

# Social media adoption: Toward a representative, responsive or interactive government?

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## ABSTRACT

Social media adoption is oftentimes seen as technologically determined by third parties outside of government, with government's role limited to reactively jump on the bandwagon and respond to citizen preferences. However, social media interactions are emergent and challenging existing bureaucratic norms and regulations. This paper provides empirical evidence for the institutionalization stages government agencies' move through when they are adopting new technologies. Adoption occurs at varying degrees of formalization and not all departments in the U.S. executive branch regulate and restrict the use of new technologies in the same way. The internal procedural and organizational changes that occur during the adoption process are extracted using qualitative interviews with social media directors in the 15 departments which received the executive order to "harness new technologies" in order to make the U.S. government more transparent, participatory and collaborative. In addition to the perceptions of federal social media directors, a process tracing approach was used to map the accompanying governance and institutional changes and follow-up orders to direct the adoption of social media. Tracing both the behavior of individual organizations as well as the institutional top-down responses, this paper is both relevant for academics as well as practitioners. It provides the basis for future large-scale research studies across all levels of government, as well as insights into the black box of organizational responses to a top-down political mandate.

## Categories and Subject Descriptors

K.4.3 [Computers and Society]: Organizational Impacts – computer-supported collaborative work.

## General Terms

Management, Human Factors and Theory.

## Keywords

New technology adoption, institutionalization, governance mechanisms, social media, U.S. federal government

## 1. INTRODUCTION

Federal agencies in the U.S. Executive branch are heavily using social media tools to interact with the public in general, but also with other government agencies and to collaborate internally. The adoption of social technologies that are hosted by third parties oftentimes constitutes a difficult problem in the public sector: relying on external technology platforms comes with the risk and uncertainty of changes in the platform itself. Agencies cannot opt out of revisions of the technology. They cannot hire contractors to outsource changes or request customization services to platform providers such as Facebook or Twitter according to their internal needs. Public managers in charge of social media accounts are therefore exposed to constant changes of the platforms and at the same time have to deal with emergent citizen behavior in the online interactions through social media. The social behavior evolving around social media technologies puts agencies in a reactive mode and formal institutions, such as social media policies and organizational structures subsequently evolve as a result of the observed user behavior and technological changes.

Much of the experience using social media was derived from President Obama's first presidential campaign in 2008 and replicated in his second run for office in 2012 [see for example 1, 2, 3]. Social media was heavily used by campaign staff to increase citizen participation and helped to influence online users of social media sites to change their behavior: people were moved from online interactions with the candidates to offline actions such as registering to vote and then showing up at the voting booths on Election Day. Social media played a crucial role in targeting citizens who have already registered, but were unsure who to vote for and also to use those with a clear choice to convince their friends in their online networks to vote for the candidates [4]. The early successes in the 2008 campaign informed the Obama Administration's Open Government Initiative [5] and were fine-tuned after the second campaign into a new digital government strategy [6]. The result was a call to harness new technologies in government to increase participation, transparency and collaboration with the public.

However, it is still unclear how the success of a time-bound political campaign that is focused on one celebrity politician can be transferred into day-to-day governance activities that do not necessarily have a clear cut goal such as the election of a new president and a much longer time horizon. Moreover, the dynamics and communication modes of a political campaign are subject to very different rules and regulations than a government agency, focuses on a different audience than highly specialized social media day-to-day communication or targeted campaigns. Moreover, very little guidance existed at the beginning to align social media use with the existing bureaucratic reality and had to be developed as a

response to online behavior of both government agencies and citizens [7].

This paper provides empirical evidence of the formalization stages in U.S. federal government agencies of the executive branch in form of internal organizational and institutional norms and regulations.

## **2. SOCIAL MEDIA USE IN THE PUBLIC SECTOR**

Defined as “*web services that allow users to create an online profile and that also enable user-generated content, crowdsourcing, and online collaboration*” [8:12], social media tools have the potential to connect citizens directly to government communicators and other citizens in real-time. Government organizations are using social media tools almost universally as an additional tool in their communication tool kit to increase transparency by sharing content that citizens are otherwise not aware of or cannot easily access through a government organization’s website or other offline media. In 2013, all federal agencies had a social media presence. In addition, 84% of local and state governments in the U.S. are represented on social media [9, 10].

Social media applications are used for a wide range of purposes depending on the mission of the organization. The majority of government agencies are using social media tools to replicate already existing content from their websites or to point citizens to information that is already available online. The main purpose is to increase trust in government operations by providing more frequent and transparent online information. This new form of representation can be seen as the lowest degree of online engagement and is oftentimes misinterpreted as true citizen participation. More complex forms of interactions include active calls for engagement in form of photo contests, requests to submit information in blog comments or even open innovation initiatives to tap into the knowledge and creativity of citizens. There is very little evidence so far that government agencies are using social media applications as an e-government service, delivering customer service beyond the response to citizen requests or for complex and event-driven interactions, such as emergency management services [11]. The potential however to close the gap between potentially flawed perceptions of government actions and the formal information government tries to transmit is still immense. Government agencies need to adapt their existing organizational routines to monitor, interpret and respond to social media interactions. It is therefore important to understand the current internal management practices and existing rules and regulations that guide social media output and interactions.

## **3. CHANGE IN GOVERNMENT ICT ADOPTION**

Existing theories of innovation and technology adoption in the public sector focus on policy adoption and the resulting technology adoption. As an example, Rogers and Shoemaker provided a model that showed the growing numbers of adopters over time in aggregation over the whole population of potential adopters [12]. Innovation needs to be communicated through a network of adopters who can then observe each other’s behavior. That also means that the location of the innovation is important, so that

learning can occur. This is especially true for social media interaction: each government account in the U.S. federal government is publicly accessible on the agency’s website and most interactions are observable in each social media accounts’ timeline.

Other authors have shown that technology adoption occurs in stages [13, 14]: adopters can be divided by their speed of adoption from early adopters to laggards or from those adopters who are moving from the acceptance of simple technologies to complex technologies.

However, the existing rules and regulations in a bureaucratic setting like government mitigate the uncontrolled acceptance of new technologies and might even delay adoption [15, 16]. This also explains that technology adoption is usually seen as an investment decision that is made top-down and rolled out throughout the organization.

Previous research on the use of social media technology in government agencies has advanced our understand of different purposes or tasks that are conducted through social media, such as increases in participation and transparency [17-19] or the potential to respond in emergency situations [see for example 11]. Other research has focused on observable online tactics [20-22] and the effectiveness of these tactics [23-25]. Most of these studies focus either on publicly observable online practices that can be extracted from the Web and individual social media accounts. Or they focus on citizen behavior and how the public interacts through social media with government organizations [26]. The data is then used to deduct adoption patterns and potential outcomes.

Recently, Mergel and Bretschneider have suggested that organizational behavior cannot necessarily only be interpreted based on the output on social media sites [27]. Instead, it is necessary to understand internal decision-making processes in the context of existing organizational routines and constraints through regulations that govern these decisions. They have suggested a staged model explaining organizational dynamics of social media adoption moving from stage 1 with high degrees of experimentation, to stage 2 of “constructive chaos” to institutionalization in stage 3. Each stage is characterized by varying degrees of online interactions. Mergel and Bretschneider hypothesize, that the degree of interaction declines with increasing formalization.

This paper therefore aims to answer the following core research questions: Why and how do federal agencies adopt social media in the public sector? What are the necessary conditions, what hinders them to use social media? How are the existing rules and regulations governing internal adoption decisions and observable online interactions?

## **4. DATA COLLECTION AND ANALYSIS**

Data for this paper were collected using a digital ethnography approach over the course of five years. The researcher participated in ongoing online interactions with the social government communicator community on the microblogging service Twitter using the search hashtags #Gov20, #SocialGov and #GovTech. Problem statements and problem solutions provided by the community were extracted from online conversations and the researcher actively participated in online conversations by sharing insights, research and practitioner reports, Twitter updates, practitioner-oriented Op-Eds on government technology news websites and a research blog, as well as through teaching online classes for GSA’s digital government university. Prior forms of

online ethnographies, for example conducted by West, focused on similar non-participant observations of online tactics [28, 29]. West created an inventory of online services by extracting the number of interactive elements available on government websites and tracked changes over time. In this paper, the focus of online observations was on social media interactions of government officials by tracking their behavior on all available social media channels, as well as their articulated problem statements and resolutions provided online to the community. The content and number of interactions were tracked on social media accounts that are directly linked from a department's official websites, as well as those social media accounts that are only established on third-party platforms and their content is distributed through those social media services that were directly linked from the homepage. This includes for example Instagram photo sharing or FourSquare location services. Throughout the digital ethnography process, changes in online behavior of government entities were collected and stored in notes that were subsequently used for the data analysis.

In addition, social media directors in the 15 departments of the executive branch in the U.S. federal government participated in interviews. The interviews were recorded with the permission of the interview partners and then transcribed verbatim. The goal of the data collection was to obtain a complete inventory of all 15 departments and additional interviews with agencies that were mentioned by the interview partners as innovators were added to the initial set [30]. This snowball sampling approach started with innovators that were identified by the researcher and with each interview partner additional contacts were established and interviews were added to the final set.

The sampling approach can be labeled as a non-probability, targeted sampling. The social media directors included in the data set were either organizationally embedded in the IT or website administration as part of the Chief Information Officers responsibilities (10%) or in the public affairs offices (90%).

The "elite" interviews lasted between 60 and 90 minutes. The interview outline was semi-structured and constructed based on the initial online observations [31, 32]. The interview guideline covered a wide range of topics, including the strategic intention of the use of social media, mission support, organizational embeddedness, roles and responsibilities, internal decision making processes as well as implementation processes, day-to-day governance and management processes, resulting online tactics, perceptions of best practices across the federal government and outside of government (in the business and nonprofit sectors) and measurement of online impact.

The data analysis applied a triangulation approach [33]: Observable online behavior indicating the extent of social media adoption in the public sector and the formally articulated organizational intent extracted from social media handbooks and policies were used to inform the initial interviews with social media directors. In turn their articulated perceptions of the organizational decision making processes were compared again to the available documents and more importantly to the web coding results of observable online practices. Over time, a process tracing approach was used to understand how top down policies from the White House, the Office of Management and Budget (OMB), the Office of Science Technology Policy (OSTP) and the Government Accountability Office (GAO), as well as best practice guidance available through General Services Administration's (GSA) HowTo.gov website were integrated into organizational practices [17, 18, 34].

Following Bertot et al.'s overview of policies and guidelines directing the use of social media in the U.S. government [35], an

archival and document analysis provided the emergent institutional framework in which social media interactions evolved. Initially, social media use was interpreted as e-government use already covered by the provisions stated in the 2002 e-Government act [36], which direct agencies on how to use email and Internet technologies. However over time it became clear that the use of third-party platforms that are not hosted in government but by businesses in the cloud may need additional guidance. GAO subsequently released reports which in turn initiated institutional responses by OMB and OSTP as well as procedural guidance by GSA [see for example: 37, 38]. Individual organizational units then created internal social media guidance, such as social media handbooks, guides, strategies or policies which help to guide both employee and citizen behavior that were taken into consideration to understand organizational change and formalization of routines.

The process tracing data was subsequently triangulated with the web coding data and web narratives from the interviews in an iterative process. The theory-driven "within case"-analysis of the qualitative data were based on the first-hand reports of the internal decision making processes that lead to the final decisions about how to enact social media use by each of the departments. As a result the theoretical assumptions of a staged adoption process and its implications on organizational structures, norms, routines and observable tactics [31].

## **5. FINDINGS: EVIDENCE FOR A THREE-STAGED GOVERNANCE MODEL OF SOCIAL MEDIA USE IN THE PUBLIC SECTOR**

Social media interactions, social media strategies and the articulated intentions of social media directors are adopted similar to previous waves of e-government innovations in three stages. For each stage unique institutional, as well as organizational governance mechanism can be identified that lead to adaptations of managerial processes and organizational structure, as well as distinct online tactics.

### **5.1 Stage 1: Intrapreneurial experimentation**

The stage of social media adoption includes relatively free experimentations with social media. Tools are available for free, on the Web, so that there is initially very little interventions or support through the existing organizational infrastructures, such as the IT departments necessary. Institutional drivers in the initial stage include mainly the top-down Presidential mandate. The Transparency and Open Government memo served as a justification for experimentation. Mergel defined this type of experimentation as the "Wild West" of new technology use [39]. As one of the social media directors stated, early adoption and experimentation was clearly driven by the interpretation of the Open Government and Transparency memo and therefore public managers felt empowered to veer outside the existing technology paradigm and test some of the boundaries of the social media technology: *"We had to use social media to accomplish the goals of the Open Government and Transparency initiative memo"*.

As a result, experimentation happened based on a broad mandate, but mostly outside the existing acceptable technology paradigm of the 2002 e-Government act. Social media directors acted as intrapreneurs [40]. Online interactions on social media therefore need to be interpreted as a departure from the existing norms, organizational rules, and procedural governance mechanisms.

Intrapreneurs take a risk by assuming high degrees of bureaucratic autonomy and potentially challenge the existing accepted technology paradigm. One interview partner represents the degree of organizational formalization in stage 1: *"We don't actually have a single communication strategy. Period. Social media is one tool in the toolset. Get people educated about social media, so that they are at least considering adding those tools to whatever they are going for."*

To assume the risks that are inherent in this experimentation phase, rules are replaced with common sense norms. As one social media pointedly mentioned, his organization assumes the *"Don't be an idiot"*-rule. One social media director points out: *"For Twitter and Facebook there is no real clearance process. I have advocated very, very hard that there shouldn't be one, because especially the nature of Twitter. You got to be on top of it. It's timely type of platform. Everything is time sensitive and any type of clearance process really can obviate the whole purpose of using it. The overall messaging we sent out, any Facebook updates or the tweets: it is understood before they are actually put out. So, it is a personal judgment call. It's like: Do we have enough information, is this what we want to say. If I am updating our Twitter account: I feel comfortable knowing what the messaging is supposed to be, then I can say it. If I personally recognize that I'm not sure exactly what we want to say or how we want to say it, then I might bug somebody and the right person and ask for advice."* However, subsequent adoption phases showed that common sense in a hierarchical and bureaucratic environment may lead to unintended consequences and online firestorms have put the organizations at jeopardy by negative public attention on the agency. A case in point is the use of social media by GSA employees while the information about conferences spending was leaked and investigated [19].

In this early stage of experimentation with social media tools, social media directors adopted many different tactics. Some traditional e-government uses are reflected in these tactics including basic functions, such as simple online representation and broadcasting of a department's information that is already available on their website. These simple tactics are focused on recycling existing content and are supporting the organizational mission to inform the public. However, stage 1 also includes experimentation with location-based services to create highly interactive elements, such as the National Archive's Walk in the Footsteps of the Presidents (<https://foursquare.com/ourpresidents>), and active bidirectional citizen engagement experiments, such as running short-term campaigns and encouraging citizens to send in their comments or photo contests on Twitter and Facebook. While some of these online tactics might not seem path breaking, they constitute a clear departure from the traditional communication paradigm in government. Usually, government agencies only communicate using the traditional "press release format", that means communicating in low frequency rate and only when important new content has to be shared with the public. The first stage is therefore characterized by highly innovative experiments of never before used online tactics, bidirectional interactions with stakeholders, actively pulling in comments and information from the public in a relatively unstructured environment and outside the existing rules and regulations that only applied to other types of electronic communication, such as email and website content.

## 5.2 Stage 2: Consolidation and Convergence

The second stage is therefore characterized by a wide variety of online practices, varying degrees of engagement, and often times duplicate social media accounts in the same organization. As a

result, the Government Accountability Office issued a report which highlighted the risks of the wide-ranging and uncoordinated social media use across departments [37]. Institutional governance mechanisms such as this call for standards in form of formal social media strategies and policies then impact the creation of organizational formalization efforts.

So-called "business cases" of potentially harmful online behavior and overlapping, uncoordinated activities increased the awareness of risk-taking behavior of intrapreneurs experimenting with social media. At the same time, the value of social media interactions and the positive impacts of engaging in a more direct way than ever before showed the value social media can potentially have for government organizations.

As one of the social media directors states: *"We draft policies, procedures, guidance for best practices as a group and then those are enforced throughout the various folks that are involved in social media. It's driven by the communication needs as well as what people bring to the table, their needs, and then that sets the agenda for what guides things to be addressed at what time."* Other departments, start with a single social media strategy for one specific initiative, such as HealthCare.gov, and roll them out as other projects or initiatives emerge: *"Because there are a lot of different projects that are underway, [this project] has a social media strategy to it. A strategy in the sense that people have seat down and talked about it, and it's still sort of being worked out the details. But it's on paper: This is our goal, these are our target audiences, things along those lines. Social media strategies then pop up with all different projects. We do not have an [overall] explicit strategy, larger for the department. There is no huge [department] social media, new media communication strategy. Part of that is because things bounce all over the palace. The [department] is so huge. We set some guidance, and some parameters around which people can use, and build their own social media communication strategy."* This shows that public managers recognize the need for standardization and streamlining of behavior, the organizational reality is oftentimes emergent with events, projects or initiatives that are started in dispersed parts of the organization. Oftentimes, large departments such as Department of Defense (DOD) or Department of Health and Human Services (DHHS) have in itself not a unified organizational and management structure. As one of the public managers stated: *"CDC is rather centralized, so they have a more centralized strategy, in the sense that it is only one CDC account. On the other hand we have the National Institutes of Health, which has a decentralized organizational structure in and of itself, so they have elected to be incredibly decentralized in the social media communication strategy, and empower the different offices within NIH to come up with their own. Those are only two of the operational divisions across the 12. There is a lot of variability across the department for sure."*

Stage 2 is therefore characterized by standard setting efforts that result in new organizational and rules for both government employees and their online behavior on behalf of the agency, but also in their private use and for citizens and other stakeholders interacting online with the agency.

These procedural governance mechanisms in form of official social media strategies and policies formally document appropriate behavior and new standards, but also limit the autonomy of individual intrapreneurs who were experimenting with social media. As a result, social media directors were more aware of potential risks and limit their online tactics to mostly a push mode

and relatively few interactive responses to inquiries via social media or interactive pull modes.

### 5.3 Stage 3: Institutionalization & formalization of behavior and norms

Finally, stage 3 of social media adoption in the public sector is characterized by high degrees of institutionalization of social media as an accepted channel to interact with the public, but also high degrees of formalization of social behavior directed by newly established institutional organizational norms.

In this stage no online interactions are left occur randomly. Social media is part of the overall organizational communication strategy and embedded in the ICT standards of the organization. In some organizations this includes even pre-approval of new social media accounts or even the centralization of all social media activities: *“Right now it is extremely centralized... emphasis on extremely. It is very centralized. We only have one YouTube [channel], one Facebook account, one Twitter account.”*

This reduction of individual initiatives, or other decentralized efforts of the organization is supported by institutional governance mechanisms, such as at the GSA’s Terms of Service agreements with the most popular social media services [41], or social media policies that not only include policies for employees using social media on behalf of the organization, but also their personal use in their private lives and policies were extended to include contractors: *“[We] set the policy for anyone who is a [department] employee or contractor – even on their private accounts.”* The U.S. Army even extended social rules to family members of service personnel after security breaches through location-based social media services surfaced.

These institutional governance mechanisms of the third stage also impact organizational procedures and management practices. As an example, GSA has developed editing tools for social media use. Desktop tools, like Measure Voice, provide an editing template for social media updates with a clear hierarchical approval mechanism. That means, that one employees crafts the initial social media update, moves it through the approval process to a supervisor or managers, who edits and potentially re-edits before messages are moved off the desktop to the live social networking site. These routines remind of formal public relations information vetting procedures that have been established for years and are applied for press release editing needs. One social media director highlighted: *“I said earlier that I stole language from media advisories. I’m stealing actual text from a document.”*

Content curation in stage 3 reaches a professional level: Messages are expertly scheduled to ensure a continuous flow of information sharing and subsequently engagement. However, existing regulations in turn oftentimes restrict the free flow of updates. As one social media director said: *“There are certainly legal problems that come up and can hinder certain activities. If we are engaging people to become records management issues, what becomes a federal record that we to be able to record. Are we collecting certain personally identifiable information, is that then triggers of a number of other offices that could be involved. There are accessibility issues, so we call 508 compliance. The idea is that where government is, all government information should be accessible to people, even if they have disabilities. [...] Not all our websites set up so that they can. Facebook for example is not fully accessible or 508 compliant. YouTube platform is not. A lot of these other tools are not. We take the accessibility very seriously, so we actively discourage the use of a lot of these tools to engage with*

*stakeholders, until we have these accessibility issues figures out.”* While formalization might sound counterproductive to the interactive, fast and furious nature of social networking sites, these professionalization efforts show a mission-driven diversity of communication needs. Social media directors create diverse modes of online interactions and are adapting them based on events or small campaigns to increase public awareness.

As a result, online tactics oftentimes appear much less proactive and are limited to targeted campaigns, but mostly fall back into old routines to push information out through social media channels. However, as part of the formalization or institutionalization efforts, additional resources are allocated to support social media activities.

### 5.4 Summary of stages

In conclusion, social media adoption is impacted by institutional and organizational mechanisms that direct the degree and extent of adoption. The institutional mechanisms are oftentimes out of the control of the public managers interviewed for this study. Overarching institutional norms and regulations evolve as social media practices emerge and administrative needs evolve that result in restriction and formalization of behavior. Organizational governance mechanisms as a result then include changes in management practices, such as the establishment of roles and responsibilities, or retroactive budget allocations for capacity building. Both, institutional and organizational governance mechanisms, influence the interactivity of online tactics.

The following table summarizes the evolution of institutional and organizational governance mechanisms and the online tactics for each of the three stages:

**Table. Summary of findings**

<b>Institutional Governance Mechanisms</b>	<b>Organizational Governance Mechanisms</b>	<b>Observable online tactics</b>
<b>Top-down mandate:</b> Open Government memo “Harness new technologies”	<b>Stage 1: Experimentation</b> <ul style="list-style-type: none"> <li>• No Policies</li> <li>• “Don’t be an idiot”</li> <li>• High bureaucratic autonomy to innovate</li> </ul>	<ul style="list-style-type: none"> <li>• Push</li> <li>• Pull</li> <li>• Networking</li> </ul>
<b>Follow-up policies</b> <ul style="list-style-type: none"> <li>• Strategies &amp; Policies (GAO)</li> <li>• Records management (NARA)</li> </ul>	<b>Stage 2: Consolidation</b> <ul style="list-style-type: none"> <li>• First internal and external policies</li> <li>• Awareness of potential</li> <li>• Controlled experiments</li> <li>• Introducing and establishing of routines</li> </ul>	<ul style="list-style-type: none"> <li>• Push</li> <li>• Pull</li> </ul>
<b>Internal and externally-oriented guidelines</b> <ul style="list-style-type: none"> <li>• Formal handbooks</li> </ul>	<b>Stage 3: Institutionalization</b> <ul style="list-style-type: none"> <li>• Guiding policies</li> <li>• Strict rules for online interactions</li> <li>• Formalized editing procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Mostly Push (only)</li> <li>• Representation vs. interaction</li> <li>• Limited customer service</li> </ul>

Institutional Governance Mechanisms	Organizational Governance Mechanisms	Observable online tactics
<ul style="list-style-type: none"> <li>• Terms of Service (GSA)</li> <li>• Best practices (GSA)</li> <li>• Social Media Policies</li> </ul>	<ul style="list-style-type: none"> <li>• Convergence of strategy, policies and online tactics</li> <li>• Merging and consolidation toward centralized use</li> <li>• Introduction of norms and regulations of the bureaucracy into the 'network'</li> <li>• New structural positions, clear responsibilities and roles</li> <li>• Retroactive budget allocation for capacity building</li> </ul>	<ul style="list-style-type: none"> <li>• Falling back into "old routines"</li> </ul>

## 6. DISCUSSION

Similar to previous waves of e-government and ICT adoption, social media adoption follows a diffusion curve [42-44]. In early stages of the adoption of a new technology, there seems to be enough bureaucratic discretion to experiment with a variety of social media tools and modes of online interactions, however as organizations are making positive and most importantly negative experiences with social media, more and more institutional and organizational governance processes and procedures are designed to be in alignment with the hierarchical norms and standard operating procedures of the accepted technology standards.

As a result, some of the social media practices follow a reversed adoption curve: In stage 1 more complex and interactive tactics were observable, and toward stage 3 these are consolidated or even reversed to less complex and relatively simple or even basic interactions that move from highly interactive and bi-directional interactions to less interactive and mostly representative modes of online information sharing.

This study also shows that many institutional and organizational routines and norms are persistent across waves of technology innovations. While there might be a phase of innovative behavior that is pushing the boundaries of the acceptable use of technology, the responses of the bureaucracy itself result in falling back into existing routines [20]. As the organization moves through the three stages, increasingly existing norms are adjusted to the novel context, restricting use and the autonomy of individual early innovators, but following more nimble online practices of early and later adopters.

While user acceptance – both inside government and outside of government by citizens – is clearly high, what this study shows is that technology acceptance has to fit into the existing organizational needs, standard operating procedures and acceptable IT standards currently in place [22, 24]. In the case of social media, the degree of ease of use is initially very high, but is lowered across the three stages as public managers experience the need to introduce norms into the network. Social media initially adopted to support strategic communication to fulfill the mandate to increase

customer- and citizen-centric online approaches, is then contrasting the new Digital Government Strategy and might even stifle future innovation.

Formalization of both internal behavior as well as coordinating and restricting behavior of external stakeholders lead to a reduction of the initial intent to increase interactivity and responsiveness of government. The following figure shows how behavior is consolidated over time across stages 1-3 and how with every degree of formalization, behavior is formed and normed to fit into the existing hierarchical structure of the bureaucracy:

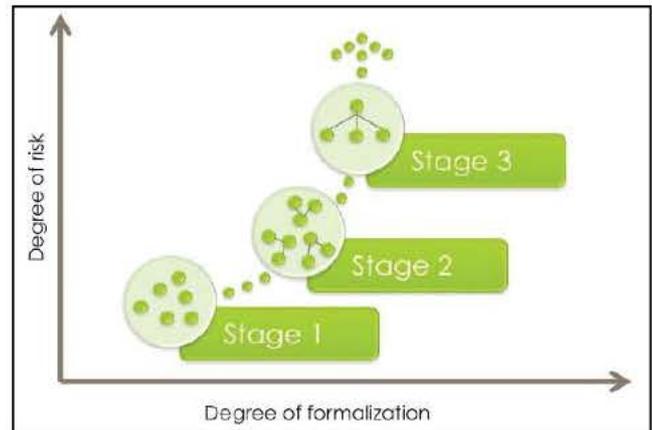


Figure: Stages of Formalization

## 7. Limitations and future research

This paper focuses on a very specific subset of digital government interactions through social media channels and a very distinct sample of government organizations – the executive departments of the U.S. federal government. While their online practices are emulated in other branches of the federal government, as well as across the state and local government levels, they might not be representative for e-government in general or for all modes of online interactions. It is necessary to conduct additional – large-scale – surveys to understand what the impact of these online interactions is. Unanswered questions include for example: Do citizens perceive that government is more interactive, responsive, transparent, participatory and collaborative as a result of their use of social media channels?

In addition, government interactions do not follow only one type of online communication mode. As a matter of fact, there is lots of convolution in the literature and researchers collapse the use of social media in local government departments. As an example, mayors have different intentions in their online interactions than for example police departments. Political actors, such elected officials, like Members of Congress, are constantly on the campaign trail and are less likely to deliver online services through social media channels. Police and other types of first responders in turn, do not always communicate in the same mode. As a matter of fact, they need for online interactions changes based on their event-driven need to communicate, trust building campaigns between events, and general community service. Online communication modes will vary and additional research is needed to understand the difference between modes and their actual impact on citizens [10].

Future research therefore needs to focus on deriving different social media communication modes that will differ across organizational mandates, situational needs and type of online actors.

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