Policy Management Framework for Managing Enterprise Policies

Dahir A. Ga'al and Wardah Zainal Abidin

Abstract—Policy management in organizations became rising issue in the last decade. It's because of today's regulatory requirements in the organizations. To manage policies in large organizations is an imperative work. However, major challenges facing organizations in the last decade is managing all the policies in the organization and making them an active documents rather than simple (inactive) documents stored in computer hard drive or on a shelf. Because of this challenge, organizations need policy management program. This policy management program can be either manual or automated. This paper presents suggestions towards managing policies in organizations. As well as possible policy management solution or program to be utilized, manual or automated. The research first examines the models and frameworks used for managing policies from various perspectives in the literature of the research area/domain. At the end of this paper, a policy management framework is proposed for managing enterprise policies effectively and in a simplified manner.

Keywords—Policy, policy management, policy management program, policy repository.

I. INTRODUCTION

P OLICY can be defined as plan of action used by an organization to give instructions from its senior management to those who make decisions to take actions, and perform other duties on behalf of the organization's context [1]. Major challenge facing organizations in the last decade is how to distribute all their policies to target employees. And to keep them read, understand and comply with all policies in the organization [3]. Because of this challenge, there is a strong demand in organizations for some kind of policy management solution. This policy management solution can be either manual or automated [3]. Policy management in the context of this paper is the conversion of policies into practical and enforceable [3] documents, rather than simple documents in which employees neglect or don't read it, that can be implemented in the organization as whole. However, most organizations manage their policies manually. Weisman quoted "Developing a manual policy management solution is creating a set of procedures that reflects the purpose of the policy. Keep the policies as high level as possible; the procedures and guidelines will provide the details necessary

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for day-to-day operations" [3]. Managing policies manually is good for small organizations, but large organizations should have software solutions to manage their policies in a way that is quick, online and reliable.

II. POLICY

Policy can be defined as plan of action used by an organization to give instructions from its management to those who perform day to day duties on behalf of the organization context [1]. It can also be defined as organizational rules and regulations that define acceptable and unacceptable behavior within the organization [1]. Policy is typically written document that defines a plan or course of action to guide decisions and achieve rational outcome(s) in organization [2].

III. POLICY MANAGEMENT

In the last decade, policy management became an imperative issue in organizations, because of modern regulatory requirements. Therefore, policy management entails, managing the life cycle of the policy from drafting until archival. According to [4], there are five key stages of policy management:

- Establishing policy requirements - Investigating all the "relevant law, regulatory requirements, guidelines and best practice" [4] which is necessary to identify the business requirements.
- Drafting policy – is to come up with statements, those sounds fine in legality, in simple English [4].
- Policy deployment - Sharing and distributing policies around the organization.
- Testing understanding & affirming acceptance - To make sure that employees understand the policy and ready to abide by it.
- Auditing policy penetration - Reviewing policy and generating report to the [4] management on compliance status.

IV. POLICY REPOSITORY

Another important issue which was examined in this research is policy repository. It is a shared database where all policy documents are stored for ease of access. In large organizations, a huge number of policy documents are used; and those documents need management solution. Thus, management starts from storing them in a single database where everyone in the organization is able to access them any

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time. Policy repository is the main important component of policy management program. However, this component will be used as part of the proposed policy management framework.

V. POLICY MANAGEMENT PROGRAM

To implement policy management across the organization, a policy management program should be developed. As discussed earlier, policy can be managed manually or automated way. Based on this, there are two approaches for developing policy management program [3]; manual or automated. For the manual, there is human involvement to manage the policies. For the automated approach, software tools are used instead [3]. The manual way of policy management program is good for small organizations because of their limited number of policies which people can manage easily. But large organizations need software solution to manage the large number of policies across the organization.

VI. POLICY MANAGEMENT MODELS

In order to propose a policy management framework, several existing related frameworks were studied and the IETF/DMTF Policy Framework is deemed most suitable to be investigated in depth.

VII. THE IETF/DMTF POLICY FRAMEWORK

The IETF/DMTF policy framework is introduced by IETF (Internet Engineering Task Force) and DMTF (Distributed Management Task Force) and is shown in figure 1. This framework is being used as the basis for the efforts of designing a policy management framework. It consists of four components namely: policy management tool, policy repository, policy decision point and policy enforcement point.
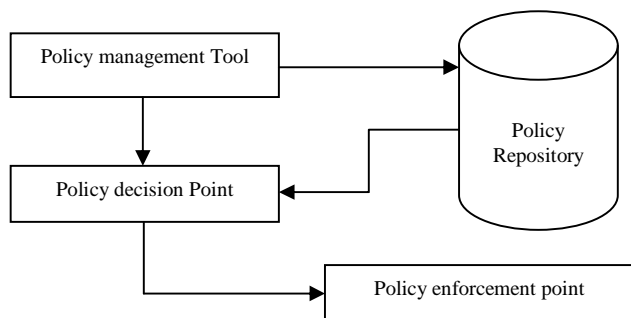

Fig. 1 The IETF/DMTF policy framework [5]

The policy management tool is a graphical user interface where the users or policy readers can use it to access the organization's policies. This tool provides the mechanism to retrieve policies from the policy repository. Within this tool the management users can also draft new policies, review

existing ones within specified time frame, or simply view policies that are stored in the policy repository. The policy repository is used for the storage of policies, after they have been drafted and approved by the approvers of that policy by using policy management tool. It is a database, which is connected to the Policy Management Tool for the storage of the policies. Lastly, Policy Decision Point is the final point where management users can approve newly drafted policies and allow them to be accessed by the normal users or staff.

VIII. UNIVERSITI TEKNOLOGI MALAYSIA: CASE STUDY

Universiti Teknologi Malaysia (UTM) is one of Malaysia's leading universities in engineering, science and technology. It is located in Johor Bahru, the southern city of Malaysia [6]. It is famous [6] for being at the forefront of engineering and Technological knowledge in Malaysia. Interest in policy management began when the University's legal affairs department decided to have a software tool to use for managing policy documents all over UTM because of the existing huge policy documents. The department needs to make all UTM policies in digital format, rather than printed documents kept on shelves, to ease access. To digitize UTM policies, they need to have web base policy management tool. This will consist of policy repository, for the storage of all policies, and policy management for retrieval, drafting, reviewing and storing policies. The legal department also needs to keep all staffs updated on the current and old policies by providing online policy management tool. This tool can give them access to all policies online which is very easy for them to read understand and to keep them updated on new policies. After the problems have been identified, an interview was conducted with top officers of the legal department in UTM to get deep understanding on the state of the problem. The result from the interview showed that there is a need for policy management software to use as a solution for the problem. However, policy management framework was proposed as a solution for the problem regarding on how to make all policies online and how to keep staff to read and understand organization's policies.

IX. PROPOSED POLICY MANAGEMENT FRAMEWORK

As discussed above, IETF/DMTF policy framework is used as the basic concept in order to design policy management framework as a solution for the policy management need in organizations. The proposed framework will give organizations policy management solution and is shown in figure 2.

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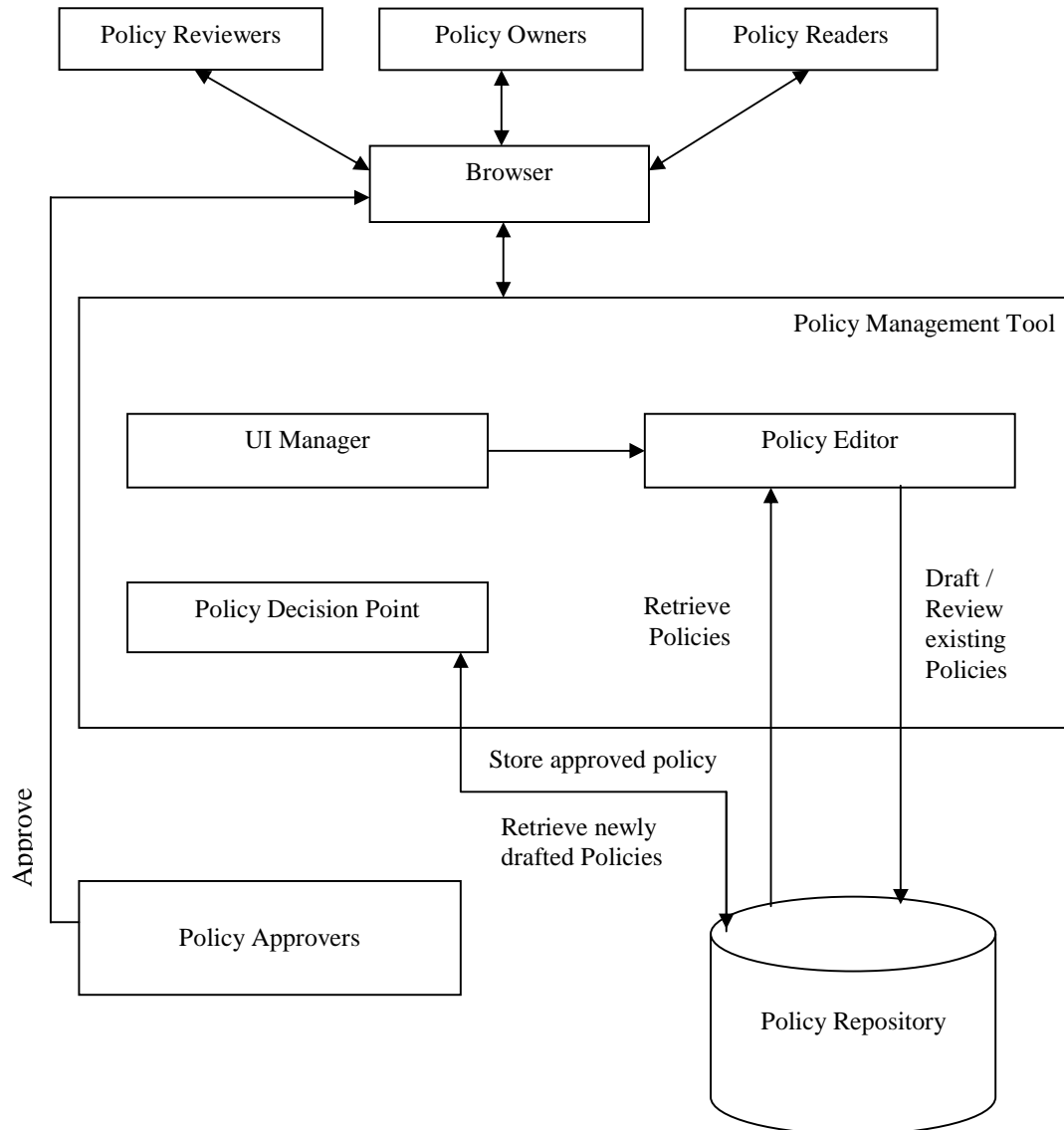Vol:4, No:9, 2010

Fig. 2 Proposed Policy management framework

As shown in the above figure, the proposed framework consists of the following components:

1. Policy Reviewers
2. Policy Approver, Readers and Owner
3. Browser
4. Policy Management Tool
   a. User Interface Manager
   b. Policy Editor
   c. Policy Decision Point
5. Policy Approvers
6. Policy Repository

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TABLE I SUMMARY OF PROPOSED POLICY MANAGEMENT FRAMEWORK DESCRIPTION

Policy Approver, Readers and Owner	These three components are the users of the policy management framework. Policy approver is the person who approves the policy after it has been drafted by the policy creator or owner. Policy readers are the target groups in the organization those required to read the policy. Lastly, policy owner is the person(s) drafted the policy or created it.
Browser	This is the first component that helps users to access the policy management tool by using web browser.
Policy Management Tool	The second component is the Policy management tool. This component consists of three sub components which are User Interface Manager, Policy Editor and Policy Decision Point.
User Interface Manager	The User Interface Manager is the front end of the policy management tool where the users may be able to view the existing policies.
Policy Editor	The second component of policy management tool is the policy editor. This component allows the user to view, draft and review the policies and save it to the repository.
Policy Decision Point	The final component of the policy management tool is the Policy decision Point where the administrator or top level management users can release the newly approved policies and allow them to be accessed by the target staff.
Policy Approvers	The third component of the proposed model is the Policy Approvers, where the administrator or top level management users can approve the newly drafted policies so the readers will be able to view.

X. CONCLUSION

There is not a clear and complete definition of policy management in the past literature. However, this paper presented what is meant by policy management according to the researcher's view. And also IETF/DMTF policy framework is used as basic idea in designing policy management framework, which is the main result of the paper. This proposed policy management framework was designed to help large organizations to manage their policies and keep their employees read and understand all policies across the organization. In the near future, to implement the framework presented in the paper, a policy management tool is needed to develop. The tool can be used to manage all policies in organization, in order to proof the concept presented in this paper. This policy management tool will be a website that has all policy management need across the organization.

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