

# Tales of Software Updates: The process of updating software

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## SUMMARY

The majority of computers are compromised using vulnerabilities for which a patch already exists. If people had updated the computer software they would not have been compromised. Yet people persist in not updating software.

**Research Question:** Why are people not updating software?

## PEOPLE DELAY OR DO NOT UPDATE

People delay updating, and they update different software at different rates.

Software	Missing latest update	Missing last 3 updates
Microsoft Windows	31.8%	12.1%
Microsoft Word	32.9%	31.4%
Adobe Reader	45.2%	31.8%
Oracle Java	72.0%	45.5%
Adobe Flash Player	54.7%	39.6%

Why Johnny Can't Patch: And What We Can Do About It, David Seidman, Bluehat briefings 2013

## SURVEY: RELATE AN UPDATE EVENT

- Protocol
  - Demographics
  - Relate an update event
  - Questions about the event
  - Relate a contrasting event
- Participants
  - Amazon Mechanical Turk users
  - 307 users related 614 stories
  - 43% Female
- Manual content coding to process the stories

Please share with us an update related experience. This can be any experience you have had while updating software on any device such as a phone, game console, computer, or tablet. Or an experience where you decided not to install an update. This can be any event involving an update such as the last time a piece of software asked you to update it, or when you noticed that your software had changed due to an update.

Please select an update experience for which you can most easily recall details about where you were and what happened when you installed (or chose not to install) the update. You will be answering further questions about this experience in the next two pages. In couple of sentences please summarize what happened in your own words.

## RECOMMENDATIONS

### Allow expression of risk acceptance

- Users have different levels of risk acceptance for different software
- Finer grain controls around risk are needed

### Make it easy to find information about an update

- Communicate information about what an update will do
- Make it easy to find reviews

### Be conscientious of resources

- Installer resources such as battery, processor, and disk space
- Post-state resources such as processor speed, and battery

### Provide a recovery path

- Provide a "safety net" in case the update outcome is not desired

## STAGES OF UPDATING

### Awareness

Learning that a new update is available.

- Notification
- Automatic
- Manual
- Triggered



"My Java notice came up and reminded me to update."

"I am dissatisfied with any program that does not update itself. Some parts of ASC required me to go to their websites, download new installers, and install the update myself, and that's just lazy coding."

### Deciding

The person decides if they are going to install the update, delay, or not install at all.

Detailed in section to the right.

"I decided that I wasn't going to install the update because I have heard all the reviews online about how it generally makes your phone slower in every respect."

### Preparation

Engaging in preparation activities to get the update installed in a safe way.

- Backup the device
- Make space for the update on the device
- Plug the device into power
- Obtain the update file

"I first had to delete half of the apps on my phone and also upload my pictures to my computer and delete them off of my phone because I didn't have enough usage to install the update."

"I downloaded from Mozilla (not a third party site)."

### Installation

Run the update installer, interact with the update user interface, and potentially reboot the device.

- Runtime resources
- Bundled unwanted software
- Disruption (rebooting)

"[The update] went smoothly."

"[Windows Update] drains my processing resources, preventing back ups and even stopping me from running stats software for my job."

### Troubleshooting / Recovery

Address any problems that happened during installation and recover any data or state that the update damaged.

- Reverting the device after a failure
- Restoring data removed during preparation
- Fixing any settings that may have been changed by the update

"The computer automatically updated a version of Flash Player which disabled my access to sites I really needed for work. I had to uninstall it and it took a great deal of time. This was frustrating."

"I took it to the Apple store had to wait in line for 45 minutes and then they refused to help me unless I paid a huge fee."

### Post State

Using the updated software after the update has completed.

- Fixed problems
- Enjoying new features
- Compatibility issues
- Learning new interfaces

"One of my programs would not work properly. I'd been delaying a recommended update so I finally updated and, not surprisingly, the program began to function correctly again."

## DECIDING TO UPDATE OR NOT

Why installed update	Count	Why didn't install update	Count
I always install updates	118	Satisfied with the current version	17
I thought it was important	109	It looked like it would be disruptive	13
I trust this software company	90	I didn't trust the update	13
I use this software frequently, so keeping it updated is important	87	Compatibility issues	13
I didn't have a choice	58	Had trouble updating	11
It was a security related update	49	I didn't think it was important	10
I wasn't satisfied with the current version	15	Too many updates for this software	6

### Updating is important

People who installed updated explained that updating was an important thing to do. Most people installed updates, though they delayed first.

### Old version had problems

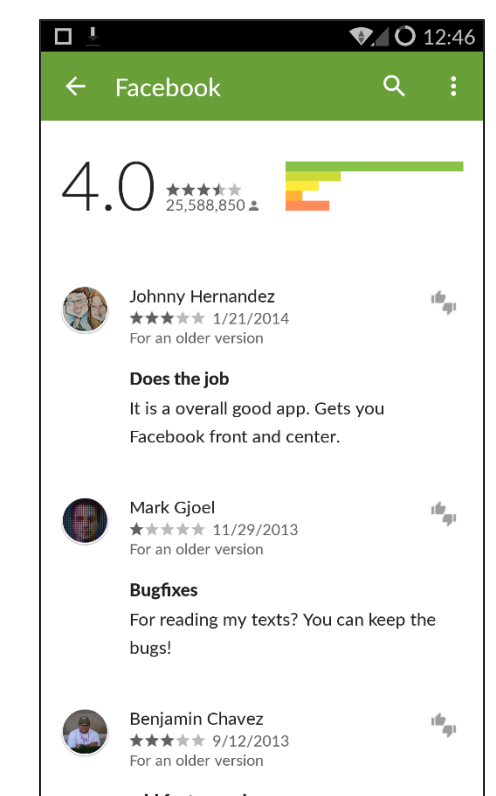
The old version of the software was having problems that an update was likely to correct.

### The reviews said the update would be bad/good

People researched updates by looking at comments asking friends and looking for reviews.

People were most concerned about:

- Features
- Performance
- Resource usage
- Bugs



### Wait out the problems

Researching takes time and effort. A far cheaper approach was to delay update installation by a few days. The idea is that other people would install the software, identify the problems, and the developers would fix the issue. By the time the user installed the update the problems would already be identified and fixed.

### Are the benefits worth the bother?

Updates can be disruptive even if they go smoothly. Users wanted to know if the good things an update would bring were going to be worth the effort and risks of installing the update.

### Updates can contain viruses

People thought that updates could be or contain viruses and avoided the updates. Users mistook unwanted bundled software for viruses and "learned" that updating software was dangerous.

