

# An Recommendation Based Process Modelling Support: Method And User Experience

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## ABSTRACT

In this competitive world, both frequent changes of custom demands and the specialization of the business process require the capacity of modelling business processes for enterprises effectively and efficiently. Traditional methods for improving business process modelling, such as workflow mining and process retrieval, still require much manual work. To address this, based on the structure of a business process, a method called workflow recommendation technique is proposed in this paper to provide process designers with support for automatically constructing the new business process that is under consideration. In this paper, with the help of the minimum depth-first search (DFS) codes of business process graphs, we propose an efficient method for calculating the distance between process fragments and select candidate node sets for recommendation purpose. In addition, a recommendation system for improving the modelling efficiency and accuracy was implemented and its implementation details are discussed. At last, based on both synthetic and real-world datasets, we have conducted experiments to compare the proposed method with other methods and the experiment results proved its effectiveness for practical applications.

**Keyword:** Business process modelling, enterprise systems, industrial informatics, string edit distance, workflow, workflow recommendation.

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## I. INTRODUCTION

The To facilitate the coordination of work across the organization and cooperation, enterprise systems (ES) have been developed to integrate computer systems that support all phases of an organization's operations. Enterprise System [1] has adopted many organizations for their mission critical [2][3] applications. ES has been fuelled by the global economy and the development in information technology including industrial informatics. Enterprise Systems integrate business processes and align IT to support business strategy and workflow technology is essential and is threaded through the very core of the system architecture. Business process is one of the main tool to develop workflow technology. Business process specifies various business logics and handles different business operations. Thus, business process modelling [4] plays important role in

operating modern enterprises. However, business process is time consuming process which often involves selecting concrete activities to be performed such as determining their execution order and dealing with the exceptions that may occur. Business process is complex process. Besides, in modern commerce, both frequent changes of custom demands and the specialism of the business process require the capacity of modelling business processes for enterprises in an effective and efficient manner. Existing processes improving business modelling use workflow mining and process retrieval and require much manual work.

## II. RELATED WORK

Nowadays, research work has been focusing on improving business process modelling. Designing the workflow

process use workflow mining, its time consuming process. Workflow mining helps the modellers improve process modelling with discovered process models. The construction new business process is referred to the pre-discovered template model and modellers have to construct the process themselves. Instead of the workflow repository, our method can not only automate the construction process but also provide guidance for recommending the most likely nodes. However, taking the result from the workflow mining as the provenance for workflow repositories, then accuracy of workflow recommendation will increase, which means have complementary advantage. Process retrieval can help modellers improve the modelling by retrieving the similar fragments from the workflow repository. Similar to workflow mining much manual work is still involved.

A limited number of literatures available for above research. Workflow recommendation technique also called flow Recommendation. Flow Recommendation features a more robust exploration capability to identify the upstream dependency patterns that are essential to the accuracy of workflow recommendation. This leverages source of workflows to provide recommendation for the best node that needs to be chosen to complete the workflow. Flow Recommender consist of complex structure does not support patterns (e.g. AND-join, OR-join, etc.) and it would fail facing with candidate node with multiple influencing upstream sub paths. Flow recommender cannot widely used in real applications. Since our work starts from the graph model its complex structure, in this paper we proposed recommendation method is more practical and could be applied to real application scenarios.

Other related research work was carried out on service discovery and optimization for composition in the domain of Service Computing. Traditional service composition issues refer to the web services scenarios recommended based on certain given or pre-defined business template in which high-level abstract web services are well specified by users when the workflow is designed.

### III. PROPOSED SYSTEM

we proposed the sequence processes is the only consideration, Flow Recommender performs well in both effectiveness and efficiency. A comprehensive study has been conducted in our experiments on both synthetic and real world datasets. The synthetic data generator we use dissimilar to that used in, and we also improved this generator with the capacity to generate the processes which can contain different structures (i.e., AND-Join, OR-Join, etc.).

### Advantages:

- Speed up the business process design work by reducing the deliberation time which is needed when domain knowledge is inadequate or missing.
- Provide guidance for choosing the most likely tasks by minimizing the errors that are possibly made in business.
- This module is designed workflow model and automated with ERP System

### Features:

The method can not only automate the construction process but also provide a guidance for recommending the most likely nodes. Generally, taking the results of Workflow. Mining as the provenance for workflow. Repositories, the accuracy of workflow. Recommendation will increase, which means they have complementary advantages. What is more, process retrieval can also help modellers improve the modelling by retrieving the similar fragments from the workflow. Repository. However, similar to workflow. Mining, much manual work is still involved. So far only a limited number of literature available for the above-mentioned research. In, the authors proposed a workflow. recommendation technique called Flow Recommender which leverages provenance of workflow. to pro-vide recommendation for the best node that needs to be chosen to complete the workflow.

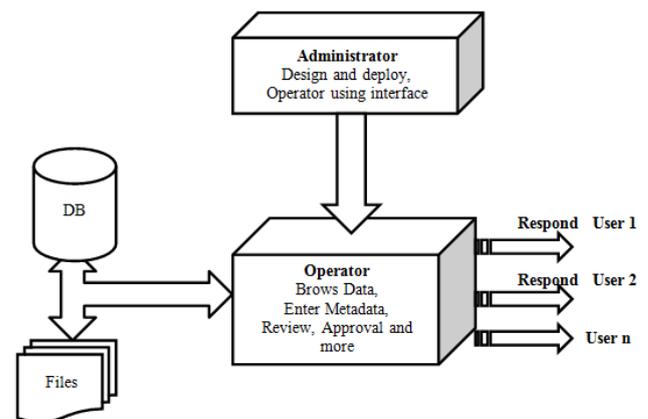


Fig 1: System Architecture

### IV. PROPOSED ALGORITHM

- Workflow recommendation technique.
- Automatically constructing business Process Work Flow Algorithm.
- Depth First Search (DFS) Algorithm.

## V. MODULE DESCRIPTION

After careful analysis the system has been identified to have the following modules:

- Management
- Human Resources Department
- Technical Manager
- Job Seeker

### Management:

In this module file is management is responsible for opening the requirement of the job with an unique Id. Management is responsible for viewing the status of the tracker HR activities

### Human Resources Department

The Requirement is received from the management by an unique Id. They are responsible for job posting and searching the candidates according to their specification. Once the candidate profiles matches HR schedules the interview with technical panel and uploads candidate the RMS in the database. If the candidate is selected in Technical Interview then HR process for HR discussion and releasing the offer and takes care of joining formalities If the candidate is joined the requirement is closed.

### Technical Manager

The Technical manager is responsible for viewing the interview schedule report and taking technical interview for the candidate and updates the status of the candidate

### Job Seeker

Job seeker is responsible for uploading the required information and CV to the portal. The jobseeker can search the jobs and apply for the jobs to the company

## VI. CONCLUSION

In this paper we not only address the problem of distance calculation between two process containing complicated structures such as AND-Join and OR-Split, but also improved the efficiency for matching two fragments. we proposed SED-based workflow recommendation method which is improving the business process model for providing the guidance to extend or complete the business process under construction. And we proposed a framework for prototype implementation and two algorithms respectively for pattern discovery and workflow recommendation. The experimental evaluations conducted on synthetic and real world datasets, which is showed that our method achieved better or equal performance in both efficiency and effectiveness when comparing with other methods (i.e., GED-based method and Flow Recommender). It turns out to be a promising approach for improving the efficiency and accuracy of business process modelling in real applications. Much work still needs to be in the future. Iteration structure which is not supported in our work, is common in business process, we plan to solve this problem

using redefining the pattern location or redesign new method to distance calculation.

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