# InfoWorld **Deep**Dive

Everything
you need to know about
WINDOWS 10

Deep Dive

Windows 10: The "last" version of Windows

Not only is Windows 10 a free upgrade, but Microsoft will push out improvements continually. Should you jump on this train? Read InfoWorld's comprehensive evaluations to find out.

BY WOODY LEONHARD

Since its release, Windows 10 has triggered waves of adulation, scorn, and uncertainty.

Is it a worthy successor to Windows 7? Should you get it now, or wait? Will it send an untoward amount of private information to Microsoft's data collectors? Will you be forced to update at Microsoft's pace? Why is the commercial version free? What happens when there's a bad patch? Are there any worthwhile new Windows 10 programs dangling like tiled carrots?

The answers to those questions are not necessarily straightforward. Historically, some Windows upgrades have been no-brainers. This is certainly not the case with upgrading to Windows 10.

This Deep Dive takes you through the parts of Windows 10 that you need to understand in order to make an informed upgrade decision. It's specific to the RTM version of Windows 10 — the one released on July 29, 2015. Remember, Windows 10 is intended to be a work in progress, upgraded continually.

Be sure to check the regularly updated InfoWorld article, "Where Windows 10 stands right now," to get the latest. ■

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WINDOWS 10 REVIEW

Hold off if you use Windows 7

Windows 10 is what Windows 8 should have been, but it has too many rough edges to attract Windows 7 users. Continuous upgrades could change that soon.   BY WOODY LEONHARD

After the truly wretched Windows 8 and marginally less wretched Windows 8.1, Windows 10 comes as a breath of fresh air.

Windows 10 is much more usable than Wndows 8 or 8.1 and proudly offers a bundle of new features, including improved security, a new browser, and the voice-activated intelligent assistant Cortana. You might even call Windows 10 the most revolutionary version of Windows ever, mainly because it will be continually upgraded as part of Microsoft's "Windows as a service" effort.

But the question is not whether Windows 10 is a good upgrade for Windows 8 users — obviously, it is. The real question is whether Windows 10 deserves to supplant Windows 7. Despite substantial new functionality in Windows 10, Windows 7 users should wait until the upgrade train brings more improvements.

Many of the new features of Windows 10
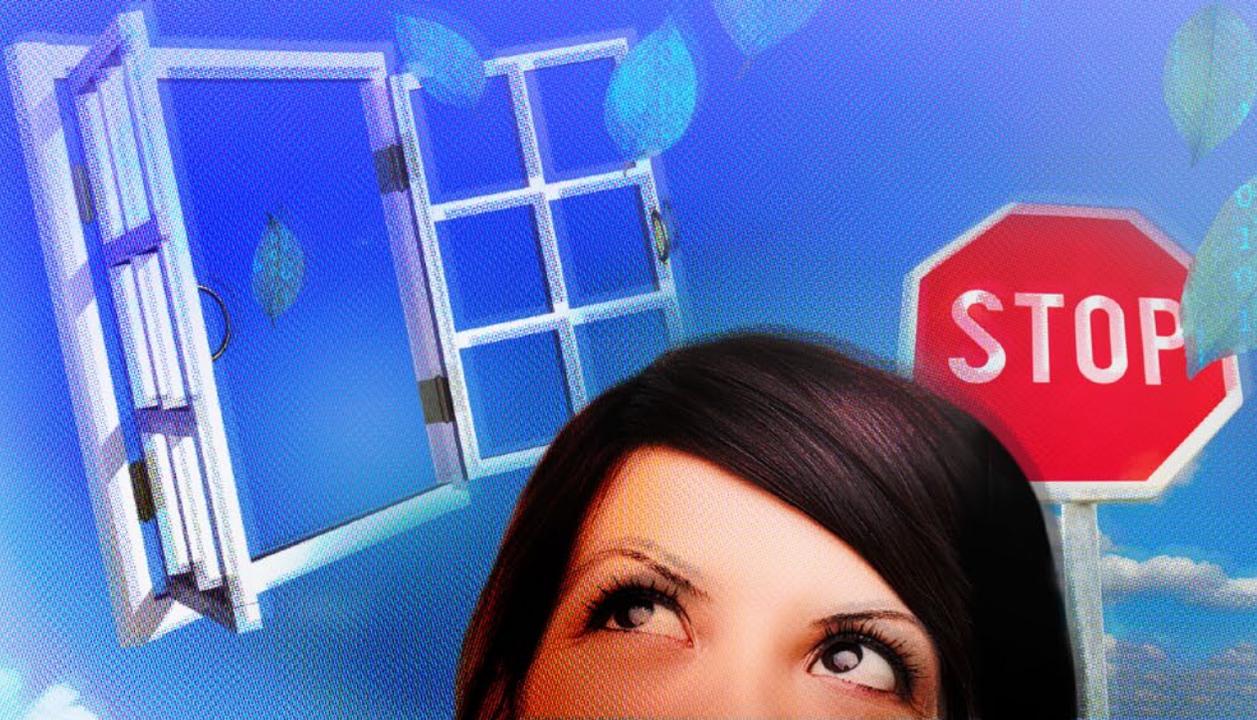
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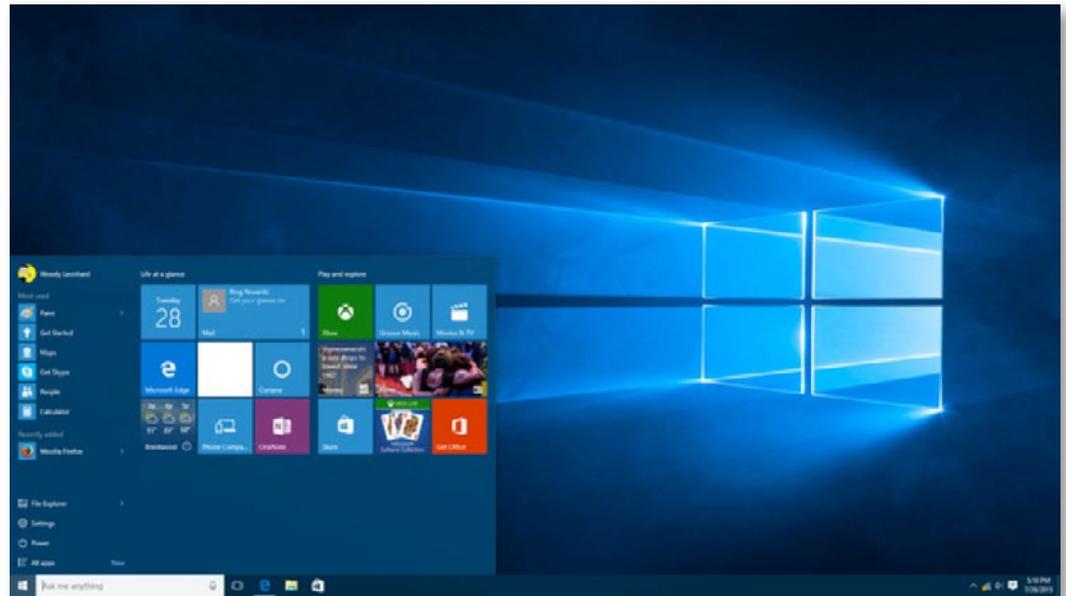
The new Windows 10 Start with live tiles is a major departure from previous versions.

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It seems obvious that Microsoft rushed the consumer version of Windows 10 out the door **in time for back-to-school season.**

do not seem ready for prime time, including the greatly modified Start menu with live tiles, the new Edge browser, Cortana, and the Continuum method of switching between mouse and touchscreen control. They all work well enough, yet they all lack key capabilities. The lesser tile-based Windows apps vary in quality from good (Mail, Calendar) to passable (Photos, Phone Companion) to barely breathing placeholders (People, Groove Music, Movies & TV).

It seems obvious that Microsoft rushed the consumer version of Windows 10 out the door in time for back-to-school season. But the "real" Windows 10 (at least the "next final" version) won't appear until October or thereabouts, in the form of Threshold 2. Think of TH2 as an accelerated Service Pack 1, ready for the enterprise.

Meanwhile, myriad questions remain unanswered. We know that Microsoft will force updates on Windows 10 Home and Windows 10 Pro users who aren't connected to update servers. That posture has already created problems, with an Nvidia driver hatched before its time and a patch that caused repeated Explorer restarts — both in the past week. Those of us familiar with Microsoft's Windows patching travails will face the future with some trepidation: How long until Microsoft force-feeds

a bad patch, and how will Microsoft recover from it?

These caveats aside, there's no doubt Windows 10 holds a spark of greatness and should please those who were disenfranchised by Windows 8's hamfisted changes. It's the beginning of a new Windows, with all the good and bad that entails. Let's take a look at the details.

Ease of use

For those of us who rely on a mouse and keyboard, Windows 10's ease of use rates right up there with Windows 7 and is light-years ahead of Windows 8/8.1. For the touch crowd, with a few exceptions noted below, Windows 10 works as well as Windows 8.1, which may be (properly) construed as damning with faint praise. There's a learning curve with touch, along with disappointing limitations, no matter which version of Windows you currently use.

Windows 10 boots faster, works faster, and seems much more robust than either Windows 7 or Windows 8/8.1. I haven't had any problems with drivers or programs that run on Windows 8/8.1, although all of those old Metro apps are destined for the bit bucket. Clearly, the new Windows Universal apps hold great promise, but they aren't there yet.

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Windows 10's signature new feature, of course, is the Start menu. The new Start menu combines a severely stripped-down version of the Windows 7 Start menu with a mouse-friendly field of Windows 8-like tiles.

If you're coming from Windows 7, the left side of the Start menu will look vaguely familiar, but the Windows 10 version is much less malleable than the Windows 7 version. In Windows 10, you can't create custom menu items, build cascading menus, or pin your own apps, files, or locations to the Start menu. You only get a fixed set of 10 apps that can be pinned to the bottom-left side of the menu, along with File Explorer and Settings, which can be removed.

No, touch has not gone away: Behold the new tablet mode of Windows 10.

If you're coming from Windows 8/8.1 and using a mouse, the field of tiles should feel quite similar to the Metro Start screen, with the new ability to run the tiled apps in resizable windows on the desktop. Methods for grouping and manipulating the tiles are different in Windows 10, but cover much the same ground as those in Windows 8. In Windows 10, tiles are grouped rigidly in three- or four-wide groups. You can change the number of groups that are visible by widening or narrowing the Start menu. That's considerably more restrictive than Windows 8/8.1.

If you're coming from Windows 8.1 with a mostly tablet mindset, the new Tablet mode in Windows 10 has much of the ease-of-use benefits of touch Windows 8.1, such as spread-out tiles and the Start options hidden under a hamburger icon, with a few minor annoyances. For example, you can't turn off the taskbar at the bottom of the screen, no matter which app is running. You're also stuck with the rigid organization of tiles into three- or four-wide groups.

Charms? Gone. Left-side task switching? Gone. Good riddance.

Other ease-of-use improvements abound. For example, Microsoft seems to have finally perfected in-place upgrades. Cortana is starting to become a viable "assistant," and if you're willing to let Microsoft look at your activities, the potential for Cortana help extends into every interaction you have with Windows.

One widely touted ease-of-use benefit of Windows 10 — the ability to run nearly identical Universal applications on phones, tablets, PCs, Xbox, and all Windows 10-branded devices — remains elusive. Whether Microsoft will be able to deliver a WinRT API that works on all those devices, and whether app developers will take advantage of the API, is still very much up in the air — particularly given Microsoft's recent retrenchment on Windows Phone.

Windows 7 upgraders can take advantage of many Windows 8-era ease-of-use improvements: a better Task Manager, more functional File Explorer (though it still doesn't support tabs), Storage Spaces to manage all of your drives in a group, File History, built-in antivirus, and the considerable plumbing improvements in Windows 8.

Features

Even as Windows 10 rolls out to the world at large, big new features are still evolving. Some of the features are due for updates in or around October, in the Threshold 2 timeframe. Whether Microsoft dribbles some of the improvements out in the interim — as one might expect with "Windows as a service" — remains to be seen.

Edge, Microsoft's first modern browser and arguably its most advanced Windows Universal app program, looks poised to take on Firefox and

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...the potential is there to make voice input the equal of other input methods.

Chrome head-to-head. It has a sleek new design, runs fast, and is closing in on its rivals in HTML5 support. Edge is infinitely (I say that in a clinical, measurable way) more secure than Internet Explorer because it doesn't support any of the offal that Microsoft has been foisting on us for years — no ActiveX, no Silverlight, no custom navigation bars, no Browser Helper Objects, no VBScript, no attachEvent. For those of you stuck with that technology, Internet Explorer 11 will also ship with Windows 10.

Edge has a simple switch to turn Adobe Flash Player on and off. It also serves as the Windows default PDF reader, which is a huge improvement. Slightly ahead of RTM, Edge loosened its grip on Bing; you are now free to choose Google as your default search engine. Edge still doesn't have support for extensions or add-ons, similar to what you find in Google Chrome and Firefox. Microsoft promises that Edge will get extension support, but we have no idea when it will come.

The much-anticipated **Cortana** has its ups and downs. We've seen demos of Cortana sending messages and descriptions of Cortana firing off short emails. I can get it to compose an email, but not send it; your mileage may vary. With the version shipping now, we don't get much more than a note-taking, reminder-generating app with easy weather reports and a search front end — you still have to click in Bing to get results. But the potential is there to make voice input the equal of other input methods. Many logistical hurdles await, including problems with sound pollution in offices. Think of a dozen Scottys picking up the mouse and saying, "Hello, computer."

Some features are frozen in limbo. **Windows Settings** still hasn't subsumed everything from Control Panel, so we have an awkward situation where numerous tasks — for example, maintaining user accounts — are split between two entirely different apps. **Task view/multiple desktop**s is nice and useful — as it has been since the days of Windows XP — but you still can't assign different backgrounds to different desktops, and moving among desktops is still clunky.

Some features have been yanked entirely. The Metro **OneDrive** app from Windows 8.1, which supported "smart files" that showed thumbnails of all files in File Explorer, whether they were synced or not, has been yanked in Windows 10 (see Paul Thurrott's description). The old Windows 8.1 Metro **Skype** app was pulled. In Windows 10, there's a link to install the old, underwhelming Windows desktop version of Skype, but no Universal app.

As for advertising, Microsoft showed off its Spotlight capability for running ads on the lock screen early in the beta testing process. It even touted Spotlight as a new advertising medium for big-budget companies. Microsoft also included a "Highlighted app" capability, at one point putting a Microsoft-selected app on the left side of the Start screen. A couple of months ago, the Universal Weather app sprouted a display ad. All of those have been quashed in the current version. Whether they'll come sneaking back is anyone's guess. Perhaps advertising will become the price of using Windows 10.

Many other new features aren't yet fully functional. **Continuum**, which enables you to switch from touchscreen mode to mouse and back again, seems to be waiting for hardware improvements that will arrive with a new generation of devices. **Windows Hello** — the face, finger, and retina log-on recognition feature — similarly needs new hardware and drivers. Although fingerprint recognition reportedly works with some existing fingerprint scanners, face recognition requires a specific kind of camera typified at this point by Intel's RealSense technology. It's going to take a while before such cameras become commonplace.

Windows Media Center is gone. Windows 10 can't play DVDs. Minor irritations for most, with VLC an obvious free choice.

The rest of the apps are going through massive last-minute changes. Windows 10 **Mail** and **Calendar** are reasonably usable touch-enabled mail and calendar programs, but nowhere near Outlook.com or Google's new Inbox. **People** compares quite favorably to DOS-era contact managers, but doesn't set any new bars nowadays. The Photos app is a cobbled-together extension of the Windows 8.1 tile-based app, with some new smarts, but doesn't come close to what's widely available — particularly when compared to Google Photos.

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Microsoft has created a **wondrous deployment and patching infrastructure for Windows 10.**

The future of Music, renamed **Groove**, remains in doubt, and the app has a very convoluted method for managing playlists. It can't even add metadata. **Movies & TV** follows in the same rut. The Bing apps — **News, Money, Sports** — have improved modestly from Windows 8.1 days. The old Food & Drink (formerly Food), Health & Fitness (formerly Fitness), and Travel apps have all been pulled.

On the flip side, **Contact Support** offers easy access to Microsoft support techs. If it's still free and still readily accessible in two or three months, that will be an enormous boon to beleaguered Windows users. **DirectX 12** promises to bring new levels of reality to gamers.

Windows 10 brings back the **Windows 7 Backup and Restore** features, which were unceremoniously dropped from Windows 8/8.1. (Many people think Windows 7 had backup and restore nailed; Windows 8.1 eviscerated the features.) Windows 8-style Reset and Refresh are in Windows 10, too. You should check to make sure the Apple Time Machine-like File History feature is turned on (some people report it isn't on by default): type file history in Cortana and follow the crumbs.

Finally, the **Windows Store** is getting better, but only gradually. Microsoft has made several pronouncements about how the Windows Store is eliminating crapware, and the number of apps has decreased. Unfortunately, that isn't the whole story: While researching my Windows 10 book, I found many Windows Store apps that were embarrassing. They're still there today.

Developers have precious little incentive to build universal apps for the store. Peter Bright at Ars Technica put it succinctly: "If the only place that a Universal Windows App can easily reach is a Windows desktop user, developers may well be better off sticking to the ancient Win32 API (it's old and crufty, but much broader in scope than the Universal API), or even ditching the app entirely and building for the Web."

Management

Microsoft has created a wondrous deployment and patching infrastructure for Windows 10. But forced patches for those who aren't attached to servers stand out as a big sticking point. In the past week we've seen two dramatic examples of poorly constructed patches pushed down the automatic chute. Those went to beta testers, who should be accustomed to being treated like cannon fodder. We still don't know what will happen when bad patches hit the teeming masses.

There's an extensive discussion of deployment in the Microsoft Virtual Academy. As mentioned before, in-place upgrades look very clean. In a similar vein, the nondestructive Repair works well in my tests. Deployment has been well thought out, but many enterprises will be stuck with very different deployment models for Windows 7, Windows 8.1, and Windows 10.

The patching infrastructure has undergone massive changes, with the new Current Branch, Current Branch for Business, and Long Term Servicing Branch defining how updates get deployed. Mary Jo Foley at ZDNet has a good overview. The admins I know are concerned about the way the CBB and LTSB servers, and the "old" WSUS, will interact. It's a big unknown at this point.

On a micromanagement level, Windows 10 loses the Guest account which may be of note to some. I'm more concerned about the general lack of changelogs and patching notifications. As best I can tell, none of the Windows Store apps from Microsoft have changelogs. It's very hard to say, right now, which version of a particular Windows Store app is the most recent, and how it differs from the last version. Windows Update, as we've known it for decades, no longer exists, and with its departure Windows users won't be able to tell which patches have been applied.

It appears that Windows 10 Home customers have no option to delay or block updates. Windows 10 Pro customers, on the other hand, may be attached to a Current Branch for Business server, and the admin there may be able to postpone patches for a finite (but still undefined) amount of time. I haven't heard anything definitive about Windows 10 Pro customers who aren't attached to a CBB server, but there's no Settings page as yet that would implement the ability to block specific patches. It looks like

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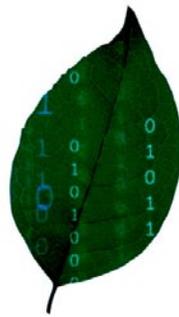
Win10 Pro users who aren't attached to a CBB server will get patches as they come hurtling out. That has some troubling consequences, which I'll explore in a later post.

Security

Microsoft has been talking about security improvements in Windows 10 for almost a year.

From a user point of view, the single largest improvement is in multifactor security techniques tied to accounts where you simply log in once and do nearly anything. The single most important improvement is the system-level separation on a given device of corporate and personal data, using a new technology called Data Loss Prevention.

There's built-in support for VPNs. Admins also get corporate lockdown capabilities, limiting apps that can be installed to those signed by specific vendors, along with Azure Active Directory integration. Enterprise apps from the Windows Store can be sideloaded — and much more.

Windows 10 has its own native Mobile Device Management (MDM) with BYOD support, Enterprise Data Proection policies, and full wipe capabilities. The built-in MDM capabilities are integrated into Intune. They're also promised to work well with third-party MDM packages. I haven't seen anything extending MDM-like capabilities to the individual — if you lose your laptop, there's no FindMyPhone feature accessible from the Web, for example.

Compatibility

This is one area where Windows 10 shines. I've had few compatibility problems running any of the numerous betas and expect to see very few still around on July 29. Some drivers may not work properly, but the installer highlights those and tells you what (if anything) you can do about it. I fully expect that any application running on Windows 8/8.1 — and, by implication, almost any app that runs on Windows 7 — will do fine on Windows 10.

Conclusion

Windows 10 is a curious combination of enormous potential and disappointing current reality. With big advances in many areas, and fumbling starts in many others, it's a mixed bag, particularly for anyone relying on the Microsoft-developed Universal apps. For example, if you need to run a Mail client on Windows 10, the Microsoft-supplied Universal Mail app works, but the Maps and Photos app will have you pulling your hair out.

Windows 10 does what it set out to do: Bring the Windows 7-style interface into the tiled universe. It is, in many ways, what Windows 8 should've been. It has all the advancements from Windows 8 — security, stability, power saving, and on and on — with much of the Windows 7 interface fully integrated. Windows 10 makes the old-fashioned desktop an integral part of the product, instead of an accidental tag-along, as it was in Windows 8 and, to a lesser degree, Windows 8.1.

At some point — sooner rather than later — I figure most Windows 8/8.1 users will want to upgrade to Windows 10, although there may be some touch-sensitive types who won't like the new Tablet Mode.

For Windows 7 users, it may make more sense to hang tight for the foreseeable future — or at least until Windows 10 Update 2 or 3 or 4 or 17 may be available. Sit back and watch the rollout unwind. It will take months for the major problems to surface and be corrected by Microsoft. It will take longer — perhaps much longer — for updates to make the promising new features attractive enough to warrant upgrading.

Eventually all Windows users will get Windows as a service. But there's no rush. Microsoft isn't going to run out of bits. Wait. ∎

Deep Dive

WINDOWS 10 TOUR

The good, the bad, and the missing

Microsoft's latest OS shows polish, promise, and pain almost everywhere you look

BY WOODY LEONHARD

Some day, we're assured, Windows 10 will solve all of your computing problems, greatly enhance your productivity, protect you and warn of impending problems, scale tall buildings with a single bound, and cure terminal halitosis. We aren't quite there yet.

Instead, the version of Windows 10 that hit on July 29 has some very good traits and some that aren't so good. The basic design holds together nicely, but a number of the pieces don't quite fit or need a lot of work — some don't even exist yet.

In this feature-by-feature view, we'll take a look at parts of Windows 10 that don't appear on any flashy ads. Instead, they're parts that you, as a Windows 10 customer, are going to find helpful, challenging, or downright frustrating — possibly all three at once.

Windows 10 marks the return of the Start menu, and those who raised their pitchforks at Microsoft for dropping the Start menu in Win8 should be pleased — with reservations.

The right side of the Start menu, where the app tiles live, is remarkably malleable. You can drag tiles into different groups, rename the groups, and resize the menu itself by dragging at the edges. You can also resize the tiles as you see fit, make them stop flipping, or delete them by right-clicking. You can add more tiles to the Start menu simply by right-clicking on a program (nearly anywhere you find one) and choosing Add to Start.
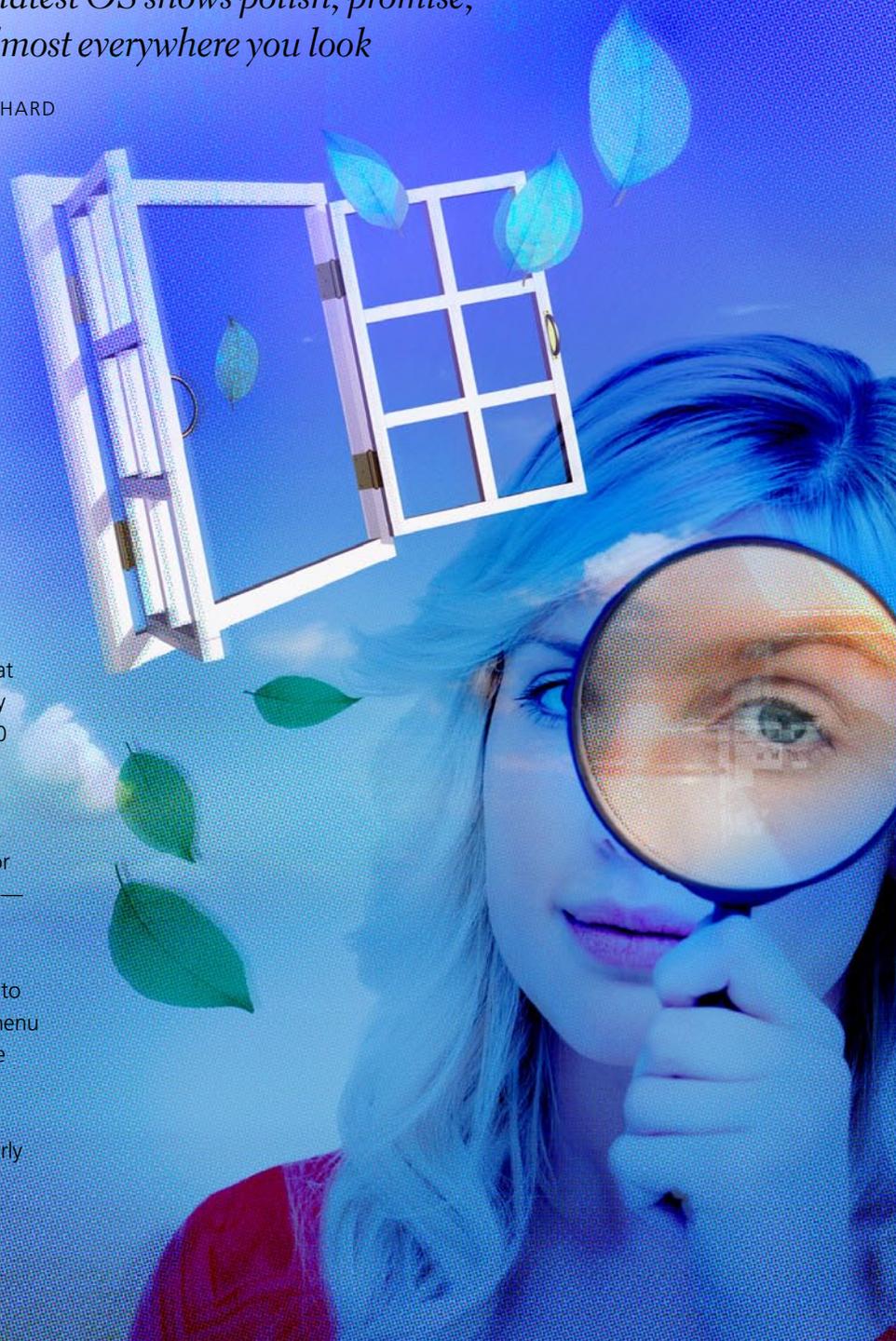
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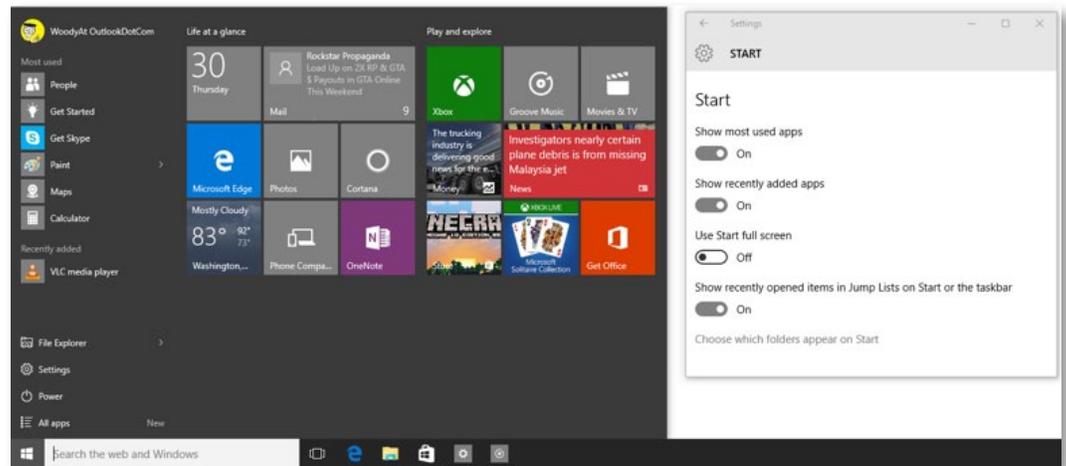
Start menu: Back but not quite its former flexible self

Accessing apps: Cutting through the sprawl

The left side of the Start menu, however, is quite rigid. As you can see in the screenshot, you can choose whether to show your most used apps (a salted list that expands as the Start menu gets taller) and/or recently added apps. You can also choose which apps appear on the lower left, as long as you select from a preordained list of 10 apps.

The old Windows 7-style ability to create your own cascading menus on the left, pin your own locations and programs on the left, and generally customize the text side of the Start menu is gone.

In place of customizable, cascading menus, we get the glob approach typified by the All Apps list you see here. Yes, there's a "phone book"-style index that helps you traverse the mass, but heaven help ya if you think that, oh, Internet Explorer, is under "I." That All Apps list, mashed as it is, still beats Windows 8's shotgun blast of icons.

If you get accustomed to it, finding apps by typing the name in the Cortana search bar works reasonably well, and you can get straight to the Cortana search box by pressing the Windows key. Type Win-Paint, for example, and the Paint app appears, Win-calc brings up the Calculator.

The access problem lies not so much with fresh systems, like the one in this slide, but in upgraded systems that have been running and accumulating programs for many years. Peter Bright at Ars Technica writes about a bug in the way the Win10 Start menu works when it

exceeds about 500 entries. He found that the list of All Apps is limited to about 500 entries — and performing a search on app names has the same limitations.

Taskbar: More flexible than meets the eye

Icons in the taskbar — to the right of, and including, Edge's "e" icon — all follow the same basic pattern: You can remove them by right-clicking and choosing "Unpin this program from taskbar"; you can add new ones by firing up an app, then right-clicking on its icon and choosing "Pin this program to taskbar." Some of the icons have right-click jumplists that include shortcuts to various incarnations of the app, such as recently opened files or frequent folders. Others, notably Edge, have no jumplist.

The Start button stands immutable, as you might expect (though you can move the entire taskbar to the top, left, or right), but the Cortana search box and the Task view icon next to Cortana can be changed. Cortana can be hidden, reduced to an icon, or appear with the "Ask me anything" box. And the Task View icon can be hidden.

Microsoft Edge: Great promise and deeply hidden search options

The new browser, Microsoft Edge, shows that Microsoft is finally serious about Web browsing. Weighty tomes have been written about the demise of Internet Explorer, and I won't miss it
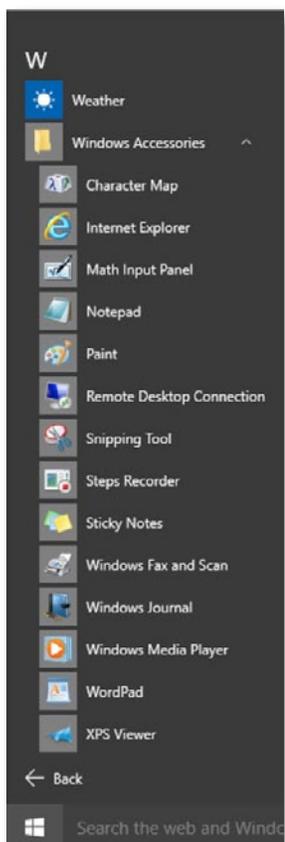
or its evil spawn — ActiveX, Silverlight, browser helper objects, VBScript, VML, custom toolbars (good-bye, Ask!), attachEvent, document modes — one little bit. I apologize to those of you who followed Microsoft's lead and built your careers around those technologies, but they have to go.

Microsoft succumbed to the pressure (some would say the realities) of browsing in the 21st century and kept support for Flash, but the Flash player is built in, and users can turn it off with a slider in Advanced Settings. There's PDF support built into Edge, as well.
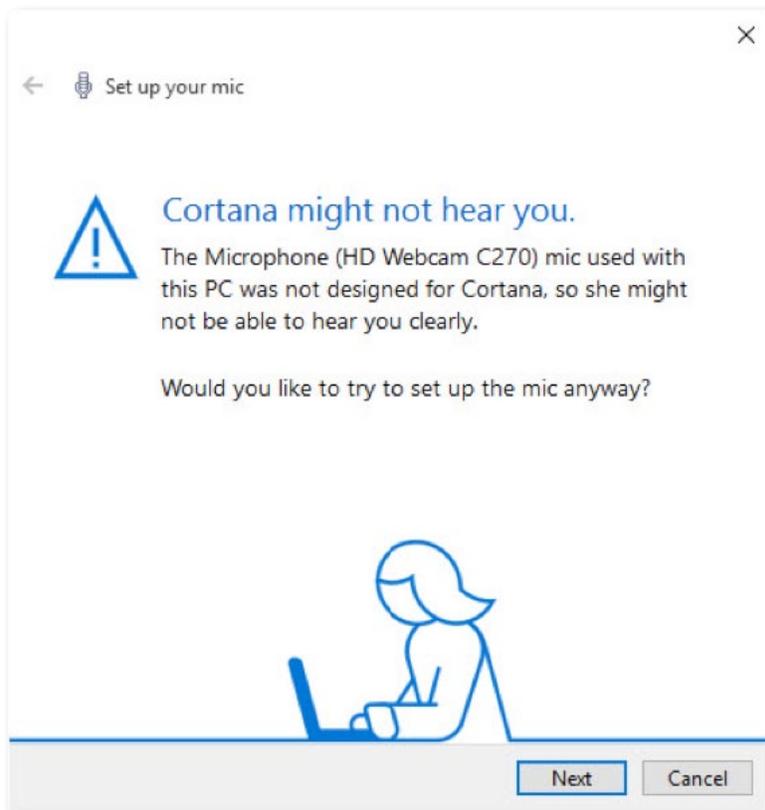
Cortana: Less easy, more snooping than advertised

I was startled to discover a couple of days ago that you can add alternate search engines to Edge, though the method is by no means obvious. Navigate to the site you want to use for a search engine; in this case, I went to duckduckgo.com, but the method works for google.com as well. Click the ellipses icon in the upper right, choose Settings, then View Advanced Settings. Scroll down to "Search in the address bar with" and choose "<Add new>." If Edge can work with the search engine, it will

appear in the "Choose one" box at the top. Click on it, then click Add, or Add as default.

Superlatives aside, Microsoft Edge has few of the bells and whistles we've come to expect from a fully developed Web browser.

For example, there are no extensions as yet. Microsoft has confirmed that it's trying to build a framework inside Edge that will allow Chrome extension developers to port their extensions to Edge with "not much work to do, or zero work to do." Replicating the Chrome API inside Edge is not a simple task.

Microsoft's also drawing the ire of Mozilla, for one, by ignoring the choice of default Web browser during an upgrade, and making it difficult to change default Web browsers inside Windows 10 itself, as shown in the screenshot. The browser can no longer set itself as default. Mozilla CEO Chris Beard has taken to the ether, posting a blog and an open letter to Satya Nadella that details his concerns. "It is bewildering to see, after almost 15 years of progress bolstered by significant government intervention, that with Windows 10 user choice has now been all but removed."

Like Edge, Cortana is also very much a work in progress. Cortana is supposed to listen, but she only occasionally (at least in my experience) listens well. Part of the problem is hardware. The type of notice shown in this slide is common — very few microphones on computers today pass muster, and Cortana will moan about them.

If you let her, Cortana will listen to absolutely everything you say, snoop your email, look in your files, and generally carry privacy invasion to its obvious electronic limits. Microsoft gathers it all like rosebuds, stuffing Microsoft's database with every sort of goody. That's the price you pay for a personal assistant: She can't very well do personal things for you, unless you give her the information.

Microsoft has a Web page that lets you clear information Cortana has gathered about you. To see it, click the Cortana ring, then the second icon for Notebook, then click Settings. If you click "Manage what Cortana knows about me in the cloud," you get a Bing settings page, which lets you clear stored information about your saved favorites and interests. There's also a

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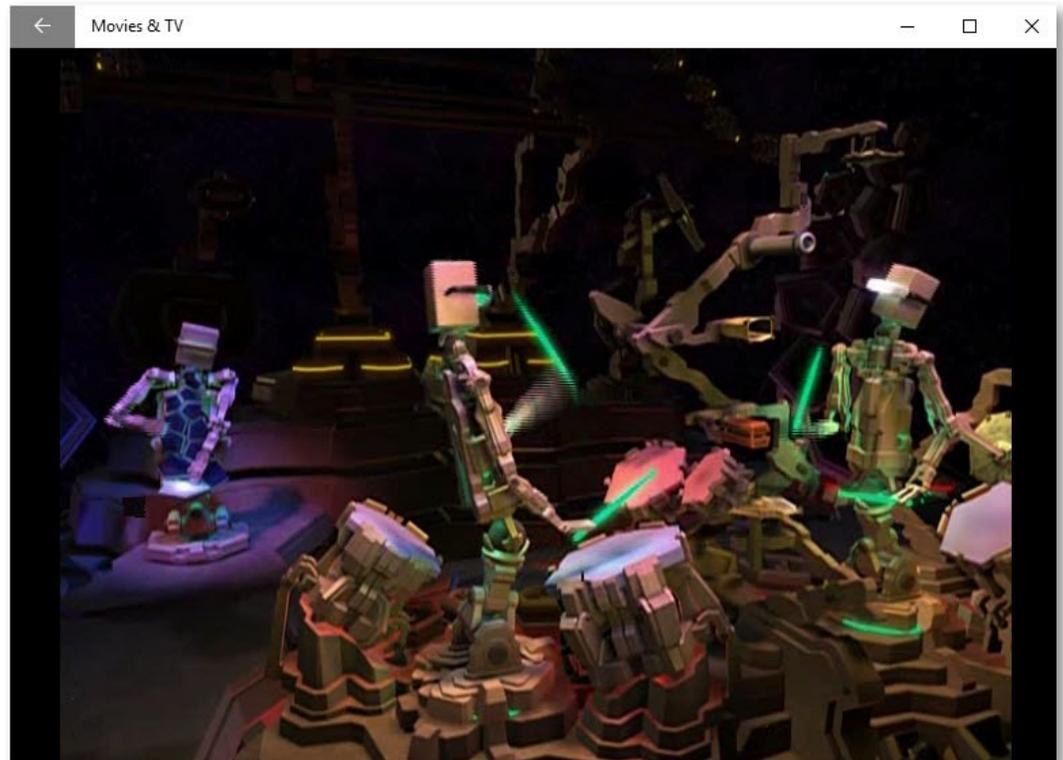
button to clear your calendar, contacts, location history, and browsing history.

In addition, Microsoft has an entire site devoted to letting you control whether personal information collected about you can be used to target ads. (Note that this is rather different than preventing Microsoft from gathering information about you.) Go to the Choice site and plug away.

Universal apps: From the mundane to the truly incapable

Microsoft's Universal applications — Mail, Calendar, People, Photos, OneNote, Groove Music, Movies & TV, the News, Money, Weather, and several others — run a gamut from reasonably usable to truly pathetic. Let me start by looking at one of the good ones: the new Universal Mail app.

Universal Mail has many of the capabilities you would expect in a modern email program, though it won't consolidate inboxes, and it always shows threads in conversation view — you can't simply look at mail as it comes in, chronologically.

The Calendar app works well, particularly when fed a Google Calendar. I was quite startled by how well changes in the Windows Universal Calendar app showed up on my Android phone.

But the People app is a cruel joke. If you can figure out the interface (click the ellipses icon on the right edge of the left pane, choose Settings), it's possible to add contacts from Outlook.com, Exchange, Google, iCloud, and POP or IMAP. If you choose to Get Social Apps, you see a rude notice from the Store that "Your search for '' had no results." The People list does little more than an Outlook 97 Contact list — less, in fact, because you can't export it.

Speaking of barely-good-enough apps, the new Universal Movies & TV app has a fatal flaw. If you minimize the window, the whole thing stops playing — no sound at all.

The obvious solution is to install VLC, the old-fashioned Windows desktop version, which doesn't suffer from the same problem. VLC has been playing my videos on many platforms for many years.

Microsoft has been working on Universal/Metro music and video apps for four years now. Somehow, I expect better.

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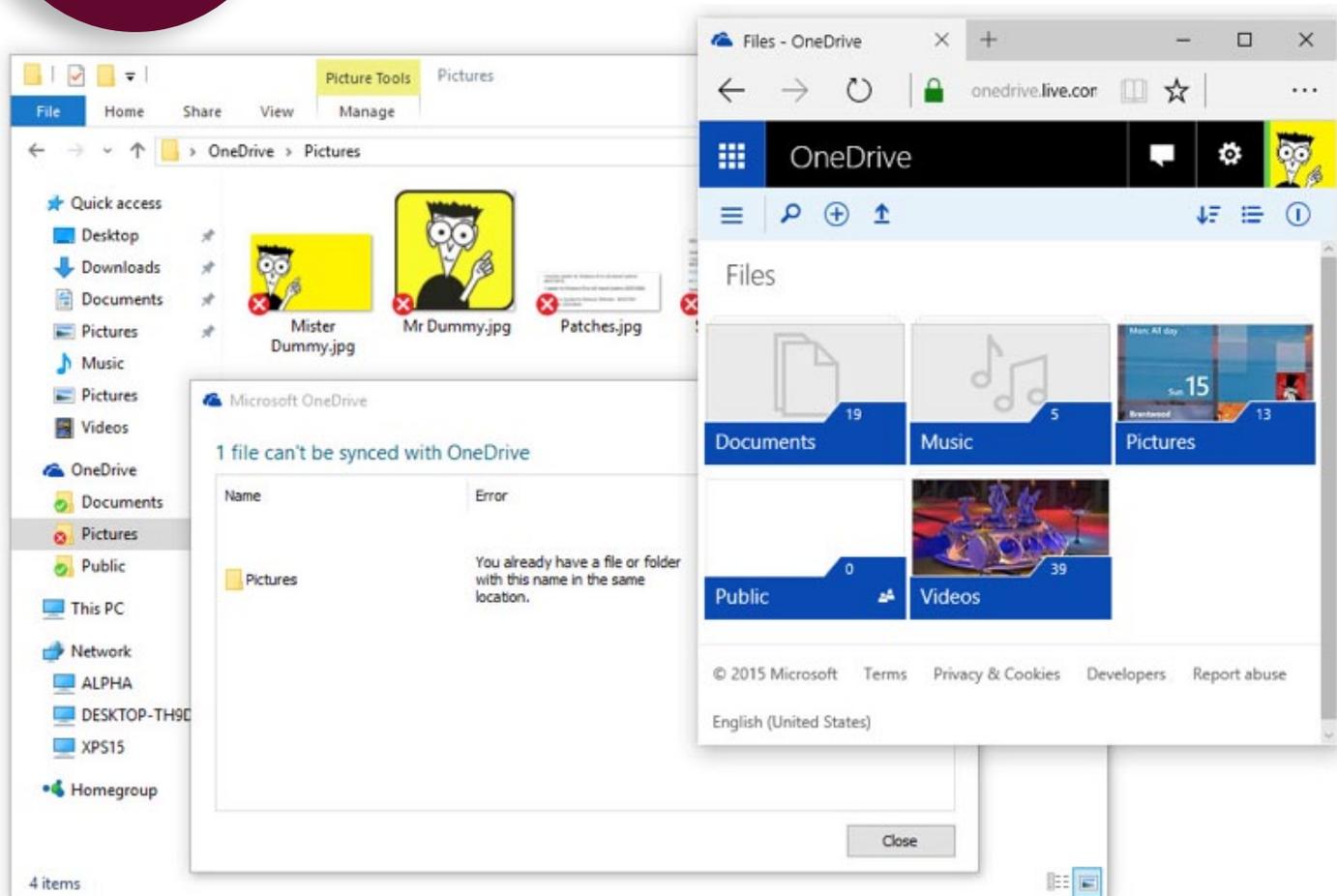
The Windows Store: A hopeful wasteland

The Windows Store is there, and it doesn't have as many truly horrendous apps as it once had. Maybe someday the big-name apps will arrive, but for now the shelves are as bare as a 7-11 in a typhoon. Yes, you can get a Twitter app (newly updated, no less) or a Facebook app, but neither comes close to the apps on iOS or Android — much less the Web. Instagram and Vine are OK renditions of venerable hits.

There's still lots of junk. For example, I looked at an app (mercifully, it's free) called How to Do. As best I can tell, it consists entirely of pages scraped word-for-word from WikiHow.com. The app doesn't cost anything, but inside there are plenty of ads — Low Cost Dental Implants! Reverse Mortgage Calculator! — that link to keywordblocks.com, a site that pays for clicks. All of the written reviews for the app are 5-star. Of course.

That said, there aren't as many out-and-out scams as once existed. But the Windows Store is still a wasteland and likely to remain so for some time.

OneDrive: Death by a thousand cuts

OneDrive remains a constant pain. While Windows 8.1 had OneDrive working pretty well — Windows maintained thumbnail "smart files" on your computer to show you what was actually stored in the cloud — a range of technical problems forced them to backtrack. (Simple example: What does File Explorer do when there isn't enough room on the machine to even store thumbnails of all those pictures you took?)

The result is a confusing array of settings. When I installed Windows 10 on my main machine, I told OneDrive that I wanted to store local copies of my Documents and Public folders on the machine — and it should keep Music, Pictures, and Videos in the cloud. Later, I decided

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Many Windows 8 improvements continue in Windows 10, and if you are a Windows 7 user, it'd be worthwhile to look them up.

that I wanted to put some pictures stored on the computer in OneDrive. What I got in the end was the untenable mess you see here, with duplicated folder names and files that appear to File Explorer to be in OneDrive, while OneDrive itself (accessed from the Web) doesn't show the files.

We've been promised a resolution to the problem ... some day.

File History & System Restore: Some assembly required

Many Windows 8 improvements continue in Windows 10, and if you are a Windows 7 user, it'd be worthwhile to look them up. Chief among them, in my opinion, is File History. Windows 7 used Shadow Copies ("Previous versions") to back up blocks of changed data. File History offers both more thorough backups and an easier interface for retrieving them.

To get File History working, make sure you have a secondary drive available somewhere — a second hard drive, an external drive, or a network-attached drive — then in the Cortana search box type "file history." Click on the link at the top and follow the instructions to turn it on.

The old Windows 7 backup and restore, which were gutted in Windows 8, have returned in Windows 10. You can get to them from this same Control Panel applet. Click the link at the bottom to System Image Backup.

While you're thinking of it, now's a good time to ensure Windows is making periodic System Restore points, which you can use to roll back from simple problems (including, uh, bad forced patches). Right-click on Start, choose System. On the left, choose System protection. On the System Protection tab, check to see that your Local Disk (C:) (System) drive has Protection set On. If it isn't, click the Configure box.

Windows updates: The great unknown

Permit me to end this tour with something of an enigma. I've been writing for several months about how Microsoft will force-feed updates to Windows Home customers as well as Windows Pro customers who aren't connected to an update server. The details are still cloudy, in my mind — nobody outside Redmond has even

seen a Windows Update for Business server, for example — but that seems to be the direction we're headed.

There's no question that security patches will be distributed to everyone, although it seems likely that update server admins will be able to hold them back, at least for a short period of time, to make sure they don't cause massive damage. Historically, the security patches have caused the most mayhem.

In August, I wrote about a little-known Microsoft utility called wushowhide (or KB 307930) that, with a few hiccups, lets you manually block specific updates, for an unknown period of time. It came in very handy when the Windows Updater suddenly started forcing a bad Nvidia video driver.

Here's the enigma: Very late in the beta testing process, a check box appeared in Windows Update advanced options, shown in this screenshot. It's marked "Defer upgrades." I have no idea what the box does, and the "Learn more" link doesn't help. Perhaps those who aren't attached to an update server will be able to defer their own upgrades. Then again, maybe not.

That's one of the big unanswered questions at this point — and for many of you, the chance to block unwanted patches could be a dealbreaking consideration given Microsoft's update track record. ∎

Deep Dive

10 reasons you **should upgrade** to Windows 10

Windows diehards take note: Win10 is more than a misguided mash-up of Win7 and Win8.

BY WOODY LEONHARD

By now you've undoubtedly seen the Microsoft TV ads showing 10 reasons to upgrade to Windows 10: It's familiar, Cortana, Microsoft Edge, Xbox, Multi-doing (is there a pedant in the house?), Security, Windows Hello, Music and more, and Continuum.

The ads aren't targeted at you and me, they're designed for your Great Aunt Mabel… who undoubtedly will get hooked searching through YouTube. If you're more than mildly conversant with either Win7 or Win8, it'll be hard to stifle a guffaw.

Don't let the ads lead you astray. It's easy to dismiss Windows 10 as a misguided mash-up of Win7 and Win8, but there's much more to the story. Let me step you through 10 best reasons I know for upgrading to Windows 10 – and, in a companion piece, also point out the 10 best reasons for avoiding Windows 10.

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10 Windows 10 is the way of the future

Yes, Microsoft tried to sell us the same bill of goods with Windows 8, but this time it's very likely true.

Even though the Windows 10 desktop, and the Win32 API underneath it, will be around for a long time, and those "legacy" programs you've known for years will continue to save our butts, there's no question that the new Windows Universal app platform (you can call it "Metro" and I won't mind) is where we're headed.

The WinRT API, which drives Universal apps, will sooner-or-later become the platform of choice for Windows developers — assuming that all of the Windows developers don't turn to iOS or Android in the process. WinRT was originally conceived as a way to run more-or-less the same apps on both Windows and Windows Phone. Now, with Windows Phone not even a pimple on the mobile boil, that motivation is fading. But WinRT still has a draw on other devices, and in other contexts, including Internet of Things, Hololens, Raspberry Pi, and heaven knows what.
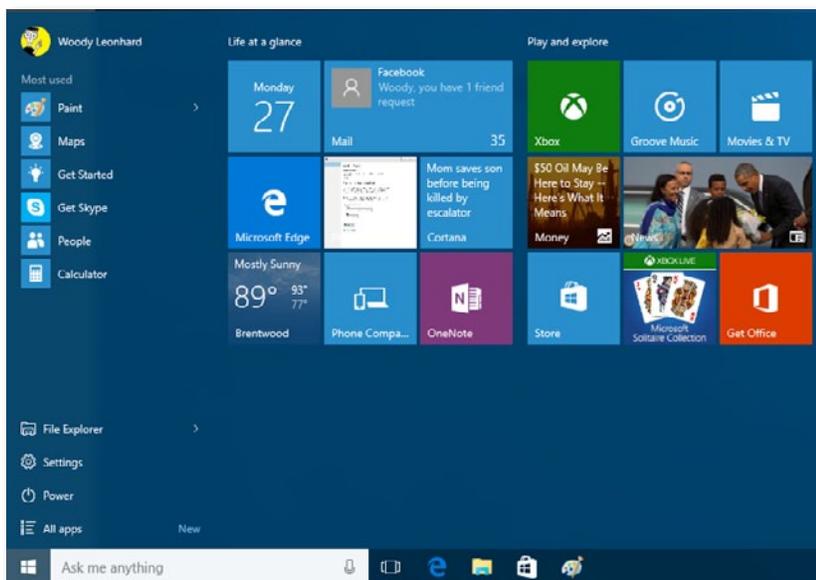
9 The new Start menu represents a big "plus" for Windows 8/8.1 mousers

Windows 7 customers who rely on a mouse have good reasons to think twice or thrice before upgrading to Windows 10. But mousing Windows 8.1 folks will find the new Start menu overwhelmingly inviting. If you use a third-party Start menu (e.g., Start8) with Windows 8.1, you may already be happy enough. But if you're tired of the 8.1 interface, Windows 10 represents a significant improvement.

For mousers, Microsoft made a huge mistake with the Windows 8 interface, and only partially rectified the problem with Windows 8.1. While other considerations may make you refrain from Windows 10 (for example, the OneDrive foibles, as explained in my list of 10 reasons to avoid Windows 10), for most Win8 mousers, Windows 10 is a huge step forward.

8 DirectX 12 makes a big difference with hard-core games

Looks like frame rates may double. Right now DirectX 12 is making a big splash in the gaming industry. Some day, we may see big gains in all sorts of graphics rendering. Even on a slowpoke Intel integrated video chip, the improvement is marked.

But, for now, the only beneficiaries are gamers, running games specifically capable of taking advantage of DirectX 12.

Still, it's worth pondering.

7 Security improvements, both shipping and anticipated

If memory serves, every Windows version since 3.1 has laid claim to being "the most secure ever." Windows 10 had many security improvements, some of them game-changing.

The big game changer? Internet Explorer is no longer the default browser. That, all by itself, will do more to improve the general security of Windows than any other change in recent memory.

Windows Hello, which you've probably seen in videos but never experienced in action, uses your face, iris or fingerprint to verify your authenticity. Many machines have fingerprint readers that will work with Windows Hello. Few have the Intel RealSense camera necessary to pull

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off facial recognition. Intel lists 11 laptops and all-in-ones with the requisite camera, with three more that are only sold in Japan.

Aside from updates to current features – Windows Defender, SmartScreen, Family Safety – Microsoft is expected to ship Enterprise Data Protection, to wall-off company data on mobile devices, later this year.

6 Catching up with every modern mobile phone and tablet, Win10 finally has a Notification center

Microsoft calls it an Action Center, but at least it stores away your notifications so you can find them, instead of flashing them on the desktop and tossing them into the bit bucket.

As a little bit o' lagniappe, there are handy shortcuts at the bottom. (Hint: "All Settings" doesn't really have All Settings; it's just an easy way to get into the Universal Settings app.)

If you have two hands full of thumbs, as do I, you'll probably want a stylus. But for general touch use, I find that Windows 10 works better than Windows 8.1.

5 You can actually use Win10 on a touch screen… most of the time

Windows 8.1 tablet aficionados may not appreciate all the nuances (I talk about them in the reasons to avoid Windows 10 list), but Microsoft has re-organized the touch side so you can actually get at many of the features available with a mouse. Illustrated here is the All Apps list, which is a contortionist's dream in Windows 8.1.

If you have two hands full of thumbs, as do I, you'll probably want a stylus. But for general touch use, I find that Windows 10 works better than Windows 8.1. In particular, Win10 doesn't require you to memorize weird swiping combi-

nations, and it doesn't hide tiles in "Where's Waldo" land.

4 Multiple desktops are built-in, not patched on

Windows has had the ability to run multiple desktops since XP days. You just had to install an add-on like the XP Virtual Desktop Manager hidden in Microsoft's XP Power Toys. With more recent versions of Windows, dozens of virtual/multiple desktop management add-ins hit the scene, including Sysinternals Desktop from Microsoft. In Windows 10, instead of installing a separate program, multiple desktops just arrive built-in.
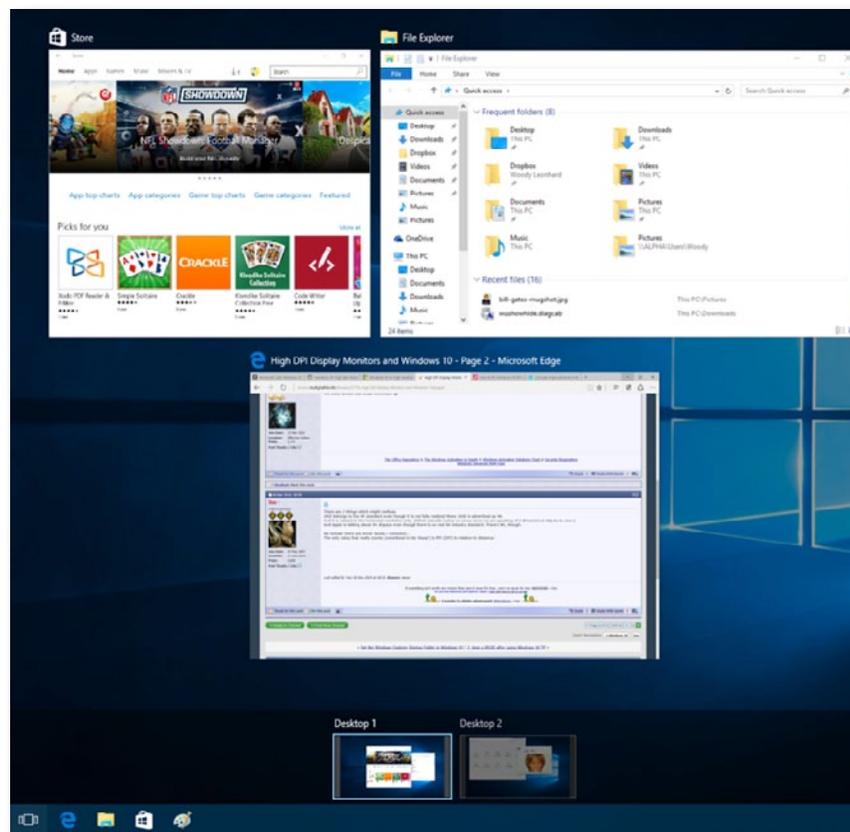

Many people don't like virtual desktops – it's hard to keep them organized, there's no differentiation in background (one wallpaper applies to all the desktops), and no hint as to which desktop is currently in use. But I've found them worthwhile when trying to juggle two completely different tasks.

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The simple fact is that Cortana needs access to all of that information in order to personally assist you. **Very much a two-edged sword. Just make sure you understand the consequences.**

To bring up the multiple desktop interface – and put your programs in Task View, as shown in the screenshot — click the icon to the left of the Edge icon. It's the one that looks like a schematic of a table and two chairs.
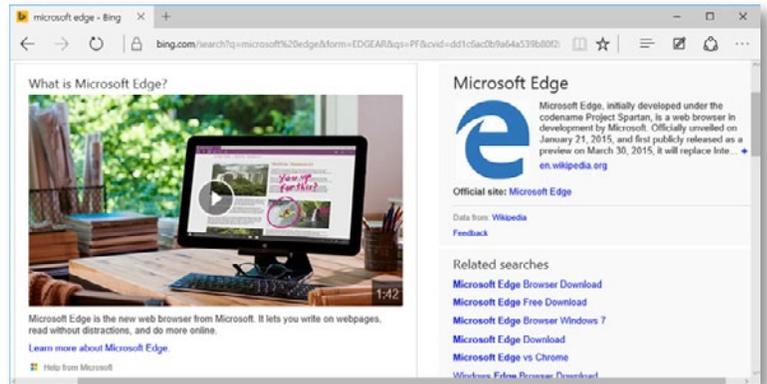
3 Cortana may change the way you work – someday

Much has been said about Cortana, the minus-500-year-old AI that occupies the spot to the right of the Start button. She/he/it is improving constantly. Windows 10 serves as a funnel to send your interactions with Cortana back to the Microsoft mother ship. Expect Cortana's repertoire to grow by leaps and bounds as Microsoft moves to match Apple's Siri and Google Now.

The big downside to Cortana? She (pardon the anthropomorphism) constantly sends your personal data to Microsoft. Run a search on your local computer, and the search terms go to Microsoft's Bing collector. Ask to be reminded about an appointment, and that data gets stuck in your bucket in the sky – and your Outlook calendar.

That said, you can opt to turn off Cortana's intrusive ways. You can even disable Cortana completely. The simple fact is that Cortana needs access to all of that information in order to personally assist you. Very much a two-edged sword. Just make sure you understand the consequences.

2 Microsoft Edge is good and getting better

The best part about Microsoft Edge? It isn't Internet Explorer. Finally, Microsoft's getting serious about creating a browser that's fast, efficient, compliant with web standards, and doesn't really care too much about backward compatibility. It's about time.

The downside? It isn't ready yet. Although Microsoft's promised us that it'll be easy to switch default search providers the only alterna-

tives to Bing that I can find are Wikipedia and Twitter search. We've been promised add-on support, but there isn't any.

Personally, I'll stick with Firefox and Chrome, even though they aren't available as Universal apps just yet. But I've got my eye on Edge and, when the features get flushed out, I'll likely be all over it.

1 Better navigation for mousers

Maybe I'm the only one to notice, but navigation in Windows 10 using a mouse and keyboard has improved so much, I'd be tempted to upgrade to Windows 10 just for the additional help in organizing things. (In fact, if you're coming from Windows 7, you may seriously consider getting Win10 just because it brings back the "Up arrow" in File Explorer.)

If you're sick and tired of accidental edge bumps in Windows 8 – let your cursor drift too far to the upper right and you get blasted with charms; too far to the left and apps you've just run appear out of nowhere – Windows 10 banishes them all.

But there's more. I use Snap Assist all the time: Drag a window to the left, to occupy half the screen, and the other windows that could go to the right all appear. Click on the app you want, and there's a side-by-side screen, all set up and waiting. You can also drag into a corner for the window to occupy one-fourth of the screen, as in the screenshot.

Sometimes the little things make a big difference for people who wrestle with the beast, day to day. ■

Deep Dive

10 reasons you
shouldn't upgrade
to Windows 10

You may be better off sticking with Win7 or Win8.1 given a wide range of Win10 trade-offs and shortcomings

BY WOODY LEONHARD

Windows 10 provides a compelling combination of features that may tempt you to take the plunge and upgrade — the greatly improved navigation for mousers, new browser, facial recognition, and Cortana all rate as significant improvements over what you are currently getting from Win7 and Win8.

But yes, there are "but"s. As in InfoWorld's review of Windows 10, it may have a few too many rough edges to tempt you, especially if you're comfortable with what you have. "Better the Devil ye ken, than the Devil ye don't" — those are wise words, born of much pain.

Here are the main reasons why you may, legitimately and without a tinfoil hat, want to stick with Windows 7 or Windows 8. There are powerful arguments in the direction of staying put.

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10   Ongoing privacy concerns

While you may reasonably argue that Microsoft needs access to all kinds of data to give you the services you demand — Cortana has to be able to look inside your email and calendar, for example — the trade-offs between privacy and features is not a simple black-and-white decision.

Microsoft, to its credit, makes no bones about the information it's collecting in Win10. (Did you know that Windows 8 has an "Advertising ID" that follows you around?) Read my discussion of the pros and cons of the privacy problem and decide for yourself if you're willing to give and, if so, how much.

Of course, if you've been using Google search, Gmail, or Google Drive on a free account, or Chrome, you've already been examined 10 ways from Tuesday. Microsoft is entering the Google league, and if you decide to take the plunge, you should do so with your eyes open. Is "Moogled" a word?
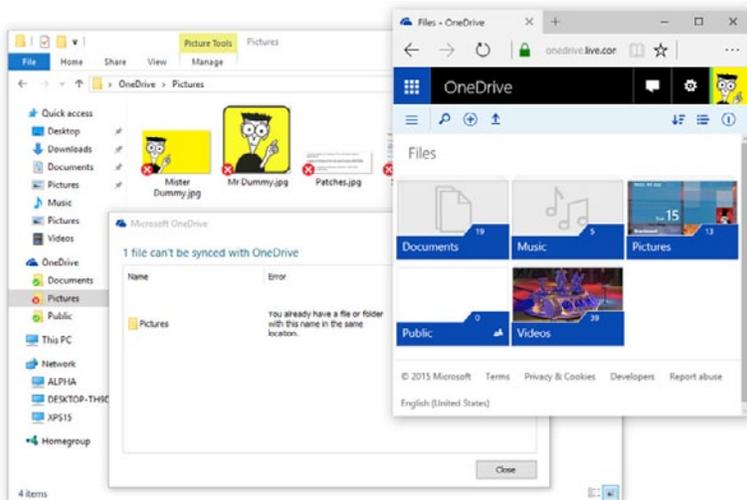
9   OneDrive regression

This concern applies only if you use OneDrive in Windows 8.1, and you put a lot of stuff in OneDrive. For those of you using OneDrive in Windows 7 (and 8), there's no change in behavior with Win10. But if you're accustomed to seeing all of your OneDrive files in Windows 8.1's File Explorer, you're going to be in for a bit of a shock.

Windows 10 makes you choose which OneDrive folders you want to be able to see in File Explorer. Once you've made that choice, the other folders aren't accessible in File Explorer — or just about anywhere else in Win10, including, say, the Word File Open dialog. The only way to see what files you have in OneDrive is by venturing to the OneDrive website.

That can lead to difficult situations like the one in this screenshot, where you've unwittingly created a folder in File Explorer that duplicates one in OneDrive, and it all turns into a can of worms. It can also lead to situations where you just can't find a file you really want. It's a huge mess. Microsoft promises it'll fix the problem one of these days.

8   Missing Media Center and DVD player

I know there's ten of you who really want to run Windows Media Center on your new Windows 10 PC. Sorry, it ain't gonna happen. If you try to upgrade a system with Windows Media Center, the Win10 installer won't bring it over. If you try to install WMC on a Win10 machine, you won't get anywhere. If you install Win10 on a Win7 machine that has WMC, then roll back to Win7 (which you can do within 30 days), WMC doesn't come back.

Of course, Microsoft wants you to use an Xbox. But there are zillions of options around. I, personally, use a Roku with Plex Media Server. For recording TV, every cable company has video recorders available these days, and some fancy new stuff (Apple TV?) is just on the horizon.

In addition, Windows 10 doesn't have any native ability to play DVDs. Which is silly because VLC — one of my top 25 picks for Windows desktop applications — works just fine, and it's free.

7   Not much in the way of Universal apps

If you've fallen for the marketing fluff about all of those wonderful Universal apps — programs that run on Windows 10, whether it's on a desktop, notebook, phone, Raspberry Pi, or Frigidaire — you're in for a rude awakening.

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The Windows Store is still, by and large, a wasteland, with crap apps galore. There's a reason why Microsoft takes up room in its prestigious Windows blog to promote such illustrious new apps as a USA Today scraper and PicCollage. The folks in Redmond want to convince you that the Windows Universal App situation isn't as dire as it appears. My colleague Paul Krill says Microsoft's plans keep changing, and the future of Universal apps is cloudy at best.

Someday the Windows Store may come close to the competition. I won't hold my breath.

6 Key apps, including Mail and Edge, aren't ready yet

Some of Windows 10's key apps just aren't baked. Mail, for example, shown in this slide, has a nasty habit of putting notifications in the upper left corner and leaving them hanging forever. There's no combined Inbox, so if you have multiple accounts you have to jump from Inbox to Inbox.
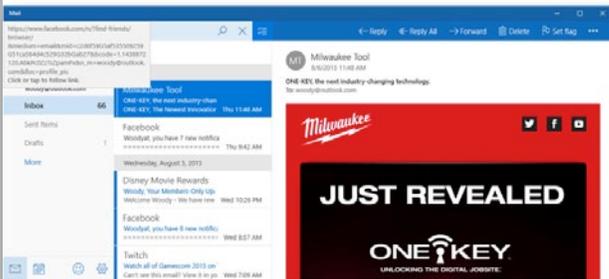
And it crashes. Hard. For a lot of people.

Edge, the new browser, similarly has all sorts of rough edges. There are no extensions as yet, thus no AdBlocker — it shows every stupid ad on every stupid page — and no LastPass, which is a showstopper for me. Changing the search engine is tortuous. Moving tabs onto the desktop and back again doesn't work, and you can't pin tabs.

I talked about the sorry state of the Microsoft-supplied Universal apps in my Windows 10 review. Microsoft pulled the Skype Universal app. Photos isn't in the same universe as Google Photos.

5 Win10's Tablet Mode may not appeal to you

If you're running Windows 8.1 and use it primarily as a touch-first device, you may not like the way Windows 10 has moved the cheese.

First, there's the hamburger menu on the left which tucks away the entries on the left side of the Start menu. It collapses just fine, but when it's collapsed it rarely shows any more tiles than when it's not collapsed. So what's the point, eh?

Universal app windows have that pesky taskbar permanently tacked on the bottom, while the window bar at the top autohides. Edge when running full screen doesn't support any of the old Metro IE swipe commands. You can't swipe through running apps. And the apps themselves? Office on the iPad is better than Office on Windows 10.

Before you jump from touch-first on Windows 8.1 to Windows 10, go to your favorite local computer store and try Windows 10 in Tablet Mode. See if you like it — or tolerate it.

# 4 The installer may not be ready for you yet

If you keep getting notifications that your upgrade isn't quite ready yet (in Win7 or Win8.1, right-click the Windows Update icon in the system tray and choose Check Status of Update), there's a reason. Microsoft got a whole lot of requests to upgrade to Windows 10. Contrary to what you might expect, those requests are not being satisfied first-in-first-out.

Instead, the Windows 10 installer takes a look at your system and, based on the hardware and software it finds, assigns your request to a bucket of similar upgrade requests. The folks running the (massive) upgrade effort prioritize your request based on their assessment of how likely your system is to bomb out on an upgrade. As more systems get upgraded, more of the kinks get ironed out, and the more likely your system will float to the top of the heap.

You can upgrade manually — I wrote about how to perform a manual upgrade. But unless you've made the request the usual way, and waited until your turn comes up in line, you're tempting the Wingods.

3 Forced updates

Patching remains Windows 10's Achilles' heel. Whether you like it or not, all Windows 10 Home machines, and Windows 10 Pro machines that aren't hiding behind an update server (such

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If you're old school and not afraid of rolling up your sleeves to customize your editor, you might find Emacs or Vim to your liking.

as WSUS or WUB) will get all patches applied according to Microsoft's time scale. There once was a time when that "feature" alone would've driven me to scream bloody murder. In the past four months, though, Microsoft has shown it's far, far more capable of providing good updates than at any time in the past decade. Two decades, for that matter. Except. Yep, you guessed it. All three of the first "Cumulative Update" patches have had problems with reboot cycles. KB 3081424 on Aug 5, KB 3081436 on Aug 12, and KB 3081438 on Aug 14 all crash a fairly small number of Windows 10 systems. The installer stops mid-installation, flashes an error message, rolls back, and reboots. But then — you guessed it — the forced installer kicks in, and crashes Windows again. Rinse, lather, repeat. Getting out of the mess involves editing the registry. I'm convinced Microsoft will give us some sort of tool to stop this kind of endless cycle. But there's no indication when (or even if) we'll see it.

2 Ain't broke, don't fix

The old adage comes from painful experience — and it's just as applicable now as it ever was.

If you're using Windows 7, and it's properly patched up and working for you, and you've stopped using Internet Explorer, you really have to consider whether it's worth the effort to upgrade to Windows 10.

Few programs will run on Windows 10, but not Windows 7. The only major ones I can think of, aside from a small handful of touch-centric programs, are Cortana and Edge, both of which come baked into Windows 10. If you're using Windows 8.1 with a mouse and you're OK with the interface (there must be a dozen of you), Windows 10 may be more trouble than it's worth.

In either case, carefully consider whether the warning signs listed here outweigh the benefits in 10 reasons you should upgrade to Windows 10, for you, in your situation. It's entirely reasonable to hold off until you get a new machine, with a camera that can run Windows Hello, and a touchscreen.

1 Questions, questions, questions

I'm still troubled by how many unanswered questions are floating around. For example, although we haven't received official confirmation of the fact, it now appears as if the validation sequence goes like this: When you upgrade a "genuine" Win7 or 8.1 machine to Win10, and run the upgrade in place, Microsoft apparently records a hardware ID that says, "this machine has valid licenses for Win7 and Win10." At that point, you can install either Win7 or Win10 on that machine and your license will be validated. We didn't know that a week ago. Ed Bott wrote about it on ZDNet, but there's still no official confirmation.

Another example of something we don't know: How does Windows Update for Business patching really work? Nobody's seen a WUB server. We also don't know what the Windows Update advanced option marked "Defer upgrades" really does.

We haven't yet seen how Microsoft will recover from a really bad update — although the experience to date with the three Cumulative Updates does not instill confidence. We don't know if Microsoft will start documenting its patches again. We don't know if much effort will be directed at fixing and improving the Microsoft-supplied Universal apps.

Most disconcerting of all are the privacy questions. Peter Bright at Ars Technica has a disturbing revelation that, even with all of the Win10 security settings on "Off," Win10 still sends some data to the Microsoft Mothership. The simple fact is that Microsoft hasn't told us what data it's collecting – there's a short note at the end of Bright's article — although the EULA says it can do just about anything with the data it collects. Stackexchange has an insightful thread on the topic.

All of these are key questions, and we really don't know the answers. ■

Senior Contributing Editor **Woody Leonhard** *is the author of "Windows 10 All-in-One for Dummies," available worldwide. The book explains what works, what doesn't, and how to avoid the potholes in Win10.*