ECLAIMS: A CLOUD-BASED SCHEDULING AND PROCESSING OF MEMBERS BENEFIT CLAIMS FOR SOCIAL INSURANCE INFORMATION SYSTEM

Jayrezze O. Cañedo, LPT, MSIT
Polytechnic University of the Philippines Graduate School, Sta. Mesa, Manila, 1016, Philippines
jhaycanedo@gmail.com

ABSTRACT

eClaims is a cloud-based information system that provides more enhanced online social insurance benefit transactions. It eliminates the inconvenience on the part of the members in filing and processing claims from social insurance agencies. This system provides assistance to the compulsory members in filing and monitoring their claims application. This system also covers the processing and scheduling of payment for retirement, EC sickness, and disability benefits. By using this system, members can now be able to file their claims online and submit the necessary documentary requirements. eClaims has SMS and email notification feature that will inform and update the member about the status of the claim. On the part of the claims processor, this system allows them to view and evaluate the claims of the members, process the payments and schedule the date of releasing of benefits. Processors can also put remarks if the documents filed need further verification. eClaims includes integration of MacroDroid, real-time claim analytics, and cloud computing. Real-time claim analytics display reports on the number of benefits filed, list of claims application and list of released payments. The development of eClaims enhances the quality of services and promotes a hassle-free online transaction between social insurance members and claims processors. It also addresses the challenges that the members are experiencing today in manually processing their claims. Furthermore, eClaims aims to support a less paper manner of benefits application.

KEYWORDS – eClaims, Cloud Computing, MacroDroid, Members Benefit Claims, Web-Based Application

INTRODUCTION

Social insurance provides income support to workers and their beneficiaries in times of disability arising from work, sickness, old age, death and other contingencies resulting in loss of income or financial burden. Social insurance is just one of the three major components of social protection [1].

Social Security System (SSS) is one of the agencies that administer social insurance in the Philippines. Based on 2016 SSS Annual Report, 34% of the Philippine population is registered as members (employees, voluntary and self-employed) of SSS. In the past years, three million benefit claims were processed by the SSS manually.

Social insurance agencies preferred to use the manual processing of filing and payment of benefits rather than the automated or centralized system. Through this, the services provided by them were too slow and leads to poor quality of services offered.

Some of the issues and concerns in filing and processing the benefit claims are; member's filling out of hardcopy of claim application, manual checklist of requirements, submission of documentary requirements, issuance of claim stub, documents already submitted not properly recorded/ accounted for, additional documents are not properly recorded/ communicated to members and no acknowledgment of documents submitted.

Submitting a claim involves more than just pushing a button. Claim processing requires extensive data to be processed before any claim is approved. Manual processing of claims may involve significant delays (days/months) and sometimes may even involve human error.

In processing the claims, hard copies are sent by the branches to the Processing Centers through courier or postal service. They face a lot of hurdles in their claims processing center due to scattered data and lack of a centralized system. The processor has to look on the claim record page by page. Decision or actions taken are recorded only in

the claim folder. Letters are manually prepared and sent to branch/member if additional documents are required. Members are not well-informed of the status of their claims.

To identify the problems and enhance the relationship between workers and the social insurance agencies, eClaims: A Cloud-Based Scheduling and Processing of Members Benefit Claims for Social Insurance Information System can play an important role in improving the manual process in filing and payment of benefits.

This study presents a new social insurance information system, wherein it eliminates the inconvenience on the part of the members, same as on the part of the claims processors. It helps in reducing costs associated with the processing of claims; utilize a single platform for all data sources, workflows for routing claims, for review and approval processes and increase the consistency and timeliness of payments.

LITERATURE REVIEW

Social insurance information systems around the Asia

As we look over the information systems developed in different countries around Asia, we can say that most of the countries need an information system to fulfill customer satisfaction, make their lives easier and provides an efficient way of giving benefits to the workers.

Integration of Social Insurance Information Systems in Korea provides a one-stop service (claims, certificates, grievances, notices) through integrated web portal-online. This system provides online and offline customer services for their social insurance programs. Through this system, the number of required documents and processing time reduces. It easily identifies the citizens who are entitled but not covered by their social insurance programs [2].

One of the closest studies is the Integrated Social Security Information System in Guangdong, China. This social security application provides doctor's appointment, the scheduled time of doctors and settled medical bill through mobile payments. It also enables the member to register and make contributions for the social insurance programs in Guangdong, China [3]. This application can be accessed anywhere in the province. The strength of this application is accessibility and convenience. It is designed as an integrated system that covers major business lines including social insurance, employment services, and human resources management. The features included in this application are QR code for viewing the test results of the clients, biometric verification for registration, mobile payments and face recognition for proving the status of the clients from home. Even though this social security application delivers better social insurance services, there are still some weaknesses presented in this system. Access to member's information, employment, and other services were limited. There is no notification regarding the status of their application. Other people cannot afford to use this mobile application because they need to install the application in mobile phones with QR scanner and front camera for face recognition.

Social insurance information systems in the Philippines

When it comes to social insurance agencies here in the Philippines, most of their online services enable the members to register online, information on the benefits package, membership details and employers can remit their premium contributions online. If the members want to file their benefit claims application, they must visit the nearest SSS branch to file their claims. In verifying the status and payment of their benefits, the members may be going to the SSS branch or contact the SSS call center.

METHODOLOGY

Gather data concerning the perspective of the respondents on the eClaims: A cloud-based scheduling and processing of members' benefit claims for social insurance information system. The target population was the members of the social insurance agencies who have filed retirement, EC sickness, and disability benefits and the claims processors of the SSS Ayala Processing Center. The population of the respondents is fifty (50), forty-seven (47) compulsory members and three (3) claims processors. The respondents in this study are voluntary. Willingness and availability of the respondents are the two things that were initially considered on the selection of respondents. Evaluation form is based on ISO 9126, software quality test to gather the respondents' level of acceptance on the developed software.

Data Generation Procedure

From manual data processing to electronic data processing or EDP is the modern technique to process data. The data is processed through the computer; Data and set of instructions are given to the computer as input and the computer automatically processes the data according to the given set of instructions [4].

Software Development

eClaims: A Cloud-Based Scheduling and Processing of Members Benefit Claims for Social Insurance Information System hopes to provide better services to the members and claims processors. This system is expected to have successful online benefit transactions. The timeline on software development would include the data gathering, coding, designing, and implementation of the system. The software methodology to use is Software Development Life Cycle (SLDC).

System Architecture

For the development of the system, the researcher used the XAMMP (Apache, PHP and .net) for web hosting, MacroDroid for android application, integration of Cloud SQL for data storage and real-time claim analytics.

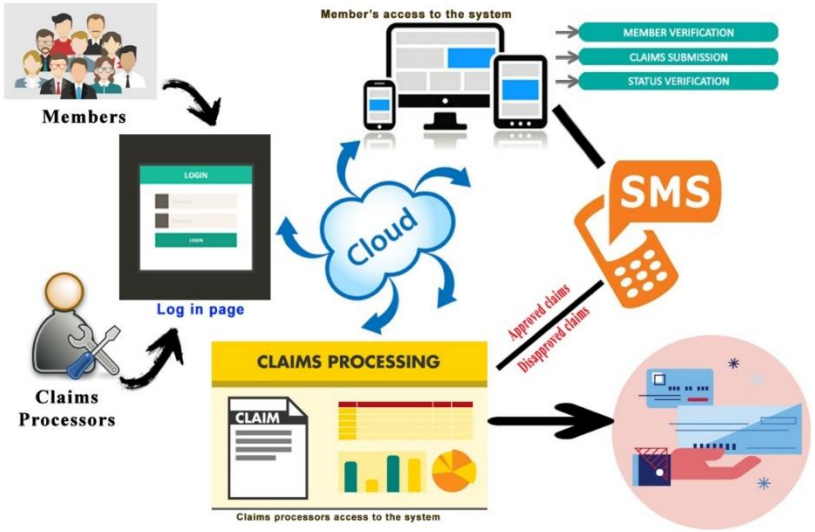

Figure 1. System Architecture of eClaims: A Cloud-Based Scheduling and Processing of Members Benefit Claims for Social Insurance Information System

Figure 1 shows the system architecture of eClaims. The users in this system are the members and claims processors. For members, the system allows the user to log on or sign up using their SS Number and password created when they sign up to the system. An activation code was sent through email or SMS. This activation code is used to activate the account in eClaims. If the user has already logged in, he/she can now access the system. He/she can view the homepage of the system, member's profile and the FAQ menu for the general benefits program information. The members must fill out the member's profile before he/she can proceed with the filing of the benefit claims application. Included in the member's profile are the basic information; employment details from previous to current employer, details of dependents and the basic tab for updating contact details. After providing the necessary information in the member's profile, the members can access the benefit application. In benefit claims application, the members can file claims like EC sickness, EC disability and retirement. Fill out the form provided every benefit claim, upload and submit the necessary requirements and choose the mode of payment of their benefits. This system notifies the status of their claims via SMS/email or simply login to their account. It helps to keep members informed of the progress of a benefit claim so they don't have to inquire and remind them of the status of their claims.

For claims processors, this system allows them to process and evaluate the benefit claims filed by the members. The claims processors can view the dashboard on benefit transactions and documents submitted by the members. This

system provides the access on processing and scheduling the payment of benefits. In evaluating the benefit claims filed by the members, there is a corresponding remarks or status of application provided every form, requirements and supporting documents submitted in this system. If the claim is approved, the claims processor will proceed with processing the payment of benefits. Upon approval, a corresponding remark whether the application is cancelled, denied or for revision will appear and this system will notify the members on the status of their benefit claims. In processing the payment of benefits, the claims processor can compute the amount of benefits in process payment menu. After computing the amount of benefits the claims processor will proceed with scheduling the date of releasing the payment of benefits. This system also integrates dashboards and provides reports on list of benefit claims application and a list of the members who already processed the payments.

RESULTS

There are several challenges encountered by the respondents in processing members benefit claims for social insurance. Almost ninety-two percent (92%) of the respondents' experience hassle in processing their benefit claims. On the other hand, forty-eight percent (48%) of the respondents' experience difficulties in filling out forms while six percent (6%) say that the problem is lack of an integrated system to accommodate benefit claims. The remaining two percent (2%) of the respondents specify that incomplete transmission of records is also a challenge in processing members' benefits claims. Through these challenges, the researcher, therefore, concludes that there is a need for developing a system that facilitates online benefit transactions. A system that provides the easiest way of filing and processing of benefits.

In order to address the challenges identified, this developed system has appropriate features that made it acceptable for the respondents. It transforms the hassle way of processing benefits into a faster and better way of accommodating the needs of the members in terms of benefit transactions. There are no difficulties in filling out forms since this system provides only the necessary documents required per benefit applications. When it comes to lack of an integrated system to accommodate benefit claims, this system facilitates online filing of benefit claims application, monitoring of the benefit claim status, evaluating the claims, processing, and scheduling of payments of the benefits. A complete transmission of records from the members to claims processors is done also by eClaims.

Based on the results obtained, it revealed that the respondents' level of acceptance of the developed system was functional, usable, portable and reliable cloud-based scheduling and processing of members' benefit claims for social insurance information system. Most of the respondents consider the system as "Moderately Acceptable" which also mean that the system fully met and far exceeded the most expectations.

DISCUSSION

Overall, the system feedback was satisfying as it met the objectives of the research and far exceeded the most expectations of the respondents in terms of functionality, usability, portability and reliability. The respondents felt that this web-based application was relevant and would be effective if used in claims processing. The challenges encountered by the respondents in manual processing of claims were reduced through the help of eClaims. Through a hassle-free online transaction, this system eliminates the face-to-face transactions between the members and claims processors. This system improves the process cycle time of processing and evaluating the benefit claims. Also the SMS and email notification feature informs and update the members about the status of their claim. Most of the respondents felt that through eClaims, processing of members' benefit claims is more efficient and more convenient. The user interface was good and easy to follow. The features are appropriate to the function of the system.

CONCLUSIONS

Through the help of eClaims: A Cloud-Based Scheduling and Processing of Members Benefit Claims for Social Insurance Information System, the problem in manual filing and slow processing of members' benefits claims can be solved.

The concept of this system is to be more efficient in processing the benefit claims of the members. The members can file and monitor their benefits online. Documents are scanned and filed so that the members no longer need to submit hard copies. A member's SS number gives access to all of their files and documents at once. Furthermore, this system

provides information on the benefits catered by the social insurance agencies. The strength of this system is to automate activities such as filing, monitoring, processing, scheduling and payment of benefits.

It will also notify the members regarding their benefit claims application status like documents are for processing and the specific actions that were taken. On the other hand, this system will provide the claims processors the flexibility to process benefits claims. Custom reports are also easily administered. Some of the reports provide by this system are claims summary report per benefit claims application and payment processed or benefit claims paid. On the other hand, the weaknesses of this system are other benefits like maternity, funeral, death, and loans application are not accommodated by eClaims. Payment of loans and contributions are also excluded. Since it is a web-based application, there is a need in developing this system through a mobile-based application.

RECOMMENDATIONS

Inconvenience in filing for benefit claims in social insurance agency should be addressed in order to provide a better delivery of services to its members. Thus, there is a need to have a further development of online information systems like eClaims. Future researchers may develop a new system that would cover other benefit claims such as maternity, medical reimbursement, funeral, death, and loans application since the current developed system caters only to EC sickness, EC disability, and retirement claims.

Since eClaims is a web-based application, development of a mobile application for members' benefits claims for social insurance information system may also be considered by future researchers. Most of the members of social insurance agencies are now using mobile phones. Taking note of that, a mobile app that can be accessed both by Android and IOS mobile system could facilitate the online transactions of the members.

The level of acceptance of the respondents in the developed software serves as a vital factor in determining the value and significance of the system. While the respondents rated eClaims as "Moderately Acceptable", still there is a need to enhance systems' functionality, usability, portability, and reliability. Moreover, future researchers may focus on strengthening the systems' data security.

Lastly, the possibility of online linkages with other social insurance information system in order to provide a faster and better way of filing and processing of benefit claims across the social insurance agencies here in the Philippines may also be explored for future study.

REFERENCES

[1] Manasan, R. (2009). *A Review of Social Insurance in the Philippines.* Volume 36, No. 2. Philippine Journal of Development. Number 67, Second Semester.

[2] Yoon, Seok-Yong ("SY") (2016). *Integration of Social Insurance Information Systems in Korea.*

[3] Wang, Dewen (2018). *Disclosable Restructuring Paper – China: Guangdong Social Security Integration and Rural Worker Training – P117596 (English).* Washington, D.C.: World Bank Group. Retrieved from http://documents.worldbank.org/curated/en/845031541758334456/Disclosable-Restructuring-Paper-China-Guangdong-Social-Security-Integration-and-Rural-Worker-Training-P117596.

[4] Given, L. M. (2008). *The SAGE encyclopedia of qualitative research methods* (Vols. 1-0). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781412963909

[5] StatPac Inc. (2017). *Survey Sampling Methods.* Retrieved from https://www.statpac.com/surveys/sampling.htm

[6] DeRosa, J. (August 2013). *Improving Claims Management Through Cloud Computing.* Retrieved from https://www.claimsjournal.com/news/national2013/08/15/234953.htm.

[7] Rai, U. & Kothandaraman R. (2014). *Streamlining Claims Processing Towards a Better Customer Experience.*

[8] BusinessDictionary.com. (N.D.). *Claims Processing.* Retrieved August 20, 2015, from http://www.businessdictionary.com/definition/claims-processing.html

ABOUT THE CONTRIBUTOR

Jayrezze O. Cañedo, LPT, MSIT is an information officer at Employees' Compensation Commission. She finished her Master's Degree in Information Technology at Polytechnic University of the Philippines Graduate School. The key strength that she possesses for success includes striving for continued excellence and provides exceptional service to her colleagues.