

The role of leadership in developing: Innovation and Quality Culture

Mihai Dumitrescu¹, Ioana Stanescu^{2*}

^{1,2}Department of Design Engineering and Robotics, Technical University of Cluj-Napoca, 400641 Cluj-Napoca, Romania

Email: Stane.sc.rom@muri.utcluj.ro

*Corresponding Author

Article Info	ABSTRACT
<p>Article history:</p> <p>Received : 13.07.2024 Revised : 24.08.2024 Accepted : 15.09.2024</p>	<p>For organizations that want to maintain a competitive edge, today's rapidly evolving business landscape demands that much attention is given to innovation and quality. Effective leadership is the key to cultivating such a culture. This article discusses the different things leaders do to foster around a setting where creativity, continuous improvement, and excellence abound. Leadership spells out the qualities of an organization's values, behaviors and aspirations. Genuine leaders fill their teams with a sense of commitment to innovation and quality that empowers them to break the mold, err on the side of judicious risk, and strive for the absolute height in all that they do. They shape the DNA and drive sustainable success in the company by their vision and action. To this critical topic, we'll take a look at the ways of doing things available when we're trying to form an innovative culture of excellence. We'll find out the words leaders need to use to turn their organizations into centers of creativity and excellence, from setting up expectations to empowering the employees, giving them learning opportunities and celebrating achievements. This is the journey to learn how visionary leadership can free the potential of teams and organizations and take them to the future of never ending growth, adaptation and success.</p>
<p>Keywords:</p> <p>Innovation Management; Leadership Strategies; Organizational Culture; Quality Enhancement; Strategic Development</p>	

1. Understanding Organizational Culture

The building block for building innovation and quality initiatives is organizational culture. What it refers to is set of values, beliefs, and practices that it takes shape in a company and guide how employees think, respond and work together in a company. Quality goals and such a strong culture working together can become a great catalyst to success. Organizational culture, and, by extension, the culture within any organization of any size, depends on the leadership within an organization. Actions, decisions, communication style all indicate what is valued and what is expected from each other within the company. Leaders lead by modeling the behaviors that help support innovation and quality consistently, and it is a reinforcement of these priorities for the entire organization.

Intentional effort has to be put in to creating that culture of innovation and quality. The rule needs to provide a platform where creativity is allowed, risk is supported and continual improvement is established as a norm. The process can comprise of setting definite goals, also giving resources that the

individual must need, and acknowledging those behaviors which are relevant to the goals. According to one key aspect of cultivating such a culture, we must promote psychological safety. When employees are allowed to come up with ideas and to try new ideas, to experiment, and even to fail with little or without fear of retribution, they are more likely to engage in innovative thinking and to pursue quality improvement. In order to encourage this safety, leaders can create open dialogue, appreciate different perspectives, and view failures as learning opportunities.

The other important aspect is aligning the organization systems and processes with innovation and quality goals. Such may entail having to dump the evaluation criteria, tweak incentive approaches or incorporating new collaboration tools. Really, leaders are responsible for creating a cohesive organization where innovation and quality are natural by doing everything to provide organisational support and reinforcement of the desired culture [1]-[5].

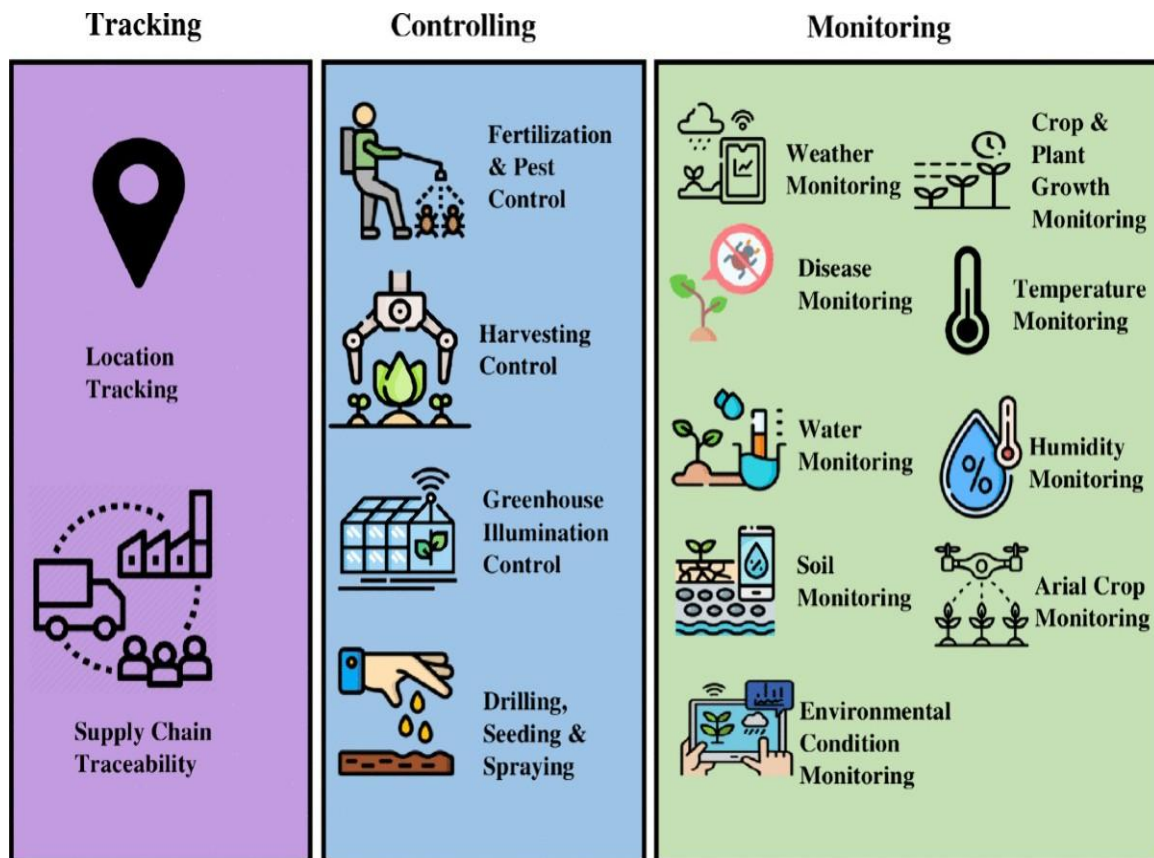


Fig 1. Setting Clear Vision and Goals

A compelling vision is a north star, helping organizations to innovate and become more quality. A leader must also paint a vivid, inspiring picture of the future that all employees at all levels can relate to. It will be this vision that will aim to show the value of innovation and quality in aiming for a long term success.

Finally, it is important to translate this overarching vision into some concrete goals in order to drive actions. Leaders should create with their teams concrete goals on innovation and quality improvement. These goals serve as a goal focus and direction; they help employees know how their individual effort impacts the big picture.

The key to setting goals, be it New Year's resolutions or otherwise, is to strike that balance. The stretch goals can also instill creativity and bring out the best in teams, but they should not be so unattainable that they discourage real effort. Moreover, leaders should also make sure that there is alignment of goals among different units and levels of the organization to build cohesion as well as collaboration.

It is very important to communicate regularly regarding the progress toward these goals. It is the responsibility of a leader to give frequent updates sharing the successes, and at the same time addressing the challenges openly. This transparency helps gain traction and provides a course correction tool.

Creating a goal setting process that gets the employees involved will increase buy in and commitment. Teams can help leaders understand what they think is possible and what they need in order to succeed with aggressive goals. It isn't just the collaborative approach that results in more realistic goals, but in its effectiveness it actually gives employees ownership of the innovation and quality agenda [6]-[11].

An innovative and quality focused culture is built around open communication. If leaders want individuals to share ideas, feedback and then information with the whole organisation, the channels and practices must create the settings to enable that to flow. This openness facilitates collaboration, problem-solving, and continuous improvement. Leading by example is one of the ways in which fostering open communication works. Admitting mistakes, seeking input and actively listening to others clearly sounds like something good, namely how leaders would share their advice with employees, but it also creates an environment where employees feel safe to do the same. It builds authenticity and promotes honest dialogue at all levels of the organisation.

Regular idea sharing forums can greatly enhance the efforts of making innovation. These could include brainstorming session, innovation challenges or even cross functional project teams. The leaders should make sure that these platforms

are inclusive and allow voices from different background and perspective to be heard. Quality improvements can only be driven by feedback loops. Leaders need to set up channels through which employees, customers and other stakeholders can give feedbacks on what to be done on products, services and processes. This feedback needs to be sought actively for use in decision making and improvement, carefully considered, and used to drive decisions and improvement initiatives.

In large or geographically dispersed organizations, technology can be used to enable open communication. Leaders should use collaborative tools, internal social networks, or any other digital platforms to break down silos and make it easier for people to share information.

Also note that an open communication means that you are also receptive to dissenting opinions and constructive criticism. On the other hand, leaders who promote an environment of challenging the status quo are more likely to identify ways to solve quality problems and find solutions to processes before they become the big problems that cycle back to them [12]-[17].

2. Empowering Employees

There has been increasing recognition that innovation and quality in an organization depends especially on employee empowerment. Trust and support in making decisions, taking calculated risks, and pursuing new ideas leads to more contribution of their potential by the individual for the achievement of organizational goals.

Table 1: Leadership Practices that Foster Innovation and Quality Culture

Leadership Practice	Description	Contribution to Culture
Visionary Communication	Clearly articulating future goals and directions	Aligns team efforts and encourages innovation
Empowerment and Delegation	Trusting teams with decision-making authority	Fosters ownership and creativity
Continuous Learning Environment	Encouraging skill development and knowledge sharing	Promotes adaptive and innovative behavior
Open Feedback Mechanisms	Facilitating two-way communication across all levels	Builds trust and improves process effectiveness
Recognition and Reward Systems	Celebrating innovative and quality-focused efforts	Reinforces desired cultural traits

Creating an empowering environment requires leaders to play their role. It starts off with the giving out authorities and responsibilities only to those who deserve them. Leadership consists of entrusting employees with real work, with meaning, and with the freedom to carry it out.

One other aspect of empowerment is to provide access to necessary resources. It encompasses tangible supports like tools and technology as well as intangible ones like time, information, and supports. Employees are dependent on the leaders to give them what they need to pursue innovative ideas and to continue to produce high quality standards in their work.

Stimulating calculated risk taking is vital for innovation to take place. In such a space for experimentation built by the leaders, failure is interpreted as a learning opportunity rather than as a cause for punishment. The shift in this mindset

can inspire employees to go beyond their normal boundaries in search of breakthrough solutions.

Empowerment relies greatly in reinforcing recognition and rewards. As leaders you have to acknowledge and celebrate cases when employees demonstrate initiative and self-starting, solve problems creatively, come up with quality improvements or things of that nature. This positive reinforcement helps to keep the employees engaged and indicates which behaviors are valued within the organization.

Employee empowerment also includes receiving professional development opportunities. Leaders invest in skill building, mentorship programs, career growth pathways, showing their belief in their team’s success. Apart from improving capabilities, this also boosts motivation and loyalty [18]-[21].

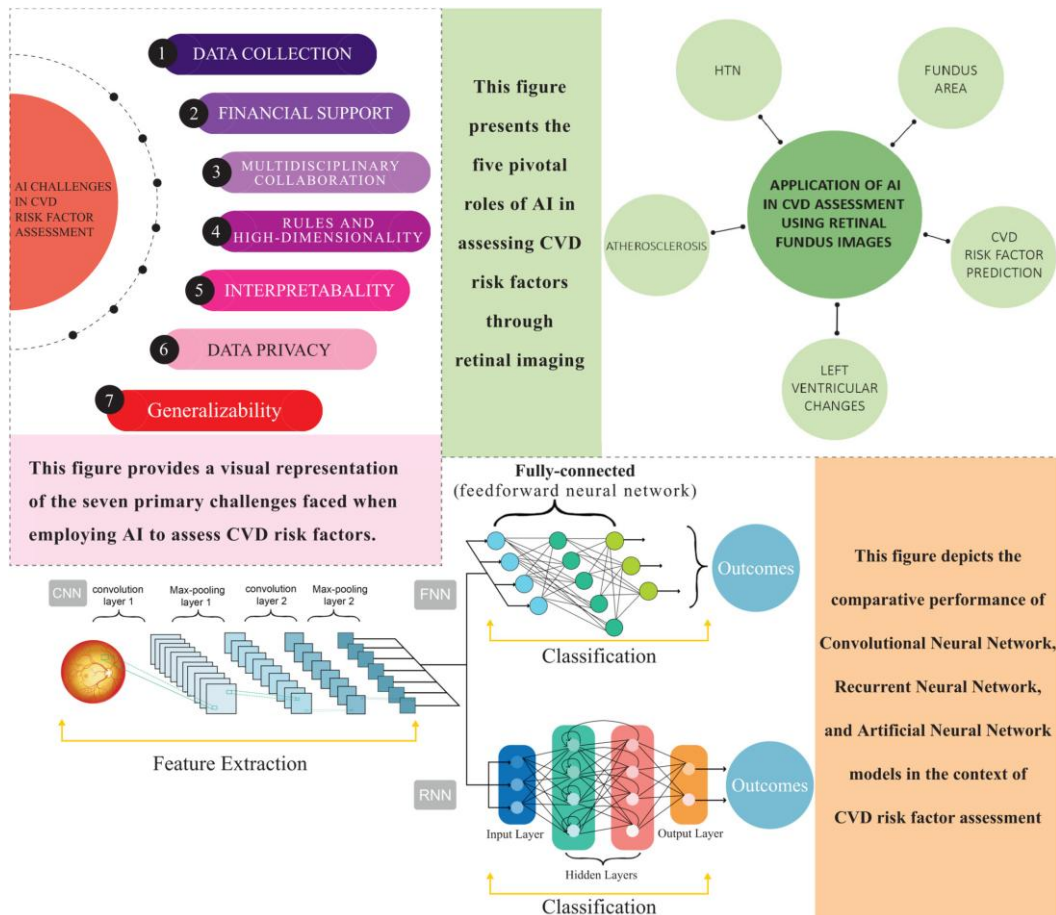


Fig 2. Promoting Collaboration and Teamwork

Often innovation and quality improvements can grow and emerge from the synergy of the wide range of diverse backgrounds and skillsets. To release this collective potential, leadership must foster collaboration and teamwork where teams can leverage distinct energy and insights. Breaking down silos and building a culture of cooperation makes organizations quick ideas and problem solving.

A very good (and effective) way is to form cross functional teams or task forces on specific innovation and/or quality initiatives. These are groups of people that form across business areas, people with badges and uniform, as well as along all the skill sets, joining hands to solve challenges and take advantage of opportunities. These teams should operate with a little freedom to experiment with creative solutions, while leaders should clarify expectations and resources in order to operate and achieve project objectives.

In the event of hybrid or remote work, we may want to implement collaborative workspaces and tools to ease teamwork. To facilitate communication, sharing of documents, as well as project management between remote teams, leaders should invest in technologies that enable seamless communication. In addition, while tools are important, they're not enough – leaders also

need to exhibit and push for collaborative behaviors.

There is a need to develop a culture of knowledge sharing that makes people collaborate. They can create regular knowledge exchange session, internal repositories of best practices, or implement mentoring programs. Organizations can better encourage employees to share their expertise as well as learn from other employees, enabling their shared intelligence to work for them.

To reinforce the importance of the collaboration, it's essential to recognize and reward collaborative efforts. They should discuss the case of successful team outcome, recognize the employees' roles in delivering teamwork output and incorporate team work metrics in employees' performance evaluations. By putting emphasis on collective success, thoughts are shifted away from silo to a more collaborative thinking.

Collaboration is effective only through building trust with your team members. Individuals can build trust within the team by engaging in team building activities, transparent communication, and dividing of responsibilities and recognition. On the other hand, when team members trust one another there is a tendency for one to push ideas,

give feedback, and help out other team members [22]-[26].

3. Encouraging Continuous Learning and Development

Continuous learning and development are a crucial requirement to remain competitive in a fast moving business landscape for winning in the battle to be an innovator and a brand of quality. For leaders to fulfill the mandate to support, encourage, and foster ongoing education and increasing skill enhancement, the culture of the organization must be amenable to this.

The implementation of robust learning management system which provides various training program / work shops / course is considered an effective approach. The resources for these skills should be both technical that are specific to roles and soft skills that enable good innovation mindsets and quality realities. Leaders should also facilitate goal setting by employees and make allowance for time spent on learning activities.

Mentoring programs can be solid instruments for the transfer of knowledge and skill. Organisations can facilitate organic learning and encourage cross generational collaboration by pairing experienced and those looking to develop in particular areas. We recommend that leaders take an active role these programmes as both mentors and as being supportive of the mentorship efforts within the company.

This is important to create opportunities for experiential learning for developing practical innovation and quality improvement skills. Thus, leaders have the option to transfer employees to other roles in this company, put them into other departments in order to carry out special projects, or invite them to attend industry conferences and workshops. Experiencing this widens viewpoints and exposes them to new challenges and ideas.

The learning process is based on feedback and reflection. Regular check-ins are needed for the

leaders to discuss development goals completed and discuss progress also, giving employees feedback and asking them to reflect. The continued dialogue makes sure that learning continues to match individual and organizational objectives.

It recognizes and celebrates the merits of learning achievements within the organization. Acknowledging employees who are certified in certain skills or have applied new skills to help solve problems or share it with others as a way to help others. This recognition tells us that there is a high value on continuous improvement and gives fuel to keep moving forward with learning [27]-[29].

Nurturing Creativity and Innovation

In the competitive market of today, creativity and innovation are of utmost importance for the organization to lead. Leaders are the ones that create an environment where the novel ideas can be cultivated and turned into the convincing solutions. This needs to be addressed on an individual and on an organisational level.

A big part of one strategy is setting aside time and space for creativity. Instituting “innovation days” whereby teams or the entire company spend a portion of their work time dreaming up new ideas that are unconnected to their day jobs is one way they can do that. For instance, another form of this approach is evidenced in Google’s famous “20% time” policy, which has allowed for the development of numerous successful products.

It is essential to encourage different views. Leaders need to actively solicit input from people that have different backgrounds, experiences and mental process. The difference in thoughts can bring out the unique combination of ideas and the breakthrough innovations. To achieve this exchange of alternate viewpoints, perhaps creating cross functional teams or even interdepartmental brainstorming, is one way.

Table 2: Impact of Leadership on Organizational Innovation and Quality Metrics

Metric	Without Strong Leadership	With Strong Leadership
Employee Innovation Participation (%)	34	76
Implementation Rate of New Ideas (%)	21	63
Quality Improvement Initiatives/Year	2	8
Customer Satisfaction Score (out of 10)	6.8	9.2
Product/Service Defect Rate (%)	14	5

Structuring a process to turn creative ideas into physical outcomes can be a helpful way to implement an effective process for that innovation. Clear idea submission, evaluation, and development pathways should be set up by leaders. These could include innovation challenges,

hackathons or some other similar form of moving concepts from an ideation to implementation. Helping maintain momentum and prove dedication to innovation is to provide resources and support to promising ideas.

An important step towards creating a culture that tolerates and learns from failure is to learn to tolerate and tolerate failure. It is up to leaders to redefine failure as an opportunity for learning rather than as a reason to punish. In short, "intelligent failures" – those stemming from good thought experiments – help foster calculated risk taking and perseverance in the face of failure. In such case, technology can leverage support innovation efforts significantly. The leaders should search for methods of idea management, virtual collaboration, and fast prototyping. However, these technologies can shorten the innovation process, as well as bring more participants into the process (remote team members, partners, etc) [30]-[31].

4. Driving Quality Excellence

Quality excellence is an ingredient of sustainable success in any industry. Therefore, leaders have to instill a commitment to quality in every area of the organization, from product development to customer service. It means an organized way and a culture with exactitude, reliability and ongoing improvement. Robust quality management systems form one key strategy. Leaders should establish clear standards, processes and metrics for measuring quality performance so that quality performance is guided. Such an activity may entail employing Six Sigma, or Total Quality Management frameworks, respectively tailored to fulfill the needs and context of the organization.

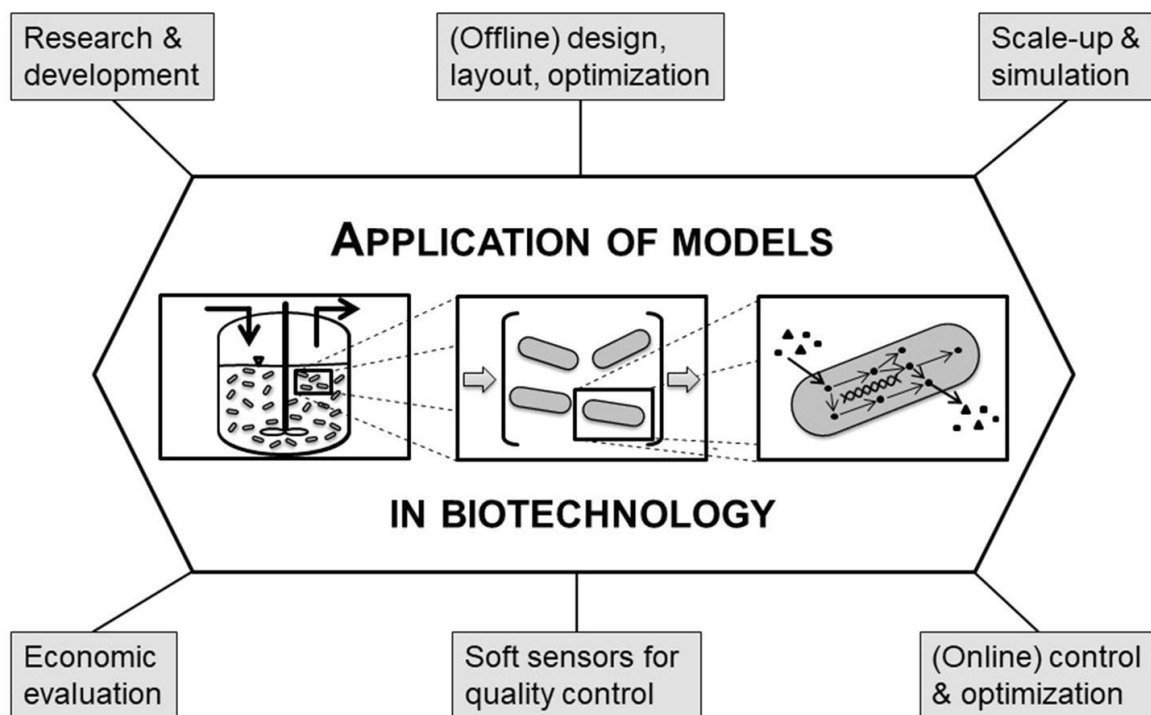


Fig 3. Fostering Open Communication

It is crucial to enable employees to take ownership in quality. Leaders should ensure that team members are trained on quality principles and tools and are encouraged to identify and solve quality problems in advance. Fostering a sense of collective responsibility for high standards can be accomplished by creating quality circles or improvement teams. Driving quality excellence requires using data to drive decision-making. A better system for collecting, analyzing and acting upon quality related data is a better investment for leaders. Perhaps it would be the use of statistical process control, regular auditing or predictive analytics to predict quality problems before they even happen. Customer feedback should have a crucial role to play in quality improvement activities. The

gathering and responding to customer insights on product or service quality of a leader must be established. This helps maintain quality initiative alignment with customer expectations and market demands. This recognizes quality achievements as a valid practice in the organization and rewards them. Leaders can create quality award programs, provide success stories in communication with the company, or place quality metrics in performance evaluations and incentive structures. It beats recognition in that this recognizes quality excellence where improvement efforts will continue. They are based on the premise that continuous improvement is a culture that must be fostered to sustain quality excellence. In fact, leaders should push their employees to find

dedicated ways to improve processes, minimize flaws, and increase productivity on an endless basis. Embedding this mindset of continual refinement through the organization can be achieved using techniques such as Kaizen events or regular process reviews.

Aligning Organizational Systems and Processes

For real innovation and quality culture, leaders have to make sure that organizational systems and processes are aligned with innovation and quality objective. This alignment gives room for natural and supportive reinforcement of quality focused and innovative thinking behaviors.

The performance management system is an important area of alignment. Performance metrics, evaluation criteria and reward structures need to be reviewed and changed to include the weight of importance of innovation and quality. Some of these metrics may include incorporating innovation KPIs or recognising quality improvement efforts or rewarding collaborative behaviours that bring about these goals.

Also, it is suggested that resource allocation processes be examined so that they encourage innovation and quality initiatives. These strategic objectives must have leaders set clear criteria for prioritizing and funding projects that are aligned with them. It may consist of setting up innovation budgets, allocating time for implementing quality improvement activities, or applying stage gate processes to evaluate and progressing innovative ideas. The process of a culture of innovation and quality depends on communication systems. It's not just about popping whatever needs to be communicated into Slack to the masses, or about repeating whatever could sound like niceties by way of company wide emails or meetings. Sharing success stories, giving updates on key initiatives, and soliciting feedback are all simple ways to keep people engaged, focused and invested in innovation and quality efforts.

Concepts must be designed so they can be selected, replicated and altered quickly to evaluate outcomes. Frameworks such as design thinking or agile methodologies can also be implemented by leaders to encourage development through iterations, pivots as feedback is received. It also accelerates innovation and quality improvement efforts when empowered teams are in a position to make decisions at the levels between which decisions are authorized. Therefore, the capturing and disseminating of insights that drive innovation and quality are essential knowledge management systems. Organizations should invest in the tools and practices that make it simple and easy to share best practices, lessons learned and creative ideas throughout the organization. It could be setting up communities of practice, starting the Idea

Management software or setting up an internal innovation hub.

The talent management processes should be aligned to attract, develop and retain individuals who can be motivated to assist the organization in achieving its goals regarding innovation and quality. In case leaders, they should review recruitment strategies, onboarding programs and career development pathways to make sure that they support to build capabilities and mindsets for succeeding in this new kind of jobs.

5. Measuring and Monitoring Progress

To know that the efforts to create innovative and quality products are paying off, leaders in the industry need to have robust systems to measure and monitor progress. The use of this data in order to make informed decisions, to identify areas of improvement and to show the effectiveness of these types of initiatives is possible here.

A balanced scorecard of key performance indicators (KPIs), such as developing, has been proven to be effective in tracking progress on various dimensions of innovation and quality. Leaders from every department should collaborate with their teams to identify the metrics that represent leading indicators and lagging indicators of success. Measures such as number of new ideas generated, time-to-market for new products, customer satisfaction score, and defect rate are a few of the things these might refer to.

It is essential to keep momentum and accountability by regularly reporting and reviewing these metrics. With this, leaders should understand that there should be a cadence around performance discussions at various levels of the organization (teams to executive reviews). They supply time to appreciate the successes, address the challenges, and readjust strategies as wanted.

Comparing to industry standards or to best in class organizations can bring valuable context to how progress is being made. Types of relevant benchmarks should be sought out and then used by influential leaders to motivate people to set ambitious yet reachable targets for innovation and quality performance. An external perspective can act as motivation for new ideas and also suggest what to improve on.

Periodic assessments of the organization's innovation culture and quality culture may yield insights. Surveys, focus groups or external audits can be used to measure employee's perceptions, identify barriers and monitor changes in mindsets and behavior through time. While this qualitative input is an important complement to the quantitative metrics, it gives a holistic picture of progress.

Using such tools of data analytics and visualization can give the organization a step in the right

direction, towards deriving actionable insights from performance data. Real time monitoring and feedback of innovation and quality metrics should be invested in through capabilities. They can be useful in patterns discovery, issue anticipation, and opportunity to improve.

They should evolve as the organization's innovation and quality initiatives mature. However, measurement framework is something that the leaders ought to regularly check and prolong them as per strategic objectives. One could include introducing new metrics, changing targets, or phasing out measurements that aren't informative anymore.

Overcoming Challenges and Resistance

Change to foster an innovation and quality culture usually means large change, and naturally there are challenges and resistance in the organization. To create measurable impact from their initiatives, leaders need to be ready and prepared to address these barriers with all their might and proactively. An often cited challenge is getting rid of ingrained mindsets and behaviours that are contrary to the goals of innovation and quality. They should spend time communicating the rationale for change and explaining the benefits for people and the organisation. The new direction can be built with buy in and ownership by giving employees the chance to voice concerns and offer ideas.

Beyond the barriers, resources can limit innovation and quality improvement efforts. Allocating resources might require reprioritizing already existing or reach outside for partnership to fill the gap. Early wins and ROI from the initial investments can build support to continue allocation of additional resources. Silos within the departments or functions may prevent collaboration and knowledge sharing that are critical to innovation and quality excellence. Break in half these barriers, leaders should implement cross functional projects, job rotation, or collaborative workspaces. In order to reward and recognize collaborative behaviours, they should be recognized for their importance of working across boundaries.

The fear of failure can, or rather, will, kill your innovation efforts. To foster such an environment for calculated risks and to see failure as an opportunity for learning, leaders have to provide a psychological safe environment for their people. Personalising such stories will help to normalise the notion that failure is part of the innovation process as it happens.

Can be hard to keep the momentum up over the long term when you are competing priorities or dealing with pressing short term issues! Leaders should take time to applaud small wins and little

milestones to maintain the energy and engagement. Focus and commitment can be reinforced by linking innovation to quality initiatives and to the performance overall of the organization. One of the most problematic resistances comes from middle management because they are the ones responsible for translating top-level strategies to day to day actions. Middle managers need to be supported with the skills and mindsets they need to innovate and deliver quality results within their teams and leaders need to help them get there.

6. Sustaining Long-Term Success

An innovation and quality culture development is a continuous journey that demands the perpetual commitment and modification. To be successful in the long run, leaders have to make sure these priorities are imbedded deeply into the organization's DNA. Addressing the problem of recipe and process change necessitates adopting one key strategy: institutionalizing innovation and quality practices through formal processes and structures. On the one hand, it may involve forming innovation moths, or quality circles, or planning and implementation of continuous improvement methodologies broadly such as Lean or six sigma. To make sure these practices persist after the end of an individual champion or an initiative, leaders can incorporate them as part of the organization's standard operating procedures. It is important to sustain the momentum by developing a pipeline of future leaders who are capable of doing the work of innovation and quality. Leaders must invest in leadership development programs that cultivate these competencies, create mentoring opportunities for members, and invest in career paths that promote original thought and behavior oriented toward quality. Regular innovation and quality initiative refreshment is important so you don't stagnate. Periodic reassessment of the strategies is encouraged by leaders, new challenges or new focus areas are introduced, or the organization looks for fresh perspectives from inside and outside the organization. It is this ongoing evolution that keeps you engaged and efforts still reflect on what it is that is changing in a business environment.

The building of external partners and networks during the innovation sustainability and quality excellence can provide an invaluable input and support. Relationships with customers, suppliers, universities, and, indeed, competitors should be cultivated by leaders to remain attuned to new trends, share lessons learnt, and learn from complex problems together.

It is imperative to embed innovation and quality metrics in the organization's long term strategic

planning and assigning goal setting processes. Making these priorities part of the company's vision and objectives creates a vision so that leaders can focus on the same things consistently and have the resources as well.

7. CONCLUSION

The inability to sustain innovation and quality is among the foremost reasons it is fundamental to create a learning organization mindset. Leaders ought to be promoting continuous reflection, knowledge sharing, continuous adaptation based on failures and successes. Capturing and disseminating lessons learned can help the organization evolve and improve over time by creating systems for it. Finally, the leaders should demonstrate the leadership by example, to continue their vision for innovation and quality. Reinforcing these priorities throughout the organization is a continual by-doing-what-they-do-all-the-time, they lead with curiosity, openness to new ideas and excellence in their own work. Finally, leadership offers multiple and ongoing methods of creating a culture of innovation and quality. Leaders can establish conditions for the success of creativity and excellence by defining clear vision, empowering employees to deliver, aligning systems that support the objectives, monitoring and measuring, and addressing challenges. Such innovation and quality commitment not only ensures the organizational success but it also gives a competitive edge over other competitors in the constantly changing business environment.

REFERENCES

- Lueke, R.; Katz, R. *Managing Creativity and Innovation*; Harvard Business School Press: Boston, MA, USA, 2003.
- Nguyen, T.N.; Shen, C.H.; Le, P.B. Influence of transformational leadership and knowledge management on radical and incremental innovation: The moderating role of collaborative culture. *Kybernetes* 2022, 51, 2240–2258.
- Chen, J.; Reilly, R.; Lynn, G. The Impacts of Speed-to-Market on New Product Success. *Engineering Management. IEEE Trans.* 2005, 52, 199–212.
- Kessler, E.H.; Bierly, P.E. Is Faster Really Better? An Empirical Test of the Implication of Innovation Speed. *IEEE Trans. Eng. Manag.* 2002, 49, 2–12.
- Rennung, F.; Luminosu, C.T.; Draghici, A. Service Provision in the Framework of Industry 4.0. *Procedia—Soc. Behav. Sci.* 2016, 221, 372–377.
- Umair, S.; Waqas, U.; Mrugalska, B.; Al Shamsi, I.R. (Eds.) *Human Perspectives of Industry 4.0 Organizations: Reviewing Sustainable Performance*; CRC Press: Boca Raton, FL, USA, 2024.
- Pratap, Nalajala Lakshman, et al., "A Novel Method of Effective Sentiment Analysis System by Improved Relevance Vector Machine," *Australian Patent AU 2020104414* (2020): 31.
- Bandyopadhyay, P.K.; Leonard, D. The value of using the Baldrige performance excellence framework in manufacturing organizations. *J. Qual. Particip.* 2016, 39, 10–14.
- Jankalová, M.; Jankal, R. How to Characterize Business Excellence and Determine the Relation between Business Excellence and Sustainability. *Sustainability* 2020, 12, 6198.
- Fonseca, L.; Carvalho, F. The Reporting of SDGs by Quality, Environmental, and Occupational Health and Safety-Certified Organizations. *Sustainability* 2019, 11, 5797.
- Kassem, R.; Ajmal, M.; Gunasekaran, A.; Helo, P. Assessing the impact of organisational culture on achieving business excellence with a moderating role of ICT. *Benchmark. Int. J.* 2019, 26, 117–146.
- Moeuf, A.; Pellerin, R.; Lamouri, S.; Tamayo-Giraldo, S.; Barbaray, R. The industrial management of SMEs in the era of Industry 4.0. *Int. J. Prod. Res.* 2018, 56, 1118–1136.
- Sanders, M.S.; McCormick, E.J. *Human Factors in Engineering and Design*; McGraw-Hill Education: New York, NY, USA, 2020.
- V. Siva Nagaraju, et al., "A Hybrid PAPR Reduction Technique in OFDM Systems," 2020 IEEE International Women in Engineering (WIE) Conference on Electrical and Computer Engineering (WIECON-ECE), Bhubaneswar, India, 26-27 Dec. 2020, pp. 364-367.
- Fuentes, M.; Montes, F.; Fernández, L. Total quality management, strategic orientation, and organizational performance: The case of Spanish companies. *Total Qual. Manag. Bus. Excell.* 2006, 17, 303–323.
- Perdomo-Ortiz, J.; González-Benito, J.; Galende, J. Total quality management as a forerunner of business innovation capability. *Technovation* 2006, 26, 1170–1185.
- Marôco, J. *Análise de EquaçõesEstruturais: FundamentosTeóricos, Software e Aplicações*; Report Number: Pêro Pinheiro, Portugal, 2010.
- Venanzi, D.; Faustino, D.L.; Silva, O.R.; Hasegawa, H.L. Lean Six Sigma—Multiple case study. *Rev. GestãoInov. Tecnol.* 2017, 7, 4059–4073.
- Gleeson, F.; Coughlan, P.; Goodman, L.; Newell, A.; Hargaden, V. Improving manufacturing productivity by combining cognitive

- engineering and lean-six sigma methods. *Procedia CIRP* 2019, 81, 641–646.
20. P. Ashok Babu, et al., “Fake Currency Recognition System Using Edge Detection,” 2022 Interdisciplinary Research in Technology and Management (IRTM), Kolkata, India, February 24-26, 2022, pp. 1-5.
 21. Kumar, P.; Singh, M.; Phull, G.S. Production lessening analysis of manufacturing unit in India: Lean Six Sigma perspective. *J. Proj. Manag.* 2019, 4, 281–290.
 22. Al Amri, T.; Khetani, K.P.; Marey-Perez, M. Towards Sustainable I4.0: Key Skill Areas for Project Managers in GCC Construction Industry. *Sustainability* 2021, 13, 8121.
 23. Bodrow, W. Impact of Industry 4.0 in service oriented firm. *Adv. Manuf.* 2017, 5, 394–400.
 24. Rauch, E.; Dallasega, P.; Matt, D.T. The evolution of modular assembly in a global manufacturing environment with the emergence of Industry 4.0. *Procedia CIRP* 2020, 88, 202–207.
 25. Bowen, G.A. Document analysis as a qualitative research method. *Qual. Res. J.* 2009, 9, 27–40.
 26. Braun, V.; Clarke, V. Using thematic analysis in psychology. *Qual. Res. Psychol.* 2006, 3, 77–101.
 27. Lazerson, M.; Wagener, U.; Shumanis, N. What makes a revolution? Teaching and learning in higher education, 1980–2000. *Change* 2000, 32, 12–19.
 28. Chalmers, D. A Review of Australian and International Quality Systems and Indicators of Learning and Teaching. August, V1.2; Carrick Institute for Learning and Teaching in Higher Education: Chippendale, NSW, Australia, 2017.
 29. Cheng, M. The perceived impact of quality audit on the work of academics. *High. Educ. Res. Dev.* 2011, 30, 179–191.
 30. Tarí, J.J. An EFQM model self-assessment exercise at a Spanish university. *J. Educ. Adm.* 2006, 44, 170–188.
 31. Tarí, J.J.; Espinosa, S.A.D.J. EFQM model self-assessment using a questionnaire approach in university administrative services. *TQM Mag.* 2007, 19, 604–616.