

**The implementation on Education about Standardization at Universities:  
Experiences of University of Surabaya**

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**Abstract**

As a university located in town the industrial, commercial, maritime and education, University of Surabaya (UBAYA) is very concerned about the success of the business and industry community, particularly in the city of Surabaya and surrounding areas. One of univeritas mission is to produce graduates who are competent in accordance with the needs of business and industry. Needs of the business and industry community are implementation both of Indonesia National Standard (SNI) or International Standard (ISO). Therefore, graduates UBAYA in the future should be more understanding and have skills related to the standards.

This paper addressed about UBAYA experience in implementation on education about standardization starts from the scope UBAYA themselves by implementing the international standards of quality management system ISO 9001:2008, inserting the material of standardizing or content of the standardization into the curriculum or subjects, then together with National Standardization Agency (BSN) and the East Java Province participated promoting standard to schools, colleges, community of business and industry. All these things are done also in order to fulfill one mission UBAYA.

The results of the various activities carried out showing good results, it seen from a survey of customer satisfaction, increased demand for training and assistance for the implementation of quality management system ISO 9001:2008 in the industry, some of graduates majoring in industrial engineering has been working in areas relevant to standards such as a internal quality auditor, management consultant and management representative.

**Keywords:** Education about Standardization, UBAYA Cooperation with BSN

## 1. Background

Universitas Surabaya (UBAYA) as one of the private universities which are well known in Eastern Indonesia that always wants to realize his vision became the first university in hearts and minds, by constantly creating products/services of teaching, research, and community service which quality and giving value-added to stakeholders.

UBAYA As an educational institution also has a mission, such as: (a) produce graduates in higher education who have competence in the scientific, skill, and good character, in accordance with the needs of business and industry, (b) promote research, application of science and technology, in context of role in the business community and industry partners, etc. [1]

From this mission statement, it seems clear that the graduates as well as services of UBAYA focuses on an active role in advancing the business and industrial community. Therefore, in order to establish relationships with business and industrial community must use the same business language, business language namely "standard".

"Standard language as a entry point into business and industry, reinforced by a statement of the Head of National Standardization Body (BSN), that the standard has become the second language in business and industry after prices [2]. Because, in a global trade, standards will be needed to give assurance to customers that the product / service have been conform regarding to aspects of quality, safety, safety, health and environmentally friendly.

In this regard, and in order to speed up the process of achieving its vision and its mission, UBAYA also very concerned on education about standardization, and continue to work closely with the parties concerned to the standard, one of them with a BSN as a developer organization of Indonesian National Standard (SNI). UBAYA together with BSN actively promote the standardization both at the university or the business and industrial community.

This paper focuses on describe some of activities related with the implementation of education about standardization at the UBAYA and the business and industrial community.

## Problem

Problem faced is how to implement steps to meet the expectations of the future, namely UBAYA want to take role of actively in promoting education about standardization and in order to fulfill the mission UBAYA as well as participate in advancing the business and industrial community.

## 2. Literature Review

The literature review more emphasis on study documents that exist in UBAYA and BSN, the news about education about standardization in Indonesia, besides definition about standards, standardization and Indonesia National Standard (SNI). Review of documents such as is found in documents of the strategic plan UBAYA's or the strategic plan BSN's, Memorandum of Understanding (MoU) between UBAYA and BSN, etc.

**Standards dan Standardization.** According to ISO/IEC Guide 2 (ISO 2004-1), **Standards** is a "document established by consensus and approved by a recognized body, providing for common and repeated use rules, guidelines, or characteristics for activities or their results aimed at the achievement of the optimum degree of order in a given context. Meanwhile, **Standardization** is as "the activity of establishing—with regard to actual or potential problems—provision for common and repeated used aimed at the achievement of the optimum degree of order in a given context" [3]

According to this definition, standardization aims to achieve maximum of overall economy and provide benefits to various sectors of society, such as standards provide access to markets and facilitate trade, the standard provides benefits for improving the quality, safety, reliability and efficiency of production, and so forth.

**Indonesia National Standard (SNI).** SNI is a document containing the technical provisions of an activity or the results are formulated by consensus and set by the BSN to be used by stakeholders with the aim of achieving an optimum arrangement in terms of the context of a specific purpose [4]. BSN as the bodies responsible for national standardization activities, interested party in increased the application of SNI both voluntary and mandatory in manufacturing / services in order to increase the competitiveness of nations.

## The UBAYA Strategic Plan for period 2011-2018

In the UBAYA strategic plan [1], chapter self-evaluation results in 2011, showed that the strength of UBAYA as follows, has: (a) the facilities and infrastructure campus are adequate, (b) a good reputation of stakeholders perception, (c) management information system integrated, (d) the quality management system that has been awakened in the scope of supporting units, (e) the quality of the learning system (hardskills), (f) The condition of health financial (cash flow, reserve), (g) commitment organization's to appreciate of the values of multi-cultural, (h) the pluralist organization's character and consistent. While the opportunities in the future include: (a) Higher

education as a center of entrepreneurship and Technopreneurship (b) International networking and partnerships, (c) The spread of environmental issues, (d) Regulatory and government policy towards higher education, (e) shift lifestyles and increased awareness of consumer rights, (f) The need for alumni to updating / upgrading of competence, (g) development of utilization of information and communication technology (ICT), (h) The growth of creative industries.

With the strenght as mentioned, UBAYA will take the opportunities of external conditions in connection with the change of the organizational environment.

#### **The BSN Strategic Plan for period 2010-2014**

In the Strategic Plan document the exposure of the results achieved in the period 2005-2009 stated that the BSN has signed a Memorandum of Understanding (MOU) with 18 Higher Education (include UBAYA) in field education about standardization to organize the development and coaching in the field of standardization within their respective universities. Further stated that the curriculum of standardization for Higher Education has been established and implemented at the University of Diponegoro since 2007, and follow with publication of the Introduction to Standardization textbooks. Also mentioned that the BSN has participated actively in the activities of International Cooperation for Education about Standardization (ICES) and the APEC SCSC PAGE (Project Advisory Group on Education). ICES and APEC SCSC PAGE are an international and regional organizations engaged in education of standardization, so that Indonesia can play a role in development on education about standardization in the world. Furthermore, also in this document mentioned that BSN has been established cooperation of networking of standards information (called INSTANET) among BSN with 33 universities/organizations. [5]

BSN also has policies such as promoting standard culture through education and socialization of standardization with cooperation among primary school, secondary school and higher education.

#### **Memorandum of Understanding (MOU) between UBAYA with BSN**

Together with nine other universities, on 18 November 2009 which was witnessed by Minister of Research and Technology Republic of Indonesia, the Rector and the Head of BSN UBAYA signed the MOU related to the development and standardization coaching in education about standardization in the province of East Java with a letter number 010/UM/SR / XI/2009 and 2298/BSN/XI/2009 within the scope

of: (a) education, training, and promotion standardization in education institution, (b) increasing the participation of experts in standardization activities, (c) information exchange of standardization, (d) the development laboratory at the university, and (e) research and dissemination of research results in the field of standardization. [6]

From both a strategic plan, it appears that there is a similar activity between UBAYA and BSN, when combined event will get optimal results. For example, UBAYA got opportunities to further enhance networking with partners, involved on handling of environmental issues and improved consumer rights which can be combined with need of BSN associated with the acceleration of standards culture in society through education / training on standardization in campus or schools. Related with the MoU have been signed, UBAYA will conduct development of education about standardization through the implementation of quality management system ISO 9001 , Occupational Health and Safety OHSAS 18001, teaches standardization in some subjects in of the Faculty /Study Program, conducting of ISO 9001 and ISO 17025 training to the students and staf, establishment of Standards Information Network (INSTANET), in cooperation with East Java province to giving the technical guidance for worker of standardization field in the district /city of East Java province, conducting campaigns SNI for the community, etc.

### **3. Research methodology**

From the literature review, especially the MoU document, Strategic Plan, news of education about standardization, etc., then this study is a review of activities undertaken between UBAYA with BSN, or UBAYA itself in the field of coaching and development of educational of standardization. The results of secondary data processing of the data taken at the Directorate of Quality Assurance & Internal Audit -UBAYA, Department of Industrial Engineering, the news of the website UBAYA and BSN. Furthermore, Processed data are then analyzed for efficacy, weakness or obstacles encountered to obtain a plan of action in the next future.

### **4. Results and discussion**

#### **Development and Coaching on Education about Standardization through Implementation of a Management System**

Actually, education about standardization has been implemented by UBAYA, since 2000, by adopting the Quality Management System-ISO 9001:2000 in supporting unit under the management of the university, namely with documenting and implementing of the standard operating procedure

(SOP). The SOPs are required to assure that service conducted consistently and the quality service is increased. In 2005, in which a college is required to have a Quality Assurance unit as a unit that ensures the quality of the output of universities and the accountability to the public, UBAYA anticipate by establishing QA units. This unit is responsible for managing all of activity of quality assurance in units and move forward with the principle of continuous improvement, so that the outputs produced by the university assured quality according to the requirement that has been established. Related to this, the QA unit has published standards both standards in academic and non academic that is comply with the regulations of the Ministry of Education and Culture.

In 2009, the quality management system of UBAYA officially have been get certification of ISO 9001:2008, which starts from 7 units, and then expanded its scope to 32 units in 2010. Subsequently, in 2012, the addition of the scope of certification again in the learning process and the laboratory at the Faculty of Pharmacy, Faculty of Engineering, Faculty of Business and Economics, Faculty of Biotechnology and the Polytechnic. The documents of standard that have been established as follow: Quality Manual of Academic, Quality Standards of Academic, guidelines of Monitoring and Internal Evaluation, Guidelines of Laboratory Quality Audit, Guidelines of Performance Measurement, Manual of Quality Management System ISO 9001:2008, 141 SOPs of 32 supporting units and 7 SOPs in the field of learning [5]. Currently, all of standard documents can be viewed and edited by each unit of work through online in order to paperless-office and concern for environmental conservation.[7]

Outcome of education about standardization through the implementation of this standard is got on a survey of customers / stakeholders conducted by Directorate of Quality Assurance & Internal Audit on November 17 to 23 2011 for 32 units and faculty earned an average customer satisfaction / stakeholders was 75.72%. other impact, for example from 11 programs of undergraduate study in UBAYA there are six of study program accredited A (excellent) and five accredited B (good) by the National Accreditation Board of Higher Education (BAN-PT).

Some of effort education about Standardization continue to be improved, by adopting various international standards such as OHSAS 18001 for safety, occupational health for employees and students, beginning with the implementation of 5S program (*Seiri, Seiton, Seiso, Seiketu and Shitsuke*) in keeping cleanliness of the work environment . Related with environmental caring, UBAYA have

also established the Center for Environmental Studies (in 1996) and the Center for Renewable Energy (in 2011).

#### **Development and Coaching Education about Standardization through Teaching of Standardization or Standardization Content in Faculty/Study Program**

Education of Standardization is included in the curriculum. For example, in the Faculty of Engineering, Department of Industrial Engineering, Department of Chemical Engineering and Department of Computer Science. In Department of Industrial Engineering, subjects standardization is taught in the concentration field of Enterprise Quality System. There are 5 elective courses related to the standardization namely Standardization, Quality Management System-ISO 9001, occupational, health and safety management systems-OHSAS 18001, Environmental Management System-ISO 14001, and Quality & Supply Chain Management. While in Department of Chemical Engineering as follow subjects: solid & hazardous waste management, occupational health and safety, quality control and food safety. In the Department of Computer Science, namely in subjects of Information Systems Audit & Control.

Outcome of the implementation of this subjects, for example in the Department of Industrial Engineering, since 2008 has been trusted by some of manufacturing / services organization in the city of Surabaya and surrounding areas in: (a) assist companies / organizations to set up of quality management system-ISO 9001, (b) conducting in-house training related to documenting of QMS ISO 9001 and internal quality audits., and (c) is believed by one of the certifying body in Indonesia became auditor of quality management system ISO 9001.

#### **Cooperation Development and Coaching of Education about Standardization with BSN**

Cooperation with BSN in field education of standardization, in addition to accelerating the creation of quality culture in UBAYA environment, as well as the intent to move forward the business and industry community. Activities already carried out are: (a) Training of ISO 9001:2008 for students UBAYA and students of Institute of Technology of Sepuluh November Surabaya (ITS-Surabaya), and (b) Training on ISO 17025 - General requirements for the competence of testing and calibration laboratories for head of laboratory in UBAYA.

Outcome of the implementation of ISO 9001 training in particular the training of students in the Department of Industrial Engineering, it is appear at the increasing number of ISO 9001 topics for Final Project in 2011. In addition to this training, Department of Industrial Engineering has

conducted an internal quality audit training for students since 2010, and until now there are about 150 participants who successfully completed. Some of graduates who have this kind of training they were already working in relevant fields such as consulting in quality management systems, as an internal quality auditor and some of them are already occupied a position as a management representative of ISO 9001.

While the outcome of the implementation of ISO 17025 training, although all of laboratories have not been certified to ISO 17025, but they are already certified to ISO 9001:2008. The impact of this certification is an increase of control of the laboratory administration, more pay attention for the safety of the laboratory, and the use of measuring instruments have been calibrated both internally and externally.

Cooperation other with BSN is in: (a) Establishment of Standards Information Network (INSTANET), in which the library UBAYA join in delivery service information about standardization to business and industrial community, (b) Establishment of Forum for Standardization (FORSTAN), which engages in education of standardization in schools through competition of standardization, share your experiences with other colleges in the teaching method of the standardization, (c) implementation of SNI campaigns in the community, (d) participation in the international event namely the International Conference on Education about Standardization (ICES) and World Standards Cooperation (WSC) in 2010, 2011, and 2012, (e) participate in celebration the national children's Day in 2011, where students of UBAYA display and demonstrate with the children about some of the games that made , (f), participated in the exhibition of Micro, Small and Medium Enterprises (SMEs) at the University of Education-Tasikmalaya of West Java province, where students of UBAYA display and demonstrate some of standards games with visitors of the exhibition , (g) be a host to activities of SNI Thon, (h) conducting of standardization game competition for senior high schools in Surabaya city and the surrounding areas, (i) exhibition by students of Department of Industrial Engineering UBAYA related to education of standardization in the form of the game, (j) competition of painting t-shirt SNI for high school students in Surabaya , etc.[8][9][10][11]

Outcome of this activity is the extend of networking with partners, both from universities, schools, government and international organizations.

### **Development and Coaching Education about Standardization Together with East Java Province and Indonesia Standardization Society**

Cooperation with the East Java Province, Indonesia Standardization Society for East Java region in activities such as (a) technical assistance for technical staff related with the standard, (b) preparation of the standardization program for SMEs in the East Java Province, (c) inviting the guest lectures and visits to product testing laboratory.

Outcome of these activities in addition to strengthening ties Academics, Business, and Government (ABG), also for share knowledge, experience in the development and promotion of standardization in the East Java Province.

From a variety of activities shared with BSN, East Java Province, the Indonesia Society for Standardization is both in terms of implementation of joint activities, technically problems were not found. However, the need for improvement in next future is in making the work plan activities together. Where do many activities that are conducted sporadically, because it is not well planned in the early. For example, after signing MoU between UBAYA with BSN should be followed up with set up a joint program activities in one year, which in it contains a number of activities to be carried out either by the BSN and UBAYA related to education of in standardization. After one year, then the program evaluated against the achievement of its performance, and so on. With a well planned activity will impact on the setting of the allocation of its resources each including the provision of a joint budget for activities to be performed.

### **Conclusion**

With all its potential, UBAYA continue to move forward to take the path towards the vision and mission. The road taken is the road that has been followed by many organizations, which proved to be directing the success of the organization, one of road is the implementation of standard consistently. Those standards can be a regulatory requirement, the relevant guidelines for the organization, etc.

### **6. Referensi**

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- [11][http://www.bsn.go.id/news\\_detail.php?news\\_id=2895/](http://www.bsn.go.id/news_detail.php?news_id=2895/) Jawa Timur kerjasama dengan BSN kelola INSTANET

→ Attachment some of pictures related with activities education about standardization have been done



**Figure 1.** Student of UBAYA participate in celebration the national children's Day in 2011



**Figure 2.** Forum of Standardization (FORSTAN)



**Figure 3.** Standardization Game Competition



**Figure 4.** Student of UBAYA display and demonstrate some of standards games with visitors of the exhibition



**Figure 5.** Student of UBAYA visits to product testing laboratory.



**Figure 6.** Lecturer of UBAYA attends to ICES&WSC Day, Hang Zhou, China.



# PROCEEDINGS



## THE ICES CONFERENCE AND WSC ACADEMIC DAY 2012

Bali, Indonesia, 10-11 May 2012



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