



SOFTWARE TESTING ANALYSIS & REVIEW

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Keynote

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"Stop Guessing About How Customers Use Your Software"

Presented by:

**Alan Page
Microsoft**

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Alan Page

A tester since 1993, **Alan Page** joined Microsoft in 1995 and currently is the Director of Test Excellence, where he oversees the technical training program for testers and other activities focused on improving testers, test tools, and testing across Microsoft. At Microsoft, Alan has worked on various versions of Windows, Internet Explorer, and Windows CE. He is the lead author of *How We Test Software at Microsoft*, writes about testing on his blog (blogs.msdn.com/alanpa/), and recently contributed a chapter to *Beautiful Testing*. Alan is a board member of the Seattle Area Software Quality Assurance Group (SASQAG) and speaks frequently about software testing and careers for software testers.

Stop Guessing About How Customers Use Your Software

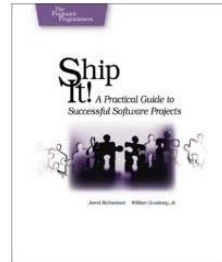
Alan Page
Test Architect
Microsoft

Customer Feedback Lifecycle v1

Make it



Ship it



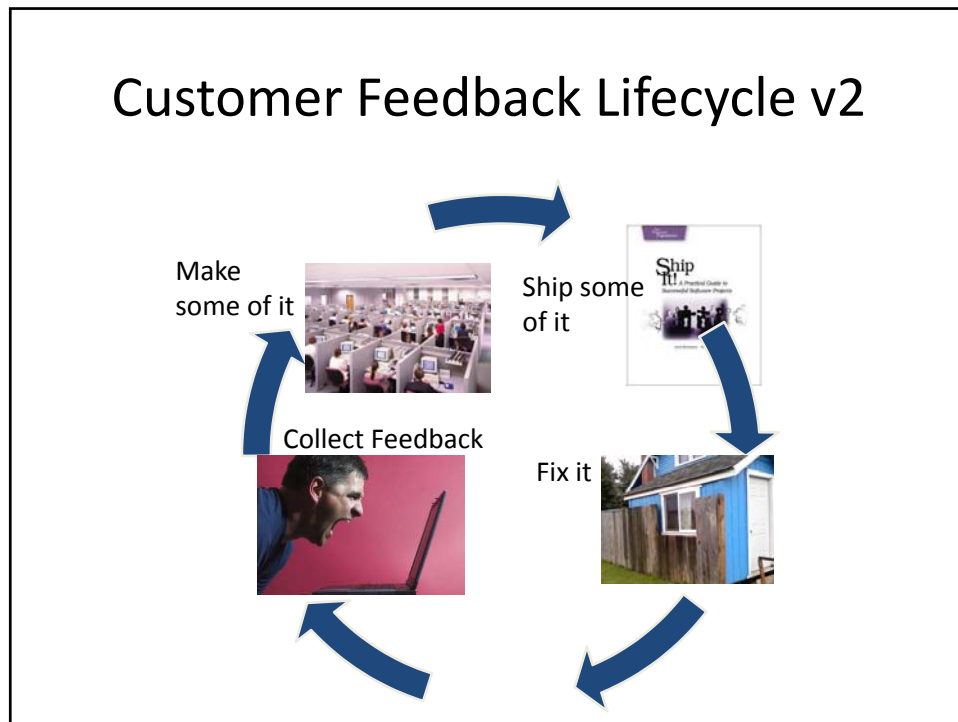
Collect Feedback



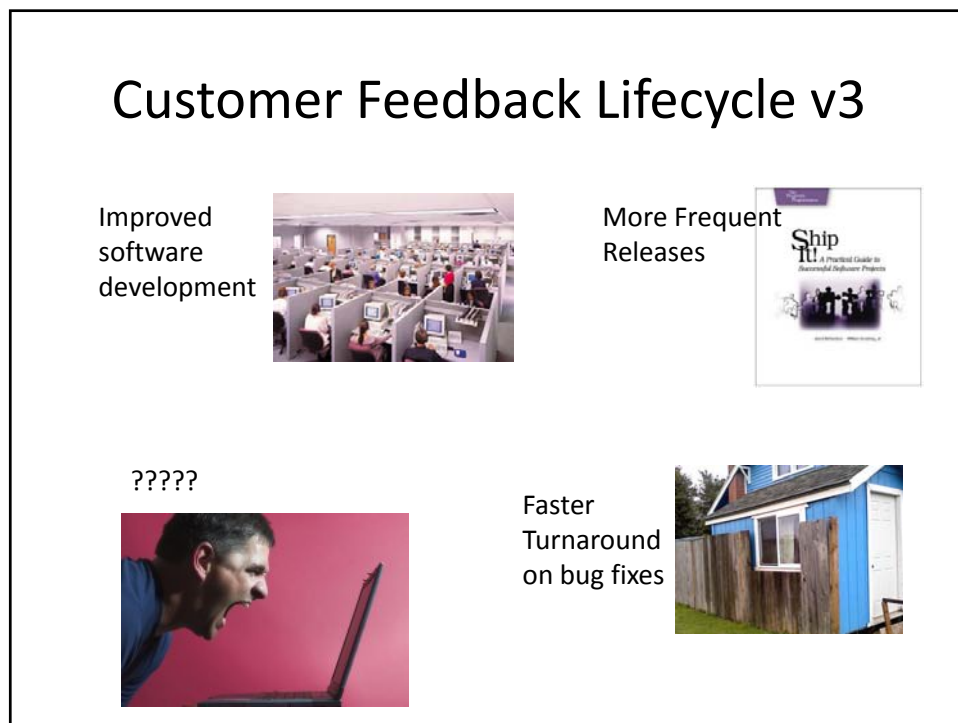
Fix it



Customer Feedback Lifecycle v2



Customer Feedback Lifecycle v3



What are your users *really* thinking?



Possible solutions:

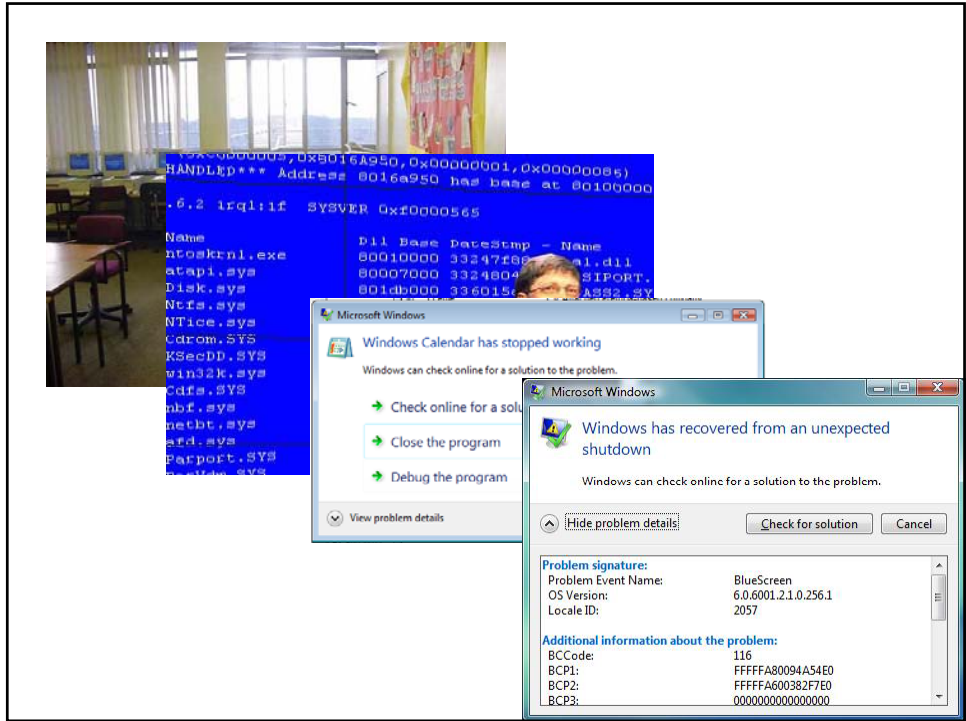
- Include a human observer with every software download
- USB mood rings
- More Customer Data

What we know

- Crash Data
- Verbatim Feedback
- Send-a-Smile
- Usage Data
- A/B Testing

Usability Labs (use to lead int exp)





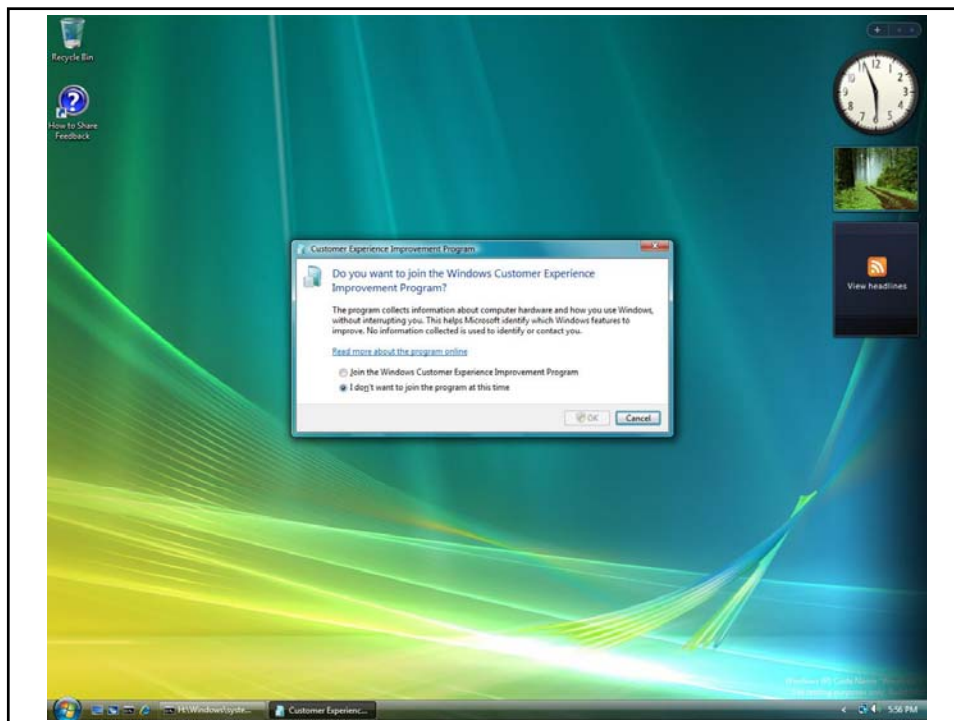
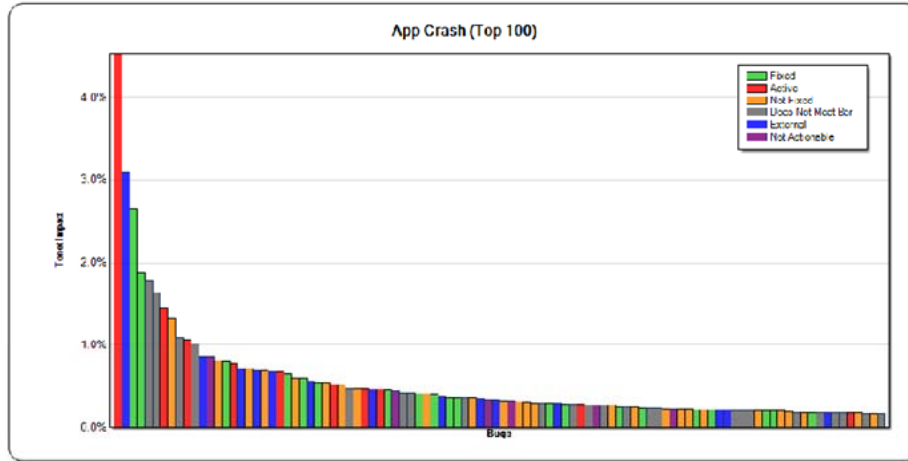
Crash Data



What does this do?



Crash Data



Customer Improvement Experience Program (CEIP)

What: Platform service to help understand customer usage patterns.

Windows Media Player

Pause Windows Media Player for calls, video calls, and conferences

Language

Communicator language: English

Quality

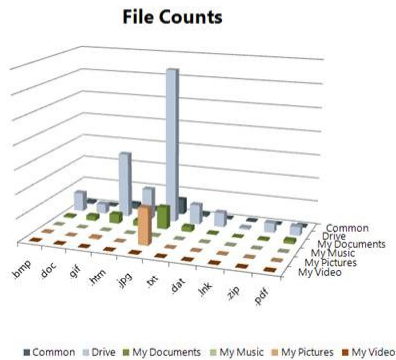
Join our Customer Experience Improvement Program and help improve the quality, reliability, and performance of Microsoft software and services.

Allow Microsoft to collect information about how I use Communicator

[More Information...](#)

Logging

Example Data



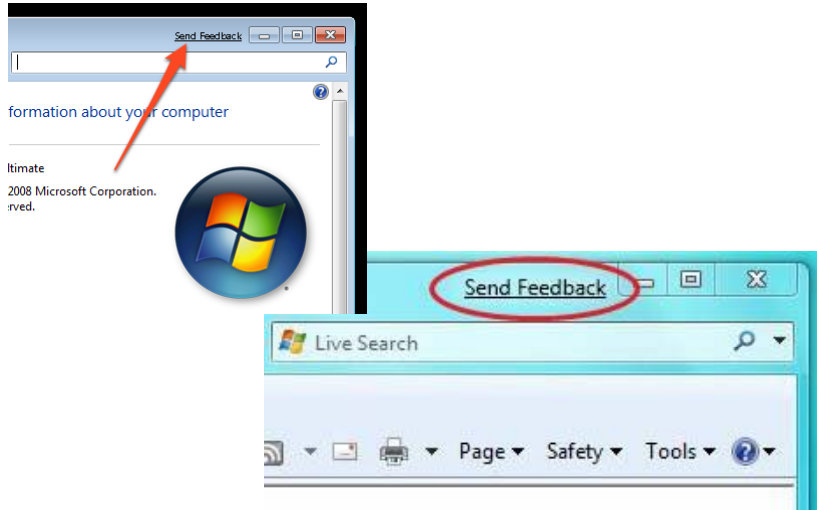
Monitor Default Resolution	% of Total Sample
1280X1024	26%
1400X1050	6%
1600X1200	20%
1680X1050	8%
1920X1080	1%
1920X1200	9%

Approximately 10% of customers have HD or higher resolution.

chosen resolution	%
640X480	1%
800X600	7%
1024X768	57%
1280X1024	3%
1600X1200	32%
Total	100.00%

68% of customers with a 1600x1200 display lower their resolution

Feedback

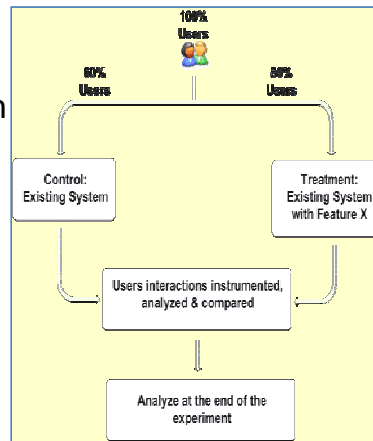


Send-a-Smile



Controlled Experiments in One Slide

- Concept is trivial
 - Randomly split traffic between two (or more) versions
 - A (Control)
 - B (Treatment)
 - Collect metrics of interest
 - Analyze



- Best scientific way to prove **causality**, i.e., the changes in metrics are caused by changes introduced in the treatment(s)
- Must run statistical tests to confirm differences are not due to chance

The image displays five different versions of a real estate search interface, each representing a different treatment in a controlled experiment:

- Control:** A search form with radio buttons for "Existing Homes", "Foreclosures", "New Homes", and "Rentals". It includes fields for "Price Range", "Enter City", "Select a State", and "Enter ZIP".
- Treatment 1:** A search form with a "Find Existing Homes for Sale" heading, a house icon, and fields for "Enter City", "State", "or", and "Enter Zip".
- Treatment 2:** A search form with a house icon and fields for "Enter City", "State", "or", and "Enter Zip".
- Treatment 3:** A search form with a heading "What are you looking for?" and a list of categories: "Existing Homes", "New Construction", "Rentals", "Foreclosures", "Senior Living", "Home Valuation", and "Professional Services". It includes fields for "Enter City", "State", "Enter Zip", and "No Max".
- Treatment 4:** A search form with a heading "Find a new Home or Apartment" and icons for "Existing Homes", "New Construction", "Foreclosures", and "Rentals". It includes fields for "Enter Zip", "Enter City", "State", and "Search Listings".
- Treatment 5:** A search form with a heading "Find Your Dream Home or Apartment" and a field for "City, State or ZIP". It includes radio buttons for "Existing homes", "New construction", "Foreclosures", and "Rentals".

Examples

- Three experiments that ran at Microsoft recently
- All had enough users for statistical validity
- Game: see how many you get right
 - Everyone please stand up
 - Three choices are:
 - A wins (the difference is statistically significant)
 - A and B are approximately the same (no stat sig diff)
 - B wins

MSN Real Estate

- “Find a house” widget variations
- Overall Evaluation Criterion: Revenue to Microsoft generated every time a user clicks search/find button

Find Your Dream Home or Apartment

City, State or ZIP

Existing homes
 New construction
 Foreclosures
 Rentals

Search listings ▶

A

Existing Homes Foreclosures New Construction Rentals

Find Existing Homes for Sale

Enter City
 State ▼
 or
 Enter Zip

Find homes ▶

B

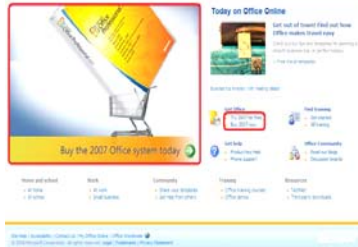
- Raise your right hand if you think A Wins
- Raise your left hand if you think B Wins
- Don't raise your hand if you think they're about the same

Office Online

Test new design for Office Online homepage

OEC: Clicks on revenue generating links (red below)

A



B



- Raise your right hand if you think A Wins
- Raise your left hand if you think B Wins
- Don't raise your hand if you think they're about the same

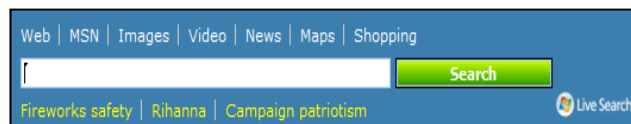
MSN Home Page Search Box

OEC: Clickthrough rate for Search box and popular searches

A



B



Differences: A has taller search box (overall size is the same), has magnifying glass icon, "popular searches"
B has big search button

- Raise your right hand if you think A Wins
- Raise your left hand if you think B Wins
- Don't raise your hand if they are the about the same

US Search Box for Bing Launch

- For the launch of Bing, Microsoft's search engine, there was an effort to improve the search box on the MSN home page

- Control:



- Treatment:



- New version was statistically significantly better
- Small changes have big impact

What can you do?

Windows Error Reporting (WER)

Solicit feedback within your application

A/B Testing

Stop Guessing

Resources

Windows Error Reporting

- <http://www.microsoft.com/whdc/winlogo/maintenance/StartWER.aspx>

Experimentation Platform

- <http://exp-platform.com/>

My social stuff

- <http://angryweasel.com/blog>
- <http://hwtsam.com/>
- @alanpage (Twitter)