

MANAGEMENT

Enhancing the Frontline Employee's AI Performance

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Companies are infusing AI in a multitude of ways to boost workplace performance.

AI is currently utilized in many fields to boost productivity and profitability. Autonomous driving, targeted online advertisements, speech recognition on smart phones and medical applications are a few examples in use by individuals and organizations around the world. A McKinsey (2021) report indicated that in the workplace AI is used in service operations optimization (22%), AI-based product enhancement (22%) and automation in contact centers (22%) among many others. Through AI, overall profitability rates can increase by 38% and by 2035 will likely make huge contributions to the economic performance of countries (Purdy and Daugerty, 2022). Given the growingly important role of AI in corporate operational performance, this article reviews some the AI uses in the workplace and offers strategic insights on ways to find success especially considering the efforts of the regular technology users or the *frontline employees*.

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In organizations around the world, companies are infusing AI in a multitude of ways in order to boost performance. Here are a few examples:

Process Improvement. Companies are using AI for production process anomaly detection and future process prediction. The purpose is to maintain the right product quality as the product is produced. With the help of predictions, companies can prescribe to production operators what they should do next to keep the product quality at the right level.

Machine Efficiency. In the manufacturing setting, AI is used for equipment condition monitoring, condition anomaly detection and failure prediction. By combining anomaly detection, past results digital analysis and future event prediction companies can

prescribe to maintenance personnel when they should maintain a piece of equipment, replace a part or even replace the equipment all together.

Operations Monitoring. In some companies, machine vision is used. There can be numerous video feeds at a factory. Video monitoring has been done manually but now companies can automate it thereby freeing operators' time for much higher value tasks such as continuous improvement planning (LEAN) and process optimization.

Environmental and Regulatory Compliance. Companies use AI tools to find solutions for special purposes such as wastewater treatment plant optimization. The goal is to maintain the stability of wastewater treatment under all conditions so that it stays within environmental permit limits that protect environment.

Project Management. Companies are using AI to enhance their projects as well. Some are using Natural Language Processing (NLP) through different digital content and interpreting these in multiple languages. This method enhances communication specially across international project teams.

These examples suggest that AI is applied in diverse ways and across different work environments. As such, an important question arises – *“Are the day-to-day users of these technological tools or frontline employees well equipped to succeed in their current jobs?”*

When Frontline Really Isn't

In a world where cognitive capability of an organization is essential, it is imperative that users of technology and information have the aptitude, training and the right set of tools to get their job done right.

Oftentimes, the stakes are high and the pressure is intense for these frontline employees to succeed. Poor performance would lead to production delays, project failure, and customer dissatisfaction among others. A Deloitte Insights (n.d.) report indicated that with regard to

AI, organizations face the challenges of integration into corporate operations, management of data related issues, and efficient implementation among others.

The frontline employees are frequent users of AI tools tasked to improve a product, process or engage in research to better understand customers, competitors or the operational environment. They need to understand what the predictions mean and how to make decisions based on information drawn from probabilities. These employees need to be competent in the use of AI to enable them to add value and deliver optimal results.

There are several workplace scenarios that derail the AI application efforts of frontline employees:

- ***Slow response.*** It is difficult and frequently time consuming to gather and access information from other departments especially when other organizational units don't understand the underlying purpose of the request. These delays slow down project completion timelines. For example, a frontline employee assigned in the IT department may request customer information and data from the marketing department. The marketing department tend to have their own priorities and may not respond in a timely manner.
- ***Inadequate information:*** Lack of data would inhibit the frontline employee's efforts in making accurate assessments and predictions. Data provided by the accounting department may take on a different format from the desired project format and may have omitted certain necessary information.
- ***Technological incompatibility:*** At times, the infrastructure and technological know-how of the frontline employee differs from those within or outside the organization. Data may be required from a supplier for a project. Problems could arise if the supplier uses a different technological platform or if the frontline worker is not well-versed with the supplier's system.
- ***Outdated technology:*** Technological tools that don't have the features and supporting architecture to process data efficiently can slow down the frontline employee's efforts or negatively impact the ability to succeed.

- **Structural complexity.** The organizational structure as well as set policies can make inter-departmental collaboration challenging. If securing data from the marketing department means getting approval from five senior executives across different departments, the process may take time and delay the project.
- **Information overload.** Gathering data from too many data sources can pose significant challenges for the frontline employee. For example, when trying to improve a product or service processing and analysing several hours of video can be overly cumbersome and important points may be missed.
- **Cultural and language barriers.** Frontline employees need to collaborate with colleagues and project collaborators in different countries. Cultural and language differences can cause misunderstanding and project errors.
- **Missing the big picture.** Frontline employees and those supporting their efforts don't necessarily see the "big picture" and therefore fail to take on a more holistic or integrated effort to find success. It is not uncommon to find departments operating in silos and each working on their respective goals and priorities.

Companies need to navigate these challenges and re-imagine a new version of frontline operations.

Staying In the Front of the Line

In order to optimize frontline employee's performance a new model is necessary. This model should emphasize **3 P's** – **People**, **Product**, **Process**. Emphasis should be placed on people and providing them with the proper skills to succeed. Attention needs to be placed on the product and its consistent top quality. Process has to be monitored and reviewed periodically in order to optimize performance.

AI can be used as a tool not only for project completion but also to accomplish operational excellence specially for frontline employees. Outlined below are examples of viable strategies:

Emphasize Quality Enhancement (Product). Use product quality advising tools that predict and prescribe to help frontline employees make better decisions on product quality. For example, in paper manufacturing product type changes are made instantaneously while machines are running. When these changes are implemented, it takes time to verify the product quality in the laboratory. With the help of AI based quality management tools, one can predict and simulate the change in advance and make sure machine settings are correct for the accurate the production of the new product type immediately after the change. This way, product quality is consistently correct and there is less waste.

Improve Predictability (Process). Use asset performance management tools for equipment performance monitoring and future performance prediction. By combining the results of root cause analysis and linking them to predicted asset events, the right maintenance actions can be prescribed for the frontline employee to consider. Preventive maintenance is commonly used by companies. It is typically based on calendar time –the right time-based maintenance interval to avoid technical failures and unplanned downtime of production process. With the help of AI tools, one can analyse equipment usage and signals from different sensors to predict equipment behavior and risk of failure. Instead of maintaining equipment based on calendar time, one can use fact-based decision making to do implement maintenance at the right time and avoid unplanned shutdowns. This saves maintenance costs and helps increase production efficiency.

Specialized Attention (Process). Machine vision helps to automate manual visual inspections and monitoring. There are numerous applications where this AI technology can be used. For example, employees can detect anomalies in video feeds at industrial sites and therefore increase safety. An interesting application is virtual fencing of dangerous areas where it is not physically viable to build fences in. The tight AI tool improves operational efficiency and safety.

Accelerate Intelligence (People). Natural Language Process (NLP) is an excellent tool to use to read and interpret documents written in different languages. The main benefits would be to share best practices and to learn faster from new workplace events or cases. During the pandemic, some companies started to use online simultaneous interpretation when

conducting international online meetings. Using this tool, what one says is automatically translated to multiple languages online. This approach led to enhanced inter-organizational and cross-border communication and understanding. Consequently, the speed and rate of project completions improved.

Frontline employees need to be educated, organizationally empowered, and technologically-savvy to be at the forefront of workplace operations as well as the AI Revolution.

Concluding Thoughts

In many organizations, frontline employees are in position to make a huge difference and take on a critical role as the inter and intra organizational conduit to the accomplishment of technological progress and vital business operations. Despite the emergence of many new technologies, operational deficiencies still exist and prevent frontline employees from achieving their full potential. AI is poised to seal gaps in the workplace through heightened intelligence, quality and process improvement and an intuitive perspective. In essence, AI can be both the tool and solution for frontline employees.

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