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ABSTRACT

In this work in progress research paper we describe a concept of a computerized system which can help in addressing the issue of bad publicity on blogs posted on platforms such as tumblr or wordpress, twitter, facebook and/or other public internet forums such as CNET. There are three parts to solve the problem. First, identifying and searching the web for such comments and creating a bag of words from every such comment. Second, creating an index of words occurring on process models and assign them weightage in different process models based on their frequency of occurrence. Third, to create an association between the bag of words derived from the comment and the process models using the index of words. Once the comment is associated to process model it can be directed to the process model owner for appropriate action. Thus knowledge inside the process models is used for directing the complaints towards relevant executives. This invention can also help in other similar uses such as software maintenance, automated process support, help desk etc where requests in natural language can be automatically assigned to relevant person based on their job description or process description or process map.

Keywords

Association algorithm, business process management, business process modeling, knowledge management, ranking of process maps.

INTRODUCTION

Participation of public in creation of web content has many implications. Ordinary customers can write about any organization and this can be read by many other potential customers. It greatly influences opinion of others who may be considering buying a product or service (Christy et al. 2008). Such influence is especially significant if alternative service and products are easily available. Organizations want to reduce the negative impact of such unwanted publicity. To respond to such web content on the internet the organization must come to know about such web content and then try to redress the issue. For example: we take the case of consumer complaints against a bank which disburses home loans. Some of the complaints are that after the customers had paid the home loan mortgage in full, they could not get the original home registration papers from the bank since they have been misplaced by the bank. This resulted in lot of hardship to the customers. In spite of attractive interest rates by this bank some customers will decide against taking a loan from this bank.

Our objective is to make a tool so that the organizations can address such comments. There are two parts of the problem. First to search for the relevant blog entries and other web content which the company may choose to respond. Second is responding to such web content. In this case the bank has many services to customers, which include saving account, current account, credit card, foreign exchange, safe deposit locker, fixed deposit account etc. In general, inside a company there may be many customer-facing and back end departments. In manual response a designated employee, let's say public relations officers, would read the complaint and then direct it to respective department where some nodal person would further redirect it to the sub department or process in-charge.

Take the case of original papers of land deal being lost by home loan department. The corresponding process belongs to home loan unit of the bank and the specific sub process relates to the preservation of documents. An outside party may also be involved to archive all the records. In this case the sub process owner should respond to the complaint on the web. The complaints will have words such as home loan papers, loss of documents etc. By proper association algorithm between words in complaint and words in process model, it might be possible to link a process with a complaint on the web.

In big 'digital organizations' where there are multiple systems, where people carry out most of the day to day activities sitting in cubicles, while remaining practically unaware about other departments, it is difficult and time consuming to identify who will respond. The problem is more difficult with high attrition level and complex organization structures where some parts of the job are outsourced to different geographies. There is scope to use knowledge in business process models to identify who will respond to a web entry. Let's assume that the processes of the organization are modeled and they can be electronically searched. There is very high likelihood that the words used in the complaint will have some commonality with the words in the process model.

CONCEPTUAL DIAGRAM OF THE SYSTEM

The following figure describes the system conceptually.
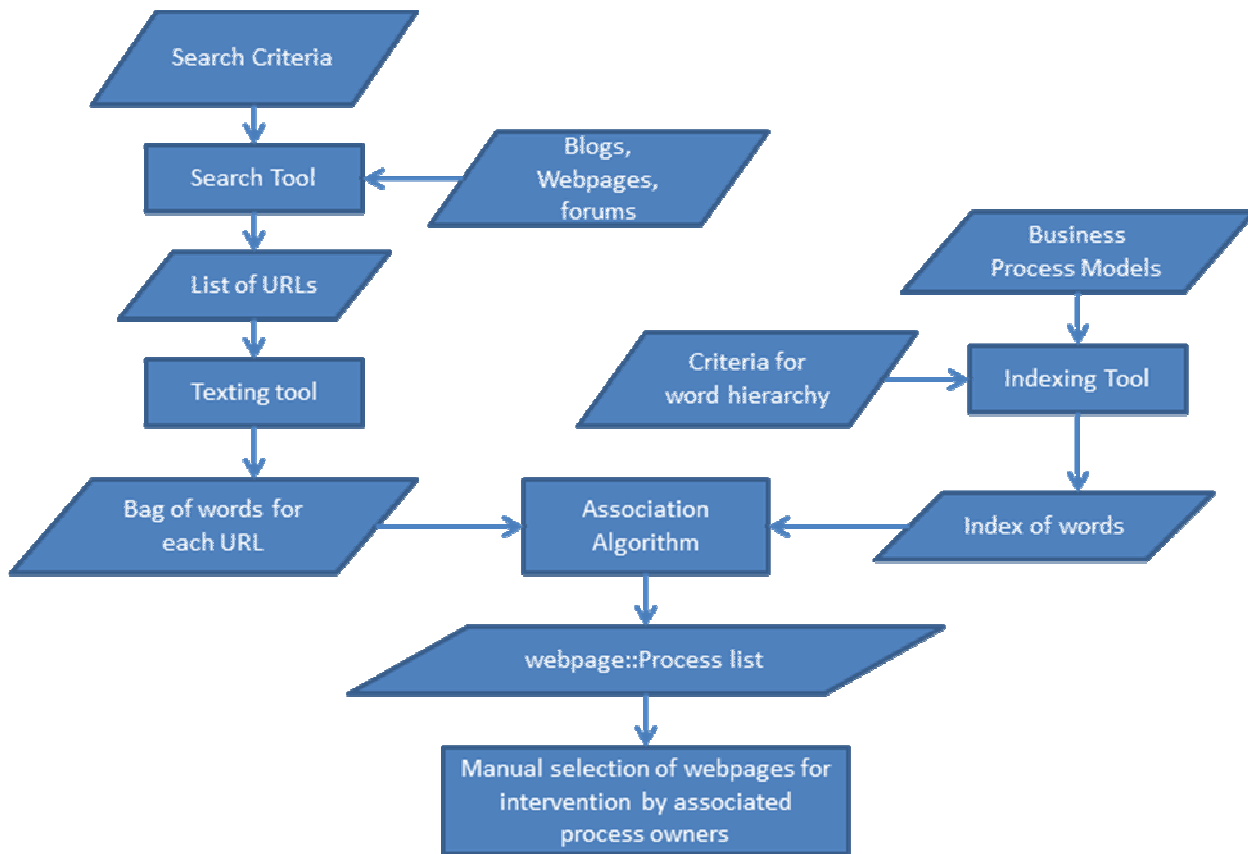
Figure 1: Schematic diagram of software tool for addressing the issues in blogs by the process owners in organization

The system will consist of following components

I.   Search Engine: To search for keywords like Organization name etc. in blogosphere.

II.   URL Bucket: Contains List of searched URLs.

III.   Bag of Words: Extracted meaningful words form a particular URL using a page content crawler. This will eliminate articles and auxiliary verbs.

IV.   Process Models Repository: Contains modeled processes in an organization. It is needed to describe who does what.

V.   Index Tool: will convert the words in the process model repository to Index Table. This will assist in finding corresponding process models for a set of words. .

VI.   Association algorithm: Maps Sack of Words to Index table. This is the most important part of the software where we list down processes based on their close association with the bag of generated from the blog.

VII.   Reports: URLs with associated process models list.

Working

Keywords such as Organization name etc. are searched in blogosphere using search engine to get a list of URLs as result. For each URL a sack of words is created using page content crawler. An index table is created which contains process model names along with the indexes of the word list present in each model artifacts. Further correlation engine is used to correlate each word from the created sack with the words present in Index table. It creates a map having key as URL and value as the process model name list. Reports are generated using the above created map having each URL mapped to a process model name list. In such reports the URLs and ranked list of processes is shown. Manual selection is resorted to identify some URLs worthy of response and a process and its owner is selected for providing the response.

INNOVATIVE CONTRIBUTION

Generally the organizations are described by their organizational structure which is typically a tree type structure. Movement of information is easy and smooth between parties which are closely linked. In this case an attempt is made to see the organization as a collection of processes executing parties and the knowledge of these processes is linked to comments on the web to identify relevant process.

CONCLUSION

The business process models are generally used for understanding the existing process and for knowledge transfer between business managers and software developers. They are also needed for process optimization work, which executable process models are executed in BPM systems. This works gives a possibility of their use to solve a social media related problem.

The algorithms used for word matching are under refinement and further development. These algorithms are at the heart of this process – comment matching system. Works is being done to test the system under practical, real life examples.

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