

# ACADEMIC ADVISING BUSINESS PROCESS REMODELING IN EGYPTIAN EDUCATIONAL INSTITUTIONS

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## ABSTRACT

The academic advising is a crucial process for a student's career path. The manual process is challenging since the student are advised to register specific courses that might affect his career path taking into consideration regulations imposed by school and knowledge and expertise of advisor. Therefore, there are several limitations in the manual academic advising process that could be managed by enhancing the process of the advising using business process remodeling. The paper aims to remodel the advising process using an information technology tool that can enhance the education process and automate the advising process. The paper will use multi-methodological approaches that combine case study, focus group, system implementation and questionnaire. The case study will depends on many evidences: interview with advisors and students, manual process observation to detect deficiency of existing advising process, archival documents reviews to get content of sample courses and transfer it into interrelated concepts. The paper will use concept-related data to feed and develop system that automate this service providing to deliver enhance educational service. The paper will refer as well to expect system outcome and ensure that remodeling process provide better and optimized service for students and academic institution using a questionnaire filled by academic advisors.

## KEYWORDS

Educational Service; Academic advising; Business process remodeling

## 1. INTRODUCTION

Business process management is a new trend to manage the business processes and to enhance the quality of the business output. One of the educational services in universities is the academic advising. Academic advising is the process of selecting courses to register by the student. The courses to be register follow the curriculum of the student's major. The selection of the courses to be register depends on the academic advisor of the student and his knowledge. Business process remodelling aim is changing the actual processes in business to enhance the output. Academic advising has drawbacks as advisor knowledge, complex cases, time consumption, curriculum requirements, and unavailable advisor (Schomaker, 2015).

The aim of this research is to enhance the academic advising process, and proposing an advising process remodeled to solve the academic advising problems. An information technology tool will be implemented (E-Advisor) to reduce advisors unavailability compared to huge number of students, advisor limited knowledge, complication of the transfer between majors and universities. The aim of this research is helping the academic advisor to choose the suitable major of the student based on his history and the curriculum of each major. The research is Case study in the Arab Academy for Science and Technology University in Egypt. The process of transfer was a manual step in the university, so the researcher implemented an online tool to enhance the quality of the advising process.

The paper is organized as follows. The first section is the problem identification. Second section is the literature review of the academic advising process, business process management and knowledge sharing. The third section is the advising process remodeling description; the fourth section is the results. The last section includes the advantages of the proposed process and the directions for future work.

## **2. LITERATURE REVIEW**

The following subsections will define these ideas: academic advising, and business process remodeling.

### **2.1 Academic Advising**

Academic advising is process guiding students to select courses to register in each semester and fulfil the degree requirement. Academic advising is a process in student' educational life. Each semester, there should be a face-to-face meeting between the academic advisor and the student to guide student for registration and courses selection process (Ahmar, 2011).The expertise of the academic advisor can effect the student academic path by choosing courses in the advising process that may delay the student to graduate, one of the main problems in the advising process is the academic advisor knowledge (Schomaker, 2015) ,(Henning, 2007)and (Pokrajac and Rasamny, 2006).Academic advising affect educational development in college or university (Kalamkarian and Karp, 2015; Keston and Goodridge, 2015; Yanosky, 2014; Bettinger& Baker, 2014; Mohamed, 2015).

Sharing the knowledge of different academic advisor is important for the purpose of automating this step, since the academic advising categorizes the student's transcripts into groups that share the same advising document also data mining techniques as artificial neural network (Henning, 2007), rule-based reasoning (Schomaker, 2015), (Zhou and Yu, 2008),(Deorah et al., 2010), and classification (Romero et al., 2008). For the importance of knowledge sharing in educational institutions, (Deorah et al., 2010)shows the interaction between data systems and educational institutions, this model discusses how schools and other educational institution can collect better data and learn how to transform that data so that the information held within can be effectively shared among all stakeholders.

Manual academic advising has many drawbacks related labor intensive, time consumption, human advisors use their accrued knowledge and the large number of students compared to the number of advisors (Chinta et al., 2016; Aghajari, 2010).An Automated Course Advising System (ACAS) is implemented in Electrical Engineering Department of the United Arab Emirates University (UAEU). The system is developed to help student register the academic courses. Students in Engineering department face the following problems: lack of experience of advisers, inappropriate advising time schedules, selecting unnecessary and incorrect courses, and missing out suitable courses for registration (Laghari, 2014).Quality Academic Advising requires committed staff to be accessible to handle the assignment. Money related requirements regularly make it unfeasible to contract staff exclusively to advise and henceforth existing staff are generally allocated for this additional work, making their general obligations labour intensive (Tarí and Dick, 2016;Belhaj et al., 2013;Binh et al., 2008;Keston and Goodridge, 2015).

### **2.2 Business Process Remodeling**

Business Process Management is a systematic approach with aim of reaching organization's objectives by restructuring the business process (Crowe et al., 2002). Critical Success factors (CSF) is one of the important topics of the BPR implementation. The success of BPR depends on how it meets predetermined goals within the project scope and over a longer period of time. The six factors that affect the success of BPM approach include strategic alignment, governance, BPM methods, IT, people and culture (Rosemann and Broke, 2010). Other factors are process analysis, process metrics, process performers, process infrastructure and process (Harmon, 2010). Example of BPR output are: reduction in process time, cost reduction, enhance service quality, enhance process (Albadvi et al., 2007).

## **3. PROPOSED ADVISING PROCESS REMODEL**

Advising Process Remodelling that uses the E-advisor is validated using the following quality attributes: service tangibility, service responsiveness, service reliability, service empathy, service assurance (Mostafa et al., 2014). The business process management is validated using two of the critical success factors: people and organizational culture.

Tangibles attribute represented as the physical facilities (Haveckin, 2012). Responsiveness is the process of helping customers and providing service, reliability is the process of providing service accurately (Haveckin, 2012). Assurance is the aim of manager to spread trust between the employees (Haveckin, 2012). Empathy is defined as customizing each service or product for each customer (Daniel and Berinyuy, 2010). Salimifard et al. (2010) listed critical success factors as: people, organizational culture, business needs, business process and IT tools. Business process remodelling involves understanding how business processes currently operate, and the aim of the BPR is to redesign these processes to eliminate the wasted effort and improve efficiency and quality. BPR assist the organization to gain competitive advantage and enhance the relationship with its customer. BPR support organizations goals by maintaining tasks, managing people or redesigning IT systems. In this research the process of the advising process is described in details and the enhanced advising process that is remodelled is defined.

The advising process has 3 main actors: student, academic advisor and registration department. The student starts the process by asking for enrollment in one of the available colleges or majors. The required document for the enrollment process is the student information document, student previous (external transcript).

The student information document contains the personal information of the student and the previous educational profile. Educational profile is the history of the student if he was enrolled in previous university, or in the same university with different college. The second document is the student's external transcript. The transcript will contain the courses finished and the grade of each course taken by the student.

The student will handle the two documents to the academic advisor. This will start the decision of accepting the documents or not. The academic advisor will check the information of the student and his documents for any missing detail. If the documents are rejected this will end the process and the student must start from the beginning by the required documents. The academic advisor will compare the name of the courses in the student external transcript and with the AAST courses list document. The process of comparing courses is a manual process that depends mainly on the experience of the academic advisor, advisor availability and the complexity of the student case. The selection of courses to be transferred is a vital process that will define the student academic path and number of courses to be taken, and graduation year. The aim of this research is to enhance the efficiency of this process by redesigning this process to be automated using IT tools.

Each academic advisor has his experience and working tasks, so if the student academic path and graduation year depends on these criteria's, it should take more attention from the university management.

Many student cases are delayed in their academic years, lose their interest in their major based on the decision of major selection and transferred courses decision. The process of advising as described in the previous section should be enhanced. The factors that affect the quality advising process are: knowledge of the advisor, student satisfaction and the time. The aim of the enhanced advising process is to modify the quality of the process and eliminating the waste of time, effort.

The main actors in enhanced process are student, academic advisors and E-advisors. E-advisor is a website to help the academic advisor in the advising process. This research design and implement the E-advisor tool.

The enhanced advising process is divided into six modules. The student asks for enrollment while providing the following documents: student external transcript, student information document and the description of the courses taken in the previous university. The academic advisor receives the three documents from the student and at the same time he opens the E-advisor to check whether the details of the student's previous university is stored in the E-advisor or not.

The case study started with the research observation. In order to translate the research observation and findings, a group of academic advisors were interviewed. The result of the observation and the interview was translated into a list of tasks. The researcher designed the advising process to be implemented. A focus group is also established for the purpose of defining the importance of keywords on courses. The advising process is implemented for the purpose of overcoming the manual advising process drawbacks. E-advisor is an online tool that help the advisors in the advising process. The link of the E-advisor is <http://www.aast-advisor.com/>. The webpage starts with a login page either the user is an administrative or academic advisor. When the academic advisors enters the authentication information the list of universities, departments and courses are available. The academic advisors chooses the suitable courses that is finished by the student and the E-advisor proposes a specific major for the student to enrol in.

#### 4. ADVISING PROCESS REMODELING EVALUATION

After implementing and testing the remodelled Advising process, it is important to understand the feedback and the perception the academic advisors. For this reason the questionnaire was designed and spreaded to be filled with the academic advisor working in the Arab Academy for Science and Technology and Maritime Transport university, College of Management , Business Information System Department. Questionnaire was filled by 160 academic advisors. The statistical package of social sciences (SPSS) was used to analyze the collected data. Several techniques were used to reach the results and the findings of this paper.

First, a frequency analysis was conducted to ensure the consistency of the various items in each instrument used in the questionnaire. Second a correlation was undertaken to measure the strength and the direction of the relationship between the service quality, people , organizational culture on the advising quality.

The frequency analysis is defined as "the number of times various subcategories of a certain phenomenon occur from which the percentage and the cumulative percentage to their occurrence can be easily calculated"(Sekaran,2003, p.395).Service Quality frequency table reveals that 91.2% ( agree ) and 8.8% (disagree) of the academic advising convinced that the service quality affected the advising process quality.

People frequency tables reveal that 84.4% ( agree ) and 15.6% (disagree) of the academic advising convinced that the people factor affected the advising process quality. Organizational culture frequency tables reveal that 89.4% ( agree ) and 10.6% (disagree) of the academic advising convinced that the organizational culture affected the advising process quality.

In order to test the proposed model, Pearson correlation analysis was used to measure the relationship between the variables under investigation. Pearson correlation analysis indicates the strength, direction, and significance of the relationship between only two variables at a time, then it is used to test the paper hypotheses (Sekaran, 2003). If P is between 1 and 0.5 then the strength of the relationship is strong, when p is between 0.5 and 0.3 then the relationship is moderate, while when p is between 0.3 and 0.1 the relationship is weak and finally when p is less than 0.1 the relationship is very weak (Sekaran, 2003).

The correlation analysis shows a strong positive relationship between the service quality and the advising process quality. Advising process quality increases when service quality increases. The correlation analysis shows a strong positive relationship between the people participation and the Advising process quality. The Advising process quality increases when the people participation increases.The correlation analysis shows a moderate positive relationship between the organizational culture and the advising process quality.

#### 5. CONCLUSION

The paper provides a proposed model to enhance the academic advising process using business process remodelling. An automated tool (E-Advisor) is used to execute the advising process remodelling.

A questionnaire was spread and filled in by academic advisors to evaluate the proposed advising process remodelling. The analysis of the questionnaire had shown that 91.2% of academic advisor agreed that service quality affected the advising process quality.84.4% of the academic advisor agreed that of the academic advisors accepted that people factor affected the advising process quality. 89.4% of academic advisor convinced that organizational culture affected the advising process quality.

The limitation of this research can be defined in the following points: This research focuses on remodeling the advising process so as the advising process is better quality, accurate and less time consumption; however any research still has a list of limitations. First limitation is the case study, the case study was made in one university which is the Arab Academy for Science and Technology. Since the researcher works in College of Management and Technology (CMT) so the participators of all case study evidence were from the CMT. The participant of the survey were hundred and sixty academic advisors whose available for advising process. All the academic advisors are faculty members so they were so busy working to advice students and prepare their teaching materials and also they were trying the system.Advising process remodeling uses an IT tool (E-advisor), the database used in the E-advisor is limited to three universities: Arab Academy for Science and Technology,Pharos University and Alexandria University.

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