

Application: ERA Budget Module

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Type of evaluation: Heuristic Evaluation
 Usability Testing (Paper Prototype)

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Participants:

Campus	Dept	
IUB	Smith Research	1
	SPEA	1
	Biology	1
IUPUI	Medicine	1
	Psychology	1
TOTAL		5

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Executive summary

Usability testing was conducted using a paper prototype of the proposed design for the ERA Budget Module. Five participants were drawn from various departments at IUB and IUPUI campuses. Participants were given a sheet of budget details taken from an actual proposal and asked to use the prototype to complete the budget data entry process.

In general, the participants were able to complete the budget entry tasks without too much difficulty. The usability problems encountered were largely due to unfamiliar terminology (e.g. Agency Request, Task) and certain interactions that users found confusing (e.g. use of Cancel button). This document presents the common observations made during the tests along with recommendations for the development team to consider.

Observation	Interpretation	Recommendation for redesign
Login Process		
When logging in, 4 of 5 users chose the optimal path to add a budget (<i>Proposals -> Budget Form -> Add a Budget</i>).	The navigation labels make sense and are easy to follow.	1. Maintain this approach.
Budget Parameters Page		
When completing this page, 5 of 5 users indicated confusion with the <i>Task</i> section. “Is adding a Task like a subcontract?”	Users weren’t familiar with the term <i>Task</i> in their budget process and had difficulty guessing what it would be used for.	2. Consider changing task name in the textbox from <i>Task 1</i> to something more descriptive. (e.g. <i>Primary Budget</i>) (SEE BP-Revised 1) 3. In the description of <i>Task</i> , indicate that separate tasks are not used for subcontracts. It may be helpful to equate tasks with account numbers in the description.
When identifying a Project Director, 4 of 5 users tried typing in the text field before clicking the <i>Search</i> button. “Well, I would click here unless this is like the Route Sheet. Then I would click search first.” 1 user stated a preference for entering Project Director and Agency Name instead of searching for them	The presence of the text field invites users to click there to begin their data entry. Removing it will make it clear that they have only once choice.	4. Remove the Project Director text field altogether. (SEE BP-Revised 1) 5. After completing their search, present the Project Director name in read only format on the screen. (SEE BP-Revised 2)
For the <i>Budget Period</i> section, 3 of 5 users indicated they were unsure of what to enter in the text fields.	Users aren’t sure if they can enter the entire budget period or if they should break it down. Also, some departments use different terminology (e.g. year, period, etc). Some groups have to reapply for the grant each year.	6. Add labels (<i>Period 1, Period 2, etc</i>) before date entry fields. 7. Display multiple period date boxes. 8. Move <i>Add Period</i> button so that it is below the last period box, clearly indicating that more periods may be added.

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<p>Re: the <i>Budget Name</i> section, 3 of 5 users indicated that they weren't sure what they should enter.</p> <p>"Would it name different periods?" "Who would need to see this?"</p>	<p>The term <i>Budget Name</i> isn't something that users generally use. The current form requires users to read through each item to know if it is required or optional.</p> <p>Moreover, the repeated labels add to the density of information on the screen.</p>	<p>9. Give one line of instructions or a suitable example that illustrates what the budget name is used for. (e.g. Dr. Steven's budget) (SEE BP-Revised 1)</p> <p>10. Rearrange the required and optimal sections on the screen to assist the flow of work and to eliminated repeated labeling (SEE EX#). (SEE BP-Revised 1)</p>
<p>4 of 5 users left the <i>Program Announcement Name</i> blank. Many indicated uncertainty about what to enter in this field.</p> <p>"Is it RFP?"</p>	<p>Users were unsure of what the field is used for.</p>	<p>11. Consider renaming and or providing a suitable example in brackets following the text field to help users understand its value.</p> <p>12. Move this item into the optional area of the screen (SEE BP-Revised 1)</p>
<p>2 of 5 users skipped the <i>Agency Search</i> step in their process.</p>	<p>This may have been due to the limitations of paper prototyping.</p>	<p>13. Ensure that upon saving this screen's details, the audit feature checks for missing agency among other required details.</p>
<p>1 user indicated that she sometimes has multiple personnel inflation rates.</p>	<p>The current design only accounts for one personnel inflation rate.</p>	<p>14. Consider adding multiple personnel inflation rate capabilities.</p>
<p>1 user indicated that she thought the <i>Save</i> button might only save the bottom portion of the document.</p>	<p>The <i>Save</i> button is not sufficiently separated from the bottom section of the screen to suggest its association with the entire screen's details.</p>	<p>15. Include a horizontal rule at the bottom of screens that separates the information above from the <i>Save</i> button below. (SEE BP-Revised 1)</p>
<p>1 User thought the <i>Cancel</i> button on this page would delete the budget. Several users expressed uncertainty about the <i>Cancel</i> button overall.</p>	<p>Users tend to think cancel will take them back to the previous page and erase what they've entered.</p>	<p>16. Remove the <i>Cancel</i> button on this screen.</p>

Observation**Interpretation****Recommendation for redesign**

Main Budget Page		
<p>3 of 5 users weren't sure what the <i>Delete Person</i> button would do.</p> <p>"Would I put my cursor on the person and press Delete?"</p>	<p>The current form does not clearly indicate which person is to be deleted.</p>	<p>17. Add checkboxes to the left of the names of each person.</p> <p>18. Change <i>Delete Person</i> to <i>Delete Checked</i>. (SEE MB-Revised)</p>
<p>4 of 5 users tried to click into the number field to enter a dollar amount for equipment. However, all the users recovered from this error and chose the <i>Equipment</i> link on their second try.</p>	<p>Users were unsure how to proceed and the number fields appeared to be the most obvious choice.</p>	<p>19. Improve the proximity of the labels and their associated fields in the grid. (SEE MB-Revised)</p> <p>20. Remove the personnel detail of <i>Role</i> and <i>Appointment Type</i> to help improve the proximity of the labels and fields. (SEE MB-Revised)</p>
<p>3 of 5 users had some initial difficulty viewing the current period of their budget.</p>	<p>The visibility of the <i>Task</i> and <i>Period</i> menu is reduced by their location and pull-down menu nature.</p>	<p>21. Change wording on drop down labels to <i>View Task</i> and <i>View Period</i>.</p> <p>22. Include repetition of the Period dates in the <i>Amt Requested</i> field. (SEE MB-Revised)</p>
<p>Users appreciated the cost share section, noting that it is very helpful to have the exact cost share all in one place.</p>	<p>This utility is an improvement over the current process.</p>	<p>23. Maintain this feature.</p>
<p>3 of 5 users chose <i>Add Person</i> immediately when presented with this screen.</p> <p>1 user tried to enter the <i>Project Director</i> name below the <i>Name</i> label.</p>	<p>The <i>Add Person</i> button gets users' attention.</p> <p>Revising it to say <i>Add a Person</i> may make it clearer still by suggesting that they will get to choose that person.</p>	<p>24. Maintain the <i>Add Person</i> button in its current prominent location. (SEE MB-Revised)</p> <p>25. Revise the label to <i>Add a Person</i>. (SEE MB-Revised)</p>

Observation**Interpretation****Recommendation for redesign**

Personnel/Agency Search		
<p>2 of 5 users did not understand the <i>To be Named</i> functionality.</p> <p>2 of 5 users indicated that <i>To be Named</i> requires the ability to specify salary, position title, and appointment type especially for grad students and assistants.</p>	<p>The current location and appearance of this item does not allow for easy recognition.</p>	<p>26. Reposition and revise the wording of the <i>To Be Named</i> link to make it more visible (SEE PDS-Revised)</p>
<p>2 of 5 users indicated that they would like to be able to use an asterisk for wildcard entry.</p>	<p>The current interface does not clearly indicate will allow the user to search on wildcards by entering a portion of a name.</p>	<p>27. Include wildcard capability in the search fields.</p> <p>28. Indicate that wildcard ability exists. (SEE PDS-Revised)</p> <p>29. Ensure that wildcard behavior is consistent between Route Sheet and Budget modules.</p>
<p>Although most users were correct in assuming that the <i>Reset</i> button would clear the name and ID fields, the value offered by this button appears small for these screens.</p>	<p>The <i>Clear</i> or <i>Reset</i> button holds value when there are many items to be changed and when it is clear what it going to be reset. When either of these are questionable, removing the <i>Reset</i> button may help to simplify the screen.</p>	<p>30. Remove the <i>Reset</i> button. (SEE PDS-Revised)</p>
<p>2 of 5 users indicated that they would like to be able to add the Project Director to the system themselves rather than have to email the administrator.</p>	<p>Users wish to be in as much control of the administration process as possible.</p>	<p>31. Consider adding this functionality if the business rules allow for it.</p>
<p>2 of 5 users indicated that they would like to be able to enter the Agency acronym.</p> <p>1 user wondered if the <i>Agency Report Name</i> field was used for entering the agency acronym.</p>	<p>Users wish to enter as few keystrokes as possible.</p> <p>The current field label for Report Name is not entirely clear, and the example (NSF) may be misleading if this is not solely an acronym field.</p>	<p>32. Add <i>Agency Acronym</i> field with ability to search by acronym. (SEE AS-Revised)</p> <p>33. Remove the acronym example in the <i>Report Name</i> field. (SEE AS-Revised)</p>
<p>Users frequently moved their “pencil mouse” down and to the right to save their changes. They then had to correct their action and move left to the <i>Save</i> button.</p>	<p>Users tend to gravitate down and to the right as they complete their work on screen.</p>	<p>34. Move the <i>Search</i> button to the bottom right of the fields and the <i>Cancel</i> button to its left. (SEE AS-Revised and PDS-Revised)</p>

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Users tended not to consider the information in the middle of the page until asked to do so.	This information may fit the workflow better if it follows at the end of the search results rather than at the beginning. Increased clarity of the wording may help users interpret the item at a glance.	35. Move this link to the bottom of the search results. 36. Revise “Click here if you were unable to locate project director” to read “Unable to locate the Project Director? Email the system administrator to add one.”
Personnel Detail		
3 of 5 users indicated uncertainty at the purpose of the notes section. “Who are notes for?” “Do we have to enter this?” “Are these justifications?”	It isn’t clear if the <i>Notes</i> section refers to the entire <i>Personnel Detail</i> page, or if it is specific to a period.	37. Clearly indicate the relationship of <i>Notes</i> to each budget period (e.g Notes for Budget...or...Notes for Period 1)
1 user was concerned that the salary returned may be inaccurate. 1 user indicated that she would like to be able to change the base salary because she rarely uses it, and she often changes figures for planning purposes.	The current system does not seem to provide the flexibility required by all users.	38. Consider giving users a way to revise the salary or to contact someone who has permission to do so.
1 user suggested a <i>Calculate</i> button would be helpful	Lack of a <i>Calculate</i> button makes the user feel less in control of their activity. Removing the auto-calculate feature would also remove the need for a screen refresh and the use of JavaScript.	39. Add a <i>Calculate</i> button and remove the auto-calculate feature.
1 user indicated that she would like to see a total compensation field that sums the total salary and total fringe in the bottom table.	Users may find it helpful to know the total compensation of each personnel.	40. Add column labeled <i>Total Compensation</i> that sums the total salary and total fringe.
1 user indicated that <i>Appointment Type</i> could automatically populate the drop-down menu with the person’s current appointment type.	User would like the system to complete as much information as possible.	41. Consider having the <i>Appointment Type</i> drop-down menu default to the person’s current appointment type, but allowing the user to make changes.
1 user skipped the top portion of the page (e.g. <i>Role</i> and <i>Appointment Type</i>) and went to fill in the information on the grid at the bottom of the page.	The current form makes it difficult to notice where data has been automatically entered and where the user needs to start entering in their own.	42. Insert a space between the autofilled name details and the <i>Role</i> and <i>Appointment Type</i> to help cue the user where to start entering information.

Observation	Interpretation	Recommendation for redesign
Non-Personnel Detail Page		
4 of 5 users did not know what <i>Agency Request</i> meant.	The term <i>Agency Request</i> does not convey a dollar amount.	43. Change <i>Agency Request</i> to <i>Amount</i> .
On the <i>Equipment</i> page, 1 user was not immediately sure how to delete an item.	User did not immediately see the checkbox at the far right of the item.	44. Move the checkboxes to the left of each line to improve their visibility and make clear their relationship with the items in the list.
General Issues		
<p>3 of 5 users understand <i>Cancel</i> button on secondary pages returns you to the previous page without saving your work.</p> <p>On Budget Parameters and Budget Main page, the <i>Cancel</i> button consistently confused users.</p> <p>“I expect it to delete my entire budget.” “I don’t know where it would take me.”</p>	Users are familiar with the convention of being able to cancel changes on secondary screens, but are unsure of the consequences of canceling from a main screen.	45. Remove the <i>Cancel</i> button from the <i>Budget Parameters</i> and <i>Main Budget</i> screens. (SEE BP-Revised 1 and MB-Revised)
3 of 3 users had difficulties when asked how they would proceed to create a new budget following their work on an previous budget.	The <i>ERA Home</i> button may add to confusion if the user wishes to create another budget. Clicking <i>ERA Home</i> -> <i>Proposals</i> -> <i>Budget Form</i> will open multiple pop-up windows.	46. Change <i>ERA Home</i> to <i>Budget Home</i> 47. Consider removing the <i>IU</i> button.
2 of 5 users who were asked to logout were uncertain how to proceed. One clicked the <i>Logout</i> button at the top of the screen, thinking that would close the entire ERA application	<i>Logout</i> button wasn’t informative enough to specify the Budget application only.	48. Change wording of <i>Logout</i> button to <i>Close Budget</i>
Inconsistent use of hyperlinks	Some links will take the user to more information about the purpose of that section while others will take the user to a place to enter information into that section.	49. Insert <i>More Info</i> link to the right of the header instead of making the header a link.