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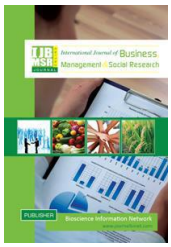

Workday: Human resource information system in Grameenphone

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ABSTRACT

A case study was done on the human resource information system (HRIS) in Grameenphone (GP). Interviews and website analysis were used as the data collection method and a qualitative approach was used for data analysis in the study. GP uses the Workday database management system in its information system. Workday is used to manage master data and it supports all organizational layers in GP. Two of the major benefits of Workday are that it is cloud-based and it is a centralized system. The HR analytical report is produced with inputs like employee database, salary structure, and employee performance information. Workday is an object-model database, and its speed, privacy, and file-based search options make it unique. Several issues are considered to be major concerns of this system. Privilege Escalation, trojan horse, worm, and IP theft are the major ones.

Key Words: *HRIS, GP, Workday, information system and human resource information system.*

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I. Introduction

Organizations use information technology (IT) in Human Resource Management (HRM), also known as Human Resource Information System (HRIS), to gain competitiveness (Teo et al., 2001). HRIS is used to acquire, store, manipulate, analyze, retrieve, and distribute pertinent information regarding an organization's human resources (Kavanagh et al., 1990). Companies invest in information systems for business purposes such as achieving efficiency, developing new products and services, achieving customer and service intimacy, improving decision-making, competitive advantage, and survival (Laudon and Laudon, 2013). HRIS contributes to the overall business performance in the organizations by completing or at least supporting data storage tasks that serve as the primary administrative support tool of program monitoring along with retrieval, reporting, and statistics (Ostermann et al., 2009). The objectives of this study are to find the role of information systems in GP, to understand the information systems using a systems approach, to look at the information system used in GP, to gain a

technological understanding of the Information System, and to find out the issues associated with the system currently.

II. Materials and Methods

The paper contains information about Grameenphone's human resource information system, how the system is helping reaching organizational goals, and the issues associated with the system. The information presented in the study was acquired through an interview with five IT officials in Grameenphone headquarter. Primary data was gathered through the interview (Appendix I). Secondary data was gathered through browsing the company website and others. GP maintains a strict privacy policy in terms of sharing its information. No confidential information was shared by the IT officials. An overview of the information system and database was provided by the people interviewed. The paper is based on the information gathered from a three-hour interview at GP headquarter in Bashundhara R/A, Dhaka.

III. Role of information system in GP

Major functions of Workday

Workday is a Global System (*Global HR Management System | Workday*). Many companies are shifting towards Workday gradually since Workday is an object-model database that is faster, maintains privacy, and makes it easier for GP to introduce a new feature due to Workday itself containing millions of metadata definitions. With Workday, GP can review the performance of its employees easily and routinely. Workday allows GP to keep an eye on employee's performance every moment, and thus it becomes harder for an employee to get away with performance mistakes.

Job recruitment is done using Workday in GP. The entire process of Job recruitment involves many complex steps, and an efficient database system like Workday reduces a lot of stress surrounding such a lengthy process. Training, Orientation, Job interviews- all become easier with the help of Workday. Workday keeps record of all the data entered into its memory (metadata), which means Workday can show any required information in a few seconds. List of Job applicants, their background information, their progress in the recruitment process, their performance in the training period- all of these are organized in Workday, and GP just needs relevant keywords to search for something.

Workday is completely an employee database. Workday contains profiles of all of its employees. Hence, detailed information about every past and present employee is stored in the database. It becomes easier for GP to maintain contact with its employees. Additionally, employees themselves in each department are in touch with each other through this database. Workday is used in the Master Data management in GP. Master data is the core data required in an organization for the operations. Master data contain metadata, transactional data, unstructured data, analytical data, and hierarchical data. Workday is supporting the overall organization. From top level employees to lower-level employees, everyone has access to Workday data in GP. The major benefits of having a Workday database management system are as follows.

Centralized: Workday database management is heavily centralized. It means that it is an object-oriented database which stores all the information about every entity and updates automatically whenever a new entry appears. Workday itself has coded information in it, hence workday manages data automatically. The workday can handle deeply embedded applications and can produce the most demanding performance. Since it is centralized, there is strong data protection because every employee maintains their share of privacy all of which add up to the overall privacy.

Cloud accessed: Workday can store data in clouds, which means data are stored in large data centers with the highest form of security. Even though data get lost in GP, the data itself cannot be erased from the data centers. GP can retrieve its data even in times of hazardous disasters or massive database hack. Cloud-accessible databases are considered to be the safest in today's world.

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Workday is different from the traditional databases that many companies have used for several years before the introduction of Workday. This means GP has been successful in implementing the best database in their system. GP currently cannot be blamed for not having the best technology, thus any major inefficiency will be the fault of individual people rather than GP's existence as an innovative organization.

IV. Systems approach

Inputs taken by the Information System

Employee Database: Employee Database helps to keep a record of all the employees and their performance. All the information about every employee is kept in this database. The information is constantly updated as par requirement.

Salary Structure: It focuses on the compensation plans the employees receive in GP. Besides each employee's name, the salary structure is mentioned with a brief description of their compensations.

Employee Performance Information: The employee performance information is stored in the database, and this information can be evaluated from time to time for further actions like granting a performance of the year award, bonus, employee of the month tag, or selecting employees for promotion.

Using the employee database, full organization reporting, and internal movement is done. Using salary structure and performance information, the organization processes the activities of promotion, leave balances, carry forwards, and organization restructuring. A customized report is prepared through the processing of inputs.

Outputs generated by the Information System

After processing the inputs, the HR analytical report can be prepared. This report helps the management to take decisions.

Other outputs generated include having an overall view of the Organization Hierarchy or having a total organizational view. By viewing the Organization Hierarchy, the management can decide whom to promote, whom to assign work, or whom to grant the best employee recognition. This is an automated system that requires an effortless analysis for it to produce the analytical report.

V. Technical understanding

Workday is an Object-oriented database. The Workday database is based on the idea of an object- model database. Instead of using millions of lines of code like that in the traditional databases, Workday itself consists of millions of metadata definitions. Metadata is any and every part of an object-model database. Metadata is data that can provide information about other data in a database. With metadata, it can be found out when and how other data in the database was collected and stored. Metadata thus provides overall information about every single data in the database.

The Workday applications can be altered whenever it is required without having to change or restructure the entire database. When the database needs restructuring, coding is not required since Workday itself consists of millions of lines of codes. Workday keeps all of the application stored in its memory.

One of the important features of Workday is its speed. It becomes easier and faster for Grameenphone to respond to customers using Workday since the database itself performs most of the work required in a certain task. When GP introduces a new feature, the developers do not have to sit through hours of database operations since Workday has codes installed in it, and with a small command, Workday does the job itself.

Privacy is another crucial feature of Workday. Privacy is possibly a core feature of the Workday database since any sort of customer data at GP can only be accessed by the application server. This means, no one (customers or the employees) can access customer's data from another place. Limiting data access to

the application server means that the only threat to the database is the outside hackers and any misuse of data, not an inside job.

Using Workday eliminates the need for thousands of data tables that are required in the traditional databases. This means data reports can be shown to customers twice or thrice every year. Workday itself can show the requested report, and all a customer needs to do while checking the reports is to search with a particular keyword to find the desired object. In GP, if a user or customer wants to know about its workers, it can be easy with Workday. Additionally, the user can also know about the head of any of the departments of GP, the head of each headquarters in different areas, and if the user keeps scrolling up the list, s/he can also check the Chairperson or CEO of the company or the Chairperson of each product lines of the parent company of GP. The entire list of workers, key people, and employees' profiles are available at the Workday. Every employee has their profile in the Workday database where all of their information (name, age, join date, leaves taken, position in the company, promotions, work reports, achievements) are stored privately.

Workday is open to technological changes or application upgrades, which is again a plus side for GP since constant updates are required due to new products and offer to emerge almost every week. It should also be mentioned that the type of system used in GP is a file-based system. When a file-based system is used, it has to be made sure that the application program itself must be equipped with the knowledge of the way the files in the database is organized. This is in-sync with Workday database since as mentioned above, Workday itself has coding encrypted in it, and workday has information about every data stored in it. File-based systems are known for their ability to access the required data on their own; something which matches the use of the Workday database. Programming becomes easier in this case since the presence of metadata means the application program (Workday) can access the required data in a transcendental way. Persistency is maintained in the GP database due to the presence of the file-based system.

Examples of reports generated by the system

Hundreds and thousands of reports are generated by Workday at GP. Two prime examples of those reports are as follows.

Headcount report: This is also known as employee census. The employee census keeps records of all the employees individually. The records are organized based on a variety of fields including employee's gender, position in the company, salary range, department, years of expertise, promotion, achievements. Workday enables GP to create such reports with any number of variables. The headcount report is an important document for the Human Resource Management department.

Absenteeism or Attendance report: This report contains data about employees' absenteeism in the workdays. It does not include paid leave or any forms of leaves permissible to employees by GP. This report is an important document to GP as a whole since absenteeism is a problem without a firm solution to it.

VI. Information system security

Issues which can negatively impact the system

Even with the highest amount of security, GP cannot keep its information safeguarded. IT systems are exposed to a range of issues, which will almost always be, and it can cause a lot of damages to the company. The issues cause damages to the availability of data in the systems. Even with all the security systems out, it is not always possible to keep a 100% lockdown on data or to protect the IT system in GP. Due to the presence of technology, sometimes it becomes even riskier to secure all the confidential data.

While interviewing, it was found out that certain issues are hard to overcome, doesn't matter the amount of security. In the case of GP, the situation is a bit tougher since it is a huge telecommunication company with greater access to the private information of the general public and this information should be protected by the highest level of security.

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The issues associated with the system are as follows:

Privilege Escalation: Privilege Escalation is when a certain insider of a company or sometimes an outsider of the company finds a loophole or flaw in the database system and then exploits the system to access it, destroying several files and misusing applications (*Privilege Escalation*). GP is in a serious threat of privilege escalation since GP is a leading telecommunication company with descriptive details about almost every user. Now with SIM-registration being mandatory in the country and more and more users registering their SIM cards with personal information, issues like privilege escalation have a higher chance of happening. If anyone can access the inside data of GP, they can find out a great deal of personal information about any user.

Trojan horse: Trojan Horses, like the name suggests, are issues that appear suddenly or when it is not expected. Many websites, applications may contain a link or picture that might seem useful at first glance, but later turns out to be malicious issues once clicked. Although for GP, the risk of being affected by Trojan horse is a little less compared to other issues, it should be noted that Trojan horses are not recognizable until the consequences are faced. Also, if the hacker becomes successful in hacking the system using Trojan horses, s/he will end up accessing the database system, exploiting user information.

Worm: Being a telecommunication organization, speed is one of the leading requirements for GP. Worms, once inside the system, slow down the performance of the devices, and sometimes also slow down every small process of a device. When one device or action slows down, it leads to other functions slowing done, thus defecting the entire system. Hence, GP worms may cause disturbing problems where they might end up disappointing their users with the lack of user-friendly attributes of their current system.

IP (intellectual property) theft: IP theft is stealing copyright materials from the internet and using it as own property. IP theft is probably one of the most common things for internet business people, musicians, and other internet material creators (Cappelli et al., 2012). For GP, it will affect differently since GP's business model is not based on the internet. However, GP uses the internet as its web-technology. An insider theft may misuse the confidential information of the GP system, and release a small or large amount of intellectual property to a foreign person or other organizations. This goes against the law since it is the GP's responsibility to protect user data at all costs, and any such hacking will affect the users, and GP will be responsible for all of it.

When insiders steal intellectual property, more often than not it is for their business advantage rather than for earning money. With the intellectual property of a company, one may leave the country and start a new business using the business idea of the company they stole the intellectual property from.

Security management tool

IP Theft security management tool suggestions are as follows:
GP should copyright all the materials it produces. GP should know its IP rights when they copyright a material. For every intellectual property theft, GP should be filing cases so that huge IP thefts do not happen easily. GP should find out where the most valuable information is stored, and those should be accessible to very few people.

Monitor employee activity around sensible data. Employee activities should be monitored once in a while to see whether an employee is checking large amounts of code from any projects or whether they are working on something outside their projects.

Since GP offers a file-based system, it should know which employee has access to what type of data. No employee should be accessing anything without the knowledge of her/his supervisor, and the supervisor should be informed about the exact reasons for the data access, time of the data access, and the employee who is accessing. The supervisor should also report to her/his senior every once in a while.

Privilege Escalation security management tool suggestions are as follows:

GP should check their system from time-to-time to see whether their system has a loophole. This can be checked by logging off the system and using the system as an outsider to see whether there is any flaw in the system. Any possible flaws should be reported to the IT department.

No employee should be given access to more than two levels of data in the database. When an employee knows information about every data levels, it becomes easier for them to misuse a system flaw since they already know their way around the system.

For horizontal privilege escalation (outsiders finding loopholes in the system), GP can keep an eye on forum boards or/and Question-Answers websites like Quora, where system loopholes discussions are quite common. When users know about system flaws, they usually try to share it with others to check it with others. Although every such user may not misuse it, it should be noted that to hackers, such information about system flaws may be useful.

VII. Conclusion

This paper provides a broad look at Grameenphone's human resource information system. The paper talked about the database used in GP: Workday. The entire paper concentrated on different aspects of Workday, starting from the benefits it provides to GP, to the characteristics that make Workday a leading database in today's world, and how Workday makes it easier to reach company goals at GP. Finally, the paper talked about the possible issues GP's database faces, and which of those issues can be considered to be the most dangerous ones. Additionally, there are several suggestions from us on what GP can do to avert those issues. From the findings, it can be concluded that GP has a world-recognized database, it maintains privacy both for users and employees, it has been successful in several initiatives in the past years, it has effective backup plans in times of disasters, and it takes the possible issues seriously.

Conflict of Interest

The authors declare no conflict of interest. Nevertheless, for any concern and questions, please contact with the article authors for more details. The publisher and anonymous reviewers do not take any liability for the published contents of this article. Authors are fully responsible for the interviews, data generation, findings and any legal questions and issues of this article.

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Appendix I

Questionnaire:

1. Can you please introduce yourself to us?
2. Can you please tell us the use of HRIS, in general, in Grameenphone?
3. For how many years is GP using this system?
4. What are the inputs and the outputs of the system?
5. How are the inputs processed?
6. is the system web-based? If yes, then which platform is the system using?
7. What type of database does the system use?
8. What are the issues associated with systems security and privacy?
9. Which tools are used to protect the system from issues?
10. Can you recommend a document related to the system we can read?
11. Do you have any samples of the reports generated by the system?
12. Any other comments regarding all of it?

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