e-HR: A Custom Electronic Human Resources Management System

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ABSTRACT

The Human Resources General Directorate (hereinafter HRGD) of Abu Dhabi Police GHQ (hereinafter ADP) endeavored a project to become an electronic work environment. The targeted system will be a total electronic Human Resources Management System (hereinafter e-HR) that supports all six departments in the HRGD. These departments are the Personnel Affairs, Recruitment, Training, HR Planning, Performance Appraisals, and Police Institutes and Schools. The e-HR system has two interfaces, the first is to be used internally (intranet) and the second is to be used by externals (internet). Our concern was concentrated in two directions. First, to automate data acquisition, transfer and processing. Second, to integrate all departments and functions across HRGD into a single solution that can serve different departments' needs and requirements. This paper is to furnish a high-level of details of the e-Recruitment sub-system that is being tested and evaluated before it is made public.

BACKGROUND

The Human Resources General Directorate (hereinafter HRGD) of Abu Dhabi Police GHQ (hereinafter ADP) endeavored a project to become an electronic work environment. The project started around the end of year 2004 and still carrying on. The targeted system will be a total electronic Human Resources Management System (hereinafter e-HR) that supports the HRGD six departments. These departments are the Personnel Affairs, Recruitment, Training, HR Planning, Performance Appraisals, and Police Institutes and Schools. The e-HR system has two interfaces, the first is to be used internally and the second is to be used through the internet.

The following table summarizes some of the currently implemented HR strategies and solutions in different agencies and enterprises:

Solution	Description
Manual HR system	Some agencies still manage their HR systems as separated procedures where everything is done manually including recruitment, employees' leaves, employee raise and bonuses … etc. A candidate or an employee should fill paper-based form that is submitted to the concerned party where it goes through many steps before a decision is made. Not only is it inconvenient but also it places a great overhead on HR department. Due the lack of efficiency and scalability this system doesn't work even for a middle size business not to mention a government agency.
HR Solutions	Many outsourcing companies provide solutions for e-Recruitment such as StaffCV, Eclipse and many others [1]. Although these solutions are considered cost efficient they have very limited functionality that do not meet the requirements of a government agency. Moreover, these solutions assume one workflow of the recruitment process where the candidate applies and his/her application is been revised by the HR department. This is not the case in military agencies where many parties are concerned as will be explained later.
Enterprise resource planning software (ERP)	ERP system is a single software program that serves and combines all different departments together into a single, integrated software program that runs off a single database so that the various departments can more easily share information and communicate with each other. The goal of ERP is "to gain include standardization, better inventory management, improved profit margins and increased competitiveness" [4]. Some companies provide ERP systems such as Oracle and SAP [3].

Why is the Proposed e-HR System Better than Existing ERPs?

It is important to mention that we have chosen to develop the e-HR system completely in-house as the existing ERP solutions from Oracle, SAP and others require much customization to fit the current HR environment at ADP. We estimated that the cost of developing this system in-house will be much less than the cost of adopting and customizing one of the existing ERP solutions. Besides that, the estimated time it would take us to customize such solutions would be longer than the time it takes us to develop the e-HR system completely in-house.

The following table summarizes the three main factors that lead us to chose the in-house development of the intended system as opposed to adopting one of the many existing HR/ERP solutions/systems:

Factor	Description
Cost	The total cost of ownership (TCO) of ERP includes hardware, software and professional services. The average TCO was $15 million (the highest was $300 million and lowest was $400,000) [6]. The cost increases as the number of users increase because of acquiring licenses. In addition, over 31% of companies which applied ERP said that it was over budget while 18% said it was not applicable [4]. In our project the solution is developed in house and open-source technologies are used which cut down the overall cost.
Timeline	According to the Enterprise Resource Planning Research Center the implementation of ERP usually runs between one and three years [6], on average depending on the enterprise size and the stability of the requirements. In our project we are applying the system in phases. In one year we have been able to fully serve three departments out of six.
Dynamic requirement	Due to the nature of the police department, requirements change frequently. In ERP system, once a requirement is set, it is very hard and expensive to adjust it. It is important to figure out requirements before the beginning of implementation. Any change in the requirement later will delay the project because some complex processes need to be rewritten and it might lead to the failing of ERP [2]. In our system, due to the simple design, it is easy to change the system to meet the upcoming requirements as well as adding additional processes to perform additional tasks.

At the time of writing this paper, three of the e-HR sub-systems have been completely developed. These are the e-Recruitment, e-Training, and e-Education ones, which are being internally tested and will be released to public in the near future.

- The e-Recruitment sub-system handles the entire recruiting cycle that can be summarized as follows:
  - o Concerned ADP departments post their staffing needs.
  - o HR Planning department double checks these needs and approve/disapprove them.
  - o Recruiting department advertises the approved jobs openings on the website.
  - o Receiving applications from applicants for particular job openings.
  - o Concerned ADP departments review and evaluate applications and shortlist candidates for each of their advertised jobs.

o   Recruiting department arranges for interviews, medical tests, appointments, etc.

- The e-Training sub-system enables the Training department to:
    o   Receive training requirements electronically from the different ADP departments.
    o   Receive the details of available training programs from internal and external training providers.
    o   Produce a training plan and communicate that with the concerned ADP departments as well as with the concerned training providers.
    o   Follow up on carrying on training programs.
- The e-Education sub-system enables the Education section of the Training department to maintain ongoing communications with ADP undergraduate and graduate students who are studying inside the country as well as with those who are studying abroad. Also,

this facilitates communications with their universities. Overall, this sub-system helps the Education section to monitor all ADP-sponsored students.
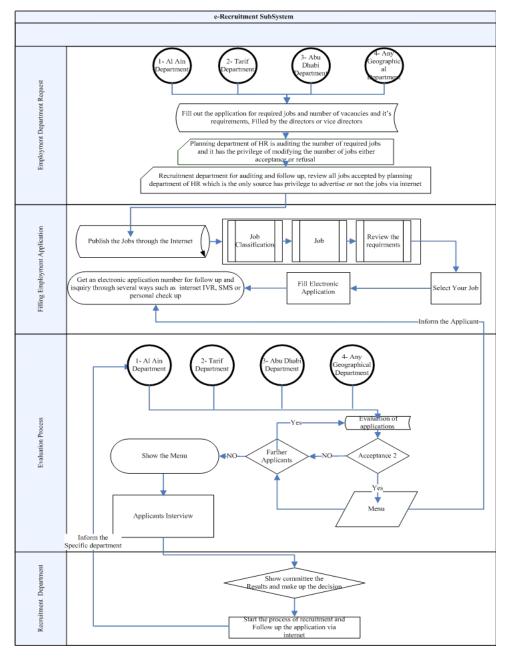
At a later stage of the e-HR project, the following sub-systems will be developed and implemented: e-Personnel, e-Institutes, e-Schools, e-Planning, and e-Performance.

This paper is intended to present a high-level details of the e-Recruitment sub-system.

E-RECRUITMENT

All ADP departments will be using this sub-system besides applicants seeking employment at ADP. The ADP entire recruitment process is incorporated into this sub-system. Some modifications were introduced

Figure 1. E-Recruitment Sub-System's Logical Foundation

in the process in order to decentralize the existing current recruitment process by enabling the concerned departments to review the applications first such that the Recruiting department just takes care of the overall all coordination of the recruiting process.

At anytime, the status of any application can be viewed by the applicant himself/herself, the ADP concerned departments, etc. and therefore there would be no need for an applicant to visit any of the ADP employment offices around the country.
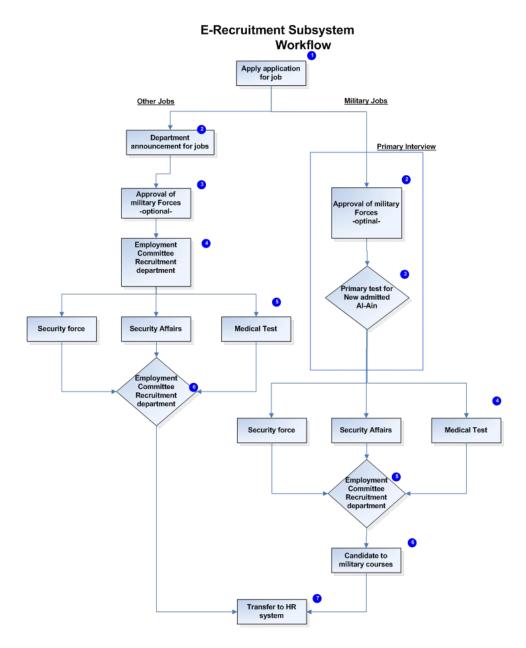
E-Recruitment Workflow
As shown in Figures 1 and 2, the e-Recruitment sub-system can be viewed of three basic stages:

- The process of advertising jobs by the concerned departments at ADP.
- The process of filling the application for job by the applicants through the internet.
- The process of evaluating applications by the concerned departments and the Recruiting department.

Advertising Jobs
- **User 1 - All ADP Departments**: These departments request advertising their vacancies online through the e-Recruitment sub-system in a secured manner.
- **User 2 - HR Planning Department**: This department reviews all requests for advertising vacancies for budgetary, job description and responsibilities purposes. HR Planning department can adjust the number of required staff and any other details in the

Figure 2. E-Recruitment Sub-System Workflow

requested advertisement. Once an advertisement request is approved by the HR Planning department, the e-Recruitment subsystem passes it to the Recruitment department for further processing.

• **User 3 - Recruitment Department**: This department reviews the requests for vacancies advertising passed by the HR Planning department and approve/disapprove them. Once a request is approved by the Recruitment department, it gets automatically published on the e-HR website and becomes available for public review.

Apply for jobs

• **User** – External and Internal Applicants: The user reviews the vacant jobs and their requirements then fills an application form for a particular job. The system generates an application number for the applicant to use later on to check on the status of his/ her application.
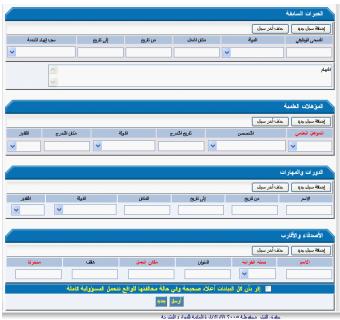
Evaluation of Applications

• **User 1 – all ADP Departments**: Each department evaluates all applications submitted against its own job vacancies. The system

Figure 3. The e-Recruitment Sub-system's main page

Figure 4. The listing of available jobs

Figure 5. The first part of the application form

Figure 6. The second part of the application form

passes to the Recruitment department only those applications that have been passed by the departments of concern for further processing.

- **User 2 - Recruitment Department**: This department reviews all applications that have been passed by the concerned ADP departments and then arrange for interviews, medical tests, security check, etc. Once this process is completed, the system transfers all passing applications to the Personnel Affairs department for appointments.

E-Recruitment Implementation

This subsection presents some snapshots of the many screens that we developed as part of the e-Recruitment sub-system interface. As can be predicated from these snapshots, the current version of the e-Recruitment sub-system supports the Arabic language. The English version will follow in the near future.

CONCLUSION

In this paper, the e-Recruitment sub-system of the intended ADP e-HR system has been presented at a high-level of details. This system is being tested and evaluated for public deployment in the near future. The initial observations lead us to believe that this system will save ADP too much effort and cost in their recruitment process.

ACKNOWLEDGMENTS

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