Information Services & Technology

RAFT2 usability testing summary

Usability study conducted at the request of Amon Horne
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Summary
Nine MIT staff members (including one pilot test participant) participated in a usability test of the RAFT phase two financial forecasting application on February 7 and 8. Of those staff members, four are fiscal officers, two are financial assistants (one was the pilot test participant), two are directors of finance and administration, and one is a financial coordinator. For one of the nine participants, an interview was conducted instead of the traditional usability test because of his expertise with other system and the team's desire to hear more from him about ways to improve it. Those results were recorded separately and are not recorded here.

The primary areas explored in the usability sessions were the revenue/expense forecasting and personnel forecasting. We also explored the use of the keyboard and the mouse for navigation, the visual metaphor for editable cells, and the absence of a save button. The specific tasks and details about participants experience with them follow.

Issues and Recommendations
Overall, participants found the RAFT application straightforward and were able to accomplish six of seven tasks (see table on page 5 for completion rates) in the usability session with little or no assistance.

What worked

- Overall, participants found the application easy to use.
- Participants were impressed with the quantity of information displayed.
- Participants liked people forecasting feature.
- All but one participant used the mouse to navigate the screen and the keypad/enter button to enter amounts. They said when asked that this was how they navigated Excel. Many said they also use keyboard shortcuts in Excel.
- Participants understood the visual metaphor conveying information about which cells are editable.

There were areas where users experienced difficulty and had questions about how the application would work. These issues and recommendations are listed below.

General Functionality

- **Issue:** To enter a new amount in a cell, users had to select the current entry and then enter the new digits.
  Recommendation: Users would like the current entry to clear upon clicking into a cell.
- **Issue:** In order to enter an amount, users had to click outside of the cell to commit. Some users did not realize this immediately and were frustrated by it.
  Recommendation: Users would prefer to enter the number and then hit "enter" as they currently do when using Excel.
- **Issue:** Scrolling was "jumpy."
  Recommendation: Improve scrolling so that when using the mouse, users can quickly and smoothly move through the information to get to a particular category.
- **Issue:** Users reported that it is difficult to scan the screen and pick out the totals for the GL categories.
  Recommendation: Users would like totals and GL categories in bold.
- **Issue:** Users wanted to see balances more clearly, perhaps in a standard position.
  Recommendation: Move the balances to a standard position at the bottom of the page.

GL level

- **Issue:** Users had a difficult time figuring out how to add a GL item. Several users were frustrated that when the clicked on the "plus" icon, they got no feedback ("nothing happened") only to realize after they expanded the item that they had added numerous GL items.
  Recommendation: If the user clicks on the "plus" icon, they should see the GL category expand with the new item highlighted.
- **Issue:** Users could unknowingly delete a line item. One user mistook the plus and minus signs for expand and collapse icons and accidentally deleted a GL item.
  Recommendation: This issue needs further exploration and we understand that in subsequent versions of the system this may change. For now, we recommend adding verification that the user is about to delete a line item.
- **Issue:** Users were not clear on whether or not they should add revenue as a negative number. Some questioned it, wondering if it was like systems where the system makes the revenue negative automatically, some entered it as a negative number saying that revenue is always negative, and some entered it as a positive and when questioned said that they did not deal with revenue so weren't sure.
  Recommendation: This is an issue that needs further exploration and clarification for users.
- **Issue:** Users said there are many GL categories that they do not use in their departments.
  Recommendation: To eliminate visual clutter on the screen, users would like to rollup those categories that they don't use and save that setting in their preferences so they don't have to repeat that.
- **Issue:** Users were sometimes frustrated that when they added a line item to a GL category, the amount did not roll up to the GL total.
  Recommendation: We realize the difficulty given that users can overwrite the GL total, but we recommend this issue be further explored if only to determine the best way to communicate how this works to the users.

Cost Objects

- **Issue:** Users were frustrated that they had to go back to the home page to search for a new Cost Object. They wanted to be able to pull it down from the current page, particularly if it was a child of the cost object they were currently viewing.
  Recommendation: This issue and possible solutions be further explored in future testing and user interviews.

People Forecasting

- **Issue:** Users understood that they could easily toggle between percent allocation and dollar amount for each personnel appointment. They were confused, however, by the label for the dollar amount "$ Year."
  Recommendation: This be labeled "$ Month."
- **Issue:** Users wanted to see all of the cost objects a person is allocated to so they could tell if a person was over allocated across all projects.
  Recommendation: Further explore possible solutions with users in interviews and testing sessions.
- **Issue:** Users were frustrated that they had to keep expanding a personnel line when toggling between percent effort and dollar amount. Once expanded, users wanted those lines to stay expanded.
  Recommendation: Once personnel lines are expanded, keep them expanded as the users go back and forth between percent and dollar amount.
- **Issue:** Users said it would be helpful to have information about the cost object at the top of the people forecast page: PI, date, overhead rates.
  Recommendation: Add overview information to the top of the page, if possible.
- **Issue:** Users would like to be able to click anywhere on the personnel line to expand it, not just the person's name.
  Recommendation: Make the entire personnel line clickable so that the information can be expanded.
- **Issue:** Users were curious to know how this personnel information will feed into the R/E forecast.
  Recommendation: This was not functional at the time of the test and will need to be explored in future sessions.
- **Issue:** Users also asked if there was a way to see all of the personnel for one PI.
  Recommendation: Our understanding is that this will be part of the workset functionality, but we would like to explore this with users in future sessions.

Comments from Users on their overall experience with the RAFT application:

Please list one to three pain points (areas of difficulty) that you would like to see addressed in the future:

- Numbers entered would clear cell
- Information about the account would be at the tope
- Make clear what this account is a child of
- Put people forecasting before R/E forecasting
- Set preferences to hide some GL items to make the screen more manageable
- There is a lot in the GL hierarchy I won't use. I would like to collapse some as a default preference
- I would like to see all of the personnel of a particular PI
- I would like to change the date range without clicking into a dialog box

Please list one to three things you liked and would want to remain in the future:

- Easy to use
- Easy to see several months
- Totals at the top
- Travel all together
- How much data fits on one screen
- People forecasting
- Expenses and people together are nice

Task Completion Summary Table

Participant	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7
Pilot	?	?	?	?	✓	✓	✓
1	✓	✓	✓	?	✓	✓	✓
2	✓	?	?	?	?	✓	✓
3	✓	✓	✓	?	✓	✓	✓
4	✓	✓	✖	?	✓	?	✓
5	✓	✓	✓	?	✓	✓	✓
6	✓	✓	?	?	✓	✓	✓
8	✓	✓	✓	?	✓	✓	✓

✓ Users completed the task
? Users struggled but eventually completed the task
✖ Users failed to complete the task

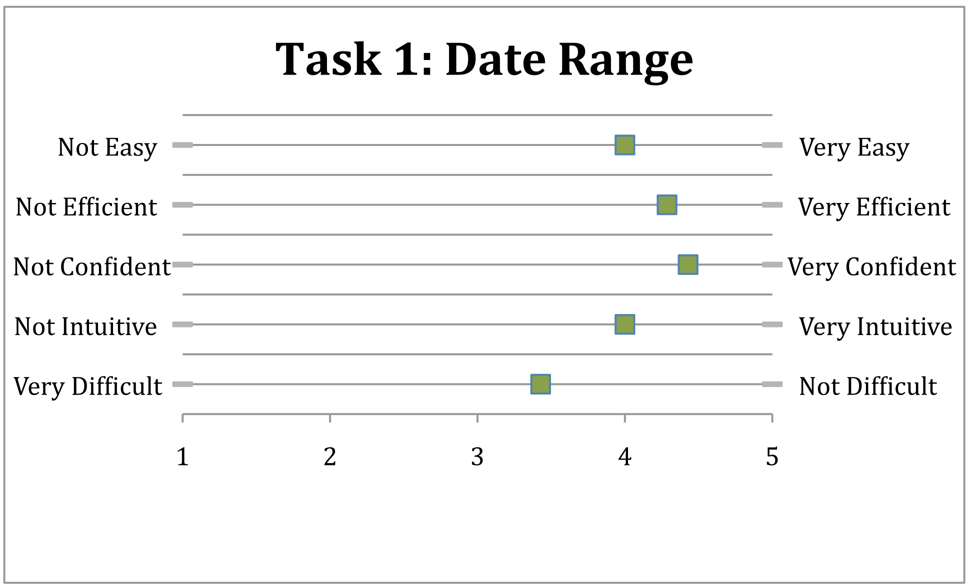
Next steps

We recommend further usability testing and interviews with users to explore some of the issues and possible solutions identified by these testing sessions.

Task by task ratings

Task 1: You want to look up cost object 9999990 (Future Reporting Test) using MIT's new reporting and forecasting tool. Having reviewed the expenses you now want to narrow the date range and review expenses only for January 1, 2009, through June 30, 2009, and see how much was spent on Travel during that period.

Participants did not have trouble completing this task, but two users were looking to change the date on the home screen rather than open a dialog box.

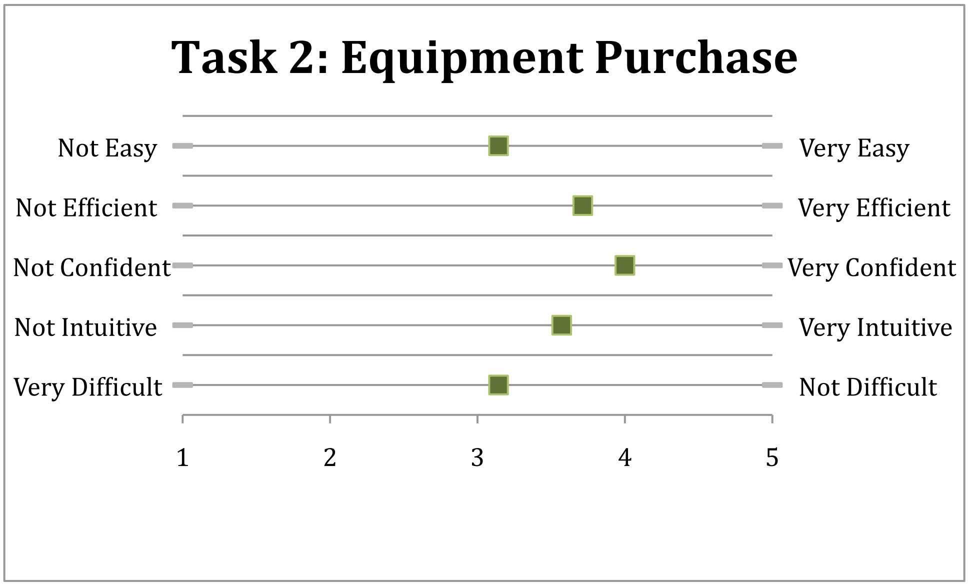


User comments:

- I don't like having to click more than once to change the date range.
- Is the default something I can set from my preferences?
- Do I need to use the SAP date entry method?

Task 2: For Cost object P9999991 (Future Reporting Child 1) you want to review the expense forecast. The PI for this project would like to purchase new lab equipment in April 2011 that she estimates will cost $7,000 and wants to know how this will impact the overall expenses. How would you answer her question using the RAFT tool?

Several participants wanted to know what the forecasted end balance was and they had a hard time finding it. They wanted to be able to scan the screen more easily to pick out those key amounts.



User Comments:

- I should not have to search again to get to the child account.
- I don't want to have to reset the date range again.
- I would like the total lines to be bolded as well

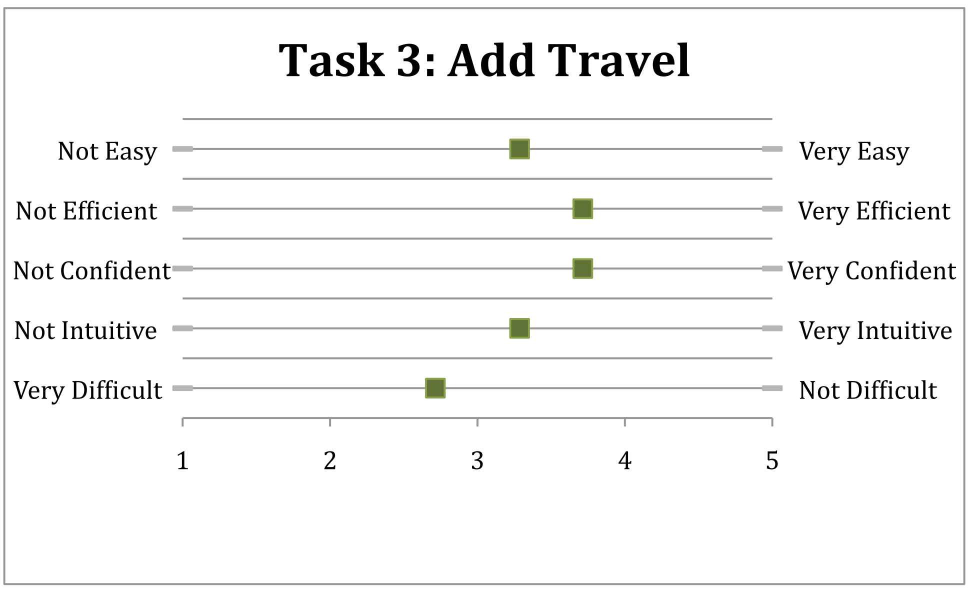
Task 3: There is $3,000 in the foreign Travel forecast for April 2011. You need to allocate $1,500 for travel to a conference in Brussels for that month. How much will remain for travel in April 2011?

Participants had difficulty with task in several areas:

- Do they need to add a line item?
- How to add a line item?
- Accidently deleting a line item
- Not knowing they had added a line item
- Having to clear the cell manually before entering a number
- Having to click outside of the cell to enter the number

Some participants had difficulty because they don't forecast travel (or other GL items) to this level of detail and they weren't sure how to do it. They also struggled with entering a new line item but not seeing the amount appear in the GL category total. We understand the reasons for this but it is not clear to users and should explore the issues with future testing and interviews.

The graph below conveys the difficulty users had with this task.



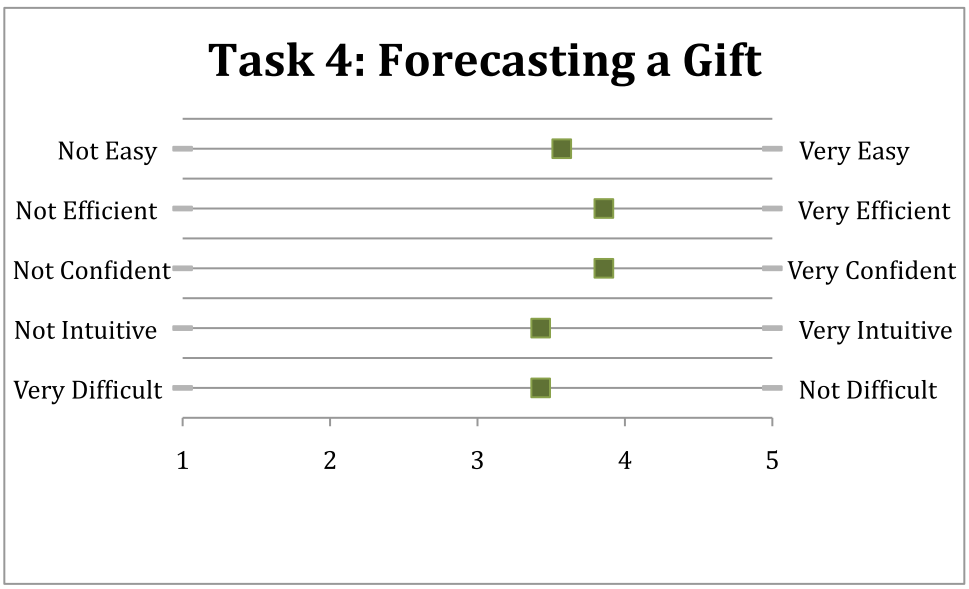
User Comments:

- We don't forecast travel by month
- We don't usually drill to this level of detail.

Task 4: Your program is expecting a $1,500 Gift in April 2011. How would you account for that in the forecast?

Many participants struggled with this task because they don't normally deal with revenue There was also some confusion over whether or not to enter this as a negative number. Some participants did not consider it and others wondered if the system would make the adjustment for them and enter the revenue as a negative. There was also confusion about adding a separate line item for this or aggregating it with all gifts.

Similar to task 3, participants were confused about how to add this to the forecast. Some participants added this to the total and then allocated it and some entered a new line item and wanted the GL total to change. This issue should be explored through further testing and interviews.



User Comments:

- How would I allocate this?

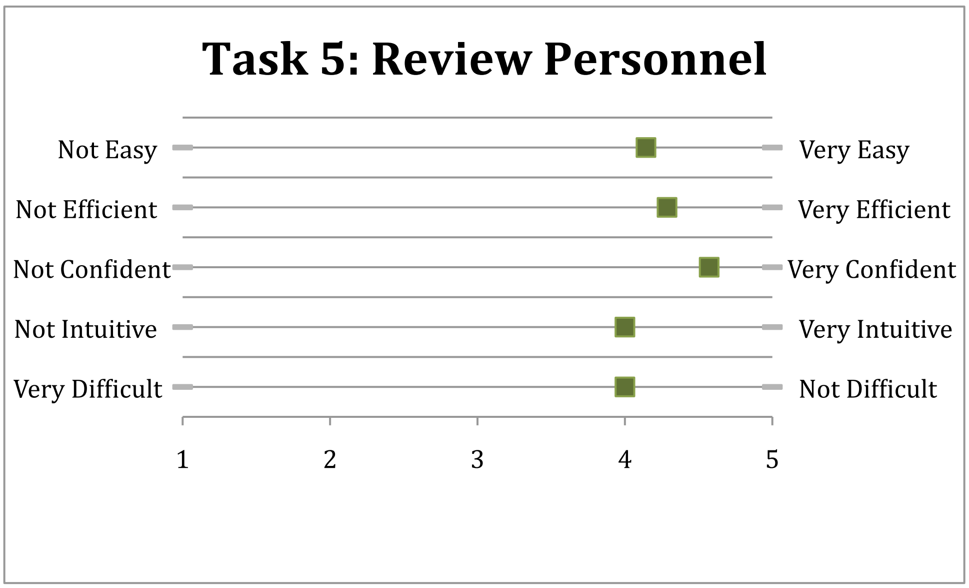
Task 5: You need to review some personnel expenses for Cost Object P9999991. What is the percent allocation for Bob Salary tester 1 for May 2011? What is the associated dollar amount?

Participants were frustrated that when they switched back and forth between percent allocation and dollar amount, they had to reopen the particular line they were viewing. Once opened, they wanted it to stay open.

Participants were all comfortable with this NOT being the system of record for personnel.

Participants understood the need to expand each person to see their appointments.

Two people wanted to update the personnel forecast from the Revenue and Expense forecasting tab.



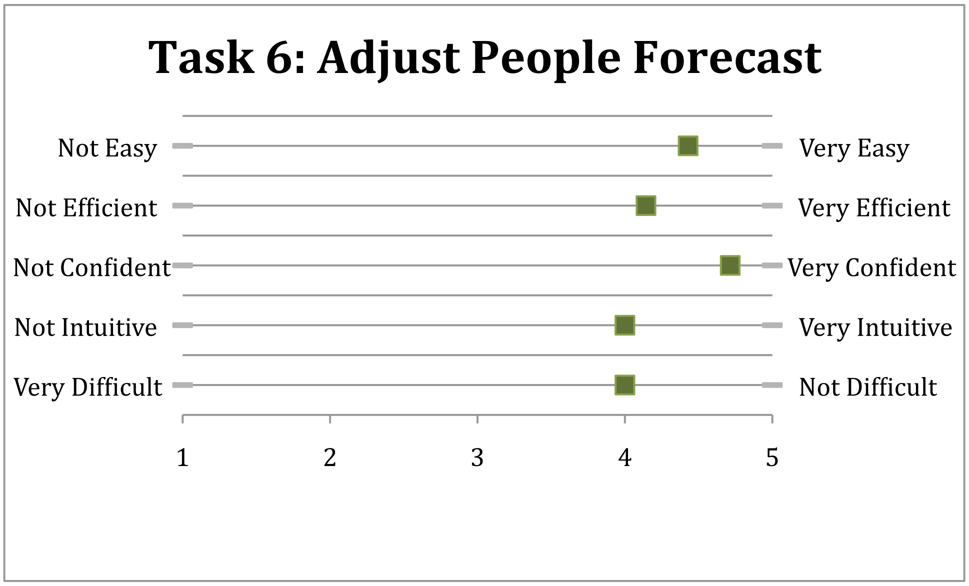
User Comments:

- It's okay that this is not the system of record. That's the way it is now.
- I want this to be the system of record for past data.
- This is much easier than the Excel spreadsheet I use now.

Task 6: Bob Hourly tester1 will be working on Future Reporting Child 1 (P9999991) fifty percent time in May 2011. Make this adjustment in your forecast.

Participants completed this task easily and were fairly confident they had done it correctly, as reflected in the graph below. Only one person questioned the second row

Their main complaint was that they wanted to see an individual's allocation across multiple cost objects to make sure they were not over allocated or for how long they would be over allocated.



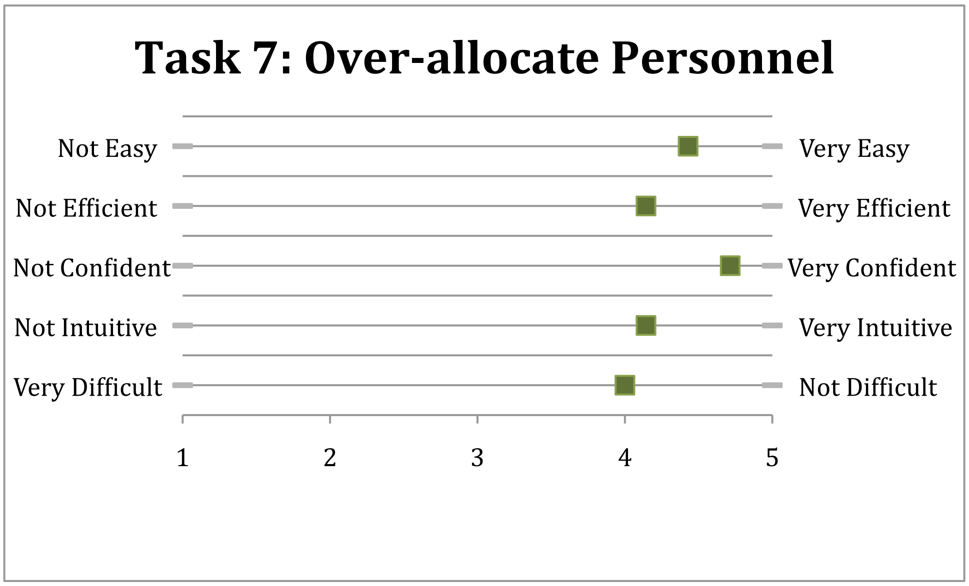
User Comments:

- How would I be able to see Bob's allocation across all cost objects?
- I would like to be able to click anywhere on the row to get the second row to appear.

Task 7: Bob Hourly tester 1 should be allocated to Future Reporting Child 1 (P9999991) 150 percent time for March 2011. How does this affect the total salary and wages for that month?

As in the case of task 6, participants completed this task easily, but wanted to see the individual's allocation across multiple cost objects. They also wanted to see the dollar amount roll-up to the Revenue and Expense forecast.

Question about calculating the total amount for hourly employees because moths vary in length so their total pay is usually different.



User Comments:

- I wanted both lines to stay open while I switched back and forth between percent and dollars tabs.
- How did RAFT come up with this total number – for hourly employees this is very tricky. Are there four or five weeks in a month?