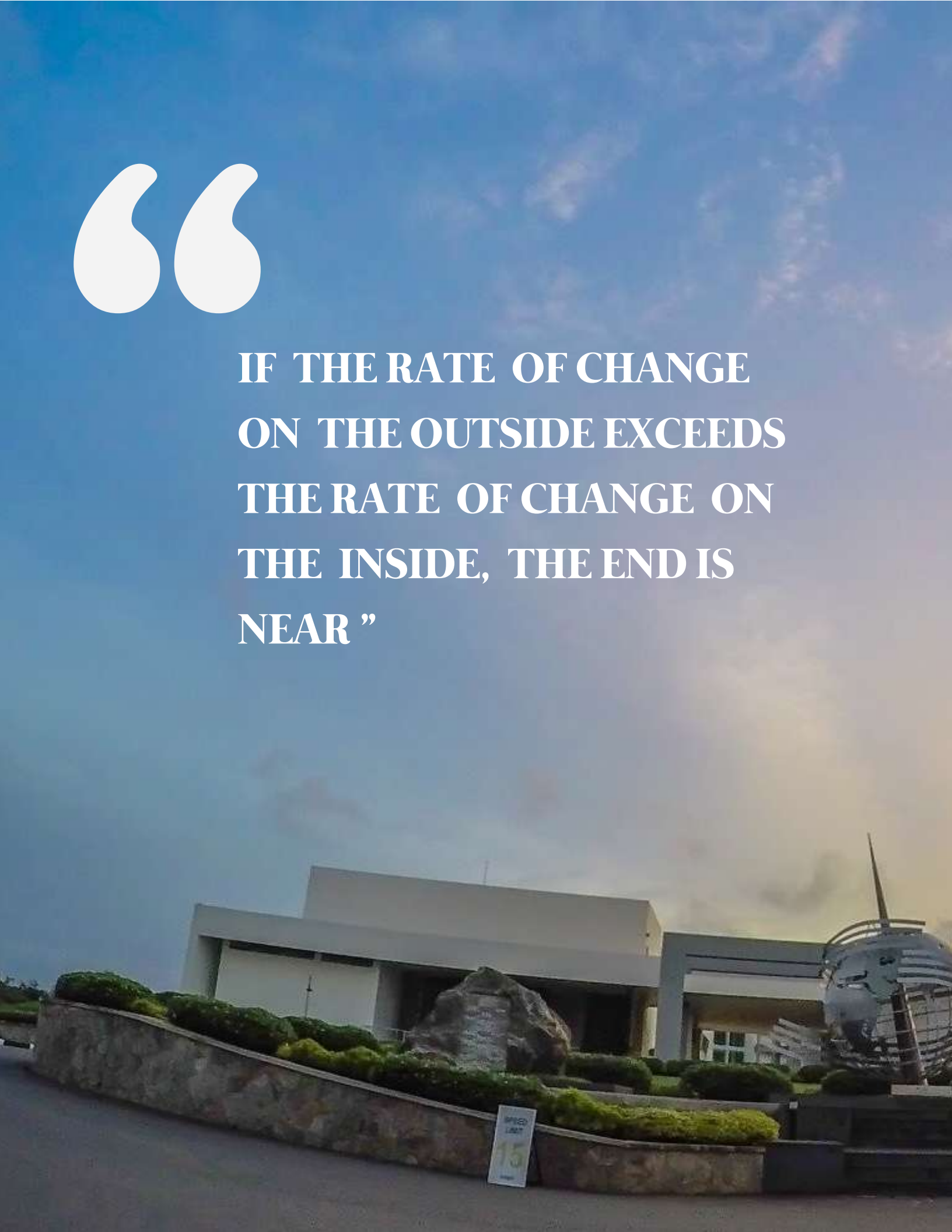
FIRST EDITION

OCTOBER 09 | INDUSTRIAL MANAGEMENT CIRCLE

IMEX 2024

NAVIGATING THROUGH EXCELLENCE

THE FLAGSHIP MAGAZINE OF INDUSTRIAL MANAGEMENT CIRCLE


“
IF THE RATE OF CHANGE ON THE OUTSIDE EXCEEDS THE RATE OF CHANGE ON THE INSIDE, THE END IS NEAR ”

DEAN

FACULTY OF BUSINESS

MS. THILINI DE SILVA

As the Dean of the Faculty of Business at NSBM Green University, I am honored to witness the launch of "IMEX", the new magazine from the Industrial Management Circle of NSBM Green University. This magazine represents our unwavering dedication to cultivating a platform that nurtures innovation, leadership, and strategic thinking within the field of Industrial Management.

"IMEX" serves as a collaborative effort by our students and faculty, designed to provide in-depth knowledge, fresh perspectives, and actionable insights in the realm of Industrial Management. The magazine features expert articles, industry interviews, and comprehensive analyses, offering readers valuable resources that will aid their growth as future leaders in this dynamic field.

This publication underscores the spirit of collaboration and excellence that defines the Industrial Management Circle and the Faculty of Business at NSBM. I congratulate everyone involved in the creation of "IMEX" and am confident that it will inspire continued achievement and innovation.

HEAD

DEPARTMENT OF OPERATIONS AND LOGISTICS

MR. SHAJA MUSTHAFFA

It is with immense pride that I extend my heartfelt congratulations to the Industrial Management Circle on the successful launch of "IMEX," a magazine that symbolizes our collective commitment to advancing knowledge and fostering leadership in the field of Industrial Management. This publication stands as a testament to the hard work, dedication, and collaborative spirit of our students and faculty, who have come together to create a platform that provides valuable insights, industry trends, and expert perspectives.

"IMEX" not only showcases the intellectual curiosity and innovation that drive our academic community but also reinforces our mission to bridge the gap between theoretical knowledge and practical application. It is my firm belief that this magazine will serve as an invaluable resource for students, professionals, and industry leaders alike, inspiring them to strive for excellence in their respective fields.

I commend everyone who contributed to this endeavor and am confident that "IMEX" will continue to be a source of inspiration and growth for all who engage with its content.

MISTRESS IN-CHARGE

INDUSTRIAL MANAGEMENT CIRCLE

MS. REKHA KULASEKARA

It is with immense pride that I congratulate the Industrial Management Circle on the launch of the first-ever IMEX Magazine, dedicated to industrial management. Since its inception in 2021, the Circle has consistently demonstrated dedication and commitment to enhancing knowledge in manufacturing management through a variety of impactful activities. These include firefighting and first aid trainings, Lean Six Sigma, Total Quality Management, Continuous Improvement workshops, insightful guest lectures, and field visits to gain exposure to various manufacturing operations such as production, maintenance, industrial engineering, quality control, production planning, and innovation departments, among others.

I would like to extend my heartfelt thanks to all three Industrial Management Boards for their continued contributions toward the Circle's growth. A special note of appreciation goes to the 2024 Board for their initiative and hard work in bringing this magazine to life. It stands as a testament to the innovation and teamwork that define the Circle.

MASTER IN-CHARGE

INDUSTRIAL MANAGEMENT CIRCLE

MR. SACHIN KULANDAIVEL

It is with immense pride and joy that I extend my heartfelt congratulations to all of you on the launch of the maiden issue of the student magazine, IMEX. This milestone is a testament to your dedication, hard work, and unwavering commitment to excellence in the field of industrial management.

The theme, “Navigating Through Excellence,” perfectly encapsulates the spirit of this initiative. By focusing on critical areas such as health and safety, manufacturing excellence, quality management, innovation in manufacturing, and sustainability and green operations, you are not only contributing valuable insights but also paving the way for future leaders in the industry.

I commend each and every one of you for your contributions and for taking this bold step to share knowledge and foster a culture of continuous improvement. Your efforts in bringing together articles from both students and industry professionals highlight the collaborative spirit that is essential for driving innovation and achieving excellence.

EDITORIAL BOARD

INDUSTRIAL MANAGEMENT CIRCLE

IMEX ' 24

PRESIDENT

Industrial Management Circle

Mr. Prabhath Ranasinghe

As President of the Industrial Management Circle, I am very proud and pleased to introduce IMEX'24, our flagship magazine. This publication is more than just a compilation of articles—it reflects our journey, values, and vision for the future of industrial management. In a rapidly evolving world, where industries face unprecedented challenges and opportunities, IMEX'24 serves as a bridge between innovation and practice.

Through this magazine, we aim to foster a culture of continuous learning, sharing insights from thought leaders, industry experts, and forward-thinking professionals. Our goal is to equip the next generation of industrial managers with the knowledge, tools, and perspectives they need to navigate an increasingly complex business environment. IMEX'24 brings together key trends, emerging technologies, and best practices to provide valuable takeaways for professionals across various sectors.

The Industrial Management Circle has always been committed to promoting leadership, collaboration, and growth, and this magazine stands as a testament to those ideals. We hope that IMEX'24 inspires meaningful discussions, sparks innovative ideas, and serves as a resource that empowers our readers to drive positive change within their industries.

I invite you to explore, engage, and share your thoughts with us as we continue to shape the future of industrial management together.

EDITOR IN-CHIEF

Industrial Management Circle

Ms. Isuri Wijemanna

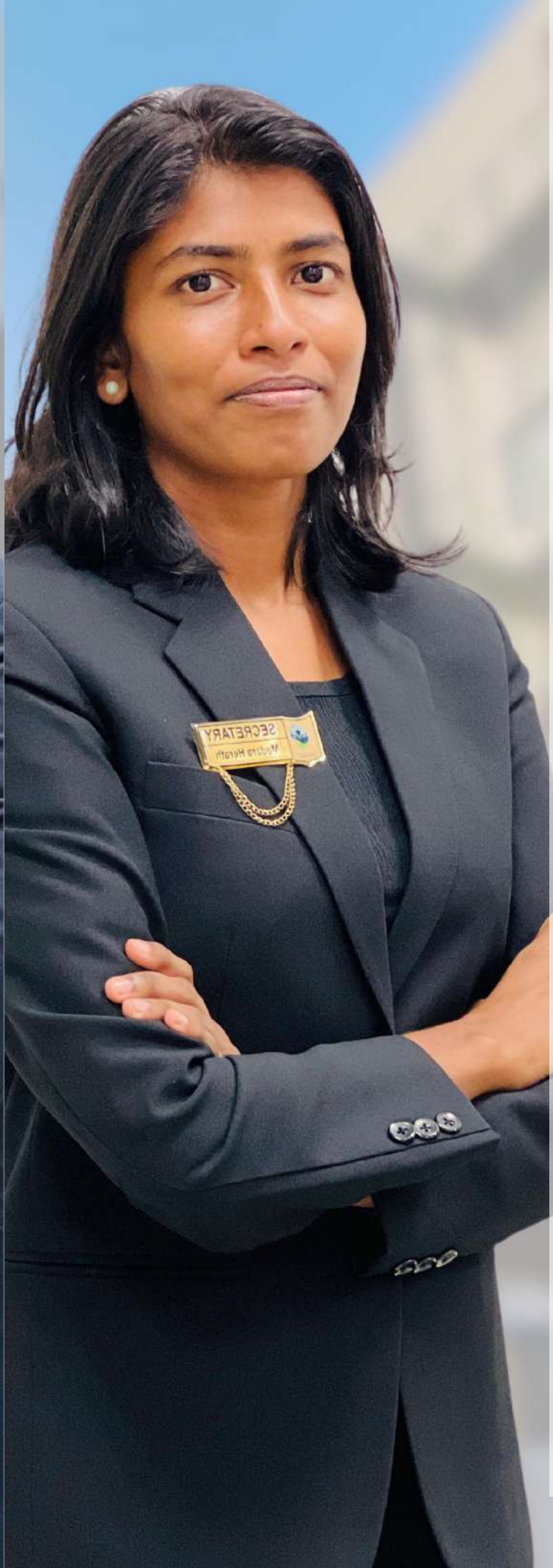
The Industrial Management Circle is thrilled to launch its inaugural edition of IMEX, a beacon of innovation and knowledge for our community. In today's dynamic landscape, staying ahead requires constant learning and adaptation.

IMEX'24 is more than just a magazine; it's a platform for sharing insights, fostering dialogue, and empowering professionals. We delve into trends shaping our industry, explore emerging technologies, and offer practical solutions for navigating modern management.

Within these pages, you'll find thought-provoking articles, case studies, and expert perspectives, all designed to equip you with the knowledge and tools to lead with confidence. This edition features a special focus on Manufacturing Excellence, Health and Safety, Innovation in Industrial Management, Sustainability and Green Operations, and Quality Control & Continuous Improvement, highlighting key challenges and opportunities within these critical areas.

As Chief Editor, I believe in the power of collaboration and encourage you to engage with our content, share your experiences, and contribute to the evolving conversation. We are excited to see how this inaugural edition will inspire new ideas, spark crucial discussions, and ultimately contribute to the advancement of industrial management practices.

Join us in shaping the future of our industry!



CO EDITOR

Industrial Management Circle

Ms. Madara Herath

Welcome to the inaugural edition of IMEX Magazine, your gateway to the dynamic world of industrial management and innovation. As the Co - Editor of IMEX Magazine , we believe in pushing boundaries and embracing modern trends, fostering a culture of knowledge exchange. This issue delves into transformative topics, from technological advancements to sustainable practices, equipping you with the tools to navigate today's evolving business landscape.

Our team of experts, writers, and researchers curate the latest insights, providing a comprehensive understanding of the industry's challenges and opportunities. We remain committed to delivering high-quality content that informs and inspires, challenging you to think critically about the future of industrial management.

Join us in this exciting journey as we explore the latest trends, emerging technologies, and innovative solutions shaping the future of industrial management. Your feedback is invaluable to us, and we encourage you to share your thoughts as we work together to make IMEX a platform for learning and innovation. Thank you for being part of this exciting journey. We look forward to growing alongside you as we explore the dynamic world of industrial management together.

INDUSTRIAL MANAGEMENT CIRCLE 2023 - 2024

We are a dedicated team within the Industrial Management Circle at NSBM Green University. Our team has been shaped by the remarkable efforts of previous leaders and board members, who laid a solid foundation for success and collaboration. Their collective vision has been instrumental in establishing a culture of excellence and innovation within the circle.

As we embark on the 2023-2024 term, we are excited to announce the leadership of our President, Mr. Prabhath Ranasinghe. His dynamic approach and commitment to industrial management will be pivotal in guiding us toward new heights. We are also privileged to have the unwavering support of our Master in Charge, Mr. Sachin Kulandaivel, and Mistress in Charge, Ms. Reka Kulasekara. Their expertise and mentorship provide invaluable support to our leadership team, ensuring that we continue to advance with cohesion and creativity.

This year, we are proud to present the first-ever Industrial Management Day, titled "IMEX '24." This event marks a new chapter in our journey, symbolizing growth, innovation, and a shared vision for the future. "IMEX '24" aims to showcase the importance of industrial management principles while offering students a platform to demonstrate their skills, ideas, and talents. It is a celebration of our collective achievements and a chance to set ambitious goals for the years ahead.

We warmly invite all members of the NSBM community and beyond to join us in celebrating the hard work and dedication of the Industrial Management Circle. Our vibrant and engaged community is at the heart of our strength, and we are eager to share this enthusiasm and drive with everyone. As we look forward to the future, we remain committed to fostering an environment of excellence, collaboration, and continuous learning, ensuring that all members of the circle thrive and succeed.

INNOVATION

Innovation drives success in industrial management. Companies that embrace change and technological advancement secure a competitive edge. The future lies in automating routine tasks, optimizing processes, and fostering a culture of creativity. In a world where industries evolve rapidly, leaders must stay ahead by investing in innovation and continuous improvement. It's not about keeping up with trends but setting them. In today’s fast-paced environment, success is built on the ability to adapt and innovate, ensuring sustainability and growth while meeting ever-changing market demands.

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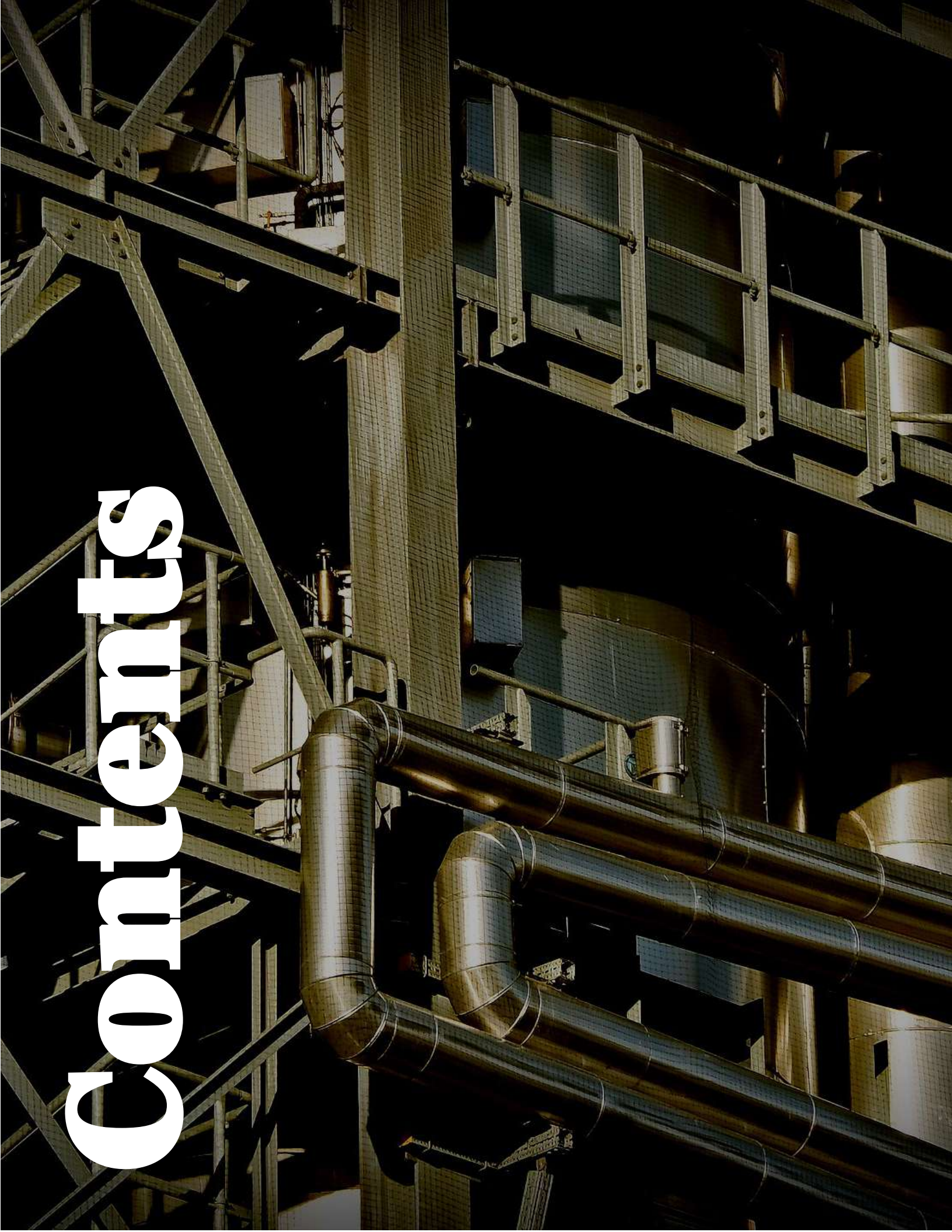

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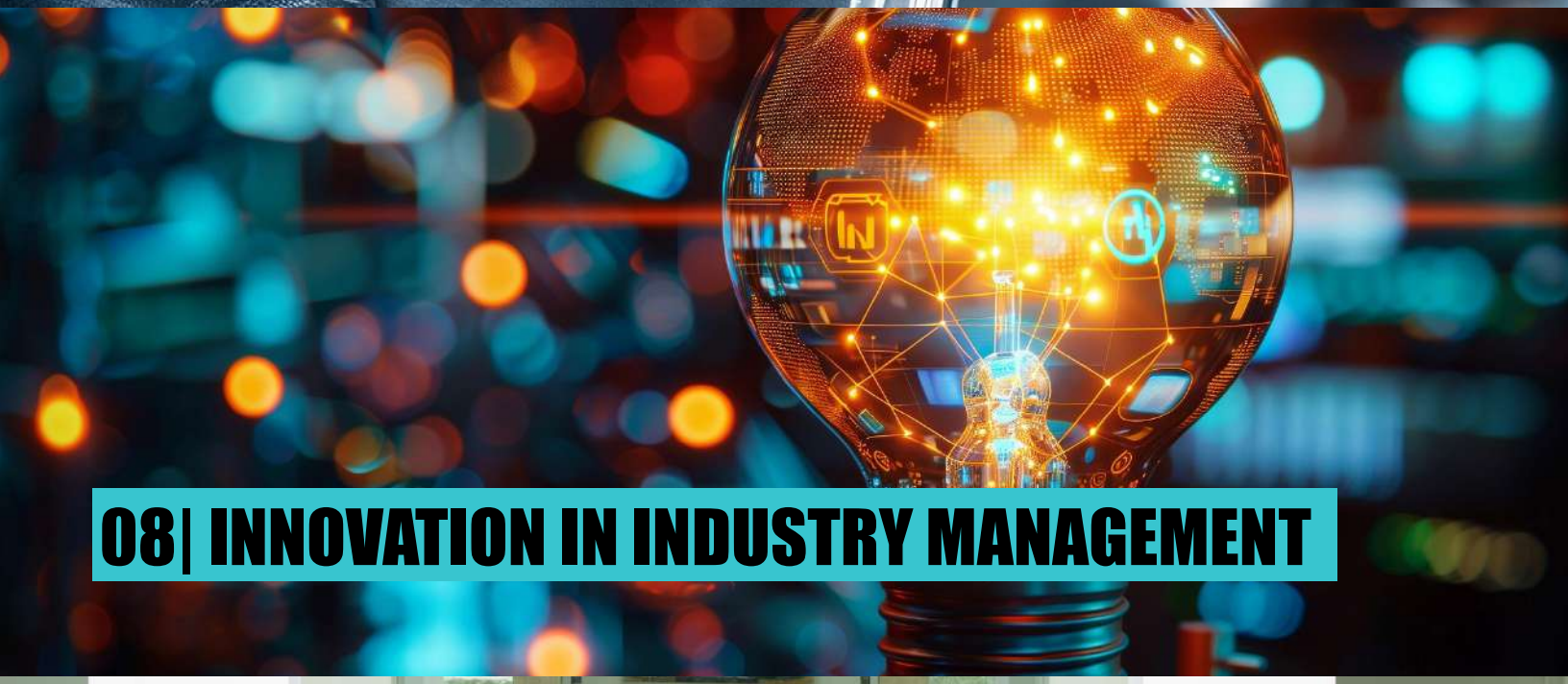

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01

SUSTAINABILITY AND GREEN OPERATIONS

BUILDING A SUSTAINABLE FUTURE: THE POWER OF GREEN OPERATIONS

Small and large businesses, governments, and society are talking deeply about sustainability in today's world. Encouraging global business in an environmentally friendly way benefits organizations and the global environment. Many companies today are adopting green operations, and through that, we can see the importance of sustainability and green operations concepts.

Sustainability is a concept that promotes the harmonious coexistence of economic growth, social development, and environmental protection. The main aim of sustainability is to meet the needs and wants of the present generation without compromising the ability of future generations to meet their own needs and wants. Sustainability looks to balance social justice, economic development, and environmental responsibility.

Green operations are suitable for businesses that maximize economic performance and minimize environmental impact. By adopting green operations, companies can reduce their carbon footprint, conserve resources, and improve their global

reputation as a socially responsible organization. An example of this is Tesla, which helps to reduce the carbon footprint of the environment, conserves limited resources and has a good reputation in society. Green operations are referred to as sustainable operations and eco-efficient operations. Optimum energy use by reducing waste and organization consumption to increase resource efficiency. To minimize waste generation, organizations should engage in recycling promotional activities and strategically focus on new products. For example, waste materials produced by a company can be recycled into a new product. Using good sustainability supply chains can ensure that the company's suppliers and partners are committed to sustainability.

Organizations can benefit significantly by adopting green operations. By implementing green operations by various organizations, it is possible to reduce waste and increase efficiency by reducing energy loss. Businesses with solid sustainability credentials often enjoy enhanced brand image and customer loyalty. Take Tesla as an example. Green operations enable mitigating risks associated with climate change regulatory compliance and supply chain disruptions and strengthen the organization by mitigating risks that may directly or indirectly affect business. Businesses that adopt sustainable practices foster a problem-solving culture through innovation and creativity. It is hugely beneficial for business branding. By following green operations and giving society a more favorable, sustainable, and fair future, businesses can contribute to social responsibilities so the organization can continue to grow and develop.

It is clear from the following facts that society can be affected by implementing green operations for good. By implementing green operations, businesses can assess their current environmental impact and sustainability by finding areas for improvement. Establishing measurable goals to reduce the

ecological footprint helps organizations achieve clear goals. A green initiative can engage employees and foster a horizontal culture. It brings good to society in an indirect way for the sustainable business in which the employees are involved. Organizations can expect good returns and results by investing in green technologies and exploring and using energy-efficient equipment and sustainable materials. Adopting an excellent green operating system enables you to check progress and adjust as needed on your journey towards sustainability. Through that, society and the organization can claim numerous benefits.

NSBM Green University, a higher education institution, contributes to sustainable operations in many ways. When designing infrastructure and buildings, Green University is designed to maximize natural light and ventilation, and artificial lighting is often kept to a minimum. Electricity is produced by using solar power, and through that, it brings many benefits to the organization. Therefore, this helps in various organizational cost management activities. NSBM Green University uses a small electric vehicle to transport various goods from one place to another. An irrigation system has been created that can collect rainwater for water conservation. Green University uses modern technology in its promotion activities and minimizes one gathering of waste in many ways. Through this, this organization carries out waste management in a practical way, and it has even been reported to be evaluated at various times.

Sustainability and green operations are essential to building a sustainable, resilient future for better societies. It can expect good benefits and results by contributing directly or indirectly to businesses. By adopting environmentally friendly practices, businesses can protect the environment, improve

their bottom line, and enhance their reputation. Through this, many good benefits can be achieved for businesses and society, and due to sustainability, organizations also attract consumers. As the world continues to face severe environmental challenges,

businesses increasingly realize the value of sustainable operations. Therefore, many businesses follow sustainable operations and successfully carry out their business activities.

As an example, related to businesses, a business can improve resource efficiency through cost reduction by producing new products from recycled materials and thereby improve business profits. It can also enhance the business's reputation while attracting customers and helping society. The management is responsible for setting up a sound operating system suited to the business; if done correctly, only good things will be attracted to the business. Some businesses use solar panels to generate electricity for their manufacturing operations, which can sometimes generate added income and help manage costs. Using excellent and sustainable means of transportation to obtain and transport raw materials required for business minimizes the release of harmful organic substances, thereby bringing good to society. Although the current business may face many challenges in many ways, by adopting sustainable operations as per the requirements, the organization can grow and develop by accumulating good benefits. Through that, many organizations can build a promising, sustainable future.

Ms. A. Teshani Matharage

BSc in International Management and Business

22.1 Batch


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FROM NSBM GREEN UNIVERSITY
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SUSTAINABILITY: A WAY TO A GREENER FUTURE

As a solution to the escalating environmental issues, sustainability is becoming a crucial component of corporate operations everywhere. As a result, rather than merely adhering to legal requirements as in the past, businesses are realizing the significance of green operations as they seek to match with a global shift towards environmentally responsible behavior. Today's corporate environment places a premium on economic viability. Therefore, developing products, services, and processes with the least possible negative environmental impact has become a core objective. Many businesses today, including some of the wealthiest in the world, are concentrating on green operations or eco-friendly practices that lower carbon emissions, save energy, and minimize waste. They invest in it and establish objectives to attain sustainability in addition to the core business purpose. Collectively, these concepts have established the norms and even the contributing elements that are transforming the modern corporate landscape.

Nowadays, environmental consciousness and sustainability are essential to people and companies and become prerequisites for their continued

existence. It is vital to assess how to reduce carbon footprint, use more renewable energy, waste less resources, recycle, and reuse existing resources due to pollution, depletion of natural resources, and environmental deterioration. Because of this, many organizations now consider sustainability a critical strategic priority, having previously just existed as a CSR project. Within this framework, companies strive to establish a structured and moral corporate governance framework that minimizes adverse environmental effects while meeting social obligations.

The green operations center is concerned with internal organizational procedures and actions that directly impact the environment. Among these, the most important are reducing energy use and waste, increasing resource efficiency, and switching to renewable energy sources. The ability of businesses to lessen their environmental impact while preserving profitability and productivity is the essence of green operations. Organizations that practice green operations aim to reduce the environmental impact of their activities by implementing sustainable practices. Many organizations have adopted standard practices for running green operations. These practices include recycling garbage, employing energy-efficient technologies, and minimizing using non-recyclable materials like plastic. Many organizations have adopted standard practices for running green operations. These practices include recycling garbage, employing energy-efficient technologies, and minimizing using non-recyclable materials like plastic.

Additionally, the approaches vary depending on the industry that each organization serves. Additionally, the approaches differ depending on the industry that

each organization serves. For instance, businesses in the coordination and transportation sectors have started using green aero planes to save emissions and promote fossil fuel-free alternatives like electric cars. Businesses that produce and package goods recycle waste to cut down on by products and employ eco-friendly packaging materials to reduce plastic usage. Furthermore, businesses typically build energy-efficient lighting, heating, and cooling systems, run energy-efficient energy systems, and optimize their production processes to use less energy. The productivity and efficiency that follow eventually boost the company's profitability.

In addition to lessening environmental harm, implementing sustainability and green operations has various advantages. To start with, it benefits the company's brand reputation. Customers prefer to use eco-friendly brands, particularly those of the younger generations. Increased client loyalty is the result. Initiatives focused on sustainability might also result in long-term financial savings. For instance, disposal reduction techniques result in lower raw materials and resource prices, and energy-efficient technologies frequently decrease power bills. This idea ensures enterprises' survival and establishes them as morally and responsibly operating businesses in society, but it also helps preserve the environment for coming generations.

These concepts also have a big effect on the marketing side of the company. Since most of today's firms' clientele depend on it, implementing these ideas will increase the brand's reputation. Employees are driven to work for companies that practice social responsibility, and investors tend also to favor these companies. These ideas also motivate companies to fulfil the obligations the modern global economy imposes.

People should be encouraged to move towards sustainability because it is a worldwide trend that is not legally required. Even though it began because of a global trend, it is still worthwhile starting and needs to continue till the end of time. Green operations and sustainability are now considered social values and are not optional. Rather than pursue the most considerable profit, firms must operate responsibly and compliantly in the modern world. Companies may ensure their long-term viability and contribute to a sustainable planet by focusing on lowering environmental consequences while preserving economic growth. Not only are sustainability and green operations goals, but they should also be ongoing practices. Because, as the adage goes, you cannot escape the consequences of one's actions. Analogously, we can only claim the future if we invest in sustainability now.

Ms. A. S. G. Dias

BSc in Accounting and Finance

21.1 Batch

GREENING INDUSTRY: HOW SUSTAINABLE OPERATIONS SHAPE THE FUTURE OF BUSINESS

Due to increased environmental issues and climate changes, sustainability is becoming a critical issue for global businesses. They realize that pursuing eco-friendly initiatives in their operational activities is of considerable value. Thus, sustainability is a way to meet regulation requirements, customer expectations, and the demand for operational efficiency in the long term. Green operations refer to adopting practices that will minimize the ecological impact created by industries while using resources more efficiently and responding to social responsibilities. This paper discusses sustainability within industrial management as a philosophy about green operations, the advantages of sustainable practices, and how to implement such strategies successfully. Resource efficiency involves maximization of the use of raw materials, energy, and water. Efficient resource management reduces waste, cost, and environmental impact. Waste reduction introducing practices that avoid waste generation would involve recycling, material reuse, and zero-waste approaches. Energy efficiency would be optimized by applying renewable sources of energy-saving technology and enhancements to the processes that contribute to reducing GHG emissions. Pollution prevention is pre-identification of activities causing pollution; and taking all measures to avoid air, water, and soil contamination to sustain the operations. Supply Chain Management screening for selection and involvement based on suppliers' environmental standards; integrating sustainability into procurement

processes to extend operations into greener ones. Green operation to a company confers advantages in several ways, Saving Costs with efficient utilization of resources and energy, the business saves on operational costs. For example, technologies that ensure energy efficiency will reduce utility bills and waste reduction will decrease disposal costs. Regulatory compliance with environmental regulations/standards will save companies from legal penalties and add a reputation to the company concerned. Better brand appearance increases the number of consumers who look out for companies that respect the environment means that green corporate operations are a reason to enhance the brand appearance and lure in green-conscious consumers. Operational efficiency of green operations often equates to lean processes that minimize resource utilization. There is better operational efficiency when there is reduced waste and utilization of fewer resources. When long-term viability, firms can ensure investments in sustainability practices for long-term operational viability and resilience against environmental risks and resource shortages. In measuring the outcome of green operations, there is a need for business concerns to focus on KPIs that reflect their sustainability initiatives. Some key KPIs will involve energy use per unit of production, waste recyclable rates, and reductions in carbon emissions. These metrics will thus allow the organization to track progress toward its objectives while establishing shortfalls that might require an upgrade and ensuring

that their businesses are on the right track regarding environmental concerns. Good KPI management will not only indicate a commitment to sustainability by the company but also enhance continuous improvement and operational efficiency. There are many ways in which companies can realise business strategies for green operations to integrate green operations:

According to the develop a sustainability strategy the core of any green operation, the initiative must be a well-defined strategy in sustainability, articulated in concurrence with the company's goals and values. This strategy must detail what it aims to accomplish, key performance indicators that indicate the progress of its objectives, and a roadmap for implementation. Engage Stakeholders who are employees, suppliers, and customers will develop a sense of collaboration through their involvement in sustainability initiatives. Training programs, awareness campaigns, and stakeholder engagement activities may be undertaken to achieve collective efforts toward greener practices. Investing in technology and innovation can access to advanced technologies and innovative solutions will optimize resource use and minimize environmental degradation. The investment in renewable sources of energy, waste management systems, and energy-efficient equipment would fall under technological advancement. Progress Monitoring and Reporting can require periodic monitoring and reporting regarding sustainability performance for progress to be tracked and areas for improvement implemented. Accountability and commitment to stakeholders are demonstrated through transparent reporting through sustainability reports or environmental disclosures.

Many of the companies have successfully integrated green operations and received gigantic benefits. For example, Unilever promised sustainability by launching the "Sustainable Living Plan," which aimed to reduce environmental impact along with the product lifecycle. It has already reduced greenhouse gas emissions and water usage, which proves its green operation. Another example is Tesla's focus on

renewable energy and electric vehicles, which befits its mission to accelerate the world towards switching to sustainable energy. Its various inventions regarding electric transport and energy storage solutions epitomize the factor of sustainability that it integrates into the company's business model. Indeed, green operations are challenging to implement, although there are benefits. Modern technologies and processes imply high initial costs. Resistance might also set in on stakeholders accustomed to the traditional practices. Management of an eco-friendly supply chain would add complexity since there would be a need for careful coordination regarding adherence to environmental standards. Indeed, with continuous technological advancement and increased ecological awareness, these issues have gradually been better managed. Innovations in sustainable materials and technologies continue to make items more viable through gains in renewable energy and improved recycling. Future directions include a more robust drive toward the circular economy's principles, reducing waste, and reusing resources, thereby enhancing operational efficiency and environmental impact.

Sustainability and green operation are the new industrial management revolutions that gain ecological and corporate benefits. By applying the green principles, organizations can reduce the environmental footprint, attain operational efficiency, and retain a better brand image. Integrating sustainability strategies, technology investment, and stakeholder involvement will bring positive results. Against the never-ending development of environmental challenges, businesses must be flexible and achieve continuous improvement in sustainability matters. Green operations can create a more sustainable future for industries and the planet through collective action and innovative solutions.

Ms. R. H. R. N Ayeshani

BSc in Accounting and Finance

23.2 Batch


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MAKE IT COUNT
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FROM NSBM GREEN UNIVERSITY
AFTER A/L
BSc in
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PROJECT MANAGEMENT (SPECIAL)
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BUSINESS | COMPUTING | ENGINEERING | SCIENCE | LAW | DESIGN

02

LANKA HOSPITALS

LANKA HOSPITALS

Patient Safety at Lanka Hospitals: Commitment to Excellence and Sustainability

Patient safety has become a backbone for delivering quality care in the ever-evolving healthcare landscape. At Lanka Hospitals, patient safety is not merely a protocol but a philosophy deeply embedded in every aspect of our operations. From our state-of-the-art facilities to our highly trained medical staff, we are committed to providing our patients with the highest standard of care while continuously fostering an environment of safety, quality, and sustainability. Our dedication to these values has been recognized through multiple prestigious certifications and accreditations, reflecting our alignment with international standards and best practices.

Prestigious Accreditations: Hallmark of Excellence

The patient safety foundation at Lanka Hospitals is built upon a series of prestigious international accreditations. We are proud to have received certifications from Joint Commission International (JCI), ISO 14001, ISO 22000, the College of American Pathologists (CAP), and ISO 15189. Each of these certifications represents our commitment to quality and patient safety across various dimensions

of healthcare service delivery. The JCI accreditation, known worldwide as the gold standard in healthcare quality, demonstrates our adherence to rigorous patient safety and clinical excellence standards. It underscores our commitment to reducing patient risks and delivering safe, evidence-based healthcare. ISO 14001, focused on environmental management, reflects our pledge to operate sustainably while ensuring that patient care remains at the forefront of our services. This certification demonstrates our environmental responsibility, showing that sustainability and safety are undeniably linked. ISO 22000, which pertains to food safety management systems, ensures that all food served within our facilities—whether to patients or staff—meets the highest safety and hygiene standards. This is particularly vital in a hospital setting, where infection control and nutrition are crucial in patient recovery. CAP and ISO 15189 accreditations signify our excellence in laboratory services. These credentials ensure that our diagnostic processes meet the highest global standards, providing accurate and reliable results, essential for effective patient care. This precision in diagnostics is a key component of patient safety, ensuring that patients receive the correct treatments and interventions promptly.

Continuous Quality Improvement and Recognition

At Lanka Hospitals, we are committed to patient safety and quality care beyond certifications. We are also actively engaged in continuous quality improvement (CQI) initiatives. These projects involve ongoing assessment, monitoring, and enhancement of patient safety protocols to adapt to the latest developments in medical science and healthcare technology.

Our exceptional quality improvement projects have earned us recognition at both national and international levels. We have been honored at the National Convention on Quality and Productivity (NCQP) and the International Convention on Quality and Productivity (ICQCC), which acknowledge our efforts to improve healthcare processes, enhance patient outcomes, and minimize errors. These accolades are a testament to our relentless pursuit of excellence in patient safety and our ability to innovate and implement effective solutions that elevate the patient experience. There are some comprehensive patient safety protocols.

Lanka Hospitals' patient safety protocols are designed to encompass every facet of our healthcare delivery process. These protocols include infection control, medication safety, emergency preparedness, and patient engagement, each of which is crucial to maintaining a safe and secure environment for both patients and healthcare providers.

One of the most critical aspects of patient safety is infection control, particularly in a hospital setting where patients may be vulnerable to healthcare-associated infections. Our infection control program is robust, adhering to the latest international guidelines and best practices. We continuously monitor, report, and respond to potential infection risks. Regular staff training, stringent hygiene practices, sterilization techniques, and an efficient isolation protocol ensure that we minimize the spread of infections within the hospital. Medication errors are a significant risk in any healthcare setting, but at

Lanka Hospitals, we have implemented comprehensive systems to prevent such occurrences. Our approach to medication safety includes rigorous cross-checking procedures by pharmacists and nursing staff.

Furthermore, we maintain a system of continuous education for our medical professionals to stay updated on the latest medications, interactions, and safety guidelines. This holistic approach helps ensure that every patient receives the right medication, at the right dose, and at the right time. Lanka Hospitals is equipped with a robust emergency preparedness program designed to protect patients, staff, and visitors in the event of any unforeseen disasters or crises. Our emergency teams undergo regular drills, and we have state-of-the-art emergency facilities capable of handling various types of medical emergencies.

Our preparedness extends to having backup systems in place for critical utilities like power, ensuring that patient care can continue uninterrupted under any circumstances. At Lanka Hospitals, we recognize that patient safety is not only the responsibility of healthcare providers but also of the patients themselves. We actively engage patients in their own care, educating them about their conditions, treatments, and the role they can play in ensuring their safety. By fostering open communication between patients and healthcare teams, we create a culture where patients feel empowered to ask questions, voice concerns, and participate actively in decisions about their care.

Alignment with Global Health and Safety Initiatives

Lanka Hospitals is committed to aligning our patient safety efforts with broader global health and safety initiatives. One such initiative is the Sustainable Development Goal 3 (SDG 3), which aims to ensure healthy lives and promote well-being for all. By integrating SDG 3 into our healthcare delivery, we contribute to global efforts to reduce morbidity and mortality rates, ultimately improving the health of the broader community.

Additionally, we have aligned with the World Health Organization (WHO) Patient Safety Action Plan 2021 - 2030, which calls for healthcare systems worldwide to prioritize patient safety through effective leadership, robust policies, and community engagement. This alignment further strengthens our commitment to not only meeting but exceeding international standards for patient safety.

Fostering a Culture of Continuous Improvement

At Lanka Hospitals, we are constantly looking for ways to enhance our patient safety protocols. This commitment to continuous improvement is evident in our regular audits, staff training programs, and engagement with both national and international healthcare organizations. By staying abreast of the latest evidence-based practices, technological advancements, and regulatory requirements, we ensure that our patients benefit from the most up-to-date and effective safety measures available.

Our approach is proactive rather than reactive—anticipating potential risks and addressing them before they can impact patient care. Whether it is

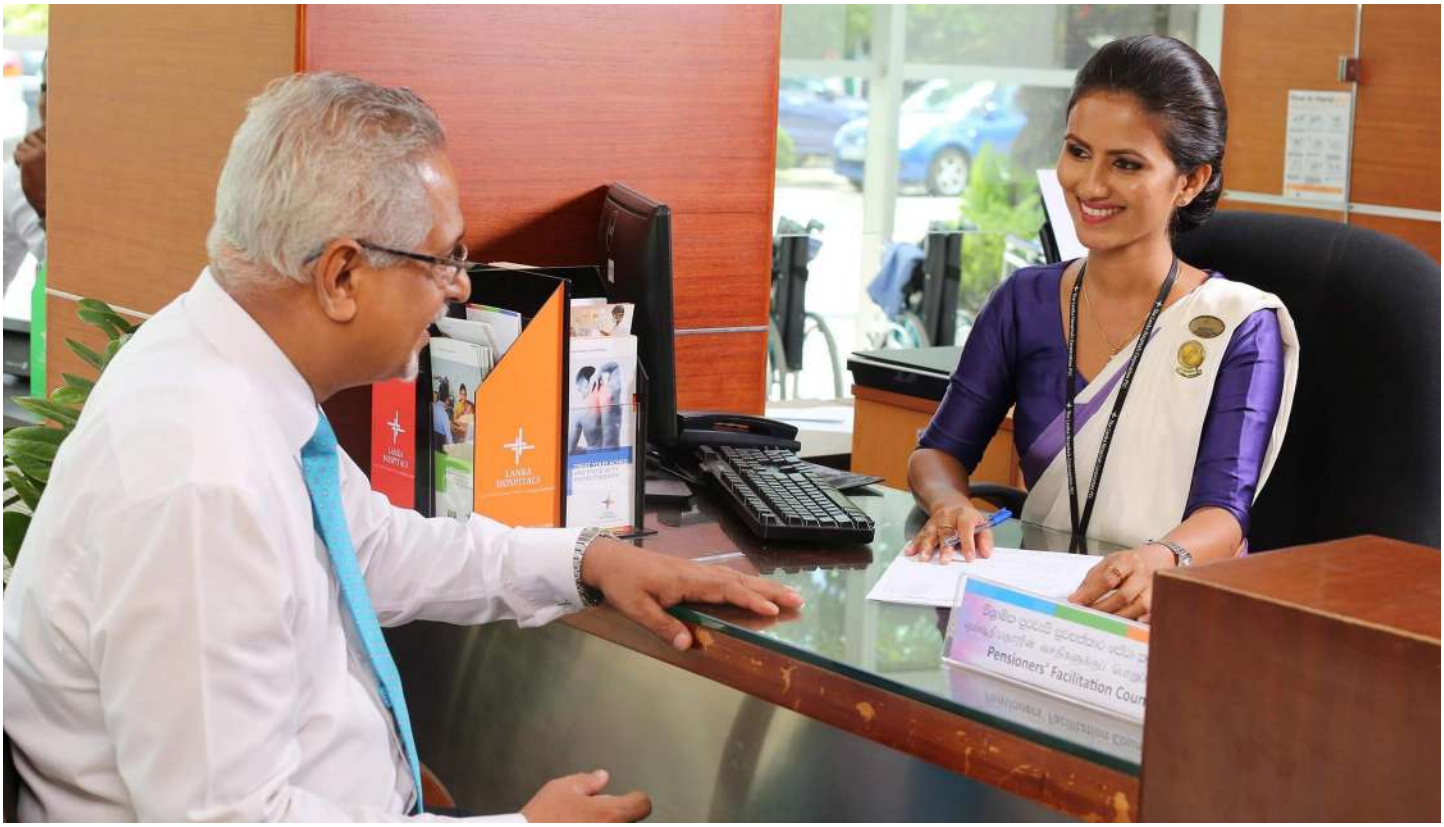
adopting cutting-edge medical technology, upgrading our facilities, or implementing new training programs for staff, we are always focused on improving the quality of care and safety for our patients.

Lanka Hospitals Academy: Building the Next Generation of Healthcare Professionals

In addition to our ongoing efforts in patient safety, Lanka Hospitals is also deeply committed to shaping the future of healthcare. To that end, we have established the Lanka Hospitals Academy, a dedicated institution aimed at training the next generation of healthcare professionals. This academy is a testament to our belief that quality healthcare begins with skilled, knowledgeable, and compassionate professionals. The academy offers a range of programs designed to equip aspiring healthcare workers with the skills, knowledge, and expertise needed to excel in the ever-evolving medical field. Drawing on the rich experience and best practices developed at Lanka Hospitals, we ensure that our graduates are well-prepared to uphold the highest standards of patient safety and quality care.

In conclusion, patient safety at Lanka Hospitals is a holistic, ever-evolving commitment that involves constant vigilance, innovation, and dedication. With our international accreditations, award-winning quality improvement projects, comprehensive safety protocols, and investment in future healthcare professionals through the Lanka Hospitals Academy, we are ensuring that our commitment to patient safety and sustainability remains unwavering, now and in the years to come.

Lanka Hospitals Academy and Quality Assurance Department of The Lanka Hospitals Corporation PLC



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03

QUALITY CONTROL AND CONTINUOUS IMPROVEMENT

INTEGRATING QUALITY CONTROL AND CONTINUOUS IMPROVEMENT

Quality control is a term used to describe the activities where products and services are measured and tested for adherence and where similar products from other competitors exist. It helps businesses reduce variations and enhances the quality of the products over time. The process further includes activities geared towards improving existing products, processes, or services upon the understanding that such improvements may not be carried out simultaneously but in gradual steps over time.

Quality control is a management plan of procedures to preserve the predefined quality of manufacturing end products, even in services-orientated industries. Quality control in industrial management is implemented to maintain uniformity in all manufacturing activities, minimise defect variations, and ensure that all the outputs are inspected and tested. This requires evaluating production processes and production samples, which is done to find out the errors or flaws, if any, as per the norms. Statistical Process Control (SPC): As SPC controls the variations in the processes, employing quantitative approaches prevents quality problems from escalating.

ISO Standards Compliance: Most industries adopt ISO quality standards, which can be construed as a series of instructions on the best practices that guarantee quality in every process outcome.

Quality control plays an integral part in allowing the induces to be productive and efficient in output since they can do away with the production inaccuracies or faults that will otherwise lead to the use of time that could have been spent on operating.

How shall that be possible? Quality improvement involves a permanent redesign of processes, products,

or services. It differs from big-bang style change since many slight changes are put in place as opposed to one substantial change, and these changes lead to results in the long term. One of the most famous examples of continuous improvement is Kaizen, or training, for which organisations in Japan are at the hub of lean production and seek to satisfy customer needs. The pivotal elements of quality control including cotenuous improvement in industrial management provides many benefits:

Incremental Gains: Normally, industries experience progress with satisfying accomplishments in efficiency without undergoing the constantly disruptive and time-consuming exercise of total process change, as regular slight changes are made.

Increased Employee Engagement: Continuous improvement calls for every employee, regardless of their level's position, to put forward suggestions for bettering procedures, making each feel important and part of the company's success.

Innovation and adaptability: If continuous improvement is part of the culture in an organisation, it gives rise to creativity and flexibility. This is because employees are always looking for better alternatives and changes to the current way of doing things, which benefits organisations.

Although quality control oversees preserving product quality, continuous improvement ensures that factors to enhance productivity, reduce waste, and improve quality are incorporated into all production operations. These two conceptions are the basis of a comprehensive industrial management operational excellence system. Quality control helps to name all the defects, nonconformities, and potential problems in products, services, or processes. However, continuous improvement is needed to solve those

problems. Procedures such as lean manufacturing are interested in reducing all kinds of waste, whether it is time wasted, resources wasted, or materials wasted. The first is quality control; it ensures harmful products do not get to the consumer. The second is continuous improvement, which seeks to prevent waste by improving processes. Manufacturing quality assurance requires QC to cooperate with both production, engineering, and maintenance teams to find and fix quality problems, while the process of continuous improvement involves the participation of all organisational levels, focussing on achieving greater flow between steps. Quality control sets up stringent criteria for product consistency, but continuous improvement ensures that those criteria are revisited and changed as technology advances, customer expectations change, or the industry's best model of practice changes. There are many tools and methodologies to help organisations successfully put QMS, quality control, and continuous improvement initiatives into practice.

Six Sigma is a data-driven improvement approach that seeks to reduce defects and increase process capability by finding and cutting the cause of errors. One can equate Six Sigma here to streamlining processes and quality improvement using tools such as DMAIC (define, measure, analyse, improve, and control. This approach focuses on minimising waste and maximising machinery productivity. Gearing up value stream mapping to visualise the flow of materials and information means less time detecting inefficiency. TQM is a holistic method that involves employees in all aspects of quality improvement. It reflects a company-wide focus on quality that spans the entire production process. PDCA is an iterative method used in continuous improvement to plan changes, implement them, check the results, and act

on what has been learned. This experimentation and course correction process leads to a culture of continuous learning.

Industrial management is predicated on quality control and constant improvement. This, in short, marks long-term operational success that can only come from a culture of continuous improvement and consistent product/service quality. Incorporating these notions can make industries more competitive, lower their costs, and align with changing customer demands. Quality control and continuous improvement in the industrial process can make it more efficient, innovative, and sustainable, provided you use the right tools with the best quality workforce.

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BSc. in Business Management (Special)
Project Management
22.2 Batch


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THE RISE OF QUALITY CONTROL AND CONTINUOUS IMPROVEMENT IN SRI LANKAN INDUSTRIES

As the competition goes global, quality control or QC and continuous improvement or CI have become the way for Sri Lanka's industries to retain their position and strive for a better share in the international market. From tea and apparel to IT and services, business ventures have taken novel initiatives to ensure that quality is maintained right to the finish with efficiency. The above quote is in line with the increasing focus on quality, regarded as vital for Sri Lanka's competitiveness in a rapidly changing global economy. Meeting these emerging consumer needs and the ever-stringent standards of its trading partners means that quality assurance and continuous innovation are of the essence for local industries to remain competitive. Sri Lanka is known for its quality exports, particularly in the apparel, tea, and rubber industries. A reputation for quality is a thing of prime importance to maintain. Sri Lanka has earned a worldwide reputation in the garment industry for its pledge to ethical manufacturing and quality products. The quality control systems are followed in each process, from sourcing raw materials to final inspections. Advanced technology and the use of international best practices ensure that garments meet the stricter requirements of the markets in Europe and North America. Quality maintenance is not just about avoiding defects; it is

about building long-term relations with global brands, according to Ruwan de Silva, a quality assurance manager in the apparel sector. "Success will depend on our capability to meet and exceed customer expectations constantly."

In the tea industry, which provides a significant percentage of the country's earnings from exports, rigorous quality control is observed at the plantations and the processing factories. On the world stage, the demand for Ceylon tea is sustained only by the closely guarded integrity of its purity and flavor. Whereas QC ensures that standards are met, CI seeks ways to improve processes and performance. Continuous improvement methodologies, such as Kaizen, Lean, and Six Sigma, have become an instant hit among Sri Lankan companies looking to drive efficiency, reduce waste, and improve product quality. The concept of CI most aptly applies to those IT-based industries, such as software development. As Sri Lanka becomes a growing tech hub, businesses implement Agile and DevOps practices to innovate, speed up project delivery, and maintain quality services. In a competitive market, continuously adapting and improving will become the key to retaining international clients and growing market shares.

Automation and intelligent technologies are finding their places in manufacturing for efficiency and high

output accuracy. Advanced machinery has been increasingly utilized in the textile and rubber sector to detect defects early and optimize production processes.

"Continuous improvement is not a one-time fix; it's a thing in the mind. We must keep assessing our process and make alignments to remain competitive, says Chamini Perera, an operations manager at a major garment manufacturer. Government Support and Industry Collaboration

In collaboration with industry umbrella organizations such as the SLSI and EDB, the government of Sri Lanka has taken several initiatives to disseminate QC and CI practices among enterprises. These include training programs, certification, and upgrading technology that can help firms enhance their quality management systems.

It encourages exporters, particularly SMEs, to obtain international quality certifications like ISO and SLS, through which standards are met globally, thus becoming competitive in the global market.

Quality control is no longer a luxury; it is something essential to scale businesses and compete internationally, says Pradeep Gunaratne, advisor at the EDB. We see more and more companies investing in quality management systems, especially SMEs, and reaping the benefits.

Of course, despite such vital achievements, problems persist. Implementing QC and CI systems requires considerable investments in their support, especially for small enterprises. Besides, there is a greater demand for skilled professionals to manage and sustain these systems.

However, most analysts also believe that the long-term benefits amply offset the costs. If Sri Lankan firms start investing in training, technology, and quality systems, they will not only be able to meet their markets' existing demands but also be better equipped to face any future challenges.

The future of industries in Sri Lanka will depend on consistently delivering quality products and services. With such emphasis on quality control and continuous improvement, Sri Lankan businesses are well-positioned to thrive in the global market.

Ms. Janani Benelka Mudalige

BSc. in Business Management

22.2 Batch


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THE ETHICAL IMPLICATIONS OF QUALITY: RESPONSIBILITY AND ACCOUNTABILITY

In today's competitive world, organizations realize the importance of quality to ensure long-term success. Quality control and continuous improvement have become two key strategies to deliver better products and services: customer satisfaction and operational excellence. Quality control refers to systematically inspecting and monitoring processes and products to comply with established standards and specifications. It involves a variety of activities such as the introduction of benchmarks, which consists of the setting of standards in terms of quality assessment of the goods and services, inspecting and testing by way of regular examinations to search for imperfections and irregularities, the establishment of corrective actions on the quality problems that have been found, and planning activities to avoid the occurrence of quality problems. Moreover, several acknowledged quality control methods, such as Statistical Process Control (SPC), Six Sigma, Total Quality Management (TQM), Quality Assurance, and Root Cause Analysis (RCA), support operational excellence. SPC is a recovery practice that involves sampling operations' output rather than repairing defects' potential causes. Six Sigma work is sustained through a program seeking an absolute minimal defect that is rarely attained 3.4 defects in a million opportunities, and it consists of five phases: Define, Measure, Analyze, Improve, and Control (DMAIC). TQM is the management philosophy that seeks to raise the quality commitment of top-to-end consumers. All activities that create conditions for the product or the service to comply with the required standards and the required quality are described by

quality assurance. Root Cause Analysis (RCA) refers to a method used to ascertain the underlying reason for specific occurrences, in this case, quality issues. Enforcing proper quality management is crucial to keeping clients loyal, reducing production costs of recalled goods, and cutting expenses incurred to rectify or dispose of defective products. In this way, organizations would improve their brand image and gain a larger market share by ensuring their products and services satisfy the expectations of their customers. While quality control focuses on maintaining current standards, continuous improvement involves proactively identifying and eliminating waste, inefficiency, and defects within processes.

It is an outlook that allows companies to be better than they are and to be able to add more value than what is optimized. Core aspects within the context of continuous improvement include understanding customers, their needs, and their expectations, which all involve customer focus, process improvement to reduce waste and enhance efficiency, and employee involvement, which encourages and engages workers to submit and implement ideas for enhancements, data-driven decision-making which is using data to identify root causes of problems and track progress and Kaizen which is Implementing minor, incremental improvements continuously. There are some recognized continuous improvement methods as well. Kaizen is a Japanese concept in which all company employees strive for constant self-improvement through slight changes made step by step. The Lean Manufacturing method focuses on eliminating waste and improving efficiency through techniques like just-in-time (JIT) production and value stream mapping. TPM is a preventive maintenance strategy that involves all employees in

maintaining equipment and machinery. DFSS is a methodology that integrates Six Sigma principles into the product design process to ensure quality. By embracing a culture of continuous improvement, organizations can foster innovation, reduce costs, and stay ahead of the competition. It enables them to adapt to changing market conditions, respond to customer feedback, and drive long-term growth. Some benefits of the Quality Control and Continuous Improvement cycle are customer satisfaction, cost savings, and cost reduction. Adhering to these helps improve product quality and services, increasing customer retention and satisfaction. An organization can save rework, scrap, or complaints costs if they reduce process waste and defects. Further, better-managed and improved processes will lead to higher organizational growth and efficiency. Also, employees' commitment and satisfaction levels can be enhanced with better quality and improvement culture. So, an organization that prioritizes quality and continuous improvement can gain a competitive advantage in the marketplace. Also, when discussing challenges and considerations of these two concepts, some can be called resistance to change, lack of top management support, and insufficient resources. It has been known that employees backed out from implementing quality initiatives because that would involve changing how they do things in their workplace. The initiatives on quality improvement are likely to fail if management is not visibly involved in the process. Also, Adequate funding and resources are essential for effective quality management; collecting and analyzing quality data can be time-consuming and challenging. So, quality control and continuous improvement are ongoing processes that require sustained efforts and long-term

commitments. By understanding the principles, techniques, and benefits of quality control and continuous improvement, organizations can create a culture of excellence that drives sustainable growth and success. Quality control and continuous improvement are not mutually exclusive but rather complementary strategies. While quality control sets the requirement for products and services produced to conform to stipulated requirements, continuous improvement focuses on the need for improvement. For instance, data on quality control can highlight places in need of and subject to improvement for such continuous improvement. Further, due to efforts for continuous improvement, process elements may be redefined, and quality control may be improved. By producing quality products and services, companies will enhance customer satisfaction and loyalty, as well as the desire to achieve and maintain high-quality control and ongoing improvement and gain an advantage in the market. For such steps as adopting quality control and continuous improvement on the organizational level, the following steps can be distinguished: leadership commitment, employee engagement, standard setting, data collection and analysis, problem-solving techniques, and continuous learning. Most importantly, senior management must approve and actively participate in quality management activities and persuade people on all levels to work in teams to plan, implement, and improve the management of quality processes.

In conclusion, quality control and continuous improvement are essential to successful industry management. By knowing these interrelationships and applying the appropriate measures, organizations can quickly raise their competitiveness, enhance customer delight, and attain sustainability. Companies can become dominant sector players by seeking quality assurance and development.

Ms. M. A.D. P. N. Perera

BSc. in Business Management (Special) Industrial Management

22.2 Batch

04

MANUFACTURING EXCELLENCE

MANUFACTURING EXCELLENCE: PRODUCT EXCELLENCE

One thing we can recognize when talking about businesses is that they also include the production of goods and services. The two words production and product are two words that are often found when talking about business. Immediately, they have the same meaning, but there are two meanings. Accordingly, "product" refers to the "goods" and "services" provided to business customers, but production refers to the process of producing goods and services to satisfy human needs and wants. From the above-mentioned small definition regarding production, we can recognize that a business's production process primarily focuses on providing goods and services to meet human needs and wants.

Accordingly, businesses go through various stages in this process. That process is known as the "production process." The process of turning inputs into outputs for a business can be identified as the "production process." The process of converting inputs into outputs consists of three main steps, namely Applications, Translation process, and Conclusions. Accordingly, input means the production resources introduced to the production process of a business organization. It is not limited to raw materials, and it is possible to identify inputs beyond that. Transformation is the process of turning inputs into outputs introduced into production. The steps involved in the conversion process vary depending on the nature of the product the business is producing. For example, the transformation process of a clothing business can be shown to be different from the transformation process of a bakery product business. Output refers to the result obtained after a business entity transforms the inputs into its production process. Businesses provide a product or service as a finished product to their customers. Bread, buns, etc., are food items in a bakery manufacturing company, and shirts, pants, and gowns sewn in a textile manufacturing company can be mentioned as examples. Manufacturing process excellence, or manufacturing excellence, refers to the product's superior quality, performance, and overall value. Focusing on product excellence can be recognized as a process comprising various aspects. The first factor is the quality of the product, which means that the product must be well-made, reliable, and durable, often exceeding industry standards. When talking about product excellence, the next thing to focus on is performance. It should provide consistent and efficient performance that meets or exceeds user needs and expectations.

Innovation is an expensive thing. This means that products should be created with advanced technology or unique solutions that differentiate them from competitors. How it is designed is the next thing to focus on when discussing product excellence. This means it should be an attractive, functional design that improves user experience and satisfaction. The next thing to focus on when discussing product

excellence is value for money. It offers a good balance between cost and benefits, making it a worthwhile investment. Customer satisfaction is one of the key areas to discuss in product excellence. Positive feedback from users and prominent levels of customer loyalty indicate the degree to which the product meets or exceeds their expectations. Overall, product excellence represents a combination of these factors.

Its exact standards and exceptional performance make it an outstanding product. A broad focus on "product excellence" reveals several facets. A product's excellence can be determined by reliably performing across various uses and conditions. This consistency builds trust with users and ensures that they depend on the product over time.Great products are often designed with the end user in mind, addressing their needs, preferences, and pain points. Rigorous testing and quality assurance processes are essential. These processes ensure that each production unit conforms to established standards and is free from defects, ensuring product excellence. Increasingly, excellence also includes considerations of environmental impact. Sustainable materials, energy-efficient manufacturing processes, and recycling are essential to product excellence.

Products that demonstrate excellence often lead their market segments. They set benchmarks for competitors and become the preferred choice due to their superior qualities. The brand's reputation that produces the product can influence the perception of excellence. A strong, positive brand image often accompanies products that are perceived as high quality.

Incorporation of the latest technologies and innovations can raise the standing of the product. This may include integrating smart technologies, advanced materials, or new features that add value. Excellence is about the support provided before, during, and after the sale. This includes customer service, warranty policies, and responding to feedback and issues.In conclusion, the above reveals that product excellence is a multi-dimensional concept that combines high-quality products, user-centered design, innovative features, and dedicated support mechanisms to provide superior value and satisfaction to customers.

The preceding discussion has highlighted the multifaceted nature of product excellence and its significance in driving business success. By focusing on quality, performance, innovation, design, value,

customer satisfaction, and sustainability, businesses can create products that stand out in the marketplace and foster long-term customer loyalty. Product excellence is not merely a matter of producing high-quality goods and services; it requires a comprehensive approach considering the entire product's lifecycle. From the initial design and development stages to production, distribution, and customer support, businesses must strive for excellence at every step.

By consistently delivering exceptional products, businesses can build a powerful reputation and differentiate themselves from competitors. This can lead to increased market share, higher profitability, and long-term sustainability. ("Cash on hand: Maximizing Quick Assets: The Importance of Cash on Hand") ("Cash on hand: Maximizing Quick Assets: The Importance of Cash on Hand") Moreover, focusing on product excellence can contribute to customer satisfaction, loyalty, and positive word-of-mouth, which can further enhance a business's success.

In conclusion, pursuing product excellence is a fundamental strategy for businesses seeking to thrive in today's competitive landscape. By prioritizing quality, performance, innovation, and customer satisfaction, companies can create products that meet and exceed customer expectations and drive long-term success. Furthermore, by integrating sustainability into their product development and manufacturing processes, businesses can contribute to a more sustainable future and enhance their reputation as socially responsible organizations.

Mr. J. A. D. S. Gunawardhana

BSc in Business Management (Special) Logistics Management

22.2 Batch

SUPPLY CHAIN

As environmental concerns grow and regulations tighten, industries must rethink their approaches to production, energy consumption, and waste management. Sustainability isn't just about protecting the planet; it's also about ensuring long-term profitability. Companies that prioritize eco-friendly practices will not only reduce costs but also meet the rising demand for sustainable products. Industrial managers play a key role in this transformation, integrating sustainability into every layer of operation from raw materials to distribution ensuring that business and environmental goals

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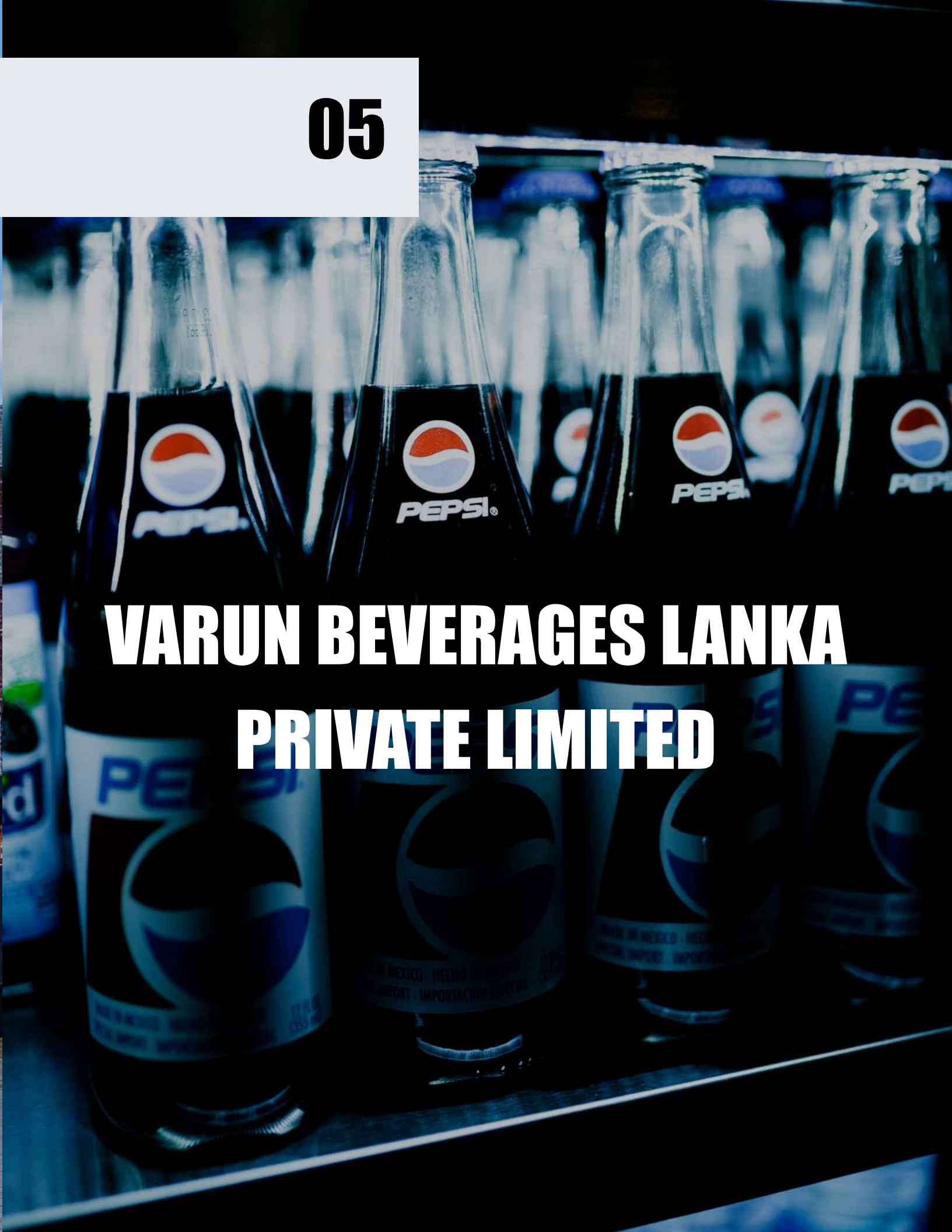


VARUN BEVERAGES LANKA PRIVATE LIMITED

Varun Beverages Lanka Pvt Ltd (VBLL) is a company operating in Sri Lanka that is part of the Varun Beverages Limited group. Varun Beverages Lanka Pvt Limited is one of the largest franchisees of PepsiCo in the world, handling the production and distribution of PepsiCo beverages in various countries. In Sri Lanka, Varun Beverages Lanka Pvt Ltd would be responsible for manufacturing and distributing PepsiCo products like Pepsi, Mountain Dew, and 7UP, among others. As a leading beverage company serving over 1.4 billion customers globally through an extensive network of over 3 million retail outlets, we are committed towards safeguarding our environment and promoting sustainability in all our operations. At Varun Beverages Lanka Pvt Ltd. sustainability implies that we do things efficiently and responsibly in terms of the environment, people and the economy, with an aim of having a net positive impact on the planet.

As an organization, VBLL seeks to drive environmentally sustainable growth across its business. VBLL's business operations follow a stringent and well-defined framework that aims to minimize the environmental impact, improve food safety & hygiene protocols and encourage people & community development.

Plastic Recyclability & Waste Management

VBLL focuses on the 3R's: REDUCE, RECYCLE and RECOVER that include segregation of different types of waste material to regulate the recyclability, anti-litter and recyclable marks on products to remind consumers to dispose in a safe and environment

friendly way. VBLL shall report the progress on % of PET recycled in its annual report as well as quarterly results presentation.

On the other hand, company has established a comprehensive waste management program that focuses on recycling materials. We have set up Material Recovery Facility and are working with local municipalities to enhance community recycling efforts. On the other hand, through that MRF sites we maintain the network development program for needy people and we enhance their livelihood. Annually, we recycle 40% of PET from our total sales and we planned to increase that total PET recycling up to 100%.

Water Management

VBLL follows a positive water balance based water conservation approach. Water resource is managed throughout value chain in three stages comprising of stringent water usage ratio at the stage one. At stage two, treat waste water to make it reusable. At stage three, through comprehensive water recharge initiatives. The company will continue to focus on the following efforts are reducing water consumption during the manufacturing process. Replenishing groundwater through recharge initiatives. Promoting water conservation and raising awareness. And also, we implemented sustainable practices to strengthen the ecological foundation of our planet and we are also constantly looking at newer ways to be a good steward of the environment.

Water Stewardship Program

Project Details: Varun Beverages has implemented a water stewardship project related to the Wewita Lake clean-up project. Under the first phase of the project

we cleaned 1 acres of the lake. The company has also partnered with local communities to improve water management practices, ensuring sustainable access to clean water. Continuous efforts to maintain a clean lake foster sustainable practices that can be implemented in other areas, promoting broader environmental protection efforts.

Energy Efficiency

Varun Beverages Lanka Pvt Ltd. has already initiated renewable energy projects that include installation and commissioning solar plant at many of its manufacturing facilities. The company aims to implement renewable energy sources throughout its manufacturing facilities to reduce its overall carbon footprint.

Governance Framework

With a strong corporate governance structure, we strive every day to further strengthen our policies and practices and enhance compliance and transparency to our shareholders and stakeholders. Mainly, Varun Beverages Lanka Pvt Ltd is dedicated to advancing the United Nations Sustainable Development Goals (SDGs) as part of our commitment to sustainability and social responsibility.

We actively integrate these goals into our operations, focusing on areas such as responsible production, water conservation, and community well-being. Our efforts aim to contribute positively to the environment and the communities we serve

We have inculcated a visioned governance framework by expanding the scope of our robust policies to contractors and suppliers with an ESG focus. In the healthcare domain, we have launched

"AARU Clinic", with an aim to provide free access to medical assistance to the underprivileged and economically weaker sections of the society.

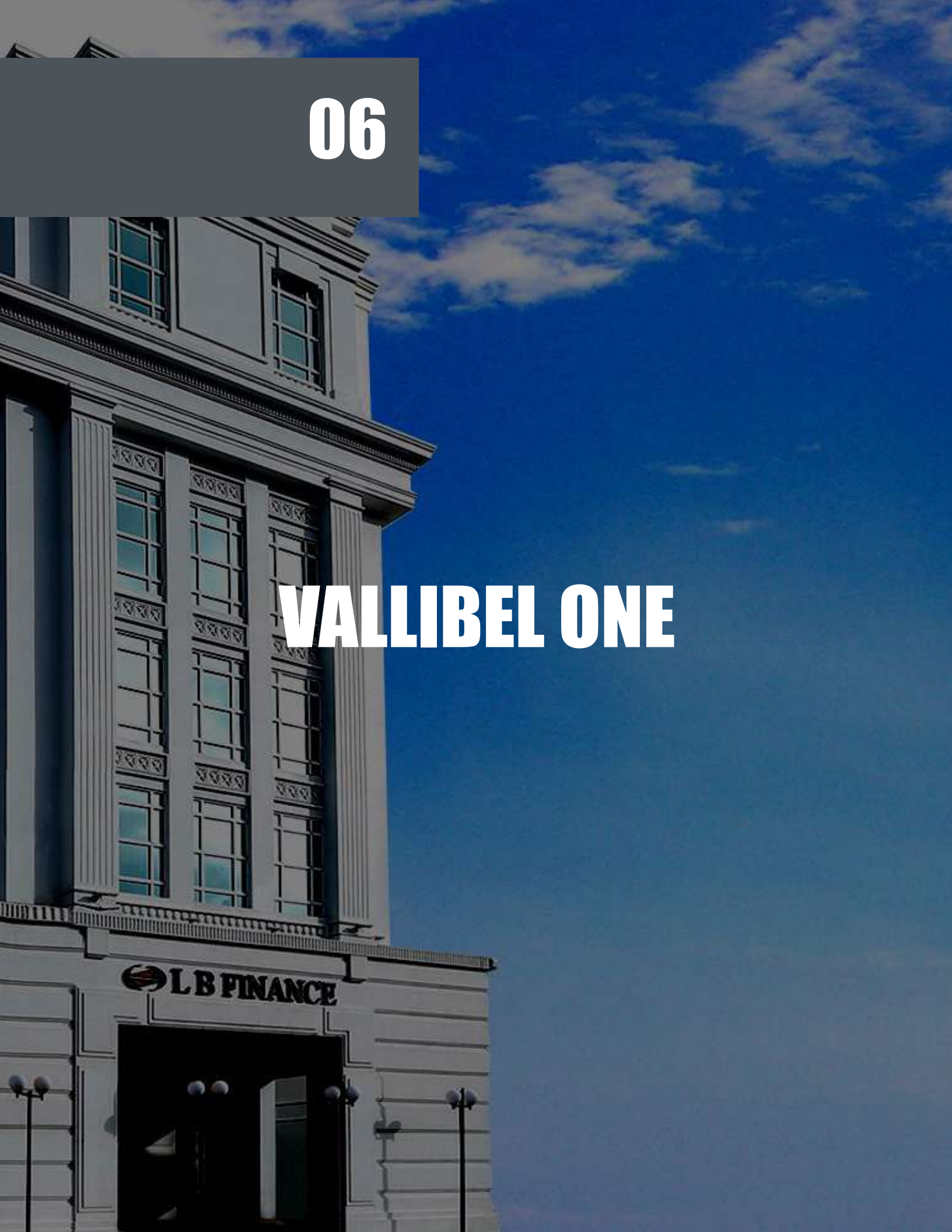
Ms. Eresha Kumburulanda

Head of the Legal Compliance and Sustainability

Varun Beverages Lanka Pvt Ltd

06

VALLIBEL ONE



UNLOCKING OPERATIONAL EXCELLENCE: LESSONS FROM VALLIBEL ONE GROUP

Introduction to Operational Excellence

Operational excellence is the pursuit of optimized efficiency and product quality through the adoption of a continuous improvement culture across an organization. As industries evolve, achieving excellence requires more than just efficient production—it demands a strategic approach that minimizes waste, maximizes productivity, and engages all levels of an organization. One of the most influential frameworks in this pursuit is Total Productive Maintenance (TPM).

TPM is a comprehensive approach to equipment maintenance that goes beyond traditional methods. It emphasizes preventive and predictive maintenance and encourages participation from everyone in the organization, from operators to managers. This approach reduces downtime and equipment failures and fosters ownership and accountability across teams. The ultimate goal of TPM is to stabilize the production process, ensuring smooth operations, higher product quality and long-term efficiency.

The TPM Mantra—achieving zero accidents, zero defects and zero breakdowns—aims to create an autonomous maintenance environment and drive process improvement. This concept emphasizes eliminating all forms of waste and inefficiency, ensuring optimal production and safety standards. In essence, TPM is the foundation of a continuous improvement culture because it promotes a proactive, holistic approach to maintaining equipment and processes, leading to consistent output and minimized disruptions.

Background and History of TPM

TPM's origins trace back to post-World War II, when Japanese manufacturers, particularly in the automotive industry, recognized the potential of proactive maintenance methods. During the 1950s, Japanese companies such as Toyota studied preventive maintenance techniques from the U.S. and adapted them into their own system, incorporating elements such as operator involvement and process optimization. By the late 1960s, Nippon Denso, a

Toyota subsidiary, became the first company to implement TPM, revolutionizing equipment maintenance practices fully. The Japan Institute of Plant Maintenance (JIPM) played a key role in formalizing these advancements. In 1971, JIPM introduced the TPM Award to recognize companies excelling in these practices. TPM's success in Japan soon gained international attention. Kodak's Tennessee Eastman facility became the first plant in the U.S. to adopt TPM in 1987. Since then, TPM has spread across various industries worldwide, offering a blueprint for companies aiming to achieve manufacturing excellence.

The Operational Excellence Journey of Vallibel One Group

Under the visionary leadership of Mr. Dhammika Perera, Vallibel One Group embarked on a transformative journey toward operational excellence through the implementation of TPM. Supported by group directors, this journey—spanning from 2016 to 2024—has seen the group's manufacturing subsidiaries, particularly Rocell and Lankatiles, achieve significant improvements in efficiency, quality and innovation. This transformation has been spearheaded by Mr. Aravinda Perera, Managing Director of Rocell Group and Mr. Mahendra Jayasekara, Managing Director of Lanka Walltiles Group.

Establishing the Foundation (2016)

In 2016, **Mr. Dhammika Perera** recognised the untapped potential within Vallibel One's manufacturing operations. He initiated

comprehensive assessments to identify inefficiencies and bottlenecks in production processes. These assessments laid the foundation for a wide-reaching operational excellence strategy. A critical aspect of this strategy involved training employees at all levels in the principles of TPM. Under the guidance of Mr. Thilak Pushpakumara, a TPM expert from the Institute of Lean Management, the group began implementing TPM practices aimed at optimizing processes, reducing waste, and enhancing product quality. This phase focused on establishing a strong foundation for sustainable improvement.

Embracing Kobetzu Kaizen and Continuous Improvement (2016)

The group adopted Kobetzu Kaizen, the Japanese philosophy of continuous improvement, as a core component of its operational excellence strategy. Kobetzu Kaizen encourages employees to identify inefficiencies actively and suggest process improvements. This shift fostered a culture of collaboration and innovation, where employees across all levels contributed to the group's success. The results were remarkable—processes were streamlined, defect rates were reduced, and product quality significantly improved. Kobetzu Kaizen ensured that improvements were not just one-off successes but part of an ongoing cycle of innovation and efficiency.

Financial Savings through TPM and Operational Excellence Between 2017 and 2024, Vallibel One Group achieved impressive financial savings through its TPM initiatives, recording total verified savings of 4.4 billion rupees. A key driver of these savings was

a series of focused improvement projects targeting critical areas of the manufacturing process.

By addressing inefficiencies systematically, these projects led to substantial cost reductions, enhanced profitability, and optimised resource utilisation. This enabled the group to maintain high product quality and sustain growth, even in challenging economic climates.

Navigating the COVID-19 Pandemic (2020)

The COVID-19 pandemic in 2020 posed severe challenges to global manufacturing, disrupting supply chains and halting production in many industries. Vallibel One responded swiftly by implementing stringent health and safety protocols to protect its workforce while maintaining operational continuity.

The group introduced remote work practices where feasible and invested in enhancing supply chain agility to cope with disruptions. Thanks to the robust foundation laid by TPM, Vallibel One Group was able to maintain efficiency, safeguard employee health and continue delivering value despite global challenges.

TPM practices focused on cultural development and system stabilisation and played a vital role in helping Vallibel One navigate the pandemic. The proactive and preventive measures instilled by TPM allowed the organisation to adapt quickly to the pandemic's disruptions. Post-pandemic, Vallibel One intensified its focus on **sustainability** and **innovation**. The group implemented energy-efficient technologies and waste reduction initiatives across its tile and

bathware manufacturing operations, reflecting a strong commitment to minimising environmental impact.

Investment in **research and development** led to the introduction of new, innovative products that combined aesthetics with functionality. This focus on product differentiation further solidified Vallibel One's reputation as a forward-thinking and sustainable manufacturer.

Elevating TPM Toward Operational Excellence (2023)

By 2023, Vallibel One Group had fully realised its operational excellence goals. The group established itself as a leader in Sri Lanka's manufacturing sector by integrating advanced technologies, continuous improvement practices, and a commitment to sustainability. In October 2023, Vallibel One launched its Operational Excellence assessment framework, adopting Lean, Six Sigma, Industry 4.0, and Integrated Work System (IWS) practices. The Operational Excellence Framework consists of key pillars such as Autonomous Maintenance, Focused Improvement, Policy Deployment, Early Management, Planned Maintenance, Quality Maintenance, and the 5S Methodology. These pillars form the foundation of the group's approach to achieving sustainable excellence. The Operational Excellence Journey of Vallibel One group is driven by a governing committee led by Mr. A.M. Weerasignhe, Operational Excellence governing committee Chairman. The group's **assessment criteria** encompass all Continuous Improvement (CI) aspects, aligned with a structured **Reward and Recognition** program. The evaluation includes contributions to CI, Kaizen initiatives, improvement

projects, and the 5S methodology. Moreover, the assessment recognizes the importance of culture and people, ensuring that both technical and cultural elements drive sustainable improvement.

A Moment of Recognition: July 2024

In July 2024, Vallibel One hosted a celebratory event to honour the exceptional achievements of its employees, whose dedication has been instrumental in the group's success. Over 100 awards were presented, recognizing contributions and unwavering commitment to excellence.

This event highlighted Vallibel One's journey toward operational excellence and underscored the importance of innovation, leadership and a relentless focus on continuous improvement.

Conclusion: Adapting for Success

Vallibel One Group's operational excellence journey demonstrates that any organization can achieve operational excellence by embracing strategies like TPM, Lean, Six Sigma, and Industry 4.0. However, success does not come from applying these concepts as they are; it comes from adapting and customizing them to fit the organization's unique needs, culture and industry.

When done thoughtfully, this approach will unlock the full potential of operational excellence and drive sustainable growth.

Geeshan Wikramasighe, General Manager - Continuous Improvement & Research, Vallibel One PLC.

Ravishka Uduwana, Manager - Engineering & Projects, Vallibel One PLC.

Loodeesha Ekanayake, Executive - Strategic Planning and Business Development, Vallibel One PLC.

EFFICIENCY

In a world where industries are increasingly interconnected, the role of management is to simplify, streamline, and optimize. Effective managers are like conductors of an orchestra, ensuring that each component operates in harmony. Whether it's supply chains, production lines, or human resources, the objective is the same balance innovation with execution. A great manager doesn't just run operations; they transform them, constantly seeking opportunities for improvement while managing risk. Success lies not in maintaining the status quo but in evolving with the challenges of a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07

HEALTH AND SAFETY

THE IMPORTANCE OF OCCUPATIONAL HEALTH AND SAFETY

As always, health and safety come first. In simple terms, health and safety is a science of regulating, evaluating, and controlling hazards which arise in a workplace environment. Ensuring a safe work environment with limited risks and hazards is one of the primary responsibilities of every employee within an organization. A well-implemented health and safety procedure protects employees from accidents and injuries. In this article, let us dive deep into the topic and understand the importance of risks and hazards, how to prevent them, and how to ensure a safer environment for everyone to work in.

Understanding what hazards and risks are involved in health and safety is essential. These two terms are the main situations in which we must focus on implementing safety procedures within an organization. A hazard is anything that can cause harm. More like a situation, source, or act with a potential possibility of causing damage in terms of human injury or ill health. In contrast, a risk is any probability of getting harmed due to hazards. It is a combination of hazardous events that can cause any

injury or illness through exposure to such situations. For example, electricity is a hazard and creates the risk of any employee getting electrocuted because of the exposure to inadequately insulated wires at the workplace. Hazards are of many types, such as physical, chemical, biological, ergonomic, psychological, and mechanical. Hazards such as noise, radiation, and vibrations are considered Physical hazards. Chemical hazards are the ones that can cause risks through exposure to chemicals. Healthcare and agricultural workers can be exposed to biological hazards such as pathogens. For example, COVID-19 was a serious biological hazard faced lately. Healthcare workers were at risk of getting infected due to their exposure to the biologically hazardous environment. Psychological hazards are more like stress and violent workplace environments that affect employee mentality. Supportive work environments can help to build up the mental health of all the employees within the organization. Another hazard we mentioned is the mechanical hazard. Moving machinery, sharp objects, and tools are considered in this category. And the final hazard type is the ergonomic hazard. What is ergonomics? Ergonomics is the concept by which we consider whether people fit with their work. Ergonomics is more like a human factor concerned with understanding the interactions between the elements of a system and a person. It has well-being and an economic goal, while it considers physical and psychological human aspects. (Jan Dul, 2008) Anything that does not fit employees into their workplace is considered an ergonomic hazard, such as Poor workplace designs and equipment. Occupational health and safety relates to all health and safety issues within any organization or workplace. It also involves laws and standards,

making the workplace environment better and safer. We also call this process workplace health and safety (WHS) and Occupational health. In addition to the moral obligations set forward through occupational safety, ensuring the protection of the people in the workplace, further makes management effective with the health and safety conditions, reducing the costs related to these accidents and risks. (Matilde A. Rodrigues, 2020) Workplace environment health and safety are critical because having a safe work environment leads to more productivity and efficiency of employees while promoting the physical and mental well-being of employees. Employees, too, have a great responsibility for implementing occupational safety. Responsibilities include adhering to safety protocols and guidelines established by the organization and actively participating in activities that promote health and safety. Further responsibilities involve cooperating with their employers and workplace colleagues and reporting hazardous situations to prevent risks.Precautions are better than cures, so it is always good to prevent hazards in the workplace, which can eventually cause a considerable risk. Many steps can be taken to avoid such situations and to implement good health and safety measures within the organization. Conducting regular safety risk assessments and implementing safety training will help us to identify new, evolving hazards and to educate the employees by ensuring that the existing safety control measures are much more efficient and effective while keeping the employees up to date with all the latest safety procedures within the organization. With the implementation of health and safety measures, companies with a strong safety culture manage to reduce the number of accidents that can happen. Also, having a strong health and

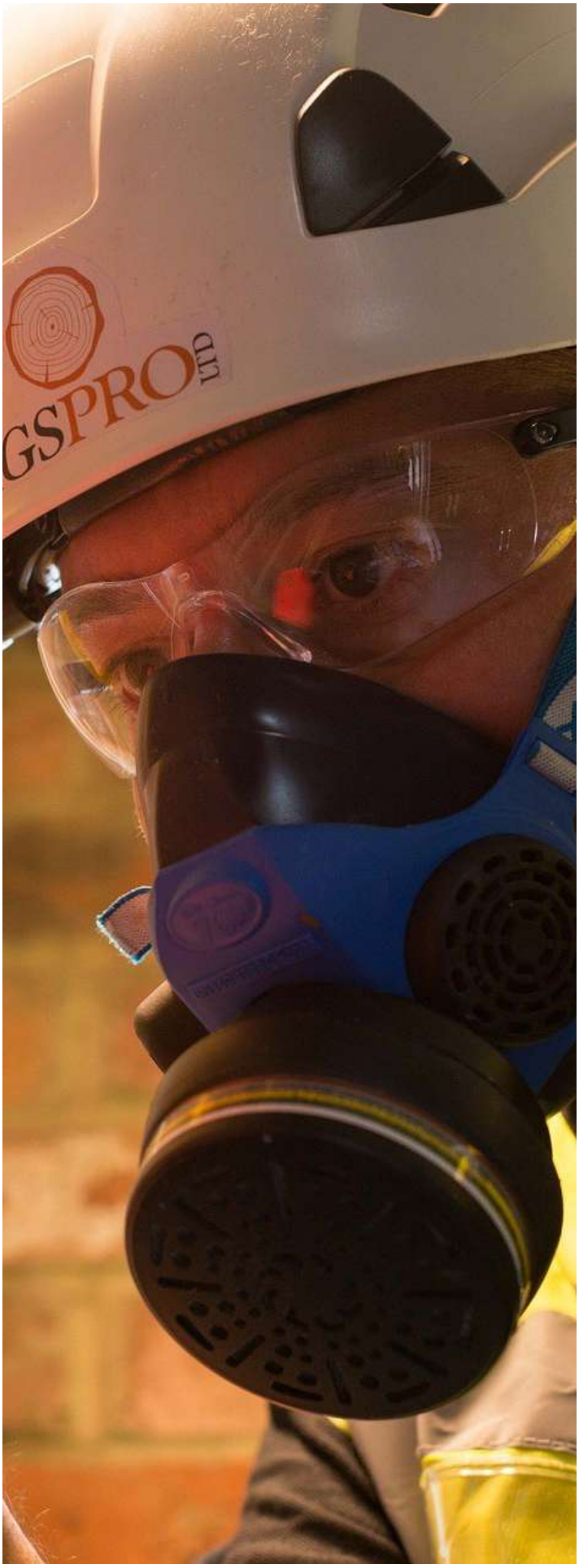
safety culture impacts employees critically. Employees feel safe and valued. Moreover, they get job satisfaction while contributing towards the company's long-term sustainability. A safety culture in an organization also ensures compliance with legal requirements and reduces the risk of fines and lawsuits, enhancing the company's reputation while attracting top talents, retaining customers, and creating an excellent public image.

In conclusion, workplace health and safety are critical components that every organization must focus on to make a sustainable and successful business in the emerging world. Adhering to safety measures creates a positive working environment while assuring employee safety and the positivity of the organization. Commitment to health and safety in the workplace is a considerable investment for the organization's future.

Mr. Kevin Peiris

BSc. (Hons) International Management and Business

23.1



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THE ROLE OF INDUSTRIAL MANAGEMENT IN SHAPING WORKPLACE HEALTH AND SAFETY

This article quantifies a critical balance between efficiency, productivity, and employee safety in industry settings. It has been pointed out that while industries stress most production output and meet their targets, the health and safety of the workers are equally important and should never be compromised.

It positions industrial management as the key driver to this effect, ensuring that measures which have something to do with safety are always incorporated into daily operations. It does this by setting the stage for the rest of the article, insinuating that good management practices create a workplace where productivity and employee well-being thrive. Good safety policies form the backbone of a safe workplace.

The industrial manager is responsible for formulating and applying comprehensive health and safety policies in response to industrial standards and legal requirements. Such policies provide an operating blueprint that dictates how every employee should conduct himself and work safely. Think of a manufacturing plant where workers are exposed to heavy machinery. I

ts industrial manager would count some safety policies involving, for example, using protective gear, following proper procedures in operating machines, and following procedures in emergencies.

These are not suggestions but must-do things if accidents are to be avoided. For instance, a worker working on a machine without safety gear is dangerous to their life and others around them. Safety training will always be a need in any industrial environment. Managers should, therefore, hold regular training sessions on the potential hazards, use of PPE, and emergency procedures. Training the workers with knowledge can reduce the vulnerability of accidents and injuries by industrial

management. Consider a chemical processing plant where employees work with dangerous substances daily. The manager of the industry arranges month-to-month training on safety for all the workers in the plant. In that training, they learn about details related to the hazards associated with the chemicals they deal with and how this can burn or give them respiratory problems.

They are also practically trained to wear personal protective equipment-PPE, such as gloves and respirators. Moreover, the training has also emphasized conducting various emergency response drills, such as how to act in case of a chemical spill or fire.

For instance, if the worst happens and some chemicals spill, workers would know what to do in such a situation: put on their PPE at once, notify other colleagues, and follow the containment procedures as learned in training. This training cycle ensures that all employees are suitably prepared to cope safely with hazards, and the chances of accidents and injuries happening in the workplace are reduced. One of the places where industrial management can make a marked difference is by integrating advanced technologies to improve safety.

Automation systems, sensors that check plant safety, and tools offering real-time conditions reduce human error and provide even more excellent protection for workers at an exponential rate. The same things can be achieved when industrial managers keep pace or sometimes adapt to technological changes to create safer and more productive workplaces. For a chemical manufacturing company, in the case of any hazardous condition, the sensor picks up the signal and immediately alarms the area, locking it down.

This technology reduces manual labor involving riskier tasks and helps in immediate sensing to prevent such disasters, ensuring much more safety

and efficiency in the workplace. Health and safety are not static; they continuously need attention and improvement. Through frequent safety audits, incident investigations, and feedback loops, managers can realize areas for improvement and make relevant changes to increase the safety protocol. Committing to continuous improvement ensures that safety is always paramount amidst evolving challenges. The construction company conducts a monthly safety audit to decide how well the current measures work. On one audit, he saw that workers were habitually circumventing a crucial step in putting up the scaffolds near fall hazards. He took the time to discover why this was happening and concluded that the instructions were unclear. He rewrote the safety manual concerning set-up procedures and reinforced this with a training session. Beyond compliance with health and safety regulations, which are uncompromising, industrial management has an ethical responsibility to protect the workforce. While compliance with health and safety regulations is uncompromising, ethical responsibility extends beyond mere compliance. The safest industrial leaders would consider worker safety as the top priority. For a textile manufacturing company, installing advanced ventilation systems reduces workers' textile dust exposure, even if current air quality meets legal standards, which may not be legally required but is a critical issue from an ethical point of view. Regular health checks for employees to check the long-term influence of working in a factory environment. A healthy workforce is a safe workforce. The industrial manager can encourage health and wellness programs that cover physical and mental well-being toward illness prevention and stress reduction through a comprehensive approach. Health and wellness

programs provide a comprehensive approach toward safety, where healthy employees are better able to work safely.

Example: - a software manufacturing company implements a comprehensive health and wellness program for its employees. The program includes on-site fitness facilities, access to mental health counselling, regular health screenings, and workshops on stress management. The industrial manager encourages participation by offering incentives like gym membership discounts and flexible work hours to allow employees time for exercise and relaxation.

Building a safe workplace requires industrial management to play a vast and multi-faceted role in its development. This can be made possible by enabling proper safety policies, ensuring continuous training of employees, investing in sophisticated safety technologies, and supporting health and wellness programs. In such an environment, productivity and employee well-being complement each other. The regular monitoring and continuous improvement of all safety protocols, coupled with a high degree of commitment related to legal and ethical standards, reinforce safety as a top priority for the workers. Success with any industrial operation is linked more to preserving health and ensuring safety for its workers- the backbone of sustainability for productivity than just meeting production targets.

Mr. D. D. Kodithuwakku

BM in Accounting and Finance

23.2 Batch

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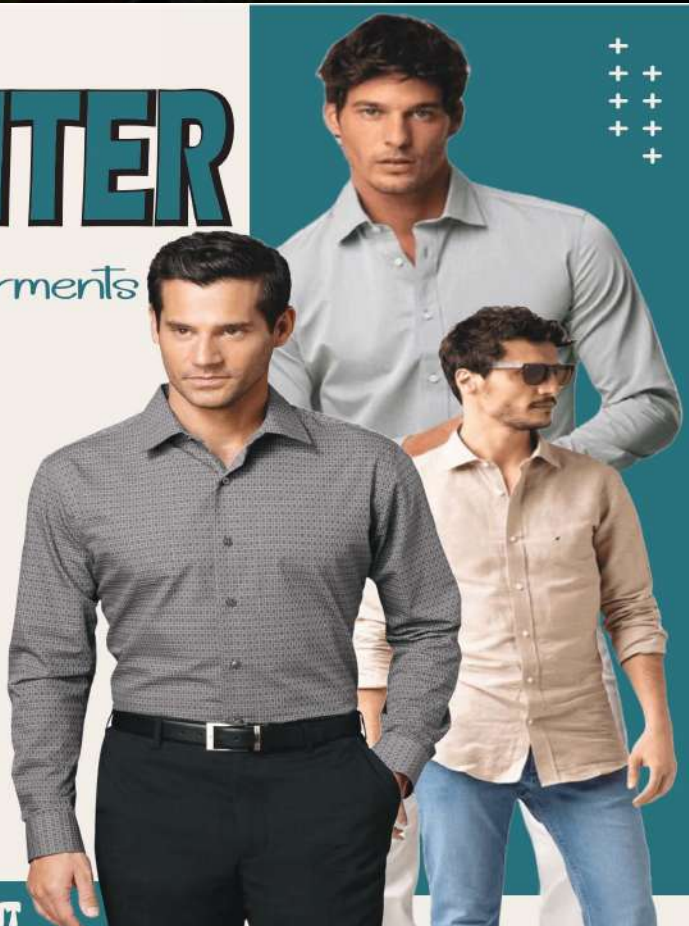

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ENHANCING INDUSTRIAL HEALTH AND SAFETY

A situation where no problems in maintaining good physical, mental, and social conditions which reduce workers regular or special activities.

Simply put, health means being free from illness or injuries, and safety means being protected from harm. The primary objective of industrial health and safety is protecting the safety, health, and welfare of employees, temporary workers, subcontractors, employers, customers, visitors, and all parties affected by the workplace environment.

Organizations maintain health and safety at cost because of following reasons, according to the moral reasons it is the right thing to do. Having to suffer injuries due to employees' work is not acceptable. According to international labor law statistics, more than 230 million people die due to work-related accidents or diseases every year. According to ILP, 3.9% of worldwide deaths are from occupational injuries or diseases. 15% of the world population incurs minor or major injuries from work per year.

When it comes to the economic/ financial reasons – when an accident or ill- health occurs, there can be direct cost (measurable cost arising directly from the accident) and indirect cost (arise indirectly due to the accident, difficult to measure) SHE UK had shown in a study that indirect cost could reach up to 36 times greater than the direct cost of an accident. Legal/social reasons , the law requires responsible people to reduce risk and hazards. It relates to the framework of international and national laws that govern the conduct of industries

and organizations. Most countries have set laws regarding organizational health and safety risk management. The critical player in health and safety regulations is the International Labor Organization. When it comes to the rules and regulations of health and safety in Sri Lanka, the Factories Ordinance (Act No 45 of 1942), Shop and Office Employees' Act of 1954, Workmen's Compensation Ordinance (Act No 19 of 1934), Maternity Benefits Ordinance (Act No 32 of 1939), Environmental Act No 47 and Amendment Act No 56 of 1988 are essential established set of legal framework. A hazard is any biological, chemical, environmental, psychological, physical, ergonomic, Transportational agent which can cause harm or damage to humans, other organisms, property, or the environment without control. For example, if we focus on the garment industry, we can see several types of hazards, such as biological hazards- poor sanitization leads to many diseases, and adequate handling of waste causes infestations.

Chemical hazards exposure to chemicals like fabric dye deadeyes and aching causes skin irritations and environmental pollution when chemicals are improperly stored and disposed of. Ergonomics hazards-repetitive tasks, leading to musculoskeletal disorders. Physical exposure to noise from machinery leads to hearing illnesses, poor lightening and ventilation leading to eye strain issues, and injuries from sharp tools. Transportation hazards-overloading vehicles and poor road conditions can lead to accidents, vehicle damage, fire hazards, etc. When it comes to the rules and regulations of health and safety in Sri Lanka, the Factories Ordinance (Act No 45 of 1942), Shop and Office Employees' Act of 1954, Workmen's Compensation Ordinance (Act No 19 of 1934), Maternity Benefits Ordinance (Act No

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Transportation hazards-overloading vehicles and poor road conditions can lead to accidents, vehicle damage, fire hazards, etc. A risk is a high or low chance that any hazard will cause somebody harm. As an example, let us focus on the garment industry's risks. Fire and electrical risks: the 2012 Bangladesh fashion factory fire led to over 100 deaths due to inadequate fire safety measurements. Occupational Health and Safety Management Safety Management System (OHSMS)18001 is fundamental to an organization's risk management strategy. It protects the workforce from hazards and risks, complies with legal requirements, and facilitates the continuous improvement of health and safety procedures in an organization. It is based on the principles of steady progress and constant improvement based on the **PDCA** model.

The benefits of adopting OSHAS are reduced workforce incidents, compliance with work safety regulations, prevention of ill health or work injuries, feedback improvement from national and international market markets, and increased credibility and brand image. According to the **Safety Health & Welfare at Work Act 2005,** employers should ensure the safety of employees, ensure the proper maintenance of plants and tools, ensure the absence of risks, provide sufficient information and, instructions and training, provide a better working environment while employees are responsible for taking care for the safety of themselves, wear personal protective equipment properly, obey with the given instructions etc.

ISO 45001 is a global standard for occupational health and safety management systems that provides a practical answer to improve health and safety. It proactively identifies sources or situations that have the potential to cause harm. It requires learning about the standard, developing an internal audit system, developing a management review system and procedure, and developing procedures for reporting, investigating, and taking action. If the organization meets the requirements, it will receive ISO 45001 certification. The benefits are improving employee safety, improving stakeholder confidence, lowering the cost of insurance, increasing overall productivity, and standing out as an industry leader.

ILO's occupational safety and management system: Plan policy, planning and implementation, evaluation, auditing, action for improvement, and continual improvement like the OHSMS PDSA model. Personal protective equipment (**PPE)** protects

workers from serious workplace injuries or illnesses. It should include head protection (hard hats, helmets), eye protection (safety goggles, face shields), hand protection (gloves), hearing protection (earmuffs, earplugs), chest and body protection (lab coats, coveralls jackets), respiratory protection: (masks, respirators), foot protection:(safety boots, steel toe shoes), fall protection:(harnesses, lanyards, safety nets)etc. This could be used as a preventive action.

It is important to note that maintaining the best **first-aid** process is essential. First aid provides temporary first assistance in emergencies until professional treatments. Organizations should possess a basic first aid kit at a minimum. This could be used as corrective action after an accident happens. Numerous exits can be exited in the workplace to prevent workplace fire accidents. Install fire alarms and extinguishers. Not place inflammable materials near risky areas. Organize fire drills regularly, etc. These actions are used as preventive actions for fire blasts. Health and safety are the stakeholders' responsibility, not just one individual party. Further, to minimize workplace health and safety problems, adopting preventive health and safety actions is better and more successful than corrective actions.

Ms. G. Theekshanie

BSc. in Business Management (Special) Industrial Management

21.1 Batch

08

INNOVATION IN INDUSTRIAL MANAGEMENT

ROBOTICS AND AUTOMATION IN INDUSTRIAL OPERATIONS

Changes in innovation management and approaches are causing a shift in businesses' functioning, resulting in increased efficiency, productivity, and competitiveness. As industries increasingly incorporate technologies such as automation, robotics, artificial intelligence (AI), and data analytics into the application processes, the efficiency of processes, costs of operations, and quality of products have been raised. In general, processes such as the employment of automation and robotics cut down on occupational hazards towards mistakes in production to a greater extent while improving the efficiency of the entire process.

Machine power is also professionally managed, and statuses are regularly suitable for production to minimize stalling. At the same time, innovations in SCM (supply chain management), such as the application of the Industrial Internet of Things (IIoT), facilitate quick and easy control over the location of materials and goods, solving critical delays in tasks. These trends also mean that companies will be less bloated and able to address current or potential marketplace changes. Also, modern technologies, materials, and designs play a critical role in enhancing sustainability as most enterprises embrace green energy and reduce pollution activities to achieve environmental conservation goals and compliance with legal requirements.

Robotics and automation play a significant role in industrial management. Robotics are defined as programmable machines capable of carrying out all the tasks autonomously at any time. Examples of robotics are medical robots, autonomous vehicles, service robots, entertainment robots, aerospace, and industrial robots. Automation may be defined in simpler and broader terms as using technology to perform duties without human beings. Many types of automation include Autonomous Mobile Robots (AMR), Automated Guided Vehicles (AGV), Articulated Robots, Cobots, and Hybrids. Medical robots, autonomous vehicles, service robots,

entertainment robots, aerospace, and industrial robots are a few examples of robotics. It has become a modern industrial operation, transforming traditional production processes in industrial management.

The evolution of automation and robotics is a remarkable journey marked by technological advancements and the evolution of automation and robotics. According to the, Early Innovations - In the pre-20th century, simple machines like levers, pulleys, and gears were used to get work done efficiently. The Industrial Revolution - That means the late 18th to 19th century. Here, steam power and mechanization are used to develop machines to get tasks. The 20th Century – The rise of automation means that Henry Ford revolutionized manufacturing in the early 20th century. The Emergence of Robotics (1960s to 1980s) - The first industrial robot, Uniate, was introduced in 1961. This is a significant milestone in robotics. 5. The Digital Revolution (1990s to 2000s) - Robotics became computerised by the rise of software technology. The 21st Century – Smart Automation and AI Integration has transformed robotics.

Robotics and automation are reshaping industrial management by operational efficiency, improving control, and transforming the workforce. Following are the impacts on the Industrial Management. Increased Productivity and Efficiency – Implement robotics and automation in industrial operations. Significantly enhance productivity and efficiency.

Optimizing resource allocation and minimizing waste leads to increased profits and competition. Enhanced Quality Control – Improve quality control by meeting product standards and reducing errors. Automated systems perform tasks with high quality. This will contribute to long-term success and competitive

advantages. Workforce Transformation – This is a crucial outcome of robotics and automation in industrial operations. This collaborative relationship between humans and machines maximizes productivity and innovations. Cost Reduction – This is an advantage of implementing robotics and automation. By decreasing manual labor, companies can retain expenses and maximize benefits. This contributes to improved profitability and sustainability.

In the industrial management sector, we can identify many future trends in robotics and automation. Robots are becoming smarter and more capable. Advanced Artificial Intelligence (AI) - Revolutionize industrial robotics and automation by enabling machines to make autonomous decisions. This evolution allows robots to adapt to new tasks. Collaborative Robots (Cabot's) - Designed to work alongside human operations, enhancing productivity and safety in industrial environments.

A robot intended for direct interaction between people and robots in a shared volume. Industrial Internet of Things (IIoT) - Interconnected sensors, instruments, and other devices are networked together, including manufacturing and energy management. Humanoid Robots – Robots resembling the human body in shape and interacting with human tools.

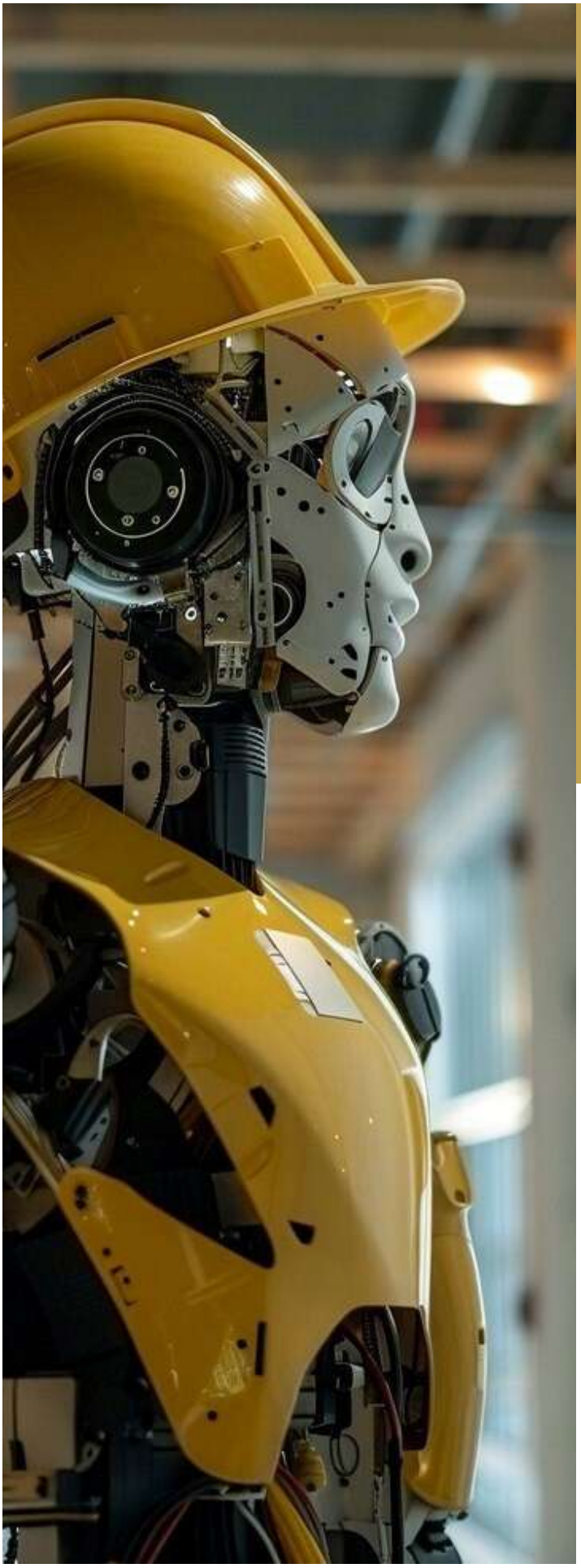
The first human robot is Ichiro Kato of Waseda University, Japan. Digital Twins – A digital model of the virtual representation of an individual real body. Widely used in the energy sector to support strategic project planning and optimise performance. The conclusion remarks that robotics and automation are revolutionizing the second sector of the economy thanks to increasing productivity, efficiency, and

quality. Organizations are enhancing their processes while also enhancing the skills and flexibility of their people through technology such as artificial intelligence or collaborative robots and IoT. With the advancement of such technologies, they will revolutionize manufacturing through Schnyder, making it smarter and more sustainable. Trends and growth are shifting towards the Inclusion of robotics and automation within the industries, making those regions effective and innovative in the competitive market.

Ms. W. K. Pooja

BSc. in Business Management (Special) Project Management

22.2 Batch



NAVIGATING THE FUTURE OF INDUSTRIAL MANAGEMENT

In the rapidly changing business world, progression is essential for development and staying relentless. Based on managing creation, resources, and work, current organizations are by and by creating, with new progressions changing how organizations work. These developments, like computerization, advanced mechanics, and the Web of Things, are helping organizations work more proficiently and diminish costs.

Robotization and advanced mechanics, for instance, have made assembling quicker and more exact by taking over dreary assignments, permitting laborers to zero in on additional significant and complex jobs.

The Snare of Things interfaces machines and gadgets to the web, engaging nonstop data grouping and examination. This helps managers to make better decisions, arrange support before issues arise, and restrict

creation delays. Besides, artificial intelligence is used to look at data, foster inventory chains, and anticipate market designs. Organizations can forestall gear breakdowns and lessen fixed costs by involving simulated intelligence for proactive support. This considerable number of headways is driving effectiveness and development in modern administration.

A developing area of advancement in modern administration is the push toward economic practices. As natural issues become more pressing, enterprises are tracking down better approaches to diminish their carbon impression and make activities more eco-accommodating. Green assembling is one of these endeavors, where organizations create merchandise while limiting waste, bringing down emanations, and effectively utilizing assets. Organizations are putting resources into energy-saving apparatus, high-level reusing innovations, and more manageable inventory network rehearses that cut down on excessive asset use to accomplish this.

Another significant idea that needs to be considered is the circular economy model. This approach urges ventures to plan items and cycles considering maintainability, advancing the reuse, reusing, and decrease of materials all through the whole lifecycle of an item. Rather than the conventional "take, make, arrange" model, the roundabout economy expects to save assets being used to the extent that this would be possible, lessening waste and ecological effect.

This remembers everything from involving reused materials for creation to making items that can be effortlessly fixed, reused, or separated into parts that can be reused. Together, these advancements are assisting enterprises in turning out to be more dependable stewards of the climate while further developing long-haul business effectiveness.

Smart assembling and the ascent of Industry 4.0 advances have carried critical developments to modern administration. Industry 4.0, the fourth modern transformation, alludes to the reconciliation of advanced innovations in the assembling area. This incorporates computerization, information trade, and high-level assembling advancements, all pointed toward making more effective and smart frameworks. One major part of Industry 4.0 is Digital Actual Frameworks, which interface computational parts with actual cycles. Machines can convey and work without human mediation in these sharp assembling plants, provoking faster and more careful creation.

Another basic movement is scattered enrolling, which grants bosses access and control data from a distance. This implies they can screen creation constantly from any place, further developing bearing and empowering better-coordinated efforts between various divisions or worldwide groups. 3D printing, otherwise called added substance producing, is one more jump forward. It permits organizations to deliver complex parts rapidly and on request, lessening enormous inventories or transportation requirements. Rather than trusting that parts will be conveyed, makers can print unequivocally definite things they need when required. Together, these progressions make fabricating more clever, versatile, and intuitive.

Organizations are embracing new developments, like wearable contraptions and security shows, to protect their delegates. Wise covers and wearable sensors, for example, can continuously screen workers' prosperity, following components like shortcomings or receptiveness to hazardous substances. This thinks about practical responses to risks, hindering accidents before they happen. Together, these improvements ensure that while machines and development advance, the human workforce stays gifted, safe, and essential to present-day accomplishment. In the modern world, more organizations are embracing cooperative and lithe administration practices to remain severe and rapid to highlight changes. These methods help businesses adjust to functional difficulties and work on productivity. One critical perspective is a cross-office joint effort, separating customary obstructions between various divisions. Rather than working in seclusion, groups from different pieces of

the organization cooperate to tackle issues and drive advancement. This united approach makes it more transparent to share contemplations and resources, provoking better autonomous heading and faster outcomes.

Agile methodology, an idea initially developed in the product business, is utilized in modern administration. Nimble administration centers around working in iterative cycles, where criticism is ceaselessly assembled, and enhancements are made along the route. This adaptability permits organizations to change their cycles rapidly, further develop item quality, and remain lined up with quickly changing business sector requests. By consolidating coordinated effort and readiness, organizations can become more proficient, creative, and ready to deal with the speedy modern climate.

In conclusion, advancements in modern administration impact organizations that can increase effectiveness and lessen costs by taking on new advances like computerization, artificial intelligence, and brilliant assembly.

Ms. H. M. S. M. Herath

BSc in Business Management (Special)

Project Management

22.2 Batch

SIMPLICITY

In an industry filled with complex processes, supply chains, and technologies, simplicity is often the most powerful strategy. Simplifying workflows, reducing unnecessary steps, and focusing on core objectives can significantly boost efficiency and effectiveness. The challenge for industrial managers is to identify areas where complexity adds little value and to streamline operations without sacrificing quality. Simplicity not only reduces costs but also improves clarity, making it easier for teams to execute their tasks and for leaders to make informed decisions. True industrial sophistication

09

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