



## Digital-enabled Operational Excellence

THE COMBINATION OF LEAN MANAGEMENT TECHNIQUES AND INDUSTRY 4.0 TECHNOLOGIES HAS THE POTENTIAL TO REVOLUTIONIZE OPERATIONS IN ANY SECTOR. WHILE LEAN PRACTICES HAVE ALREADY BROUGHT OPERATIONAL IMPROVEMENTS FOR MANY YEARS, THE ARRIVAL OF ADVANCED ANALYTICS, AI, AND CONNECTED EQUIPMENT HAS FURTHER ENHANCED PRODUCTIVITY, FLEXIBILITY, RESILIENCE, AND SUSTAINABILITY.

However, scaling up these initiatives across the enterprise has proven challenging for many companies. Today, only a few have fully leveraged the benefits of Industry 4.0 technologies. These successful companies have merged Lean principles with advanced technologies to create amplified production systems. This integration allows them to fully exploit the potential of digital technologies, resulting in continuous improvements in various areas.

"Lean management techniques combined with Industry 4.0 technologies have the potential to create amplified production systems and revolutionize operations." Seif Shieshakly, Co-Founder & Managing Partner, Four Principles

## Lean production and digitization

Logical thinking, a core principle of Lean production, encourages evidence-based decision making and continuous improvement. Digitization has transformed logical thinking by providing richer data and advanced analytical models, enabling companies to gain deeper insights and solve complex problems faster.

Digitization also enables comprehensive thinking, another core principle of Lean. By integrating data from across the value chain, companies can optimize processes holistically, and proactively address process variability.

"Digitization has transformed logical thinking by providing richer data and advanced analytical models, enabling companies to gain deeper insights and solve complex problems faster." Rauf Elgamati, Director Digital Transformation, Four Principles

## Challenges of implementing digital-enabled operational excellence

Companies must also address organizational challenges in addition to technological advancements. Lack of internal capabilities, as well as failure to engage employees, will hinder the successful implementation of new technologies.

To achieve digital excellence, a holistic approach is necessary, addressing technological, organizational, and human dimensions. This requires strong leadership, updated management systems, and empowered frontline operators.

Digital-enabled operational excellence is an ongoing journey that requires continuous improvement. Leading companies continually revisit core principles and ask themselves if they are applying operational excellence principles, using the best available technologies, and using those technologies effectively and sustainably.

"Companies must address organizational challenges in addition to technological advancements to successfully implement digital-enabled operational excellence." Mehdi Chelhi, Partner, Four Principles

## Proven results from implementing digital operational excellence

Some notable examples of companies across the globe that have successfully started implementing digital-enabled operational excellence are:

- 1. Saudi Arabia - Saudi Aramco:** The national oil company of Saudi Arabia, Saudi Aramco, implemented digital-enabled operational excellence by integrating Industry 4.0 technologies with Lean principles. By leveraging AI, analytics, and connected equipment, they were able to optimize their oil drilling processes and achieve higher productivity, cost savings, and improved safety.
- 2. UAE - Emirates Airlines:** Emirates Airlines implemented digital-enabled operational excellence by integrating Lean management techniques with advanced technologies. They utilized AI-powered predictive maintenance to optimize their aircraft maintenance schedules, resulting in reduced downtime, increased efficiency, and enhanced customer satisfaction.
- 3. USA - Tesla:** Tesla, the electric car manufacturer, embraced digital-enabled operational excellence by combining Lean principles with cutting-edge technology. Through the use of AI and data analytics, they optimized their production processes, leading to faster manufacturing cycles, improved quality control, and increased customer demand.
- 4. Europe - BMW:** BMW implemented digital-enabled operational excellence by integrating Lean practices with Industry 4.0 technologies in their manufacturing facilities. By leveraging robotics and IoT devices, they achieved higher automation levels, reduced production cycle times, and improved product customization capabilities.

## Implementation steps for success

These such companies that started successfully implementing digital-enabled operational excellence mainly by following a set of defined steps:

- 1. Assess Current State:** Evaluate the organization's current operational practices and capabilities to identify areas for improvement and integration of Industry 4.0 technologies. This assessment should include a thorough analysis of existing processes, systems, and employee skills.
- 2. Define Strategic Objectives:** Establish clear objectives for digital-enabled operational excellence, aligning them with the overall business strategy. These objectives should be specific, measurable, attainable, relevant, and time-bound (SMART).
- 3. Build Internal Capabilities:** Invest in training and upskilling programs to ensure employees are equipped with the necessary skills and knowledge to embrace digital technologies. Also, create a culture of innovation and continuous improvement to foster employee engagement and encourage the adoption of new technologies.
- 4. Implement Technology Solutions:** Identify and deploy appropriate Industry 4.0 technologies that align with the organization's strategic objectives. This may include artificial intelligence, analytics, IoT devices, robotics, and automation systems. Ensure these technologies are integrated seamlessly into existing processes and systems.
- 5. Continuous Improvement:** Establish a system for ongoing monitoring and evaluation of digital-enabled operational excellence initiatives. Regularly assess performance against defined objectives and make necessary adjustments to optimize the impact of technologies. Encourage feedback from employees and stakeholders to drive continuous improvement.

By following these steps and leveraging the experiences of successful case studies, organizations can implement digital-enabled operational excellence and unlock the full potential of Lean principles and Industry 4.0 technologies. This journey requires a commitment to ongoing improvement, strong leadership, and a holistic approach that considers technological, organizational, and human dimensions.

"Achieving digital excellence requires continuous improvement, strong leadership, and a commitment to sustainable use of advanced technologies." Patrick Wiebusch, Co-Founder & Managing Partner, Four Principles

## Conclusion

In conclusion, the integration of Lean principles with Industry 4.0 technologies holds great potential for operational excellence in all sectors. Companies that have successfully embraced this approach have seen significant performance improvements and higher employee engagement. However, achieving digitally enabled operations requires strong leadership, focus on core principles, and a commitment to sustainable use of advanced technologies.

If you want to find out more about how Four Principles can help your organization to bring in new ideas, new perspectives, and new approaches for a successful operating model redesign and implementation to ultimately meet the needs of your stakeholders, drive progress and innovation, and deliver better outcomes for society, please contact us at [info@fourprinciples.com](mailto:info@fourprinciples.com) or +971 4 368 2124.

## GET IN TOUCH

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