

## **A Study on Automatic Service Creation Method of Cloud-based Mobile Contents**

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### ***Abstract***

*Recently, people can create small content by themselves and it improved into a form that can be promoted. Also, as active small business owners increase, they produce the content for promotion by themselves without external professional help and they utilize it. This paper studies the method to make Mobile Apps, Mobile Web and homepage services available by automatically generating the mobile based mini content. The automated content creation system suggests the method that small business owners and groups can easily communicate with new people by bringing Single Page Application, hybrid mobile web app, N-Screen based content building, private cloud-based PaaS building technology, P2P network based file sharing and multimedia thread technologies together and creating the content.*

**Keywords:** *Mobile Apps, Cloud, Hybrid Web App, Auto-generated Content.*

### **1. Introduction**

Various contents are utilized and accessed using smart phones. All users, from individual users to small merchants, share the content using SNS, and beyond this, now they create the content by themselves and they are looking for a lot of medium to promote it.

Recently, as large franchises expand their advancement areas, small merchants' positions are becoming more and more narrow so there is an urgent need for the system that can increase the competitiveness of small merchants more than large franchises and the retail stores can self-develop. Small and medium merchants or private founders compete using friendship with customers as a weapon against large franchises, but the consumer uses the services such as price competitiveness and online market, to the extent that small merchants can't invest so their competitiveness is lagging behind. To solve this problem, it is not realistic for small and medium merchants to create mobile services at an expense and even though they make the mobile services, it is not easy to maintain the service continuously. Therefore, it is urgent need of the platform that is easy to create and easy to service for small merchants.

Since the smart phone users use different mobile platforms (Android based or iOS based) depending on

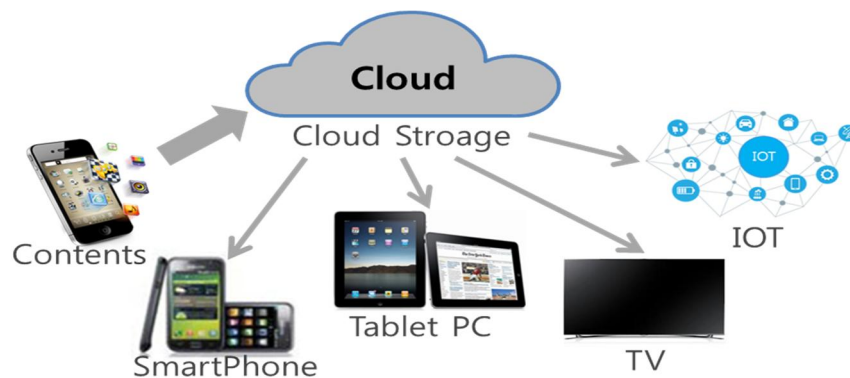
their individuality, the mobile office App used by small merchants should be made to satisfy the common provisions and in order to meet all this matters, there are several problems [1]. To solve these problems a platform is created with a mobile web-based hybrid app, and it looks like an app but it actually runs in a mobile browser so the problem is that only some of the unique services provided by each platform should be used.

This study is to propose the method that using the cloud based hardware resources, small merchants can easily create content they need and easily apply it to SNS, and the method to expose the content once the administrator handles the content that they want to inform to SNS. The content auto-generation service handles the specific services the app provides selected by the administrator and this study suggests the service method to constantly communicate with customers and enable mobile commerce when small and medium merchants utilize the service provided in this paper.

## 2. Related Studies

### 2.1 N-Screen

Responsive N-screen can be used by sharing various contents such as videos photos, data and music in smart phones, tablet PCs, IPTV and computer devices on a single network as shown in Figure 1, which is a technology that can be used by moving content to various devices, and various content can be shared in multiple devices using this technology [2].

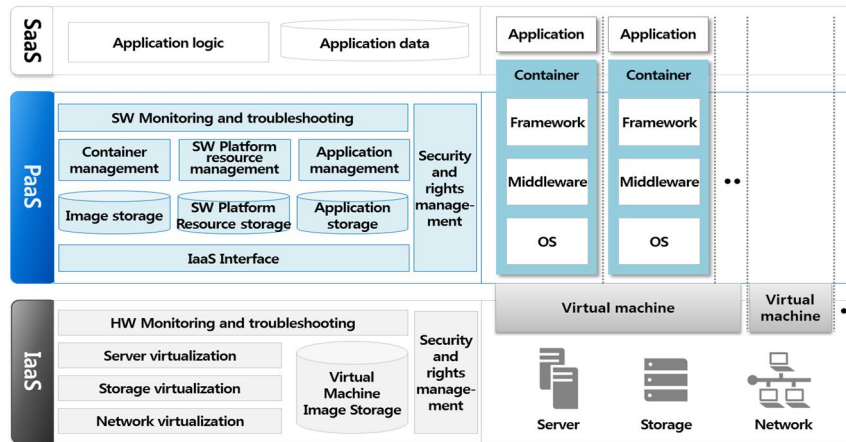


**Figure 1. N-Screen configuration diagram**

In N-Screen environment, when the user applies to a cloud environment by categorizing content by field, it is possible to easily access and execute content to be accessed in various devices. There is a feature that the content can be easily used by transferring to the device, and the various services can be expanded by integrating platform with device. The user interface is rich in color[3][4].

### 2.2 Cloud Computing Technology

Cloud computing service can be divided into 3 types as shown in Figure 2.



**Figure 2. Cloud computing configuration diagram**

IaaS (Infrastructure as a Service) is a method that users designate and use environment such as server, network, storage and backup, which is infrastructure equipment of entire IT. SaaS (Software as a Service) is a method to use the software for users via Internet by placing software in the cloud. PaaS (Platform as a Service) method is a middleware nature cloud services, which provide SW platform service based on container. In a way that extends the concept of SaaS, it provides an application execution environment on the virtual machine, and users can use the middleware in the cloud environment, such as database, web applications and storage by easily borrowing them through creating multiple containers in the form of multiple APIs [5].

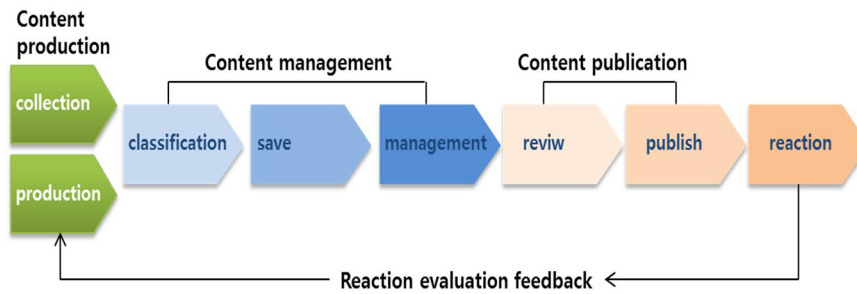
At the point of changing the method, usage and approach of the developed application to access to the web-based information system into the user convenience, platform or web services provide the services by changing into the form of PaaS or SaaS, which the service operation is changing based on the cloud service in the base of existing system construction [6].

**2.3 Responsive Web-based Platform Technology**

Responsive web responses to the device screen in different environments in one program depending on the device types, meaning that it can be run on a web page flexibly in desktop and smart phones. Web 3.0 is a customized information that individual needs. The current web environment needs selective information acquisition of the user for excessive information. Therefore, now it is required to have the service based on Intelligent Semantic Web which automatically finds the information needed. In a series of content that uses a variety of devices, it provides the web content information in a screen optimized for each device characteristic and the users can use the content they are using regardless of any device, anytime and anywhere, when multiple devices share the same content by interlocking between devices [7].

**3. Mobile Content Auto-Generation Implementation Plan**

To produce the content, users collect the data to be used in the content and produces it, then follows classification, storage and management processes, and checks the reaction for the content. The overall content flow chart to be implemented in this paper is shown as in Figure 3. The content made by the user must be checked for the feedback on the reaction evaluation, and the user generated content is easy to apply and makes the content easy to spread.



**Figure 3. Content Life Cycle**

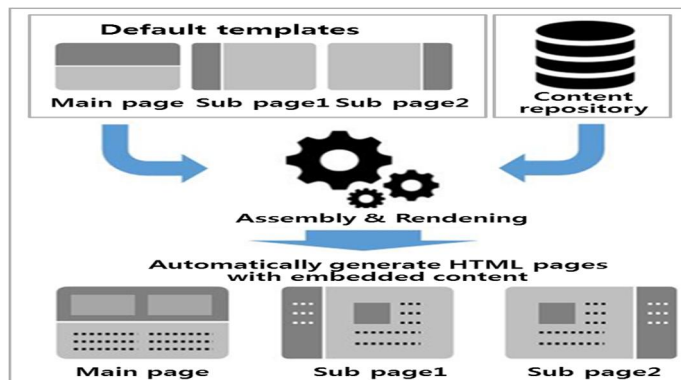
Figure 4 is a mobile content auto-generation diagram. Users should be able to easily create and modify the web content by mobile content management using the web editor in WYSIWYG way. By providing the templates needed for content creation, anyone can easily create the content with the data that the user wants, and the content made as responsive provides the screen Preview feature, allowing the user to confirm the processed screen of the content.



**Figure 4. Mobile content auto-generated configuration diagram**

With features to manage accounts and permissions, it should be able to manage by putting the access right by each group, menu and content.

The content auto-generation service should be easy for users to use, and it should be implemented by dividing the content module to be actually used in detail. As shown in Figure 5, by providing the basic template and frequently used introduction, gallery, notice, bulletin board and SNS delivery function as a module, users can apply the service immediately.



**Figure 5. Mobile content auto-generation flow chart**

In this paper, various services and products are available in services created by the administrator, the administrator issues the coupon that can use the products, and visitors can interact with small and medium merchants using purchase or downloading the coupon. As a method to continuously manage the user who had used once, continuous customer management system is needed. Figure 6 is a process of mobile content auto-generation service processing.

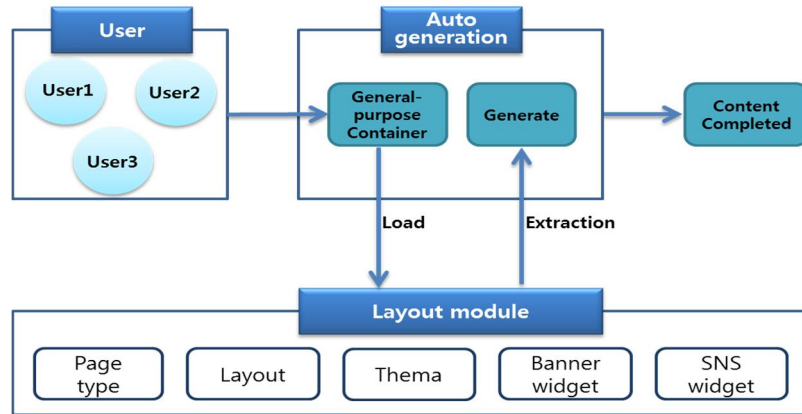


Figure 6. Automated mobile content creation service processing

By using the Open API that is provided in various SNS, as shown in Figure 7, this paper lets the administrator easily spread the web content to customers automatically by providing widgets such as Facebook, Instagram, Youtube and Kakaostory, which is accessible to content that exists in the customer’s SNS account and provides the content provided in real time as a widget function.

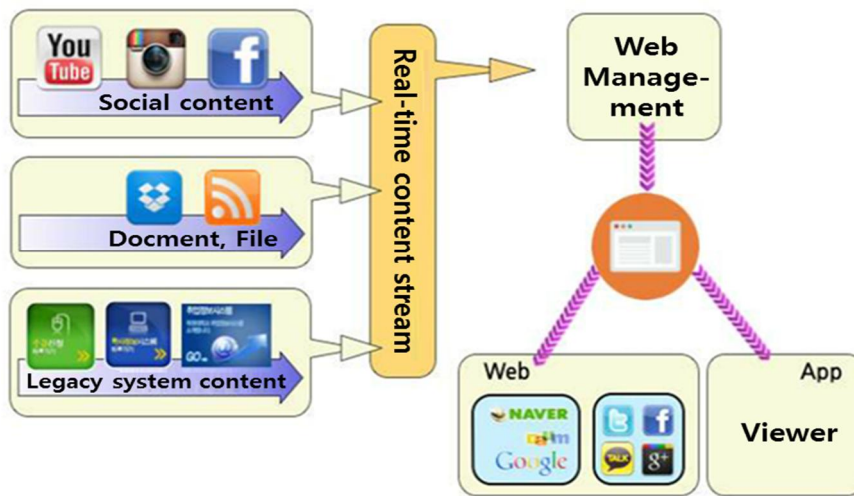


Figure 7. Offer content to a variety of social channels

#### 4. Conclusion

In order for individual users or small and medium merchants to maintain customers continuously and implement the new services easily, this study suggests the mobile content auto-generation method which the administrator selects the service module that the user needs, makes the content service to be generated, registers the product and promotion materials easily, and then the registered products can be promoted by using social network. When using this method, promotion of products and close communication with

customers are possible, being able to attract regular customers and when new products are released, it will be easy to see the reaction for new products. Also, this paper suggests the mobile content auto-generation service method that can produce better products through comments analysis at the social network, allowing communication with other users easier than other merchants and having enough competitiveness.

For the future studies, based on proposed method of mobile content auto-generation service, the actual implementing model is required, the feedback for application in small merchants, private founders, promotion and stores are needed and further studies are needed for the platform that provides services tailored to the consumers by providing the automatic analysis for product reviews by utilizing the big data.

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