



Manufacturing Health Roundtable

2023 YEAR END REPORT



Executive Summary

- Leaders in over 45 companies participated in the 2023 monthly roundtables, sharing issues and observations impacting their manufacturing operations – people, processes and technologies

- **Highlights of key outcomes from this forum:**
 - Manufacturing Outlook and Trends for 2024
 - Economic Factors Impacting the Supply Chain
 - People First vision in Manufacturing Operations
 - Performance Improvements that Sustain
 - Staffing Challenges – Technical and Operations
 - Equipment Reliability – Operability of Existing Asset Base and new CapEx
 - Mergers & Acquisitions – Assimilation of Strategic Acquisitions
 - Digital Transformation – The Journey
 - AI – Implications and Uses of Artificial Intelligence in CPG Manufacturing
 - Sustainability Trends in Manufacturing and Materials

- **Appendix**
 - Links to resources available for topics covered
 - About the FSO Manufacturing Health Roundtable

Manufacturing Outlook and Trends for 2024

- **Team Insights**

- Possibility of heading into a recession in 2024, maybe not as severe as once thought
- Election year means that we all need to remain flexible
- Watch out for new regulations that can put the brakes on our businesses
- Layoffs are rising, even though our industry needs workers
- Impact of AI will affect more of corporate staff
- Consider leading your company into using AI, to help facilitate better and faster responses, open more ideas to consider
- Manage supply chain and EBITDA projections to achieve the cost savings needed to avoid margin erosion
- Labor rates will continue to impact into 2024, driven by continuing labor shortages
- Surcharges, originally hoped to recede, have started to pick up
- Some categories are able to sustain their price increases
- More significant focus on productivity and business continuity and rising utility costs will likely demand more CapEx.
- Some CapEx may not have the same ROI, but needed to offset these pressures
- Softening in what consumers decide on their spending choices.
- Pricing increases now can lead to less volume than normal
- Correlation between product innovation or line expansion to better engage the consumer
- Top Ten focus areas 2024 – 2027

Economic Trends: Supply Chain Impact

- **Combined Inventories to sales:**
 - Inventory growing at 2x rate of sales
 - Risk of overcapacity

- **Supply Chain index:**
 - Risk of excess supplies
 - Construction projects continue to be challenging
 - Layoffs most likely to continue
 - Channel loading – pushing into system with no room for excess inventories
 - Have been in “just in time” but with supply chain issues, do we want to get back to there?
 - Aspire to return to just in time, but need better balance in supply chain
 - Consider substitutions, particularly ingredients and managing within labels
 - Formula flexibility
 - Intermodal transportation efficiencies

- **Manufacturing Inventory to sales:**
 - Higher than non-recessionary levels
 - Ratios above the average underscores sourcing issues (like chips)

- **Inventory to sales:**
 - Non-durable goods appear to be within guidance at this point
 - Retail inventories running behind non-recessionary averages

People First Vision in Manufacturing Operations

- **Team Insights**

- Workforce Trends in Manufacturing require us to consider the problem differently.
- Align our manufacturing process to succeed in the future labor market.
- Need to move from a Transactional model to a Transformational model
- Create a workplace that is clean, temperature controlled and where skilled operators run machines via a control room
- Create well paid positions with career paths to promote longevity with our company
- Run the plants 24x7 with less employees, with flexible shift schedules
- Enhance our employment offering so we can compete
- Support business growth without adding production headcount
- Provide a written career path – going from hourly operator, supervisor, to managerial position
- Determine root causes of why there is a turnover problem
- What lessons can we each learn from the Tech Bubble?
- More jobs than people to fill underscores the urgency to take action
- Role of Owners or Board in this strategic direction and commitment because of its level of importance to the organization
- Reflecting the value of an employee, not just in compensation
- Use this information as interviews and assessments of candidates
- Use open ended questions that the so the individual can self assess

Performance Improvements that Sustain

- **Floor Management Development (FMDS) meetings & Managing for Daily Improvement (MDI) meetings**
 - Promotes continuous improvement by directly engaging operators in identifying issues and proposing/acting on solutions.
 - Helps drive out waste and improve productivity.
- **Company Benefits**
 - Increased focus on achieving the strategic plans if appropriate KPIs are being tracked.
 - Increased productivity and efficiency through waste elimination and process refinements.
 - Improved quality and reduced defects by engaging operators in problem prevention.
 - Better alignment of planning with reality of the shop floor operations.
 - Faster resolution of operational issues before they significantly impact production.
- **Associate Benefits**
 - Associates feel empowered to directly influence their work through participation and solution proposals.
 - It gives associates a voice via the escalation process to higher level meetings.
 - Supervisors and other leadership get real-time visibility into challenges and can support operators better.
 - Process standardization promotes safety and consistency for operators.
 - Relationship building between supervisors and operators is enhanced.

Staffing Challenges

- **Team Discussion - Technical and Operations staffing challenges**
 - Recruiting and retention, young engineers in particular
 - Keeping the younger people retained, more than dollars
 - Work ethic including how to evaluate, measure,
 - What is needed for improved recruiting results
 - Skill sets increasingly important as more people beginning to be available

- **Members sharing unique programs they are using**
 - Skill bridges program with Department of Defense
 - Mexico labor cooperation – using for maintenance
 - NAFTA agreement enables these sourcing opportunities from Mexico
 - Available throughout the US and Canada
 - Service providers can handle logistical issues from housing to candidate screening and placement requirements

Equipment Reliability

- **Maintainability**
 - Particularly larger components, accessibility
 - Sourcing of components delayed through pandemic, supplier from New Zealand unable to supply
 - Life cycle and durability of the parts has been less

- **Standardization**
 - Example of multiple plants, making same products but little consistency of equipment utilized – impacts training, operations, sharing of parts and components
 - Journey towards standardization beginning with smaller items, build successes
 - Benefit is the efficiencies in installing, maintaining, and operating

- **Operability**
 - Only 10% of Reliability is maintenance
 - Need training to continue long after OEM initial events
 - Focus to engage Leadership and Engineering to embrace Reliability and they are making good strides
 - Implemented a Reliability Roadmap – to design into the process the need for machine time – such as providing data to show the hours needed to check and replace valves
 - Key is getting stakeholders to be actively involved in the Reliability process

Equipment Reliability (cont'd)

- **Team Discussion on Reliability:**
 - Moving towards predictive maintenance is very important
 - Locally source certain spare parts is necessary due to supply chain, availability
 - Achieving operations support to set aside “equipment time” per month as dairy operation must handle large volumes of milk daily – some opportunities to divert to other plants or companies
 - Plant managers need to own Reliability
 - Engaging plants in standardization can be facilitated through performance comparisons with like plants
 - Important to know the plants and meet them where they are at
 - Focus on next steps for plants in their Reliability journey
 - Redundancy of capacity can enable more predictable machine time for Reliability Rotation, but too often that time can be used to meet needs of business if capacity constrained
 - Predictive analysis supports root cause work and gaining support of others
 - Reliability provides real expansion of capacity, huge opportunity and benefits for business

Mergers & Acquisitions – Assimilation

- **Review of Case Study of the assimilation of strategic acquisitions into company's manufacturing strategies, culture, processes, and operations**
- **Context: Conagra's major acquisition of Pinnacle Foods in October 2018**
 - Strategy – acquire well known brands that needed revitalization
 - Scale – multi billion-dollar acquisition, process technologies aligned, expand agri-business, became #1 in Frozen Meals category
 - Manufacturing Operations highlights – net gain of 10 plants after consolidations, co-manufactures utilized increased by 80%, Integrated Work System (IWS) urged to deliver faster and higher results
- **Expectations and Goals**
 - Synergies in first 30 months - Take our debt / EBITDA ratio down to recapture the credit rating, Reinvest in the broken brands, Needed to drive synergy savings
 - Brands revived and modernized – More capital than expected, Integration into Supply Chain
- **Challenges**
 - Assessing and Determine Talent - Key players that needed to be retained (tribal knowledge, expertise), Impact of policy changes needed to occur – move from a rules based to principle-based organization, Differences between a Midwest and New Jersey organization – pay scales, remote work, Policy changes could impact keeping the “must haves”

Mergers & Acquisitions – Assimilation Cont'd

- **Challenges (cont'd)**
 - Due Diligence – Significant issue that drove unforeseen CapEx, Environmental surprises, could not be grandfathered, Private Equity investments can have some serious issues with Asset Management/Deferment
- **Lessons Learned**
 - Due Diligence – Organizational structure – old and new – needed to be revamped, Environmental, Food Safety and Risk Management (Ammonia) well short of the Conagra standards
 - Nimble - Where to get the first synergies, Discard organizational design originally planned to offset the sales drop and higher CapEx, Impacted the implementation of the Conagra way for manufacturing to be driven into the new plants
 - The Conagra Supply Chain leadership team with incredible teamwork delivered the much-needed results, Offset the lack of sales
 - Move Fast when necessary – made all Synergy targets within timeline

Digital Transformation

Digital Transformation Critical Success Factors through the Journey



Artificial Intelligence in CPG

- **General Facts:**
 - The global AI market is projected to reach \$1.8T by 2030.
 - The AI market is projected to grow at CAGR of 38.0% from 2021 to 2030.
 - There will be 8 billion AI-powered voice assistants by 2023.
 - Global GDP will grow by \$15.7 trillion by 2030 thanks to AI.
- **ChatGPT:**
 - Fast evolving, like having conversation, several uses currently-
 - Training, SOPs, Production schedule models
 - Performance ratings
- **Midjourney:**
 - Generates images from natural language descriptions, called "prompts".
 - Uses Discord to enter "prompts"
- **Major next steps:**
 - Personal AI assistants – downloadable to the desktop
 - Plug-ins
 - ChatGPT , PowerPoint
 - ChatGPT , Synthesia (custom AI video avatars , Articulate Storyline
 - ChatGPT embedded in Excel
 - Browser integration (chatGPT disconnected in Sept-2021)
 - AutoGPT – task based GPT
 - Text to Video – launching right now

Artificial Intelligence in CPG Cont'd

- **Team Discussion of applications of AI**
 - AI's bootstrapping on other AI's (ex. Using ChatGPT to train other AI)
 - Automatically source materials – like new ways to take bitterness out of caffeine
 - Reducing barriers of entry to train new staff
 - Dangers lurk with items like “Deep Faked”
 - Caution on I.P. – through AI, what is in the public domain can impact your I.P.
 - Don't use your company proprietary information in A.I.
 - Can be valuable to smaller companies to leverage their capabilities
 - Consider using to more effectively explain complex subjects – but need to validate its correctness

Sustainability Trends in Manufacturing and Materials

- **Value of Sustainability Manufacturing**
 - Optimizing productivity while operationalizing sustainability
 - 78% of investor community see sustainable investments as risk mitigation
 - Enhanced brand reputation
 - Attracting and retaining talent
 - Innovation through alternate materials & processes
 - Focus on energy consumption in operations
 - AI can impact sustainability through analytics that leverage machine learning
 - AI can also assist in benchmarking to better understand performance opportunities across shifts, lines, plants
 - Reduce consumption & waste at the process and production levels
 - Optimize energy consumption and costs across production runs & sites
 - CPG is such a diverse industry, discover value to your operation

FSO's Manufacturing Health Roundtable

PURPOSE:

Member led discussion focused on application: "Case in Point" shares the challenge and solution, seeks guidance and perspectives

VALUE:

Networks provide thought leadership with diversity of experiences and approaches in a safe harbor environment

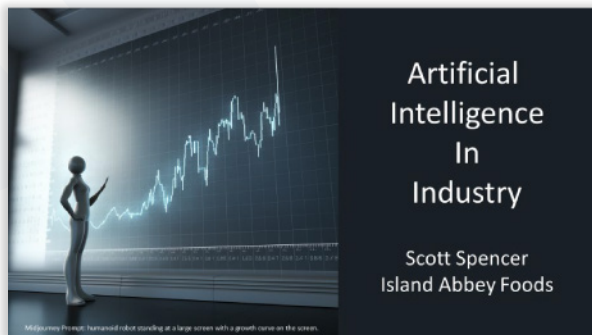
- Company leadership, manufacturing & engineering executives
- MHRT members select any of the 12 dimensions of manufacturing health for that month's central theme
- Strategic focus
- Builds your network
- Confidential and private, no sales
- Extraordinary resources available for offline networking
- Concept validation and calibration

Some of the over 45 companies participating in the MHRT:



Appendix

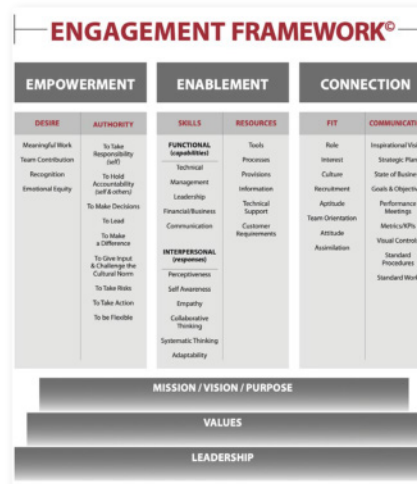
- Links to resources available for topics covered:



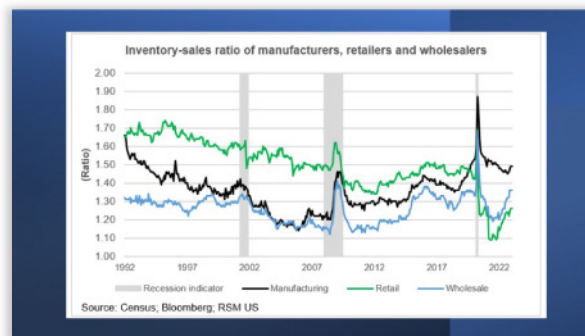
[Artificial Intelligence in Industry](#)



[Beyond Equipment Automation: The Case for Digital Transformation](#)



[Linking Workforce Engagement to People First](#)



[Economic Charts](#)



The Manufacturing Health People

To find out more about the Manufacturing Health Roundtable or the FSO Institute, please visit our website at fsoinstitute.com



Steve Schlegel, Co-Founder, FSO Institute

schlegel@fsoinstitute.com

(571) 332-4594