

ROLE'S FUNCTIONS IN CMS

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Abstract: this paper is about role's main functions in the content management system. We respectively discuss the following five points: relationship between role and party; the category of the role within CMS; the influence of roles to the design of Virtual File System; the influence of roles to the design of content category; the role's function in workflow.

Key words: content management system, role, virtual file system, workflow

1. BACKGROUND

The rural economic information center of Sichuan is a governmental organization which serves the rural economy. It contains a provincial center, 21 subordinate centers in urban district, 188 service centers in county, 3380 service stations in villages and towns, 100 market service stations. Its website is Sichuan Rural Economic Information Net. This website is established on the basis of CMS (Content Management System). All centers' daily routine is managed through this system.

APLAWS+ (Accessible & Personalized Local Authority Websites) (APLAWS, 2004) is the national technical standard which is developed by the government of UK. It is an expanded content management system which bases on CMS. On the basis of the APLAWS+, Sichuan Rural Economic Information Net has established a content management system to manage organizations of the province at different levels.

Sichuan Rural Economic Information Net is made up of several channels, such as, Chinese version, English version, Calling Center website and 21 sub-sites which represent 21 subordinate centers.

In order to construct such a software system which has organizations with four levels from content management and information service point of view, the following questions must be answered.

How to make the user and its corresponding role have different meanings on different occasions?

How to classify the roles in the view of content management and content service in order to make the content management in order?

What does the functions of the role in Virtual File System?

Does the role and content category (Redhat, 2003) have relation between each other?

What is the relationship between the role and workflow?

2. RELATIONSHIP BETWEEN ROLE AND PARTY

In the content management system, Party is an individual which manages content or accepts content service (Redhat, 2003). It can be a concrete person or the pronoun of a group. The scope of the function of the party is aimed at the entire system--all sections. Because, in APLAWS, all the management of the resource is organized according to the section and each section has a corresponding and exclusive Virtual File System. Therefore, every body can visit all sections (such as, system administrator) or some sections after they are privileged. For example, the privileged "A" can be both the party of Chengdu and Beijing (Chengdu and Beijing are two sections).

In the content management system, role is the grouping to a party in a section (Redhat, 2003). Despite of the system administrator role, the scope of role's function is not aimed at the entire system, but limited to a concrete section. For example, the editor (editor is the role) of Chengdu and Beijing may not only contain different party, but also have different management or visit privileges to their own sections.

A same party can have various roles in the same section. For example, "A" can both be the editor and the publisher. A same party in the different sections can have different roles. e.g. "A" can be editor in Beijing section and it can be publisher in Chengdu section.

3. THE CATEGORY OF THE ROLE WITHIN CMS

From the content management and service angle, the party in the content management system can be divided into two kinds: one is content management user; the other is service object user.

3.1 Content management role

Content management role is usually aimed at the party which is in the corporation's organization. According to their working duty, common roles are (Redhat,2003):

Author: Creates new content items. The privileges for this role include creating, editing, and previewing items.

Editor: Verifies new content items. The privileges for this role include editing, modification and categorizing items.

Publisher: This role with the privilege of an editor, it also has the privileges of approving and deploying content to the website.

Content administrator: The privileges for this role include role administration, category administration, content type administration, workflow administration and lifecycle administration. Meanwhile, it still has the publisher's privileges.

System administrator: The privileges for this role include content category, account administration, role administration, portal administration, creating the Virtual File System and privileging to it.

3.2 Service object roles

Public user: public@nullhost. In APLAWS, public users are defaulted to read the resource of Virtual File System of all sections. Through assigning privileges to folders, the permission of public users of all folders or a certain sub-folder in a certain section can be cancelled.

Viewer: The privilege of this role is viewing folder in a certain section.

VIP member: A specifically folder in a certain section with privileges of viewing, editing and publishing. It is the member of this non-organizational member.

4. THE INFLUENCE OF ROLES TO THE DESIGN OF VIRTUAL FILE SYSTEM

The Virtual File System is introduced into APLAWS content management system in order to making the following three aspects come true.

The Principle of Humanity is the foundation of content management.

Use the transparent mode to reflect the function and the working state of groups and individuals at all levels of organization in order to restrict each role's function in the way of giving permission.

File system replaces files and catalogs which are stored in the computer. In the system of Linux or Unix, File system stipulates the users, groups and others' access permission to the file and catalog. Through Web, the Virtual File System in APLAWS content management system simulates the computer's file, catalog and their safe management. In the content management system, the content is transparently stored in the Web virtual file management system which is characterized as folder. (Figure 1 virtual File System on the web) All the information is stored in this virtual File management System, including each branch structure in the enterprise; every person of the branch; the content of everybody, everyday, every month and every year. So, the virtual file management system is the basis and the symbol of the corporation's information management.

Based on taking the role and individual as the unit, one of the important management works to the virtual File management System is to assign permissions to folders at all levels.

The screenshot shows a web-based virtual file system interface. The top navigation bar includes '内容中心 > 内容段: 005' and '欢迎 xf h'. Below the navigation bar, there are tabs for '浏览', '查找', '角色', '工作流', '生命周期', '类别', '内容类型', '用户管理', and '即将到期'. The main content area is titled '内容 / > cdj' and displays a folder named '2006' with a creation date of '2006-3-28' and a last modification date of '2006-4-11'. Below the folder information, there are several action buttons: '复制或移动选中的项: 复制 开始', '创建新文件夹', '重命名当前文件夹', '设置为主文件夹', '进入主文件夹: 7月', and '新: 业务文档类型 开始'. The permissions section is titled '权限' and contains the text '该对象无父级上下文. 该对象的定制权限.' Below this, there is a table with columns for '被授权人', '建立新条目', '编辑条目', '条目管理', '应用预备工作流', '发布条目', '删除条目', '查看发布条目', '预览条目', and '活动'. The table lists three users: '005 Administration 0100呼叫中心成都信息员', '005 Administration 浏览员', and '005 Administration 0000呼叫中心省中心发布员'. Each user has a set of checkboxes for the various actions. Below the table, there is a search bar for '查找用户或组直接授权' and a '搜索' button. At the bottom, there is a table with columns for 'Member' and 'Action', listing 'Site-wide Administrators' and 'xf h' with 'remove' actions.

被授权人	建立新条目	编辑条目	条目管理	应用预备工作流	发布条目	删除条目	查看发布条目	预览条目	活动
005 Administration 0100呼叫中心成都信息员	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Remove All
005 Administration 浏览员	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Remove All
005 Administration 0000呼叫中心省中心发布员	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Remove All

Figure 1. The virtual File System on the web

4.1 Folders of content management roles

Author, editor, publisher, content administrator and system administrator which have the character of content management role can take part in the daily content management working in their own folders. In Figure 4-1, “01-成都市信息” is a folder; “005” is a virtual File System. “01-成都市信息” is one of the sub-folders in the 005 section. We can see that this folder can be managed by “005 Administration 0100 呼叫中心成都信息员” (it has the privileges of creating items--content items, editing items, viewing--search content items, preview content items, excepting publish privilege) and “005 Administration 0100 呼叫中心省中心发布员”. The difference between “005 Administration 0100 呼叫中心成都信息员” and “005 Administration 0100 呼叫中心省中心发布员” is that the latter has the publish privilege.

The party with the character of content management role can not only create new documents in their own folder but also create sub-folders under their own folder. e.g. In Figure 4-1, “2006年” is a sub-folder under “01-成都市信息”, and all the documents of “2006年” are stored in “01-成都市信息”.

4.2 Folders of service object roles

Service object roles and content management roles have the same folders with each other. The advantage of this design is that once “publisher” deploys content to the website, users who enjoy services can immediately get the content service. In (Figure 1), “005 Administration 浏览员” is a service object role, it has the privileges of viewing and previewing the folder of “01-成都市信息” (including contents under this folder). Once “publisher” deploys content to the website, the corresponding users of “viewer” can receive the corresponding voice and text information in their voicemail and website.

5. THE INFLUENCE OF ROLES TO THE DESIGN OF CONTENT CATEGORY

According to the connotation of contents and the pre-designed content category tree, Content Category is a working way of managing contents. In other words, any “document” in the content management system must be attached to one or more content category trees. In form, both of the Virtual

File System and content category organize content items according to the treelike diagram and both of them have the meaning of convenient search. But, they have the following essential differences.

The tree node of Virtual File System is the limitation which contains the access permission of a role. But, content category has no this limitation. So, Virtual File System can not be shared between sections, but content category can be shared. Content category which belongs to a section (navigation of the website) can also be shared by other sections. As a result, a content item can not only be deployed in its own website, but also can be deployed in the shared website.

The content item in Virtual File System is located at a confirmed place among the tree nodes. But, content item in the tree of content category or even in the forest of content category can appear time after time, and it also can change freely and flexibly.

The content item actually exists in the physical way in Virtual File System, and it exists in the link way in the tree of content category. So, the content item in the Virtual File System has privileges of copy, move, physical delete. But, there is no such operation in the content category.

In a word, the content can be perfectly shared between or in the sections when the content category is independence from the Virtual File System. Because of aiming at the visit permission and workflow of Virtual File System, roles have no influence on the content category and sharing content.

One needs to be point out is that not all the content management system has the character which content category is independence from the Virtual File System. For example, the widely used MS CMS and Open CMS is a unity which content category is not independence from the Virtual File System.

6. THE FUNCTION OF ROLE IN WORKFLOW

Workflow is a series of mutually linked and automatically worked content management tasks. A workflow contains a group of tasks, their mutually ordered relationship and the description to every task. In (Figure 2), there is a typical content management workflow. The "technical support" phase of content management describes the process which a content item evolves from the type task into publish task.

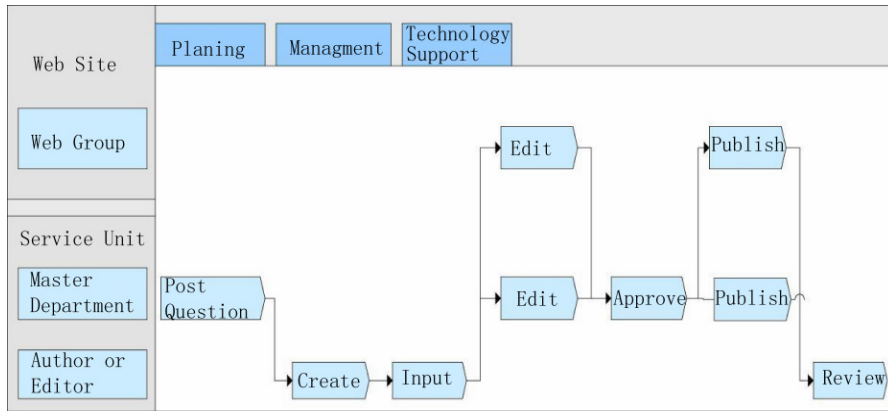


Figure 2. The relationship between workflow and roles

After the workflow is introduced, there are at least three advantages: first, it is not necessary to give the training to the party about the workflow and the change of the workflow can easily be implemented. The second, it is good for the worker to focus their attention to the data which they care about. At last, the worker can go to work either in unit or at home or even at other places.

According to the definition, each task of the workflow can only be implemented by the party who has roles. That is roles and workflow directly linked; the confirmed tasks are accomplished by the confirmed role. In Figure 6-1, “问题” (means Question) and“创建” (Creating) are two documents, they are respectively located at the phase of “规划” (Schedule) and “管理” (Management) and both of them need not the help of the computer and the network. Then, they come into the technical support of content management—workflow phase. In this phase, each task needs the party’s participation, and all party must have the confirmed roles. Such as, we need “author” to accomplish the task of “input”; we need “publisher” to accomplish the “approval” task.

7. CONCLUSION

This article discusses the following questions at the very beginning :

Confirm the role of each member.

Give proper name and assign corresponding duty to the role.

Assign privileges to the role to achieve the aim of security management in Virtual File System.

Assign the role to workflow’s each task step.

All the questions above are still considered by the content management design at the very beginning.

Through several years' practice, We have discovered that the application of the content management system can be comparatively popularized and the operation efficiency can be raised by confirming the name of role, the permission of folder according to the regulations of administrative organization or reducing the tasks of workflow to the minimum.

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