

# Explore

## Biobank process flow

Add links to your dashboard

Select the area you are interested in to see a list of available links. Pin your most used links to your personal Dashboard



## Heuristic Evaluation | Clinical Module & DTU

A heuristic evaluation is an approach to identify usability problems by comparing interfaces against accepted usability principles.

## The Heuristics

### 1. Clear navigation and informational hierarchy

Organize the data effectively to help users find and use it.

### 2. Aesthetic and minimalist design

Eliminate anything that diminishes the visibility of the pertinent data.

### 3. Consistency and standards

Visual consistency helps highlight data in a clear and concise manner.

### 4. Nurture trust

Workflows should not be impeded by questioning the accuracy of the data.

### 5. Visibility of system status

The interface should always inform users of what's happening.

### 6. User control and freedom

Allow users to do/undo and to leave unwanted states with a clearly marked "emergency exit".

### 7. Help users recognize, diagnose and recover from errors

Error messages are expressed in plain language, precisely indicate the error, and suggest a solution.

### 8. Help and documentation

Help should be easy to find...while listing concrete steps to precisely carry out tasks and avoid errors.

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“

Your old site is the best prototype of your new site.

”

– Hoa Lorangers, Director at Nielsen Norman Group

The severity of a usability problem is a combination of three factors:

- **Frequency:** Is it common or rare?
- **Impact:** will it be easy or difficult for the users to overcome?
- **Persistence:** Is it a one-time problem that users can overcome once they know about it or will users repeatedly be bothered by the problem?

The severity is scored by using the following rating scale:



## Critical

an adjustment is **imperative to fix** prior to release



## Serious

an adjustment is essential and **should be given high priority**



## Important

**does not function as expected**; an adjustment is recommended



## Minor

cosmetic or irritating – **slows the user down**; an adjustment is advisable



## No Issues

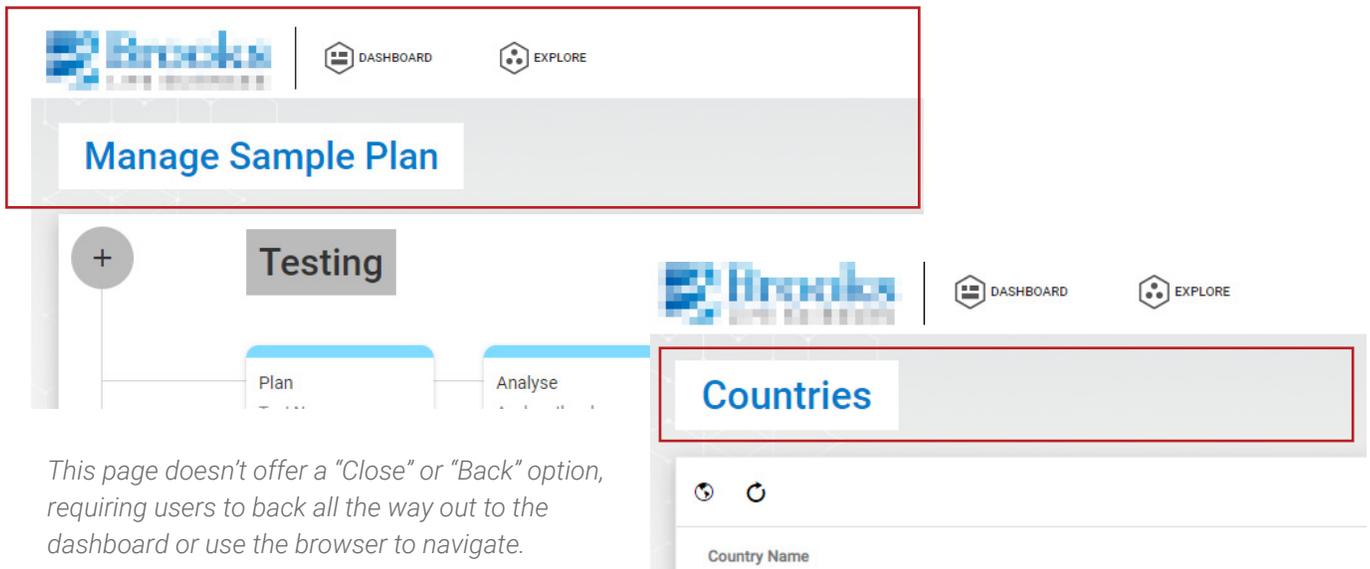
May be considered for **future enhancement**



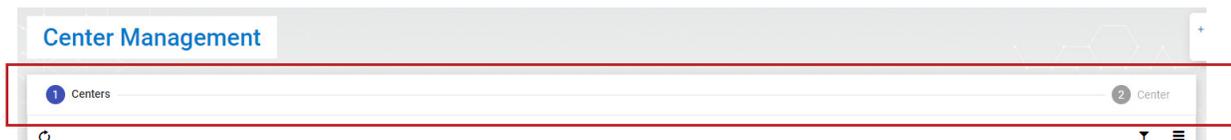
# 1. Clear navigation and informational hierarchy

## Usability Problem

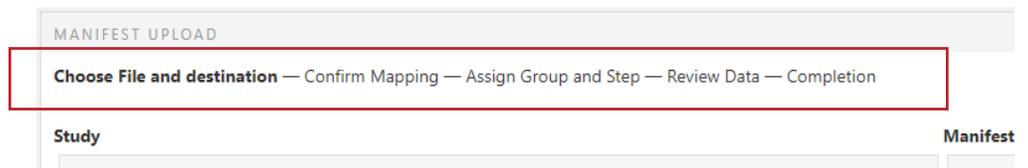
The app lacks proper navigation and wayfinding. Page titles are clear, but where that page lives in the system is not. Some pages/states are missing “Close” or “Back” buttons, requiring users to rely on the browser to navigate the system. The system appears to be using a layering approach... this makes returning more than one step impossible.



*This page doesn't offer a "Close" or "Back" option, requiring users to back all the way out to the dashboard or use the browser to navigate.*



*This Material stepper component is used for wizard-like workflows... not to indicate a drill-down.*



*This wizard-like workflow lacks the affordance of a wizard.*

Severity ■■■■■

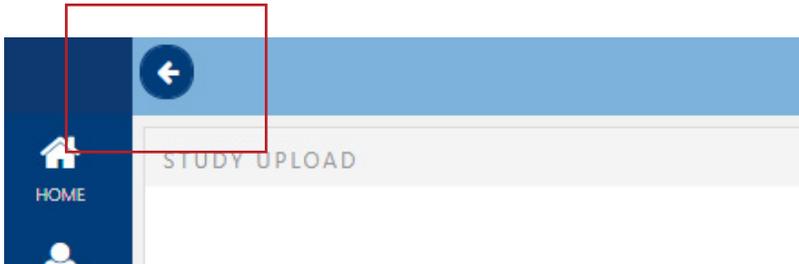
## Recommendations

- Replace the page title with a breadcrumb (ex: [Dashboard](#) / [Study Manager](#) / [Study Summary](#) / [Sample Plans](#) / [TestSamplePlan](#))
- Add “Close” or “Back” buttons to pages that requires the user to click the browser’s “Back” button

# 1. Clear navigation and informational hierarchy (continued)

## Usability Problem

Once a user navigates to the DTU applications, there is no way back to the Clinical Module without using the browser. This creates a lack of continuity when navigating from app to app.



*This appears to be a back button to the Clinical Module, but is not.*

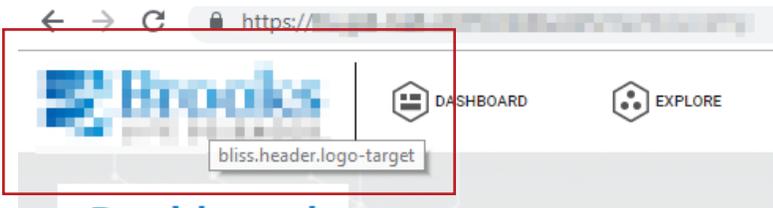
Severity ■■■■■

## Recommendations

- Create a more seamless transition between apps (make it easier for users to return to the Clinical Module)

## Usability Problem

Clicking the Brooks Life Sciences logo directs to a 404 error page on brooks.com. The hover text (img title) is also incorrect.



Severity ■■■■■

## Recommendations

- Clicking on the logo is normally a way to navigate to the “Home” screen. Linking to an external site (especially with a 404 error) is unexpected.
- Update the img title attribute to something more appropriate than “bliss.header-logo-target”

### Usability Problem

Duplicating text clutters the interface and doesn't help clarify what labels mean.



The screenshot shows a form titled "Edit Existing Organization" with a close button (X). The form contains several input fields. The first field is "Organization Name" with a placeholder "Please add a unique name for an Organization". Below it are three fields: "Vendor ID", "Status" (with value "true"), and "List URN". Each of these three fields has a second, identical label to its right, connected by a red arrow. To the right of the form is a navigation menu with four items: "Study Manager" (Management of Clinical Studies), "Vendor Management" (Vendor Management), "Centre Management" (Centre Management), and "Study Audit Manager" (Study Audit Manager). Each menu item is enclosed in a red box.

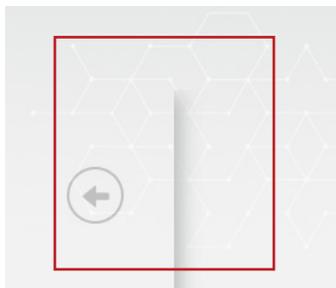
Severity

### Recommendations

- Rather than simply duplicating labels, write helpful information that gives users additional information... consider a helper icon with popover or hover instead of a second label.

### Usability Problem

Elevation and dropshadows don't behave as expected. Here the background image appears on top but should be behind the layer casting the shadow..



Severity

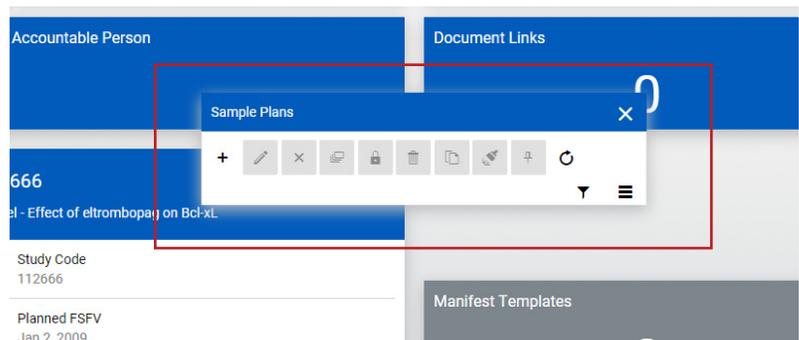
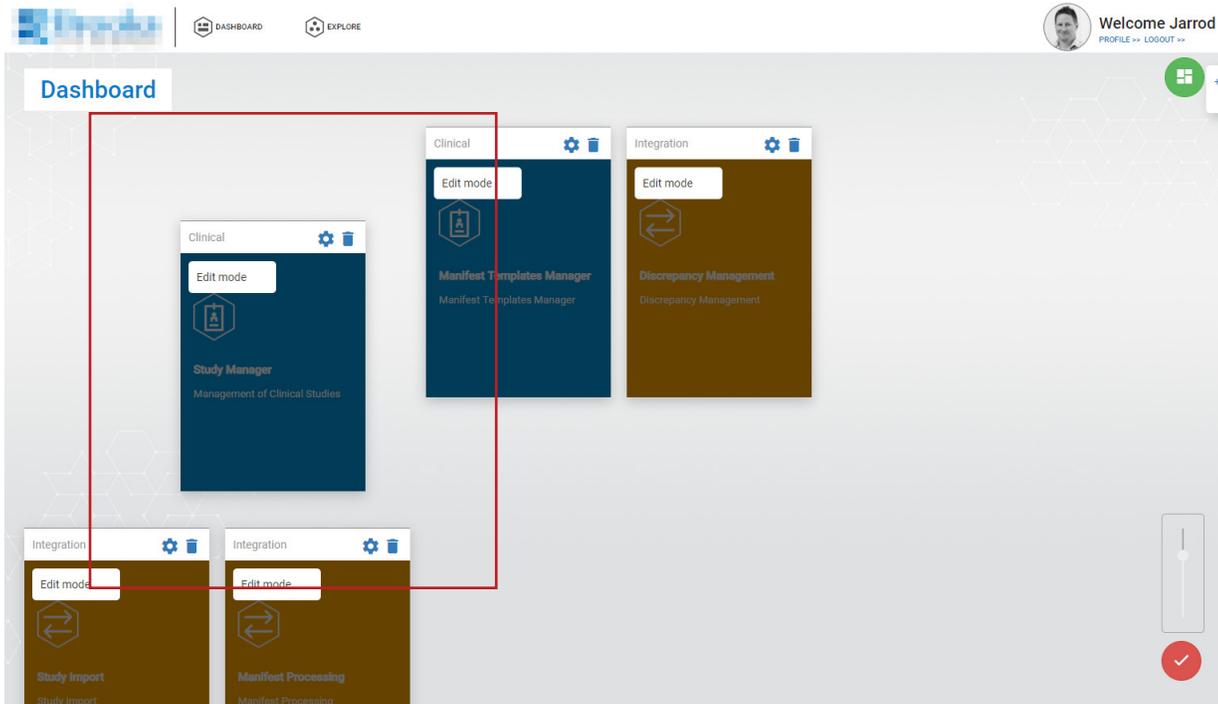
### Recommendations

- Follow the Material guidelines for elevation and dropshadows

## 2. Aesthetic and minimalist design (continued)

### Usability Problem

Interacting with the gadgets can cause spacing and layering issues. Moving a gadget can cause the other gadgets to jump around (sometimes off the stage / below the fold).



Severity

### Recommendations

- Add clearly defined drop zones in a grid-like layout. Only move the other gadgets when the active gadget enters a drop zone to restrict the constant movement.

## 2. Aesthetic and minimalist design (continued)

### Usability Problem

Learnability and cognitive load. Example of these issues is adding a gadget to the dashboard. Here are a few usability issues:

- 1 Users must know the menu is behind this Floating Action Button (FAB)
- 2 Users must know the “Add” feature is nested under the “Edit” option
- 3 Users must find an additional FAB floating higher on the page with an icon that isn’t universally known as “Add”
- 4 User must scrolling an extremely long list without a Search/Filter option
- 5 The “Add Gadget” button appears as a link. When pressed, there is no visible indication that a gadget was successfully added

The screenshot shows a dashboard configuration interface. A FAB (Floating Action Button) with a grid icon is highlighted with a red box and labeled '3'. A long list of gadgets is shown, with a 'Close' button at the top right of the list area highlighted with a red box and labeled '4'. A specific 'Add Gadget' button is highlighted with a red box and labeled '5'. A vertical sidebar on the right contains several icons, with the top icon highlighted by a red box and labeled '2'. A bottom navigation bar contains a menu icon highlighted by a red box and labeled '1', and a 'Configure dashboard' button below it.

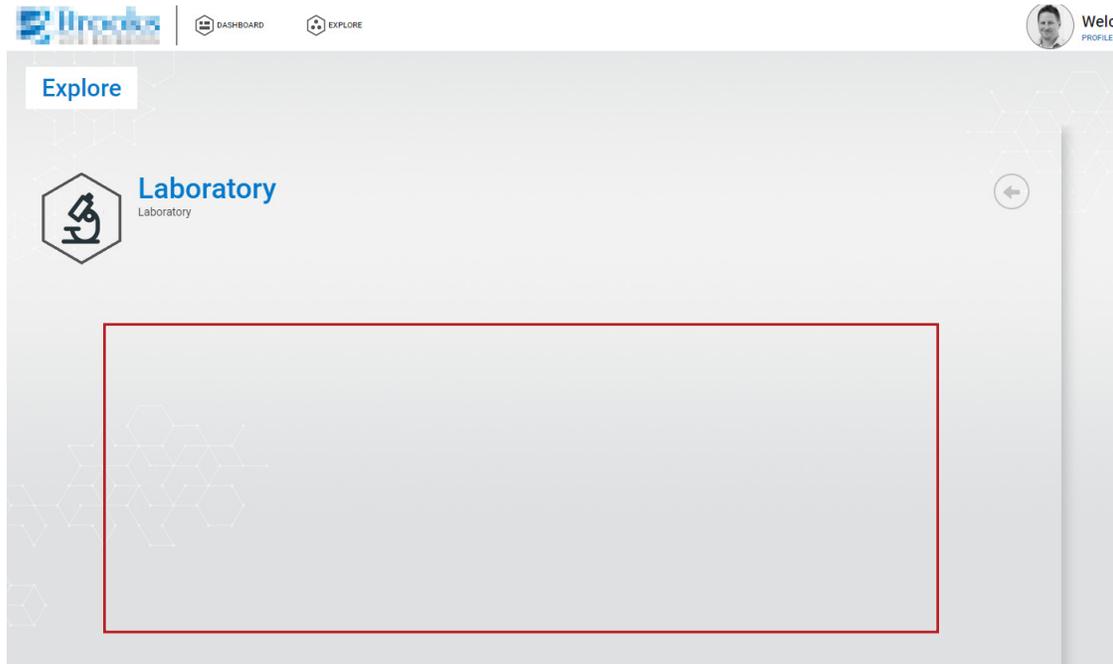
Severity

### Recommendations

- Reduce the number of clicks
- Don't hide functionality behind icons that are not universally known
- Add a confirmation when a gadget is added to the dashboard

### Usability Problem

Lack of an Empty State. A useful empty state will let the user know what's happening, why it's happening, and what to do about it.



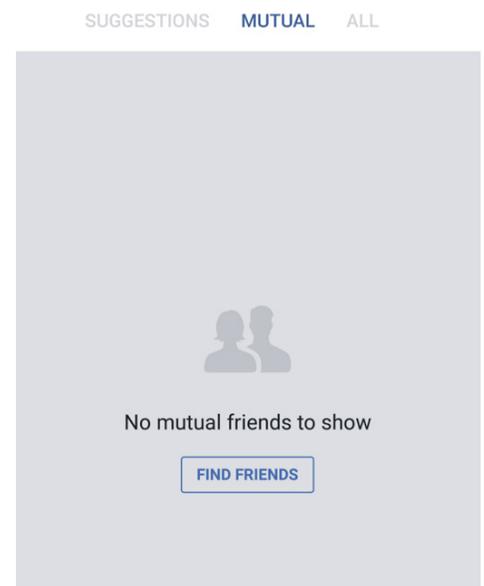
*This empty space is adding no value or telling users what to do next.*

Severity

### Recommendations

- Add an Empty State to pages where there is no data/information to display.
- If applicable, add a button/link or workflow to the page that allows the user to add one.

### Example

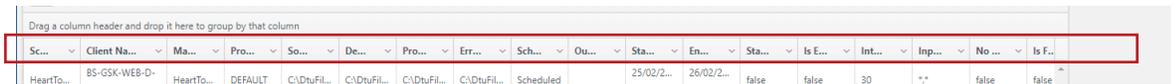


*Example of good Empty State.*

## 2. Aesthetic and minimalist design (continued)

### Usability Problem

Table column widths are too narrow and don't offer a hover state. Users must manually expand each column.



Drag a column header and drop it here to group by that column

Sc...	Client Na...	Ma...	Pro...	So...	De...	Pro...	Err...	Sch...	Out...	Sta...	En...	Sta...	Is E...	Int...	Imp...	No ...	Is F...
HeartTo...	BS-GSK-WEB-D-	HeartTo...	DEFAULT	C\DtuFIL...	C\DtuFIL...	C\DtuFIL...	C\DtuFIL...	Scheduled		25/02/2...	26/02/2...	false	false	30	**	false	false

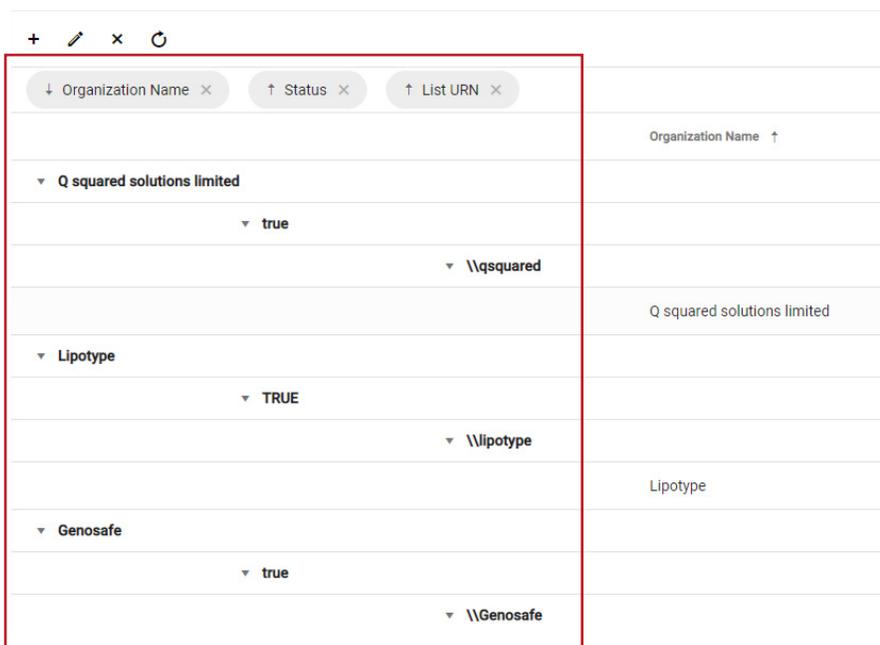
Severity

### Recommendations

- Add a title/hover state
- Allow the table to scroll horizontally.

### Usability Problem

Tables are allowed to be rendered unreadable by complex filtering and sorting.



+ ✎ ✕ ↺

↓ Organization Name ✕   ↑ Status ✕   ↑ List URN ✕

Organization Name	Status	List URN
Organization Name		
Q squared solutions limited		
true		
\\qsquared		
Q squared solutions limited		
Lipotype		
TRUE		
\\lipotype		
Lipotype		
Genosafe		
true		
\\Genosafe		

Severity

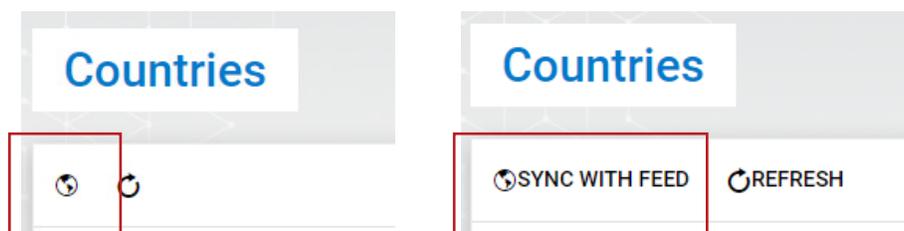
### Recommendations

- Use filters and sorts that retain the structure of a data table

## 2. Aesthetic and minimalist design (continued)

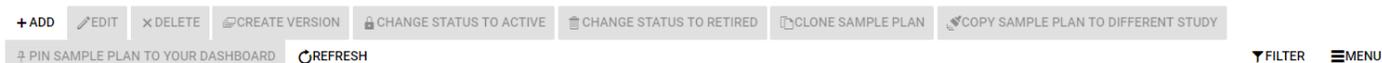
### Usability Problem

Buttons relying on icon recognition. Very few icons are universally known (ex. search, add, edit)... there is no universally known icon for "Copy Sample Plan to Different Study". This means users must interact with each button to understand what it does/means.



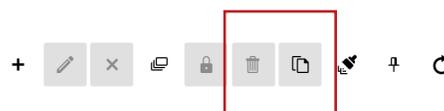
*What does the Globe Icon under countries do? Add a country? No. It means "Syncs with Feed".*

These large button groupings present too many options to the user. Buttons should be presented as a primary action, secondary action and sometimes not at all.



*Toggleing the labels on presents other layout problems.*

Severity



*Hover state and disabled state are too similar*

### Recommendations

- Buttons should have labels by default
- Use styling to create primary actions and secondary actions
- Don't display buttons/actions that are not available
- Create clear hover, active and visited states for buttons

### 3. Consistency and standards

#### Usability Problem

Tables behave differently in Clinical Module and DTU. Use perceived affordances so users know what to expect when interacting with page elements.

Name	Designation	Data Type	Column	Enforce	Presence
SAMPLECOMMENTS	SAMPLECOMMENTS	Text	0	False	Expected
PARENTID	PARENTID	Text	0	False	Expected
VISITCODE	VISITCODE	Text	0	False	Expected
QUANTITYOFSAMPLES	QUANTITYOFSAMPLES	Numeric	0	False	Expected
ORGANCODE	ORGANCODE	Text	0	False	Expected
RECIPIENT	RECIPIENT	Text	0	False	Expected
CONTAINER POSITION	CONTAINER POSITION	Numeric	0	False	Expected
SAMPADDQUAL	SAMPADDQUAL	Text	0	False	Expected
CONCENTRATIONUNIT	CONCENTRATIONUNIT	Text	0	False	Expected
SAMPLELABEL	SAMPLELABEL	Text	0	False	Expected

1 - 20 of 56 items

#### Severity



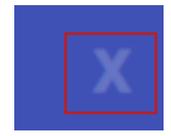
#### Recommendations

- Selecting “items per page” should change the table height
- The users are jumping from app to app...keep the experience as close as possible.

#### Usability Problem

Same icon being used for multiple meanings.

App name	Description	Link Count	Display Colour	Domain URL	Config State
BioStudies	Example BioStudies APP	3		<a href="#">https://www.example.com</a>	✓
BLISS	BLISS	33		<a href="#">https://www.example.com</a>	✓
DTU	app.dtu.description	15		<a href="#">https://www.example.com</a>	✓
Business Intelligence Tool	Business Intelligence Tool	0		Required information missing	✗



The “X” icon is being used for “Delete”, “Not Configured”, and “Close”. This is a good example of why labels are needed.

#### Severity

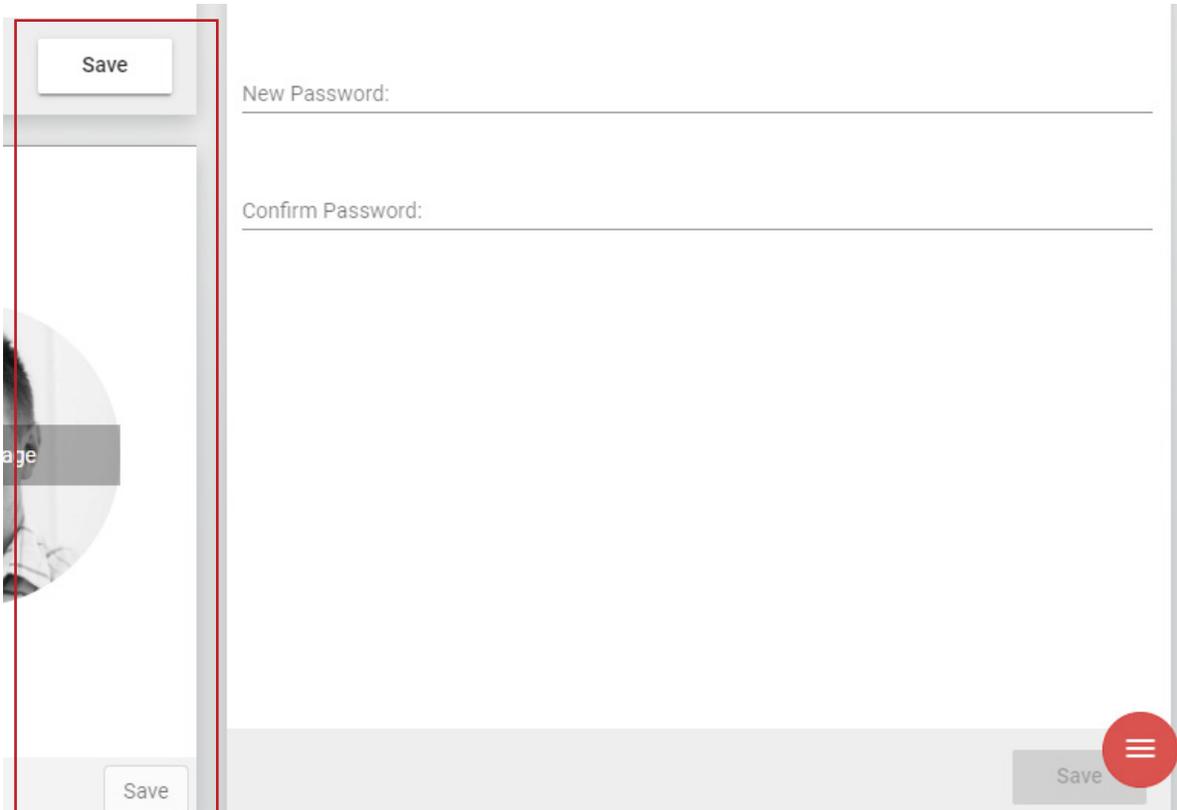


#### Recommendations

- Buttons should have labels by default and look like buttons
- Don’t reuse the same icon
- Don’t use the letter “X” in place of a close icon.

### Usability Problem

Inconsistent button styling.



*Two "Save" buttons on the same page with different styles.*

Severity

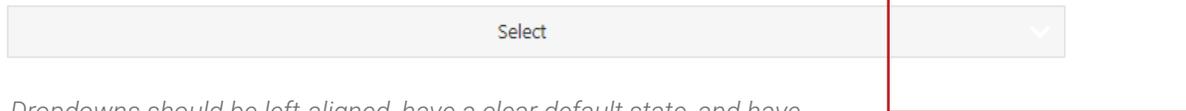
### Recommendations

- Buttons should have a standard style

### Usability Problem

Dropdowns are styled to look like buttons. They lack the affordance of a standard input field.

**Study**



*Dropdowns should be left-aligned, have a clear default state, and have a clear indication of more options. This white arrow isn't enough.*



*An example of a page where a button and dropdown are in close proximity.*

Severity

### Recommendations

- Things that look the same should act the same. Things that look different should act different. Give buttons more emphasis to make them stand out to users.
- Design the dropdowns to look like dropdowns.



### Usability Problem

Data can be manipulated with no governance.

Status	Status ↓
true	true
true	true
true	true
not true or false	true
true	I can literally type anything here

Are "not true or false" and "I can literally type anything here" valid statuses?

Severity

### Recommendations

- Give users guardrails. Don't give users a reason to distrust the data.

### Usability Problem

Users trust applications that don't slow them down. Long dropdown lists slow down users and are cumbersome.

Study

Select

Select

100200

100236

100403

100405

100406

100442

100443

100444

102549

103657

104351

104730

104917

105312

106052

106359

107020

107076

110537

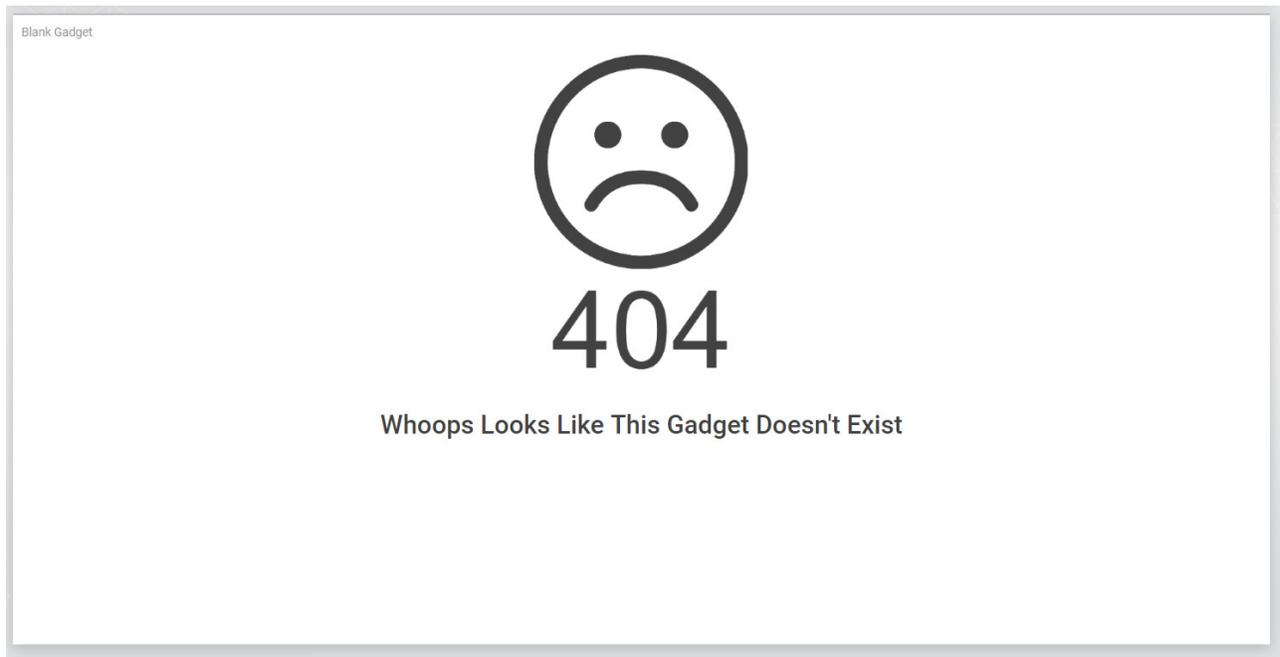
Severity

### Recommendations

- For lists this long, consider alternative ways to present the options
- Avoid dropdown boxes when typing may be faster

### Usability Problem

The error code “404” is a server response for ‘Not found’. This gadget doesn’t exist... don’t make users think the server is failing to retrieve data by mislabelling errors.



Severity

### Recommendations

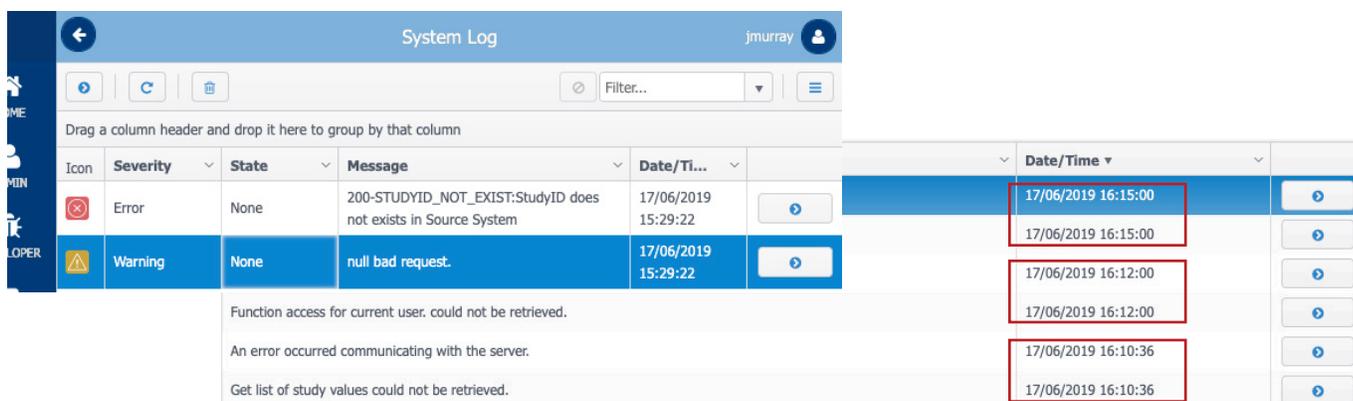
- What is the use case for users to add a “Blank Gadget”? Without the option to configure this gadget, it will always show this message
- Don’t use system codes or get too cutesy in error messages...offer users a way to fix the problem

## Usability Problem

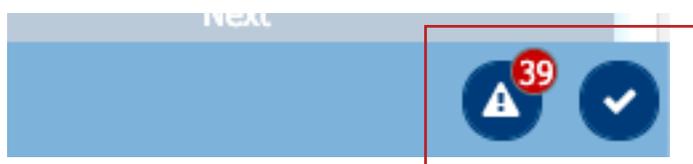
System notifications are not always displayed, but are recorded in a “System Log” instead. Notifications of the system should always display to help users understand what is happening.



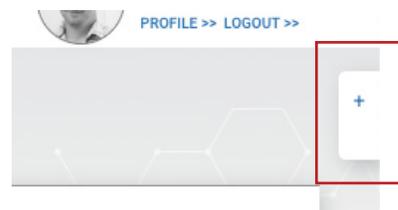
Example toast notifications



Notifications are stored on a System Log. Example of errors displaying in 2s.



The System Log displays the number of alerts in a badge. The checkmark button checks “Network Activity”



System log in Clinical Module

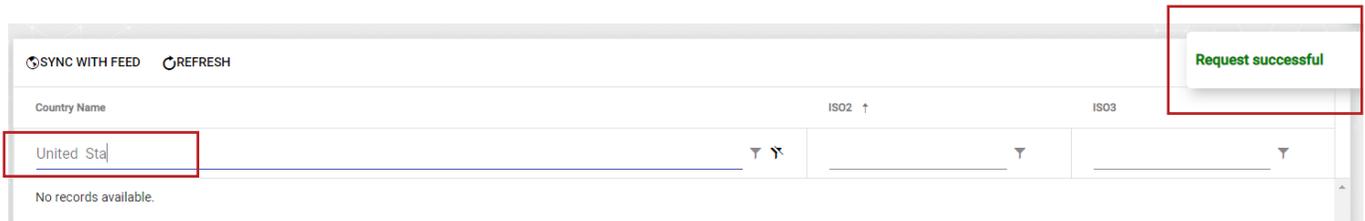
## Severity

## Recommendations

- Leave the notification on the screen a little longer. Add the ability to “Dismiss” the alert and not add it to the log
- Make the removal of notifications more intuitive. Both systems require an all-or-nothing removal
- None of the Warnings/Errors I encountered required any action... remove the additional details page from these
- Errors seem to be added in 2s... even though only one toast notification is presented
- Add labels to buttons for much needed clarity

### Usability Problem

The “Request successful” message displays as each character is input. This oversaturation of notification will dilute the system notifications users need to see.



*This success banner flickers as users type/undo.*

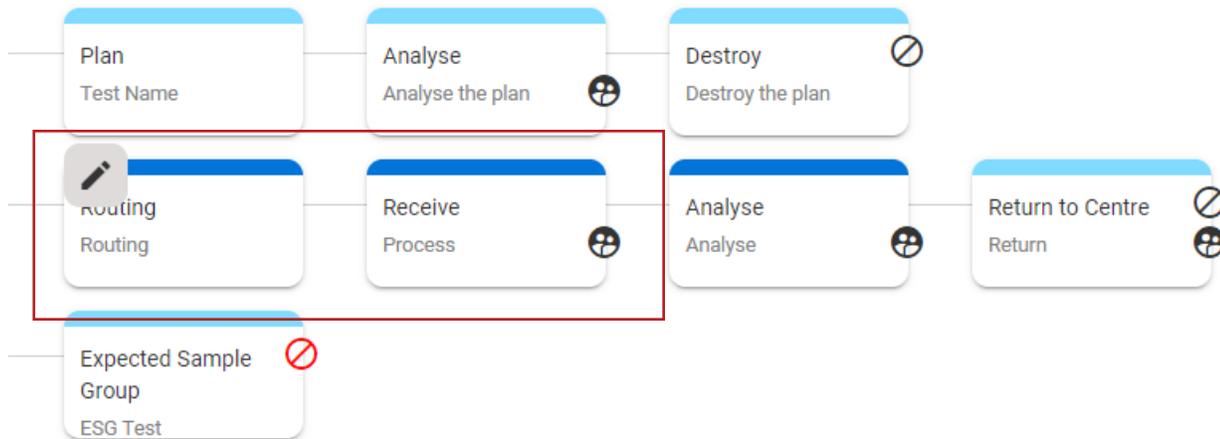
Severity

### Recommendations

- Remove the non-critical notifications

### Usability Problem

Users do not have the freedom to edit all of the details in a Sample Plan. Some functionality is taken away when an additional step is added... requiring users to delete steps to return to a previous, editable state.



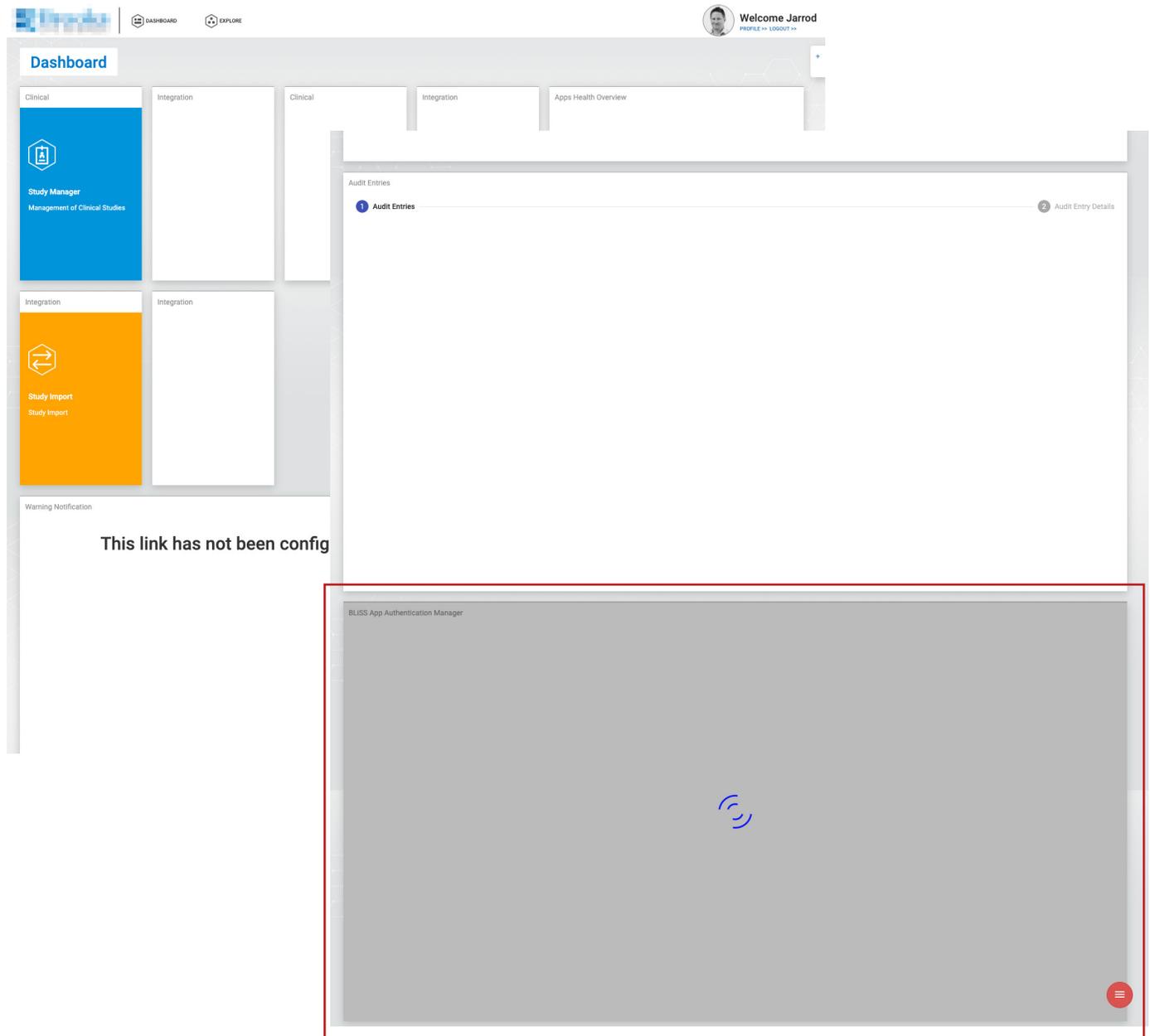
Severity

### Recommendations

- Don't restrict users... if a user wants to edit or delete a step they have defined, allow it

### Usability Problem

Gadgets are not loaded asynchronously... if one gadget encounters a problem the rest of the page fails to load, leaving no emergency exit to fix the issue.



Severity ■■■■■

*Gadgets won't load... can't be removed... or stopped. The user is stuck because the Menu Button won't load.*

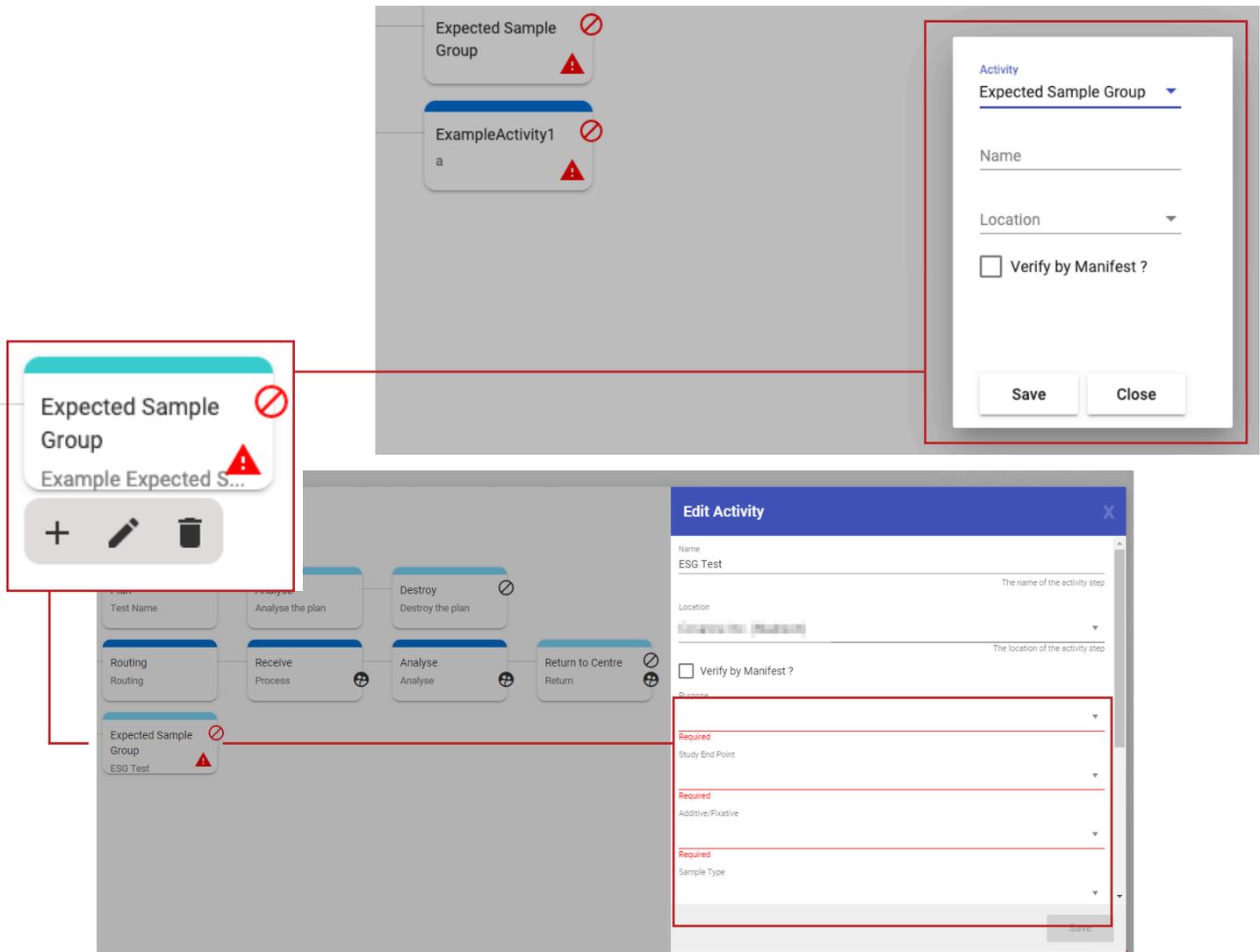
### Recommendations

- Load the pages asynchronously so pages fails gracefully

## 7. Help users recognize, diagnose, and recover from errors

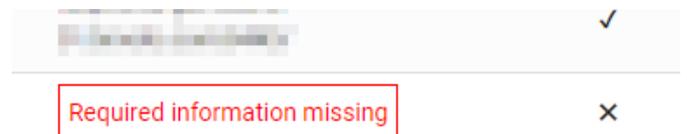
### Usability Problem

Don't make users think they've made an error when additional information is required. Make required fields available and clearly marked.



Users save an Activity only to be presented with an error icon.

Severity



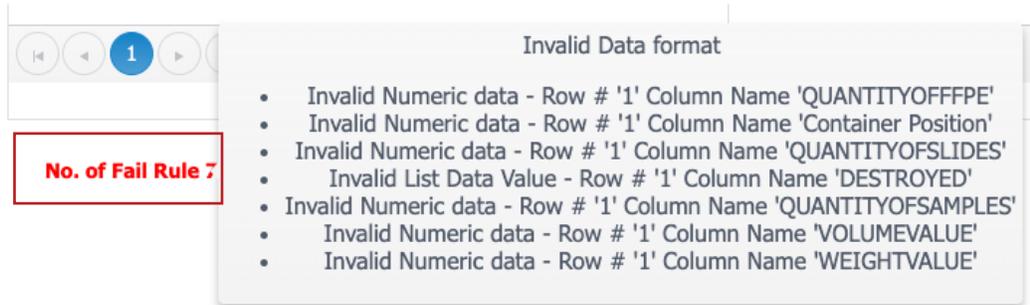
Allow users to quickly add this information.

### Recommendations

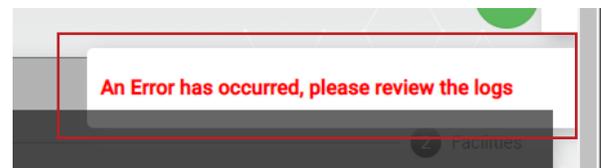
- Make the Activity form dynamic... present the required/additional fields before the activity is saved
- Add a hover or helper text to icons

### Usability Problem

Help users recover from errors. The system does a good job of displaying the errors, but the presentation of these errors don't allow the user to take steps to remedy the errors. Correcting errors become more difficult when the user is required to hover or navigate to a different page.



*The errors are shown in a hover/pop-over.*



*Be proactive in fixing errors. This doesn't help.*



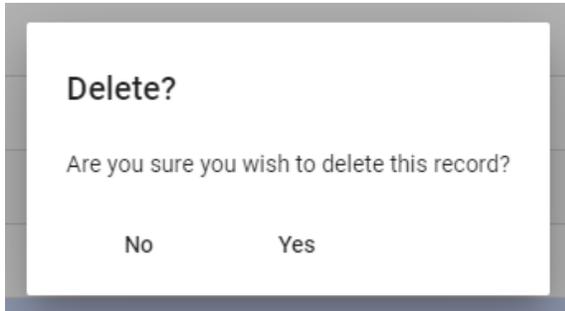
Severity

### Recommendations

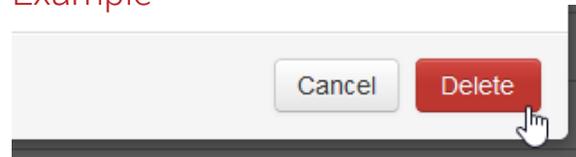
- Where applicable, allow users to remedy the error
- Don't ask users to perform tasks outside of the system to fix errors

### Usability Problem

The system should be designed to prevent error-prone conditions.



### Example



*Buttons with visual difference and descriptive titles*

Severity

### Recommendations

- To make clear distinction between two options, you have to use different visual weight for buttons
- Buttons should be descriptive of the action taking place... "Cancel" and "Delete Record" instead of "No" and "Yes"

### Usability Problem

In task-based software, next steps should be clearly marked... with concrete steps to complete that task.

The screenshot shows a web application for 'Study Upload'. The interface is clean but lacks clear guidance for the user's next steps. The 'Upload' button is not the most prominent or clearly defined element, and there is no help or documentation provided to assist users in completing the task.

*There is no help or documentation offered to assist users.*

Severity

### Recommendations

- Make the next step immediately known (ex: persist the “Study ID” field / move the Upload button to the bottom right / make the button stand out)

