CERTIFICATION OF PRODUCTS, PROCESSES AND MANAGEMENT SYSTEMS – COMMON FEATURES AND DIFFERENCES

Conference Paper · September 2016

CITATIONS
0

READS
1,010

2 authors:

Piotr Kafel
Cracow University of Economics
65 PUBLICATIONS **180** CITATIONS
SEE PROFILE

Urszula Balon
Cracow University of Economics
54 PUBLICATIONS **63** CITATIONS
SEE PROFILE

Piotr Kafel[1]
Urszula Balon[2]

CERTIFICATION OF PRODUCTS, PROCESSES AND MANAGEMENT SYSTEMS - COMMON FEATURES AND DIFFERENCES

Abstract: *The purpose of this paper is to analyze common features and differences in certification of products, processes and management systems and its impact on trust on the market, especially buyers in the voluntary certification schemes. There are two main ways of confirming quality of products. In first approach independent laboratory tests of the final products are the base for the confirmation of products quality. In second approach the base for the assessments goes from internal management of processes. All that processes can be used by producers and sellers to inform and convince about the quality of the product.*

Keywords: *certification, process certification, product certification, management systems certification, trust in certification*

1. INTRODUCTION

Asymmetries in information about product qualities between producers, sellers and buyers, where producers and sometimes sellers have more information than buyers about the characteristics of goods and services and their methods of production, are becoming more visible and their consequences more significant [1].

The purpose of this paper is to analyze common features and differences in certification of products, processes and management systems and its impact on trust on the market, especially buyers. From the customer's perspective certification of persons is easily recognised as a different activity than products/processes or management system certification. Those are sometimes mixed by sellers and buyers. In the paper self-declarations of producers were excluded, because usually that form of declaration is less credible from the consumer's point of view than independent certifications [2, 3].

2. ACCREDITATION AND CERTIFICATION SCHEEMS

2.1. Accreditation

Accreditation is a third-party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks [4]. ISO/IEC 17011:2004 standard specifies general requirements for accreditation bodies assessing and accrediting conformity assessment bodies (CABs).

Conformity assessment bodies are organizations providing the following conformity assessment services: testing, inspection, management system certification, personnel certification, product certification and, in the context of this document, calibration [4].

On the figure 1. there is a flowchart of activities between accreditation body, conformity assessment body (e.g. certification body) and producers. Accreditation bodies assess the competence of CABs. CABs assess conformity of products, services and suppliers to specifications or requirements e.g. international standards.

[1] *Piotr Kafel, Cracow University of Economics, Department of Quality Management, Rakowicka 27, 31-510 Cracow, Poland, piotr.kafel@uek.krakow.pl*
[2] *Urszula Balon, Cracow University of Economics, Department of Quality Management, Rakowicka 27, 31-510 Cracow, Poland, urszula.balon@uek.krakow.pl*

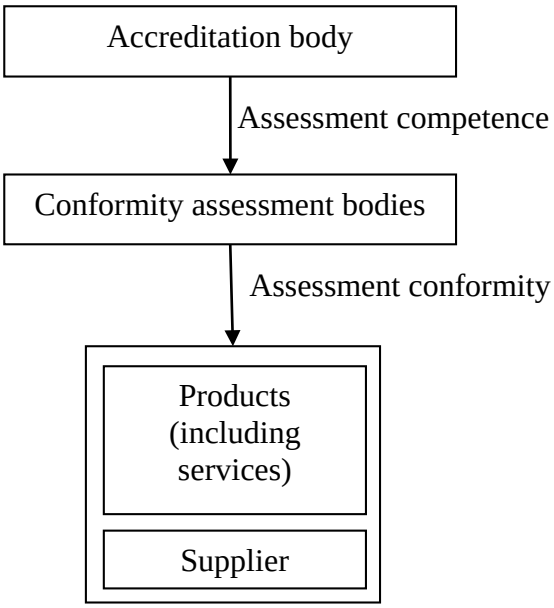

Figure 1. Flowchart of assessment in accreditation scheme [4]

Accreditation process supports both regulatory and voluntary sectors. It helps in approval of products (including services) for reasons of safety, health, environmental protection, fraud prevention or market fairness, enable comparability, and also ensure competition on equal terms. Benefits of accreditation can be different, depending on the scope of accreditation. In table 1. there are main activities that are covered by accreditation with its scope and standards.

Table 1. Main activities that are covered by accreditation [5]

Accreditation	Scope/Activity	Standards
Laboratories	Testing and Medical examinations Calibration	ISO/IEC 17025 ISO 15189 ISO/IEC 17025
Certification bodies	Certification of products Certification of persons Certification of management systems	ISO/IEC 17065 ISO/IEC 17024 ISO/IEC 17021
Validation and Verification bodies	Validation and Verification of greenhouse gas emissions	ISO 14065
Inspection bodies	Inspection	ISO/IEC 17020
Proficiency Testing Providers	Proficiency Testing	ISO/IEC 17043

2.2. Certification

Certification bodies can assess conformity of products, persons and management systems. In this article certification of personnel is not analyzed. It is because certification of personnel can be is easily separated from other certification activities. Certification of products includes two main activities: product and processes. According to ISO/IEC 17065 standard, product is defined as result of processes. Process is defined as set of interrelated or interacting activities which transforms inputs into outputs. Service is defined as a Result of at least one activity necessarily performed at the interface between the supplier and the customer and is generally intangible [6]. The definitions mentioned above are different than the definition and interpretation of product according to ISO 9000 standard. According to ISO 9000 definition service is one of dimensions of product. In table 2, there are describe examples of product, processes and management systems that can be certify.

Table 2. Examples of product, processes and management systems that can be assess by certification body

-	**Product**	**Process**	**Management system**
Example	Aluminium can for beverages	Organic farming product – e.g. organic juice	Quality management system
Scope of accreditation	Certification of products	Certification of products	Certification of management systems
Standards required for CAB	ISO/IEC 17065	ISO/IEC 17065	ISO/IEC 17021
Requirements for certification	ISO 90-1:1997	EU Regulation 834/2007	ISO 9001:2015
Label on the product	NO Yes – if it is certify the product, not the package	YES	Usually no

The results of certification presented in table 2 can be related by a buyer to one product – organic juice in a can which is produce by an organization with implemented ISO 9001 management system. That hypothetical producer can use in marketing activities information's of all obtained certificates. In all three certifications (product certification, process certification and management system certification) as a result producer can claim that the quality of the product is high. There are different methods of assessing the quality of products. First, it is possible to do the laboratory checks and base on the results claim its high quality. Secondly, it is possible to describe precisely important parameters of production and check whether they are respected. Thirdly it is possible to assess functioning of management system in the organization. That method of assessment is related with the main idea of product, processes and management system certification. Of course in practice, product certification based on appropriate model describe in ISO/IEC 17067:2013 can combine laboratory tests with assessment of some elements of quality management system.

In table 3. there is presented an example of issues that certification body can assess during the certification process.

Table 3. Examples of issues that certification body can assess during the certification process

-	**Product**	**Process**	**Management system**
Laboratory tests	YES	NO As a rule, CABs does not examine the product, unless the results of the risk analysis indicate it	NO
Check of production parameters (process of production)	YES/NO Depends on the certification model	YES	YES Indirectly through the verification of the requirements included in producer documentation
Check of management system	YES/NO Depends on the certification model	NO	YES

According to information's included in table 2 and 3 it can be concluded, that there are some situations where differences between product, process and management systems certification are difficult to distinguish. Even more difficult it is when the process of surveillance on the certificate is discussed. Certification body after issuing the certificate can establish the surveillance that includes periodic activities. In product and process certification surveillance that activities can include:

- tests of products from the market,
- tests of products from the producer,
- assessment of the quality management system,
- assessment of the production process.

On the figure 2. there are indicated different approaches to evaluation of quality in product, process and management systems. In first approach independent laboratory tests of the final products are the base for the confirmation of products quality. That approach is similar in the way of thinking about the quality from the times before TQM revolution. In second approach the base for the assessments goes from internal management of processes. This approach is nearer to the modern way of assuring quality. The problem is that in a second approach to achieve quality, honesty and real engagement of the organizations is required. On the other hand it is difficult to manipulate with laboratory tests.

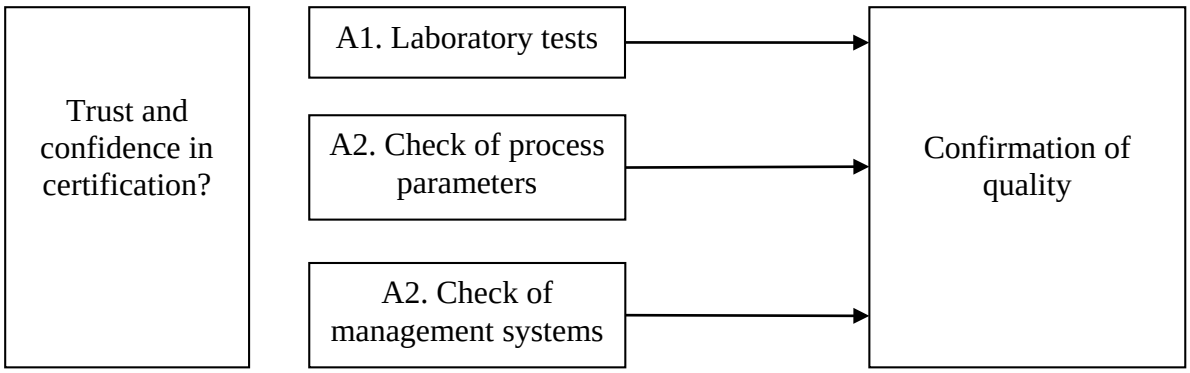

Figure 2. Different ways of confirmation quality

CONCLUSION

Both accreditation and certification with implemented legal requirements helps buyers to deal with asymmetries of information, not only about products, but also about the trustworthiness of sellers. In the article there are discussed issues of product, processes and management system certification. All that processes can be used by producers and sellers to inform and convince about the quality of the product. Different approaches that are possible in certification correspond to the needs of different stakeholders. Despite the advantages of process and management systems certification, product certification still plays important role in confirmation of quality of products. To conclude, it must be said, that in all discussed certification schemes it is possible to design certification process to obtain real trust and confidence in the results of certification.

ACKNOWLEDGEMENT

This research was realized within Tempus project EQIWBC (Improvement of Partnership with Enterprises by Enhancement of a Regional Quality Management Potentials in WBC).

REFERENCES

[1] Vertinsky I., Zhou D. (2000), Product and process certification – Systems, regulations and international marketing strategies, International Marketing Review, Vol. 17 Iss 3 pp. 231 – 253.

[2] Dekhili S., Achabou M.A., (2014), Eco-labelling brand strategy, European Business Review, Vol. 26 Iss 4 pp. 305 – 329.
[3] D'Souza C., Taghian M., Lamb P., Peretiatko R., (2007), Green decisions: demographics and consumer understanding of environmental labels, International Journal of Consumer Studies, Vol. 31 No. 4, pp. 371-376.
[4] ISO/IEC 17011:2004 Conformity assessment. General requirements for accreditation bodies accrediting conformity assessment bodies.
[5] EA MLA Annual Report 2015, EA European Accreditation, http://www.european-accreditation.org/brochure/ea-mla-annual-report-2015.
[6] ISO/IEC 17065:2012 Conformity assessment. Requirements for bodies certifying products, processes and services.

CENTER FOR QUALITY

UNIVERSITY OF MONTENEGRO
FACULTY OF MECHANICAL
ENGINEERING PODGORICA

CENTER FOR QUALITY
University of Kragujevac
Faculty of Engineering

Association for Quality
and Standardization
Serbia

10th International Conference

ICQME 2016

(Quality, Management, Environment, Education, Engineering)

PROCEEDINGS

TEMPUS JP 543662

Editor: Prof. Zdravko Krivokapić, PhD

Petrovac, Montenegro
28th – 30th September 2016

Krivokapić, Z. (editor): *Proceedings of the 10th International Conference "Quality, Management, Environment, Education, Engineering" (ICQME 2016)*; Petrovac, Montenegro; 28th–30th September 2016. Podgorica (Montenegro): Center for Quality, Faculty of Mechanical Engineering, University of Montenegro 2016. - 349 pp. ISBN 978-9940-527-49-5.

Publisher: Center for Quality, Faculty of Mechanical Engineering,
University of Montenegro,
81000 Podgorica, Montenegro

For publisher: Prof. Zdravko Krivokapić, PhD, Director of the Center for Quality

Reviewers: Prof. Slavko Arsovski, PhD, Faculty of Engineering, University of Kragujevac, Kragujevac (Serbia)
Prof. Sergey Kovalevskyy, PhD, Donbass State Engineering Academy (DSEA), Kramatorsk (Ukraine)
Prof. Sanja Peković, PhD, University of Montenegro, Faculty of Tourism and Hotel Management, Kotor (Montenegro)

Approved by:
Decision no. 1/9/2016 from 01-09-2016 from Center for Quality, Podgorica (Montenegro)

Circulation: 150 exemplars

Printed by: Artgrafika
Nikšić, Montenegro

ORGANIZERS

CENTER FOR QUALITY
UNIVERSITY OF MONTENEGRO
FACULTY OF MECHANICAL
ENGINEERING PODGORICA

CENTER FOR QUALITY
University of Kragujevac
Faculty of Engineering

Association for Quality
and Standardization
Serbia

PROCEEDINGS PUBLISHING IS SUPPORTED BY

TEMPUS JP 543662

ORGANIZING COMMITTEE

1. Prof. Zdravko Krivokapić, PhD (Chairman)
2. Prof. Milan Perović, PhD
3. Radoica Luburić, PhD
4. Evica Milić
5. Danilo Radoman, MSc
6. Dragan Vukčević
7. Prof. Aleksandar Vujović, PhD
8. Prof. Jelena Jovanović, PhD
9. Prof. Milan Vukčević, PhD
10. Srđan Martić, MSc
11. Rade Grujičić, MSc