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DATA MODEL FOR CREATING APPLICATIONS FOR MAINTENANCE AND MANAGEMENT OF THE DOCUMENTATION

Abstract: 21 st century is characterized by a very strong interest and importance of quality products and services, as well as the need of effective protection that managers can use the system for making information security program information security performance measurement, which, in addition to improving the process used protection stakeholders for decision-making and implementation safety requirements of clients. The idea is that the Technical College of Professional Studies functionally integrated in order to achieve quality education and research. This paper presents a data model for an integrated system of quality high school vocational technical studies as the basis for the development of application software maintenance and management of quality system documentation introduced. The objective of this project task is to try the integration of standards JUS ISO 9001 and ISO 27001 for the Technical High School of Professional Studies.

Keywords: quality management system documentation, policies and objectives of quality, our quality, documented procedures and records.

1. INTRODUCTION

Management, modern scientific disciplines, important in all spheres of economy and society, has become an imperative at all levels of education, particularly in higher education.[1] Adoption of quality management system should be a strategic decision of the Technical School of Professional Studies. To Higher Technical School of Professional Studies to function effectively, it must establish and carry out a number of management related activities. Activities and resources are used by management to transform inputs into outputs. Documentation of the quality

management system must include policies and quality objectives, quality manual, documented procedures and records, and secondly, that the High Technical School of Professional Studies identified as necessary to ensure effective planning, implementation and management of its processes. Documentation required by the Quality Management System Technical High School of Professional Studies must be managed.

The purpose of this paper is to show that in that particular field is a necessary approach in creating and defining the marketing strategy with regard to the specific decision making process and the

characteristics of the service itself.

This paper presents a data model for an integrated system of high quality technical school vocational studies as the basis for the development of application software maintenance and documentation management and maintenance of the introduced system of quality.

The aim of this project task is the attempt to integrate the standards ISO 9001 and ISO 27001 for the Technical High School of Professional Studies.

2. ORGANIZATION OF HIGHER TECHNICAL SCHOOL OF PROFESSIONAL STUDIES

Mission: Its mission of High Technical School of Professional Studies achieved educational, scientific and professional work and research, development and innovation in methods and procedures in their work, conditioned by scientific progress and needs of students, employees and society as a whole.

Vision: Vision of Higher Technical School of Professional Studies in Kragujevac is to develop into a modern institution, known to be in a qualitative way to educate professionals with highly specialized and practically applicable knowledge of experts who will be the ability to solve specific problems contribute to the development of the city, region and the wider community.

2.1 Organizational structure of authority and responsibility

On the High Technical School of Professional Studies to foster an organizational structure appropriate to the nature and type of activities and comply with the stated needs.

The organization is set to the process of the High Technical School of professional studies in order to be within the defined activity, achieve set goals.

Organizational units and organizational

relationships, the importance of quality, are shown in Figure 1.

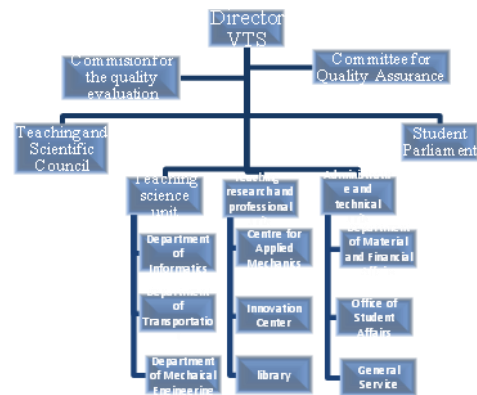


Figure 1. Scheme VTS of internal organization which provides quality

The responsibility matrix shows a responsible person, the person involved and are informed about certain activities of quality management system.

Responsibility matrix is shown in Table 1.

Working place	Director VTS	Quality management representative	Teaching and Scientific Council	License	Responsible participant	Project/Manager Service	The Ministry in charge	Suppliers	...
Activity	1	2	3	4	5	6	7	8	9
Quitting Quality Management System	O	U	I						
Corrective and preventive action	O	U	I						
Internal audits of quality management systems	U	I		U	U				
Document management systems of quality management	I	O							
Preparation and monitoring of business plan	O	I	U	I					

Table 1. The matrix of responsibilities

2.2 Defining and understanding the demands of stakeholders

The strategy aims to raise the quality assurance of all output elements from the process in the areas of quality assurance as well as the processes themselves in a qualitatively higher level.

In this sense, standardized procedures, practices, methods and results achieved. Standards should serve an improved two –

way cooperation and satisfaction of higher education institutions and their stakeholders, as shown in Figure 2.



Figure 2. Stakeholders for higher education institutions [2]

A more detailed identification of users of higher education services is presented in Table 2.

Collegium Director	Executive directors	The head protection system of information	Auditors	Head of IT security
Links with market	✓	✓	✓	✓
Management risk		✓	✓	✓
Measuring performance	✓	✓	✓	
Confirmation compliance	✓		✓	✓
Measuring control	✓	✓	✓	
Significance protection of information	✓	✓		
Management protection of information		✓		✓

Table 2. Identification of interested parties (stakeholders)

Stakeholders in the organization who have pre-protection requirements are:

- Board of Directors and Executive Directors;
- IT management personnel;
- Internal and external auditors;
- The management and staff to protect information.

The most common requirements of these stakeholders are listed in Table 3.

STAKEHOLDERS		Očekivanja/ Potrebe	
Interni	Studenti	Profesionalno znanje, veštine i sposobnosti	
	Zaposleni	Permanentno unapređivanje znanja, sigurnost i zadovoljstvo u radu	
Eksterni	Direktni	Roditelji	Zadovoljstvom uspehom i sigurnošću studenata, njihove dece
		Drugi fakulteti	Sposobni studenti i nastavak studija i istraživanja
	Indirektni	Poslodavci	KKopetentni zaposlenici, efikasnost i produktivnost
		Nadležna ministarstva, univerziteti i s	Obrazovna radna snaga, ugled i nagradnik koji čine i razvoj društva
	Stipenditor	Investiranja u znanje, adekvatna priznanja, donacija, olakšice	

Table 3. The most common needs of individual stakeholders

3. QUALITY MANAGEMENT SYSTEM

Higher Technical School of Professional Studies has established, documented, implemented and maintains a quality management system and continually improves its effectiveness in accordance with the requirements of ISO 9001.

Quality Management System of Higher Technical School includes all the processes necessary for the implementation of foreign policy and quality objectives.

3.1 Identification process

The processes of leadership (management) - RU

- System tasks:

- Review of quality system;
- Development of quality plans;
- The devilment;
- Monitoring and measuring customer satisfaction;
- Analysis of performance studies
- Review of student

- Development and monitoring of business plan

- Investment Management

Management quality system – SK

Quality management process include:

- Management and quality system design documents;

- Input, process and final quality control processes and services;
- Implementation of corrective and preventive actions ;
- Conduct internal audit of the quality system and
- The use of methods and techniques to improve work processes

Teaching -NA

The realization of educational process includes:

- Admission to the Vocational Technical High School;
- Realization of teaching and professional practice;
- The work of students service;
- Conducting mentoring group;
- Conduct and defense – graduate master work /final exam;
- Maintenance and defense of thesis;
- Recognition and validation of the exam and validation of documents

The processes of research and development –IR

The processes of research and development include:

- Research projects;
- Projects to customer (business and other organizations);
- Development and implementation of services;
- Consulting services;
- Organising meetings and conferences;
- Managing inconsistencies services

The laboratory processes – LA

The processes of the laboratory include:

- Work laboratories;
- Maintenance of laboratory equipment

Economic – financial processes – EF

Economic and financial processes include:

- Market research, promotion of services and products:press conference;
- Review of Contract;
- Procurement, selection, ranking and contracts with suppliers

Logistical processes - LO

Logistics (secondary) processes include:

- The publishing activity;
- Information and documentation activities;
- Maintain tools and equipment servicing;
- Storage, preservation, packaging and delivery;
- Reception staff and the selection of teaching and research staff.

3.2 Interrelationships of the process

For the system of quality management in Higher Technical School of Professional Studies to function , requires the cooperation of organizational units VTS.

Interrelationships between the identified processes are shown schematically in Figure 2 „Scheme of the functional relationship of the process“, [3]which are direct connections labeled processes arising from the second one (the result of a process used in another process) and indirect connections are marked processes that they not arise one after the other, but have common elements.

Direct relations are marked by full and dotted lines indirect.

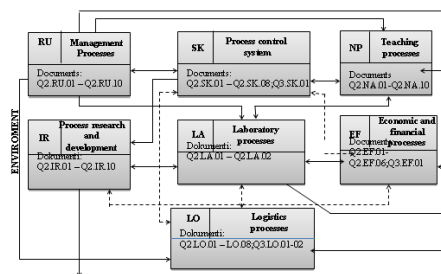


Figure 3. Functional diagram of the process connection

4. MANGEMENT RESPONSIBILITY

Mangement with executive activity High Technical School of Professional Studies, its commitment to designing, implementing and continuously improving quality management system is manifested through:

- Clearly defined policy and strategic objectives in line with the vision and mission;
- Defined work processes (primary and Logistics);
- Defined operational, measurable goals of the process;
- The commitment to complete customer requirements Q2.RU.06 services;
- Continuous, periodic review of the quality management system, in order to increase effectiveness and efficiency, as more particularly defined procedure Q2.RU.01;
- Provide the necessary resources for successful implementation of the process;
- Competent personnel Q2.LO.06, Q2.LO.07;
- Adequate equipment ;
- The necessary finance;
- Development of partnerships;
- Working conditions of employees, which is defined procedures Q2.RU.02, Q2.RU.08 and Q2.RU.09, Q2.RU.10.

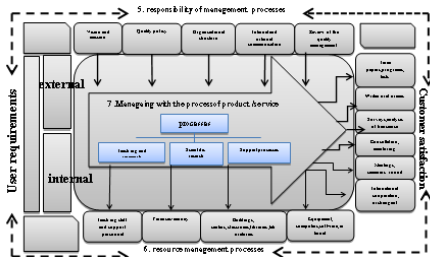


Figure 4. Process model of quality of VTS

5. DATA MODEL FOR DATABASES

Shown in Figure 5 is an integral logical

data model for creating, monitoring and document quality system management, where you can see all the entities and their attributes as well as all types of connections between entities.

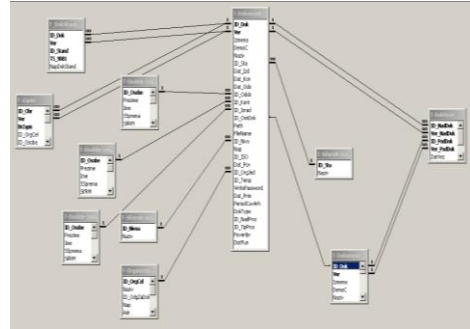


Figure 5. The conceptual database model

The traditional (conventional) data-models and data-bases, if applied consistently, ensure the integrity of the data, protection from error and stability in data-changing applications. These models are applied in systems for On-Line Transaction Processing in the area of data generation and represent a conceptual and physical basis of DB facts of the described model.

6. CONSLUCION

Realized through this research work to devolopan integrated model management system in the High Technical School of Professional Studies in Kragujevac by the standards if ISO 9001: 2008 and ISO 27001: 2005 without any doubt, allow the following conclusions.

ISO 9001 does not specify which customers should be satisfied, but ensures that the correct procedures were performed in a consistent and contolled manner. In other words, the quality system ISO 9001 means that it the processes identified in the organization, if certain sequence and interaction of these process, if the activities are implemented in achieving the planned results and continuous quality improvement, that the requirements ISO 9001.

With the opening of the organizations

information resources to the outside world also has its downsides. Information and information resources (hardware and software) are exposed to numerous security threats such as computer fraud, industrial espionage, sabotage hackers, viruses, etc... The survival of organizations is directly related to its ability to protect its information value. This concept of protection and security of information comes to the fore.

Modern business practice has shown that information security problem is not exclusively a problem of information

technology to more than a "business" problem that has to deal with the top management of the organization. In its core of the problem management risks. Series of standards ISO/IEC 27000, and its standards ISO/IEC 27001:2005 and ISO 9001:2008 provide a harmonized approach to risk management that are exposed to information values in the organization by developing, implementing and maintaining management systems for information security (Information Security Management System –ISMS)

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