



EMOTIONAL INTELLIGENCE IN THE AGE OF AI:

NAVIGATING THE INTERSECTION OF
HUMAN AND MACHINE INTELLIGENCE IN
ADVANCED MANUFACTURING

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SUMMARY

In the age of automation and artificial intelligence (AI), the manufacturing sector continues to experience transformation, one that necessitates a delicate balance between technological advancements and human ingenuity. As AI permeates manufacturing, its impact on advanced manufacturing processes is undeniable, driving efficiency, precision, and innovation to unprecedented levels. However, amidst this technological surge, the importance of emotional intelligence (EQ) is rising to the fore. EQ, the ability to understand, manage, and express emotions effectively, is proving to be an invaluable asset in navigating the complexities of human-machine collaboration. Beck & Libert underscore this point by explaining that individuals wanting to stay relevant in their professions will need to focus on skills and capabilities that artificial intelligence has trouble replicating – understanding, motivating, and interacting with human beings.[1]

Striking the right balance between the power of AI and the wisdom of human intuition is crucial for the future of manufacturing, ensuring that advancements in technology complement, rather than replace, the expertise and adaptability of the human workforce. As technology continues to evolve, the emotional intelligence (EQ) of human workers is being recognized as a critical skill in navigating this new landscape.



[1] Beck, M., & Libert, B. (2017, April 7). The rise of ai makes emotional intelligence more important. Harvard Business Review. <https://hbr.org/2017/02/the-rise-of-ai-makes-emotional-intelligence-more-important>





BACKGROUND

UNDERSTANDING EMOTIONAL INTELLIGENCE (EQ)

According to Harvard University trained psychologist, Daniel Goleman, emotional intelligence encompasses a range of skills including self-awareness, self-management, social awareness, and relationship management.[2] These skills are invaluable in a world where automation and AI are taking over repetitive and mundane tasks, allowing humans to focus on more complex and creative responsibilities. By harnessing emotional intelligence, team members can effectively collaborate with AI and machines, leveraging their strengths while contributing with their uniquely human qualities.

CHALLENGES AND OPPORTUNITIES IN NAVIGATING HUMAN AND MACHINE INTELLIGENCE IN ADVANCED MANUFACTURING

Navigating the intersection of human and machine intelligence in advanced manufacturing presents both challenges and opportunities. One of the key challenges is ensuring that workers have the necessary emotional intelligence skills to collaborate effectively with artificial intelligence. This requires a shift in mindset and a willingness to adapt to new ways of working.

Another challenge is the potential resistance to change. Many workers may feel threatened by the rise of AI and automation, fearing that their jobs will be replaced. However, by embracing emotional intelligence and recognizing the value they bring to the table, workers can position themselves as indispensable assets in the age of AI. They can focus on developing skills that are uniquely human, such as creativity, problem-solving, and critical thinking, which are highly sought after in advanced manufacturing.

THE ROLE OF EMOTIONAL INTELLIGENCE IN THE AGE OF AI

The impact of AI on advanced manufacturing has been nothing short of transformative. In one example, after supervisors in a manufacturing plant received training in emotional competencies, lost-time accidents were reduced by 50 percent, formal grievances were reduced from 15 per year to 3 per year, and the plant exceeded productivity goals by \$250,000.[3] In addition, automation and machine learning have revolutionized production processes, making them faster, more efficient, and more accurate. However, as machines take on more tasks, the need for human workers to adapt and develop new skills becomes increasingly important. This is where emotional intelligence comes into play.

While machines excel at tasks that require speed and precision, they have limitations when it comes to empathy, creativity, and critical thinking. Emotional intelligence allows human workers to tap into these uniquely human qualities, complementing the capabilities of AI and machines. By understanding and managing their emotions, workers can make informed decisions and adapt to changing circumstances. Empathy and effective communication enable them to collaborate effectively with AI and their coworkers, leveraging their strengths while contributing their own expertise and insights.

[2] Goleman, D. (2006). *Emotional intelligence: Why it can matter more than IQ*. Bantam Books.

[3] Orme, G (2003), "Emotional Intelligence – perspectives and people," *Competency & Emotional Intelligence*, vol. 10, no.4, Summer 2003, pp 43-48

EMOTIONAL INTELLIGENCE FOR ENGINEERING MANAGERS

In advanced manufacturing, effective management is crucial for success. Managers who possess emotional intelligence are better equipped to navigate the complexities of the industry and inspire their teams to achieve their full potential. By being self-aware, managers can understand their own strengths and weaknesses, allowing them to delegate tasks effectively and foster collaboration.

Relationship management is another essential quality for managers in advanced manufacturing. By understanding the emotions and needs of their team members, managers can create a supportive and inclusive work environment. This fosters trust and encourages open communication, leading to higher employee engagement and productivity. We know that improved EQ impacts performance. In one instance, after a Motorola manufacturing facility provided training in stress management and emotional intelligence, 93% of employees had an increase in productivity. [4]

Self-awareness, self-management, and effective communication are also vital for managers in advanced manufacturing. Understanding and regulating one's emotions is critical to remaining calm under pressure and instilling confidence in management. And, by conveying information in a clear and empathetic manner, managers can ensure that teams are aligned and that they understand the company's goals and objectives. This in turn, enhances collaboration and promotes innovation and continuous improvement.

"Leadership is not domination, but the art of persuading people to work toward a common goal."

-Daniel Goleman,
Emotional Intelligence



[4] Price, A. (n.d.). Council Post: The Importance Of Emotional Intelligence At Work. Forbes. Retrieved January 16, 2024, from <https://www.forbes.com/sites/forbeshumanresourcescouncil/2023/07/18/the-importance-of-emotional-intelligence-at-work/?sh=78e606b6165c>

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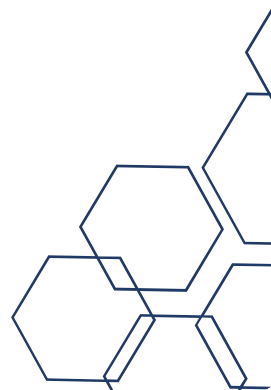
DEVELOPING EMOTIONAL INTELLIGENCE SKILLS

Developing emotional intelligence skills in the workplace requires a combination of self-reflection, training, and practical experience. Self-reflection allows individuals to become more aware of their emotions, strengths, and areas for improvement. It involves regularly assessing one's emotions and how they may be influencing behavior and decision-making.

Training programs and workshops support the development of emotional intelligence skills. These types of programs typically cover topics such as self-awareness, empathy, effective communication, and conflict resolution. By providing employees with the tools and knowledge to develop their emotional intelligence, including their self-awareness, self-management, social awareness, and relationship management, organizations can create a more harmonious and productive work environment. Employees need to understand and appreciate emotional intelligence in the context of their work and effectiveness.

Practical experience is equally important in developing emotional intelligence skills. By actively applying emotional intelligence principles in the workplace, individuals can refine their abilities and learn from their interactions with others. This can involve actively listening to colleagues, seeking feedback, and reflecting on one's own behavior and its impact on others.

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CONCLUSIONS & RECOMMENDATIONS

EMBRACING THE EQ ADVANTAGE IN THE AGE OF AI

The rise of automation and AI marks a pivotal moment in human history. While machines excel at repetitive tasks, they lack the emotional intelligence that defines our humanity. This presents a unique opportunity - not to compete with machines, but to harness our emotional intelligence as the defining factor in our success.

By cultivating self-awareness, managing our emotions, navigating social dynamics, and building strong relationships, we unlock our full potential as collaborators, leaders, and innovators. We can:

- **Bridge the gap between humans and machines:** Teams equipped with high EQ can seamlessly integrate AI into their workflows, leveraging its analytical power while adding the human touch of creativity, empathy, and adaptability.
- **Foster a culture of trust and collaboration:** Leaders with strong emotional intelligence create environments where individuals feel valued, respected, and empowered to contribute their unique talents. This fosters collaboration, innovation, and a sense of shared purpose.
- **Make informed decisions that go beyond the data:** While AI can analyze vast amounts of information, it lacks the emotional intelligence to understand the human context. By bringing our own emotional awareness to the table, we can make decisions that consider not just the numbers, but also the impact on people and communities.

The future is not about replacing humans with machines, but about amplifying our unique strengths through emotional intelligence. By embracing this critical skillset, we can not only thrive in the age of AI, but build a future where humans and machines work together in harmony, creating a world that is both efficient and compassionate.

Recommendations:

- **Invest in EQ development:** Organizations should prioritize programs and initiatives that build emotional intelligence in their workforce. This can include training workshops, coaching programs, and access to resources on self-awareness, self-management, social skills, and relationship management.
- **Lead with EQ:** Leaders who set the tone for their teams by actively demonstrating emotional intelligence can inspire others to do the same. This includes practicing self-awareness, demonstrating empathy, and fostering open communication.
- **Embrace collaboration:** Create opportunities for humans and AI to work together on projects that leverage both of their strengths. This will help to bridge the gap between the technical and the human, and encourage the development of mutually beneficial relationships.

By taking these steps, we can ensure that emotional intelligence becomes not just a competitive advantage, but a cornerstone of a thriving future for all.





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