

## LEADERSHIP IN ISO 9001:2015

Radosław WOLNIAK

Politechnika Śląska, Wydział Organizacji i Zarządzania, Instytut Ekonomii i Informatyki; rwolniak@polsl.pl,  
ORCID: 0000-0003-0317-9811

**Abstract:** The aim of the paper is to analyze the question connected with leadership in the implementation and management of the ISO 9001:2015 system. In the paper we presented the definitions of leadership, some examples of leadership styles and the motivation method used in those styles, problems connected to communication-related quality management issues, using leadership methods to fulfill customers' needs. Top management demonstrates leadership and the ability to commit to customer focus within particular organization.

**Keywords:** quality management, ISO 9001:2015, ISO 9001, leadership, interested parties, needs and expectations.

### 1. Introduction

According to business management literature we can define the concept of leadership as (Baron, 1983; Wolniak, 2018; Donnelly, et al., 1985; Tannebaum, et. al., 1961; Batten, 1989; Bass, 1990; Jacques, and Clement, 1994):

- Leadership is the influence exerted by one member to change, shape and direct the actions of other members of an organization.
- Leadership is the art of motivating a group of people to act towards achieving a common goal.
- The ability of leading a group of people or an organization. To do this. Leadership involves:
  - establishing a clear vision,
  - sharing that vision with others so that they follow willingly,
  - providing the information, knowledge and methods to realize that vision, and
  - coordinating and balancing the conflicting interests of all members and stakeholders.
- An act or instance of leading, guidance, direction.

- Leadership is the ability of an individual or a group of individuals to influence and guide followers or other members of an organization.
- Leadership is the interpersonal influence exercised in a situation and directed, through the communication process, toward the attainment of a specified goal or goals.
- Leadership is an attempt at influencing the activities of followers through the communication process and toward the attainment of some goal or goals.
- Leadership is a development of a clear and complete system of expectations in order to identify, evoke and use the strengths of all resources in the organization, the most important of which is people.
- Leadership is an interaction between two or more members of a group that often involves a structuring or restructuring of the situation and the perceptions and expectations of members...Leadership occurs when one group member modifies the motivation or competencies of others in the group.
- Leadership is that process in which one person sets the purpose or direction for one or more other persons and gets them to move along together with him or her and with each other in that direction with competence and full commitment.
- Leadership means making sure that the organization is doing the right thing. Management means making sure that those things are being done right.

The aim of the paper is to analyze the leadership aspects of the ISO 9001:2015 implementation.

## **2. Management styles and motivations**

In the organization, top management should demonstrate leadership ability and commitment with respect to the quality management systems by (ISO 9001:2015):

- taking accountability for the effectiveness of the quality management system,
- ensuring that the quality policy and quality objectives are established for the quality management system and are compatible with the context and strategic direction of the organization,
- ensuring the integration of the quality management system requirements into the organization's business processes,
- promoting the use of the process approach and risk-based thinking,
- ensuring that the resources needed for the quality management system are available,
- communicating the importance of effective quality management and of conforming to the quality management system requirements,
- ensuring that the quality management system achieves its intended results,

- engaging, directing and supporting persons to contribute to the effectiveness of the quality management system; promoting improvement,
- supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility.

Leaders establish the unity of purpose and direction for the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives (Chen, et, al., 2016; Cholewicka-Goździk, 2016; Gębczyńska, and Wolniak, 2018; Hordecka, and Wolniak, 2015; Juszczak-Wiśniewska, and Ligarski, 2015, 2016; Łagowski, and Żuchowski, 2016; Ligarski, 2013, 2014; Łuczak, and Wolniak, 2016). A good leadership is related to management styles, leadership and ways of motivation used in the company. The relation between those elements is presented in the Table 1.

**Table 1.**  
*Management styles, leadership and motivations*

<b>Leadership patterns</b>	<b>Management styles</b>	<b>Motivational theory</b>
Manager makes a decision and announces it	Exploitative – Authoritative <ul style="list-style-type: none"> <li>• Manager has little confidence in the subordinates</li> <li>• Manager issues orders/directives</li> <li>• Uses coercion to get things done</li> <li>• Atmosphere of distrust between superiors and subordinates</li> <li>• Generally, there is opposition to the goals of the formal organization</li> </ul>	Theory X assumptions <ul style="list-style-type: none"> <li>• People inherently dislike work and will avoid it when possible</li> <li>• They have little ambition, shun responsibility and prefer direction</li> <li>• They want security. It is necessary to use coercion, control them and threaten them with punishment to get them to achieve goals</li> <li>• There is always someone to blame</li> </ul>
Manager sells a decision Manager presents ideas and invites questions	Benevolent – Authoritative <ul style="list-style-type: none"> <li>• Manager acts in a condescending manner</li> <li>• Manager issues orders/directive with opportunity to comment</li> <li>• Some decision-making at lower levels within a prescribed framework</li> <li>• Carrot and stick approach</li> <li>• Staff appear cautious and fearful</li> <li>• Does not oppose all goals of the formal organization</li> </ul>	Theory Y assumptions <ul style="list-style-type: none"> <li>• If conditions are favorable people will accept responsibility and even seek it</li> <li>• If people are committed to organization objectives they will exercise self-direction and self-control</li> <li>• Commitment is a function of the rewards associated with goal attainment</li> <li>• The capacity of creativity in solving organizational problems is widely distributed in the population and the intellectual potential of an average person is only partially utilized</li> </ul>
Manager presents a problem, gets suggestions, makes a decision Manager defines limits, asks the group to make a decision	Consultative – Democratic <ul style="list-style-type: none"> <li>• Manager has confidence in subordinates</li> <li>• Manager issues orders only after a discussion with subordinates</li> <li>• Important decisions made at the top with tactical decisions made at lower levels</li> <li>• Two-way communication</li> <li>• Some trust between superiors and subordinates</li> <li>• Slight resistance to the goals of the formal organization</li> </ul>	Theory Z characteristics <ul style="list-style-type: none"> <li>• Long-term employment and job security</li> <li>• Implicit, informal control with explicit, formalized measures</li> <li>• Slow evaluation and promotion</li> <li>• Moderately specialized careers</li> <li>• Concern for the entire person, including their family</li> </ul>

Cont. table 1.

<p>Manager permits subordinates to function within the limits defined by a superior</p>	<p>Participative – Democratic</p> <ul style="list-style-type: none"> <li>• Manager has complete confidence and trust in subordinates</li> <li>• Goals normally set by group participation</li> <li>• Decision-making is highly decentralized</li> <li>• Communication up and down and sideways</li> <li>• Mutual trust</li> <li>• Formal and informal organizations are one and the same</li> </ul>	
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Source: Hoyle, 2009.

### 3. Practical realization of leadership in ISO 9001:2015

ISO 9001 explicitly specifies a set of actions to demonstrate the leadership and commitment of top management to implementing, maintaining and continually improving quality management system in the organization. The documentary should include evidence to demonstrate the leadership of top management.

Employees that operate quality management systems are a significant resource and their full involvement enhances the effectiveness and improvements of quality management systems. If we want to fully involve employees in achieving the organization's objectives, the top management should (Abuhav, 2017; Novakova, et. al., 2016):

- Promote involvement in the quality management systems.
- Promote the concept of effective quality management systems.
- Involve the entire organization in improving the quality management systems.

There are many ways to publish information in the case of internal and external communication. For example, it can include (Abuhav, 2017):

- Publishing the policy and the objective on a bulletin board or in an organizational portal.
- Maintaining a procedure that requires each employee to read the quality policy at least once, which they must sign indicating they have read and understood the policy.
- Messages or notices to the public in media.
- Letters for partners.
- Website.

In Table 2, there is a list of basic problems that should be communicated by the organization to enhance the level of functioning of the quality management system.

**Table 2.**  
*Questions to communicate in the quality management system*

Factors	Characteristic
<p><b>Awareness of the process approach</b></p>	<ul style="list-style-type: none"> <li>• The top management shall refer to the process approach in the quality policy, define it as a quality goal and, if applicable, define relevant quality objectives.</li> <li>• The top management can initiate benchmarking like reengineering projects or process mapping in order to evaluate the maturity and compatibility of the business processes.</li> <li>• The top management shall allocate resources for the implementation of the process approach:               <ul style="list-style-type: none"> <li>• Responsibilities and roles</li> <li>• Plans and schedules for the implementation</li> <li>• Tools that enable process analysis</li> <li>• Required training courses</li> <li>• Outsourced consulting</li> </ul> </li> </ul> <p>The organization must prove in action that</p> <ul style="list-style-type: none"> <li>• A method for analyzing processes is implemented. There is no requirement for documenting the method but you will need to provide evidence: tools and means with which you control your processes.</li> <li>• All processes in the organization are mapped and controlled according to this method.</li> <li>• All processes have the desired results that will enable the assessment of the process.</li> <li>• Responsibilities in the organization are authorized for these activities.</li> <li>• Results of the process mapping exist and are reviewed.</li> <li>• Process inputs and process outputs are available for review.</li> <li>• Processes are regularly reviewed and improvement of processes is achieved.</li> </ul>
<p><b>Awareness of risk-based thinking</b></p>	<p>The top management shall refer to risk-based thinking in its quality policy, define it as a quality goal and, if applicable, define relevant quality objectives. While implementing the process approach, risk-based thinking will be integrated into the planning of the processes.</p> <ul style="list-style-type: none"> <li>• The top management can initiate actions like small-scale risks analysis projects in order to identify the risks that pose threats to the quality management systems or to detect opportunities that will improve the quality management systems and enhance the desirable effects.</li> <li>• The top management shall allocate resources for the promotion of risk-based thinking.</li> </ul>
<p><b>Ensuring resources</b></p>	<ul style="list-style-type: none"> <li>• The importance of allocating the right resources to the various activities of the organization is understood and considered</li> <li>• The need for resources in order for processes and activities to be effective and efficient is acknowledged</li> <li>• The top management is committed to providing the resources required to carry out the activities of the quality management systems</li> <li>• Current process capabilities and their resources are assessed</li> <li>• Future resources and technology needs are identified</li> <li>• Activities for the identification and provision of the resources needed shall be determined</li> </ul> <p>The link between the strategy and vision of the organization and the commitment to provide the necessary resources are very important for achieving this strategy. In practice, I would include a reference to the allocation of the necessary resources in each section, part, chapter, or capital of the quality policy. For example:</p> <ul style="list-style-type: none"> <li>• Responsibilities and roles</li> <li>• The appropriate time resources</li> <li>• Procedures and methods</li> <li>• Tools and instruments</li> <li>• External resources</li> <li>• Training</li> </ul>

Cont. table 2.

<p><b>Improvements</b></p>	<p>When individuals perform their activities as expected or according to specifications and, as a result, produce the intended results, the goals of quality management systems are achieved.</p> <p>Acting towards the enhancement of their output results in the improvement of the quality management systems. When they are acting for enhancing their outputs, then the quality management systems is improved. Publishing it on the bulletin board is not enough. It is a cyclic process which includes:</p> <ul style="list-style-type: none"> <li>• Promoting improvement</li> <li>• Initiating actions to obtain input</li> <li>• Analyzing the inputs</li> <li>• Initiating actions for improvement</li> <li>• Measuring the effectiveness of those improvements</li> </ul> <p>If you maintain a suggestion box for improvements in an audit, it will not be enough to show that suggestions were filled out on a controlled form but that:</p> <ul style="list-style-type: none"> <li>• The suggestions were reviewed</li> <li>• A few of them were chosen for implementation</li> <li>• They were subjected to a methodical process</li> <li>• Their implementation was done under supervision</li> <li>• The top management took the time to evaluate the effectiveness of the suggestions</li> </ul>
<p><b>Ensuring comparability of processes to ISO 9001 standards</b></p>	<p>The top management is required to prove its commitment to implementing a quality management system. This requirement of the top management has two aspects: the establishment of the quality management systems and its continuous control.</p> <ul style="list-style-type: none"> <li>• The top management must ensure that the quality management system is established according to the standard requirements.</li> <li>• The top management must ensure that the quality management system is maintained according to the standard requirements.</li> </ul> <p>The standard requires various tools and techniques for that kind of control:</p> <ul style="list-style-type: none"> <li>• Internal and external audits</li> <li>• Risk-based thinking approach</li> <li>• Quality objectives</li> <li>• Monitoring, measurement, analysis, and evaluation</li> <li>• Management review</li> </ul>

Source: own work on the basis of: Abuhav, 2017.

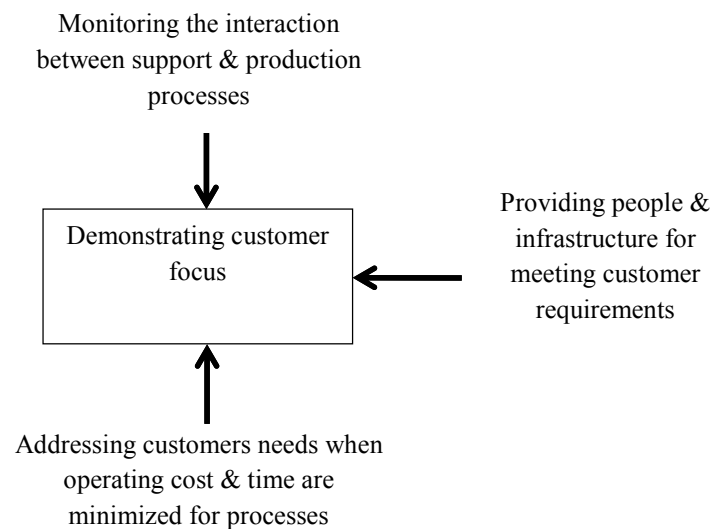
The appropriate level of leadership is needed to fulfill the customers' needs and requirements (Pacana, 2014; Pacana, et. al. 2014, 2017; Pacana, and Stadnicka, 2006, Poksińska, et al., 2002, 2017; Salvendy, 2001; Ścierański, 2011, Stamatis, 1995, Sułkowski, and Wolniak, 2016, 2018). With regard to customers, according to ISO 9001:2015 requirements, organizations should ensure that (ISO 9001:2015):

- customer and applicable statutory and regulatory requirements are determined, understood and consistently met,
- the risks and opportunities that can affect the conformity of products and services and the ability to enhance customer satisfaction are determined and addressed,
- the focus on enhancing customer satisfaction is maintained.

Top management demonstrates leadership and the ability to commit to customer focus within particular organization. Some of the visible methods for demonstrating customer focus are presented in Figure 1. The method should be used for demonstrating customer focus with regard to (Natarajan, 2017):

- Monitoring the effectiveness of interaction between support processes and production processes for meeting customer requirements.
- Providing people and infrastructure for meeting the requirements of products and customers.

Addressing customer needs when cost and time reduction measures are initiated for improving the efficiency of processes. The main problems connected to meeting customers' end expectations in the quality management system are presented in Table 3.



**Figure 1.** Methods for demonstrating customer focus. Source: Natarajan D.:ISO 9001. Quality Management Systems, Springer, Bangalore, 2017.

There are many similar terms that are used by upper management so it is not surprising that their use is inconsistent. To compare the meanings of the term policy, in particular quality policy, there is a competition between them in Table 4 based on the comparison to other strategic document terms (Szczucka-Lasota, and Wolniak, 2018; Szkiel, 2016; Wolniak, 2011; Wolniak, and Sułkowski, 2015, 2016; Wolniak, and Hąbek, 2015; Wolniak, and Skotnicka-Zasadzień, 2010, 2014; Wolniak, 2013, 2014, 2016, 2017; Ząbek, 2016, Żemigła, 2017).

**Table 3.**

*Fulfilling customers' needs in the quality management system*

Factors	Characteristic
Assessing and evaluating related risks and opportunities	<p>The top management shall demonstrate its leadership and commitment by:</p> <ul style="list-style-type: none"> <li>• Initiating action plans for identifying and addressing such risks or opportunities</li> <li>• Demanding and controlling the integration of those actions and their implementation in the processes of the organization</li> <li>• Evaluating their effectiveness</li> </ul> <p>The top management is required:</p> <ul style="list-style-type: none"> <li>• To promote the proactive approach by initiating the involvement of the organization's units at all levels in identifying and assessing the risks or in developing opportunities</li> <li>• to review the effectiveness of these actions with the instruments that the ISO 9001 requires, such as internal audits or management review</li> </ul>

Cont. table 3.

<p><b>Ensuring delivery of products and services that conform to customer requirements</b></p>	<p>Top management shall ensure the delivery of products and services that conform to customer requirements through the implementation and integration of actions and activities for identifying and meeting customers' requirements. The objective is to define actions that will:</p> <ul style="list-style-type: none"> <li>• Identify the requirements</li> <li>• Review further necessary requirements that were not mentioned by the customer but are necessary for the realization of the product or service</li> <li>• Publish these requirements at the appropriate stages during the realization of the product or service</li> <li>• Review whether the requirements can be met</li> <li>• Evaluate whether the realized goods or services meet their requirements</li> </ul>
<p><b>Enhancing customer satisfaction</b></p>	<p>By demonstrating leadership and commitment, the top management shall:</p> <ul style="list-style-type: none"> <li>• Define which method is needed (and most effective)</li> <li>• Verify whether the method is integrated into the processes and effectively Implemented</li> <li>• Validate that the information and data that were collected and analyzed provide the appropriate situation report</li> </ul>

Source: own work on the basis of: Abuhav, 2017.

**Table 4.**

*Corporate terminology*

Term	Characteristic
<b>Purpose</b>	Why we exist, why we do what we do
<b>Mission</b>	As Purpose
<b>Vision</b>	What the organization should look like when it successfully fulfills its mission
<b>Goals</b>	The strategic long-term objectives based on the mission and vision
<b>Values</b>	The beliefs that will guide our behavior
<b>Strategy</b>	How we are going to get there
<b>Policy</b>	Rules that guide our actions and decisions – the signposts en route
<b>Principles</b>	A fundamental truth
<b>Objectives</b>	What we want to achieve at key milestones along the journey
<b>Measures</b>	What will indicate achievement
<b>Targets</b>	What we aim at to achieve objectives

Source: Hoyle, 2009.

A quality policy is a type of corporate policy and such policies exist to channel actions and decisions along a path that will fulfill the organization's mission. The goal of the organization may be the receipt of ISO 9001 certification and thus a quality policy for meeting the requirements of ISO 9001 would be consistent with such a goal, but in reality this is a constraint and not a goal as people work to fulfill the mission in a way that is consistent with the requirements of ISO 9001.

To establish a quality policy means to put it in place permanently. A quality policy that is posted in the entrance hall is published but not established. For a policy to become established, it has to reflect the beliefs of the organization and underpin every conscious thought and action. This will only occur if everyone shares those beliefs. For this to happen, managers need to become role model so that by their actions the quality policy is perceived merely as something written to satisfy ISO 9001 requirements (Hoyle, 2009).



In the case of policy organization, especially top management should establish and ensure that the quality policy (ISO 9001:2015):

- is appropriate to the purpose and context of the organization and supports its strategic direction,
- provides a framework for setting quality objectives,
- includes a commitment to satisfy applicable requirements,
- includes a commitment to continual improvement of the quality management system.

Detailed description of the characteristics which the quality policy should have is included in Table 5. In Table 6, there are some examples of corporate policies.

**Table 5.**  
*Characteristics of a quality policy*

<b>Factors</b>	<b>Characteristic</b>
<b>Appropriate to the organization's needs</b>	A quality policy appropriately addresses the purpose, context and strategic direction of the organization. Phrases like compliance with legal requirements and updating of technology to ensure competitive advantage could be considered for establishing the quality policy.
<b>Framework for quality objectives</b>	The quality policy is designed to provide a broad framework for setting or deriving quality objectives. Including phrases like improving market share, customer satisfaction and quality management system effectiveness in the quality policy provides a broad framework for deriving quality objectives for various levels and processes of the organization.
<b>Commitments</b>	The quality policy is worded to include the top management's commitment to satisfying the applicable requirements of products and to continuous improvement of the quality management systems of the organization.

Source: Own work on the basis of: Natarajan, 2017.

An employee should understand the implications of the statement on their work, how they help the company in their job, or how their job relates to the company's policy. In other words, the employee must understand that their work and its outputs do not end in their workplace but have implication on later stages. This can be achieved if the employees (Abuhav, 2017):

- Are aware of the quality goals of the firm: what is the vision of the organization, what are the values upon which the organization acts.
- Know what is expected of the organization (by the customers).
- Understand the importance of quality requirements and the significance of their implementation.
- Understand the meaning of effective quality management systems.
- Are familiar with their direct quality objectives.
- Understand the significance of the quality of products and services and the implications of delivering non-conforming products or services.

**Table 6.**  
*Examples of corporate policies*

<b>Factors</b>	<b>Characteristic</b>
<b>On Customers</b>	We will listen to our customers, understand their needs and expectations and endeavor to satisfy those needs and expectations in a way that meets the expectations of our other stakeholders.
<b>On Leadership</b>	We will establish and communicate our vision for the organization and through our leadership exemplify the core values to guide the behavior of all to achieve our vision.
<b>On People</b>	We will involve our people in the organization's development, utilize their knowledge and experience, recognize their contribution and provide an environment in which they are motivated to realize their full potential.
<b>On Processes and Systems</b>	We will take a process approach towards the management of work and manage our processes as a single system of interacting processes that produce outcomes which satisfy all our stakeholders.
<b>On Continual Improvement</b>	We will provide an environment in which every person is motivated to continually improve the efficiency and effectiveness of our products, processes and our management system.
<b>On Decisions</b>	We will base our decisions on the logical and intuitive analysis of data collected where possible from accurate measurements of product, process and system characteristics.
<b>On supplier relationships</b>	We will develop alliances with our suppliers and work with them to jointly improve performance.
<b>On profits</b>	We will satisfy our stakeholders in a manner that will yield a surplus which we will use to develop our capabilities and our employees, reward our investors and contribute to improvement in our society.
<b>On the environment, health and safety</b>	We will operate in a manner that safeguards the environment and the health and safety of those who could be affected by our operations.

Source: own work on the basis of: Hoyle, 2009.

Responsibilities and authorities drive process owners to achieving the planned results. Top management defines the responsibilities and authorities of process owners in accordance to their roles. The responsibilities of process owners are (Purushothama, 2015):

- Ensuring that the quality management systems documentation conforms to the requirements of ISO 9001. Process owners usually approve their quality procedures.
- Ensuring that the processes are delivering their intended (planned) outputs as per the relevant quality management system documents.
- Reporting the performance of the assigned processes and opportunities for improvement to the top management as inputs for reviews.
- Ensuring customer focus in the functional areas of process owners.
- Ensuring that the integrity of the quality management system documentation is maintained when changes to the documentation are planned and implemented by process owners.

The policy should be communicated in an appropriate manner, in particular (ISO 9001:2015):

- be available and maintained as documented information,
- be communicated, understood and applied within the organization,
- be available to relevant interested parties, as appropriate,
- be reviewed for continuing suitability.

## 4. Conclusion

Proper leadership is a very important part of a functioning quality management system. It is indispensable to implement and manage this system. Top management demonstrates leadership and the ability to commit to customer focus within particular organization. They should prepare all documents needed to achieve the fulfillment of the customers' needs, for example the quality policy. The proper leadership style is a basis for behavior for employees.

## References

1. Abuhav, I. (2017). *ISO 9001:2015. A Complete Guide to Quality Management Systems*, London: CRC Press.
2. Baron, R. (1983). *Behaviour in organization: understanding and managing the human side of work*, USA: Allyn and Bacon Inc.
3. Bass, B.M. (1990). *Bass and Stogdill's handbook of leadership: Theory, research and managerial applications*, New York: Free Press.
4. Batten, J.D. (1989). *Tough-minded leadership*, New York: AMACOM.
5. Chen, C.K., Lee, J.D., Dahlgard, J.J. (2016). A stepwise ISO-based TQM implementation approach using ISO 9001:2015. *Management and Production Engineering Review*, 4, 65-75.
6. Cholewicka-Goździk, K. (2016). Struktura normy ISO 9001:2015, podstawowe wymagania. *Problemy Jakości*, 1, 25-30.
7. Donnelly, J.H., Ivancevich, J.M., Gibson, J.L. (1985). *Organizations: behaviour, structure, processes*. Plano: Business Publications Inc.
8. Gębczyńska, A., Wolniak, R. (2018). *Process management level in local government*. Philadelphia: CreateSpace.
9. Horodecka, A.M., Wolniak, R. (2015). Valutazione delle non conformita nell'esempio di un Azienda Italiana. In J. Kaźmierczak (Ed.), *Systemy Wspomagania Inżynierii Produkcji. Review of problems and solutions*, 18-31.
10. Hoyle, D. (2009). *ISO 9000. Quality systems handbook*. Boston: Elsevier.
11. *ISO 9001:2015. Quality management systems – Requirements*.
12. Jaques, E., Clement, S.D. (1994). *Executive leadership: a practical guide to managing complexity*. Cambridge, MA: Carson-Hall.
13. Juszczak-Wiśniewska, A., Ligarski, M. (2015). Weryfikacja przydatności opracowanego narzędzia badawczego do analizy problemów w systemach zarządzania jakością. *Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacji i Zarządzanie*, 80, 133-141.

14. Juszczak-Wiśniewska, A., Ligarski, M. (2015). Analysis of the causes the quantitative changes and trends in conferred ISO 9001 certificates in Poland Research based on the data from audits. *Systemy Wspomagania w Inżynierii Produkcji*, 1, 42-50.
15. Juszczak-Wiśniewska, A., Ligarski, M. (2016). Akredytacja i certyfikacja systemów zarządzania jakością w placówkach medycznych w Polsce – wyniki badań. *Systemy Wspomagania w Inżynierii Produkcji*, 2, 163-171.
16. Łagowski, E., Żuchowski, J. (2016). Aktualizacje normy ISO 9001 w aspekcie bieżących potrzeb gospodarczych. *Problemy Jakości*, 10, 15-22.
17. Ligarski, M. (2013). Problems examination in quality management system. *Acta Technologica Agriculture*, 4, 108-112.
18. Ligarski, M. (2014). Diagnoza systemu zarządzania jakością w polskich organizacjach. *Problemy Jakości*, 5, 14-22.
19. Łuczak, J., Wolniak, R. (2016). Integration of quality environment and safety management systems in a foundry. *Metalurgija*, 3, 843-845.
20. Natarajan, D. (2017). *ISO 9001. Quality Management Systems*. Bangalore: Springer.
21. Novakova, R., Cekanova, K., Paulikova, A. (2016). Integration management system – new of requirements of ISO 9001:2015 and ISO 14001:2015 standards. *Production Engineering Archives*, 4, 35-40.
22. Pacana, A. (2014). *Synteza i doskonalenie wdrażania systemów zarządzania jakością zgodnych z ISO 9001 w małych i średnich organizacjach*. Rzeszów: Oficyna Wydawnicza Politechniki Rzeszowskiej.
23. Pacana, A., Gazda, A., Bednárová, L. (2014). The impact of quality information on innovatory environment of the public administration *International Journal of Interdisciplinarity in Theory and Practice*, 4, 25-26
24. Pacana, A., Ingaldi, M., Czajkowska, A. (2017). *Projektowanie i wdrażanie sformalizowanych systemów zarządzania*. Rzeszów: Wydawnictwo Politechniki Rzeszowskiej.
25. Pacana, A., Lew, G., Kulpa, W. (2017). Rating the quality of implementation of environmental management systems. *Journal of Business & Retail Management Research*, 11(2), 165-169.
26. Pacana, A., Stadnicka, D. (2006). *Wdrażanie i audytowanie systemów zarządzania jakością zgodnych z normą ISO 9001:2000*. Rzeszów: Oficyna Wydawnicza Politechniki Rzeszowskiej.
27. Pacana, A., Stadnicka, D. (2017). *Nowoczesne systemy zarządzania jakością zgodne z ISO 9001:2015*. Rzeszów: Wydawnictwo Politechniki Rzeszowskiej.
28. Poksińska, P., Dahlgard, J.J., Marc, A. (2002). The state of ISO 9000 certification. A study of Swedish organizations. *The TQM Magazine*, 5, 297-305.
29. Purushothama, B. (2015). *Implementing ISO 9001:2015*. New Delhi: Woodhead Publishing India.

30. Salvendy, G. (2001). *Handbook of Industrial Engineering. Technology and operations Management*. New York: John Wiley & Sons.
31. Ścierski, J. (2011). Nowelizacja normy ISO 9001. *Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacji i Zarządzanie*, 59, 101-117.
32. Stamatis, D.H. (1995). *Understanding ISO 9000 and implementing the basics to Quality*. New York: CRC Press.
33. Sułkowski, M., Wolniak, R. (2016). Przegląd stosowanych metod oceny skuteczności i efektywności organizacji zorientowanych na ciągłe doskonalenie. *Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacja i Zarządzanie*, 67, 63-74.
34. Sułkowski, M., Wolniak, R. (2018). *Poziom wdrożenia instrumentów zarządzania jakością w przedsiębiorstwach branży obróbki metali*. Częstochowa: Oficyna Wydawnicza Stowarzyszenia Menedżerów Produkcji i Jakości.
35. Szczucka-Lasota, B., Wolniak, R. (2018). Control plan and research supply as a tool in the process of decision making. *Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacja i Zarządzanie*, 115, 439-447.
36. Szkiel, A. (2016). Orientacja na klienta w wymaganiach normy ISO 9001:2015. *Marketing i Zarządzanie*, 3, 83-93.
37. Tannenbaum, R., Weschler, I.R., Massarik, F. (1961). *Leadership and organization*. New York: McGraw-Hill.
38. Wolniak, R. (2011). *Parametryzacja kryteriów oceny poziomu dojrzałości systemu zarządzania jakością*. Gliwice: Wydawnictwo Politechniki Śląskiej.
39. Wolniak, R. (2013). A typology of organizational cultures in terms of improvement of the quality management. *Manager*, 17(1), 7-21.
40. Wolniak, R. (2013). Normalizacja zarządzania jakością a wymiary kulturowe kraju. *Problemy Jakości*, 9, 19-25.
41. Wolniak, R. (2013). Projakościowa typologia kultur organizacyjnych. *Przegląd Organizacji*, 3, 13-17.
42. Wolniak, R. (2013). W kierunku ISO 9001:2015. *Problemy Jakości*, 2, 10-14.
43. Wolniak, R. (2014). Korzyści doskonalenia systemów zarządzania jakością opartych o wymagania normy ISO 9001:2009. *Problemy Jakości*, 3, 20-25.
44. Wolniak, R. (2016). Kulturowe aspekty zarządzania jakością. *Etyka biznesu i zrównoważony rozwój. Interdyscyplinarne studia teoretyczno-empiryczne*, 1, 109-122.
45. Wolniak, R. (2016). *Metoda QFD w zarządzaniu jakością. Teoria i praktyka*. Gliwice: Wydawnictwo Politechniki Śląskiej.
46. Wolniak, R. (2017). Analiza relacji pomiędzy wskaźnikiem innowacyjności a nasyceniem kraju certyfikatami ISO 9001, ISO 14001 oraz ISO/TS 16949. *Kwartalnik Organizacja i Kierowanie*, 2, 139-150.

47. Wolniak, R. (2017). Analiza wskaźników nasycenia certyfikatami ISO 9001, ISO 14001 oraz ISO/TS 16949 oraz zależności pomiędzy nimi. *Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacji i Zarządzanie*, 108, 421-430.
48. Wolniak, R. (2017). The Design Thinking method and its stages. *Systemy Wspomagania Inżynierii Produkcji*, 6, 247-255.
49. Wolniak, R. (2017). The use of constraint theory to improve organization of work, 4th International Multidisciplinary Scientific Conference on Social Sciences and Arts. SGEM 2017, 24-30 August 2017, Albena, Bulgaria. Conference proceedings. Book 1, *Modern science. Vol. 5, Business and management*. Sofia : STEF92 Technology, 1093-1100.
50. Wolniak, R., Hąbek, P. (2015). Quality management and corporate social responsibility. *Systemy Wspomagania w Inżynierii Produkcji*, 1, 139-149.
51. Wolniak, R., Skotnicka, B. (2011). *Metody i narzędzia zarządzania jakością – Teoria i praktyka, cz. 1*. Gliwice: Wydawnictwo Politechniki Śląskiej.
52. Wolniak, R., Skotnicka-Zasadzień, B. (2008). *Wybrane metody badania satysfakcji klienta i oceny dostawców w organizacjach*. Gliwice: Wydawnictwo Politechniki Śląskiej.
53. Wolniak, R., Skotnicka-Zasadzień, B. (2010). *Zarządzanie jakością dla inżynierów*. Gliwice: Wydawnictwo Politechniki Śląskiej.
54. Wolniak, R., Skotnicka-Zasadzień, B. (2014). The use of value stream mapping to introduction of organizational innovation in industry, *Metalurgija*, 53(4), 709-713.
55. Wolniak, R., Sułkowski, M. (2015). Motywy wdrażanie certyfikowanych Systemów Zarządzania Jakością. *Problemy Jakości*, 9, 4-9.
56. Wolniak, R., Sułkowski, M. (2015). Rozpowszechnienie stosowania Systemów Zarządzania Jakością w Europie na świecie – lata 2010-2012. *Problemy Jakości*, 5, 29-34.
57. Wolniak, R., Sułkowski, M. (2016). The reasons for the implementation of quality management systems in organizations. *Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacji i Zarządzanie*, 92, 443-455.
58. Ząbek, J. (2016). ISO 9001:2015. Wybrane problemy zarządzania z perspektywy nowej normy. *Ekonomika i Organizacja Przedsiębiorstwa*, 2, 14-25.
59. Żemigąła, M. (2017). Tendencje w badaniach nad normą ISO 9001. *Problemy Jakości*, 3, 2-9.