Increasing Legislative Transparency Through a Congressional Versioning System

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Introduction

Requiring public author attribution during the legislative drafting and markup process could greatly increase governmental transparency. A Congressional Versioning System, which enables citizens to track who adds text to legislation and when, would be instrumental in improving the quality of the final law.

As Congress rushed to pass the Emergency Economic Stabilization Act of 2008, the initial three-page proposal ballooned to a final 110-page draft. This behemoth was filled with technical solutions to the financial crisis, but also a subtle change to the excise tax imposed on wooden bow and arrow sets for children, an extension for tax reductions on rum from Puerto Rico and the Virgin Islands, and provisions for the film industry. The section on wooden arrow shafts was previously introduced separately in the Senate by the delegation from Oregon, and the other sections were lifted verbatim from previous efforts to extend the Alternative Minimum Tax. These sections do not relate to the bill as a whole, but are examples of irrelevant insertions they appear all too frequently in legislation today. While careful manual tracking can reveal the author and intended beneficiaries of a particular earmark, an automated system would significantly increase transparency.

Bills are introduced by a single author and may have multiple co-sponsors, but there is currently no way of tracking who inserts particular provisions into legislation.

¹ 110-HR.1424 as enrolled, Division C, §§ 308,502,503 http://thomas.loc.gov/home/gpoxmlc110/h1424 enr.xml

² S3055. "A bill to amend the Internal Revenue Code of 1986 to modify the rate of the excise tax on certain wooden arrows designed for use by children." Introduced March 22, 2008. http://www.opencongress.org/bill/110-s3055/show

Amendments offered on the floor are public, but changes made during the markup process are less obvious, as transcripts or minutes from markup committee hearings are often not released.

During their 2008 campaigns, both John McCain and Barack Obama promised to end earmarks and "pork barrel politics." While this is an admirable goal, there is a broader issue of the quality and authorship of our laws. Too often the public cannot answer the most basic question about a piece of text: who wrote this? Knowledge of authorship is fundamental to understanding context. This understanding can help connect intentions with actors and link trails of financial incentives with legislative kickbacks. The possibility of negative press threatened by greater transparency and accountability might cause legislators to consider pending bills more carefully.

A famous quote, often misattributed to German Chancellor Otto von Bismarck, states that "Laws, like sausages, cease to inspire respect in proportion as we know how they are made." But technology can improve both our knowledge and our respect for both processes, revealing secret spices as well as unappetizing gristle. If informed consumers do not like what they see, they can make a coherent demand for change. In this modern age, we are now able "to make the repetitive tasks of constant vigilance more efficient and effective" with technology and the internet. Knowing who writes our laws is a prerequisite to truly transparent democracy.

³ John Godfrey Saxe. The Daily Cleveland Herald. Mar. 29, 1869. http://www.nytimes.com/2008/07/21/magazine/27wwwl-guestsafire-t.html

⁴ Greg Elin. Chief Data Architect. Sunlight Labs. "Re: Open House thoughts, Open Senate direction", OpenHouse Discussion Thread, December 4, 2008.

Historical Basis

American representative democracy was always intended to be publicly reviewable. The Constitution requires that Congress "keep a journal of its proceedings, and from time to time publish the same." The first method of making these proceedings available to the public was the Congressional Record. Published daily on Capitol Hill since 1873, it is mainly used by legislators, their staff, and true policy wonks. It is available online from 1989 to the present and in paper form at Federal depository libraries. The Annals of Congress and the Debates of Congress from 1774-1875 are available online through the Library of Congress? and are an invaluable historical tool.

In 1995, the leadership of the 104th Congress directed the Library of Congress to make more information about their deliberations available online. This resulted in the THOMAS system,⁸ which allows users to search by bill text from 1973 to the present, although current actions are often delayed. THOMAS provides only the final House, Senate and joint committee versions, but not proposed drafts, amendments, or changes made during markup. The user interface does not appear to have been updated since its creation, and is not easy to use for an average citizen.

⁵ US Constitution, article V, §1.

⁶ Government Printing Office, "Congressional Record", http://www.gpoaccess.gov/crecord/index.html

⁷ American Memory Collection, "A Century of Lawmaking for a New Nation", http://memory.loc.gov/ammem/amlaw/

⁸ THOMAS, Library of Congress, http://thomas.loc.gov

Current Process

Drafting

As anyone who watched Schoolhouse Rock knows, going from idea to law can be a long journey.⁹ But despite the ideal process taught in civics class, legislators seldom personally write bills. Exceptions are rare and widely noted. Instead, anonymous lawyers in the House and Senate Offices of Legislative Counsel actually write most of the text that ends up becoming law.

The creation of a nonpartisan drafting organization is a relatively recent phenomenon, started in 1919 but only fully completed in the 1990's. The 35 attorneys and 15 support staff are non-partisan and hold expertise in particular areas of the law. 10 Removing the writing of legislation from the legislators themselves and putting it in the hands of professionals improved the legal structure of laws and their reliable interpretation by the judicial system. This was accompanied by an increase in the free time of legislators to "harangue each other in ill-informed debate and extort campaign contributions from lobbyists who naively believe them to be the authors of the legislation that appeared under their names." 11 While the author of that article is attempting humor, a cynical observer might deem his observation quite correct.

⁹ Schoolhouse Rock! "I'm Just a Bill," American Broadcasting Corporation, 1975.

¹⁰ Katherine Gullickson, "Drafting Legislation Using XML in the U.S. House of Representatives," Presentation to the World eParliament Conference, 25 November 2008.

¹¹ M Douglass Bellis, "Drafting in the U.S. Congress," Statute Law Review, Vol 22, No 1, p39, 2001.

Committee Markup

After a bill is introduced, it is referred to a committee for markup. Because floor amendments are strictly regulated by the leadership, this is where the "real work of Congress takes place." While these meetings are technically public, they are often not broadcast on CSPAN, the rooms are filled to capacity, and minutes are rarely posted online. Even if a list of amendments given in markup is made available, it can be "maddening to a researcher as they are not easy to figure out at face value." When "before and after" versions are available, for many bills this consists of an *en bloc* list of amendments with little to no context, decipherable only to the serious researcher.

For example, the markup report for the Emergency Economic Stabilization Act consisted of a single amendment, replacing the entirety of a previous bill regarding preventing genetic discrimination in insurance policies with the massive text of the proposed "bailout bill." While this particular piece of legislation was passed in great haste, and this replacement of bill text was made to get the emergency bill onto the floor as quickly as possible, the speed of execution made mistakes and egregious inclusions easy to hide. Similar issues arose with the passage of the USA Patriot Act in 2001, where a section regarding telemarketing abuse by fraudulent charitable organizations was attached to the 131-page bill. 16

¹² Jenks, Paul. "CongressLine: The Committee Markup." Law Library Resource Exchange. December 23, 2007. Available online at http://www.llrx.com/congress/committeemarkup.htm

¹³ Jenks, 2007.

¹⁴ Amy Belasco, Congressional Research Service, email interview November 2008.

¹⁵ House Rules Committee. Markup on HR1424. http://www.rules.house.gov/110/text/110 hr4221 text.pdf

¹⁶ 107.HR3162 § 1011, "Crimes Against Charitable Americans"

Some committees regularly have meetings that are technically open to the public, but are held in sections of the Capitol building that are publicly inaccessible. Even access to the paper record is highly variable; "some committees provide copies of amendments to anyone who attends a markup; others restrict access so tightly that no paper is circulated except on the dais were the members sit." The subscription-only publication Congressional Quarterly publishes daily updates on pending legislation, gathered by staff paid to sit in each public meeting. But even large institutions like MIT only purchase weekly summaries, and cannot follow committee markup sessions.

Despite the rhetoric of being the "people's house," much of Congress' work remains hidden.

Software Tools

The legislative process is steeped in history, and change can come at an slow pace. However, in 1997 the Clerk of the House recommended a conversion from a proprietary and antiquated DOS-based authoring system (Zywrite) to a more open, eXtensible Markup Language (XML) based system. This transition was finalized in 2000, and XML was adopted as the primary standard for the exchange of legislative documents between the House, Senate, and other legislative branch agencies.¹⁸

The primary advantage of XML over other formats is that it separates the content of a document from code that controls how it is displayed. For example, a heading can be indicated by code like <header>Reports</header>, with a separate file to

¹⁷ Tim Starks, "A Dome Under Lock and Key," Congressional Quarterly, Weekly Cover Story, November 30, 2008. http://www.cqpolitics.com/wmspage.cfm?docID=weeklyreport-000002992032

¹⁸ "Drafting Legislation Using XML at the U.S. House of Representatives." http://xml.house.gov/drafting.htm

indicate that headings should be sixteen-point bold text when printed. This allows drafters to "minimizes attention to the typesetting product, [and] maximize consideration of the legislative language itself." Because legislation is divided into a hierarchy of sections and subsections, it is easy to echo this structure with nested tags, making later search and retrieval easy.

Legislation can be composed in any XML editor, although Just Systems' XMetaL was licensed for use by Congress and includes a "What You See Is What You Get" (WYSIWYG) mode to allow drafting without requiring knowledge of the specific XML tags. Additionally, support is included for "just in time" knowledge of the US Code when citing a particular section in a new bill.²⁰ This feature is also available when viewing the output file with styling transformations (XSLT).

While the technical tools are improving, the process still lags behind best practices. According to an interview with a senior attorney in the House Office of the Legislative Counsel, it was "excruciating to convert from Zywrite to XMetaL." Because of legacy processes, the hard copy of legislation is the official document and Adobe PDF files are "the coin of the realm." Members pass drafts to each other over email or a shared drive, with all the attendant concerns about confidentiality and security. The central server is password protected, but there is no feature to track changes.²¹ Attempts have been made to initiate a document management system for central organization of legislative drafts, but results have been unsatisfactory. With 140 offices

¹⁹ ibid

²⁰ ibid

²¹ Lawrence Johnston, Senior Counsel, House Office of Legislative Counsel, telephone interview with author, November 20, 2008.

in the Senate (one for each Senator and committee), "the idea of centralizing anything is difficult."22

The Senate has a rudimentary change tracking system, but it is layered on top of old processes and is not integrated into the writing application. XML files must be converted to "locator codes" for layout by the Government Printing Office. These files can be exported in the standard Rich Text Format (RTF), which can be compared with the Lexis-Nexis CompareWrite application.²³ However, because the draft XML files are not made public, this avenue only available to the Senate Office of Legislative Counsel, not the citizenry at large. Draft files are not made public routinely because the paper version on the chamber floor is the document of record.

²² Misenhimer, 2008.

²³ Thom Cole, Assistant Administrator, Senate Office of Legislative Counsel, telephone interview with author, December 9, 2008.

Non-governmental Projects

While Congress has been slow to adopt new technical systems to increase transparency, non-governmental organizations have charged ahead, generating impressive results. However, no private project can aggregate and display data that is not publicly available.

The Sunlight Foundation, founded by internet luminaries such as Craig Newmark, Jimmy Wales and Lawrence Lessig, aims to "to use the power of the Internet to shine a light on the interplay of money, lobbying, influence and government in Washington." ²⁴ They have sponsored numerous projects to collect citizen input on bills (PublicMarkup.org), provide a centralized interface to each legislator, committee and bill on the floor (OpenCongress.org), and lets users link sponsors of appropriations to their recipients (EarmarkWatch.org).

A separate project called <u>GovTrack.us</u> aims to build a relational database linking each member of congress to the bills they have sponsored or co-sponsored. Its strength lies in the enormous amount of data it aggregates from official sites and properly formats and indexes. It builds upon a short-lived project called Government Information Awareness, an MIT Media Lab project by Ryan McKinley, created in response to DARPA's Total Information Awareness program.²⁵ The database of legislators was initially seeded with data gleaned from closed captioning on CSPAN, a network so

²⁴ "Funding for the Sunlight Foundation." http://www.sunlightfoundation.com/funding/

²⁵ GovTrack Credits. http://www.govtrack.us/credits.xpd

boring only a computer could watch it.²⁶ Because of the strength of its data,

GovTrack.us is used as the back-end for several of the Sunshine Foundation projects.

While each of these private projects serves a valuable function, they are not as effective as changing the way Congress documents and publicizes its own process. None of these projects can go beyond what is currently exposed by Congress, on the floor or on the internet. While GovTrack.us does an excellent job at scraping and parsing data, its authorship information is limited by what Congress makes available. This level of detail is "probably not [currently] knowable unless you're either sitting in the room during a markup conference, or you have a buddy in the Capitol." ²⁷ For this reason, new reforms are necessary.

²⁶ Interview with Chris Csikszentmihályi, faculty advisor for Government Information Awareness. November 6, 2008.

²⁷ Josh Tauberer. Lead developer of GovTrack.us. Email interview with author. November 4, 2008.

Proposal

Because we don't all have "a buddy in the Capitol," I propose a system to automatically track authorship. This problem has been largely solved in the world of collaborative software development, and methods that have been proven to work there could be ported to the legislative process.

Large scale software development and the legislative process share certain striking similarities. Both deal with large complex sets of text, where multiple authors work simultaneously to make improvements. Crucial to the collaborative process are the abilities to track changes, assign blame when things break, and revise openly. Software developers use one of several versioning programs, but the principle is generally the same: authorized users can check out the code, make changes independently, and check in their revisions. A process intelligently handles conflicting changes, notifying the relevant users and administrators.

Because XML legislation is simply text divorced from its layout, it is perfectly suited to the use of a similar versioning system. While the currently available programs are not ideal to the legislative process, a subset of their tools would be. First, it is clear that only authorized users should be allowed to check in changes to proposed legislation. These users should only be members of Congress and perhaps their senior staff and legislative counsel. The rationale for keeping this power constrained is both legal and political. Because members are elected by the public to represent them in Congress, no unelected person should be allowed to insert language in bills. By

requiring strict authorization, we can maintain our faith in the primacy of the legislators, not lobbyists, as authors of our laws.

Second, a publicly available database should link each line of text in each bill to its author. Attributable authorship is crucial in collaborative software development, and it should be equally emphasized in legislative drafting. This will allow citizens to track what impact their member of Congress is having on the US Code, and also will allow retroactive praise or blame to be directed at the responsible member for sections of interest.

This authorship data should be included in the XML versions of bills posted on THOMAS. Even if this data is not exposed in that interface, merely making it available would allow the citizen-run sites to step in and display it appropriately. Because congressional websites are rarely up to current technical trends, it is perhaps optimistic to presume that they would create tools on the cutting edge of information display. But as the innovative power of the internet and current non-governmental projects have shown, freely usable data can be remixed and "mashed up" to create tools and displays the original creators had never considered. To paraphrase that icon of American cinema *Field of Dreams*: Open it, and they will come.

Benefits

Transparency advocacy groups often cite a "fundamental belief that increased transparency will improve the conduct of Congress itself and the public's confidence in government."²⁸

As John McCain often said during his 2008 campaign, the best way to defeat earmarks is to expose their authors. He repeatedly stated that he would publish a list of particularly "pork friendly" legislators and that we would "know their names." Shame and the threat of voter retribution can be a powerful force in the political world. Increasing the transparency of the legislative writing process would help to harness this force toward useful ends.

There is already evidence that transparency can reduce the number of earmarks requested. During the closed markup of the 2007 Defense Authorization bill, Carl Levin (D-MI), Chair of the Armed Services Committee, attempted to stop the release of a long list of earmarks in the bill. Had he known that this obstruction would eventually become public, he might not have been so tenacious in his attempt to block disclosure.³⁰

Increased transparency could also help improve basic respect for government, because "the long-term cost [of secrecy] is that it undermines the integrity of the process. And it generates cynicism on the part of members and on the part of the public.

²⁸ Sunlight Foundation. "About Us." http://www.sunlightfoundation.com/about/

²⁹ John McCain. Acceptance Speech at the Republican National Convention. September 4, 2008. http://elections.nytimes.com/2008/president/conventions/videos/transcripts/20080904_MCCAIN_SPEECH.html

³⁰ Starks, 2008.

People start to feel that the process is rigged by those in power."³¹ Providing authorship information would help cast light into the shadows of committee markups, and could improve the quality of the final legislation by revealing particularly egregious errors, and giving citizen anger a focal point for electoral change.

Of course, increased transparency does not always serve to improve government. Despite widespread ridicule for the Gravina Island Bridge (the "Bridge to Nowhere"), Ted Stevens (R-AK) came very close to maintaining his Senate seat in 2008, failing only because of his conviction of unrelated felony corruption. An amendment to strip the funding from the 2005 Transportation Omnibus spending bill sponsored by Tom Coburn (R-OK) was defeated by a large bipartisan majority.³² Eightytwo senators did not want to defy Stevens in his powerful role as Chairman of the Senate Appropriations Committee. Any increase in information on legislative authorship must be matched by an increase in citizen interest in good governance and informed pressure on the relevant members of Congress.

Beyond the currently salient benefits of reducing wasteful spending, exposing authorship information would be an invaluable tool for historians and citizen researchers. The ability to learn exactly what a particular member of Congress contributed to the annals of law would provide an insight into their talents as an author, but might also provide ammunition to their political enemies. However, an attributable list of legislative accomplishments would surely be a greater resource than burden than in future elections.

³¹ Starks, 2008. Quoting Steven Aftergood, Federation of American Scientists.

³² US Senate Roll Call Vote on S.Amdt.2165 to HR.3058. October 20, 2005. http://www.senate.gov/legislative/LIS/roll_call_lists/roll_call_vote_cfm.cfm?congress=109&session=1&vote=00262

Obstacles

Technical

The proposed system is feasible in the current Congressional infrastructure, requiring only minor changes. Both the House and Senate would have to adopt an authenticated version control system for their pending bills. Many such systems exist and could be implemented easily. Additionally, the current XML Document Type Definition (DTD) would need to be amended to include authorship information for each block of text in a bill. There is already a "section-author" field for each section, but it is currently an optional value.³³ Making this field mandatory and interfacing XMetaL to automatically record the legislator who is currently logged in to the authentication system would be sufficient. However, making this subtle change would probably require action by the chamber clerks or Congress itself. A centralized system "would have been done years ago if it was strictly a technical issue."³⁴

Political

Greater than the technical issues is the lack of a defined domestic interest group for greater government transparency. Because increasing accountability has the possibility to be politically harmful to all members of Congress, and the benefits are diffused generally among all politically interested citizens, no is currently championing these reforms. A former Congressional aide noted that "the challenge to overcome is that you're really asking for folks to change the culture, process and tools they use

³³ United States Congress Data Dictionary of Legislative Documents. Element: Section. http://xml.house.gov/section.html

³⁴ Misenhimer, 2008.

everyday and are comfortable with - all in the name of transparency, which is somewhat of an abstraction."35

Additionally, there are entrenched interests in keeping politics opaque.

Thousands of lobbyists spend huge amounts of money to influence the actions of members of Congress. In 2007, 15,498 lobbyists were registered to work on the Hill, spending a total of \$2.83 billion. Attempts to change this system will not be easy, and may serve only to redirect these vast resources to other undemocratic means. In particular the 1976 Sunshine Act required that "every portion of every meeting of an agency shall be open to public observation," That the unintended consequence of enabling lobbyists to gauge the effectiveness of their actions.

Making each line of legislation attributable to an author might also have the same result. A new layer of transparency could just push deal-making to a different corner of the process. The public records of a full revision control system, creating "new, broad-sweeping liabilities for the individuals involved... [would cause] bureaucrats [to] respond by evading the process entirely."³⁹

However, I believe that the greater cause of increasing transparency and accountability outweighs the possibility of further empowering lobbyists. Furthermore,

³⁵ Ted Bongiovanni. Comment on Tim Oreilly's "Put change.gov Under Revision Control!". December 1, 2008. http://radar.oreilly.com/2008/11/change-gov-revision-control.html

³⁶ Center for Responsive Politics. OpenSecrets Lobbying Database. http://www.opensecrets.org/lobbyists/ Accessed December 9, 2008.

³⁷ US Code, Title V, §552(b)

³⁸ Clay Shirky, "Re: Open House thoughts, Open Senate direction", OpenHouse Discussion Thread, November 23, 2008.

³⁹ Tom Lord, Comment on Tim Oreilly's "Put change gov Under Revision Control!". November 30, 2008.

there are simply more of "us" than there are of "them," and putting more eyes on the process will only serve to improve it.

Administrative

There also may be resistance from Congressional administrators, who "are often wary of taking on new departmental responsibilities if they are not accompanied by statutory justification or appropriations." ⁴⁰ A strict authorship requirement could place a large burden on the House and Senate Offices of Legislative Counsel, as they are forced to always attribute their work it to a particular legislator. In conversations with staff attorneys, it was made clear that being required to complete extra documentation would not be appreciated, and that "the important thing is getting words on paper and getting it to members."⁴¹

Because legislators individually task counsel to draft legislation, their communication is covered by attorney-client privilege.⁴² Making advice given on legal matters during the drafting process publicly available would either require a blanket waiver of the confidentiality of any advice given, or require Senators to disclose which attorney they worked with, but not the content of their communications.

A well designed system would place the burden of attribution not on the hapless lawyer who writes in anonymity, but rather the legislator who tasked him with the request for the law. Because these lawyers are charged with working impartially, their

⁴⁰ Sternstein, Aliya. "Lawmakers favor outside access to legislative data." GovernmentExecutive.com Technology Daily. January 23, 2008. http://www.govexec.com/story_page.cfm?filepath=/dailyfed/0108/012308tdpm1.htm

⁴¹ Johnston, 2008.

⁴² Marsha Misenhimer, Director of Legislative Information Systems Project Office, Senate Secretary's Office, telephone interview with author, December 9, 2008.

"responsibility is to reflect the ideas of Members of Congress accurately in legislative language," 43 and it is not unreasonable to attribute text they write to the member of Congress who actually inserts it into a bill.

⁴³ Strokoff, Sandra. "How Our Laws Are Made: A Ghost Writer's View." http://www.house.gov/legcoun/strokoff.shtml Accessed November 20, 2008.

Implementation

Technical

I have included an XML version of section 503 of the Emergency Economic Stabilization Act of 2008 which includes authorship identification, with modifications noted in **bold**.

```
<section id="H92B2BB6CB7EB4899AD827040920315AC" section-type="subsequent-</pre>
section" section-author="300100"> <enum>503.</enum> <header>Exemption from
excise tax for certain wooden arrows designed for use by children</header>
<subsection id="HDD9C1780A64D4FE3A9FC7235E95E09E6">
<enum>(a)</enum> <header>In general</header> <text display-inline="yes-</pre>
display-inline">Paragraph (2) of <external-xref legal-doc="usc" parsable-
cite="usc/26/4161">section 4161(b)</external-xref> is amended by
redesignating subparagraph (B) as subparagraph (C) and by inserting after
subparagraph (A) the following new subparagraph:</text>
<quoted-block display-inline="no-display-inline"
id="H377916E3B5DA4C969ECA78132768067D" style="OLC">
<subparagraph id="HBBAEC65CFC7F4726AAD8CC7536F3B3A5"><enum>(B)/
enum><header>Exemption for certain wooden arrow shafts</header>
<text>Subparagraph (A) shall not apply to any shaft consisting of all natural
wood with no laminations or artificial means of enhancing the spine of such
shaft (whether sold separately or incorporated as part of a finished or
unfinished product) of a type used in the manufacture of any arrow which
after its assembly-</text>
<clause id="H0C606526F55140C180F03E61E5F1BC"><enum>(i)</enum><text>measures
<fraction>5/16</fraction> of an inch or less in diameter, and</text></clause>
<clause id="HC96F1258BAEB4AA4AE03E9C05D70024"><enum>(ii)</enum><text>is not
suitable for use with a bow described in paragraph (1)(A).</text></clause></
subparagraph><after-quoted-block>.</after-quoted-block></quoted-block></
subsection>
<subsection commented="no" display-inline="no-display-inline"</pre>
id="H5A02C1F7BFA446C800751DD312B6BCD"><enum>(b)</enum><header>Effective
date</header><text>The amendments made by this section shall apply to shafts
first sold after the date of enactment of this Act.</text></subsection></
section>
```

The section-author value refers to a unique identifier for each Member of Congress, defined by the GovTrack.us RDF database. Here the number 300100 refers to Senator Ron Wyden (D-OR), who sponsored S.3055 a bill with identical text to this section. Note that each section already includes a unique identifier, for ease of cross referencing. Adding a second unique identifier to each section is not burdensome.

Political

While this proposal cannot be easily implemented by a lone programmer, it is not naive to advocate the cause. President-elect Barack Obama sponsored a similar bill in his term in the Senate 44, and his campaign literature included a pledge to "ensure that the public has the ability to review legislation" before signing. 45 Because of his relatively short experience in the Senate, an Obama administration might be more eager to push for reforms to the legislative process than someone who had years to develop a long record. While his bill requiring the federal funding database to be XML driven and publicly searchable did not make it out of committee, it shows the President-Elect's understanding of and commitment to a better process. The bill was also co-sponsored by a bipartisan slate of Senators, including McCain (R-AZ) and Coburn (R-OK). Building a coalition committed to improving the transparency of the legislative process will not be easy, but there are Senators already dedicated to the cause.

⁴⁴ S. 3077, Strengthening Transparency and Accountability in Federal Spending Act of 2008. http://www.govtrack.us/congress/bill.xpd?bill=s110-3077

⁴⁵ Obama for America, "Restoring Trust in Government and Improving Transparency", http://www.barackobama.com/pdf/TakingBackOurGovernmentBackFinalFactSheet.pdf. Accessed September 10, 2008.

Conclusion

Writing legislation is a complex process, but new attribution requirements can help increase transparency and improve final quality. As in collaborative software development, knowing who added text and when is critical to ensuring full and accurate accountability. While not difficult technically, political and administrative obstacles stand in the way. However, a growing number of internet-enabled citizens are clamoring for greater knowledge of what their legislators are doing. The Congressional Versioning System will help continue the progress toward radical transparency.