The Importance of Articulation Work to Agency Content Management: Balancing Publication and Control

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Abstract

This paper describes the initial results of a qualitative field study of the work required to review and approve the content on government agency web sites. The study analyzes content management work in terms of Strauss’s conceptualization of articulation. The analysis describes examples of high and low level articulation in content review and approval including using paper, personal contact, and surveillance. Study results suggest that the articulation work present in non-software based review and approval processes helps to balance conflicting agency goals of publishing content and achieving absolute oversight over published content. It also suggests that software based content management systems may prove helpful for the management of some types of content in some situations, but it hypothesizes that actors will choose paper and face to face communication mechanisms to review and approve large amounts of new content and sensitive content.

1. Introduction

Last year 68 million Americans used government web site to gather information or engage in transactions [1]. Given citizens’ growing use of on-line government content, it is imperative that we ensure both the availability and the quality of content. Government agency web site “content management” should therefore ensure both content availability and content quality (including credibility, usability, and utility). A review of the literature regarding on-line government information suggests that while a number of useful tools exist to rate the quality of government web site content [2,3], we have little knowledge of the labor that enables content availability and quality for government web sites. That is, while we have identified characteristics of a good government web site, we have little understanding of the work that agency employees do to produce content or to review or approve that content for publication.

Using qualitative data from a field study of four state agencies, this paper explores the nature of the work required to review and approve web content. On a broader scale, the paper seeks to understand the extent to which information technology systems can be used to augment or support content management in government agencies. In this paper, I address three major research questions. First, who are the human actors that create, review, and approve government agency web site content? Second, what is the nature of the labor required to review and approve agency content? Third, how might this labor be augmented through use of information technology? In framing my answer to these questions, I use constructs from Strauss’s conceptualizations of labor [4]. This approach examines work from a micro-mechanical level, examining not only the goals of the work, but the specific actors, tasks and coordination required. I draw on this theorizing and my data to discuss possible benefits and limitations of automated Content Management Systems (CMS) for managing government agency content.

This paper is organized as follows. First, I describe some conceptions of web site content management work from the trade press and the scholarly literature. Second, I contrast the rational aspects of content management work presented in the trade press with Strauss’s conceptions of work as constant articulation. Third, I describe my data collection and analysis methodologies. Fourth, I summarize my
results and analysis. Results include a description of the key actors in the review and approval of agency web content, a description of review and approval work, and examples of articulation work. Fifth, I discuss the study results in terms of their implications for government agency use of CMS to improve the availability and quality of web content. I conclude by discussing the limitations and implications of the study.

I define an agency web site as any agency digital file accessible by the public via a web browser and an Internet connection. In my analysis for this paper, I focus primarily on text, or “static” content. Dynamic content and web applications require separate discussion that space limitations do not allow. I define agency content management (CM) as “principles and practices around developing, maintaining, and deploying (web) content in an organization” [8]. I focus primarily on content review and approval. CM does not require use of a software based content management system (CMS). Non CMS based CM typically makes use of other office automation tools such as e-mail, fax, spreadsheets, authoring tools, and the software tools designed to move files from one server to another and control who has the rights required to do so. In my discussion, I focus exclusively on non-CMS based CM. I define CM work as any mental, physical, or emotional effort related to the CM task.

1.1 Government web site content management

Increasing the efficiency of government web site content management has increasingly become of central concern to government agency IT staff. A stream of widely publicized “external” evaluation studies has rated the quality of state and federal agency web sites and their content [2,3,4,5]. These studies provide tools for external review of sites, but their methodologies limit the types of quality criteria they can consider. Their methodologies do not permit them to evaluate the internal processes in place to create, evaluate, and approve agency content.¹

¹ I hypothesize that criteria created by the evaluation studies may, in part, shape the further development of state and federal web sites. I also hypothesize that a content analysis of the evaluation studies would show that their criteria privilege e-government goals of expediency over goals of transparency or accountability. For example, while the evaluation criteria encourage development of on-line servers, they do not consider the degree to which electronic records are maintained for e-transactions. If we assume that the evaluation criteria shape web development efforts in the states, by leaving some e-government goals out, the evaluation criteria may undermine some key aspects of e-governance in agencies that use the evaluation studies as guides for web development. I encourage inclusion of electronic record keeping criteria in future evaluation studies as well as the other criteria I note in the discussion section of this paper. (Full disclosure note: I am from Wisconsin, ranked #48[3]).

A number of case studies have provided a limited “internal” view of content management within government agencies. Their results suggest that CM is ad hoc [9], under funded, strained [10], and subject to interagency conflict [11]. This study builds on this previous work by looking particularly at the work related to review and approval and by including multiple actors, with different viewpoints, in the data collection.

The trade press provides a high level, rationalistic view of CM work that is very attractive to government information managers. It identifies three broad goals of CM: Speeding up creation of content, improving management of the content production process, and increasing oversight of content deployment and deployed content. Nakano describes CMS as having four systems, each with their own sub processes and goals. The system that supports review and approval is a three-step process. Step 1 is the editing of the content. When completed it is passed to an approver. In Step 2, the approver may reject the content (in which case it goes back to Step 1) or approve the content. If approved, the content moves to Step 3, and is returned to the producer. This system coordinates, or in Strauss’s terms ‘articulates,’ the work of the various CM actors by managing assignments, routing jobs, forwarding notifications and permissions, reducing the wait–time between steps in the process, and creating a “virtual assembly line” for content [8].

A number of states have purchased CMS but only a few have begun any significant implementation processes. Therefore, few “lessons learned” materials are available (e-Michigan has recently posted a number of documents describing the processes and procedures related to their migration of agency content to CMS [12]).

Past information technology research gives reasons to be skeptical about the efficiency promises of CMS to automate CM work. For example, literature from the computer supported cooperative work field (CSCW)
has shown that lack of ‘fit’ between IT and existing work processes can stymie system effectiveness [e.g. 13, 14] Systems created to support cooperation and coordination may become an obstacle to work around [15]. For example, users rejected automated approval features in a system because of their regular work practice’s reliance on handwriting to prove authenticity [16]. CWCW researchers have suggested a reconceptualization of systems development from “creation of a discrete object” to “production of new forms of working practice” in order to build systems that successfully support everyday working practices [18]. These findings suggest that the rationalized view of content management work may not comport with actual micro-level CM work practice, and that a richer understanding of CM work practice is important.

2. The Articulation View of Work

Work studies using an articulation approach explore the unplanned or non-rational aspects of work left out of rational work models. They point to the invisible, yet important nature of this unplanned work for the achievement of an end goal [13, 14, 17,18]. This literature views organizations as fields of political struggle in which actors may work to achieve multiple, and sometimes conflicting, goals [19, 20], and negotiating and re-negotiating end goals are part of the work [4].

Strauss sees work as a coordinated collective act involving multiple actors. Getting work done requires the interplay of actions between these actors, who may be more or less inclined to cooperate. Strauss describes this interplay of actions in terms of four concepts: articulation work, arrangements, working things out, and stance.

Articulation work – The term articulation work was formulated by Strauss and has been adopted by a number of IS researchers and used in slightly different ways [4, 17, 18, 13, 14]. Drawing on this past work, I define articulation work as having three characteristics. It is: 1) invisible within rational models of work or work planning; 2) involved with the coordination of tasks, beliefs, goals, or standards of different actors involved with the work; 3) undertaken in support of a high level end goal. Articulation work occurs at two levels. Upper level articulation defines the work and arrangements needed to complete it (see arrangements below). Lower level articulation involves managing local contingencies to keep the arrangements on track [14]. Previous research has identified general categories of articulation work including fitting, augmenting, working around and boundary setting. [13,14]. ‘Fitting’ is adjusting regular work patterns to accommodate contingencies. ‘Augmenting’ is taking on additional work in order to facilitate the arrangement. ‘Working around’ is using alternative, or non-approved methods to keep work on track.

Arrangements – Arrangements are tacit or explicit agreements between actors related to the actions necessary for carrying out the work. (E.g., who does it? According to what standards? Etc.) Arrangements are a temporary shared understanding of how things should occur, and may be continually reworked by actors via the working things out process. Powerful actors may dominate the working things out process and dictate the nature of arrangements.

Working Things Out – This term refers to the upper level articulation processes through which arrangements are established, revised or kept going. Articulation processes include negotiating, making compromises, educating, lobbying, coercing etc.

Stance – Stance denotes the position taken by actors toward the working out process and the work itself. Stance is expressed through interactional strategies used in the working out process. For example, actors may oppose the arrangements favored by other actors and resist during negotiations in the working out process. Power influences the type of stance actors may take.

I use these constructs to describe CM review and approval work at the four case sites that I studied. In my analysis I use them to point to the improvisational and constantly changing nature of CM review and approval work and examples of high and low level articulation.

3. Methodology

This paper describes a comparative case study of non-CMS based web site content management at four government agencies in the state of Wisconsin. The researcher collected data at agencies providing web content written for, and available to, the public. The four participating agencies included: The Departments of Natural Resources (DNR), Health and Family Services (DHFS), Workforce Development (DWD) and Transportation (DOT). Additional interviews included employees from the Department of Electronic Government (DEG) and the Department of Public Instruction (DPI). Thirty interviews focused on
Internet web site content. Two interviews discussed agency intranet content and one dealt with content on an access restricted extranet.

Within each agency, the researcher used a purposeful sampling technique to identify and recruit research participants. She included a variety of personnel at each agency including web masters, records/forms officers, people who converted content into html, content editors and content approvers. She included web personnel from both high and low resource programs within each agency. She also included personnel who maintained highly used or highly scrutinized content in each agency.

The study employed a multi-method data collection technique [21]. Results draw on two main sources of data, 33 semi-structured interviews with state employees, and content analysis of agency documents related to content management. Additionally, the author conducted observations of web publisher meetings at several of the participating agencies and conducted a focus group with state agency web masters. Data collection took place from March through September of 2002. Follow up data collection is ongoing.

The data analysis used to create the results for this paper is very preliminary. At this point, analysis has employed a primarily grounded theory approach [22]. Initial review of the data uncovered strong patterns related to improvisation in review and approval work. In order to explore this theme, the researcher adopted the constructs from articulation work research. Further data analysis will develop and test specific categories or themes related to the improvisation and look for relationships between the improvisational nature of work and other emerging themes. The researcher will use Atlas-TI software to assist in the organization and analysis of the field notes.

4. Results and Analysis

This paper reports on three tentative results. First, it describes the human actors that create and maintain government agency web sites and their roles related to review and approval work. Second, using Strauss’s constructs as a framework, it describes review and approval work and how it is done. Third, it depicts several examples of articulation done as part of the review and approval work.

4.1. Content Management Roles

The most striking aspect of CM review and approval work is its variance. CM practices were tailored to the very specific needs and resources down to the bureau and program level.

Despite this variance, it was possible to identify common roles across the different agencies. In many cases, one person held multiple roles. Roles also varied by type of content, because some content required the participation of different roles.

As noted in previous research, for the vast majority of the participants, CM work was an addition to traditional job responsibilities – regardless of the role [10]. Very few participants were hired exclusively to do CM work. CM involves six major roles.

**Subject Expert:** The subject expert creates content, typically in paper form for a brochure, report, regulation, scientific paper, or other paper output. The expert is seen as having specialized knowledge about the content and about the public that uses the content.

**Editor:** The editor corrects the content and shapes it into a format that is appropriate for the web. This person typically has a background in journalism, technical writing, editing and/or has received training about writing for the web. The person typically works in the same organizational area as the subject expert and collaborates closely with the subject expert to create the web based content. In many cases, the editor also creates content, converts content, and has some approving functions.

**Converter:** The converter takes content that exists in paper, Word, Excel or other formats and converts it into a format appropriate for inclusion on the web site. The converter also inserts the content into pre-existing agency templates and applies agency header, font and other content appearance standards. The person typically has training in a web-authoring tool.

**Approver:** The approver reviews and approves content for publication. Review criteria vary by approver, but may include factual correctness, political sensitivity, match with agency or bureau communications goals, grammar, word use, adherence to agency standards, etc.

**Publisher:** The publisher has the technical permissions to move content from a test server to a live server. The publisher is typically also an approver.

**Policy Creator:** The policy creator is an agency level position that creates policies and procedures that
affect the way content management work is done. Examples include development of standardized templates and content approval requirements and processes. This role attempts to create arrangements about how CM work is done.

4.2 Content Management Work

This section uses constructs from Strauss’s conceptualization of work to describe CM review and approval work. First, Strauss describes arrangements as mutable agreements between actors related to the actions necessary for carrying out the work. This paper focuses on the arrangements related to reviewing and approving content for publication.

Working things out refers to the high-level articulation work through which agreements are established, revised, or kept going. Policy creators within the agencies often developed arrangements such as templates, web writing guides, development guidelines, approval forms, approval processes, etc. These arrangements held some cultural capital due to the structural power of the policy creators’ positions. Nevertheless, other actors could do lower level articulation work to “work around” those aspects of the arrangements that impeded the goal of getting content published [4].

Different actors work toward different goals in the process of working things out because they have different stances. Some actors may support arrangements in their current form; many others work to change it. One can simplify the stances of CM review and approval into two major groups. One group’s stance emphasized the need to control the content published on the web. They wished to ensure that the published content was accurate, useful and did not cause any harm to the agency, to the Secretary of the agency, and to the Governor. I refer to this as the “Control Stance.” Approvers and Policy Creators exhibited this stance.

The second major stance was concerned with getting useful, quality content onto the web as quickly as possible. I refer to this as the “Publish Stance.” Subject Experts, Editors, and Converters exhibited this stance. The Control and Publish Stances both wanted to ensure the publication of useful quality content. They differed in terms of emphasis. The Control Stance was generally willing to sacrifice speed of publication for quality control. The Publish Stance believed that quality control mechanisms should accommodate program areas’ need to publish content quickly. Control and Publish Stance actors had to work things out in order to create and maintain arrangements for content management work.

As Strauss notes however, arrangements are temporary. Actors constantly work and rework them through high and low level articulation work. I noted two agreements that were subject to ongoing articulation during the study period at most sites. The first was how many levels of approval were needed. The second was what characteristics of content require approval. Control Stance and Publish Stance actors disagreed on the extent of oversight of content. I observed approval of content at four different organizational levels.

First level: The subject expert obtains support from supervisor to put existing content up on the web or create new content.

Second level: The subject expert takes content to an approver at the bureau or division level. The second level approver may seek additional oversight from bureau directors, division heads, legal staff, etc. Oftentimes authority to approve content is delegated by management to the second level approver, except in the case of “highly sensitive” or other specific types of content. In most cases, the second level approver is left to use her professional judgment about what content needs further approval at the second level.

Third level: The sponsoring program area takes the content to an agency level approving actor (person or group).

Fourth level: The sponsoring program area or bureau takes the content to the Secretary’s office for final approval.

Control Stance actors and Publish Stance actors disagreed about how many levels of approval are required. Generally, Control Stance actors argued for more levels of review. Publish Stance actors argued for fewer levels of review.

Control Stance and Publish Stance actors also disagreed as to what types of content and what characteristics of content should require review and approval. Participants described at least four types of content:

New web sites: The conceptualization and creation of text, graphics, and other materials for a new web site consisting of one or more interlinked web pages. The new sites were added as subsites to an existing web site structure. Most agency arrangements required the most extensive review for this material.

Significant changes to existing sites: This includes changes in text, graphics and other materials
such that a returning visitor to the site would recognize that the site had been significantly altered. Many agencies had a “50 percent rule.” This arrangement called for actors to use the full content review process when over fifty percent of the content on a site had changed.

Minor changes to existing sites: This includes small changes to primarily text including phone numbers, contact names, or regular updates of constantly changing content. Examples might include hiking trail or road condition reports. Most agency arrangements allowed for a shorter review process or blanket approval for this material.

Existing Paper Content: Conversion of existing paper content to a web format such as PDF or html. Some agencies had arrangements that did not require a separate review for content that had gained approval in paper form. Others still required a separate review. Important content characteristics included:

- Grammar and spelling,
- Language appropriateness given the target audience,
- Degree of fit with web presentation guidelines (e.g. use of bullets, short paragraphs),
- Importance of content (including fit within a defined communications plan, fit with other content already on the site, and the need for content at all).
- Political sensitivity of the information.

Generally, Control Stance actors favored oversight of more types of content (e.g. minor changes etc.) and oversight of more characteristics of the content (e.g. wording issues, audience appropriate language). In contrast, Publish Stance actors favored narrower review excluding certain types of content (e.g. not require approval of content that has already been approved in paper form) and excluding content characteristics such as language appropriateness and need for the content. Publish Stance actors felt these types of content did not need further review and that reviewers were not qualified to judge some of the content characteristics.

In working things out in order to maintain the agreements necessary to ensure the ultimate publication of the content, each stance used a variety of articulation tactics in order to, in Starr’s words “keep things on track” [17]. One must remember however, that keeping things on track meant slightly different things to the two stances. For Control Stance actors, keeping things on track meant articulating work to guarantee thorough review and approval by necessary personnel before publication. For Publish Stance actors, keeping things on track meant articulating work to ensure timely publication.

4.3 Articulation Work

Initial analysis has identified four articulation strategies used by Publish Stance Actors related to content review and approval. These represent work actions not included in the official review/approval arrangements. They represent actions taken to “keep things on track”, or to facilitate the approval of the content.

Using Paper. Web content creation would seem to be an entirely electronic activity. Pages are produced on a PC hard drive or server using an authoring tool; they can be emailed to an approver, and then moved via ftp to a publication server. CMS literature suggests that the workflow tools included in the systems will support faster production of web content by electronically routing content, approval requests, approval notifications, etc. between the actors. In lieu of a CMS, most actors used e-mail and attachments to accomplish many of the same processes. But the data show that Publish Stance actors sometimes did not use email in the approval process because, under certain circumstances, paper worked better.

Publish Stance actors explained that when seeking approval for a new site, it was better to send the content material to the approver on paper. Typically, the approver would suggest major changes to the content. These changes were easier to mark on paper and easier to see on paper. The Publish Stance actors would wait until they felt the approver had made all major changes before converting the content to a web form. All changes were done on paper until the content had stabilized.

Physical Contact. Publish Stance actors also explained that sometimes going and physically meeting with the approver would facilitate the approval process. The time required for the approval process for new web site content varied depending on the levels of approval required by the agency; but in agencies with third and fourth level approval mechanisms, reportedly the process could take several weeks to complete.

Physically meeting with the approver facilitated the exchange of information about the content, reportedly reduced the number of times the content had to be sent back and forth, and sometimes reduced the time needed for approval. The richer communications capacity afforded by physical contact made it easier
and faster to get something approved. This was particularly useful when the content creators felt that the approver might object to certain material and the physical contact allowed them to better respond to these concerns. As Suchman has noted about the limitations of computer-based communications, “face-to-face communication includes resources for detecting and remedying troubles in understanding as part of its fundamental organization” [27, pg. 180]

Physical meetings were also used in situations where the Publish Stance actors could not wait this period of time. (E.g. bridge collapse requiring an immediate press release, or content coordinated with an upcoming news conference) They would go and meet physically with the approver to try to negotiate a faster approval.

**Not New Content.** Publish Stance actors reported manipulating the fifty percent rule to avoid the full review process for new content. Publish Stance actors would place new content on an existing site so that it did not appear as a new site. For example, one participant talked about how she placed new content on an existing page and put a graphical box around it to draw visitors’ attention to its newness. Another participant described how she did not count anything as over fifty percent unless it changed the purpose of the site. Thus, even though over 50 percent of the text on the site had changed, if the purpose of the site had not changed, she did not put the content through the full review process.

**Ignore It.** As mentioned earlier, Publish Stance and Control Stance actors disagreed about the characteristics of content that should be included in a review. Some Publish Stance actors reported ignoring certain review comments including those related to the factual correctness of information or the best wording for the intended audience. This was especially true if the approver did not control publication of the content and/or was located outside the areas of expertise of the content. In these instances, Publish Stance actors felt the reviewers did not have the expertise to make these judgments. The Publish Stance actors kept their work on track by ignoring some of the change requests of editors or approvers.

How do these examples of work show articulation? The paper example and the physical contact are examples of the ‘augmenting’ category of articulation work [13]. The actors added tasks to their chain of work (i.e. creating a paper copy, traveling to see the approver) in order to facilitate the current arrangement. This work could also be considered an example of a ‘work around’ if the actors undertook it so as to avoid some barrier in the regular arrangement (E.g. approver not answering her e-mail). The ‘not new content’ example demonstrates how the arrangement of what counts as “new content” is fluid and being worked out by the actors through their high level articulations. One might also interpret it as an example of the work around category of articulation work [13]. The ‘ignore it’ example also shows that what counts as an appropriate characteristic for review is also being worked out through high-level articulation. It is also ‘work around’ example of articulation.

Initial analysis has identified several articulation strategies used by Control Stance Actors to facilitate and or strengthen existing arrangements.

**Trust Based Exemptions.** As mentioned in the description of the levels of review, lower level reviewers such as supervisors, section chiefs and bureau chiefs would sometimes delegate review and approval authority to a trusted other. Other participants described negotiating with editors and approvers for blanket pre-approval of certain types of content or areas of content.

**System Surveillance.** Some Approval Stance actors described how they would occasionally use the file transfer software to scan the publication server for unauthorized or unexpected postings. Approver Stance actors could watch out for specific posters or specific files.

**Physical Contact.** Some approvers also reported using physical meetings with Publish Stance actors to discuss suggested changes to content. They reported that e-mailed change requests could come off sounding bossy and could unintentionally upset or anger the receiver. They explained that by physically meeting, they could better explain their suggestions, gauge the other’s reaction, and avoid any misunderstandings or hard feelings.

**Adding New Approval Mechanisms.** Policy makers at three of the four case sites added new approval mechanisms during the study period. For example, one agency Level 4 approval body began asking for a description of all new web pages during their planning phases – a pre-approval approval.

How do these examples show articulation work? Trust Based exemptions represent the passing of work from one person to another person within the existing arrangement. This passage can be voluntary or involuntary [14]. In these cases, it was voluntary, as the lower level approver was typically happy not to
have to seek higher-level approval. ‘Systems surveillance’ represents a type of monitoring work within the existing arrangement that is not recognized in the official arrangement [14]. It is an “augmenting” example of articulation work. Physical contact is also a form of work augmentation to facilitate the existing arrangement [13]. Adding new approval mechanisms is an articulation of the existing arrangement based on the powerful position of the policy makers. It is a type of high-level ‘fitting’ work done to readjust the arrangement as a whole to the changing organizational situation.

At this point, I would like to compare the rational model of review and approval work from the trade literature to the articulation view of work presented throughout this section. This comparison shows how the real work processes described for this study more complex (or articulated) than the work suggested in the rational model. The rational model characterizes review and approval as a three-step process supported by a CMS. Step 1 is the editing of the content. When completed it is passed to an approver. In Step 2, the approver may reject the content (in which case it goes back to Step 1) or approve the content. If approved, the content moves to Step 3, and is returned to the producer [8].

The tentative results from this study present a more complex picture of the review and approval process. For example, the level of approval depends upon the type of content. Some content requires multiple layers, others content does not. In some cases, the reviewer and subject expert work together to create the content. Second, the media chosen for communication between the approver and the content owner varies based on the nature of the content, time pressures, the degree of change required to the content, the degree to which physical contact is required to maintain good relations. Third, the rational view leaves out the articulation work done by Publish Stance actors to either avoid or hurry along the approval process.

5. Discussion

Results from this study have several implications for electronic government and the ongoing management of content on agency web pages. The findings are also relevant for content management in for-profit organizations. Because the findings and analysis section focused on issues related to content review and approval processes, I focus my discussion on those issues.

The results are particularly germane for evaluating the usefulness, limitations, and possible unintended consequences of content management systems (CMS) or other information systems that seek to improve the efficiency of content management. The results from the study suggest that important review and approval work occurs that does not fit within the rational models of CM work. CMS based solely on this rational view of CM work may unintentionally impede this invisible articulation work.

The data show that CM review and approval work is much more improvisational, or dynamic, than the rational CM model. For example, the data suggests that the approval process, as an arrangement, is constantly changing or evolving in reaction to changes in actors’ stances or local contingencies. CMS would need to support this flexibility in arrangements. Further, the data shows that different types of content and different characteristics of content are treated differently in different circumstances. CMS would also need to support this level of contingency. While the study results suggest that CMS would be effective in some circumstances, CMS may also dampen the flexibility of the review/approval process if they enforce rational model processes and procedures.

In general, study results suggest that CMS would support agency content review and approval in the following circumstances: Review and approval of short and simple content, and review and approval of content in which a part of the content changes on a regular basis (e.g. product availability counts). The study results suggest that a CMS would be less helpful when dealing with the review and approval of large, complex blocks of content (e.g. whole new sub-sites), when seeking approval for politically sensitive content, and when seeking approval for emergency or last minute content. In these circumstances, the study results suggest that the actors prefer to use paper and face-to-face meetings because these media have certain communication, collaborative, and relationship building affordances that a CMC system like a CMS cannot support [23]. In suggesting these limitations of CMS, the paper contributes to an ongoing debate about the relative helpfulness of information technology for government management. The study's descriptions of actual CM work practices may also be helpful in improving the design of future CMS.

The results also illuminate an underlying tension between web site content publication and content control. One goal of e-government is to provide services to and inform citizens [24] (Note: this is not a
This study used the concept of articulation to explain the improvisational nature of CM review and approval work observed in the four case study sites. This study suggests that content management work is a sort of “extra invisible” work. First, the work is invisible because citizens never witness the labor and typically do not interact with the agency employees who enact the labor [17]. Second, the labor is not well funded or adequately staffed. It is often extra work added to an already full load of responsibilities; or, temporary staff does it. Finally, much of this work is not considered in current scholarly instruments for rating the quality of e-government and government web sites. The current methodologies of these studies make inclusion of these types of criteria difficult; but different methodologies could accommodate more internal evaluation criteria.

6. Conclusion

As government agency websites become increasingly important, it is important that agencies ensure the quality of the content on their web sites. Quality assessments should include attention to the work involved in managing the content on the web site. Data from this study suggest that a careful balance between publication and oversight of content is necessary to ensure both content availability, and content accuracy and utility.

This study used the concept of articulation to explain the improvisational nature of CM review and approval work observed in the four case study sites.
Study results show how the CM arrangement in agencies is continually shaped by high-level articulations of agency actors. Data also showed how both Publication and Control Stance actors use low-level articulation to keep publication “on track.”

Study results suggest that CMS would be helpful in some review and approval situations, but not others. The results point to two underlying issues related to the approval of content. First, a tension exists between the desire to create as much useful information for the public as possible and the need to manage that information with limited resources. Second, the study points to the importance of “content governance” in determining what content is appropriate for the web site and in shaping the nature of the site and the public perception of the agency.

The study’s examination of CM work suggests several additions to the evaluation criteria used in government web site evaluation studies. The data also show how the external review methodology of these studies restricts their ability to consider important content quality evaluation criteria that are not visible upon external review.

7. Sources


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