

# Gate-Keeping in the Age of Information Society

## Online GPA Data in Lower Secondary Schools

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# **GATE-KEEPING IN THE AGE OF INFORMATION SOCIETY: ONLINE GPA DATA IN LOWER SECONDARY SCHOOLS**

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## **Abstract**

*Despite ten years of direct regulation, our study of Danish lower secondary schools shows that they do not provide online access to the GPA for individual public schools (N=1,592). Using Lipsky's gate-keeping theory, we investigate the lack of data provision as indicator not only of professionals' being reluctant to accept imposed standards and control from central level (top-down) but also avoiding demands from parents (and children) on transparency and accountability (bottom-up). The lack of accessibility of grades on the web can thus be seen as a classical gate-keeping mechanism evolving in the age of information society where expectations of end-of-gatekeeping by providing accessibility and transparency using information systems has been outnumbered by classical forces of gate-keeping.*

*Keywords: information society, gate-keeping, upper-secondary schools.*

## **1 Introduction**

Janus, the Roman God of doors and gates, had two faces, one looking ahead and one looking back, representing a door letting you in or letting you out, respectively. A move towards digital interfaces to public information represents a more fluid entrance, where it is unclear in which direction Janus directs his faces. In this paper we revisit the gate-keeping theory (Lipsky, 1979) in the Age of the

Information Society within the public primary and secondary school domains. Gate-keeping has not received much attention in the inclusion-exclusion discussion in the context of the information society, but it could, in our view, help close a gap in understanding the failure of IT implementations in a governmental context. In its relatively short history, the digital divide has represented a technological dimension of gate-keeping. Citizens are excluded if they do not have access to technology. Recently, the digital divide has been refined with the dimension of administrative literacy (Belanger and Carter, 2009). The mastering of technology and capability of understanding the content of public web pages become crucial for citizens if they are to derive the benefits from services and information provided via online channels.

As long as online services are one among many channels for service provision, the issue of technological inclusion-exclusion does not represent a serious threat to the maxims of public administration, since citizens can access services and information through alternative channels. Similarly, digital gate-keeping does not become effective, since citizens can opt for alternative channels. Digital gate-keeping does become effective when online services become the only channel. The objective of this paper is to investigate gate-keeping mechanisms in primary and lower secondary schools with particular focus on posting of grades online. The empirical context is Denmark, where government has issued an act dictating that students' grades need to be published online. Specifically, we investigate factors that lead to gate-keeping.

The objective of this article is to highlight the potential tension between law-driven digitization of public sector activities and digital gate-keeping mechanisms. Digitization represents a challenge in relation to the numerous ways of interpreting how the rules and regulations are actually implemented in a satisfactory manner.

The Danish case represents an ideal research setting for investigating phenomena of public sector dynamics in reaction to law-driven introduction of IT processes. In 2002, the Danish government published the "Act on transparency and openness in education" (2002 Act), introducing the requirement for public primary schools to use the Internet to provide data regarding student grades and well being. The school-board is of interest with relation to the exercise of political decisions because the 2002 Act states that "the board decides the principles how the parents are to be informed on a current basis" (Folkeskoleloven). Part of this is obviously how to publish the grades according to the 2002 Act.

The language of "transformation" is widely employed by those discussing the impacts of IT in post-industrial societies and the public sector (Castells 1996; Heeks 1999; Margetts 1999; Tapscott 1996). Although studies arguing for the reverse correlation were also conducted when IT was more expert dominated and exclusive in use (King 1977; Danziger et al. 1982), there is a need to study IT not as an

independent variable but as a diffused and exploited technology through the lenses of gate keeping (Lipsky 1980) in the technology matured public administration. IT studies of government no longer appear exclusively in technology-based or interdisciplinary journal and conference outlets. Key public administration and political science journals, such as *Public Administration Review* (Bretchneider, 2003; Ho, 2002; Vigoda, 2002), *Public Management* (Waisanen, 2002), and *Parliamentary Affairs* (Silcock, 2001), also deal with IT.

Despite the technological advances in government, there is great uncertainty regarding the extent to which IT is transforming public administration and politics (Holmes 1997; Rash 1997; Sussman 1997), as well as who is benefitting from the changes that are occurring. Indeed, in contrast to those who proclaim that IT has transformed the political world, there are counterclaims that IT has largely been adapted to, and reinforced by, existing behaviours and practices (Bellamy & Taylor 1998; Danziger et al. 1982; Davis 1999; Hoff, Horrocks, & Tops, 2000; Hundley et al., 2000). In this view, IT is merely one more resource, albeit a powerful and protean one, in the arsenal of politics-as-usual.

## 2 Prior research on publishing test results at the Internet

The domain of publishing grades has been studied intensively in the past few years. Table 1 provides an overview of the dilemmas and possibilities related to the publishing of student test results, including the pros and cons, as presented in the research field. The research has been particularly concerned with the question of how publishing affects teachers, headmasters and parents - and student performance.

*Table 1: Cons and pros for publishing of test results*

Cons	Pros
Publishing has only minimal impact on student performance (Hanushek and Raymond 2005 in Rosenkvist 2010, Lundahl 2010)	Publishing leads to better student performance (Hoxby 2001, West and Paterson 2006, Levacic 2004)
Teachers' and head masters' behaviour is affected in an inappropriate direction (e.g. teaching to the test) (Nordenbo et al 2009, Rosenqvist 2010, Skov 2009, Alexander 2009)	Municipalities show more openness on school performance (Skov 2009)
Teachers and headmasters do not like public ranking of schools (Croxford et al. 2009, AEU 2010, NUT 2010, Allerup 2009 in Rosenkvist 2010)	Teachers and headmasters are responsive to their schools' rating and ranking (Mintrop 2004, Jacob et al 2004 in Rosenkvist 2010, Nordenbo et al. 2009)

Parents seldom use the full potential of the information (Ravitch 2010, Echols and Willms 1995) in Rosenkvist 2010)	Parents place high importance on having the possibility to compare their child's achievement with a provincial standard (EQAO 2010 in Rosenkvist)
Statistical imprecision makes it hard to distinguish in a meaningful way between the majority of schools (Rothstein et al 2008 and Ravitch 2010 Rosenkvist)	Parents want to be able to compare one school's performance against another (Public Agenda 2006, TNS 2008, Counterpoint 2009 in Rosenkvist 2010)

The table is based mainly on two large reviews on the use of student test results, the first of which is a review by the OECD Directorate for Education on the use of student test results for accountability and improvement (Rosenkvist 2010). This review includes more than 150 articles and covers studies on the use of performance tables and rankings, drawing the conclusion that the effect of publishing student tests of school performance has conflicting results. There is little evidence of a positive relationship between performance tables and increased student performance. Teachers and parents are influenced by performance tables – but not always as originally intended by the authorities. The review also shows that there is a wide consensus in the literature that reporting student test results in performance tables is coupled with several methodological problems (Rosenkvist 2010).

Second, the Danish Clearinghouse for Research in Education has done a review including 61 studies on the use of assessment for improving teaching (Nordenbo et al. 2009). The review shows that determinant factors in assessment are the true or imaginary consequences that test data have or can have for the individuals involved (students and teachers). This can be described as high stake tests versus low stake tests. Publishing of student test results increase the stakes for the schools involved in the test. The review indicates that high stake tests have a negative effect on students (motivation and self esteem) and teaching (teaching to the test) (Nordenbo et al. 2009).

The findings of the research are thus ambiguous. Especially studies on the effect of public rankings on student performance have conflicting findings, as is also illustrated in Table 1. Further, it is clear that teachers, headmasters and parents do not share the same understanding of publishing test results and that teachers and headmasters do not like public ranking of schools (Croxford et al 2009, AEU 2010, NUT 2010, Allerup 2009 in Rosenkvist 2010). Parents, on the other hand, want to be able to compare their school's performance against that of another school (Public Agenda 2006, TNS 2008, Counterpoint 2009 in Rosenkvist 2010).

### 3 The Gate-keeping Perspective

Lipsky (1971) introduced the term “street-level bureaucrat” about forty years ago. The term has become part of the vocabulary in public administration and political science (Schacter and Kosar 2011), and is a recurring theme in the public administration literature (ibid.). According to Lipsky (1971; 1980), “Public service workers, who interact with citizens in the course of their jobs and who have substantial discretion in the execution of their work, are called street-level bureaucrats.” This clearly means that public servants undertake other tasks- more than just applying the law. They apply the intentions of the law in their daily practices (Brodkin and Majmundar 2010), shaping and influencing citizens’ lives when they interact with the public sector (Lipsky 1971).

One dimension of street-level bureaucracy is control. Control can go beyond the intention of the law. Lipsky (1980) refers to this as gate-keeping. Gate-keeping concerns patterns of behaviour of street-level bureaucrats who interact directly with citizens and who have extensive influence on citizens’ lives. In his 1971 article, Lipsky refers to civil servants such as school teachers and welfare officers; however, he explicitly mentions that public school headmasters do not fall into the category, arguing that headmasters deal primarily with subordinates rather than with pupils, and are therefore less relevant in relation to gate-keeping (Lipsky, 1971, p. 393).

We argue that this particular claim does not apply in relation to the publishing of online grades. Pupils in a modern school context do indeed concern citizenship, particularly when we observe OECD’s critique of the Danish school system as being too little oriented towards the environment, such as pupils and parents (OECD, 2007). Further, the increased use of the Internet to publish data suggests that headmasters override teachers in their communication with parents - who are citizens. School headmasters are more likely to have a say in relation to Internet policy and management at the institutional level.

Gate-keeping is not necessarily an active act of civil servants. They can also operate as indirect gatekeepers, developing modes of operation that affect the ease or difficulty of the claiming process. Brodkin and Majmundar (2010) refer to this as administrative exclusion: “Administrative exclusion occurs when organizational practices (both formally prescribed and informally created), rather than substantive status or individual preference, affect participation in public programs.” The situation of administrative exclusion is where access to benefits or information becomes tangled up in administrative red tape, confusion, and disorganization not necessarily out of bad will, but rather out of the three types of stresses (see below), which, according to Lipsky (1971: 1980), affect street-level bureaucrats.

Lipsky refers to three types of stresses with which bureaucrats have to deal. First, there are inadequate resources, thus putting pressure on bureaucrats to make decisions fast and often without the necessary information. This is a common situation for all bureaucrats. What makes it critical in relation to street-level bureaucrats is that the decisions are often made under pressure with limited access to information, and the decisions then often have serious consequences for citizens. The second type of stress is threat and challenge to authority, which refers to the inability to control the situation. This is most illustrative in relation to policemen, to whom Lipsky often refers. Policemen in the streets feel pressure from the environment and have to be alert to potential dangers. The third type of stress is contradictory or ambiguous job expectations, where peers may place one type of expectation on bureaucrats, whereas there may be other expectations from the political system or bureaucratic reference groups or even the public. This third type of stress appears to be more relevant in the case of school headmasters. On the one hand, they have to represent the interests of parents and children, with a differentiation between pupils and pupils' performance. On the other hand, headmasters have to serve local politicians, who might have as one of their primary goals that local schools be as high as possible in the national performance ranking of schools.

To reduce the stresses, street-level bureaucrats implement mechanisms that lead to gate-keeping mechanisms or, as Lipsky (1980) labels them, "physiological and behavioural reactions" such as simplifications of procedures that tend to be stereotypical, the development of defence mechanisms that lead to distortion of reality, and the creation of a reality that people either fear or want to overcome. It is important to stress that, according to Lipsky, gate-keeping is not done out of bad will, but rather due to lack of resources. In her study of implementation of policies, Hill (2003) takes this argument further by stating that "lack of clear guidance for street-level bureaucrats might lead to expectations of decreased implementation of the bill's central directives." This perspective could have particular relevance in relation to the implementation of the Danish 2002 Act on online publishing of grades. Implementation of the act requires IT skills that are not part of the traditional school administration.

Another aspect of relevance for our study is further highlighted by Hill (2003), who argues that legislators work from the assumption that regulation has a shared meaning. We might want to add that there are political expectations which the professionals view as being contradictory: 1) Danish primary and lower secondary schools are expected to accept all children, whatever the race, gender, social background, etc. All pupils should be welcome in the same school, and this is considered to be important for society's coherence. 2) Danish primary and lower secondary schools are expected to perform better on the Programme for International Student Assessment (PISA), and on national tests. This expectation of performance in disciplinary skills is viewed by some as being unfair, due to the conflict with the former expectation. The professionals cannot see the purpose of engaging with the

2002 Act, since it is viewed as being either: 1) irrelevant to parents or 2) counterproductive to pedagogical activities in the school.

#### 4 Research method and collection of data

A sample of two hundred schools was categorized based on an assessment of the accessibility of the grades on the schools' websites. This approach is seen as an appropriation of how a real user would use the website. We lent inspiration from the Human-Computer Interaction discipline and applied the cognitive walkthrough method (Warton et al., 1992). Our application of this method meant that we performed the assessment of the schools' interface in a task-specific manner (i.e., if the school posts grades on its website). The initial study (Henriksen et al., 2011) highlighted that schools appeared to be reluctant to post grades online in an accessible manner, that is, there were signals indicating digital gate-keeping.

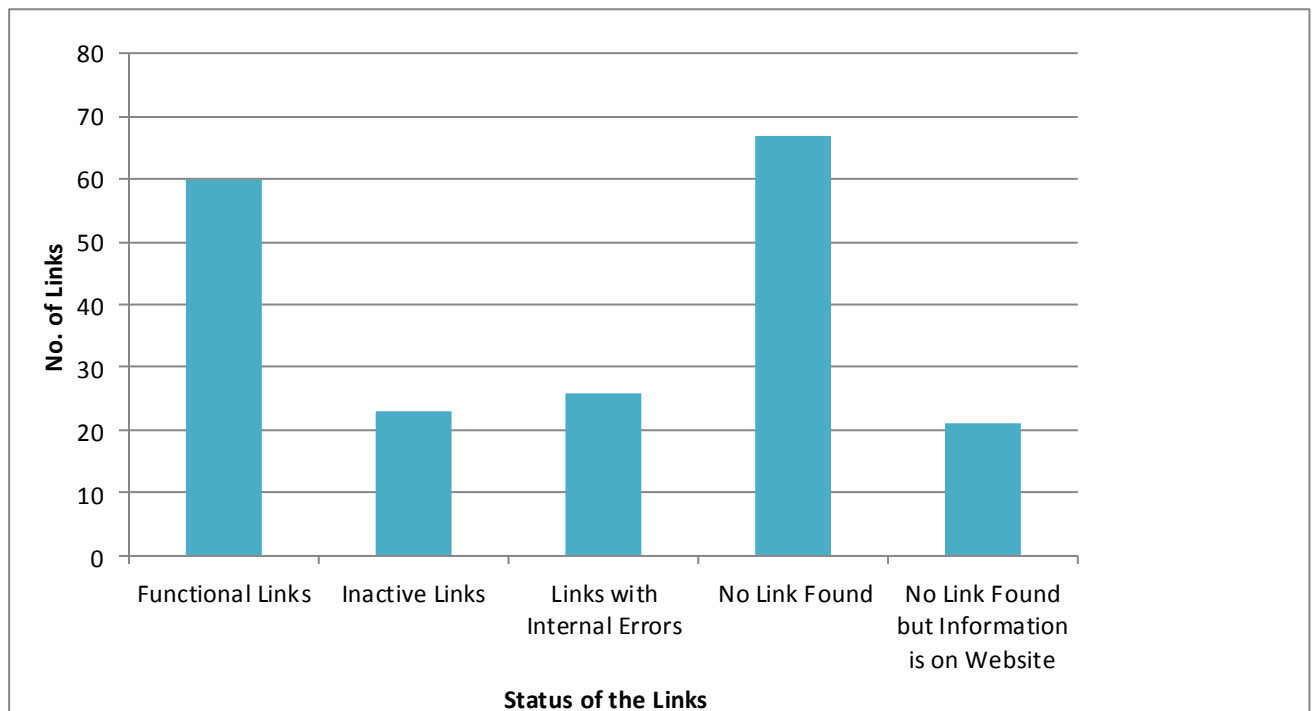


Figure 1: Distribution of accessibility of grades online (n=200)

From direct observation of how a sample of 200 schools of the 1,500 Danish public schools actually administered the act, it appears that mechanisms other than technological capabilities governed the schools' policies on the posting of grades online. The majority, or about two thirds of the examined schools, did not publish the grades in an accessible manner. The schools made it complicated for



interested parties to gain access, providing broken links or no links at all. Only 10 percent of the examined schools seemed to have made a comprehensive effort to post grades in an easily accessible manner (Henriksen et al., 2011). To get a more thorough understanding of mechanisms governing online posting of grades, five semi-structured interviews were conducted during June 2011. The recorded interviews were conducted with headmasters of schools, and were transcribed verbatim.

## 5 Discussion and analysis

To revisit the gate-keeping complex, this section presents interview data with headmasters. The analysis presented is driven by Lipsky's framework, distinguishing between three different types of stress that headmasters as street-level bureaucrats have to cope with: a) inadequate resources, b) threat and challenge to authority; c) contradictory or ambiguous job expectations. Excerpts from interviews are presented below to illustrate the tension between the wording of the 2002 Act and the actual day-to-day operations in public schools.

The interviews point to headmasters emphasising that children are prospering and thriving as individuals. They argue that these parameters are of all-encompassing importance for parents. Therefore, Hill's (2003) claim that legislators' work has a shared meaning seems to be less accurate in relation to our study. According to our informants, there is no shared meaning between professionals and legislators/politicians on the benefit of publishing grades. The publishing of grades is seen more as an obsolete activity rather than a service to parents.

*"... it's not deliberate that the test results aren't there and I have enquiries about how the teachers look upon that, well, the teachers have started saying "Well, it's just yet another parameter, and that's it." So I think they don't bother to give it further thought, because the legislation requires it and that's the end of that. And parents' enquiries that go: "Aha!", it's seldom they will say, "We would like our children to attend your school because you rate well", they don't do that. I have had some who have looked up our quality report. The average test results are listed there; it's built into those quality reports. [Middelfart informant]*

Although some might argue that the expectations might not be contradictory, one headmaster argues that the parents are not interested in grades, but in their children's wellbeing.

*In my career as a headmaster, which amounts to ten years, I have found that it's almost exclusively about well-being. You can sit and talk with parents about what matters in school, you can sit and talk about it being about the children not learning anything, but the bottom line is that when they get to the heart of it – what really matters is the well-being of the child. [Mariager informant]*

One informant does however acknowledge that the 2002 Act has had some impact on their practices in relation to publishing of grades online.

*“...we have actually talked about the fact that when we look at the replies from the pupils the teachers’ expectations are sometimes lower than those of the pupils, and we would do good to do something about that and we also need to work on the average test results. The children must do well, and they need to use their energy on that, and that’s it’ [Roskilde informant]*

Another dimension that is not often mentioned in public administration literature, including e-government literature, is competition. Most public sector services are not subject to competition simply because only one agency offers the service. That is, however, not the case in relation to public schools. In larger cities there are usually more schools in a district where the 2002 Act has a different significance. Contrary, in rural districts there is only one school. The quote below illustrates this situation, where there is no competition.

*“No there’s only this school. There’s another primary and lower secondary school 6-7 km away. And a little further in the opposite direction there’s a private school. But it may be a sign of the fact that the average results is high or that the results are good here, and the fact that we cover 97%, and that’s pretty well, actually. Of course, this is also a reflection of the fact that there’s a long way to the neighbouring school. People will find a way to opt for other schools. But it has a lot to do with traditions. I also believe – and this has nothing to do with test scores – but I also think that it is of great importance how the parents refer to and talk of the school. Because we definitely enjoy positive support from the parents and the school enjoys respect in this town, and I think that that is just as important - how the school is talked of and presented. I believe that is much more important than the test results. The fact that we do well regarding the student test results is secondary. [Mariager Informant]*

The quote illustrates that the school has a strong local anchoring which goes beyond competition as a determining factor of parents’ choice of school. They see the school as the hub of the town.

*“Yes, some competition is okay, but it means something in the municipal administration where they look at the average test results, and it irritates me when we don’t score well. But it also annoys me because they only look at precisely the score. They don’t take into account which type of class it might be. ”Wow they got a 4 in average – Halleluja” I would say; compared to some other class from a different place where they have an average of 7.2 they will look bad. But yes, they do ranking lists in the paper, they do that, but it is usually on test results that are two years old. [Espergærde informant]*

The quote suggests that grades online is not only a matter of competition, it is also a matter of attracting a good mix of parents. Children of resourceful parents are more attractive to the school.

Implicitly, this suggests that grades actually have more significance than what headmasters want to admit.

*First of all, there aren't many enquiries for them. That's not to say that the resourceful parents don't see the scores, they actually do. In this neighbourhood, as I said, there is a so-called ghetto area, but some of the most resourceful families also reside in this school district, and they do look at it. And just like we're sitting here talking about school structures, we can say that the resourceful families will move if they think that the educational offering is better somewhere else, but the less privileged won't. Either they can't or they just don't. We have to face that. [Horsens informant]*

The quotes illustrate that schools are complex organizations where publishing of grades is only one of many activities which headmasters have to look after. Publishing of grades to fulfil the 2002 Act on transparency has a low priority. Data indicate that it is partly because headmasters do not see the beneficial effect of publishing grades online and partly because other measures overshadow the intention of the law. Our interviews indicate that headmasters are aware of the direct regulation, but that they also interpret the law in such a way that gate-keeping actually becomes the outcome. Headmasters prefer to have emphasis on more qualitative measures such as wellbeing of pupils and inclusion of all. They do not see the demand from parents as an important parameter.

Parents who are interested in the school focusing more on tests and disciplinary work might, however, take revenge. During our research we observed that the market has stepped in with mechanisms which compensate from the gate-keeping of headmasters. Leading newspapers have done so, and a liberal think tank (CEPOS) has made it part of its business to sell lists with rankings of grades from public schools. It is our assumption that the supply of lists is only relevant if there is a demand; however, we have not pursued information about the actual demand for the lists. This indicates that civil servants who deliberately or accidentally perform gate-keeping in the Age of the Information Society get surpassed by other mechanisms. In other words, they are under pressure not only top-down and bottom-up, but also from third parties in the market.

The following table summarizes the specific type of stress that headmasters as gatekeepers are exposed to in facing the issue of publishing pupils' grades online.

<i>Type of stress</i>	<i>Example</i>
Inadequate resources	Lack of specific IT resources are not mentioned by informants
Threat and challenge to authority	Media and think tanks emphasizing the importance of grade publishing

Contradictory or ambiguous job expectations	Policy makers focusing on transparency vs parents focusing on pupils' wellbeing
	Headmasters' emphasis on qualitative measures vs quantitative measures

## 6 Conclusion

In this study we apply the concept of street-level bureaucracy in a slightly different manner compared to how it is presented by Lipsky. Our case represents a situation where gate-keeping (headmasters' reluctance to post grades online) has subtle or no direct impact on parents, politicians or school board members (who cannot see the grades online). Nevertheless, the case is illustrative because it shows how the introduction of new technologies has led to new mechanisms of control of information or gate-keeping. Our study suggests that Lipsky's three types of stresses are challenged in our study of posting of grades online.

The role of limited resources in the inherent dysfunctionality of bureaucracies is not obvious in the case of the posting of grades online. The posting of grades does not require more (rather less) resources compared to publishing grades through paper-based channels, e.g., the schools' periodical or letters to parents. The threat and challenge to authority is initiated by a third party who does not necessarily have a direct interest in the outcome of gate-keeping. The contradictory or ambiguous job expectations is challenged because the law is very specific but it is not aligned with the view of headmasters' with respect to the significance of grades compared to other measures of children's wellbeing.

Our data from interviews with school headmasters point to the fact that online posting of grades is not viewed as a tool for creating transparency, as intended by the law. It creates transparency of a single parameter of the school. Headmasters, however, do not view this parameter as the primary indicator of the quality of their work. Independent of the motivation for headmasters not providing access to grades online, our study indicates that digital gate-keeping is taking place.

It is possible to observe a large number of schools from outside in the role of the ordinary parent (Henriksen et al. 2011). It is thus easy for parents to compare across schools in the situation where grades are seen as a measure of the quality of the school. Our interview data, however, point to the fact that headmasters expect that parents will evaluate the quality of the school on more intangible measures, e.g., social climate and environment, rather than level of grades. We have not pursued the

bottom-up pressures in the present study, but we have observed that the market has stepped in to compensate for the reluctance of public schools to publish grades online. Our study suggests that Lipsky's (1980) ideas can be extended when applied in the Age of the Information Society in areas where the Internet plays a central role. In the case of grades online, the Internet is the carrier of information. In our case, street-level bureaucrats are not the only ones to provide content to the Internet. Social media and suppliers of information online take the lead if gate-keeping is carried out by the street-level bureaucrats.

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