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ONE TO MANY SUB-FLOW REALIZATION IN BUSINESS PROCESSES

Abstract.   The present paper aims to call into question how realize complex type by using BPM and C# coding to connect from one to many processes. In the background describes the IT concept part as a table and questions for monitoring all cases of Event process in SDU, data saving in one process, correction of responsible approvers. The using BPM methods implement in business processes: description and design, development and implementation, monitoring and control, optimization without different changes by table or figures. Complex Event Processing (CEP) techniques can detect event patterns that are specified as CEP rules. In the process of this article, process maturity was important, such as characteristics and abilities that determine the current state of the company on the path to understanding and managing processes. Techniques and method   results will be shown by realization possibility and using comfortability with the eBA workflow system.

Keywords: BPM (Business Process Management), PDCA (Plan Do Check Act), eBA workflow, EPC (Event-Driven Process Chain), CEP (Complex Event Processing).

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Аннотация. Целью данной статьи является ответить на вопрос, как реализовать сложные типы с помощью BPM и кодом в C# для подключения одного ко многим процессам. На основной текст статьи описывается часть концепции в виде таблицы и вопросов для мониторинга всех случаев обработки процесса «Event» в СДУ, сохранения данных в одном процессе, особенно ответственных утверждающих. Внедрение используемых методов BPM в бизнес-процессы: описание и проектирование, разработка и внедрение, мониторинг и контроль, оптимизация без различных изменений по таблице или рисункам. Методы сложной обработки событий (CEP) могут обнаруживать шаблоны событий, которые указаны как правила CEP. В процессе написания этой статьи была важна зрелость процессов, например характеристики и способности, определяющие текущее состояние компании на пути к пониманию и управлению процессами. Методы и результаты метода будут продемонстрированы возможностью реализации и удобством использования с системой рабочего процесса eBA.

Ключевые слова: BPM (управление бизнес-процессами), PDCA (Plan Do Check Act), рабочий процесс eBA, EPC (цепочка процессов, управляемая событиями), CEP (обработка сложных событий).

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Аңдатпа. Бұл мақаланың мақсаты күрделі түрдің BPM және C# кодын қолдану арқылы бір процестен бірнеше ішкі процестерге байланыстыра алу сұрағына жауап беру. Негізгі бөлімде СДУ-дағы "Іс-шара" процесіндегі концепцияда сұрақтарды бақылау үшін кесте түрінде көрсетілген, әсіресе бір процесте барлық ақпаратты көрсету, толығырақ айтқанда келісім беруге жауапты адамдарды. Бизнесс процестерде BPM әдісін қолдану арқылы ақпарат беру және жобалау, іске асыру және қолданысқа беру, басқару және бақылау, кесте мен суретте өзгеріссіз жақсарту іске асырылады. Күрделі жағдайларды орындау әдісін (CEP) ережесімен сәйкес процестерді жүзеге асыру анықталынады. Осы мақаланы жазу барысында процестерді түсіну және басқару жолында мекеменің қазіргі жағдайын анықтайтын сипаттамалар көрсету және процестің дұрыс құрастылуы маңызды болды. Әдістер мен нәтижелерде eBA жұмыс процесс жүйесін қолдану қаншалықты тиімді мен ыңғайлы екені анықталды.

Түйін сөздер: BPM (Бизнес процестерін басқару), PDCA (Plan Do Check Act), eBA жұмыс процесі, EPC (оқиғаларға негізделген процестер тізбегі), CEP (оқиғаларды кешенді өңдеу).

Introduction

BPM for complex processes.

For current time BPM is a one of the desired areas, which changes the view to manage the complex process analysis and effectiveness. Before every process development process needs analysis, then practical work. BPM solves the management discipline and management software [1]. The management system includes a goal, essence, structure, culture and roles, a complete set of processes. BPM- continuous optimization and he has a long-term approach to improving performance [2]. In this continuous optimization very important roles are: process architecture, process analyst, process owner. In the SDU after sent requests from process holders, process analysts prepare different cases from the system side, after that process architecting is solved by DMS commission. Before all analysis processes, analysts prepare the standard design for all paths. The last steps are: reporting in corporate architecture, design for implementation, development in operational level, monitoring the effectiveness, improves and process changes management.

EPC, the notation developed as part of the ARIS methodology, considers the inputs and outputs of the process steps as an event and allows you to simulate complex processes [3].

Complex processes consist from three categories:

1. Main processes - cross-functional processes that directly create a direct connection with the initiator. They are key and since initialization begins with them. The most of DMS processes consist of main processes.

2. Auxiliary processes are designed to maintain the core, they are not important if there are no equipment. For example, in our case, the workaround process is not important if someone wants to dismiss or take a holiday.

3. Management processes are designed to measure, monitor and control business activities. These processes are very important to improve. For example, the DMS Budget plan process created to monitor Dashboard.

CEP is based on the observation that in many cases actions are triggered not by a single event, but by a complex composition of events, happening at different times, and within different contexts [4].

Aim and objectives of research

In this work aim is development of the main one process with relation n sub-processes by using the BPM. From the previous research complex type was an open question and idea. Now I will analyze all possible cases of this type in eBA system workflow. The main difficulties in coding C# will be implemented in this work. The objectivity to create the IT concept to control all parts and to use future new processes. The main goal is to create a process connected with each other, eliminate all errors and make a way to build an effective process.

Background of Literature Review

The used methods are the Deming cycle, PDCA focused on IT. This method is used to create effective processes, where included process architects, analysis and implementation roles. The level of processes are: chaotic, described, controlled, integrated proactively controlled [3]. In usage this method assists in a) more mature project portfolio management, b) improving the interaction between business and IT, c)great focus on stability and repeatability.

In development and test the possibility of the one to many connection chosen main process was "Event", and other sub-processes are 1) AcCatering request, 2) Maintanance help, 3) Pressa request

4) Assistant student requests, 5) Marketing recruitment requests, 6) Dormitory usage requests, 7) Security control request [10].

Table 1: The BPM development plan for realization

List of tasks	Responsible developer	Deadline	Action	Helpful resources	Results(link)	Status
1. Meeting with process responsible users	Aigerim Abubakirova Elnura Nabigazinova Zhuldyz Tazhmagambet	15/12/19	**Meeting with Corporate Development director**	Meeting questions	After meeting we decided to use complex type of sub-processes	**DONE**
2. Analyze/ Process Concept	Aigerim Abubakirova	15-25/12/19	**Analyze the process after given information**	Concept Template	Analyzed document	**DONE**
3. FORM development	Aigerim Abubakirova Zhuldyz Tazhmagambet	25/12/19-10/01/20	**In every 7 sub-processes need data from main form**	Standard Requirements	In FORM part of EVENT process	**DONE**
4. FLOW development	Aigerim Abubakirova Zhuldyz Tazhmagambet	10/01-25/02/20	**Coding and functions for 7 processes**	STANDARD HELPFUL CODES	In FLOW part of EVENT process	**DONE**
5. Testing part	Aigerim Abubakirova	25-28/02/20	**Check the messages, codes, user view pages, flow history**	Change approvers mail to dms@sdu.edu.kz	Testing was successful	**DONE**
6. Report section	NA	NA	NA	NA	NA	NA

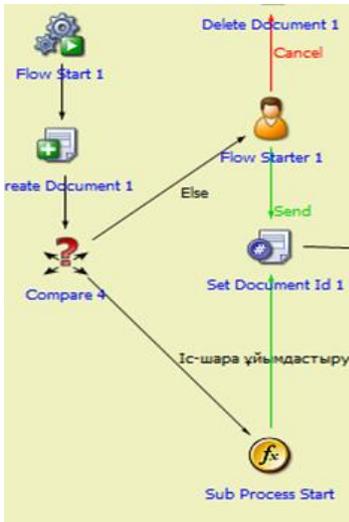|						
7. Presentation for process owner/ redevelop	Aigerim Abubakirova	05/03/20	**Present last version in DMS commission**	Commission Protocol Template	Changes after meeting in text table	**DONE**
8.User tutorial	NA	NA	NA	NA	NA	NA
9. Launch to Production	Aigerim Abubakirova	06/03/19	**From test server to production**	Server and Deploy Management	Approvers and messages changed in Flow	**DONE**
10. Officially process open	Aigerim Abubakirova	10/03/19	**Process holder should inform users**	Announcement message	All staff mail	**DONE**

As shown in Table 1 created as part of the IT concept to monitor realization of the process. In the development Form and Flow part tasks took more than others. Because the main problems were in:

1. How can we make sub processes separately as the main process?
2. How can we show the approvals list in the main process flow history?
3. How can we start the one process n times? Why do we need it?
4. How can we take main process data to subprocesses?

Sub-process starts separately from the main process

The taken all 7 processes must be started from initiators. For example process "MR request" to design, website announce, smm helps are not always used in Event process, without event initiator able to start the process. That is why I searched for different ways to find the best solution. For this case we need a model of all sub processes and this enterprise process model provides a complete high-level view of end-to-end processes [5]. This model may also include subprocesses of application information systems and high-level problems. Usually the enterprise process model is very generalized; it describes the goals and key processes of the organization level as a whole.

Figure 1. The realization of sub process possibility to be the main process.

Figure 1 appears the sub process flow, where before the initiator putting the compare with values: 1) main process name 2) else case. If compare value is 1 then runs function code in C#. To connect two processes we create value to general form id and main process id, main form id, mainname.

"Flow history" visualization

After success in connecting one to many processes by functional codes, we started to analyze the next question was the visual control of all send processes. It is important not only to measure processes - to achieve the desired results it is much more important on an ongoing basis to measure, monitor and control processes. From this point of view, process efficiency management is more a path than an endpoint. Functional monitoring as part of BPM includes the adoption of a specific business application and an analysis of how it fulfills its role within a particular process or part of a business [6].

Figure 2. The realization of sub process can be the main process.

As shown in the Figure 2 flow history visualization was possible by code that was shown in the right side. By placing processes that create value one after another and processing one subject at a time, we achieve a smooth flow of work from one step to another and in the end to the client, such a chain of processes that create value is called a value stream.

Discussion

By using the BMP the realization and analysis were more effective. This method involves examining the value stream of a process to differentiate value-added operations (which result in customers paying for a product or service) [7] from activities without added value (which complete the concept or order). If something does not add value or is not part of policy and regulation, it is considered wasteful. The main two problems solved by shown in the backgrounds of the literature review. Other two questions of this work also find alternative solutions. To start one sub-process n time we define the n is a limited number, for example "MR request" process consists of 3 part: design, website and smm requests. That is why we put one sub process 3 times with unique names. We need it to control all event related MR processes in one flow history. To take main process data to sub processes we used query and getAttachment() C# function code. That is why all problems are solved and now in Figure 4 delivers the production flow of the "Event" process.
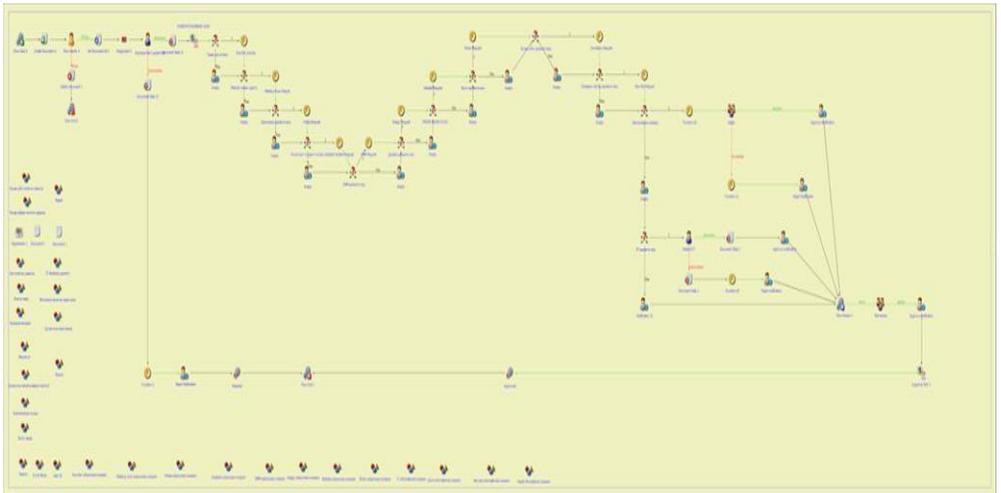

Figure 4. Flow history for main process with function of sub-processes in DMS.

Conclusion

This research result appeared eBA workflow can connect CEP in main and sub-processes. BPM assists to realize the logic part of this work and PDCA used to finish and produce to users control in one history flow. The next level will be centralization of more than automated 60 processes by using these experiments and methods in eBA workflow. Centralization in the performance part of every department processes. Now we started from the SSC processes to

connect all requests to "Protocol". Same as this we need to use it in HR, Accounting and CEC processes. In the result this research helped to find new features in eBA system, helped to increase coding experiences, and created a big useful process.

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