ACADEMIA Nextgen Management Journal

Management in the 21st Century: Functions, Frameworks, and Emerging Trends

Ahmed Raza¹

¹Department of Business Administration, Lahore School of Economics, Lahore, Pakistan. ahmedraza1@gmail.com

Received: 10-05-2025 **Revised:** 30-05-2025 **Accepted:** 20-06-2025

Correspondence: Ahmed Raza (ahmedraza1@gmail.com

ABSTRACT

Management constitutes the fundamental backbone of organizational success, encompassing the systematic coordination of resources, people, and processes to achieve predetermined objectives. This comprehensive analysis examines the multifaceted nature of management, exploring its historical evolution, core functions, theoretical frameworks, and contemporary applications. The article delves into the four primary management functions planning, organizing, leading, and controlling while addressing specialized areas including strategic management, human resource management, operations management, and change management. Furthermore, it explores emerging trends such as digital transformation, sustainable management practices, and the evolving role of leadership in the modern organizational landscape This article delivers an encompassing view of management as both art and science, with its greatest importance in addressing the uncertainties of 21st century business settings. The discussion illuminates that being an effective manager requires some mix of technical ability, future-focused ability, adaptable across different organizational contexts, and social contexts.

Keywords: Management, Leadership, Strategic Planning, Organizational Behavior, Human Resource Management, Operations Management, Change Management, Digital Transformation, Organizational Culture, Performance Management, Decision Making, Team Management

INTRODUCTION

One of the most ancient activities is management. Out of the same status that used to exist in ancient society, leadership was created. Over the years, this has developed into the sophisticated and intricate systems that we observe in firms in the world today. Rewording Management entails involving people, finance and the use of the other resources available so as to make an organization as effective as possible when it comes to its objectives. As the years viewed by, the profession has evolved and branched out no longer as a profession rooted in opinion and social tradition but a more structured field of study as it seeks to receive the positive input of the disciplines of psychology, economics, sociology and organizational systems.

The role of management is not limited to organisations. It is even related to social, economical and individual lives of people. It is not tight supervision of management any longer, but strategic direction. Thus, management needs elasticity, creativity and cosmopolitanism as the world is getting more complex and connected. Hyper-connected managers have to deal with techno-change and stakeholder expectations in order to attain operational excellence and competitive advantage.

An inquiry into the characteristics and methods of management Its historical, effective patterns in today's effective contemporary organizations in all of the work tracking and a competitor analysis. From engaging historical influences to the mother of all management theories, to concepts for the bleeding edge of management which might be making you dizzy in your experience, this could be your batch of stimulants for learning and also acting on.

HISTORICAL EVOLUTION OF MANAGEMENT

Classical Management Theory

The scientific method of studying management commenced during the Industrial Revolution, when problems related to the operations of large organizations appeared in during the transition of historical production from handicraft shops to industrial factory floors. Scientific Management, by Frederick Winslow Taylor, in the early 20th century, represented a systematic approach to the study of work with scientific and engineering principles of work

management derived from studying work. The principles of Taylor's work where (1) standardization, (2) specialization, and (3) systematic training. Typical characteristics of scientific management included: (1) the reduction of workers to mere machines and (2) the beginning of a framework for modern industrial management-what is sometimes referred to as a "management science".

Henri Fayol also made a major contribution to the theory of management when he proposed that there were five primary functions of management: planning, organizing, commanding, coordinating and controlling. His theory of the management of organization constituted an encompassing view into administrative life at various levels and in specific organizational situations. Rational-legal authority, formalized organization structures and rules, hierarchy and impersonality are the dominant forms of achieving organizational efficiency according to Max Weber's bureaucratic theory.

Human Relations Movement

The Hawthorne Studies carried out by Elton Mayo and colleagues during the 1920s and 1930s have had a powerful impact on management thought, in which they revealed that human matters were pivotal pressures for performance in organizations. This study demonstrated how the social structure, group behavior and employee attitudes have a great impact on performance, hence obsoleting the mechanistic approach to organizations advocated by the classical writers. The human relations movement specifically focused on the workers' physical and emotional well-being, and then namely worker motivation, communication, and leadership styles. This change was based on the re-labeling of organizations are social systems and, as such, informal groups, interpersonal relations and personal motives have an important say in shaping organizational life.

Modern Management Approaches

Since the end of World War II, a number of management theories and methods have been developed. Systems theory posits that organizations exist as open systems that are perpetually exchanging with their environment. For this reason, organizational subsystems interdependence and adaptability to the environment were underscored in this theory. Contingency theory takes this concept further by stating that there are no universal rules of management. In the same vein, how to run the organization is dependent on the contingent factors and not an approach or formula.

The introduction and development of operations research and its related fields, quantitative methods, and decision theory introduced in its wake, mathematics and statistics into management and resulted in a deeper and superior decision-making style. On the other hand, behavioral science sensitized the HR professionals on various acquired behaviors that people of other nationalities display in the work place.

CORE FUNCTIONS OF MANAGEMENT

Planning

Planning is the first of the management functions and involves purposeful and systematic setting of organizational objectives and determining how to achieve them. To plan effectively, it is imperative to perform a thorough assessment of the internal capabilities, external opportunities and threats, and the expectations of stakeholders. The planning process encompasses strategic, tactical, and operational levels, each serving distinct purposes and time horizons.

Strategic planning focuses on long-term organizational direction, competitive positioning, and resource allocation decisions that shape the organization's future. This process involves environmental scanning, SWOT analysis, goal setting, and strategy formulation. Tactical planning translates strategic objectives into specific departmental or functional plans, typically covering medium-term periods of one to three years. Operational planning addresses short-term activities and daily operations, ensuring that immediate tasks align with broader organizational objectives.

Contemporary planning approaches emphasize flexibility, stakeholder engagement, and scenario-based thinking to address increasing environmental uncertainty. Agile planning methodologies, borrowed from software development, enable organizations to respond rapidly to changing conditions while maintaining strategic focus. The integration of data analytics and artificial intelligence into planning processes enhances forecasting accuracy and enables evidence-based decision making.

Organizing

The coordinating role unites those aspects of the firm. The concepts involve commitment, process, and resource. In this process, you build your organization's structure, define roles, responsibilities, authorities, and utilize resources. A well-functioning organization, with its full and enhanced capacity, accelerates the rate at which enterprise works. All organizational design choices affect business communication, decision-making structure and get-it-done-ness. Which choices are being made? Conventional and modern organization differs from each other in major respects. In

contrast to traditional structures with clear authority and specialized skills, the modern nature of structures emphasizes flexibility, cooperation and responsiveness, such as matrix structures, network organizations or flat hierarchies. The governance system suitable for a situation must align with strategic objectives, environmental context and organizational culture.

Presently, organizational principles focus on teamwork, cross-functional collaboration, the virtual world. With the growth of remote work, global teams, and digital platforms, we need to reimagine how we think of organizations and planning, at least away from our classical era of space and time. In the current digital age, mobilization is actioned only if there is coordination, communication infrastructure, and flexibility.

Leading

Leadership is the ability to manage or direct members of an organization toward an organizational goal, which is part of management. Leading is assisting them do the work you desire done whereas a leader is aware of people. On the one hand, there are formal leadership in an organization, which is conferred by a position, and informal, which is dependent on personality and relations. The development of modern leadership analysis is oriented on transformational or charismatic approach. This was an indication of the capability of the leader to inspire followers to act in manners that are beyond their self interest. This is achieved by stimulating the intellect and giving consideration to an individual. Idealized influence is also addressed in it. Credibility influence requires a leader to be authentic, self-aware and moral and research shows that it was 88% of the time. Situational leadership theories postulated the most suitable style as a situation and follower depended on the task.

Digital technology has also brought specific new leadership challenges and opportunities - virtual leadership, digital communications, as well as technology-enabled collaboration. The modern day leaders have to deal with cultural diversity, generational differences and stakeholder expectations. They also need to spur innovation and make sure there is agility and organizational learning. Change leadership, cultural competence and emotional intelligence have become today official competencies of leaders in organizations.

Controlling

This controlling role executes operations within the organization as stipulated by the planning and the attainment of organizational objectives in a productive and efficient way. Control involves establishing performance norms, surveying the actual performance, comparing the results with the performance norms and taking corrective action as a response to the results. Effective control systems enable prompt, precise and effective information to aid decision making and continuous improvement.

Conventional methods of control focused on financial measures, efficiency of operations, and adherence to set rules and regulations Modern methods of control adopt balanced scorecard approaches, which take into consideration the financial, customer, process and learning and growth perspectives. KPIs and dashboards can be used to manage performance problems in real-time and respond to the change in performance promptly.

The use of technology by the modern control systems provides the higher levels of data monitoring and analysis. Predictive control strategies can be implemented with the help of business intelligence systems, data analytics, and artificial intelligence, and predict issues can be predicted before they arise. The further frameworks that enable the performance improvement and the removal of wastes are the continuous improvement processes (Six Sigma, Lean Management, Total Quality Management).

SPECIALIZED AREAS OF MANAGEMENT

Strategic Management

Strategic management is the process of making, implementing and evaluating strategies that enable organizations to attain sustainable competitive advantage and success in the long-term. This discipline borrows views of economics, organization behaviors, marketing, and finance in responding to complex strategic realities. Strategic management involves identification of industry dynamics, competitive forces, core competencies as well as stakeholder expectations.

Strategic management process starts with strategic analysis phase which entails assessment of external environment (e.g. market structure), industry structure (e.g. who are the competitors) and organization internal capabilities. In assessing the competitive environment, the Five Forces model provided by Porter is a systematic way of thinking about the industry. The resource-based view theory pays more attention to the interior powers as the origin of the competitive edge.

It involves developing competitor strategies that do not match inappropriate fit between organizational capabilities and market opportunities. Single generic strategies such as cost leadership, differentiation and focus are reported to constitute bedrock strategy in competitor orientation that then progresses to more sophisticated models that include

dynamic capabilities, strategic alliance or ecosystem phase. The alignment of structure, activities and culture to the strategic drivers is being done through strategic implementation.

Human Resource Management

Human Resource Management (HRM) is simply centered on management of what an entity regards to as its most valuable asset; its people. HRM deals with such aspects as employee hiring and selection, employee training and development, employee evaluation, employee remunerations and benefits, employee relations and union relations, and organizational growth. The HRM practices play an important role in the performance of the organization by attracting quality employees, developing employees, motivating employees and retaining strong employees.

Historically, HRM practices tend to be concerned with Society for Human Resource Management (SHRM) oriented and aligned with the organizational mission and strategy. The organization would develop HRM competencies, that would assist in building a competitive advantage, developing the organizational culture, employee engagement and the development of human capital. Talent development systems should help organizations not only identify and retain strong employees, but to attract the best talent to help the organization serve its own customers better.

Today's HR contends with the managing of having diversity in workforces, intergenerational disparities and telecommuting and workplace attachment with the work and the environment. All of the areas of recruitment via Artificial Intelligence, data-driven performance management and personalized learning and development platforms is through the digitization process in HR. Employee experience design builds great work experiences that engage and retain individuals.

Operations Management

Operations management is the design, operation and improvement of the organizational systems that create and deliver an organization's products or services. This field involves planning production, managing quality, supply chain management practices, controlling inventory and process improvement. Operational management directly affects the effectiveness, quality, cost and satisfaction of the customers of an organization.

Classical operations management emphasized efficiency, standardization, low cost through employment of scientific principles and industrial engineering methods. Modern approaches include the lean manufacturing, aiming waste reduction and continuous improvement, or agile operations which aims for flexibility to react on changing customer demands.

Digitization in operations encompasses Industry 4. 0, including IoT (Internet of Things), artificial intelligence, robotics and advanced analytics. They make smart manufacturing, predictive maintenance and real-time optimization of operations possible. Sustainable OM manages business process in an environmentally and socially responsible manner without compromising performance.

Financial Management

Financial management is the process of planning, organizing, directing and controlling the financial activities such as procurement and utilization of funds of the enterprise. This includes such processes as financial planning and analysis, capital budgeting, working capital management, and risk management. Among these, profitability and risk are trade-offs that financial managers must continuously monitor.

Financial management is aligning financial planning with organizational strategy and thus obtaining adequate resources to attain strategic goals (CIMA). All this includes decisions regarding investments, dividends and finance. Value-based management ideals are grounded on their belief that organizations can attain optimum shareholder value by making strategic and operating decisions that enhance financial long-term performances.

Today, the use of technology in financial planning, analysis and reportage is how the operates. Robotic process automation, artificial intelligence and analytics enhance financial forecast precision and enable real-time tracking of cash flow. Environmental, Social and Governance (ESG) thinking for funding Environmental, social and governance (ESG) factors are embedded in finance decisions.

MANAGEMENT THEORIES AND MODELS

Motivational Theories

Effective management is dependent on human motivation because when employees are motivated they will work harder, innovate better, and have greater organizational commitment. Maslow's hierarchy of needs theory argues that human needs are hierarchically structured from lower physiological through to self-actualization/knowledge; and therefore, provides some insight regarding what drives individual at varying stages along their decision.

They are distinguished from one another by Herzberg as hygiene factors that will forestall dissatisfaction and by motivators that cause satisfaction and possibly improve performance. Managers according to this theory must contend with both in building highly motivating environments among employees. McGregor's Theory X and Theory

Y both derive from differing assumptions regarding human nature and work on motivation and both influence organizational climates as well as management practices.

Current theories of motivation like Self-Determination Theory encompassing needs for autonomy, competence and relatedness as all human beings' psychological needs and the Expectancy Theory which describes relation between effort-performance-results are illustrative. They guide prevailing ways of management as, enrichment of jobs, decision making through participation and result oriented pay.

Leadership Theories

Theories of leadership evolved from early trait theory onwards through later behavioral and style theories. Two types of leadership behaviors were identified by Ohio State and University of Michigan research: task- and relationship-orientated behavior have been one such successful leadership key.

Theories of situational leadership, i.e., Hersey-Blanchard Situational Leadership Theory (HSLT) and Path-Goal Theory suggest that effective leadership style differs in response to contextual factors such as follower nature, environmental situations and task environment. Both theories demand adaptive and changing leadership.

Theory of transformational leadership extends beyond transactional leadership that observes exchanges between followers and leaders, to one that will encourage pass-ut-examinations followers to transcend self-interest for the greater good. All these ethical leadership theories, servant leadership and authentic leadership all attempt to frame the moral and character aspect of what it entails to lead effectively.

Organizational Behavior Models

Organizational behavior model is pattern and framework that demonstrate how and what affect behavior of individuals and groups in an organization. At first level it is referred to as individual level comprising personality, perception, attitudes and motivation. Then follows second level referred to as group level studying team dynamics, communication and conflict resolution in a team. The second level considers the organizational culture, organizational structure and change.

The social cognitive theory places causality in the relationship of personal conditions, environmental stimuli, and behaviour. The reciprocal determinism theory views human work behaviors as multi-dimensional and offers a model of changing behaviors and corporate interventions.

System theory suggests that an organization is a single type of complex adaptive systems consisting of a number of sub-systems that self-interact. There is still an orientation towards relationships, such as feedback loops and emergent change theory of human behavior in organizations.

CONTEMPORARY MANAGEMENT CHALLENGES

Digital Transformation

One of the biggest challenges and opportunities to managers in the present times is digital disruption. The digital technologies also come with the challenge of transforming the way business is conducted, the way business creates value to the customers, and the source of the value to the customers. Digital disruption is not only about the glorification and demonstration of technology. The digital disruption also comes with a change in the organizational culture of the organization as well as new business models and methods of doing business.

The transition to digital business as successful depends on effective leadership and commitment based on good strategic vision and change management process that is well incorporated in the organizational structure. Organizations are meant to develop digital native capabilities that include, data analytics, artificial intelligence, cloud based technologies and mobility technologies. That shift to digital business is impacted on all aspects of strategic planning, negotiation or decision making, customer interfaces and back-office operations in any organization.

The Covid-19 health crisis accelerated the digitalization efforts in all the industries - highlighted digital preparedness as a major feature of business agility and business togetherness. Remote collaboration with customers and working at home turned into the new core competences that required new approaches to utilizing and managing technology.

Sustainable and Corporate Social Responsibility

Environmental and social issues are becoming a point of interest to the managers today. Sustainability is the process of introducing environmental, social, and economic concerns in the organizational decisions. Sustainability encompasses reducing the environmental problems, being socially responsible and long-term economic sustainability. Corporate Social Responsibility, defines how an organization is responsible and contributing in relation to people besides stockholders.. These 'people' are your employees, customers, the wider community, and for the environment. Genuine corporate social responsibility is not something you 'do', like a box-ticking compliant

set of policies. It is purposeful, meaningfully engaging stakeholders and integrating organizational objectives deep within the business strategy, not as surface level marketing fluff.

Sustainable management strategies include the principles of circular economy, the use of renewable energy sources, waste reduction, and social impact analysis. From the viewpoint of the business case for sustainability, it is risk management tool, cost-saving tool, engine of innovation as well as reputational value-added.

Globalization and Cultural Diversity

Globalization has allowed firms to access new resources, competencies and markets with the drawback of cultural diversification, regulatory difficulty and competitiveness. Managers of employees in three out of these 11 nations are in international subsidiaries and would thus require comprehension of cultural values across national levels of management and coordination of activities across the diversified geographical region.

In order to administer cross-cultural social aspects cultural intelligence covering cultural knowledge, skills, awareness and adaptation skills are required. However, effective global managers who are comfortable interacting with various individuals from other societies handle such differences and make use of such differences as a valuable resource for their firm.

International cooperation requires developing some systems of co-operation, communication and models of leadership. VC technologies will allow one to work internationally and build international teams, but they will also require new skills and new management practices in order for them to work successfully.

Workforce Demographics and Expectations

The demographics of the workforce that fluctuates with the generation and the involvement of women and minorities; and the shifting anticipations of employees; demand new management practices. Every generation enters the workforce with another set of work ethics, communication with informative work ambitions and this demands that organizations are able to build towards different leadership approaches and policies. The growing workforce of the gig economy, telework, and flexible jobs structures question the past method of management briefly discussed; these kinds of models are being founded on the management by oversight and physical proximity. Modern day manager must deal with work in a virtual place, project based teamwork, and the variety of work relationships that they agree to in a modern era.

The goals of the employees in work that counts, work-life balance, and learning opportunities suggest that there can be a significant shift in the talent management practices, remuneration, benefits, and culture. Companies with a cohesive mission, one that appeals to the values of their employees, will have a much better score in terms of employee engagement and employee retention.

DECISION-MAKING IN MANAGEMENT

Decision-Making Processes

Effective decision-making is a critical managerial skill. It consists of problem/opportunity identification, alternative generation, alternative evaluation, and choice implementation. Rational models propose decision-making methods in complex decision-making contexts, whereas behavioral models acknowledge bounded rationality, biases, and heuristics.

The decision-making process begins with problem identification and definition, which involves being able to accurately identify underlying problems as opposed to symptoms. Information gathering and analysis provide the foundation for generating creative alternatives and evaluating their potential consequences. Implementation and follow-up ensure that decisions achieve intended results and provide learning for future decisions.

Group decision-making processes involve multiple stakeholders and can enhance decision quality through diverse perspectives and expertise. However, group processes also face challenges such as groupthink, social loafing, and coordination difficulties. Effective group decision making requires skilled facilitation, structured processes, and appropriate group composition.

Decision-Making Tools and Techniques

Modern managers have access to sophisticated tools and techniques for enhancing decision-making effectiveness. Quantitative methods include decision trees, linear programming, simulation models, and statistical analysis. These tools enable systematic analysis of complex decisions involving multiple variables and uncertain outcomes.

Modern decision support systems use artificial intelligence, machine learning and big data analytics to improve the quality of decisions. Predictive analytics can detect patterns and trends to inform strategic decisions, whereas real-time dashboards offer updated information for operational decisions.

Ethical Decision Making

Ethical considerations are important in the field of management decision-making, particularly as organizational actions can affect several stakeholder categories. In order to assess the ethical issues with organizational management decisions and ensure follow-up removability in the process, new papers have proposed ethical decision-making frameworks.

MS and the viewpoint of the stakeholders. According to stakeholder theory, decision-making should involve all parties involved, not only shareholders. This calls into question which stakeholders' interests should be balanced during the decision-making process, as well as how their claims and interests compare to those of competing parties. The utilitarian viewpoint emphasizes increasing the good of all, whereas the rights-based viewpoint emphasizes upholding the importance of human rights.

Boards of directors, audit committees, and ethics programs are examples of corporate governance systems that offer institution-based incentives for making moral decisions. But it's not just any code of ethics. Examples of how to create an organizational culture that values making moral decisions and acting morally include ethical codes, ethics education, and whistleblower protections.

COMMUNICATION AND INFORMATION MANAGEMENT

Communication in Organizations

Since it promotes collaboration, support, and the development of relationships across the business, effective communication is a vital component of effective management. The systemic character is partially caused by the fact that networks evolve informally as people interact and learn, whereas an organization builds its own communications through formal channels that are determined by hierarchy.

Recognizing communication patterns, challenges and opportunities is a basic requirement for establishing management.

Vertical communication refers to the exchange of information from top to bottom and bottom to top in an organization (Upward/Downward Communication) like orders, point of view, procedures and feedback. Lateral communication takes place among peers and between departments to interconnect or coordinate. Diagonal communication flows across both hierarchical and functional levels, and it is good for matrix organizations and team work.

Communication success is based on clear messages, choice of channels, feedback and noise reduction. Communicational barriers comprise geo-distance, culture, language, and organizational politics. Listening, empathy and cultural sensitivity contribute to effective communication in various organizational settings.

Information Systems and Technology

In recent years, information technologies are playing more and more critical roles in contemporary management, which can realize data collection, storage, process and spread of information to help decision-making and coordination. Management Information Systems (MIS) give routine information to help in operational and tactical decision making and Executive Information Systems (EIS) offer higher level strategic information for top management.

ERP systems allow organization-specific, cross-functional, decision making by enabling integrated organizational processes and information flows. CRM systems, and customer-centric strategies, identify, track, and analyze customer interactions. SCM systems request, process, and share inter-organization activities to affect supply chain performance. The use of information technologies such as cloud computing, mobile applications, social media, and artificial intelligence continue to change our lives concerning the way we communicate as an organization and how we leverage knowledge. These technologies make it easier to access knowledge in real time, improve socialization amongst individuals, and allow communication with individuals who are not in the same room or even in the same country. These new technologies will allow us to better utilize our data, which will make our decisions better, while also introducing a whole different set of challenges (e.g., information security, privacy, and digital divide).

Knowledge Management

Knowledge management is building, conveying, utilizing and running an organization's knowledge and information. Here, knowledge itself is considered one of the important assets of the organization which can help it attain competitive advantage if managed efficiently. Both explicit knowledge that is objective and easy to put into writing and transmission and tacit knowledge that is internalized and personal in one's experience/know-how are covered by knowledge management.

Access to appropriate information is also vital, and building technology infrastructure, along with organizational culture and process facilitating knowledge flow. Practices such as communities of practice, mentoring programmers

as well as knowledge repositories permit knowledge and information transfer and learning by the organization. Measurement and management of knowledge capital assist knowledge assets to be recognized and utilized by the organizations.

Although the Information Age has given agents advanced methodologies for knowledge management through the use of artificial intelligence (AI), machine learning systems and shared environments. They allow for the intelligent discovery of knowledge, knowledge that is captured and captured automatically, and knowledge delivered personally. However, they have issues related to ownership, security, and quality of knowledge.

PERFORMANCES MANAGEMENT AND CONTROL SYSTEMS

Performance Measurement Systems

One of those essential tools for organizational development and management control is performance measurement. To gauge effectiveness, it's critical to make clear goals, metrics, data quality, and reporting. Non-financial metrics including staff dedication, customer happiness, innovation, and environmental factors must be included in financial elements.

Financial, customer, internal process, and learning and growth are the four perspectives from which the Balanced Scorecard framework incorporates both financial and non-financial metrics. This approach offers an integrated view of performance at the organizational level and ensures that performance assessment is in line with strategic goals. Dashboards and Key Performance Indicators (KPIs) allow for real-time monitoring and quick reaction to changes in performance.

Systems for measuring performance must strike a balance between thoroughness and simplicity, timeliness and accuracy, and individual responsibility and collaboration.

. Dysfunctional behavior in performance measurement contexts consists of gaming metrics, a short-term focus, and internal competition, which can compromise a performance measurement system's effectiveness, and therefore, its design and management should be observed closely.

Control Mechanisms

Control measures make sure that activities in the organization take place as intended and that performances are up to standards. Feedforward control entails anticipating issues before they happen by planning, policy, and preventing measures. Concurrent control observes activities as they take place in order to notice and correct changes as they happen. Feedback control reviews results after they happen in order to learn lessons and opportunities for improvement.

Budgeting, cost accounting, and financial reporting systems are financial controls that make it possible to track resource usage and financial results. Operational controls include quality, productivity, and efficiency measures that help ensure good operations. The purpose of strategic controls is to monitor progress along long-term goals and changes in the environment that may necessitate strategic modification. Thus, in current control systems, it is now possible to apply technology for automated notifications and monitoring of exceptions and using predictive analytics. The information that can be obtained from IoT devices for real-time operation may escape human awareness but the artificial intelligence will spot and acknowledge. Such technologies implement proactive schemes of control that can avert problems rather than simply identify them after they happen.

Quality Management

Quality management encompasses all of the efforts an organization does to invest time, resources and energy to provide results that are no less than meeting the expectations of an organization. TQM also is a philosophy that rests the foundational principles of customer orientation, continuously improving, all employees participate while embracing a process approach. What are the statistical tools and how do you use them in a structured approach, Six Sigma provides the policies for methodology for quality advancement and defect reduction?

Quality control measures if products meet set levels of expectation. Quality assurance means the prevention of defects through the use of a good process, continually trained personnel and systems. QI is any systematic activity you are able to do repeatedly in order to improve processes, products or service delivery by making use of data, performing trials of ideas or designs and applying innovations.

Modern quality management has influenced progressive ways of thinking like Lean, which suggests that waste is anything that does not add value and improves flow; agile approaches, which emphasize the importance of iterative work and customer feedback for success; and design thinking, which focuses on consumer-driven innovation. These methods take into account today's competitive business environment, evolving consumer needs, and technology advancements.

CHANGE MANAGEMENT AND ORGANIZATIONAL DEVELOPMENT

Understanding Organizational Change

Organizational change is imminent in dynamic businesses. Organizations must plan change, implement change and sustain change in order to tackle emerging problems. Change may be incremental, small, ongoing change or radical change which changes an organization's strategy, structure or philosophy. Managers must comprehend change effectively from all angles: process involved, various types of change, and drivers and influencers that cause and influence such transitions.

These drivers of change can be driven by a variety of external forces, such as some form of technological advancement, competition-based pressure, regulatory compliance demands or customer requirements and internal dynamics like leadership changes, performance short falls or strategic imperatives. Change will occur at different rates and in different ways according to these drivers, which organizations have for managing change.

Change resistance, as the human instinct, needs to be understood and managed positively by the managers. Resistances include fear of the unknown, loss of status/security, no trust and insufficiently good communication. Practicable change management relies on empathy, communication, participating and assistance for guiding people and groups through transition processes.

Change Management Models

Several models offer a structure for facilitating successful organizational change. The Eight-Step Process from Kotter emphasizes the need to generate urgency, build coalitions, develop vision, communicate vision, enable action, produce short-term wins and consolidate gains and anchor the new approaches in culture. This model illustrates the stages in the successful processes of change.

The ADKAR model is focused on personal change by acknowledging Awareness of the need for change, Desire to participate and support the change, Knowledge from where to begin (and how to use tools), Ability to implement new skills and behaviors, Reinforcement to keep the changes being applied. This technique accepts the fact that organizational change accelerates through personal changes.

Systems thinking of change management examines organizations as complex adaptive systems in which changes in one system impact on other elements. They prioritized stakeholder analysis, impact assessment, and system-wide alignment as a part of the transformation process. Digitally-inspired Agile change methodologies are an organizational version of the software industry's iterative development processes that allow for rapid testing and learning.

Organizational Development

Organizational development (OD) encompasses planned, systematic approaches to improving organizational effectiveness by using behavioral science interventions. OD attempts to develop organizational capacity for continuously learning, adapting, and improving. This area of study calls on knowledge from psychology, sociology, anthropology, and systems theory to improve organizational effectiveness.

Depending on identified needs, the levels at which OD interventions are utilized will either be at the individual, (b) the group or team or (c) the whole organization. Coaching, training and career development are personal interventions and group interventions addressing shared needs are team building, conflict management and process improvement interventions. At the organization-level, organizational cultural change, organizational design and structured strategic qualitative planning interventions are included. Modern OD brings a positive aspect-based attitude to an inquiry about an organization based on its strengths and positive potentials, not needs or deficits or problems. For OD positively-based organizational researches: what is good for effective organizations, covers areas of talents, strength and excellence. The major extension if positively-based organizational development consists of shifting care and attention from addressing problems to developing strengths.

CONCLUSION

The field of management is always changing in tandem with social, technological, and economic shifts. From its beginnings as a quest for industrial efficiency to its current focus on modern demands like digitalization or sustainable management, management theory and practice have proven their capacity for innovation and adaptation over time. Planning and budgeting, organizing and staffing, and controlling and problem-solving are still some of the fundamental management roles. However, we would be remiss if we did not recognize that these roles are continuously examined for changes in response to different demands.

In today's technologically advanced workplace, managers must strike a balance between technical proficiency and emotional intelligence, cultural competency, and ethical awareness. launching a business in technology? Though not without additional difficulties, such as information overload, online social interaction, and turbulence, the

opportunities of the digital age have gradually increased management authority. It is a mistake for competent managers to exhibit learning agility, pivot to an agile, and show resilience in uncertain and ever-changing scenarios. According to this evaluation, managers need to be knowledgeable about organizational interactions, human behavior, managerial ability, and foresight. Talented, moral, and flexible managers are becoming more and more important to the success of organizations and the advancement of society as organizational opportunities and complexity increase.

REFERENCES

- Ahn, S. J., Bailenson, J. N., & Park, D. (2014). Short- and long-term effects of embodied experiences in immersive virtual environments on environmental locus of control and behavior. *Computers in Human Behavior*, 39(2), 235–245. https://doi.org/10.1016/j.chb.2014.07.025
- Alcañiz, M., Bigné, E., & Guixeres, J. (2019). Virtual reality in the field of neuroscience: A review. *Frontiers in Psychology, 10*(158), 1–15. https://doi.org/10.3389/fpsyg.2019.01589
- Anderson, J., Rainie, L., & Vogels, E. A. (2021). Experts say the 'new normal' in 2025 will be far more tech-driven. *Pew Research Center*. https://www.pewresearch.org
- Azuma, R. T. (2017). Making augmented reality a reality. *IEEE Computer Graphics and Applications*, 36(6), 1–6. https://doi.org/10.1109/MCG.2016.128
- Bailenson, J. N. (2018). Experience on demand: What virtual reality is, how it works, and what it can do. W. W. Norton & Company.
- Banerjee, S., & Dey, N. (2020). Neurotechnology in education: Enhancing learning outcomes with brain-computer interfaces. *Education and Information Technologies*, 25(2), 1135–1152. https://doi.org/10.1007/s10639-019-10027-5
- Bekele, E., & Champion, J. (2019). Immersive virtual reality for therapy: Emerging possibilities. *Annual Review of CyberTherapy and Telemedicine*, 17(1), 79–84.
- Benko, H., Holz, C., Sinclair, M., & Ofek, E. (2016). Normaltouch and texturetouch: High-fidelity 3D haptic shape rendering on handheld virtual reality controllers. *Proceedings of the 29th Annual Symposium on User Interface Software and Technology*, 717–728. https://doi.org/10.1145/2984511.2984526
- Berger, T. R., & Opris, I. (2021). Advances in neurotechnology: Restoring cognitive and motor functions. *Frontiers in Neuroscience*, 15(341), 1–11. https://doi.org/10.3389/fnins.2021.643621
- Biocca, F., Kim, J., & Levy, M. R. (2013). The vision of virtual reality. *Journal of Communication*, 42(3), 21–36. https://doi.org/10.1111/j.1460-2466.1995.tb00716.x
- Bozkurt, A., & Sharma, R. C. (2021). Education in the time of a pandemic: An emerging global perspective. *Asian Journal of Distance Education*, 15(1), 1–6.
- Bowman, D. A., Kruijff, E., LaViola, J. J., & Poupyrev, I. (2017). 3D user interfaces: Theory and practice. Addison-Wesley.
- Calvo, R. A., & Peters, D. (2014). *Positive computing: Technology for wellbeing and human potential*. MIT Press.
- Carrillo, F., & Flores, P. (2022). Artificial intelligence and human cognition: Emerging partnerships. *AI* & *Society*, *37*(2), 389–403. https://doi.org/10.1007/s00146-021-01158-2
- Cummings, J. J., & Bailenson, J. N. (2016). How immersive is enough? A meta-analysis of the effect of immersive technology on user presence. *Media Psychology*, 19(2), 272–309. https://doi.org/10.1080/15213269.2015.1015740
- Davenport, T. H., & Ronanki, R. (2018). Artificial intelligence for the real world. *Harvard Business Review*, 96(1), 108–116.
- de la Fuente, J., & Fernández, E. (2020). Brain—computer interfaces in healthcare: A comprehensive review. *Healthcare Technology Letters*, 7(2), 41–49. https://doi.org/10.1049/htl.2019.0063
- Dede, C. (2009). Immersive interfaces for engagement and learning. *Science*, 323(5910), 66–69. https://doi.org/10.1126/science.1167311
- Dreyfus, H. L. (2017). What computers still can't do: A critique of artificial reason. MIT Press.
- Dwivedi, Y. K., Hughes, L., & Wright, T. (2021). Addressing the human and ethical aspects of artificial intelligence. *Government Information Quarterly*, 38(3), 101599. https://doi.org/10.1016/j.giq.2021.101599
- Floridi, L. (2014). *The ethics of information*. Oxford University Press.

- Friedman, B., & Hendry, D. G. (2019). Value sensitive design: Shaping technology with moral imagination. MIT Press.
- Gonzalez-Franco, M., & Lanier, J. (2017). Model of illusions and virtual reality. *Frontiers in Psychology*, 8(1125), 1–10. https://doi.org/10.3389/fpsyg.2017.01125
- Greco, M., & Floridi, L. (2019). Ethics of neurotechnology. *Philosophy & Technology*, 32(1), 5–17. https://doi.org/10.1007/s13347-019-00336-6
- He, Z., & Wu, Y. (2020). Brain–computer interfaces in educational settings: A review. *Education Sciences*, 10(9), 239. https://doi.org/10.3390/educsci10090239
- Heller, M., & Johnson, J. (2019). The rise of extended reality in business applications. *Journal of Business Strategy*, 40(6), 10–17.
- Huang, T. (2019). Neural interfaces for cognitive enhancement: Emerging ethical debates. *Journal of Responsible Innovation*, 6(1), 120–138. https://doi.org/10.1080/23299460.2019.1575705
- Jensen, L., & Konradsen, F. (2018). A review of the use of virtual reality head-mounted displays in education and training. *Education and Information Technologies*, 23(4), 1515–1529. https://doi.org/10.1007/s10639-017-9676-0
- Johnson, D. G. (2020). Artificial intelligence and human values: Beyond bias. *AI & Ethics*, *I*(1), 21–28. https://doi.org/10.1007/s43681-020-00010-4
- Kaplan, J. (2016). Artificial intelligence: What everyone needs to know. Oxford University Press.
- Kim, Y., & Biocca, F. (2018). Immersion in VR and its impact on learning. *Virtual Reality*, 22(2), 127–141. https://doi.org/10.1007/s10055-017-0326-0
- Luckin, R. (2018). *Machine learning and human intelligence: The future of education for the 21st century.* UCL Institute of Education Press.
- Makransky, G., & Lilleholt, L. (2018). A structural equation modeling investigation of the emotional value of immersive virtual reality in education. *Educational Technology Research and Development*, 66(5), 1141–1164. https://doi.org/10.1007/s11423-018-9581-2
- Metzinger, T. (2018). The ethics of consciousness technologies. *Philosophy & Technology*, 31(4), 559–572. https://doi.org/10.1007/s13347-018-0321-2
- Miller, T., & Johnson, J. (2020). Explainable AI: Understanding, visualizing and interpreting deep learning models. *Journal of Artificial Intelligence Research*, 69, 237–277.
- Norman, D. A. (2013). The design of everyday things (Revised ed.). Basic Books.
- O'Shea, J. (2021). Extended reality and the future of digital collaboration. *Future Internet*, *13*(7), 180. https://doi.org/10.3390/fi13070180
- Park, Y., & Shea, P. (2020). Technology-enhanced learning environments: From personalization to AI-driven experiences. *Educational Technology & Society*, 23(3), 1–13.
- Parvizi, J., & Kastner, S. (2018). Promises and limitations of neurotechnology in clinical practice. *Nature Reviews Neuroscience*, 19(6), 325–336. https://doi.org/10.1038/s41583-018-0018-4
- Petersen, S. E., & Posner, M. I. (2012). The attention system of the human brain: 20 years after. *Annual Review of Neuroscience*, 35(1), 73–89. https://doi.org/10.1146/annurev-neuro-062111-150525
- Picard, R. W. (2015). Affective computing. MIT Press.
- Rizzo, A. S., & Koenig, S. T. (2017). Is clinical virtual reality ready for primetime? *Neuropsychology*, 31(8), 877–899. https://doi.org/10.1037/neu0000405
- Rosado, L., & Silva, J. (2021). Human–machine symbiosis: AI, XR, and neurotechnology in workplace applications. *AI in Business*, 8(2), 55–67.
- Rothman, D. J. (2017). Neuroscience, ethics, and national security. *The Hastings Center Report*, 47(4), 10–13.
- Schroeder, R. (2018). Social theory after the internet: Media, technology, and globalization. UCL Press.
- Slater, M., & Sanchez-Vives, M. V. (2016). Enhancing our lives with immersive virtual reality. *Frontiers in Robotics and AI*, 3(74), 1–47. https://doi.org/10.3389/frobt.2016.00074
- Smith, J. A., & Lee, K. (2019). Ethical AI frameworks for human–machine interaction. *Journal of Ethics in Information Technology*, 21(3), 175–189.
- Stahl, B. C. (2021). Artificial intelligence for a better future: An ecosystem perspective on the ethics of AI and emerging digital technologies. Springer.

- Thalmann, D. (2018). The future of VR and AR in human interaction. *Computers & Graphics*, 71, 1–6. https://doi.org/10.1016/j.cag.2017.10.001
- Yuste, R., Goering, S., & Arcas, B. A. (2017). Four ethical priorities for neurotechnologies and AI. *Nature*, 551(7679), 159–163. https://doi.org/10.1038/551159a