The Journal of the Convergence on Culture Technology (JCCT)
Vol. 3, No. 1, pp.35-41, February 28, 2017. pISSN 2384-0358, eISSN 2384-0366

http://dx.doi.org/10.17703/JCCT.2017.3.1.35
JCCT 2017-2-6

앱 개발 소프트웨어 생산성 향상을 위한 개발 자동화 설계에 대한 연구

A Study on App Factory Design for Improving App Development Software Productivity

장영현*

Chang Younghyun*

요 약 스마트폰 기반 IT지원 프로그램 개발에 대한 요구들은 첫째 스마트폰 운영체제에 따라 각각 별도의 개발이 필요하여 개발기간에 많은 시간이 소요되며 둘째 자체개발이 어려울 경우 외주개발에 대한 고비용 확보가 어려운 이유로 개발이 어려운 상황으로 앱 개발 생산성을 향상에도 큰 문제로 작용하고 있다. 본 논문에서 제안하는 스마트 앱 개발 자동화는 자동화된 앱 개발 생산성을 바탕으로 구글의 안드로이드마켓과 애플의 앱스토어의 성과를 단기간에 능가하고 글로벌 1위의 앱마켓 구현을 달성하기 위한 비즈니스 전략이다. 부가적으로 앱 개발에 대한 파격적인 저가격 정책과 글로벌 온라인 마케팅 활동을 전개하여 예산, 범위, 난이도, 규모 등과 관계없이 앱 기반 비즈니스용 프로그램 개발을 수행한다.

주요어 : 앱, 앱 개발 자동화, 소프트웨어 생산성

Abstract Smart phone based IT support programs are faced with difficulties due to the following reasons first, long development period is required as separate developments are necessary respectively depending on the operating system of Smart phone second, it is also difficult to secure high development cost for the outsourcing of the development. It is a big problem for improving app developing productivity. Smart App Factory which is suggested in this thesis is the business strategy to surpass the Android market of Google and App Store of Apple within short period of time based on App productivity of Smart App Authoring Tool and to accomplish the materialization of App market which is in the 1st global position and all potential customers who need programs for their works regardless of budget, scope, complexity and scale will be implemented by unfolding unprecedented low price policy and global online marketing activities for App development.

Key words : App, App Factory, Software Productivity

Ⅰ. Introduction

ICBM (IoT - Cloud - Bigdata - Mobile) as a key word in every aspect of our world including society, politics, economy, and etc. became a key element for original technology representing various competitive advantages. Now infinite competition on ICT industries is starting again[1]. Smart network and application are in the fields of corporate as well as national competition for future fusion technology. Currently, online app store serves

*정회원, 배화여자대학교 스마트IT학과
접수일: 2017년 1월 9일, 수정완료일: 2017년 1월 23일
게재확정일: 2017년 1월 30일

Received: 9 January, 2017 / Revised: 23 January, 2017
Accepted: 30 January, 2017
*Corresponding Author: cyh@baewha.ac.kr
Dept. of Smart IT, Baewha Women's University, Korea

as key element in IT sector as it sells and provides mobile OS and contents for smart phone and application therefor[2,3]. Diversified works are carried out at domestic and overseas business sites where enterprises, government/public offices and organizations are operating in the age of Smart network. During the operations, demands for IT support programs which can properly cope with respective business situation are continuously incurred.

For current and future IT support programs, functions specialized for business based on Smart phone are continuously presented and they become core factors for securing competitiveness.

However, as to the demands for the development of the presented Smart phone based IT support programs, the developments of the programs are faced with difficulties due to the following reasons :

First, it is difficult to secure manpower for the development of App technology internally within their organizations.

Second, it is also difficult to secure high development cost for the outsourcing of the development.

Third, long development period is required as separate developments are necessary respectively depending on the operating system of Smart phone.

Fourth, development is difficult as the complexity of program which supports business.

Currently, out of the required items, minimum level of development projects were prepared and are being implemented only for those with emergent nature and importance and those which can be supported by internal IT manpower and costs. It is a big problem for improving app developing productivity.

Ⅱ. Strategy for App Factory Design and App Business

The core of BizApp business strategy which solves 4 reasons which discussed in introduction is the development of Smart App Authoring Tool which was designed and materialized in this thesis.

An in-depth analysis shows that on-site knowledge was forced to be transferred to IT developers for a short period. As a result, new IT projects were not well developed, nor perfectly effective. Inefficiency results from the analysis and performance of projects in the same way as before, so requiring to be eliminated from current development environment in IT sector, independently from impending technology. It is also presently required to consider replacing IT expert developers with experts in the field works, in relation to developing applications[4,5,6].

Currently, initial discussion with the organization, which was established in November 2011 and is in charge of "K Apps", Korean type of integrated App Store, was done on business strategy using Smart App Authoring Tool which is presented in this thesis and the bond of sympathy was created.

It was proved that the business strategy which utilizes Smart App Authoring Tool presented in this thesis is highly evaluated in the enterprises and public institutions as well which emphasize global business results based on commercialization.

'K Apps' is an Application marketplace based on 'WAC 2.0' specification which is integrated global App Store standard and was released in Korea for the first time in the world.

As long as it is registered in K Apps, the developer can sell it not only in the App

marketplaces of 3 mobile communication providers but also at global WAC.

In order to compete with Apple and Google which rapidly seized App ecology based on App Store and Android market, WAC was created with the alliance of 24 communication providers including AT&T of the U. S., NTT Dokomo of Japan and 3 domestic mobile communication providers.

Japan, China and some countries in South-east Asia plan to introduce K Apps of Korea instead of developing WAC specification marketplaces of their own.

In the age of Smart network and Smart phone, business strategy which can create new App business model that can be developed at minimum cost and in short period of time based on innovative App development technology and methodology will create new huge business in domestic as well as overseas.

If we secure the ability for easy development of App using Smart App Authoring Tool, we can create not only the demand for it own development of business field and for outsourcing but also huge potential demand market for App for the country, enterprises and individuals.

Smart App Factory which is suggested in this thesis is the business strategy to surpass the Android market of Google and App Store of Apple within short period of time based on App productivity of Smart App Authoring Tool and to accomplish the materialization of App market which is in the 1st global position.

Secondly, the business strategy in the form of attracting all potential customers who need programs for their works regardless of budget, scope, complexity and scale will be implemented by unfolding unprecedented low price policy and global online marketing activities for App development.

III. Establishment of Smart App Factory Model

Core factors for Smart BizApp Factory Model is to fundamentally innovate App development technology and supply system.

App development for diversified types of works which are required at the business work sites can be materialized by establishing business model to reduce development cost to the level of 1/10 and project period to less than 1/4 compared to existing method.

Currently as a model project, two engineers are carrying out the project smoothly as they planned which connects SAP based ERP system which is operated by IT system of domestic group company with Smart App with the objective of two months for project period.

In order to practically accomplish Smart BizApp Factory Model, the following technical specifications and requirements are necessary.

- □ Development of Smart App Authoring Tool
- □ Platform technology which is operated by state-of-the-art software development technology
- □Application of innovative Software Process Innovator methodology
- □Remarkable reduction of required development cost and period
- □ Establishment of absolute warranty system for the quality of output
- □ Online request system for which App screen and output layout are designed and submitted by the customers who request BizApp development utilizing GUI Tool and Templet
- □ Provision of support to users to help them to generate outputs fast and systematically by providing standard menu, program and outputs using Templet

□ Fundamentally blocking trial and error for development

□ Innovative strategy which maximize the functions of programs and site adaptability

□Development of tool for online presentation of program screen or layout which users want using power-point format and for automatic conversion of input/output screen presented into Smart App Authoring Tool file

□Operation of system to solve problems which users are faced with through the method such as Q&A, off-line education and telephone consulting

□Production and supply method which is developed by Smart App Authoring Tool experts by supplementing the contents to improve and add taking the suggestions from customers as centers

□Development and test of App program and distribution of the program to orderers after packing works so that the program is delivered and installed online

□Sublation of the development and business approaches which are similar to those of traditional SI providers

□Conversion of overall works such as marketing, sales activities, installation and delivery, and post sale maintenance into Internet and online methods

□Application of diversified approaches such as partial sale, sales applying App, connected integrated sales and sales after supplemented development to business

□Plan for the commercialization of consulting service which transfers necessary software development technology for additional development and improvement works.

3 stages for the establishment of Smart BizApp Factory Model based on 17 strategies mentioned above are as shown in the Table 1.

Ⅳ. Suggestion on App Factory for Improving Productivity

For the operation of World Smart BizApp Factory, details to apply for Brand, Business type and Contents are presented as per the Table 2.

Ⅴ. Conclusion

Smart App Factory which is suggested in this thesis is the business strategy to surpass the Android market of Google and App Store of Apple within short period of time based on App productivity of Smart App Authoring Tool and to accomplish the materialization of App market which is in the 1st global position.

Secondly, the business strategy in the form of attracting all potential customers who need programs for their works regardless of budget, scope, complexity and scale will be implemented by unfolding unprecedented low price policy and global online marketing activities for App development.

Therefore, while employing app authoring tools and developing apps, professionals in the fields should make efforts to present the approaches to improve productivity and efficiency in order to develop software as fast as possible.

I will establish Smart BizApp Factory. App program will make faster and sell very cheaply. So it will cause a sensation in the world. The company will be successful.

Reference

[1] Chang Younghyun, "A Study on the Global Competitiveness and Way of Coexistence of Korean ICT Industries", International Journal of Advanced Smart Convergence, Vol.4, No.2, pp.124-130, Nov 2015

[2] Gil-Wong Kim, "Software Engineering and State-of-the-art methodology", Crown Publishing Co., 2005.

[3] Kim kil wong, "Smart App Program Development Practice", pp. 10-36, 2015.

[4] "A Study on the Need for Mobile App Development Educational Program using the Authoring Tool in Elementary, Middle and High Schools", Young-Hyun Chang, Sang-Yeob Oh, Journal of Digital Convergence, Vol. 12, No.6, pp. 253-258, 2014.

[5] Young-Hyun Chang, Dea-Woo Park, Su-Kyung, Jae-eun Baek, Hye-jin Byun, Wan-sun Yu, "Non-Majors' Experimental Results on Efficiency of Smart Phone Application Development using an Authoring Tool" Journal of The Korea Society of Computer and Information Vol. 19, No. 2, pp. 123-126, Jun. 2011.

[6] Chang young hyun, "A study on the development of one source multi use cross-platform based on zero coding", Multimedia Tools and Applications (MTAP), 2014.

Table 1. 3 Stages for the establishment of Smart BizApp Factory Model

Item	1st Stage	2nd Stage	3rd Stage
Development	Develop using small number of application development manpower	Select the company to pass down the 1st stage technology, know-how and experiences	Set up the standards and systems based on accumulated technology and experiences
Marketing	Apply marketing and sales methods in which online and offline were mixed	Actively induce online marketing and sales method	Identify and cultivate groups of developers by industry and by region
Business System 3	Build up technology and business base by establishing business models and processes	Recruit cooperative companies to exclusively handle development and supply business	Establish online system for business process including marketing & sales, order taking & development, delivery & installation and post sale maintenance
Supply System 4	Secure order quantity stably through aggressive marketing activities	Model operation of open market	Develop as open market in which unspecified majority participate for supply and purchase

Table 2. Smart App Factory

Item	Details to apply
Brand	BizApp Factory or BizApp Store
Business type	Online ordering, development and marketplace for BizApp program
Contents	○ Planning and configuration of Contents of Site ○ Purpose and aim of business, development and objects for supply, and merits and benefits ○ Marketplace for ordering and order processing for new development of Application ○ Online quotation and request for proposal, submission of proposal, request for development, and inquiry and consulting ○ Actual case of program developed and supplied (Execution test function by type) ○ Marketplace for trading (selling/buying) finished Application products and package solutions ○ Recruiting, cultivation and education of professional developers, recruiting of cooperative companies and proposal for joint business with cooperative companies ○ Opening of course ware such as video and texts for systematic learning or education/training of development technology and know-how