

# COPING WITH QUALITY ISSUES IN MANAGEMENT INFORMATION SYSTEMS' DEPARTMENTS IN TURKEY THROUGH ACCREDITATION

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# ABSTRACT

Presently, there are 70 departments associated with MIS discipline, which has emerged in a short span of time. Since, it is hard to claim that MIS departments and discipline have reached certain maturity level in Turkey. MIS, by combining various disciplines is an interdisciplinary field of study that necessitates professional skills within a global and societal context. Consequently, in order to rise high-skilled graduates each MIS department applies its own practices in terms of curriculum, program outcomes, program educational objectives, students' monitoring and support which leads to inconsistencies and concerns associated with the global recognition of MIS departments in Turkey. Thus, the accreditation and evaluation of MIS departments is essential so as to achieve high levels of quality and provide harmony among different departments. Therefore, our goal will be comparing two accreditation bodies' requirements (AACSB and ABET) and find out which one is more suitable for MIS departments and how they can contribute to increase quality of education in MIS discipline. **Keywords:** Accreditation, Management Information Systems, MIS, Accreditation systems

## **INTRODUCTION**

First appearance of Management Information Systems (MIS) departments in Turkey came to exist by a decision under the authority of Turkish Higher Education Institute (Yüksek Öğretim Kurumu). After the introduction of the first department in Marmara University under the name of "Business Informatics" at 1991, Boğaziçi University established the first department utilizing the name of "Management Information Systems" at 1995. Afterwards, their numbers have proliferated by hitting the number of 17 at 2010 and the number of 38 at 2014. Currently, statistics demonstrate that 70 departments associated with MIS exist under different names such as "Management Information Systems", "Enterprise Informatics" and "Enterprise Information Management". Rapid expansion of departments prevented the field to arrive at maturity and fulfil its potential. Therefore, problems have come up regarding the inadequate number of qualified faculty members, incompatibility among program syllabuses and deprivation of conducive studies in the field (Akpinar, nd.).

MIS departments so as to develop next generation of workforce should rise graduates capable of implementing knowledge of management science, computer science, psychology, operations research, sociology and economics. As a result of dealing with globalization, mobility and the pace of the technology those graduates should have capability of thinking analytically, complying with multi- disciplinary teams and team work, communicating effectively, adapting life-long learning and staying up to date. In the way of accomplishment, each MIS department implements its own processes which brings on concerns associated with recognition of departments globally. From the perspective of quality of MIS departments, the role of accreditation standards has been a topic of interest during recent years.

Characteristics of the MIS discipline dictate globalization, mobility and handling contemporary issues, which makes accreditation a vital mechanism in order to cope with complicated challenges. In order to ensure certain level and increase program quality, accreditation is the key. Most prestigious schools are getting their programs accredited to show that they provide high quality education to their students and high quality outputs to their



constituents. One question is about what kind of accreditations are available for MIS departments and programs. Since these departments may take place in different faculties or schools such as business, administrative and economic sciences, engineering sciences or interdisciplinary schools or 4 year applied sciences vocational schools, there might be different accreditation possibilities. Two most known ones are AACSB which accreditates usually business related programs and ABET which accreditates engineering programs. Therefore, within the scope of this study analysing various accreditation systems in terms of their compatibility with MIS discipline is aimed. Existing accreditation practices are briefly introduced and strengths and weaknesses of these practices are reflected. The requirement of a global accreditation system adoption is justified for MIS departments in Turkey and its potential benefits are indicated. As of today there is no single MIS department, which has accreditation by either institution. So, we believe that this study will contribute immensely and will be used as a guide by MIS departments. Consequently, the aim of our study is reviewing two accreditation bodies requirements and evaluating their standards from the perspective of their compatibility with MIS departments in Turkey.

# LITERATURE REVIEW

Accreditation of MIS programs is a crucial aspect for providing and maintaining the quality of education based on international benchmarks. Accreditation process encompasses assessing undergraduate and post graduate programs by means of well-structured peer review processes according to the confirmation of pre-defined criteria and standards (Memon, Demirdöğen, & Chowdhry, 2009). Assessment and evaluations are conducted by professional accreditation agencies that are established for this purpose. Some accreditation bodies focus on the equivalence and accreditation of institutions, programmes or both. At this point, there is no evidence of the foundation and functioning of an accreditation body specific to MIS departments. However, MIS accreditation can be either guided by institutional or departmental accreditation of business schools' accrediting bodies or depending on its interdisciplinary characteristics and close link with computer science and management science disciplines engineering accreditation focused bodies can lead to the recognition of MIS programmes globally. In terms of accreditation bodies two main accreditation models are briefly reviewed through literature review. Accreditation of business schools and engineering faculties were the initial research point for the study. Thus, literature review part is divided into two parts as follows:

## **Accreditation of Business Schools**

## The Association to Advance Collegiate Schools of Business (AASCB)

After the initial attempt for the AACSB had taken place in 1916, the first standard was established 1919. Since then, the standard is reviewed on a regular basis and by 2013 the latest version was introduced. AACSB's quality strategy concentrate on the areas compromising engagement, innovation and impact (Lagrosen, 2017). In addition to subjects such as accounting, finance, business law and marketing, AACSB added on economics and industrial management to the list of subject that are anticipated to be encompassed in business programs. Over the last few decades, subjects including behavioural management, ethics, MIS and computer science were introduced (Smith, Barnes, & Vaughan, 2017). Process of AACSB accreditation starts with the eligibility assessment based on the eligibility requirements of the AACSB and after the approval of eligibility 15 standards of AACSB were utilized as an evaluation framework (AACSB as cited in Lagrosen, 2017).

1	L	Mission, impact and innovation		Clear and distinctive mission Match of outcomes and
				mission
				Continuous improvement and innovation
				Strategies regarding the achievement of objectives
2	2	Intellectual contributions,	impact and	High quality intellectual contributions Influence on
		alignment with mission		theory, practice and teaching
				Match of contributions with mission

Table1. Standards of AACSB (AACSB as cited in Lagrosen, 2017)



3	Financial strategies, allocation of resources	Allocation of resources compatible with the financial	
		strategies	
		Existence of financial strategies to improve	
		financial resources	
4	Student admissions, progression and career	Support students for career development,	
	development	academic achievements and course completion	
5	Faculty sufficiency and deployment	Qualified faculty members	
		Giving proper instruction to students	
6	Faculty management, support	Providing processes that encourage continuous	
		development of faculty members	
		Documentation and communication of relevant	
		processes	
7	Professional staff sufficiency and deployment	Professional staff and services put support behind	
		quality outcomes	
8	Curricula management and assurance of	Curricula management	
	learning	Well-documented and systematic processes for	
		identification and development of program	
		learning goals	
9	Curriculum content	Match of curriculum content with expectations and	
		learning outcomes	
10	Student faculty interactions	Existence of student-faculty and student-student	
		interactions and support of these interactions by	
		means of curricula	
11	Degree program educational level, structure and	Program structure (design, time-to-degree etc.) is	
	equivalence	consistent with the level of the degree program	
		Program structure supports providing high-quality	
		outcomes	
12	Teaching effectiveness	Existence of strategies associated with improving	
		effectiveness of teaching	
13	Student academic and professional	Curricula support student academic and	
	engagement	professional engagement according to program	
		type	
14	Executive education	Processes of executive education satisfy	
		expectations and facilitates continuous	
		improvement of programs (if applicable)	
15	Faculty qualifications and engagement	Strategies regarding the maintaining qualified faculty	
		that represent ability to contribute the intellectual	
		capital	
		Remarkable academic and professional	
		commitment of faculty	

Other business/management focused accreditation bodies are the Association of Collegiate Business Schools and Programs (ACBSP), International Assembly for Collegiate Business Education (IACBE) and EQUIS that is governed by the European Foundation for Management Development (EFDM) (Smith, Barnes, & Vaughan, 2017; Lagrosen, 2017). McFarlane (2013) claimed that AACSB is considered as far more excellent than its counterparts such as IACBE, ACBSP and some other Europe originated accreditation bodies. Furthermore, McFarlane (2013) pointed out that this view evolved into fundementalism in accreditation issues which both advantages and disadvantages. One important reason behind perceptions regarding the superiority of AACSB is its marketing and branding strategies. AASCB is capable of controlling its members and manupulating them by means of influencing their cultures. Moreover, many cases demontsrated that graduates from AACSB accredited business schools were not superior to graduates from other counterparts in terms of knowledge, skills and capability in contrast to "the gold standard" image of AACSB (McFarlane, 2013).



# Accreditation of engineering departments

# ABET

Attempts for engineering and technology programmes' accreditation initially took place as a volunteer activity of the Accreditation Board for Engineering and Technology (ABET) in United States. While the accreditation processes can be institutional or programme based, programme accreditations in engineering education are generally based on ABET's procedure and standards (Patil & Codner, 2007). ABET accreditation system is the most broadly utilized mechanism in engineering accreditation and it aims continuous improvement of the programmes by means of using assessment outcomes as inputs for improving processes in a systematic manner (Aldowaisan & Allahverdi, 2016). ABET applies pre-defined criteria associated with; Students, Program Educational Objectives, Program Outcomes and Assessment, Professional Component, Faculty, Facilities, Institutional Support and Financial Resources, and Program (Ezeldin, 2013) and applicants are assessed based on the representation of satisfying relevant requirements. These criteria and brief explanations are illustrated in Table 2 below.

Criterion 1	Students	• Evaluation of student performance
		<ul> <li>Monitoring student progress</li> </ul>
		• Giving advice regarding the career path and curriculum
		issues
		<ul> <li>Ensuring that graduates meet the program educational</li> </ul>
		objectives
		• Implementing procedures and proving that graduates
		satisfy all graduation requirements through documentation.
Criterion 2	Program Educational	• Setting program educational objectives consistent with
	Objectives	the institutional mission
		• Documentation, systematic processes and review of
		these objectives
Criterion	Student Outcomes	<ul> <li>Outcomes which ensure graduates satisfy program</li> </ul>
3		educational objectives (See Table 3)
Criterion 4	Continuous Improvement	•Systematic evaluation and documentation of processes
		for the assessment of whether student outcomes are
		achieved.
		• Utilization of these results for continuous improvement.
Criterion 5	Curriculum	Emphasis of subject areas associated with engineering
		• Guaranteeing that program curriculum and each component is compatible with the objectives
Criterion 6	Faculty	<ul> <li>Sufficient number of faculty members</li> </ul>
		<ul> <li>Student-Faculty interaction</li> </ul>
		• Student Advice
		<ul> <li>Interacting with Industrial partners and practitioners</li> </ul>
		• Competence of the faculty (education, diversity of
		backgrounds, engineering experience, teachning
		effectiveness, communication, enthusiasm for providing
		more effective programs, engagement in professional
		societies).

Table 2. ABET's general criteria for baccalaureate level programs (ABET, 2015)



Criterion 7	Facilities	<ul> <li>Adequecy of classrooms, offices, laboratories</li> </ul>	
		<ul> <li>Conductive learning environment</li> </ul>	
		<ul> <li>Accessibility of resources and availability</li> </ul>	
		• Guidance for the use of tools and equipment	
Criterion 8	Institutional Support	<ul> <li>Support and leadership from institution</li> </ul>	
		• Sufficient resources in terms of financials, staff, services	
		• Adequte resources for proving the ongoing professional	
		development of a faculty	
		• Assistance in the operation of infastructures and	
		facilities in terms of allocating enough resources.	

According to ABET (as cited in Patil & Codner, 2007), Criterion 3 which is accociated with the qualifications that engineering graduates should meet encompass the skills demonstrated in Table 3 below.

Table 3. Qualifications of engineering graduates (ABET, 2015)

1	Ability to apply knowledge of mathematics, science, and engineering		
2	Ability to design and conduct experiments as well as to analyse and interpret data		
Ability to design a system, component, or process to meet desired needs within realistic			
such as economic, environmental, social, political, ethical, health and safety,			
	manufacturability, and sustainability		
4	Ability to function on multi-disciplinary teams		
5	Ability to identify, formulate, and solve engineering problems		
6	Understanding of professional and ethical responsibility		
7	Ability to communicate effectively		
8	The broad education necessary to understand the impact of engineering solutions in a global,		
	economic, environmental, and societal context		
9	Recognition of the need for, and an ability to engage in life-long learning		
10	Knowledge of contemporary issues		
11	Ability to use the techniques, skills, and modern engineering tools necessary for engineering		
	practice		

An important consorsium regarding the accreditation of engineering programmes emerged in 1989 with the association of representatives from accreditation bodies of various countries. This association which was denominated as Washington Accord seeked for the equivalance of several different accreditation models (Patil & Codner, 2007). Assessment of the engineering graduates from signatory members and encouraging mobility of graduates while providing uniformity across countries were among the major goals of the Accord (Hanrahan as cited in Kootsookos, Alam, Chowdhury, & Jollands, 2017).

Some other initiatives focus regional or local accrediting approaches. One of them is Europe generated European Federation of National Engineering (FEANI) which aims to maintain confirmity among engineering programmes (Memon et al., 2009). Another initiative focusing on engineering education is the framework of the European Network for Accreditation of Engineering Education (ENAEE) which aims to enhance quality and innovation of engineering programmes by means of EUR-ACE Framework Standards and Guidelines (Arditti, 2016). In the case of Asia, the situation is a bit complicated due to the variations in accreditation strategies. In addition to Japan Accreditation Board of Engineering Education (JABEE) and Institute of Engineers Singapore which have participated in the Washington Accord previously, some accreditation attempts of Korea, Taiwan and Malaysia have been members of Washington Accord as well (Arditti, 2016). Moreover, Russia due to the efforts with regard to the construction of a national accreditation system has joined to the EUR-ACE network recently (Kardanova et al., 2016).

From the viewpoint of accreditation efforts in Turkey as a result of Anglo-Saxon structure and global recognition



Bilkent University, Bogazici University and some engineering departments of Middle East Technical University (METU) acquired accreditation label from ABET between 1994 and 1999 (Taylor, Akduman, Özkale, & Ekinci, 2017). Istanbul Technical University owing 23 programmes with ABET accreditation has the highest number of accredited programmes all over the world (itu.edu.tr). Likewise, another ABET accredited programme in Turkey is the Electroics & Electronics Engineering of Hacettepe University. Shuman, Besterfield-Sacre, & McGourty (2005) emphasised the growing importance of professional skills and claimed that growth of the information technology, corporate downsizing, outsourcing and globalization have all contributed to a paradigm shift in employment issues. Even engineering profession which had necessiated strong technical capabilites previously, should combine skills of communication, leadership, team work, understanding of contemporart issues and non-technical drivers of work environment in these days. Prados (as cited in Shuman et al., 2005) underlined the importance of project-based active learning, close industrial relationships, utilization of information technology and claimed that professionals of future should be mentors and guides instead of being "all- knowing dispensers of information" (Prados as cited in Shuman et al., 2005, p.43). Undoubtedly, these foresights regarding the paradigm shift in expectations from engineering professionals are consistent with the mission and goals of the MIS education.

# FINDINGS

As a result of comparative method applied to the standards from the two main accreditation bodies, the following map emerged.



Figure 1. Overlaps and discrepancies between ABET and AACSB criteria

When the criteria of AACSB and ABET are compared, identical criteria of two bodies gather around 6 major categories compromising; Students, Program Objectives, Faculty, Continuous Improvement, Upper Level Management and Curriculum. It was discovered that the Criterion 1 and 3 of ABET which is associated with performance assessment, monitoring and assuring that graduates satisfy the program educational objectives complied with the Criterion 4, 10 and 13 of the AACSB. Thus, these similar criteria are categorized under the name of "Students". Another emerged category is "Program Objectives" which is linked to the Criterion 2 of ABET. AACSB has also a specific criterion (Criterion 1) which requires setting clear and distinctive mission and matching this mission with outcomes. Criterion 6 of ABET is associated with the quality issues of faculty and ensures sufficient number of faculty members, existence of good student-faculty interactions and being industry focused. Concerning this matter, AACSB has 3 Criteria (Criterion 5, 6, 15) focusing on faculty issues. The category of "Upper Level Management" is associated with the support activities, leadership and deployment of



strategies regarding the allocation of resources. Both accreditation body concentrate on and demand endorsement from management in terms of staff, facilities and any other resources. Criterion 8 of ABET serves this purpose whereas Criterion 3 and 7 of AACSB comply with the "Upper Level Management" category. "Curriculum" is another concept which is emphasised by both standards. This category is closely linked with the Criterion 6 of ABET and Criterion 8 and 9 of AACSB. Partial match is observed in terms of "Continuous Improvement" between the standards. ABET has an intense focus on continuous improvement issues through a specific criterion (Criterion 4). Despite of the fact that AACSB does not possess any criterion that completely defines continuous improvement as a specific standard, this goal is embedded in the accreditation process. Criterion 1 and 12 of AACSB necessitates enhancing teaching effectiveness, matching outcomes with mission and monitoring processes so as to use outputs for progressive development.

Each accreditation body has its idiosyncratic criteria as well. In the case of ABET, Criterion 7 is concerned with facilities and encourages conductive learning environment. Resources, their availability and proper guidance should contribute to the learning process from the viewpoint of ABET quality. One distinguishing characteristic of ABET is its possession of program specific criteria. Program specific criteria are defined based on the specific requirements and needs of programs and concentrate on to provide maximum value for graduates of a particular program. In traditional sense, AACSB accreditates all programs under the business schools based on the general pre-defined criteria. From the point of AACSB, intellectual contributions, executive education and degree program educational level are its characteristic standards which differentiates the body from ABET framework. However, Criterion 11 of AASCB which is dealing with the programs' structure, equivalence and compatibility can be linked to ABET'S program specific criteria as a result of focusing on the compatibility and equivalence issues of programs. Following table demonstrates the categorization of common factors of two accreditation bodies in addition to their unique factors in detail.

C.F	ABET	AASCB
Student	CRITERION 1-3	CRITERION 4-10-13
	Performance evaluation, monitoring	Support students, interactions
	Ensuring that graduates meet the program	Curricula support student
	educational objectives	academic and professional
		engagement
Program	CRITERION 2	CRITERION 1
Objectives	Setting program educational objectives	Clear and distinctive mission
	consistent with the institutional mission	Match of outcomes and mission, Cl
	Documentation, systematic processes and	
	review of these objectives	
Faculty	CRITERION 6	CRITERION 5-6-15
	Sufficient number of faculty members Student-	Qualified faculty members Giving
	Faculty interaction, advice	proper instruction to
	Industrial partners and practitioners	students.
Curriculum	CRITERION 5	CRITERION 8-9
	Curriculum and each component is	Curricula management
	compatible with the objectives	Match of curriculum content with
		learning outcomes.
Upper Level	CRITERION 8	CRITERION 3-7
Management	Support and leadership Sufficient resources	Financial strategies, allocation of
Support	Assistance in the operation of infrastructures	resources
	and facilities in terms of allocating enough	Professional staff sufficiency
	resources.	and deployment

Table 4. Categorization of ABET and AACSB criteria (ABET, 2015; AACSB, 2013)



U.F.	ABET	AASCB
Continuous	CRITERION 4	CRITERION 1-12
Improvement	Systematic evaluation and documentation of	Teaching effectiveness
(Partially Match)	processes	Existence of strategies associated
	Utilization of these results for continuous	with improving effectiveness of
	improvement	teaching
Intellectual	х	CRITERION 2
Contributions		High quality intellectual
		contributions
		Match of contributions with
		mission
Facilities	CRITERION 7	x
	Conductive learning environment Accessibility	
	of resources and availability, Guidance for the	
	use of tools and equipment.	
Executive	Х	CRITERION 14
Education		
Program Specific	Student Outcomes:	CRITERION 11
Factors	Ability to support the use, delivery, and	(Degree program educational
	management of information systems within an	level, structure and equivalence)
	Information Systems environment	Program structure (design, time-
	Curriculum:	to-degree etc.) is consistent with
	a. Information Systems: Application	the level of the degree program
	development, networking, data management,	
	security, system analysis/design	
	b. Information Systems Environment:	
	c. Quantitative analysis or methods, including	
	statistics	
	Faculty: Degree from IS (some members)	

# **CONCLUSIONS and DISCUSSION**

The conclusions based on the findings of the study indicate that both accreditation bodies contribute to enhance quality by means of encouraging continuous improvement. Both accreditation frameworks are much better than no accreditation at all. Accreditation process is a development opportunity which continuously provides leadership and guidance through application of an assessment plan. Undoubtedly, there is no best practice that fits to all circumstances. Programs and institutions all over the world should meet different quality standards so as to enhance the quality of the output and support their mission. Thus, in getting accredited considering different requirements of programs and reviewing accreditation processes in terms of their compatibility with the institutional and program-based mission is crucial. This study has put effort on building up a strong foundation for the accreditation of MIS departments and has shared the findings to assist the global recognition of MIS programs.

It was discovered that AACSB may not provide detailed criteria for MIS programs and its focus is so much on business courses. Although AACSB provides accreditation for MIS programs under the Business Schools, it partly concentrates on program accreditation. MIS departments would benefit from AACSB if the curriculum is more business oriented and has more emphasis on business courses. Thus, it seems that MIS departments acquired AASCB accreditation is generally evaluated from the viewpoint of business aspects of the program. Depending on its interdisciplinary characteristics and close link with computer science and management science disciplines engineering accreditation focused bodies can lead to the recognition of MIS programmes globally.

Regarding ABET, its accreditation process is more suitable for program accreditation by allowing programs to enter into a more detailed and specific assessment process and ABET's currents criteria addresses the



characteristics of MIS departments better. In addition to these, ABET provides program specific criteria while AACSB provides only general criteria and no program specific criteria at all.

Moreover, since MIS programs can be located in different schools and departments and AACSB offers accreditation for only Business Schools and programs ABET may be a better option for MIS programs which are not located in Business Schools. ABET better incorporates the input for expectation needs of industry and what kind of skills graduates must have. With regard to continuous improvement, ABET has a separate criterion (Criterion 4) for continuous improvement and MIS education requires continuous improvement. Of course, CI is also part of AACSB criteria but ABET emphasis on this subject is stronger.

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