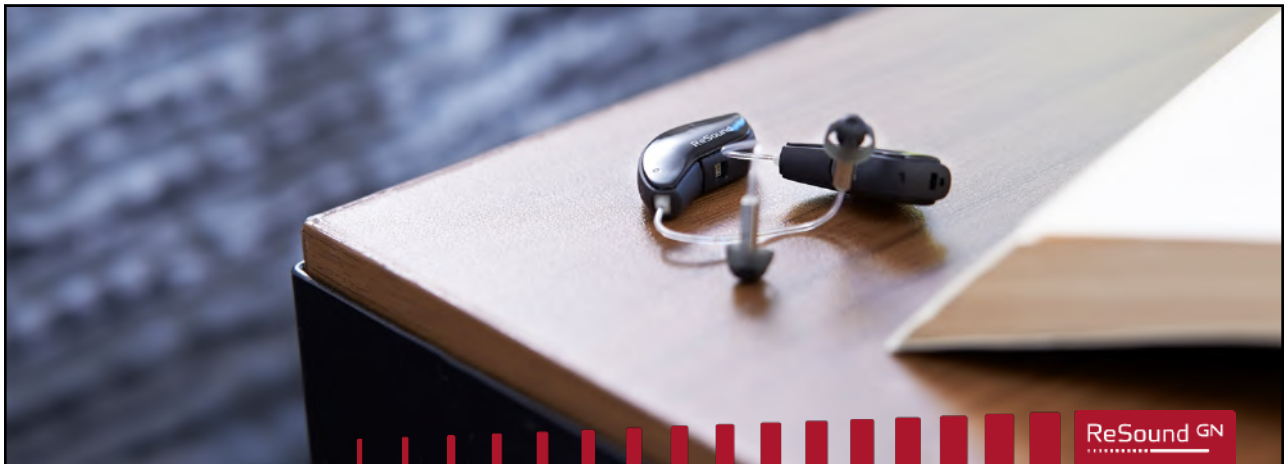


Tammi Dorion, Peer Group Director
Manufacturers Alliance

GN ReSound

Shelly Sauer

Production Manager



Learning To See Waste

Shelly Sauer – Production Manager

ReSound



Who is GN ReSound?

ReSound is part of the GN Group – the global leader in intelligent audio solutions that let you hear more, do more, and be more.

The GN headquarters is located in Denmark and has proudly built on 147 years of expertise, capabilities and insight to produce some of the best and most innovative audio devices in the world.

ReSound

Since 1943, ReSound has improved the quality of life for people with hearing loss, their families and friends.

ReSound is represented in more than 80 countries around the world.

ReSound

Manufacturing

We have several manufacturing sites around the world. Our local manufacturing site is located in Bloomington, MN.

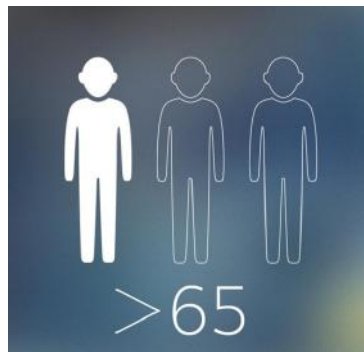
We build custom ITE (In The Ear) and BTE (Behind The Ear) hearing aids. We have an assortment of colors, styles, and accessories to meet the needs of our customers.



ReSound

Hearing Loss

One out of three people over the age of 65 have some form of hearing loss. Young people can also be hearing impaired due to any number of factors.



ReSound

What is Waste?

- Waste in a process is defined as any activity that does not provide value in moving the product closer to completion.
- Anything that the customer is unwilling to pay for in the production of a product.



ReSound

Common Misconceptions

- Waste only happens in manufacturing/production (not in the office area).
- Managers, Supervisors, or Leads have the **BEST** ideas for eliminating wastes.
- Waste can happen anywhere!!
- Our team members are the Golden Ticket! They usually have the **BEST** solutions to the problems – we just need to teach them to see the issues.



ReSound

Acronyms for Waste

▪ TIM WOODS



▪ DOWNTIME



ReSound

DOWNTIME - The 8 Wastes

D – Defects - scrap and rework of product or service

O - Over Production - making more than is immediately required

W – Waiting - for parts, information, instructions, equipment

N - Non Utilized Talent - people skills, underutilizing talent

T – Transportation - moving product or equipment around

I – Inventory - increased storage and holding costs

M – Motion - bending, turning, reaching, lifting

E - Extra Processing - doing more than is required for customer



Defects

Scrap or rework of a product or service.

Ways to help eliminate **Defects**:

Poka Yoke

- ✓ Mistake Proofing



Standard Work

- ✓ A simple written description of the **safest**, highest **quality**, and most **efficient** way to do part of a process

Over Production

Producing more than the customer needs at this point.

Ways to help eliminate Over Production:

SMED (Single Minute Exchange of Die)

- ✓ Quick Changeover

Kanban

- ✓ Visual signal or card from downstream in the process

KANBAN	
ITEM:	_____
PART NO:	_____
QTY:	_____
LOCATION:	_____
SUPPLIER:	_____
RETURN KANBAN CARD TO:	_____

Waiting

Waiting for parts, information, instructions, and equipment are just a few examples.

Ways to help eliminate Waiting:

Line Balancing

- ✓ River vs. Ocean



Takt Time

- ✓ Beat in which the customer actually demands the product

$$\text{TAKT} = \frac{\text{AVAILABLE TIME}}{\text{DEMAND}}$$

Non-Utilized Talent

Under-utilizing people's skills or talent.

Ways to help eliminate Non-Utilized Talent:

☐ Training

- ✓ 5S, SW, Team Boards, Kaizen

☐ 5 Whys

- ✓ Working with team members to get to the root cause of the issue



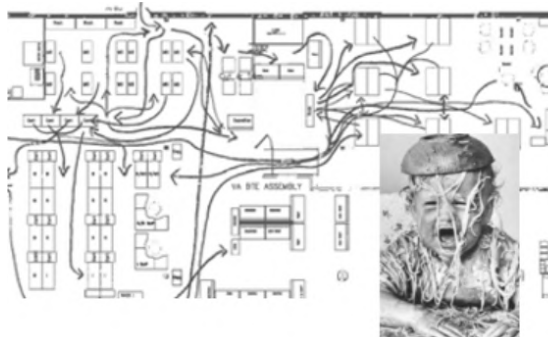
Transportation

Moving product, parts, and equipment around.

A way to help eliminate Transportation:

☐ Spaghetti Diagrams

- ✓ Observe every movement & draw on a map



Inventory

Increased storage and holding costs.

Ways to help eliminate Inventory:

One–Piece Flow

- ✓ Eliminating batches flowing through the process & keeps FIFO

JIT (Just In Time)

- ✓ Having just what you need, when you need it



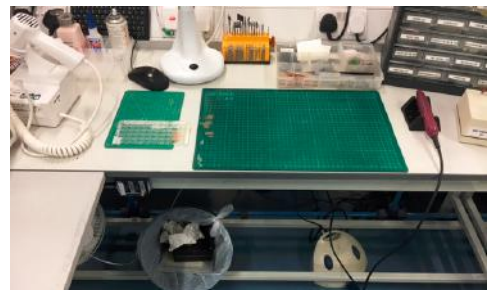
Motion

The movement of people, parts, and equipment without actually working on the product or service includes bending, turning, reaching, and lifting to name a few.

A way to help eliminate Motion:

5S

- ✓ Everything has a place & it is labeled



Extra Processing

Doing more than is required for the customer.

Ways to help eliminate **Extra Processing**:

Process Map

- ✓ Flow chart that has the process steps, delays, inventory, decision points, measurement, & transport

5 Whys

- ✓ Getting past “this is the way it has always been done”...Why? Why? Why? Why? Why?

Conclusion

There are many lean tools to help you find waste in your process.

Some ideas to leave you with:

Stop, step back and observe the process

Use your “Golden Ticket”

- ✓ Your team member’s pain points are usually indicator of waste in our process

Ask for a fresh set of eyes to look at the process

Waste can happen anywhere (even in the office)

Cell Culture Company

Renee Thurmer
Senior Project Manager



Learning to See Waste

Renee Thurmer
Senior Project Manager, Cell Culture Company
November 8, 2017

Company Overview



Cell Culture Company is a Contract Development and Manufacturing Organization (CDMO)

- C3 Performs large scale cell culture, process development, and protein production services for the academic, diagnostics, and biopharma industries
- C3 manufactures and sells hollow fiber bioreactor systems for use in life sciences



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Company Overview



**C3 has been operating out of our current
33,000 sq ft facility in Coon Rapids since 1981**



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Company Overview



C3 is relatively new to Lean (< 2 years)

Lean has led to positive change in the overall business culture by promoting:

- Movement toward process vs. task focus
- Process standardization
- Increase in interdepartmental communication and teamwork
- Understanding that exposing problems/waste is the first step toward fixing them

Company Overview



Where has C3 taught its employees to “see” waste?

Transportation

Waiting

Inventory

Motion

Underutilized Skills

Defects

Overproduction

Overprocessing

Build the Foundation



Everyone must speak the “Lean” language

- Introductory training for all employees to introduce Lean concepts and terms
- Follow-up training
 - C3 example: Online training course
 - Chose applicable videos and created a calendar to work through the course in ~5 months
 - Offered both “work at your own pace” and group “lunch and learn” video session options

Connect the Dots



Connect the classroom to the workplace

- Be Visible – Don’t allow people to forget
- Talk the talk – Integrate Lean terms into your everyday “workspeak”
- Encourage employees to start thinking of everything they do as being part of a process instead of an isolated task

Learning to See Waste



Ways to help people learn to see waste

- Show them what waste looks like, and then show them how wonderful it is when it's gone
 - C3 Example: Warehouse Reconfiguration
- Provide tools to help them see waste
 - C3 Example: Cultureware/Disposable Material Handling Process
- Show improved financial returns
 - C3 Example: Project Cost Estimation and Quoting Process
- Better utilize existing data resources
 - C3 Examples: Quality Management and ERP Systems

C3 Example: Showing What Waste Looks Like



Warehouse Reconfiguration

- Goal: Reconfigure warehouse space to improve flow and efficiency
- Tools Used: 5S
- Result:
 - Improved organization and flow
 - Improved efficiency in material handling processes
 - Reduced inventory of "non-routine" items
 - Improved appearance for customers/auditors

C3 Example: Showing What Waste Looks Like



Warehouse Reconfiguration

Before



After



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C3 Example: Providing Tools to Help See Waste



Disposables Material Handling Process

- Goal: Reduce waste in the material handling process for disposables manufacturing
- Tools Used: process mapping, 5S, and Kanban
- Results:
 - Removed an entire material staging process
 - Reconfigured some parts in ERP
 - Consolidated documentation
 - Improved process flow
 - Reduced labor per build cycle by 16-21 hours

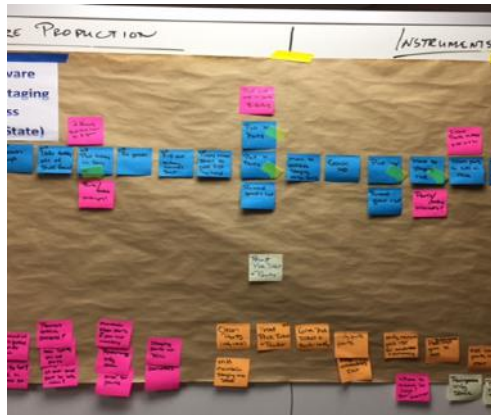
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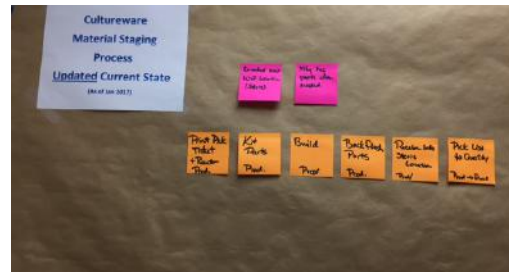
C3 Example: Providing Tools to Help See Waste



Before:



After:



C3 Example: Showing Improved Financial Returns



Project Cost Estimation and Quoting Process

- Goal: Reduce the amount of time it takes to generate a project quote
- Tools Used: Process mapping and 5S
- Results:
 - Increased net profitability of projects by increasing accuracy of cost estimations
 - Reduced time to generate quotes by using standard tools

C3 Example: Better Utilizing Existing Resources



Challenge Employees to Better Utilize Existing Tools

Examples at C3

- Use deviation and complaint reporting systems to identify areas of waste
 - Defects
 - Waiting
- Expand use of the ERP and Accounting systems
 - Configure/run reports to help recognize and address waste in:
 - Purchasing
 - Project cost tracking
 - Inventory levels

Lessons Learned



- Introductory Lean training is important to get everyone on the same page
- The simplest tools are often the most effective:
 - 5S
 - Process mapping
- Be sure to include high visibility projects for not only Production, but also support functions and upper management
- Utilize existing data-containing resources to reveal waste



Thank you!

Networking Break

10:00

Networking Break

10:00

Q & A

Cell Culture Co.
Renee Thurmer

GN ReSound
Shelly Sauer

Manufacturers Alliance
Tammi Dorion

How did we do?

Please fill out your **feedback sheet** for today's seminar.

Educational Seminars

Leverage the best practices and lessons learned from a diverse panel of industry peers.



Make to Order Lean

December 7 at Hennepin Technical College

Resolving Conflict at Work

January 11 at Wurth Adams

Experiential Workshops

Practical methods to continuously improve manufacturing and leadership practices



Measuring the Right Things

Nov 15

Design of Experiments - DOE

Nov 28

Mistake Proofing

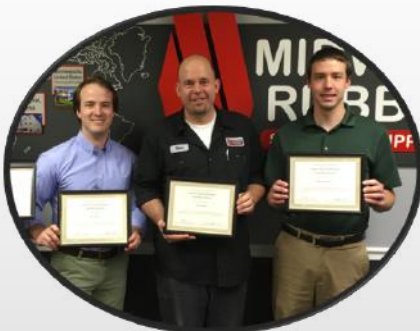
Nov 29

Continuous Improvement Idea Systems

Dec 4

Certifications

It's not enough to understand leadership principles and Improvement practices. Success lies in implementing them.



Advanced

Lean Leader Certification

Develop the systems, behavior and discipline to create a culture of improvement

Starts January 2018

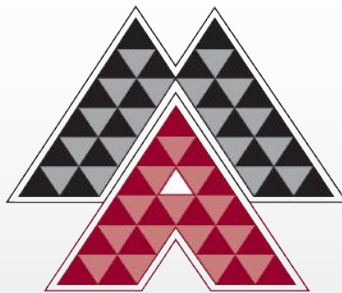
Peer Group Membership

Would you like feedback on your challenges? Leverage a group of your peers as your own board of advisors.



- **New** – CI Practitioner
- Lean Enterprise
- Advanced Lean Enterprise

See you soon!



Manufacturers Alliance

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