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Efficient Mobile Business Development based on Business Process Framework

Chaeyun Seo[1], R. Young Chul Kim[1], Jae H. Lee[2]

[1] Dept. of CIC(Computer and Information Communication), Hongik University, Sejong Campus, 339-701, Korea
{jyun, bob}@selab.hongik.ac.kr
[2] Koera University of Technology & Education, Chungnam, 330-708, Korea
jae@kut.ac.kr

Abstract. This paper applies mobile app. development from the existing web page business through the Business Process Framework (BPF). To apply BPF, we should modify & add the needed functions for mobile app. development, and also the layer structure of BPF to integrate the modeling information that needs to develop the mobile app. The mobile app. using the layer structure of BPF has some advantages to see the modeling result of development at a glance, and to easily & quickly develop the needed function to reuse the components and data according to mobile app.

Keywords: Business Process Framework (BPF), Query Language, BPSQL, Mobile Framework, Layer Architecture

1 Introduction

We propose the Business Process Framework (BPF) to efficiently & quickly develop the changed business process at time-to-market [1]. To use the BPF is able to easily integrate the existing systems built from another time, another place, and another man. In this paper, we propose a guideline that development of mobile app can apply BPF to have the layer structure.

The existing mobile app. development is added the unit of the menu function. But the existing method has difficult not to look modeling of information at a glance when developer modifies mobile app. functions. When applying BPF, we can get the advantage to quickly develop the mobile app. to reuse the assets of component, service, and data.

The paper is organized as follows: Chapter 2 describes a related work. Chapter 3 presents design and implementation of mobile app based on BPF. Chapter 4 gives conclusion and future works.

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2 Related Work

Figure 1 shows five layer structure of Business Process Framework (BPF) based on a closed architecture [2,3,4,5]. The BPF consists of business rule layer, business process layer, service layer, component layer, data layer in order from the top layer. We define the repository on each layer to be the table forms and make the language to retrieve each layers. The language named Business Process Structure Query Language (BPSQL) is able to retrieve the needed information like nested query language on each layer [6].

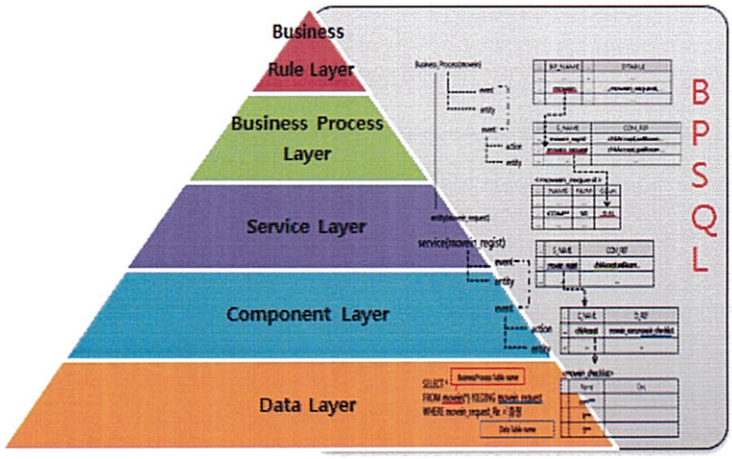

Fig 1. Business Process Framework (BPF)

3 The development of mobile app. based on BPF

Table 1 shows the specification to divide the each layer of the function unit in mobile app. applied with BPF.

The business rule layer has two rules. The first rule, R1 is 'Should be student of school' because a user of mobile app. is a student. The second rule, R2 is 'Do alarm service' because of alarm when new article announce in 'Notice' and 'FreeTalk' functions. So, the business process layer is divided into the web menu such as BP1 is Notice, BP2 is FreeTalk, BP3 is Board, BP4 is Bus Table, BP5 is Food, and BP6 is 'Setting of process'.

The service layer consists of the service of business process such as S1 is Member Service, S2 is Notice Service, S3 is FreeTalk Service, S4 is WebView Service loading screen from bus timetables and diet, and S5 is Setting Service for function of mobile app.

The component layer consist of the service such as C1 is Login, C2 is Notice, C3 is Freetalk, C4 is Market, C5 is Bustable, C6 is Diet, and C7 is Setting.

Table 1. The specification of mobile app. based on Business Process Framework (BPF).

Layer	*Name*	*Description*
Business Rule Layer	R1	Should be student of school
	R2	Do alarm service
Business Process Layer	BP1	Notice
	BP2	Freetalk
	BP3	Board
	BP4	Bus Table
	BP5	Food
	BP6	Setting
Service Layer	S1	Member Service
	S2	Notice Service
	S3	FreeTalk Service
	S4	WebView Service
	S5	Setting Service
Component Layer	C1	Login
	C2	Notice
	C3	Freetalk
	C4	Market
	C5	Bustable
	C6	Diet
	C7	Setting
Data Layer	A many tables	.....

The figure 2 shows modeling the mobile app. based on BPF.

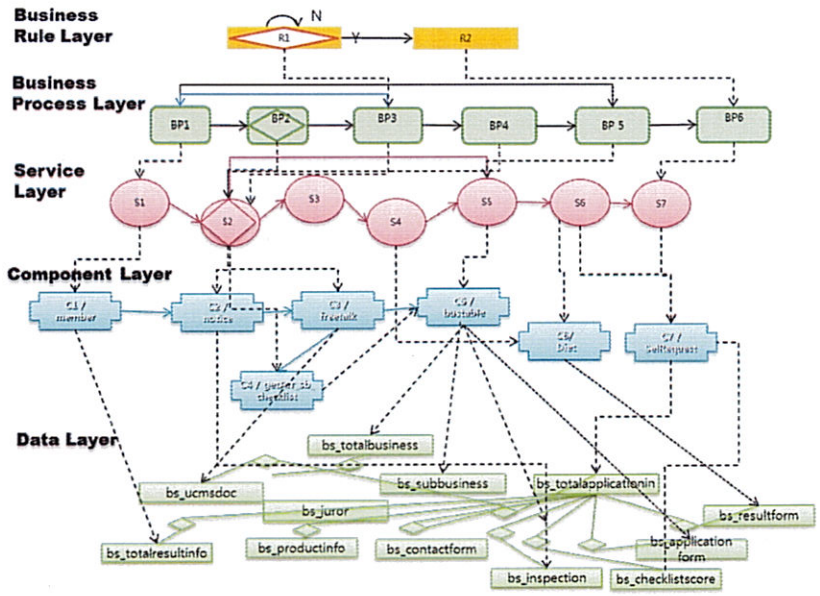

Fig. 2. The mobile app. of layer modeling based on Business Process Architecture (BPA)

4 Conclusion

In this paper, we represent a business case that mobile app. applied with Business Process Framework (BPF) to develop the function analyzing 'menu' from the existing homepage implemented as a web page. The existing development based on mobile app. function unit has a problem that is difficult not to look modeling of information at a glance when a developer modifies some functions of mobile app.

In order to solve this problem, we propose the guideline for development of the BPF applying mobile app. When applying BPF, we get advantages such as to see the modeling result of development at a glance, and to easily and quickly develop the needed function to reuse the components and data according to any mobile app. Further research should be conducted, which is not dealt in applying huge mobile app., on BPF, to increase reusability of service, component, and data of developed app, and to effectively integrate the modeling information.

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Reference

1. Chae Yun Seo, So Young Moon, R. Young Chul Kim, Byoung-Ho Ahn: A Study on Modeling Efficient Business Process Framework: Mapping Business process Layer and Data Layer. The 1st YEllow Sea International Conference on ubiquitous Computing, Shandong Univ, China Vol. 1 59 (2011)
2. Chae Yun Seo, Dong Woo Kim, R. Young Chul Kim: Business Process Framework based on the Closed Architecture. Kais Vol. 10, No. 8, 1939~1946 (2009)
3. Chae Yun Seo, Dong Woo Kim, Jae Soo Kim, R. Young Chul Kim: 5-Layer Architecture for Efficient Business Process. IWIT Vol. 6, No. 1 19-22 (2008)
4. Chae Yun Seo, So Young Moon, R. Young Chul Kim: A Study on Data Migration for BPSQL Query Language on Business Process Framwork(BPF), Kiise conference (2011)
5. Chae-Yun Seo, R. Young Chul Kim: Development through Mapping CBD, Service Model onto BPM based on Business Process Framework. KIPS (2012)
6. Chae-Yun Seo, R. Young Chul Kim: Design of Metamodel for 5 Layer Information on Business Process Framework. KIPS (2012)

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