

Addressing Manufacturing's Six Big Losses in the COVID-19 Era

Russ Fadel, Co-Founder & CEO, Augmentir

John Schultz, Chief Bootlegger, Bootleg Advisors, Inc.

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KEY TAKEAWAYS

- The COVID-19 disruption is changing how frontline workers are supported.
- With AI, Augmentir helps close the skill gap.
- Engaged and enabled workforces help companies solve problems.
- Well-balanced, mature centers of intelligence lead to increased ROIs.

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OVERVIEW

Manufacturers are well-acquainted with the “Six Big Losses.” These are the six most common causes of equipment-based productivity loss in manufacturing. But the COVID-19 pandemic is adding a new dimension to these productivity losses. Manufacturers are facing shutdowns, operational downtime, changeover increases, equipment failures, process failures, and production adjustments. In addition, manufacturers are dealing with these challenges while also implementing measures like social distancing, which can slow production even further.

Augmentir helps improve the productivity of the frontline workforce in the COVID-19 era and beyond by offering remote assistance, personalized instruction, and knowledge sharing without requiring employees to work together in person.

CONTEXT

Russ Fadel discussed the impact of COVID-19 on the manufacturing industry and how Augmentir can help meet current and future needs. John Schultz described the importance of balancing industrial centers of intelligence to increase ROI and decrease the impact of the six big loss areas.

KEY TAKEAWAYS

The COVID-19 disruption is changing how frontline workers are supported.

Many manufacturers are not stopping operations because of the COVID-19 pandemic but are being forced to change them significantly. While temporary measures, like social distancing, will eventually be lifted when the crisis is over, some changes, like remote assistance for frontline workers, are going to stay because they improve upon operational weak spots.

Training and supporting workers will change as companies implement and use remote assistance and instant-skilling tools that enable employees to perform their jobs independently, without requiring in-person assistance. This cuts down on travel and allows workers to access information they need when they need it.

We'll never go back to the day where we rely on face-to-face interactions to keep manufacturing operations running. We're going to need to enable workers to perform their jobs independently.

Russ Fadel

With AI, Augmentir helps close the skill gap.

Before the pandemic, manufacturers were already facing significant workforce challenges such as:

- A growing skills gap
- A loss of tribal knowledge as approximately 40% of the workforce retires in the next 5-7 years
- The need for **upskilling and continuous improvement** of the frontline workforce

With artificial intelligence (AI), Augmentir helps manufacturers solve these three critical workforce problems, both during the COVID-19 crisis and beyond.

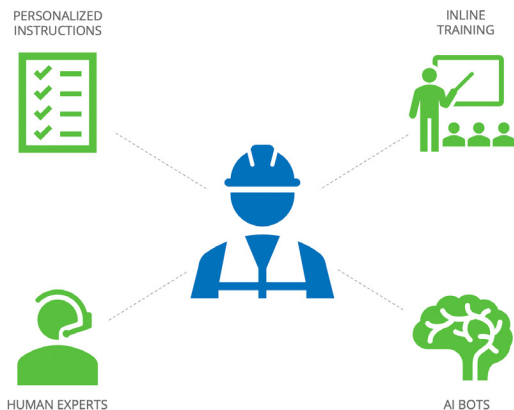
Augmentir's Vision

With AI we can provide each worker exactly what they need, when they need it, and how they need it to close skills gaps at the moment of need.



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Figure 1: How Augmentir Uses AI to Close the Skills Gap at the Moment of Need



Augmentir's AI-based platform offers two core pieces of functionality:

- **The ability to author and execute augmented, guided procedures** helps close the skill gaps, reduce errors, and improve productivity.
- **The integrated Remote Expert assistance** connects workers to internal and external experts to quickly resolve issues.

This core functionality enables independent work; it "instantly skills" the workforce with personalized instruction; and it embeds virtual support.

Augmentir's AI delivers unique value by using granular data to identify the largest opportunities across the frontline workforce, delivering instructions matched to the proficiency of each worker, optimizing outcomes.

With a new feature slated for June 2020 release, AI bots will be able to support remote experts and accumulate tribal knowledge to help close skill gaps and reduce the impact as senior workers retire.

Figure 2: How Augmentir Delivers Unique Value with AI

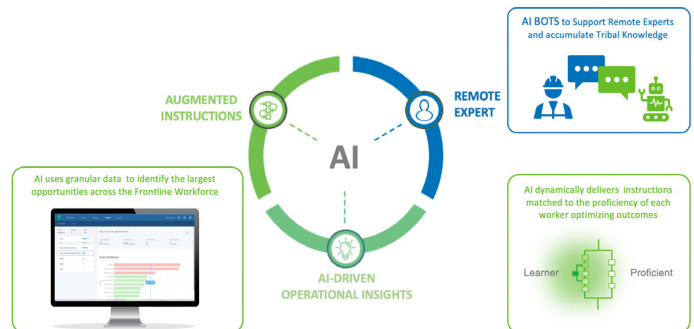


Table 1: Ways that Augmentir's AI Delivers Value

Ways Augmentir Delivers Value	Through
Enables independent work	Rich, augmented procedures
"Instant skills" your workforce	AI-based personalized instruction
Embeds virtual support	On-demand remote expert functionality that allows for remote assistance
Delivers hands-free operations	Augmentir on industrial smart glasses
Uncovers True Opportunity™	Using AI to separate "true" from "raw" opportunity

Engaged and enabled workforces help companies solve problems.

When a company has an engaged, enabled workforce, it can overcome almost any problem.



By focusing on industrial centers of intelligence, Bootleg Advisors helps manufacturers bridge the gap between the needs of the business and **the ability of the workforce** to execute in a secure and resilient environment.

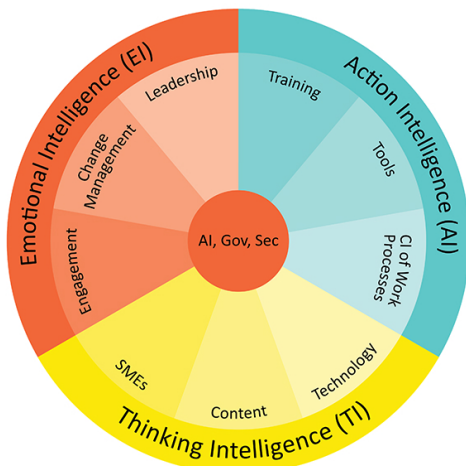
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Regardless of what business challenge an organization has, if they have an engaged and enabled workforce, you can throw any business challenge at them and they will solve it and they will win.

John Schultz

Three centers of intelligence (COI) must be in balance to achieve and sustain results: the thinking center of intelligence, the emotional center of intelligence, and the action center of intelligence. At the core of these three COIs are AI, governance, and security.

Figure 3: Three Centers of Intelligence Balanced to Achieve & Sustain Results



The action center of intelligence is the body. Training, tools, and work processes are necessary components to keep the business running smoothly.

Well-balanced, mature centers of intelligence lead to increased ROIs.

A business operating with well-balanced and mature centers of intelligence is likely to see significantly increased ROIs. One Bootleg Advisors client recouped its investment in Augmentir in just three quarters, and the five-year ROI was 6.2 to 1.

Table 2: Example of Workforce Intelligence Economics Showing ROI and EBITDA

# of Workers on Platform	1,100
Quarters to Break Even	3
Quarters to \$1M in Net EBITDA Contribution	4
Estimated 5-year EBITDA Net Contribution	\$65.3M
Annualized EBITDA Run Rate Existing year 5	\$22.6M
5-year Net ROI	6.2

Focusing on centers of intelligence can help manufacturers improve overall equipment effectiveness (OEE). With every labor dollar saved, businesses can save an additional 3 to 8 OEE dollars in the big six loss areas.

Table 3 shows losses per area for top quartile and bottom quartile consumer packaged goods companies (CPG), and the overall gap in each area.

Solutions like Augmentir AI can help minimize these gaps, both during the COVID-9 crisis and after.



The thinking center of intelligence is the brain. Organizations need to be able to leverage internal and external subject matter experts (SMEs) and provide the workforce with access to useful content and technology.



The emotional center of intelligence is the heart. Employees need to be engaged, and there needs to be a strong leadership and change management process to guide the workforce.

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Table 3: Impact of Big Six Loss Areas on Top and Bottom Quartile CPG Performers

	Top Quartile	Bottom Quartile	Gap
Shutdown	1.38%	16.29%	14.91%
Organizational Downtime	1.17%	10.96%	9.79%
Changeover	1.21%	10.32%	9.11%
Equipment Failures	3.81%	21.21%	16.40%
Process Failures	0.32%	9.36%	9.04%
Production Adjustments	0.00%	3.90%	3.90%

ADDITIONAL INFORMATION

- For more information visit www.augmentir.com
- To sign up for a free trial of Augmentir visit www.augmentir.com/trial
- [Download Augmentir's latest eBook](#): How AI Solves the Big 3 Challenges for the Industrial Workforce

BIOGRAPHIES

Russ Fadel

Co-Founder & CEO, Augmentir

Russ Fadel is a serial entrepreneur and the CEO and Co-Founder of Augmentir. Prior to founding Augmentir, Russ founded four successful companies in the industrial software sector, including the two most recent – ThingWorx, the leading Industrial IoT (IIoT) platform company (acquired by PTC), and Lighthammer, the pioneer in enterprise manufacturing intelligence software (acquired by SAP). Russ has been intimately involved in the last three software revolutions around humans and machines in manufacturing and service. Augmentir is a continuation of this theme.

John Schultz

Chief Bootlegger, Bootleg Advisors, Inc.

John Schultz has proven that maintenance and reliability can be a highly profitable investment, and not just a cost. During the last 25 years, he has helped benchmarked over 1,400 locations and helped more than 200 businesses "Make More, Break Less and Not Spend." More recently, John has been focused on assisting executives with courage to digitally transform and disrupt key areas of their business and supply chain. The Mission of Bootleg Advisors is to help "Executives with Courage bridge the gap between the needs of the business and the ability of the workforce to execute in a secure and resilient environment."