

Cloud Computing Point of Sales Development for Indonesia Small Medium Enterprise

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Abstract—The agile development of Internet technology and cloud computing are frequently prevailing create small and medium enterprises (SMEs) have an opportunity to be able to utilize information technology at a cost that is affordable and does not require massive investment. Based on the previous study SME's belief that Point of Sales (POS) based on cloud computing is the alternative technology to accelerate their business. Nowadays not only large-scale business uses the internet in business processes, but many micro enterprises able to use it, especially when internet users outside of their organization is also increasing. From the data gathering done by the qualitative methodology from SME's entity, there were features necessary need for Indonesian Small Medium Enterprise and the most important factor in cloud computing POS infrastructure is reliability, security, and scalability. The result of this study is Point of Sales based on cloud computing for the small-medium enterprise.

Index Terms—Development; Cloud Computing; Internet; POS; SME's.

I. INTRODUCTION

Nowadays the growth of internet technology enabled Small Medium Enterprise (SME's) to be more contentious in this era. This development made micro, small and medium enterprises improving their business processes, assets supervision, and decision-making which related to business strategy by adopting some technology. The data from <http://internetlivestats.com> shown that over the last five years the number of internet users in Indonesia had considerable increase. In the previous three years had a new technology called cloud computing, cloud computing technology allows SME's use information technology solutions very flexible in the needs of the operating system platform, infrastructure, and software. The flexibility of cloud computing provides a new solution for SME's who want to use the software and application without spending a huge amount and make a significant investment to buy hardware needs of information technology. This study purpose is to design and develop the Point of Sales based on cloud computing for Small Medium Enterprise. The development features based on a necessary need from Indonesian Small Medium Enterprise. The requirement gathering by using Qualitative Methodology which consists data collection, data analysis, triangulation process and conclusion finding. The data collection process done by the discussion with ten informants in Surabaya, Indonesia, the informants consists of three categories: business owners, IT specialists, IT users. Through the interview process is expected to deliver IT users need the features, then this requirement will be validated by IT experts and business owners, while business owners also provide features what the requirements of POS then verified by IT

experts. Based on interviews with IT users, business owners and IT experts found that cloud computing is the recommended solution for POS applications. Based on previous research the most important factor in Cloud computing POS infrastructure is reliability, security, and scalability. The features required and necessary for IT Users related to store operation, transaction summary and sales report. Meanwhile, the requirements for a business owner are the transaction report should send in their email every day, dashboard required for the business owner to control their business from everywhere and forecasting also needed. Furthermore, the IT specialists verify all requirements from IT users and business owner able to develop in cloud computing. The purpose of this study is to discover the information systems for SME's requirements and the exploration of cloud computing technologies. The results of this study are developing an application model that precise and appropriate for SME's needs. This paper is in the developing POS based on cloud computing using client-server programming with mobile computing programming stage; the mobile computing is evolving for IT users in store to operate the business operation, meanwhile the business owner able to supervise their business from web application or mobile application.

II. LITERATURE REVIEW

A. Cloud Computing

Cloud computing defined as a shared pool of on-demand computing resources that are accessible over the internet and dynamically configured to optimize resource. Cloud computing offers users ubiquitous and convenient access to a shared pool of computing resources consisting of networked servers, storage and software applications that are configured based on user demands, rapidly provisioned to communicate with need, and made accessible on a pay-per-use basis. Essentially, cloud computing represents the IT services which presented over the internet on a scalable, virtual infrastructure using the latest communication technologies, cloud computing services allow users access to shared resources in a customize service format to their needs without buying, install, maintain, and manage those computing resources[1]. Cloud services also have the possibility to reduce the problem of information systems which is a difficulty often faced by SMEs. These challenges include among others [1] unfurled management functions through the advantages of information systems, [2] bridging limited funds to have skilled technical employees in information systems, and [3] constraints on the investment of capital for Information and Communication Technology. Some of these challenges have led SMBs to have a slower adoption rate for IT innovation compared to