NTTG.BIZ OBSERVATIONS OF USER INTERACTIONS

This document describes the insights our team has learned about http://nttg.biz to date through usability interviews and observations of current user interactions with the website.

We have interviewed two website administrators, one NTTG executive, and one NTTG funder. We have also briefly researched the functional capabilities of a user type not interviewed, the private access user.

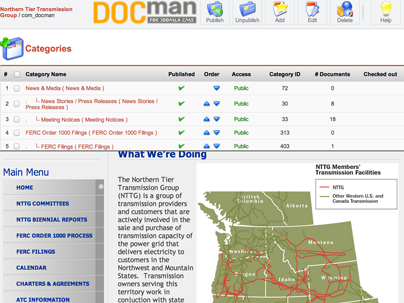
# User Types

There are three different types of users (plus some special cases) accessing the website: administrative users, private access users, and public users. Administrative users handle the day to day content maintenance of the site. Public users have access to information that must be legally made available (meeting notes, contact information, and a list of upcoming meetings). Private access users have access to all of the public content, plus private content.

## Administrative Users

There are very few regular administrative users of the website. These administrative users are frustrated with the difficulties posed by a counter intuitive interface. Often, they need to use multiple browser windows to capture the relevant structural and hierarchical information in order to make updates to the site. In order to create hyperlinks that reference the correct URI, administrative users must use multiple browser windows and a pop-up dialog.

The admin taxonomy does not map well to the administrative users’ expectations. For example, the admin interface contains a location for “Files” and a location for “Documents,” but the difference between the two types are not clear.



The relationship between the front end and the back end is hidden by numerous lists, folders, and specialized names. The confusion that this interface causes may result in slower turnaround when implementing content, architecture, and event updates.

Navigation of the administrative interface is an entirely different experience than navigation of the website front end.

Rather than relying on familiarity with website administration and maintenance to keep the website up and running, administrators must rely on an extensive collection of self-created, locally saved support documents. Each administrator may have a different set of documentation or documentation with differing instructions.

## Private Access Users

Note: we have not interviewed any private access users. However, we have briefly researched the capabilities of this user type.

Registering for the distribution list creates a new Private Access User account. There are currently 18258 Private Access User accounts. However, all of the administrative users we interviewed assume these accounts are spam.

While private access users could feasibly access content that was not available to the general public, no such content is currently being added to the site. As a result, private access users have access to no more content than public users.

According to the text on NTTG’s website, the Private access users *should* be added to the distribution list and receiving updates as a result. However, this is not currently happening.

Becoming a Private Access User does enable one feature not available to Public Users: the ability to upload documents to nttg.biz.

### How to Become a Private Access User

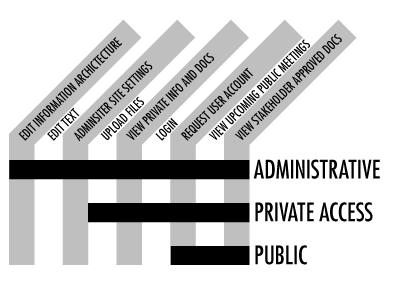
Registration on the site allows visitors to nttg.biz to create their own user account. All they have to do is confirm their account through an automated email notice.

### How to Upload a Document as a Private Access User

Once registered, users can upload files (via **Documents** > **Submit File**).

## Public Users

Public users only have access to content that is published for availability on the website front end.



Relative level of access for the identified user types.

Public Users can also be Administrative Users or Private Access Users, depending on whether they are logged in to nttg.biz or not. Funders, stakeholders, and the general public will all typically access nttg.biz as a public user.

These user types use nttg.biz to gain access to meetings (meetings they are attending, as well as meetings that they are leading), to look for documents, and to add content to the site.

## Notable Cross-Type Users

There are a few notable users that fall into two or more of the user type categories.

### Other NTTG Staff

While some of the NTTG staff are administrative users, not all are. Despite restricted access (at the user permissions level), the NTTG staff has significant authority to influence the layout, design, information structure, and content of nttg.biz. Without a position at NTTG, these staff members would be limited to the same influence that a Public Access User holds.

To initiate updates, non-administrative users at NTTG communicate directly with the administrative users (via phone calls or email) to direct the administrators through the changes step-by-step.

# User Registration

Registering for the distribution list creates a new user account. These users are the **Private Access Users**. NTTG does not use any of these registrations to distribute information, although the text on the website would indicate otherwise:

Registering with nttg.biz will add the users to the NTTG distribution list, giving them up-to-date information on public stakeholder meetings.

Site administrators don’t have a way to validate email addresses, don’t curate the list, or move any of the user data into a CRM service. No newsletters are distributed to registered users.

Instead, in order to *actually* get access to newsletter updates, interested parties need to contact NTTG staff directly and request to be added to the list.

## User Administration

Administrative users are the only people with recognized user accounts. All other registered users are assumed to be spam.

There are currently 18258 registered users. These registered users fit our definition of the **Private Access Users**, although none are currently seeing any benefit from being a registered user (outside of an ability to upload files to nttg.biz).

# Technology

Of the users we interviewed, only a small selection of browsers were used to access nttg.biz:

* Microsoft Internet Explorer 9 (IE9)
* Google Chrome

The users observed accessing nttg.biz with IE9 were the administrative users and one public access user. All other users used Chrome.

Administrative users did not prefer IE to Chrome; instead, their reason for using IE was purely functional: the nttg.biz administration interface is not compatible with modern browsers. When using modern browsers with the administration interface, the creation, update, and removal of content fails. Edits through the front end interface are not successful in Chrome either – popups that are necessary for saving changes never load.

Outside of interaction with the NTTG website, administrative users use Chrome as their main browser.

The limited nttg.biz browser compatibility limits the software and operating systems that the administrators must have access to in order to maintain the website. It could also result in an inability to update the site through a graphical user interface in the future.

# Content Types

There are seven different types of content currently being added to the website: images, text, Adobe Acrobat files, Microsoft Word files, Microsoft Excel files, Microsoft PowerPoint files, and datetime information.

The majority of the content on the website is downloadable PDFs. There is a small collection of downloadable DOCXs and XSLXs as well. It is important that the majority of the content is PDF so that it cannot be easily changed by end users and can be saved locally and printed out.

Downloading is important for maintaining open access.

## Images

Only two images are currently used on the website. One is the header image (bus\_header.jpg) and the other is a map of NTTG’s coverage area (nttg\_map\_final\_xxlarge.jpg). The coverage map is the only image that is ever updated. It is an inline image placed within a [WYSIWYG](http://en.wikipedia.org/wiki/WYSIWYG) text input box.

This image is updated slightly less often than the text, every two years or more.

## Text

A large portion of the content on the website is text. The text is updated by administrative users. They first log in through the front end and then perform their edits within WYSIWYG text boxes and single line text boxes.

This data is updated “maybe once every two years.”

## Adobe Acrobat Files

Adobe Acrobat files (files with the extention PDF) are the most frequently updated content. These are meeting notes and proposals. Before being made available to public users, the administrative users must first receive sign-off from stakeholders. In some cases stakeholders may have private access accounts, but these accounts do not grant them early access to content.

### Uploading Acrobat Files

Correctly uploading, storing, and including these files on the website is a difficult, time consuming process. However, this is an important aspect of nttg.biz; the website serves primarily as a document repository to keep NTTG (and the service providers) in compliance with FERC regulations.



Publicly available content includes items like approved biennial reports. Content that has not been approved for public consumption is not available to public users.

The current process for uploading meeting notes is as follows:

1. While the meeting occurs a note taker takes notes. In most cases the note taker is an administrative user of the website.
2. The note taker saves the notes in docx format and sends the notes out to all of the stakeholders.
3. If a stakeholder has changes to make they will either:
   1. Turn on track changes, make edits to the document, save the document as a docx, and email the file back to the note taker, or
   2. Raise their concerns at the next meeting.
4. At the next meeting, all stakeholders will be asked if they have any objections to making the notes public.
5. Until a quorum is reached with no objections, the notes will remain private.
6. When a quorum is reached with no objections, the administrative user will convert the notes to a pdf and upload them to the website via the DOCMAN feature.
   1. The files need to be uploaded into the proper location of DOCMAN. Figuring out the proper location can be a time consuming process involving multiple browser windows (at least one for the admin interface and at least one to reference the front end display structure) and hunting through deeply nested menus.

* This approach to content organization means that a new category is created for each committee meeting.

The process for uploading proposals is very similar to the process of uploading meeting notes, with one difference: there is no meeting at which to take notes, the proposals come from stakeholders. The stakeholders, funders, and committee chairs must email the content to NTTG in order to get it up on the site.

It is unclear how much space these files (or the website for that matter) take up. Some error codes indicate that it may take up more than 128mb. The total size of the website is currently at least 2.1gb.

By distributing the majority of the content on nttg.biz as PDF files, NTTG is attempting to make it more difficult to be changed by end users. This also allows the content to be saved locally and printed out.

Since no visitor analytics are currently being captured, we do not know how much traffic this portion of the website receives monthly.

### Nesting Limitations

As part of the process for adding text content to introduce and provide context to Adobe Acrobat files, the website administrator creates a **Content Item** within a **Category**. The Content Item is the equivalent of page content, while a Category is the equivalent of folder structure. As a result of this relationship, the page content of a Content Item is unable to nest additional Categories or Content Items further within it.

In other words, the admin is unable to nest content items within content items. Instead, the nesting has to be faked through redirects to items stored in the Recently Posted list.

### Using Acrobat Files

Funders and stakeholders will often download the agenda document associated with meetings prior to the meeting. They’ll use the agenda document to refer to during the meeting, and access the meeting materials by following the **Link to Meeting Materials** hyperlink in the agenda document.

Sometimes, users will print out the agenda document (especially if they are traveling at the time of the meeting).

## Microsoft Word, Excel, and PowerPoint

The Microsoft Word and Excel files are used by stakeholders as forms to be filled out. Filled out forms are submitted by emailing them to NTTG.

Microsoft PowerPoint files are used by stakeholders for meeting presentations.

## Datetime

An important element of the website is the inclusion of dates and times of upcoming public meetings. Directions about how to access these meetings must be made available to the public by law.

NTTG also holds private meetings. For private meetings, meeting subject, date, time, attendees, and access information are not added to the website. This information is communicated privately between the relevant stakeholders.

### Adding Stakeholder Meetings

The website administrators have to run through an elaborate process of copying and pasting existing text to keep the formatting for each meeting the same. The admin then edits the hyperlink and the content in the copied text.

# Navigating the Site

All interviewed users demonstrate difficulty in navigating nttg.biz. Even users who have been instrumental in developing the organization of the website spend time hunting for content in a different place than where it is actually located.

While there are multiple ways to make another pass at finding the info the user is looking for, few users made use of all options before giving up. Fewer still were able to successfully locate the information they sought using these alternate methods.

Often, the information users are looking for is nested several levels deep. For example, locating the final draft of the 2012-2013 NTTG Cost Allocation report can take six clicks to access:

1. Click on **NTTG Committees** in the main menu.
2. Scroll down to the links within the **Cost Allocation** section and click The **FERC Order 890 Cost Allocation Process** link.
3. Click on the **Cost Allocation Process 2012-2013** category.
4. Click on the **2012-2013 Cost Allocation Report Development**.
5. Click on the **2012-2013 NTTG Cost Allocation Report Final** link to initiate downloading a PDF.
6. Click on the downloaded PDF file to open it and view the contents.

## Observed Methods for Additional Attempts to Locate Content

We observed four different methods employed to attempt to locate content after not finding it at the expected location.

It is worth noting that none of our users used the **[ Back ]** link at the bottom of any of the nttg.biz pages or the **Site Map** for navigation.

### Breadcrumbs



Breadcrumbs on nttg.biz reflect the nested folder organization of available files, not the path traveled to arrive at the present location.

Breadcrumb navigation was the least used method of observed attempts at locating content. The breadcrumb navigation allows a user to navigate one or more levels up the folder tree from the user’s present location.

Sole use of the breadcrumb navigation rarely directly resulted in successfully locating content.

### Main Menu

The main menu was the most used method for both first and second attempts at locating content. Use of the main menu after the first attempt indicated a complete restart in locating content.

### Documents

**Documents** is a navigation option within the main menu. It differs from the other navigation options in the main menu in that its structure directly relates to the organization of the folders and files on the site itself.

Browsing through the Documents section was the most successful approach for our users in locating content.

#### News & Media

Within Documents is a collection of news and media documents. These documents were displayed on nttg.biz for a short period of time, but their presence elicited a lot of concern from the funders. The funders felt that the attention NTTG received as a result of the prominent presence of the news and media documents opened them up to legal issues.

Since then, **News & Media** documents have been depricated (no content has been added to this section since 2010), but the content remains in the Documents section.

### Site Search

Site search was rarely used.

Currently, search only allows queries that are 20 characters long or less. This length is less than adequate for searching for a phrase like “public policy requirements” (a 25 character query).

When users were unsure about the name of the file they were looking for, search was very poor at successfully locating and presenting the information the users sought.

### Recently Posted

The **Recently Posted Items** section appears on every page in nttg.biz. This section lists the five most recent important items posted to the website. Examples of important items are meeting notes and agendas.

Adding items to this list requires manual entry from a site administrator.

None of the links in this section were used to attempt to locate content.

## Archived Documents

Old documents are occasionally archived. There is not an established process for determining which documents are worthy of archiving or how to archive them.

Decisions around archiving documents are made on a per document basis by NTTG staff.

We observed users attempting to access archived documents by going to **Documents** > **General** > **Archived Documents**, but users were unsuccessful in locating the information they were looking for.

“What I’m looking for may not even be on here any more,” a user said while trying to locate a document for reference on a comittee’s progress.

I suppose I could use the search engine, but I’d have to remember any sort of name of what the document is, but I don’t… Let me think if I can remember some of the names of the documents.

After trying once to search for the document without success, the user gave up.

## Finding a Meeting

Users access meeting information through the calendar widget. We observed some confusion with this widget: users expected weeks to be ordered Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday. Instead, the weeks on the calendar begin with Monday and end with Sunday. There is no method for users to change the week layout or to log in and set a preference.

Often, users had trouble locating past meetings. Users attempted to find the meeting by using the meeting categories, but that still returns a long list. Users rarely scrolled when looking for past meetings. Locating information about past meetings was often unsuccessful.

### Receiving Notice about Upcoming Meetings

Some public users receive notice about upcoming meetings. These public users have an established relationship with NTTG and receive an email when there is a meeting coming up. To receive these emails (or to get a member of their team added to the notification as well), public users must directly contact a NTTG staff member.

This is a feature that is likely more appropriate for Private Access Users. Currently, this information is not making its way into distribution lists that Private Access Users have been added to.

## Finding Documents

Users had varying levels of success at finding the documents they were looking for. Documents that were located within very shallow nesting on the site were the documents that were most easily found.

If I’m not coming in [to the NTTG website] relative to a meeting, I might be in here looking for some sort of document. There’s a couple different ways to get at documents, but the first thing that strikes me is “Charters & Agreements.”

Often times during the Planning Committee meeting I may need to reference the Charter (which I do have stored on my computer, or printed out, or I could come in here … [and get] the most recent one. I know I can always get the most recent charter by going back to the Charters & Agreements.

Deeply nested documents were more difficult for users to find. The following example demonstrates a user’s difficulty in finding the Study Plan.

The user’s first attempt at locating the Study Plan was through **NTTG Committees**. Looking at the options available, the user announced some confusion.

“It isn’t really an 890 process.”

The user was expecting to see a hyperlink to the Order 1000 Process documents from the committees (since the committees where the people working on developing the process documents), but it wasn’t listed.

So, I’m going to go back. Because, that wasn’t helpful.

The second try through the user tried **NTTG Order 1000 Process** in the main menu. After selecting **NTTG Order 1000 Regional Planning and Cost Allocation Process** the user looked over the options it returned: a list of the different things that occur in the process broken out by quarter.

I’m not exactly sure where I’m going to find my Study Plan based on those two things.

Again, the user decided to go back and try again.

This time the user selected **Documents** from the main menu and then followed the nested folders though **NTTG Committees** > **Planning** > **FERC Order 1000 Process** > **2014-2015 NTTG Planning Cycle**. This approach is similar to the one the user took from the NTTG Commitees main menu item, except this time there is a selection for the Order 1000 process.

Inside the **2014-2015 NTTG Planning Cycle** folder, the user expected to find the study plan. The user located it within the option, **Quarter 2 - Data Evaluation and Study Plan Development**.

So I *was* there, but I didn’t understand that I had documents available on the last process I was looking at.

[…] The thing that was a little bit misleading on that one is that it didn’t reflect that there were documents I could see. When I came in through the Documents, I could see how many files where there.

# Website Analytics

For visitor analytics, the only current example is the “Hits” counter on individual documents. It shows how many times people have accessed the document.

It just gives me some sense – particularly if we’re putting something that’s controversial out there – I like to go monitor that [to see if it has attracted public attention].

When a document has a high Hits count, a “Hot!” indicator appears near the document. None of the observed users knew what the threshold was for the Hot indicator, or how to adjust it.

There is no system in place to gain insight into where visitors are coming from, what common navigational flows are used, what search terms are used, etc.

# A Stable Platform?

Users shared their thoughts about what having a “stable platform” for nttg.biz meant to them.

## Compatible with Current Technology

A common concern was the age of nttg.biz:

We built this in 2007 when NTTG was formed and we’ve done no maintenance to it since then.

How long can you use Joomla 1.0 when its up to whatever it is now? […] If one day it goes away and goes BOOM, we really can’t be down for the period of time it would take to build a new website.

In 2013 NTTG’s hosting provider upgraded their servers. This resulted in temporarily bringing down nttg.biz due to compatibility issues.

## Harder to Hack

Several users have mentioned concern with the security of the website. Already, the site has been hacked at least once. Remnants of hacking are still present on the nttg.biz site. Users would like to limit the possibility of additional hacking happening again.

## Fewer Bottlenecks

Since all additions to the website have been implemented through a website administrator, other members of the NTTG staff don’t know enough about the backend to implement changes themselves. As a result, the NTTG website has a very [low bus factor](http://en.wikipedia.org/wiki/Bus_factor): if anything were to happen to the project coordinator (like being hit by a bus), the timely updates to the website which are necessary for compliance with regulations would be put in serious risk.

I’ve never seen the back-end of [the NTTG website], I’ve always relied on the project coordinator … to work through the background on this.

The only way for stakeholders, funders, and commitee members to get their content up on the site is to go through NTTG staff.

## Creating Content with Subcommittees

Subcommittees are non-public, but are still working on creating documents and solving problems. Some users desire to have a place where subcomittee members can collaborate privately.

NTTG members do have access to at least one SharePoint site hosted in Office 365, but it hasn’t seen very much adoption among the subcommittee members. Some users refuse to make use of it for legal reasons.

Instead, collaboration tends to happen through emailing documents around (with multiple people having multiple changes, and somebody trying to merge those changes).

To organize meetings for the subcommittees, NTTG emails a date and time to all of the subcommittee members and provides information about how to connect to each other.

# Regulation Compliance

To comply with the regulations that NTTG and its funders are subject to, nttg.biz needs to:

* Keep its information open and accessible
* Post public meeting notices at least 7 days in advance
* Provide contact information

## Open and Accessible Information

It is important to NTTG to keep their information open and accessible to all.

NTTG receives no funding from Federal assistance, so it does not need to comply with Section 508.

Open information is important for communicating with the funders, FERC audits, and the public. It allows NTTG to demonstrate that transmission providers are not providing preferential treatment to transmission providers’ own merchant or anybody else. It allows everyone to have the same data at the same time.

[A capability for] downloading [files] is important for maintaining open access.

## Public Meetings and the Calendar

The calendar is for listing public meeting notices for the stakeholder meetings and the steering committee meetings. Notice of upcoming meetings must be posted at least 7 days in advance.

## Contact

The public needs to have a way to contact NTTG. The contact method needs to be in line with all of their attachment K filings.

Every transmission provider would have to do a new filing with FERC if we were to change this [contact method].

The current method allows a user to fill out a contact form on the website. Completing the contact form sends an email to admin@nttg.biz.

They also need to be using info@nttg.biz. This is the email address that is in all of their FERC filings. It is mentioned on all data submission forms, “E-mail this form and all supporting documents to info@nttg.biz.”

# Budget

NTTG is estimating a budget up to about $20,000 for this project.

## Current Costs

Records show that NTTG originally paid about $3500 to get the site built by eVenture. At the time, they were hosting the site via SiteGround for $7/month. They were paying the hosting fees annually for $84.40/year.

The 2011 website assessment showed that the hosting costs had raised to $107/year.

The 2013 hosting invoice shows that hosting was still through SiteGround at the time and was being paid monthly at $15.39/month. This works out to an annual cost of $184.68/year for hosting.

Hosting is still through SiteGround. The Joomla platform running on the SiteGround Apache servers is currently free of charge.

# Document Biases

The information we’ve gathered has been heavily reliant on the user studies conducted with administrative users. To better understand the needs of other user types, we suggest conducting additional user studies with private access users (if such users exist) and public users.

An important part of additional user studies will be finding and observing private access users. Since this is a group that is largely ignored in current administrative practices, learning about the needs and expectations of these users is likely to result in a significant improvement in their experience with the site.