

Technological Innovation as the Foundation for Developing Competitive Capabilities in Business Organizations -An Analytical Study

Mouzai Bilel^{1,*}, Terfa Mohammed², Hamla Azzedine³

¹ Blida 2 - LOUNICI ALI University/ Laboratory for Local Governance and Its Role in Achieving Development,

(Algeria) b.mouzai@univ-blida2.dz

² Blida 2 - LOUNICI ALI University/ Laboratory of Entrepreneurship, Human Resource Management and Sustainable Development, (Algeria) m.terfa@univ-blida2.dz

³ Blida 2 - LOUNICI ALI University/ Laboratory of Development Policies and Foresight Studies, (Algeria)

a.hamla@univ-blida2.dz

Received: 22/05/2025; **Accepted:** 28/06/2025; **Published:** 30/06/2025

Abstract: Business organizations today face numerous challenges due to the rapid and continuous changes in the global economy. This compels these organizations to develop strategies based on technological innovation, which relies on the full exploitation of scientific and technological knowledge, as well as research and development practices, to achieve competitiveness, survival, and growth. Technological innovation enables organizations to attain a high level of performance, allowing them to maintain and enhance their competitive positions relative to their rivals through modernity and leadership.

This study aims to highlight the importance of technological innovation in enhancing the competitive capabilities of business organizations.

Keywords: Information technology; technological innovation; competitive capabilities; business organizations;

Jel Classification Codes: O14; O32

* Corresponding author.

Introduction:

The contemporary era is characterized by profound and rapid transformations across all levels, whether local or international, and in various domains, including economic, commercial, organizational, technological, and knowledge-based spheres. These developments have led to significant changes in production aspects, the emergence of large institutions, strategic alliances, and the expansion of the technological revolution. This has transformed the competition among organizations into a battle of technological innovation and creativity. Thus, technological innovation is now considered the preferred approach for business organizations to ensure their survival and continuity.

Historically, innovation was seen as an individual activity limited to a few exceptional people, often perceived as a spontaneous inspiration that could not be controlled or organized. This undermined the role and importance of innovation in institutions. However, this perception has radically changed in recent times, as organizations now fully recognize the importance of innovation for their survival and growth. With intensifying competition and the emergence of new market players competing in all aspects, there is an unprecedented acceleration in improving existing products and introducing new ones. This creates an unstable environment for organizations due to the proliferation of new products. One of the fundamental reasons for this is the evolving perception of organizations toward technological innovation and the increasing investment in it as an activity that often adds value and serves as a competitive weapon to maintain existing markets and explore new ones for innovative enterprises.

Undoubtedly, the most successful organizations today are those that rely on technological innovation, which has become the strategic choice for developing competitive capabilities in business organizations within the new global economy, built on knowledge and information technology.

The primary objective of this research paper is to shed light on the importance of technological innovation in enhancing the competitive capabilities of business organizations amid the changes in the new global economy.

I- 1. The Conceptual Framework of Technological Innovation:

The rapid and continuous advancement of modern technologies, coupled with increasing competition, has driven business organizations to focus on technological innovation to sustain and expand their activities while meeting customer demands. Innovation has become one of the fundamental pillars for developing organizational capabilities in a dynamic competitive environment.

1.1. The Nature of Technological Innovation:

Many scholars and researchers have approached the concept of technological innovation from various perspectives, reflecting its significant importance to business organizations. This section clarifies the concept, characteristics, importance, and objectives of technological innovation.

1.1.1 Definition of Technological Innovation:

The term "technological innovation" was first used in its modern sense by economist Joseph Schumpeter (Randall Mork & Yeung Bernard, 2001, p01), who defined it as "the introduction of new or necessary changes." This definition was later included in the Oxford English Dictionary (OED).

Robert Fulmer described it as a form of modernization and originality in products, where technological innovation involves the development or improvement of existing products or the launch of new ones in the market. (Fulmer, R., 1974, 148).

The U.S. National Science Foundation (NSF) defined it as "the introduction or improvement of products, processes, or services to the market." (Mueser, R, 1985).

From this definition, it can be inferred that technological innovation relates to:

- Entirely new products.
- Improvements to existing products in the market.
- Entirely new processes.
- Improvements to existing processes.

Mohamed El-Said Oukil defined it as "anything entirely new or any minor or major improvement in products or manufacturing methods

achieved through individual or collective effort, which proves successful technically or technologically and effective economically." (Oukil, M.S., 1992, p111)

Marquis and **Myers** described it as "not an isolated individual event, concept, or idea, but a comprehensive and integrated process involving a set of interconnected systems and sub-processes within the organization." (Akroush, M.N. & Akroush, S.N., 2004, p01)

Based on these definitions, the key features of technological innovation can be summarized as follows:

- It is linked to products and production methods, improving production processes and providing new or enhanced products.
- It enables economies in production factors, positively impacting production costs and enhancing performance from both technical and economic perspectives, leading to improved efficiency and reduced unit production costs.
- It represents the application of scientific and technological knowledge and is a continuous process requiring coordination and organization for success.
- It involves introducing changes to products and production methods, which may be minor (incremental) or major (radical).

Thus, any novelty or change that introduces new products or production methods, based on scientific and technological knowledge, and proves successful economically and socially—whether through product improvements, reduced production costs, or enhanced safety for consumers—is considered technological innovation.

1.2 Characteristics of Technological Innovation:

From the above definitions, the characteristics of technological innovation can be derived as follows: (Oukil, M.S., 1992, pp.111-112)

- It must be linked to production and productivity. Any innovation that does not improve manufacturing processes, utilize production factors, or introduce or enhance new products is not considered technological innovation.

- Technological innovation is the application of new technological knowledge. Innovations based on inaccurate information that lead to ineffective results, despite their aesthetic appeal, are not considered technological innovations.
- Technological innovation values continuous research and development efforts.
- Efforts and innovative processes that do not result in cost reductions are not technological innovations. A key point here is that technological innovation inherently involves competition in final costs and selling prices.

1.3 The Importance of Technological Innovation:

The importance of technological innovation cannot be overlooked in all aspects of life. Its significance can be summarized in the following points: (Lendrevie, J., Lindon, D. & Levy, J., 2003, 327)

- **Stimulating Demand:**** Innovation strengthens primary demand (equipment) by introducing new offerings and reinforces secondary demand (replacement) by replacing existing products with new ones. The desire to purchase arises with the availability of new products.
- **Stimulating Supply and Creating New Income Sources:** Organizations constantly seek development, and innovation serves as a strategic and vital resource for organizational growth. By launching new products, increasing supply, meeting new market needs, and diversifying activities, organizations create new income sources to fund their development.
- **Enhancing Competitive Capabilities:** This is achieved through:
 - Rapid introduction of new products.
 - Reducing manufacturing costs through process innovation.
 - **Countering Distributors:** Innovation is the direct and sole weapon for producers. Distributors' weakness lies in new products, making negotiations possible and favorable for producers.
 - **Attracting Customers and Ensuring Satisfaction:** By offering advanced products.

- **Expanding into New Markets:** Providing opportunities for organizations to sell in new markets, increasing sales and profitability.

- **Ensuring Organizational Survival and Continuity:** Organizations operate in a competitive environment. To adapt, they must continuously develop their products. Additionally, they are tied to product life cycles; organizations relying on a single product have shorter lifespans, while those diversifying their products extend their longevity.

- **Innovation Breeding Innovation (Grappe d'Innovation):** One innovation often leads to subsequent innovations stemming from the same idea, aimed at fulfilling similar needs.

- **Achieving Sustainable Development:** Technological innovation contributes to sustainable development.

1.4 Stages of the Technological Innovation Process:

The technological innovation process involves the following stages: (Crowly, P., 2004, p07).

1. Idea Generation: The innovation process begins with generating ideas, which may stem from innate capabilities, imagination, or environmental studies and problem recognition. Sources of ideas can be internal or external:

- External Sources:

- **Consumers:** Understanding buyers' needs and intentions is one of the best sources for innovation. Suggestions from consumers, market studies, and marketing research help identify potential and actual buyers.

- Industrial buyers.

- Experts, clients, and external research entities.

- **Distributors and intermediaries:** These can provide new ideas based on their direct interaction with consumers and understanding of their needs and problems.

- **Other sources,** such as advertising agencies, scientific journals, industrial and commercial exhibitions (local and international), etc.

- Competitors: Many organizations analyze competing and similar products, dismantling them to understand their features and leveraging this knowledge for product development.

- Internal Sources:

- Top management and managerial groups.
- Marketing, production, and market research departments.
- Employee suggestions.
- Research and development (R&D) departments: Specialists and experts within the organization assist in generating useful ideas. Large organizations often employ "think tanks" to brainstorm new ideas.

2. Idea Screening: This follows idea generation. The challenge for organizations lies in filtering the proposed ideas, as they may accept poor ideas or reject good ones that could have been developed into successful products. Screening criteria vary across organizations and industries but generally include:

- Technical Criteria: Production capacity, organizational strategy, technical expertise, and skill levels.

- Commercial Criteria: Needs analysis, environmental factors, and competition. (L'Leminier, S., 2001, p.70)

3. Feasibility Study: Selected ideas undergo feasibility studies to estimate costs, benefits, and potential profits for the organization.

4. Adoption and Preparation for Implementation: The innovative idea must be translated into action. This is typically achieved by forming work teams, providing necessary resources, selecting appropriate technologies, and motivating employees to ensure successful implementation. External environments must also be prepared to accept the innovation through methods such as advertising or establishing new distribution channels. (Al-Samarrai, S.H.A., 1999, pp.45-46)

5. Innovation Diffusion: This stage involves marketing the innovation, whether a new product or service. Diffusion is measured by the cumulative percentage of new adopters over time. Individuals vary in their willingness to adopt innovations, with some being early adopters and others waiting until benefits are more evident.

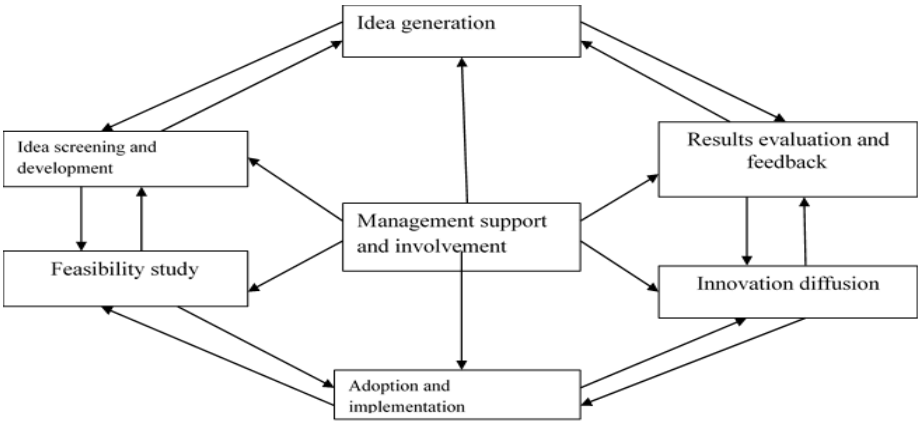
6. Evaluation and Feedback: Each stage requires information flow to ensure the process aligns with plans and to identify and address any obstacles. Continuous evaluation and feedback are essential to confirm the innovation's success and its alignment with intended goals.

The following diagram illustrates the stages of the innovation process:

Stages of the Innovation Process:

- 1. Idea Generation
- 2. Idea Screening and Development
- 3. Feasibility Study
- 4. Adoption and Preparation for Implementation
- 5. Innovation Diffusion
- 6. Evaluation and Feedback

Figure: Stages of the creative process



Source: Salwa Hani Abdul-Jabbar Al-Samarrai, **Technical Innovation and Some Influencing Factors**, PhD Thesis, College of Economics, Baghdad, 1999, p. 46.

2. The Conceptual Framework of Competitive Advantage:

The terms "competitiveness" (compétitivité) and "competition" (concurrence) are widely used in economic and managerial contexts. They are integral to what is now known as competitive capability or advantage. Contemporary literature distinguishes between the concept of "comparative advantage" (avantage comparatif) in international trade, as proposed by David Ricardo, which is based on the relative abundance of production factors determining trade patterns between

countries, and "competitive advantage" (avantage concurrentiel), which relies on efficiency in resource utilization, quality, training, research and development, knowledge, competencies, and environmental sustainability, among others.

Michael Porter was the first to develop the theory of competitive advantage, designing a model to measure competitiveness based on microeconomic variables. He argued that competition occurs between organizations themselves. (Porter, M., 1996, p12) In contrast, the Global Competitiveness Report proposed another model based on macroeconomic variables, assuming competition occurs between nations. The difference between the two models reflects divergent outcomes: at the organizational level, competition implies winners and losers, whereas at the national level, one country's success in global markets does not necessarily mean others lose, as export growth often generates demand for imports due to increased income.

2.1 Definition of Competitive Capability:

The concept of competitiveness lacks a unified and comprehensive definition due to varying perspectives. At the organizational level, competitiveness means continuously gaining a larger share of local and international markets. At the sector level, it refers to the ability of organizations within a specific industry to achieve sustained success in international markets without relying on government support or protection. At the national level, it involves achieving high and sustainable growth rates in real per capita income. (Zaghloul, I. & Al-Hazaima, M., 1999)

A. National-Level Competitiveness:

The Global Competitiveness Report defines national competitiveness as "the ability to achieve high and sustainable growth rates in real income per capita, measured by real GDP per capita." This report emphasizes that competitiveness reflects the structural qualities of a national economy.

The Organisation for Economic Co-operation and Development (OECD) defines it as "the degree to which a country, under free and fair market conditions, can produce goods and services that succeed in

international markets while maintaining or expanding the real incomes of its citizens over the long term."

The U.S. Industrial Competitiveness Council defines international competitiveness as "a country's ability to produce goods and services that pass the test of international markets while simultaneously increasing the real income of its citizens." (Al-Qarnashawi, H., 1999, p296)

B. Sector-Level Competitiveness:

Sector-level competitiveness refers to the ability of organizations within a specific industry to achieve sustained success in international markets without government support. It is measured by the sector's overall profitability, trade balance, foreign direct investment inflows and outflows, and cost and quality metrics. (Jordan Competitiveness Team, 2003, p03).

Sector competitiveness depends on the productivity of production factors, which must exceed or equal that of international competitors, with unit production costs lower than those of rivals. (Al-Jarf, M.T., 2002, p09) Additionally, the sector must achieve superiority by increasing its share of global exports.

C. Organizational-Level Competitiveness:

The organizational level is the most suitable for defining competitiveness. It reflects four key criteria: profitability, differentiation, superiority, and contribution to sustained growth.

- **Profitability:** The organization's ability to generate increasing and sustainable profits.

- **Differentiation:** The organization's success in distinguishing itself positively from competitors through unique products, superior performance, lower costs, etc.

- **Superiority:** The organization's ability to increase its global market share.

- **Contribution to Sustained Growth:** The organization's role in increasing real per capita income and maintaining this growth. (Al-Jarf, M.T., 2002, p09)

In the UK, organizational competitiveness is defined as "the ability to produce the right goods and services with the right quality, at the right price, and at the right time, meaning meeting consumer needs more efficiently than competitors." (Wadi, M.A., 2003, p 10)

The U.S. Presidential Commission on Industrial Competitiveness defines it as "the ability to deliver products or services with superior quality and lower costs compared to local and international competitors, ensuring long-term profitability, employee compensation, and returns to owners." (Al-Jarf, M.T., 2002, p10)

Another definition describes it as "the degree to which an organization succeeds in achieving its goal of maintaining competitive positions and building deeper competitive advantages relative to peers by reducing production errors, increasing market share, enhancing productivity, and focusing on innovation and sales growth." (Al-Tarawneh, M., 2002)

From these definitions, it is clear that resources and capabilities create performance differences among organizations. Some elements enhance effectiveness by enabling the production and delivery of superior products, while others improve efficiency in competition.

2.2 Requirements for Organizational Competitiveness:

Achieving competitiveness requires the following: (Arab Future Journal, 2000, p88)

- Compliance with international quality standards.
- Technological advancement to increase productivity and reduce costs.
- Workforce development and productivity enhancement through training and incentives.
- Emphasis on research and development.
- Market studies of competitors and exploration of new export opportunities.
- Organizational and administrative development.

2.3 Definition of Competitive Advantage:

Michael Porter defines competitive advantage as "the value a firm can create for its customers that exceeds the cost of producing it. It arises from offering products or services at lower costs or with superior differentiation, while maintaining this advantage over time." (Porter, M., 1986, p 08)

Ali Al-Sulmi defines it as "a set of skills, technologies, resources, and capabilities that management can coordinate and invest to achieve two main goals:

1. Producing higher value and benefits for customers than competitors.
2. Ensuring a state of distinction and differentiation between the organization and its rivals." (Al-Sulmi, A., 1995, p98)

2.4 Methods to Achieve Competitive Advantage:

Competitive advantage can be achieved through the following methods: (Najib, F., 2004, p634).

- **Superior Efficiency:** Through cost control.
- **Superior Quality:** By offering products that meet customer expectations.
- **Superior Innovation:** By introducing new products.
- **Superior Customer Responsiveness:** Through precise understanding of customer needs.

2.5 Sources of Competitive Advantage:

The two primary sources of competitive advantage are:

- 1. Distinctive Skills:** Such as technical knowledge, capabilities, and intelligence.
- 2. Distinctive Resources:** Such as financial resources, superior production capacity, etc.

Efforts to explain the competitive advantage of many organizations indicate that its source lies not in favorable external conditions but in the ability to leverage internal resources, where competencies, knowledge, and quality are key elements. (Cazal, D. & Dietrich, A., 2003, p 02)

By effectively utilizing these sources, organizations can achieve the following:

1. Efficiency

Efficiency is the optimal use of available resources, measured by the quantity of inputs used to produce specific outputs. As organizations transform inputs into outputs (goods and services), higher efficiency reduces the inputs required for a given output, lowering costs. Organizations with high production efficiency can build competitive advantages by offering lower prices.

2. Quality

With rapid changes and developments, organizations increasingly focus on meeting consumer desires and ensuring satisfaction. Price is no longer the primary driver of consumer behavior; quality has become the primary concern. Organizations aiming to remain competitive must produce high-quality products. A strong reputation for quality allows organizations to command higher prices, while defect-free production processes enhance efficiency and reduce costs. Quality is achieved through new technologies, improved processes, better management, and training.

3. Knowledge

Intellectual assets are a cornerstone for organizational survival in a knowledge-based competitive environment. Organizations relying on measurable intellectual assets, such as knowledge, patents, and trademarks, invest heavily in knowledge. They replicate best practices to achieve real returns on intellectual capital, though this requires addressing challenges in knowledge application.

Successful organizations invest in what they know, transferring knowledge across their structures to enhance production processes, develop goods and services, or improve functions and operations.

3. The Importance of Technological Innovation in Strengthening Competitive Strategies for Business Organizations:

Technological innovation has become the optimal and most reliable strategic choice for business organizations to confront global challenges such as globalization and rapid technological

advancements. It is a fundamental pillar in building competitive advantages, as organizations continuously seek to outperform rivals and dominate markets. Their ability to create competitive advantages depends on developing competitive strategies that help them secure profitable and sustainable positions amid competitive forces.

3.1 Technological Innovation Supporting Cost Leadership Strategy:

This strategy relies on an organization's ability to design, manufacture, and market products at lower costs than competitors or to offer products at prices below the industry average. This does not mean selling below cost but achieving lower variable costs, reduced marketing expenses, or minimized operational and administrative costs. Each type of cost can be a source of cost advantage. (Al-Tamimi, I.F. & Al-Khashali, S.J., 2004, p129)

The cost leadership strategy is based on the "experience effect" (effet d'expérience), where doubling cumulative production reduces unit costs by a constant percentage. This stems from economies of scale (économie d'échelle) and the learning effect (effet d'apprentissage). Economies of scale lower unit costs through increased production volume, while the learning effect improves labor productivity as cumulative production enhances workers' knowledge and organization of tasks, reducing the time required for specific activities and thus lowering costs. (Hamadouche, A., 1997, pp 67-68)

Cost leadership offers several advantages: (Khalil, N.M. ,1998, pp 37-38).

- **Competitors:** Organizations with lower costs are better positioned to compete on price.
- **Buyers:** They are less vulnerable to powerful customers demanding price reductions.
- **Suppliers:** They can withstand pressure from strong suppliers, especially if efficiency considerations allow them to set prices and maintain profit margins.
- **New Entrants:** They can deter new competitors by lowering prices.

- **Substitutes:** They can use price cuts to counter attractive substitute products. (Porter, M., 1997, pp 26-27).

In summary, cost leadership strengthens an organization's competitive position and market control by offering products at lower costs than rivals. Cost reduction is the overarching goal of all organizational activities.

3.2 Technological Innovation Supporting Differentiation Strategy:

Differentiation occurs when an organization offers unique products or services that distinguish it from competitors, meeting customer needs in a distinctive way. This could involve innovative products, superior quality, or exceptional services, justifying higher prices. Examples include Sony in electronics and IBM in computers. (Morsi, N.M. & Salim, A.A., 2007, p104)

Differentiation relies on: (Khalil, N.M., 1998, pp 119-120)

- High-quality raw materials affecting the final product.
- Intensive R&D efforts to improve product design, performance, and versatility.
- Manufacturing processes free of defects, superior engineering, flexible product uses, and high quality.
- Efficient delivery systems and accurate order processing.

Key areas of differentiation include:

- Technical superiority.
- Quality.
- Enhanced customer service.
- Greater product value relative to price.

Differentiation strengthens an organization's competitive position by distinguishing its products and services from competitors'. However, it often involves additional costs and higher prices, justified by the unique value offered.

3.3 Technological Innovation Supporting Focus Strategy:

This strategy targets specific customer segments, market niches, or geographic areas. Organizations using this strategy precisely define their marketing goals and meet their needs through cost leadership or differentiation within the targeted segment. (Porter, M. ,1997, pp 27-29)

The focus strategy aims to build a competitive advantage by catering to specific customer needs, geographic markets, or product uses. It involves dividing the market into homogeneous segments and directing resources to those aligning with organizational goals. (Khalil, N.M. ,1998, p 121)

4. The Economic Impacts of Technological Innovations on Business Organizations:

The economic effects of technological innovations vary and primarily relate to economic development or growth. They can be categorized as follows: (Oukil, M.S., 1992, p 37).

4.1 Effects on Final Costs:

Technological innovation impacts the final cost of products, influencing the prices at which organizations sell them. Two scenarios illustrate this:

Case 1: Increased Output Volume

Organizations adopt new production technologies to enhance capacity, producing more units in less time. This strengthens supply and meets demand.

Case 2: Reduced Unit Production Costs

The primary goal of technological innovation is cost reduction, particularly unit costs, enabling organizations to compete through product improvements. This optimizes production processes, increases margins, and ensures survival and growth through reinvestment.

New technologies significantly boost production volume by processing more inputs in a given time, often lowering overall production costs and unit costs, thereby improving profitability.

4.2 Effects on Consumption and Usage:

In a competitive environment, organizations strive to satisfy consumers by continuously improving product quality. Quality is measured by:

- Product warranty periods.
- Estimated product lifespan.
- Ease of maintenance.
- User-friendliness.

Technological innovation achieves these standards by applying scientific and technical knowledge, ensuring high-quality products at comparable costs, fostering economic growth.

Standardization (*normalisation*) also stimulates consumption by addressing issues arising from diverse product sources and specifications. It relies on integrated global standards for dimensions, quality, performance, and operations, expanding the range of services offered to consumers.

4.3 Effects on Exports :

Exports are a key measure of economic and organizational efficiency. Technological innovation's greatest challenge is enabling market entry and expansion through exports, as increased production necessitates distribution solutions.

Successful organizations improve their competitive positions by boosting exports and earning foreign currency. Enhanced quality reduces production costs, strengthens competitiveness, increases market share, raises revenues and profits, and funds R&D and innovation.

4.4 Impact on Work Organization:

Innovative production methods not only enhance productivity and quality but also transform work systems. Adopting new technologies requires workforce training and skill development.

For instance, major U.S. industrial firms found that production equipment upgrades alone were insufficient to boost productivity without concurrent investments in employee training.

4.5 Impact on Reduced Transport and Communication Costs:

Technological revolutions in communications, IT, and information systems have integrated global financial markets and accelerated globalization. Transport and communication costs have plummeted; phone call costs have decreased 60-fold since 1930, and international transport costs have fallen due to technological advancements.

Faxes and computer networks have overcome geographical barriers, enabling billions of dollars to cross borders in minutes. This technological progress has increased financial market liquidity, facilitated capital flows, and enhanced accessibility.

Conclusions and Recommendations:

The key conclusions of this study are as follows:

- 1. The Critical Role of Technological Innovation:** It is the true driver of value creation in modern organizations and a primary resource for achieving competitive advantage.
- 2. Drivers of Innovation:** Intense market competition and rapid scientific and technological advancements make innovation the engine of progress and the key weapon for organizations to enhance competitiveness.
- 3. Competitive Advantages:** Continuous improvement and mastery of technological innovation enable organizations to gain or maintain competitive advantages in global markets.
- 4. Human Capital:** Technological innovation reflects the level of knowledge and skills, highlighting the importance of human resources in acquiring competitive advantages, especially in a globalized world.
- 5. Knowledge Economy:** In an era of knowledge-based economies, managers must prioritize R&D, adopt modern IT and communication technologies, and adapt to environmental changes. Speed is crucial; failure to innovate exposes organizations to fierce competition and globalization pressures.
- 6. Strategic Reassessment:** Organizations must reevaluate their strategies in light of the new global economy, embracing alliances,

foreign investments (partnerships), and leveraging advanced technologies across all domains.

Referrals and references:

- 1- Randall Mork & Yeung Bernard (2001). *The Economic Determinants of Innovation*. Ottawa: Industry Canada, Occasional Paper No. 25, January 2001, p.1.
- 2- Fulmer, R. (1974). *The New Management*. New York: Macmillan Publishing, p.364. [As cited in Saleh Mahdi Hassan Al-Ameri (2005). *Technological and Organizational Factors Affecting Technological Innovation: A Field Study on a Sample of Jordanian Industrial Companies*. Damascus University Journal for Economic and Legal Sciences, 21(2), p.148].
- 3- Mueser, R. (1985). Identifying Technical Innovation. *IEEE Transactions on Engineering Management*, 23(4), p.158. [As cited in Al-Ameri, op.cit., p.149].
- 4- Oukil, M.S. (1992). *Functions and Activities of Industrial Enterprises*. Algiers: University Publications Office, p.111.
- 5- Akroush, M.N. & Akroush, S.N. (2004). *New Product Development: An Integrated Modern Strategic Approach* (1st ed.). Jordan: Wael Publishing House, p.1.
- 6- Lendrevie, J., Lindon, D. & Levy, J. (2003). *Mercator* (7th ed.). France: Dalloz, p.327.
- 8- Crowley, P. (2004). *Sources and Resources of Innovation in the EU: Science and Technologies*. Luxembourg, p.7.
- 9- L'Emnier, S. (2001). Innovation: Does Your Project Hold the Road? *Enterprise Review*, 187, April 2001, p.70.
- 10- Al-Samarrai, S.H.A. (1999). *Technical Innovation and Some Influencing Factors*. PhD Dissertation, College of Economics, Baghdad, pp.45-46.
- 11- Porter, M. (1996). *On Competition*. Boston: Harvard Business Review Book, p.12.
- 12- Zaghloul, I. & Al-Hazaima, M. (1999). Policies and Plans for Developing the Competitiveness of the Jordanian Economy. Symposium on Competitiveness of Arab Economies, Economic Policies Institute, Arab Monetary Fund, No.5.
- 13- Al-Qarnashawi, H. (1999). Policies and Plans for Developing Competitive Capabilities of the Egyptian Economy. Arab Monetary Fund, No.6, Abu Dhabi, p.296.
- 14- Jordan Competitiveness Team (2003). *Competitiveness and Jordan's Experience*. Ministry of Planning and International Cooperation, p.3.
- 15- Al-Jarf, M.T. (2002). The Concept of Competitiveness and Its Determinants. Center for Economic and Financial Research, Cairo University, Egypt, *Economic Papers*, No.19, p.9.
- 16- Al-Jarf, M.T. (2002). Op.cit., p.9.
- 17- Wadi, M.A. (2003). Competitiveness and Its Measurement. Arab Planning Institute, Kuwait, *Development Bridge*, 24, p.10.
- 18- Al-Jarf, M.T. (2002). Op.cit., p.10.

- 19- Al-Tarawneh, M. (2002). Total Quality and Competitiveness. Journal of Administrative Sciences, 29, Jordan.
- 20- Arab Future Journal (2000). Enterprise-Level Competitiveness, 254, p.88.
- 21- Porter, M. (1986). Competitive Advantage. Paris: Inter Editions, p.8.
- 22- Al-Sulmi, A. (1995). Total Quality Management and ISO 9000 Qualification Requirements. Egypt: Gharib Publishing, p.98.
- 23- Najib, F. (2004). The Relationship Between Information Systems and Competitive Advantage in the Jordanian Pharmaceutical Sector. Public Administration Journal, 24(3), p.634.
- 24- Abu Qahf, A. How to Control Markets. Beirut: Al-Ishaa Technical Press, p.264.
- 25- Cazal, D. & Dietrich, A. (2003). Competence and Knowledge: Between HRM and Strategy. Research Papers, Claree, January 2003, p.2.
- 26- Al-Tamimi, I.F. & Al-Khashali, S.J. (2004). Innovative Behavior and Its Impact on Competitive Advantage: A Field Study in Jordanian Food Industries. Al-Basaer Journal, 8(2), p.129.
- 27- Hamadouche, A. (1997). Strategic Analysis Methods and Tools. Algiers: Chihab Edition, pp.67-68.
- 28- Khalil, N.M. (1998). Competitive Advantage in Business. Egypt: Alexandria Book Center, pp.37-38.
- 29- Porter, M. (1997). Competitive Advantage. Paris: Dunod, pp.26-27.
- 30- Morsi, N.M. & Salim, A.A. (2007). Strategic Management. Egypt: Modern University Office, p.104.
- 31- Khalil, N.M. (1998). Op.cit, pp.119-120.
- 32- Porter, M. (1997). Op.cit., pp.27-29.
- 33- Khalil, N.M. (1998). Op.cit, p.121.
- 34- Oukil, M.S. (1992). Op.cit, p.37.