

Hotmail Usability Test Final Report

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Report for Microsoft's Hotmail Development Team

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Usability Test Final Report

Evaluation of Hotmail Internet Email Service Application

This report contains the following sections:

The **executive summary** briefly describes our test, summarizes the results, and lists our main recommendations for improvements to Hotmail.

The **description of the usability study** outlines the processes we followed to design the test, select test participants, and develop criteria for gauging test results.

The **test results** describe the amount of time test participants spent completing scenarios, the types of data collected, and the categories used to group usability problems.

The **findings and recommendations** provide detailed information about the test results and Practical Product's recommendations for resolving problems.

The **conclusion** summarizes the results and discusses reasons to address the usability problems identified in the test.

The **appendices** contain copies of actual documents used during testing.

Executive summary

In response to Microsoft's request for usability testing of Hotmail, its web-based email product, Practical Products, Inc. performed a formal usability test with several representative users of the product. We tested six people ranging from rank novices with no previous email experience to advanced users who were highly experienced with email products.

Our tests, conducted in a usability lab, involved observing test participants while they completed a broad range of real-world messaging tasks. The test results and post-test interviews revealed several strengths and weaknesses in Hotmail, as detailed in the body of this report. The following table briefly reviews the most significant usability problems and our recommendations for addressing them.

<i>Problems</i>	<i>Recommendations</i>
The Hotmail Search feature failed.	Enable the Hotmail user search feature or remove it if this is not possible. The Search feature to locate other Hotmail users did not work.
It is difficult to attach files.	Reduce the number of steps required to attach files and change the default file type to "all files."
User feedback is lacking.	Provide better and more visible feedback to users. Our users needed more and better confirmation that they had successfully performed certain tasks, including moving messages into folders, attaching files, and logging off.
Internal and network errors are common.	Research the causes for internal errors and network errors and determine ways to improve the robustness of the product.
The Enter key does not always work.	Allow users to use the Enter key and Submit button interchangeably.
Users weren't sure how to reply to mail.	Make more obvious the functions of radio buttons versus links. Many users mistakenly clicked on radio buttons when attempting to reply to messages.
Icons, buttons, options are sometimes hard to find.	Consistently position buttons, icons, options, etc. so that users become "trained" concerning where to expect to find these items. In addition, Hotmail should avoid duplicating options on a single window (e.g., "Inbox" on the Folders window) to prevent confusion.
The password clue was confusing.	Use a more familiar password reminder, such as "mother's name."
Some language was confusing.	We recommend finding a synonym for the word "compose" to label the option that users select to write a message. Also, one of our international test participants commented that "first name" and "last name" are terms international users might fail to recognize.

Description of the usability study

This section describes the purpose, content, and design of the Hotmail usability test that Practical Products, Inc. performed for Microsoft. In addition to this report, our lab produced an annotated 10-minute "highlights" video that captures key responses of the test participants as they complete the usability test.

Test goals

Practical Products, Inc.'s goal for this test was to provide Microsoft developers with a list of findings and recommendations they can implement to improve the usability of Hotmail, Microsoft's no-cost, Web-based email product.

We addressed as many of the issues Microsoft developers raised as possible given time, budget, and technical constraints, as explained following.

Background

Microsoft contracted with Practical Products, Inc., to research the strengths and weaknesses of Hotmail, Microsoft's no-cost web-based email application. According to our Hotmail liaison, Hotmail's audience is quite broad, consisting of anyone with Internet access who is interested in having anonymous email capabilities.

Microsoft presented Practical Products with a set of features to test. We addressed most of the requested issues, as discussed below, with a few noted exceptions.

"Specific" test requests

We were asked to assess Hotmail's ease of use in the following *specific* areas:

- registering for Hotmail
- logging in and logging out of Hotmail
- composing an email
- sending and retrieving email (to include sending attachments)
- using the Hotmail member directory to look up member email addresses
- sorting messages in the Hotmail InBox
- creating an address book that contains frequently used addresses
- setting up folders to store messages by category.

"General" test requests

The developers also asked us to address concerns of a more *general* nature. They asked us to collect information about Hotmail user habits and perceptions, including:

- how users currently use email
- the level of effort required to use Hotmail
- satisfaction with Hotmail (determining whether users continue using it, recommend it to others, etc.)
- perceived reliability of Hotmail
- perceived speed of Hotmail.

Test requests we excluded

The test team decided to exclude from formal testing four test issues that Hotmail developers requested. We based this decision on our opinion that it would be better to address these issues in a focus group or through questionnaires and interviews:

1. **What users think of Hotmail's performance.** Because of the wide variety of computers used, modem speeds, variations in Internet traffic volume, and other factors, we determined it would not be helpful to address this issue as part of the formal usability test. We decided to assess the test participants' impressions about system performance using a post-test questionnaire.
2. **The password retrieval process.** We omitted a study of the password retrieval process because it requires setting up password "prompts" that would require time to elapse for users to forget their passwords or password clues. However, we did collect information about the password entry process, because it revealed some problems for users.
3. **Reminders.** We excluded a study of "reminders" because we believed they would be used by only a small subset of advanced users.
4. **Accessing other email through a POP account.** We chose not to test POP account access because of the difficulty in setting up the test (e.g., queuing messages up from another account while the usability test was in progress) and because of the possibility of encountering proprietary conflicts with other email accounts.

Hotmail test description

The discount usability testing approach

Practical Products conducted the Hotmail usability test following our customary "discount usability testing" approach. This widely embraced approach to usability testing involves testing a relatively small, representative group of users in order to produce reliable results, reduce testing costs, and reduce the amount of time spent conducting and analyzing test results. Industry studies confirm that carefully designed tests with a small number of test participants (4-6, typically) discover at least 80% of the usability problems revealed in formal tests with much larger numbers of test participants.

In addition, we have found that discount usability testing significantly reduces test turn-around time, allowing our lab to provide prompt feedback to clients. This is especially important to clients who may be working under very limited time constraints—such as development staff who must implement recommended changes within a small window of time before a product is released.

Test format

The complete test for each test participant involved the following activities:

Pre-test activities consisted of phone calls to qualify the test participants and completion of a pre-test questionnaire designed to confirm that the test participant met our user profile requirements.

Formal testing in a usability lab involved testing individual participants in a lab environment set up much like a home office. Users completed real-life scenarios using Hotmail while we recorded their activities on video and observed them through a one-way mirror.

The usability test room (where test participants worked) was furnished with three video cameras set up to tape test participants from various angles. Test participants worked at a desk with a Pentium computer running Windows 95 with Netscape Communicator and Internet Explorer software. They were connected to the web through an Ethernet T-1 internet connection.

The observation room contained an AV console, audio channel mixer, VHS recorders, a special effects generator, and a speaker with a pickup to the usability test room. While the test participants worked, the evaluation team logged and categorized observations using a computer running U-Loggit usability testing software.

Walkthrough—To test our scenarios and the general “do-ability” of the test, we invited a sample test participant to complete the test scenarios in the lab while we logged the results. We used the results from our walkthrough test participant to confirm that the test scenarios were readily understandable and to review our timing assumptions. The walkthrough experience gave us a chance to revisit some awkward wording and revise our test time limits.

Pilot test—After refining the test scenarios and questionnaires, we conducted a pilot test under authentic test conditions to make sure our revisions had corrected all critical problems with the test.

Post-task and post-test activities consisted of short questionnaires administered between scenarios and a longer questionnaire and interview administered after the final scenario. The test team used the final interview as an opportunity to ask test participants about specific issues that arose during their individual tests.

Summary sessions conducted after each test allowed the evaluation team to quickly examine test results and categorize usability issues discovered in the test.

Test times

We tested Hotmail both on weekday evenings and on Saturday mornings. We tested two users per 3-hour session.

Test participant selections

Based on Microsoft's assertion that Hotmail is geared for all levels of users, Practical Products' evaluation team decided to test two groups of users, novice users and advanced users. We reasoned that by selecting users on both ends of the experience scale, we could collect a broad range of feedback that would be generally applicable to users falling in the middle of the continuum. By testing novices, we were more likely to collect information about the intuitiveness of the application. By targeting advanced users, we could be confident of assembling a group of people capable of performing the more difficult tasks we were asked to test.

Novice Profile: We selected novice test participants who met our requirements of having basic computer experience, including keyboarding skills, Windows experience, and the ability to access and navigate a Web browser. We purposely selected people for this group who have NO email experience as a way to ensure that prior experience with other email packages would not skew the test participants' reactions.

Advanced Profile: We selected advanced users who met the minimal requirements of the novice users, but who in addition had previous experience using other email programs (except for Hotmail). We limited this study to participants who had extensive Web experience (6 months +), and who had used email for at least 6 months.

In addition to selecting test participants who met the experience profile, we also worked to ensure that the test participants were sampled across a broad demographics range. Our users were a mixed gender group ranging from age 15 to 45+ years.

Test problems

Test participant selection problems

We originally recruited and qualified three novice test participants and three advanced participants, each group containing a mixture of ages and genders. However, during one evening testing session, Hotmail was unexpectedly taken down for maintenance. We had to excuse our sole male novice participant test participant and recruit another on short notice. The replacement participant subject was a 45+-year-old female with advanced user skills.

Because of this substitution, our final test sample was composed of four advanced participant users and only two novice users.

Wide variations in Hotmail response

We noticed a considerable difference in system responsiveness depending on the time of day that the tests took place. Hotmail was very slow on weekday evenings, but quite responsive on weekend mornings. This is important to note because it may help explain why there is such a wide divergence of opinion among the test participants concerning the "speediness" of Hotmail.

Scenario and questionnaire design

We created a set of scenarios designed to test the issues discussed previously. Each scenario was designed to require between 15-25 minutes to complete. We constructed the scenarios to be as real-world as possible, containing multiple related tasks (e.g., reading an email message and then responding to it).

The questionnaires administered after each scenario and after the complete tests were designed to collect some of the "qualitative" data omitted from the formal testing. The questionnaires quizzed test participants about their perceptions about Hotmail and how well they understood and liked the product.

Scenario design

We revised our test scenarios slightly because of some problems that occurred during testing. The final scenarios and tasks were as follows:

Scenario 1: Registering for Hotmail and Logging On

(time limit: 10 minutes)

Scenario 2: Reading, Composing, and Sending Messages

(time limit: 15 minutes)

Task A: Check for email messages received from Hotmail.

Task B: Write an email message and send it.

Task C: Check for a new message and respond to it.

Advanced user scenario**Scenario 3: Sending Attachments, Creating a Message Folder, and Creating an Address Book**

(time limit: 15 minutes)

Task A (Discontinued because application wouldn't support a search for existing Hotmail users).

Task B: Send a message with an attachment.

Task C: Create a folder and store a message there.

Task D: Create an address book and store an email address there.

Scenario 4: Deleting Messages and Leaving Hotmail

(time limit: 10 minutes)

Task A: Erase all messages in the inbox.

Task B: Sign off from Hotmail.

Time limits

We allotted 50 minutes for the test participants to complete all four scenarios.

When we originally designed the scenarios, we believed that because of their limited abilities and experience, novice test participants might not have enough time to attempt Scenario 3, which tests the advanced Hotmail tasks (attachments, folders, address books). However, because our novice users were able to complete scenarios 1, 2, and 4 reasonably quickly (setting aside system-imposed delays), we decided to allow them to attempt the more advanced tasks. As a result, the test scenarios and time allotments are the same for the two groups of test participants.

Test questionnaires and interview design

We designed a series of questionnaires to qualify potential test participants and to collect subjective feedback from the test participants during and after testing. The Appendix contains the actual questionnaires.

Pre-test questionnaire

To qualify test participants, we asked a series of questions designed to collect demographic information and to assess their level of computer and Internet experience. We accepted for testing those test participants who met our minimum requirements for novice or advanced users.

Post-task questionnaires

After the test participants completed each scenario, we administered a post-task questionnaire. The questionnaire was designed to capture feedback about Hotmail tasks while the test participant's memory was fresh. The questionnaires asked test participants to rate the ease or difficulty of the tasks, describe whether Hotmail's terminology relative to the task was clear, and provide free-form comments concerning the tasks.

Post-test questionnaire

After the test participants completed the final scenario, we administered a questionnaire designed to capture their general opinions about Hotmail. The questionnaire asked test participants to rate their interest in having anonymous email capabilities, their impressions about Hotmail's speed and responsiveness, and their overall satisfaction with the product.

Post-test interview

After each of the test participants completed the post-test questionnaire, the test briefer (the evaluation team's liaison with the test participant) scanned the questionnaire and asked the test participant to explain some of the responses. As the need arose, the briefer occasionally presented the test participant with additional questions that the evaluation team compiled while observing the test.

Test results

Timing Results

The test participants completed the test scenarios as outlined in the following table.

	Scenario 1 (10 min)	Scenario 2 (15 min)	Scenario 3 (15 min)	Scenario 4 (10 min)	Total Time (50 min)
Test participant 1 (Novice)	9:29	4:34	14:25	3:36	32:04
Test participant 2 (Advanced)	1:04	5:52	17:33	1:24	25:53
Test participant 3 (Advanced)	13:43	6:13	9:42	1:12	30:50
Test participant 4 (Advanced)	5:40	5:57	6:50	0:49	19:16
Test participant 5 (Novice)	17:03	6:56	10:12	1:02	35:13
Test participant 6 (Advanced)	6:35	5:43	8:11	1:03	21:22

Explanation for exceeded time limits

The time limits presented few difficulties for the test participants, with the following exceptions:

Scenario 1: Test participant 3 exceeded the time limit on Scenario 1 because she thoroughly read the terms of service agreement and the mail group descriptions. Test participant 5, a novice, exceeded the time limit primarily because system response time was very slow at the time of testing.

Scenario 3: Test participant 2 exceeded the time limit primarily because he tried several times without success to use the non-operating Hotmail search feature.

Types of data collected

Quantitative data Quantitative data consists of 'hard,' measurable results that we analyzed to determine how the test participants performed compared to established benchmarks. Some of the **quantitative** information we collected included time spent on task, the percentage of test participants succeeding or failing at tasks, and so on.

Qualitative data Qualitative data consists of records of subjective impressions and opinions. Some of the information we collected was **quantitative**, including time spent on task, the percentage of participants succeeding or failing at tasks, and so on.

Some of the other information was **qualitative**, consisting of opinions about Hotmail's quality, the product, perceptions about Hotmail's speed and ease of use, and so on. We captured some of the qualitative commentary during testing, but also received good qualitative feedback in the questionnaires and post-test interviews.

Quantitative data collected during testing

We collected the following information during formal testing:

- time to complete each task
- number of test participants completing tasks within allocated time
- number of test participants completing tasks with extra time
- number of problems encountered
- number of errors (unsuccessful tries)
- number of local problems
- number of global problems
- number of times each test participant used the online help
- number of times each test participant accessed advertising sites
- length of time each test participant spent browsing advertisements.

Qualitative data collected during testing

During and after the test we also collected "qualitative" data, consisting mostly of commentary recorded during the tests. This commentary provides additional insight into some of Hotmail's usability difficulties.

We collected information including:

- facial expressions
- verbal comments when test participants "thought out loud"
- spontaneous verbal expressions (comments)

- miscellaneous activities (stretching, requesting breaks etc.)

We also collected qualitative data during:

- interviews after the test scenarios
- interviews after the test was completed.

- interviews before the test
- interviews after the test
- miscellaneous activities (stretching, requesting breaks etc.)

Usability criteria

To categorize the test observations, we applied a usability test analysis model that categorizes product usability problems according to whether they fail to meet any of the following 102 criteria:

1. **Concept:** Does the product use effective metaphors? Is it intuitive?
2. **Consistency:** Does the product look and perform similarly through all parts of the application?
3. **Content:** Is the content accurate, appropriately complex, and provided in the right amount?
4. **Feedback:** Does the product provide appropriate feedback to the user?
5. **Interaction Model:** Are user responses and other system interactions handled according to established models?
6. **Navigation:** Is it easy to get where you want to go in the product?
7. **Terminology:** Is the interface's language easy to understand for the audience(s)?
8. **User Assistance:** Does the product supply an appropriate amount of user help (e.g., online help, how to get customer service, other instructions)?
9. **User Preference:** Does use of the product cause difficulty for individual users in other ways not covered in these categories (e.g., does it favor "mouse users" over "keystroke users"; is it perceived to be too slow)?
10. **Quality Assurance:** Is the product robust? Does it fail in ways that prevent users from performing tasks?

Our test results produced findings in most of these areas, which we rated using the rating scales discussed in the following section.

Scope and severity ratings

After identifying usability problems, we rated their scope and severity. **Scope** refers to how widespread the problem was throughout the product, and **severity** codes rate the seriousness of the problem.

Scope

Local problems consisted of problems that occurred only in a particular part restricted to a particular part of the application, while **global problems** indicated far-reaching design flaws that occurred with consistency throughout the product. In general, global problems tend to be critical to correct, because they affect usability of the entire application, have far-ranging effects, and tend to be critical to correct. However, some local problems are critical enough to hamper severely the users' ability to perform key tasks.

Severity

We used the following severity codes to classify the seriousness of the problems we discovered:

1 - prevents completion of a task

2 - causes significant delays in completing a task

3 - causes minor usability problems, but users can complete the task

4 - minor annoyance - does not significantly impact usability, but should be corrected if time allows.

Findings and recommendations

Using the evaluation criteria discussed previously, we analyzed the test results to develop a set of findings. This section discusses:

- usability problems noted during the test (findings)
- recommendations for improving Hotmail
- feedback we collected from test participants using questionnaires and post-test interviews.

Findings

The following table summarizes usability problems noted in the usability test, ordered by severity level. The narrative following the table provides recommendations related to the findings.

Usability Problems	Number of test participants affected	Severity Level	Scope
1. Test participants were unable to find users in Hotmail's directory. ¹	21	1	local
2. The process for sending attachments confused test participants. (Four test participants thought they had successfully attached a document when they had not.)	4	2	local
3. Test participants were unsure if items had been moved into the selected folder.	2	2	local
4. Test participants received internal and network errors.	2	2	local
5. Test participants expected to be able to press the Enter key to submit information, but this worked only in isolated instances.	3	3	global
6. Test participants were unsure whether to click on the radio box or the link to reply to email.	4	3	local
7. Test participants had problems finding the "create folder" icon.	3	3	local
8. Test participants were unsure if they had signed off from Hotmail successfully.	2	3	local
9. Test participants were unsure which button allowed them to compose an email.	1	3	local
10. Test participants had trouble navigating between inbox screen and folder screen.	2	3	local
11. Test participants were confused about the password hint question.	4	3	local
12. International test participants were unsure of the terminology "first name" and "last name" ²	W	3	local
13. Test participants complained about excessive amount of reading materials in the Terms of Service.	4	4	local
14. Test participants were unable to find messages they had sent.	1	4	local
15. Test participants disliked the Compose window.	1	4	local

¹ We removed this task from our scenarios after the first two test participants were unable to complete the task and the evaluation team confirmed that the task could not be completed.

² This finding was collected from our walkthrough test participant, whose other testing results are not recorded in this report. We included this finding because it may be of special interest to developers interested in internationalization and localization issues.

Recommendations

We recommend the following improvements to Hotmail based on the test findings.

1. Enable the Hotmail User Search feature

The search feature on Hotmail ("Searching for Another Hotmail User") did not work over the course of our testing. After it failed for our walkthrough test participant and first advanced test participant, we removed it from the scenarios. Later attempts to use it by the test team were similarly unsuccessful. We recommend that Hotmail enable this feature (or entirely remove it). In the future, if it (or any portion) of Hotmail is not available, we recommend that Hotmail not allow users to attempt to use the facility.

2. Simplify the Attachments feature

The attachment feature caused problems for each of our test participants. Each test participant found the process to be difficult. Of our six test participants, only two were able to successfully attach it, although all *thought* they had done so. We recommend the following:

Change the default file type on the "browse" option from HTML files to "all files." Because the test participants were not sending HTML files, they experienced trouble finding the correct file type.

Remove the second step from the attachment procedure.

Once the user has chosen the file to attach, the second step confuses the user. The "attach to message" process should occur automatically.

Add highlighting or an icon to the email compose screen to notify users that they have successfully attached a message.

None of the test participants noticed the "attachments" portion of the email compose screen.

3. Notify users when folders are created successfully

Some test participants had trouble using the Folders feature. It is easy to move items between folders, but there is no confirmation that an item has been moved to a folder. We recommend that Hotmail add a notification after the user has moved the item.

4. Improve "robustness" of the application

During our tests, Hotmail experienced issues such as internal and network errors. (For example, some users encountered an internal server error after submitting their registration and after creating a new folder.) While these are not usability issues *per se*, they do affect the general usability of Hotmail and user acceptance of the product. We recommend that Hotmail research these issues and take steps, such as increasing server capacity, to avoid them in the future.

- 5. Allow users to submit using the Enter key**

Test participants expected to be able to hit the Enter key when submitting information. Many other websites do this. In some places, Hotmail does not accept it; in others, it does. We recommend that Hotmail allow users to press Enter to submit information on every portion of the website, not just selected portions.
- 6. Make obvious the function of radio boxes and links**

All folder screens feature a radio box next to the message, and a hyperlink on the message itself. Test participants were unsure of the function of each. We recommend that Hotmail make more obvious the function of radio boxes and hyperlinks.
- 7. Make it easier to find the Folder "Create" option**

Test participants experienced difficulty finding the "Create" option on the Folders screen. Users searched on the screen to find it, taking up to five minutes to find it. We recommend that Hotmail add highlighting to draw attention to the "create" link.
- 8. Notify users that they have signed off**

Many test participants were unsure whether they had actually signed off from Hotmail. We recommend that Hotmail add a screen notifying users that they have successfully signed off before taking them to the MSN homepage.
- 9. Provide different term to replace *Compose***

Test participants had issue with the "compose" button. The test participants did not understand the terminology. One of our test participants stated during the test that "it would be better if it said send a message."
- 10. Remove duplication of menu items**

Some test participants had trouble navigating between the In-box and Folders screen. They were unsure if the menu would take them where they wanted. One test participant also expressed confusion over the Inbox being listed both on the menu and in the Folders screen.
- 11. Use a more familiar password retrieval metaphor**

Most test participants were confused about the password hint question. If a user forgets his or her password, they can contact Hotmail and get their password if they answer this question properly. Test participants thought that they were supposed to supply their password to answer this question. This compromises the security of the test participants, and of Hotmail, since the answer to the question appears on the screen (thus giving away the user's password). We recommend that Hotmail use the verification method widely used in business, where the user gives their mother's maiden name to verify his or her identity.
- 12. Change "last name" to "family name"**

Our walkthrough test participant was international. He found the terminology "first name" and "last name" to be confusing. We recommend that Hotmail change this terminology to embrace the needs of international users.

- 13. Reduce quantity of information in the TS** All users complained about the amount of information in the Terms of Service. Only one test participant tried to read the entire TS, and she started skimming after approximately five minutes. We recommend that Hotmail decrease the amount of information given at the beginning for users to read, and make it clear where the TS can be referenced later.
- 14. Make the "save message" option more visible** Test participants expected to be able to find the messages they had sent. Test participants did not notice the option on the email compose screen that they can set to keep a copy of the message. We recommend that either Hotmail make this option more visible, add an option to allow users to choose an on/off setting to specify that they want to keep all sent messages, or (as many other mail programs do) automatically keep copies of sent messages.
- 15. Add color / other design elements strategically** Test participants commented that the email compose window was "boring." We recommend that Hotmail add more color, highlighting, or other graphical elements to the screen.

Other feedback (questionnaires and interviews)

We collected detailed feedback from test participants concerning what they liked and disliked about Hotmail. Following are summarized results collected from the post-test questionnaires.

On the following scale, rate your need for / interest in having anonymous email capabilities.

Test participant	No interest / need	Low interest / need	Don't feel strongly either way	Moderate interest /need	High interest / need
#1				X	
#2					X
#3	X				
#4				X	
#5			X		
#6				X	

On the following scale, rate your impression of Hotmail's speed and responsiveness.

Test participant	Very slow	Moderately slow	Neither fast nor slow	Moderately fast	Very fast
#1					X
#2				X	
#3		X			
#4				X	
#5		X			
#6			X		

Will you use Hotmail in the future?

Test participant	Never	Rarely	Sometimes	Fairly frequently	Very frequently
#1				X	
#2		X			
#3	X				
#4		X			
#5					X
#6			X		

On the following scale, rate how highly you would recommend Hotmail to your friends and associates.

Test participant	Would NOT recommend	Would recommend with reservations	Don't feel strongly either way	Would probably recommend	Would strongly recommend
#1					X
#2	X				
#3	X				
#4			X		
#5		X			
#6				X	

If you plan to use Hotmail at all in the future, please indicate how you might use it:

Test participant	While traveling for pleasure	While traveling for business	At work for business use	At work for personal use	At home	Not applicable – will not use
#1	X				X	
#2					X	
#3						X
#4						X
#5		X				
#6				X		

	<p>Following are free-form comments from the test participants.</p>
<p>What did you like MOST about Hotmail?</p>	<ol style="list-style-type: none"> 1. Test participant #1: It's fast and pretty easy to use. 2. Test participant #2: Easy to send email to another Hotmail member, easy to delete messages. 3. Test participant #3: Log off. 4. Test participant #4: It's very fast. Also, the screens aren't cluttered. 5. Test participant #5: The in-box (once you are familiar with it) was fairly straightforward – nice to know how many messages you had (new and unopened). 6. Test participant #6: Fairly easy to follow without printed instruction sheet or manual.
<p>What did you like LEAST about Hotmail?</p>	<ol style="list-style-type: none"> 1. Test participant #1: There's no confirmation for signing off and sending messages sometimes. 2. Test participant #2: File attachment difficult and not clear. 3. Test participant #3: Attaching files, moving email to folders. 4. Test participant #4: I don't think people who've never used email will find it easy to use – at least initially. 5. Test participant #5: It seemed to take a long time to get from one section to another. 6. Test participant #6: Didn't see a button to allow review of "sent" messages.

What would you change about Hotmail?	<ol style="list-style-type: none"> 1. Test participant #1: Get good pictures on the homepage 2. Test participant #2: Clarify and simplify file attachment process. 3. Test participant #3: Lose the horizontal toolbar with Reply, Reply All, etc. Add drop-down menus. Allow right-click shortcut menus. 4. Test participant #4: The OK button after sending email. The lack of instructions for moving and deleting mail. 5. Test participant #5: Maybe the layout and design. 6. Test participant #6: Need an obvious outbox.
Optional comments	Please add any other comments about Hotmail that might be useful in helping Hotmail improve this email product.
	<ol style="list-style-type: none"> 1. Test participant #2: Reduce amount of options – high percentage of PC users very seldom use more than sending/receiving messages in home environment – perhaps if you target businesses, they will have more use for various options. 2. Test participant #3: Make it look like Outlook Express. 3. Test participant #5: The flow (or ease of going from one section to another) could use some improvement. Not all sections seemed as easy to maneuver as others did. The address book was a nice feature because it stored quite a bit of useful information that may not always be easily accessible. 4. Test participant #6: File attachment seems to take longer than either Lotus Notes or Eudora.

Positive feedback summary

Test participants offered several positive comments about Hotmail. They liked:

- the ability to log into Hotmail from any location--noted as a plus when traveling on business.
- the ease of sending and deleting messages.
- Hotmail's overall simplicity of use: "I didn't need an instruction manual to use it."
- The uncluttered, simple layout of the site.
- The thoroughness of the Address Book feature--it lets you add considerable biographical information about people.
- The quick responsiveness of Hotmail (this from users using Hotmail at low-traffic times).

Critical feedback summary

Some of the test participants commented on issues they would like to see improved in Hotmail. They criticized:

- The wordiness of the terms of service text.
- The limited amount of graphics. Some users commented that the site should be made more visually attractive.
- The slow response time (this from users using Hotmail during high-traffic times)
- The excessive number of "clicks" required to attach a file
- The inconsistent location of options. Sometimes options are placed in the left frame of the window, sometimes in the middle of the window, and sometimes at the bottom of the screen.
- The "wordiness" of the online Help text.
- The fact that Hotmail quizzes new users about demographic information although it touts itself as an anonymous email product.
- The spell-check feature. It does not provide you with feedback to confirm it is checking words.

Conclusion

The fact that users who were unfamiliar with Hotmail could learn to use it fairly easily suggests that Hotmail is a basically sound product. Even novice email users were able to complete the majority of Hotmail tasks successfully, and most test participants offered up positive comments about Hotmail along with their criticisms.

Appendices

Even so, Microsoft could do much to improve the product. It has been Practical Products' experience that clients who implement usability recommendations report a significant improvement in user acceptance and fewer calls for technical support. In the case of this Web-based product, Microsoft might reasonably expect greater numbers of new registrations and greater amounts of time spent at the site—both of which would increase exposure for Hotmail's advertisers.

Many of the problems with the product could have been discovered through earlier testing of the product and through iterative testing at different stages in the application's development. We recommend that Microsoft perform iterative usability testing on the revised parts of Hotmail whenever major changes are made to the application.

Appendices

The attached appendices consist of the following items used in testing or as a basis for test analysis:

- Appendix A: Pre-Test Questionnaires
- Appendix B: Test Scenarios
- Appendix C: Post-Task Questionnaires
- Appendix D: Post-Test Questionnaires
- Lists of additional questions posed to participants to address unique issues that arose during their tests
- Appendix E: Evaluation team checklists administrative materials used by the evaluation team, including checklists for each team role
- Table outlining scenario completion time, by user
- Spreadsheet outlining test findings.

Appendix A: Pre-test questionnaire

Practical Products administered the following questionnaire to qualify our test participants.

Pre-Test Questionnaire

Thank you for considering being a volunteer for our Usability Test. We will work to make sure the test environment is pleasant and fun for you, with a casual dinner being served. The results from our Usability Test will be used to help improve a computer software product's ease of use.

Please answer the following questions. We will use your answers to determine if you will be a participant in our Usability Test.

The testing will take place on March 22 and March 29 from 6-8 p.m. The usability test will require 1 1/2 hours of your time.

Please place a check next to the dates on which you are available, if any.

March 22 _____ March 29 _____ Either Date _____ Neither Date _____

Please disregard the rest of the questionnaire if you are not able to attend one of the dates. Thank you again for your consideration.

Name: _____

Home Phone: _____

Work Phone: _____

Age:

15-20 21-30 31-40 41-50 51 or above

Sex: Male Female

Right handed Left handed

Please answer the following questions about your computer experience:

1. Do you use an IBM or compatible personal computer?

Yes

No

If you answered "no," please disregard the remaining parts of the questionnaire.

2. What kind(s) of programs have you worked with? Check all that apply.

Word Processing

Spreadsheets

Graphics

Other(s) specify _____

3. How long have you been using personal computers?

0-3 months

4-6 months

7-9 months

10-12 months

More than 12 months

4. Have you ever used a Web browser?

Yes

No

If you answered "no," please proceed to question 7.

5. Which Web browser have you used? Check all that apply.

Microsoft Internet Explorer

Netscape Navigator

Other(s) specify _____

6. How long have you been browsing the Web?

0-3 months

4-6 months

7-9 months

10-12 months

More than 12 months

7. Which Internet Service Provider(s) do you use? Check all that apply.

AOL

Prodigy

CompuServe

Mindspring

Other (specify) _____

I do not use/have an Internet Service Provider.

8. Does your Internet Service Provider (ISP) **OR** your work/school location provide an email program?

- ISP Yes No Not applicable—I have no ISP
- Work/School Yes No Not applicable—I don't use email from work/school

If you answered “no” or “not applicable” to BOTH of the categories in this question, please proceed to question 11.

9. Which email program does your Internet Service Provider **OR** your work/school location provide?

	<u>ISP</u>	<u>Work, School</u>
Microsoft Outlook Express	<input type="checkbox"/>	<input type="checkbox"/>
Express	<input type="checkbox"/>	<input type="checkbox"/>
Eudora	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify) _____	<input type="checkbox"/>	<input type="checkbox"/>
I do not know.	<input type="checkbox"/>	<input type="checkbox"/>

10. How long have you been using your Internet Service Provider's **OR** your work/school location's email program? (If you use multiple programs, indicate the time period corresponding to the program for which you have the MOST experience.)

- 0-3 months
- 4-6 months
- 7-9 months
- 10-12 months
- More than 12 months

11. Do you use the World Wide Web for email?

- Yes
- No

If answered “no,” please proceed to question 14.

12. Which World Wide Web email program(s) do you use? Check all that apply.

- Yahoo!
- HotMail

Netscape

Other (specify) _____

13. How long have you been using your World Wide Web email program(s)?

0-3 months

4-6 months

7-9 months

10-12 months

More than 12 months

14. Where do you use email? Check all that apply.

From a personal home account

From an account at work

From a public access terminal (library, Internet cafe, other)

From school

Other (specify) _____

15. What do you use email for? Check all that apply.

Work

Personal

Other (specify) _____

16. Do you know how to send attachments to someone via email?

Yes

No

17. Do you know how to make files for the email you receive so similar emails can be grouped?

Yes

No

18. Do you know how to create and send a simple email message?

Yes

No

Thank you for completing our questionnaire. We greatly appreciate your consideration and time. We will be in contact with you if you are selected to participate in our Usability Test. Thank you!

Appendix B: Test scenarios

Practical Products tested participants using the following scenarios.

Scenario 1 – Remember: THINK OUT LOUD!

You have recently decided to sign up for email using a service called Hotmail. Using your Web browser, go to the following address:

Hotmail.com

Once you are at the Hotmail Web site, go ahead and sign up for a free e-mail account. If you need any assistance, feel free to use the online help provided by Hotmail.

When you finish signing up to Hotmail, take some time to look around the site and explore its features--but for now, don't try to look at or send any email.

Scenario 2 – Remember: THINK OUT LOUD!

Task A:

Check for any email messages that you may have received in Hotmail. Open a message you received from Hotmail, and close it when you finish reading it.

Task B:

Send a message to the following email address:

bill.smith@i-solutions.com

Be sure to tell the recipient that you are sending out this message to test your new Hotmail account.

Task C:

Check to see if you have received any new email messages while you've been working in Hotmail. Look for a message with the subject line "Usability," and respond to it with a message telling the sender that you got the email.

Scenario 3 – Remember: THINK OUT LOUD!

Task A

(Discontinued—go to Task B.)

Task B:

You decide that you want to send your friend Marji a message to tell her about your new Hotmail account. Along with your message, you also decide to send her a file she's been asking for. Go ahead and write Marji an email telling her you have a Hotmail account, and attach the file to it. The file you are sending is located on the A drive and is titled "Test.doc."

(Marji's Hotmail address is **marji@hotmail.com**)

Task C:

Place one of the emails you have received in a holding area called "My Stuff." If this holding area isn't there, create it.

Task D:

You just realized that you would like to keep Marji's email address accessible for future correspondence. Create a place in Hotmail to store her address for other mailings.

Scenario 4 – Remember: THINK OUT LOUD!

Task A:

Erase all of the messages in your mailbox.

Task B:

Sign off from Hotmail.

Appendix C: Post-task questionnaire

Attached are the questionnaires that Practical Products administered after the test participants completed each of the scenarios.

We reviewed the results and asked follow-up questions concerning these questionnaires in the post-test interviews with test participants.

Scenario 1 Questionnaire: *Signing Up to Hotmail and "Looking Around"*

1. Rate how easy or difficult it was to sign up for Hotmail.

Very difficult	Moderately difficult	Neither easy nor difficult	Moderately easy	Very easy
[]	[]	[]	[]	[]

2. Was Hotmail's wording clear (easy to understand)?

Very unclear	Moderately unclear	Some clear/some unclear	Moderately clear	Very clear
[]	[]	[]	[]	[]

3. What was MOST DIFFICULT to do or understand? (If you need more room, write on the back of this page.)

4. What was EASIEST to do or understand? (If you need more room, write on the back of this page.)

5. When you were exploring the Hotmail site, what items, features, or ads did you look at? What were your observations about what you saw? (If you need more room, write on the back of this page.)

6. Optional: Please add any additional comments. (If you need more room, write on the back of this page.)

Scenario 2 Questionnaire: Checking for New Messages, Writing a Message, Replying to a Message

1. How many new messages did you have when you first signed into Hotmail? _____

2. Rate how easy or difficult it was to determine you had new messages when you first signed into Hotmail.

Very difficult	Moderately difficult	Neither easy nor difficult	Moderately easy	Very easy
[]	[]	[]	[]	[]

3. Rate how easy or difficult it was to write and send messages in Hotmail.

Very difficult	Moderately difficult	Neither easy nor difficult	Moderately easy	Very easy
[]	[]	[]	[]	[]

4. Rate how easy or difficult it was to notice you had received a *new message during* your Hotmail session.

Very difficult	Moderately difficult	Neither easy nor difficult	Moderately easy	Very easy
[]	[]	[]	[]	[]

5. Rate how easy or difficult it was to respond to a message in Hotmail.

Very difficult	Moderately difficult	Neither easy nor difficult	Moderately easy	Very easy
[]	[]	[]	[]	[]

6. Was Hotmail's wording clear (easy to understand)?

Very unclear	Moderately unclear	Some clear/some unclear	Moderately clear	Very clear
[]	[]	[]	[]	[]

7. What was MOST DIFFICULT to do or understand? (If you need more room, write on the back of this page.)

8. What was EASIEST to do or understand? (If you need more room, write on the back of this page.)

9. Optional: Please add any additional comments. (If you need more room, write on the back of this page.)

Scenario 3 Questionnaire: *Attaching Files, Storing Messages, Storing Addresses*

1. Rate how easy or difficult it was to attach a file to an email message.

Very difficult	Moderately difficult	Neither easy nor difficult	Moderately easy	Very easy
[]	[]	[]	[]	[]

2. Rate how easy or difficult it was to create folders to store messages in Hotmail.

Very difficult	Moderately difficult	Neither easy nor difficult	Moderately easy	Very easy
[]	[]	[]	[]	[]

3. Rate how easy or difficult it was to create a place to store an email address (create an "address book").

Very difficult	Moderately difficult	Neither easy nor difficult	Moderately easy	Very easy
[]	[]	[]	[]	[]

4. Rate how easy or difficult it was to add a new address to the address book.

Very difficult	Moderately difficult	Neither easy nor difficult	Moderately easy	Very easy
[]	[]	[]	[]	[]

5. Was Hotmail's wording clear (easy to understand)?

Very unclear	Moderately unclear	Some clear/some unclear	Moderately clear	Very clear
[]	[]	[]	[]	[]

6. What was MOST DIFFICULT to do or understand? (If you need more room, write on the back of this page.)

7. What was EASIEST to do or understand?

8. Optional: Please add any additional comments.

Scenario 4 Questionnaire: *Deleting Messages, Signing Off from Hotmail*

1. Rate how easy or difficult it was to erase messages in Hotmail.

Very difficult	Moderately difficult	Neither easy nor difficult	Moderately easy	Very easy
[]	[]	[]	[]	[]

2. Rate how easy or difficult it was to sign off from Hotmail.

Very difficult	Moderately difficult	Neither easy nor difficult	Moderately easy	Very easy
[]	[]	[]	[]	[]

3. Was Hotmail's wording clear (easy to understand)?

Very unclear	Moderately unclear	Some clear/some unclear	Moderately clear	Very clear
[]	[]	[]	[]	[]

4. What was MOST DIFFICULT to do or understand? (If you need more room, write on the back of this page.)

5. What was EASIEST to do or understand? (If you need more room, write on the back of this page.)

6. Optional: Please add any additional comments. (If you need more room, write on the back of this page.)

Appendix D: Post-test questionnaire

Practical Products administered this questionnaire after the test participants completed the final scenario.

We reviewed the results with the test participants in post-test interviews.

6. What did you like MOST about Hotmail?

8. What did you like LEAST about Hotmail?

9. What would you change about Hotmail?

10. Optional: Please add any other comments about Hotmail that might be useful in helping Hotmail staff improve this email product:

Appendix E: Evaluation team checklists

Following are the checklists that each of our evaluation team members used to organize their activities during testing. A checklist was used for each key testing role:

Narrator

Logger

Test Administrator

Camera Operator

Test Assistant

Briefer

Checklist for the Narrator

Before each test participant comes:

- _____ Know the product/system well.
- _____ Know the objectives of each task.
- _____ Know the steps related to each task scenario.
- _____ Know the teams' objectives as related to video and data captures.
- _____ Coordinate efforts with the data recorder to ensure results are captured.

During each task session:

- _____ Provide information to the data recorder.
- _____ Work with the data recorder to verify the accuracy of actions and comments.

Checklist for the Narrator, Continued

Check list for Scenario #1:

Scenario #1:

You have recently decided to sign up for email using a service called Hotmail. Using your Web browser, go to the following address:

www.Hotmail.com

Once you are at the Hotmail Web site, go ahead and sign up for a free email account. If you need any assistance, feel free to use the online help provided by Hotmail.

When you finish signing up to Hotmail, take some time to look around the site and explore its features--but for now, don't try to look at or send any email.

- ___ How does the user enter the URL for hotmail.com?
- ___ Pay attention to how the user navigates the page (mouse versus tab).
- ___ How does the user navigate information forms (mouse versus tab)?
- ___ Does the user access the online help?
- ___ Does the user click on any banner ads?
- ___ Note any facial expressions to the logger.
- ___ Note any verbal comments to the logger.
- ___ Note any body gestures to the logger.

Checklist for the Narrator, Continued

Check list for Scenario #2:

Scenario #2:

Task A:

Check for any email messages that you may have received in Hotmail. Open one of them, and close it when you finish reading it.

Task B:

Send a message to the following e-mail address:

Bill.smith@i-solutions.com

Be sure to tell the recipient that you are sending out this message to test your new Hotmail account.

Task C:

Check to see if you have received any new email messages while you've been working in Hotmail. Look for a message with the subject line "Usability," and respond to it with a message telling the sender that you got the email.

- ___ Note to the logger how the user navigates the Inbox Screen.
- ___ Can the user understand the radio box concept?
- ___ Pay attention to how the user navigates the page (mouse versus tab).
- ___ How does the user navigate information forms (mouse versus tab)?
- ___ Does the user access the online help?
- ___ Does the user click on any banner ads?
- ___ Note any facial expressions to the logger.
- ___ Note any verbal comments to the logger.
- ___ Note any body gestures to the logger.

Checklist for the Narrator, Continued

Check list for Scenario #3:

Scenario #3:

Task A:

(discontinued)

Task B:

You decide that you want to send your friend Marji a message to tell her about your new Hotmail account. Along with your message, you also decide to send her a file she's been asking for. Go ahead and write Marji an email telling her you have a Hotmail account, and attach the file to it. The file you are sending is located on the A drive and is titled "Test.doc."

(Marji's Hotmail address is **marji@hotmail.com**)

Task C:

Place one of the emails you have received in a holding area called "My Stuff." If this holding area isn't there, create it.

Task D:

You just realized that you would like to keep Marji's email address accessible for future correspondence. Create a place in Hotmail to store her address for other mailings.

- Note to the logger how the user navigates the Attachment page.
- Note to the logger how the user navigates the Folders page.
- Note to the logger how the user navigates the Address Book page.
- Pay attention to how the user navigates the page (mouse versus tab).
- How does the user navigate information forms (mouse versus tab)?
- Does the user access the online help?
- Does the user click on any banner ads?
- Note any facial expressions to the logger.
- Note any verbal comments to the logger.
- Note any body gestures to the logger.

Checklist for the Narrator, Continued

Check list for Scenario #4:

Scenario #4:

Task A:

Erase all of the messages in your mailbox.

Task B:

Sign off from Hotmail.

- ___ Note how the user interacts with the radio box/pull down deletion menu.
- ___ Note the user's facial expressions when they log off from Hotmail.
- ___ Pay attention to how the user navigates the page (mouse versus tab).
- ___ Does the user access the online help?
- ___ Does the user click on any banner ads?
- ___ Note any facial expressions to the logger.
- ___ Note any verbal comments to the logger.
- ___ Note any body gestures to the logger.

Checklist for the Logger

Before the test:

- Turn on logging computer.
- Check error codes in logging software.
- Enter new test information into logging software.
- Check headphones and microphones for logger and narrator.
- Test logging software.
- Check video feeds.
- Check logger's monitor.
- Change monitor views as necessary.
- Check cable from logging computer to printer.
- Check paper and ink in printer.
- Do a test print from logging software.
- Check paper and toner in copy machine.
- Do a test copy.

After each test participant:

- Print report.
- Copy report.
- Distribute copies to evaluation team members.
- Place original in test participant's folder.
- Set up logging software for next test participant (if any).

Checklist for the Logger, Continued

At end of day:

- Print final report.
- Make sure all members of team have copies.
- Have logging software ready for next team.
- Turn off computer.
- Refill printer (if necessary).
- Turn off printer.
- Refill copier (if necessary).
- Turn off copy machine.
- Order paper (if necessary).
- Back up logging software data files.

Checklist for the Test Administrator

Before each test participant comes:

_____ Make sure each evaluation team member has a copy of the scenarios, questionnaires, etc.

_____ Monitor the evaluation team members to confirm they are using their checklists.

_____ Greet the test observers.

During each test session:

_____ Manage any problems that arise.

_____ Observe and take notes, noting real problems and "big picture" issues.

_____ Collect "follow-up" questions to review with the test participants.

After each test session:

_____ Collect test paperwork (questionnaires, notes, etc.)

_____ Make sure the computer is set up for the next test participant and clear the room of any materials left behind by the test participant or briefer.

_____ Bring test participants into the observation room and describe the testing process from the evaluation team's point of view.

_____ Lead the team in a brief session to catalog results and identify any usability issues discovered during the test.

After each day of testing:

_____ Conduct a brief review with the other members of the evaluation team to summarize the test day's findings.

Checklist for the Camera Operator

Before each test participant comes:

- Turn on the equipment.
- Adjust the cameras to the proper setting for taping.
- Check the sound both in and out of the monitoring booth.
- Label the tapes for the session.
- Load the tape into the VCR.

During each test session:

- Synchronize starting times with the data recorder.
- Run the equipment.
- Select the picture to record and handle the recording.
- Adjust the sound as needed.
- Change the videotapes when necessary.

After the test participant leaves:

- Rewind the tapes used during the session.
- Check to make certain the tapes are labeled properly.
- Turn off the equipment.

Checklist for the Briefer

Before each test participant comes:

- _____ Make sure the test room is properly set up. Turn on the test equipment. Get the product ready. This may mean turning on the computer and bringing up the product. It may mean turning on another type of machine.
- _____ Make sure the documentation is in place, if appropriate.
- _____ Have a pad and pens or pencils for taking notes.
- _____ Have an ink pen ready for the test participant to use in signing the Consent form.
- _____ Check the folder for that test participant. Make sure all of the forms are in the folder.

At the beginning of each test session:

- _____ Greet the test participant.
- _____ Check the test participant's name to be sure that this is the person whom you expect.
- _____ Make the test participant comfortable. Offer food and beverage.
- _____ Bring the test participant into the test room.
- _____ Let the test participant see the cameras and other equipment.
- _____ Show the test participant where to sit.
- _____ Give the test participant a brief introduction to the test session.
- _____ Ask if the test participant has any questions.
- _____ Remind the test participant to think out loud.
- _____ Remind the test participant to tell you when he or she has completed each task.
- _____ Put the "Testing in Progress" sign on the door.

At the end of each test session:

- _____ Ask the test participant to fill out the post-test questionnaire.
- _____ Go in to the test room and thank the test participant for his or her help.
- _____ Debrief the test participant. Go over the test participant's responses to the post-test questionnaire.
- _____ Give the test participant the payment or other incentive.
- _____ Offer to show the test participant the test team's room. Show the equipment and introduce the team.
- _____ Thank the test participant and show him or her out.

After the test participant leaves:

- _____ Put all the forms in the test participant's folder.
- _____ Turn off the equipment in the test room.

Checklist for the Test Assistant

Before each test participant comes:

- _____ Make sure that there is sufficient paper and that all of the evaluation team members have writing instruments to take notes.
- _____ Label each page of the notes with the project name, test participant's number/name, date, and time.

During each test session:

- _____ Take notes on problems and other observations.

After each test participant leaves:

- _____ Review and edit notes so that they are legible and clear.
- _____ Put notes in that test participant's folder.