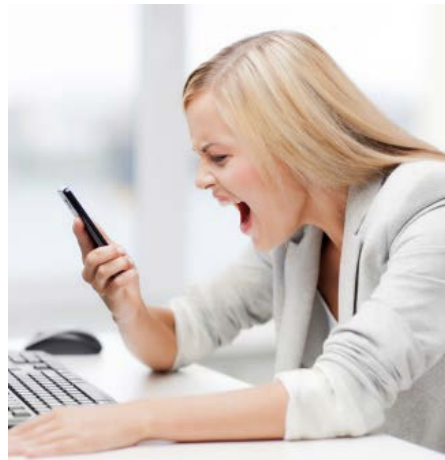**Talking to Technology**

Deke Kassabian, Information Services & Technology
Division

Until about the mid 1980s, almost everybody
interacted with a computer using only a
keyboard and a command line interface or
"CLI." No mouse, no point and click interface,
and certainly no touch screen.

When the mouse and the point-and-click
interface came along as part of modern computers and operating systems of the
mid-1980s, it drastically changed the way we interacted with technology. Though
the CLI still has its place, today we rely most heavily upon the mouse and the point-
and-click interface as we have for the last 30+ years. Over time, the mouse became
wireless (making it look a lot less like a "mouse") and the window systems became
more sophisticated. Faster computers and networks made video possible, and cheap,
fast mass-storage devices allowed us to hold all our photos, songs and movies. The
point-and-click interface, though, has remained largely the same.

Will speech and natural language interaction be the next game-changer, as the
mouse was in the 1980s? Apple, Amazon, Google, and Microsoft all seem to think so.
All have introduced products and capabilities that allow speech as input and audio
as output, meaning you can talk to your technology and it talks back.

The first major system on the scene was Apple's Siri, released in the fall of 2011 for
use on iPhones. Google Assistant, Amazon Echo and Microsoft Cortana followed
soon after. While Apple's Siri was first among the big players, the others each
introduced interesting new capabilities. Google could leverage what it knew from
your calendar and other tools to bring more value as an assistant. Amazon
introduced standalone, stationary devices which could be extended to deliver
"smart home" capabilities through "skills" or capabilities accessible via voice. Most
of all, each new voice interaction system showed advancements and improvements
in language interaction to the point where the earliest systems like Siri soon seemed
far less impressive.

What now?

Now that we can talk to technology, a reasonable question to consider is whether
and when speaking and listening is a preferred interface. A clear advantage is that
speaking and listening are part of a more *natural user interface*, close to the way we
interact with each other. For most of us, conversation is the communication tool we
learn first! Also, there are times when the point-and-click interface just doesn't
make good sense, such as when driving. A conversational interface with our
technology seems far safer in that setting.

There are pretty clearly some disadvantages to consider, too. First, talking to technology still looks a little strange. When I pass people on the street carrying on a phone conversation via a Bluetooth earpiece or some in-ear headphones, a small part of me can't help noticing how they look like they are talking to themselves (and how can I be really sure that they aren't!). Second, there are some tasks that probably just work better in a point and click interface. The voice interface makes it more difficult to leverage visual information (like a map) and to select specifics from that information (like a street or address). Finally, as a practical matter, the technology is still far from perfect. Voice assistants seem to still misunderstand us a little too often to be a primary interface.

It's probably fair to guess that that last point won't be true for very long. Improvements will come to voice assistants as they come to so much of the technology around us. Apple, once the leader and now lagging, is quite likely to make up lost ground in a future release of Siri. Some are speculating a major revision from Apple in 2017. The other major vendors will respond and introduce improvements as well.

Maybe a next leap forward in user interfaces will leverage Augmented Reality and Virtual Reality as the next logical step. A number of niche vendors are producing interesting AR and VR products, and the big vendors will surely respond with some of their own. Another interesting blog topic for another day.

What do you think about user interfaces? Point-and-click, voice, something else? Do you talk to your smartphone on a regular basis? Send us your thoughts.