

E-Recruitment System: A Case of Namibian Government

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Abstract: Online recruitment systems have become widely used in Namibia and all over the globe. These online recruitment systems provide quick results in terms of job ranking and provide cheaper and faster ways of doing recruitment. However, the government of Namibia still uses the traditional method to do recruitment. The traditional method involves submitting hardcopy documents, which tends to be difficult when sorting documents. This study focuses on the design and implementation of a smart, transparent, open and merit-based recruitment system for the Namibia government. The paper also looks into the factors that always lead to delays in the government recruitment process, understanding some of the few technologies that can be introduced to make the recruitment process faster. It further presents a system developed as a result. The study adopted the qualitative research methodology and the incremental model to come up with the system designed.

Keywords: on-line recruitment, e-recruitment, e-hr, open.

1. Introduction

There have been great developments in information systems and the World Wide Web (WWW) over the past few years. As technology keeps changing rapidly we keep on changing the way we do things as well. For example, the WWW has changed the way we communicate and provides a lot of resources (including information, email communication, etc) to people. Due to the increase in technology developments, some companies have changed the way they do recruitment. It has been revealed that companies have started migrating towards the use of online knowledge management systems or simply e-recruitment systems to hire employees taking advantage of the Internet resources. According to [1], the widespread use of the Internet today has meant that advertising for candidates has become cheaper while at the same time appealing to the wider audience and gaining popularity in a short time. Further, the author stated that the impact of online recruitment is considered to be cost-effective, clear communication, broader search, deeper pool, improved standardization and compliance, faster time to the appointment, adoption is growing- especially among younger candidates and green solution to mention a few.

The term e-HR was first used in the 1990s and refers to conducting Human Resource Management transactions using the Internet or an intranet [2]. E-recruitment is the practice of using technology and particular web based for tasks involved with finding, attracting, assessing, interviewing and hiring new personnel. The main aim of online recruitment is to

make the recruitment process more efficient and effective as well less expensive. Some functionalities allow some of the recruitment processes to be automated thus reducing the amount of work that needs to be done by the HR staff in doing the selection and job ranking [3].

Although e-recruitment is fast it can bring up challenges especially when the database is large and the organization is not technologically well prepared, thus causing the risk of resource loss [4]. However, [5] in his study emphasizes that an organization should have the website designed in such a way that information is easily accessible for job seekers so persons who think they are qualified and fit with the organization may attract.

The government of Namibia still uses the traditional method to recruit people. This method involves people having to submit hard documents and completing government employment forms, which are then sorted and reviewed by the HR department. This method of recruitment is very costly and time consuming as sorting out documents can be very difficult when you attract a huge number of applicants, therefore leading to delays in the job selection and ranking process. [6] states the importance of recruitment and how it can overcome the barriers of traditional methods for easy access of candidates. [7] have concluded that job portals are the most popular and widely used tool by companies and recruitment teams to facilitate the smooth flow of the recruitment process in the competitive world. It is the purpose of this research to help the government of Namibia to find a way to do recruitment in a much faster and efficient way. It is in this background, this study aimed at designing E-recruitment systems that allow users to register their CV by uploading their documents. Once they are registered they can then apply for the jobs that are advertised on the system. Employers on the other side can release jobs and set requirement which needs to be met by the candidates. This is a web-based Government recruitment system to make government recruitment more efficient and less expensive and access to smartphones and Internet enabled devices.

2. Objectives

The objective of this project was to develop a web based e-recruitment system for the Namibian government that enhances, speeds up and automates the job ranking process in the recruitment process.

3. Methodology

3.1 Research Design

Research designs are plans and the procedures that span the decisions from broad assumptions to detailed methods of data collection and analysis [8]. To do this research a qualitative research method was used to analyze and produce the results of the study.

3.2 Population and Sampling

The target population consisted of 12 people from the following line ministries: the Ministry of Education, Ministry of Justice and Ministry of Health. The participants included a chief human resource officer and three human resource officers. A random sampling procedure was used for selecting the participants in this study.

3.3 Data collection tools

A questionnaire produced by the researcher was used as an information-gathering tool. The questionnaire was created using google forms and was distributed to 12 participants via email. The online structured questionnaire consisted of open and closed ended, multiple choice questions, true and false. Questionnaire Interviews were conducted with human resource officers, from the Ministry of Health and Social Services and the Ministry of

Education. The respondents were called telephonically and the interview was conducted remotely due to restrictions that were in place during the Covid-19 pandemic.

3.4 Data Analysis

Data was analysed, systematically applying Excel techniques to describe, illustrate and evaluate data that helps the researchers come up with conclusions of the data they have collected in relation to the problem statement, research objectives from data analysis and interpretation.

3.5 Procedure

Participants gave informed consent. Ethical approval was sought from and approved by the Ministry.

3.6 Software Development Methodology

A software process is a set of related activities that leads to the production of a software product. These activities may involve the development of software from scratch in a standard programming language like Java or C. However, according to [9] software applications are now often developed by extending and modifying existing systems or by configuring and integrating off-the-shelf software or system component. This research study used the incremental software development life cycle model, which is shown in Figure 1.

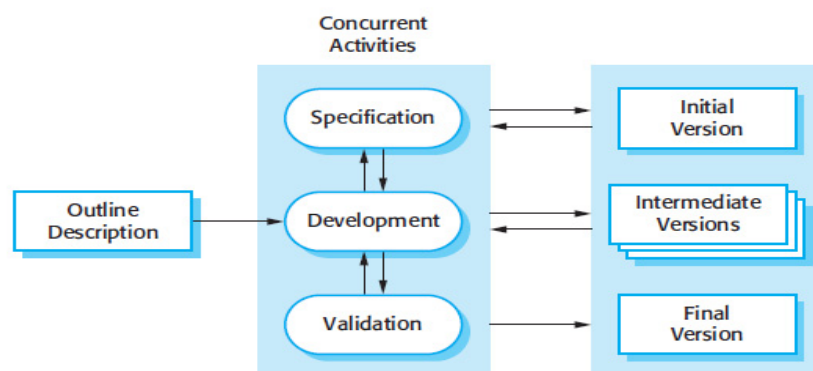


Figure 1: Illustration of the incremental model

4. Technology Description and Prototype Development

4.1 Hardware and Software Requirements

This section describes the necessary hardware and software needed. Hardware requirements includes a personal computer with at least 4 Gigabytes of Random Access Memory. Software requirements include Windows 10 Pro, Web browser (that supports at least HTML 5), Xamp web server and PHP and MySQL software.

4.2 System Development

4.2.1 System Flow Chart and Use Case Diagram

During the design phase, the architecture was established. During this phase, the system was designed to satisfy the requirements identified in the previous phases and map the requirements into an architecture. Tools that were used for describing the system design are the system flowchart and Use case diagram. This requires players to carry out task analogous, resulting in the actor learning her/his fit with the employee role benefiting the HR department [10].

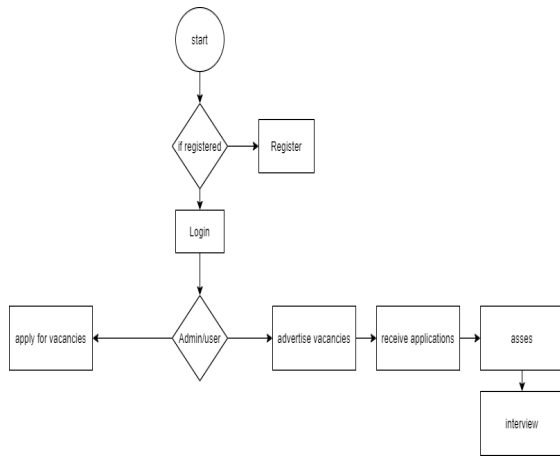


Figure 2: System Flow Chart

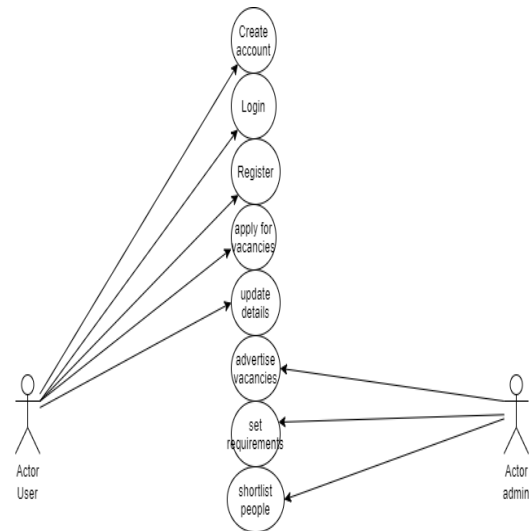


Figure 3: Use Case Diagram

Use Case diagram incorporates:

- To Create an account: Actors are the Users, the Goal is to register their user account and the Description is that the users should be able to create user accounts.
- To Login: Actors are the Users/admin, the Goal is to login into the system and the Description is that the users should be able to sign-in using given credentials.
- To Register: Actors are Users, the Goal is to register user personal information and the Description is that the users should be able to register their personal information such as names, education and work experience, etc.
- To Apply for vacancy: Actors are Users, the Goal is to apply for vacancies and the Description is the logged in users should be able to apply for vacancies.
- To Advertise: Actors are Admin, Goal is to advertise vacancies and Description is that the admin should be able to advertise vacancies.
- To Set requirements: Actors are Admin, Goal is to setup requirements and Description is that the admin should be able to set-up job requirements for the vacancies.

4.2.2 User Interface Components & Design

The system was tested to check if it met the requirements. Below are some of the user interface designs consisted of screens that the user saw and interacted with the system. Figure 4 and 5 show the Index and sign up page. The index page shows the currently advertised vacancies and gives routes to other pages such as the sign-in and sign-up pages where the user before start using the system they need to create and set-up accounts.

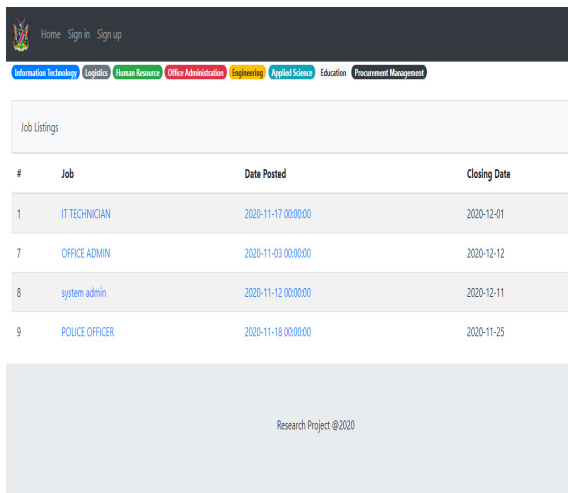


Figure 4: Index Page

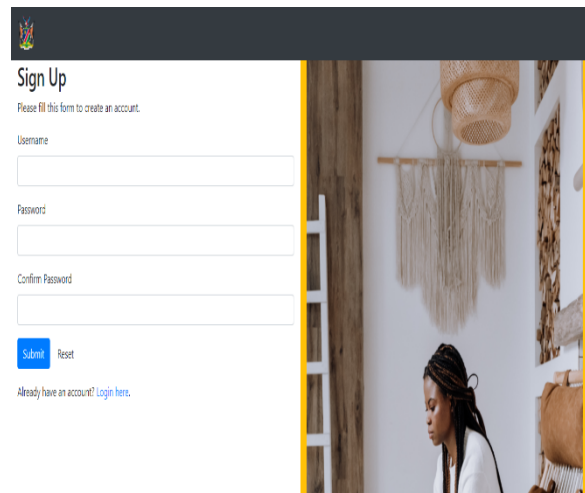


Figure 5: Sign up page

Figure 6 and 7 shows the log in page. After the login, the credential was accepted, and then the user will be taken to the next page where they have to register their personal information.

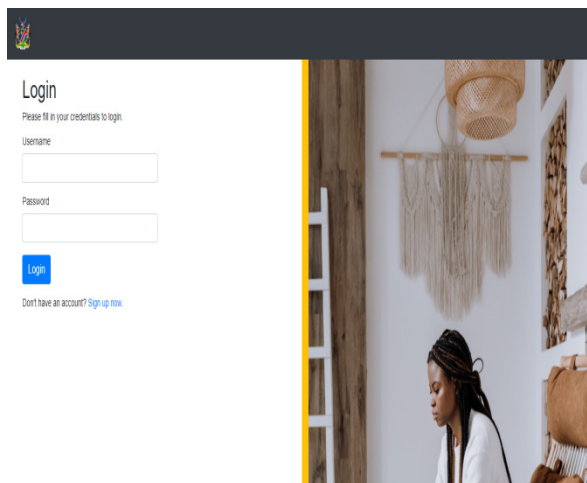


Figure 6: Sign in Page

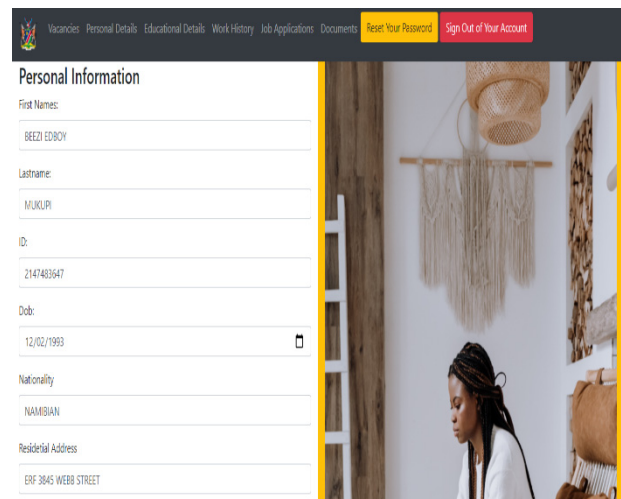


Figure 7: User Details

Figure 8 and 9 shows the interface on which the user can add their educational information their working experience.

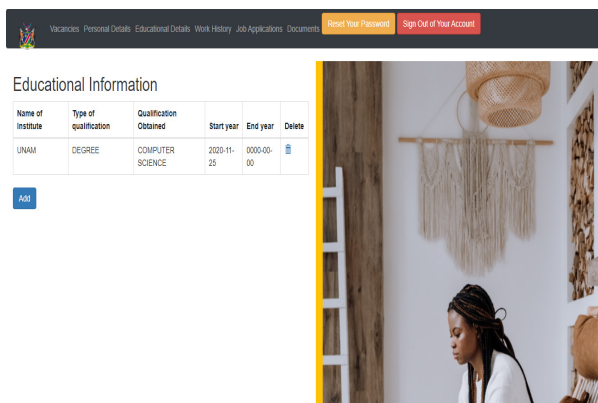


Figure 8: Adding user education details

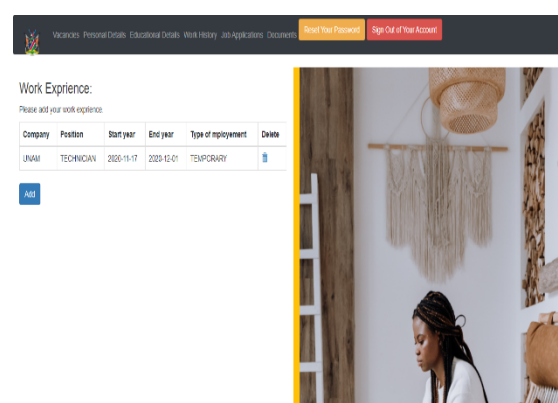


Figure 9: Adding user employment experience

Figure 10 and 11 shows the document upload page and the page that allows users to reset or change their passwords page.

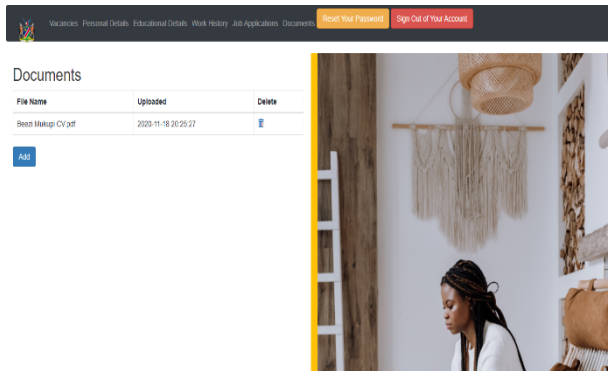


Figure 10: Document Upload Page

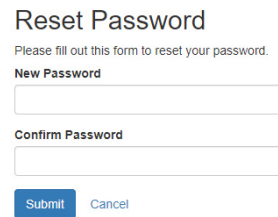


Figure 11: Password rest Page

Figure 12 shows the interface that allows for job postings.

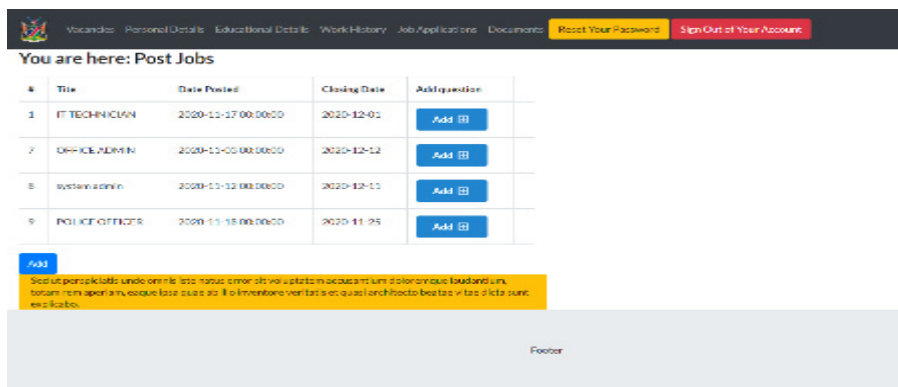


Figure 12: Post Jobs Page

Figure 13 below shows the interface that allows for posting the Questions page (Admin). Figure 14 shows an interface that allows for the addition of the question to jobs.

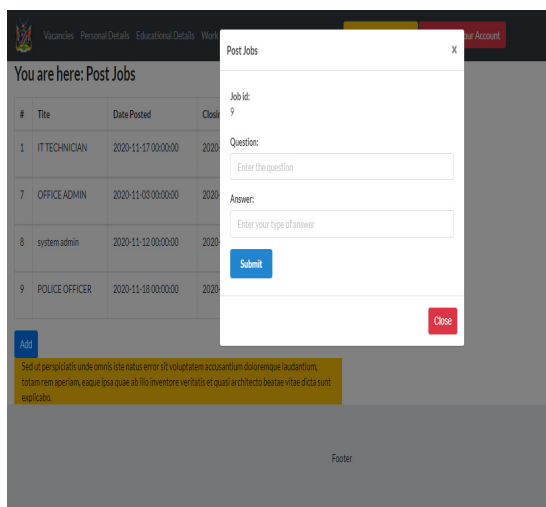


Figure 13: Adding Questions

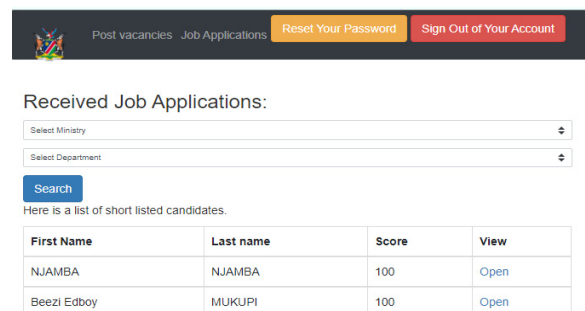


Figure 14: Candidate Ranking Page

5. Results

The system has been demonstrated to participants and evaluated before full implementation. Testing has also been done at different levels including unit test, system test, etc. The results from the questionnaires revealed that the majority of the respondents did have access to a laptop or a computer, which would make it possible to implement an e-recruitment system although a small number of people did not have access to the Internet, and a computer at work. During the study, it was revealed that several factors such as sorting hard copy documents, the number of stages involved in the recruitment process, candidate ranking all lead to delays in the recruitment process. The results revealed that the majority of the respondents believed that the current system is fair in terms of candidate ranking. Most of them preferred the web based system compared to the hard copy system.

The researcher identified the tools that were necessary to implement the smart, transparent recruitment system. The objectives were met by identifying the factors that lead to delays in the government recruitment process.

The project achieved its main objective of developing a smart, transparent, merit based e-recruitment system by producing a web-based system that can be used to do recruitment. The resulting system allows the government to advertise vacancies, set-up a questionnaire on which candidate has to participate in when applying for a job. Below are two major pie charts illustrating the participant's responses.

- Figure 15 shows that 58.3% of the correspondents chose all of the above factors as the reason to why there are delays in recruitment. 33.3% chose the number of stages involved in the recruitment process while 8% chose sorting hard copy CVs as reasons for delays in the recruitment process.
- Figure 16 shows that 58.3% of the correspondents prefer the web based recruitment system where candidate ranking is semi-automated, while 41.7% chose the traditional way (submit hard papers).

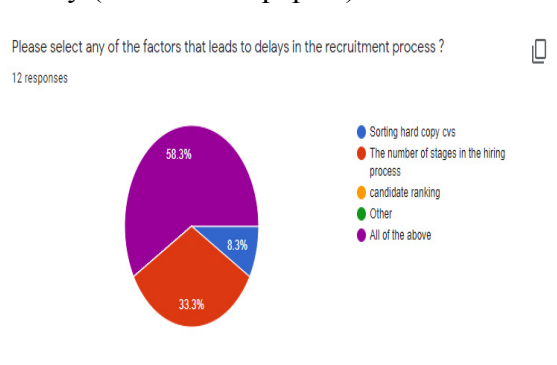


Figure 15: Factors that lead to delays in the recruitment process

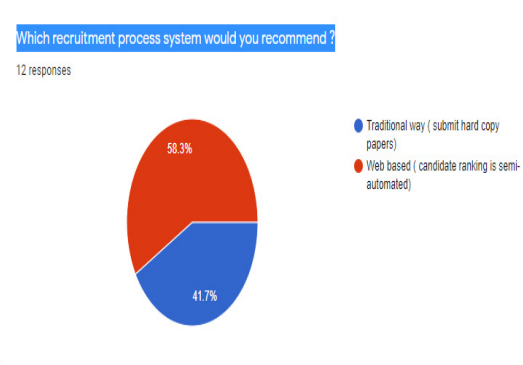


Figure 16: Which Recruitment process system would you recommend

6. Business Benefits

The project intended to help the Namibia government find a better way of doing the recruitment process with transparency. The study also adds value toward understanding the impacts of applying ICT towards the government recruitment process. Furthermore, help to determine the advantages of e-recruitment. This will also add value to understand how the government can reduce recruitment costs and the time spent on recruitment.

7. Conclusions, Recommendations and Future work

In conclusion, the main objective of developing a smart, transparent, merit based e-recruitment system was fully achieved. It also aimed to understand the various factors that lead to delays in the government recruitment process. The research looked into similar

systems that offer the same functionalities. However, it has been found that this system emerged superior because it is responsive and implements some intelligence such as data analysis. Understanding the best futures among those that could be implemented to improve on what is available systems.

Future work aims to co-design the system with all stakeholders by incorporating the public user's opinions on e-recruitment and the public perspective on the system. Additional functionality could be incorporated such as on-line and offline text messages that inform the candidates once they have been shortlisted.

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