An Online Intelligent System to Selecting the New Employees for Directorate of Education in Dhi-Qar

Hayder Hussein Azeez
IMAM JAAFAR AL- SADIQ University / College of Information Technology
Heart_hiynner@yahoo.com

Abstract— In recent years, the concepts of government and administration have radically transformed. Transformations were caused not only by growing requirements and expectations for ways of governing civil society to reflect modern methods of efficiency and productivity, but also the attitude that government should be more open to democratic control and accountability. Many authors state that using ICT in Public sector ensures efficiency and democracy in a more economical way than it was forecasted before, and the application of ICT creates opportunities for government to modify the traditional compromise between these two objectives. Therefore, the researcher in this study has attempted to harness ICT to design Employees Selecting System to help and increase the transparency between the government and citizens in Dhi-Qar province.

Index Terms—Online Intelligent System, e-City, e-service, Dhi-Qar, Employees Selecting System

I. INTRODUCTION

By definition, Information Communication Technology (ICT) include both computer-based systems and telecommunication technologies for information and data storage, processing, and communication [1]. ICT includes both computing and allied equipment [2] and also communications infrastructure. Together, these enable the gathering and processing of data, as well as its storage and distribution (Evans, 1990). Essentially, ICT is a collection of hardware and software used for the collection, storage, processing, dissemination, and use of information [3].

Information and Communications Technology (ICT) has become a catch-all term, and has many different considerations, even among experts. Fast change drastically changed the traditional ways in which information was processed, communications conducted, and services made available [4]. Concerning financial management, ICT combines accounting principles and concepts with the benefits of an information system which is used to analyses and record business transactions, prepare financial statements and provide accounting data for the intended users [5].

Use of ICT in the public sector has been traditionally called e-government and is intended to improve Government administration and service [6]. Typically, e-Government is defined as the usage of ICT to provide public services (therefore, it is closely related to an administrative management unit); however, ICT enabled solutions are also applied at various administration levels such as, international, national, regional or local. The application at the local level is related to the concept of e-City. The concept of the e-City is based not only on the provision of information, but also on the possibility to include citizens into the life of a city more actively and mutually usefully. For example, digital technologies (remote network systems, Internet and mobile technologies) are used to facilitate the process of decision-making for public institutions, improve public policy in local communities, and transform relations with citizens, business, and other public institutions [7].
II. MOTIVATION OF STUDY

In Dhi-Qar, there is a huge number of new students graduating year after year. Not only this, there are few opportunities for find a new job in government. This depends on the requirements for all agencies in Dhi-Qar province. However, selecting new employees still causes injustice for applicants. This is because the traditional method used for selecting the new employees is mostly not efficient and requires a great deal of time to select employees. The application of information and communication technologies (ICT) has the potential to achieve two benefits: the bureaucratic outcome of increased efficiency through digitizing administration processes and services, and the political outcomes of reduced corruption [8]. Therefore, this paper attempts to allow the use of new technology to achieve good governance and apply it in the public sector (Directorate of Education in Dhi-Qar) through an intelligently designed system for Directorate of Education. This will make possible the selection of employees based on qualifications.

III. LITERATURE REVIEW

Online services have been shown to increase the communication pathways between users and organizations. They allow for both easier and more efficient services [9]. The history of communication technologies includes mail, the telegraph, the telephone, and the Internet. However, the Internet is only one of the latest communication technologies [10].

Electronic services provide information or perform a task using in whole or in part Information and communication technologies. They are an increasingly adopted channel for citizen-government interaction (e.g. Rowley [11]), and e-government has advanced from the early phase of information publication [12] to service development. Iraq’s e-Government has been able to meet some of the requirements; including the use of technology specifically computers and the Internet to help reduce the voltage for the citizens and reduce the time required to deliver information in a certain manner. Per the website (http://www.egov.gov.iq), the Iraq’s E-government has many services divided into four sections, and each section has deferent services. The figure below depicts these services:

![Figure 1: Iraq portal](image)

Unfortunately, most of these services not are active and do not interact with users, especially local citizens; therefore, a new system should increase interaction between local government and citizens, where local government deemed contact point between citizen and government. The table below shows the studies in this field for developed and developing countries:
Table 1: Summary a number of previous studies

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year</th>
<th>Object(s)</th>
<th>Country</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarikas and Weerakkody [13]</td>
<td>2007</td>
<td>This study strives to explore the challenges that local government face in the UK when implementing fully integrated electronic public services</td>
<td>UK</td>
<td>Realizing integrated e-government services: a UK local government perspective</td>
</tr>
<tr>
<td>Bigdeli and de Cesare [14]</td>
<td>2011</td>
<td>The aim of this research is to investigate and analyze the barriers to e-service development projects in Iran</td>
<td>Iran</td>
<td>Barriers to e-Government service delivery in developing countries: The case of Iran</td>
</tr>
<tr>
<td>Alateyah, Crowder and Wills [15]</td>
<td>2014</td>
<td>This study discusses e-government services, in particular the challenges that face adoption in Saudi Arabia</td>
<td>KSA</td>
<td>Identified Factors Affecting the Intention of Saudi Arabian Citizens to Adopt e-Government Services</td>
</tr>
<tr>
<td>Nawi, Ibrahim and Rahman [16]</td>
<td>2013</td>
<td>This study attempts to identify and understand the barriers in sustaining the e-service initiatives for future guideline</td>
<td>Malaysia</td>
<td>Public e-service Sustainability Failure Factors: Project Stakeholders’ Views</td>
</tr>
<tr>
<td>Alam and Brooks [17]</td>
<td>2014</td>
<td>This paper aims to identify the need for Public Sector Information Systems (PSIS), a particular field of the IS discipline dealing with the design, redesign and evaluation of E-services in public sector organization</td>
<td>Bangladesh</td>
<td>Identifying a Public Sector Information Systems (PSIS) for E-service: A Case of Land Records e-service in Bangladesh</td>
</tr>
</tbody>
</table>

Per the aforementioned studies, the system for e-services in public sector should be enhanced, while Iraq is still in the infant stage. Therefore, there is a need to a design system for provision of information and interaction between citizens and the government via ICT.

IV. METHODOLOGY

Research methodology is more than just a collection of method to carry out research; it is a systematic and formularized way to solve a given research problem. The research methods refer to the methods and techniques used by the researcher in doing the research, for example, data collection techniques, data processing techniques, and instruments. The methodology used in this research to solve the problem and design an ESS (Employees Selecting System) is the General Design Research Methodology [18].
According to Vaishnavi and Kuechler [18] the general design research methodology includes the major steps shown in Figure 2 below:

A. Awareness of Problem

In this stage, the researchers has identified the requirement of the study. Based on those requirements, the researchers have fully understood the scope and the objective, thus setting the direction on the current research. Also, data collection is essential to meet the requirements of a system that fulfils the applicant user’s needs. Based on previous studies, as well as interviews with new employees in Dhi-Qar province, awareness was reached that the manual process caused a lot of problems for both the agency (Director of Education) and the applicants. The interview was examined to identify the weaknesses of the current process, as well as to determine the mistrust in this process from applicants and the needs of the system. Also, this will help determine what the Directorate of Education needs for their Employees Selecting System.

B. Suggestion

In this paper, an Employees Selecting System has been proposed in order to solve the problem that Directorate of Education and applicants were facing. The proposed system enables the applicants to access it anywhere. Thus, the applicants and the managers can view all the information and the results from system easily. The output of this was the tentative design, including a UML diagram. The UML diagram contains a use case diagram, activity diagram, sequence diagram, collaboration diagram, and class diagram. However, this paper will illustrate only the use case diagram.

C. Development

In this phase, the propose system has been implemented. In this research, Asp.net was the programming language used. The development environment was Visual Studio 2010. At this phase, the Rapid Application Development (RAD) was applied for the prototype development. Indeed, The Rad methodology was developed to deliver the system in a timely manner. The four phases included in RAD are as follows: Requirement planning Phase, User design phase, Construction phase and Cutover phase. These phases are shown in the figure below:
D. Evaluation

The system was evaluated following the development phase. The results were determined after the people using the system managed to do their job. The IT staff has more than five years of development experience testing the system. Therefore, they have sufficient knowledge and experience to validate the system.

E. Conclusion

This stage documents the overall findings. Results have been used to examine user requirements and acceptance of Employees Selecting System. The researchers will present the analysis and design of the prototype system in the next section.

V. Design and Analysis

The design of the system includes UML diagrams and a sketch of the system’s architecture. In this paper, only the use case diagram is used. This diagram described the blueprint of the proposed system. The Edraw program has been used to draw use case diagram that help in the development stage. Below is the main use case diagram of the proposed system:
Figure 5 has depicted the process for the system from the start to awaiting the results:

![Diagram of system process](image)

**Figure 5: Process for Employees Selecting System**

### A. Login Page

On this page, the applicant inputs a username and password, which gets sent to the applicant’s email. Then they press Login button, as illustrated in Figure 6 below:

![Login page](image)

**Figure 6: Login Page for Employees Selecting System**

### B. Registration

On this page, the applicant can register to get username and password to allow him/her to login and fill the form to new job at the Directorate of Education.
C. Applicant’s Form
On this Page, the applicant can add his/her information (Education level, Qualifications, and so on):

![Figure 7: Registration Page for Employees Selecting System](image)

![Figure 8: Job Form Page for the Employees Selecting System](image)
VI. CONCLUSION AND FUTURE WORK

Rapid development of information and communication technology (ICT) has generated a number of opportunities for more efficient and cost effective public service delivery. Even though most developed countries have had established electronic services for several years, the vast majority of developing countries have begun only recently. Iraq has attempted to deliver services to citizens by harnessing the Information and communication technology in public sector. Therefore, this study is intended to design a system for the Directorate of Education in Dhi-Qar province to assist the applicants for a new job to apply online anywhere, as well as to increase transparency, reduce corruption, and increase trust in the local government. Moreover, they should choose a person who has high qualifications, without bias or mediation. Future work should include studies about electronic service in local government, due to scarcity in this area. A number of studies have investigated the adoption of e-government services in developed countries, whereas relatively little has been undertaken in developing countries such as Iraq. There has been great destruction of infrastructure because of war; therefore, we suggest that the use of mobile communication services as a result of its dramatic spread in Iraq.

REFERENCES