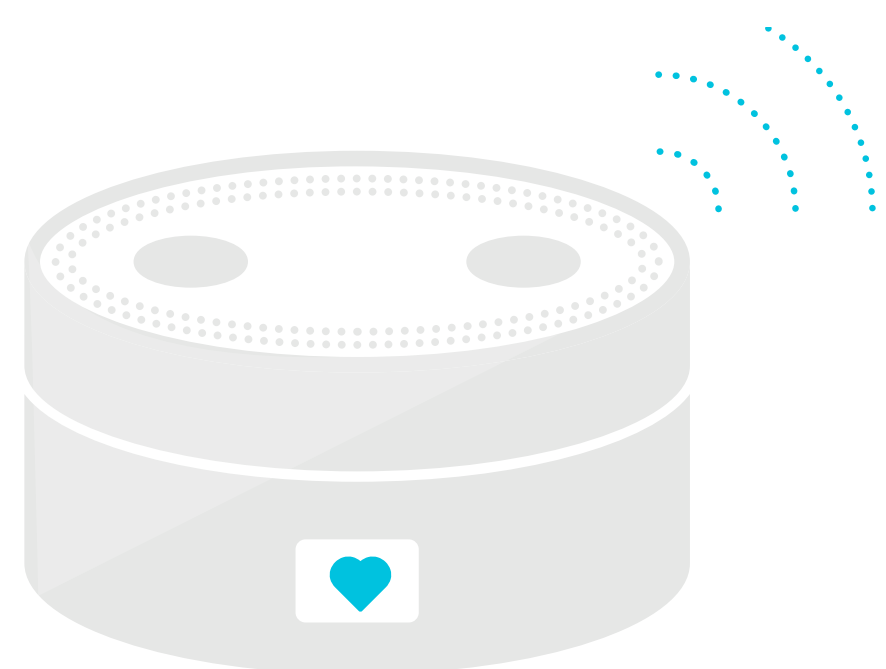




## Ask yourself this question: *Why voice?*

**There. In the less than one second it took you to say it, you've answered the question.**



### **SPEAKING COMES NATURALLY**

Voice, like typing on a keyboard or tapping on a tablet or smartphone, is a way to communicate. However, unlike the other two methods, using our voices— or speaking— comes naturally to us. Language is something we are exposed to and begin to learn while we are still in utero. Eventually, the vast majority of us learn how to speak, a skill so ingrained into our development that we don't remember the process of acquiring it.

Over the course of our lives, we learn new words and refine how we speak. We are able to communicate a wide range of ideas with clarity. We can share what we think without a user interface developed by someone else to express ourselves.



### **SPEAKING IS MUCH FASTER AND EASIER THAN TYPING**

Just typing the above header further proves this statement. I had to fix at least two typos before the line was complete. Within that same time frame, I could have spoken that sentence several times. Studies show that the average typing speed for a business professional is 40 words per minute. The average speaking speed is 150 words per minute, nearly three times faster.

The typewriter, and by extension, the keyboard is a device that was designed back in 1873. Over the years, and with the advent of computer technology and personal computers, we have subjected ourselves to neck problems and carpal tunnel syndrome as we hunch over the keys day in and day out. Despite all of their benefits, keyboards are actually harmful to our health!

### **VOICE TECHNOLOGIES ARE ACCESSIBLE**

Consider situations each of us likely encounter every day: cooking something in the kitchen, driving, and showering. In the first case, your hands are likely dirty; the second, busy; and the third, wet. In none of these situations is it practical or even safe to use your fingers to type out commands or tap a button. However, your voice is unencumbered and can be used to issue directions with no risk to devices or yourself.

Voice is an easier mode of communicating for both the young, who may not know how to use a typing device or even to spell; and the elderly, who may have health issues like arthritis or poor eyesight that makes typing difficult.



With all these benefits, you may be asking yourself: why isn't voice the interface of choice with computers or the internet? What has hampered voice's rise to being the interface of choice is also the very thing that will make it possible: technological innovation.



## TECHNOLOGY ADVANCES PUT VOICE IN THE SPOTLIGHT

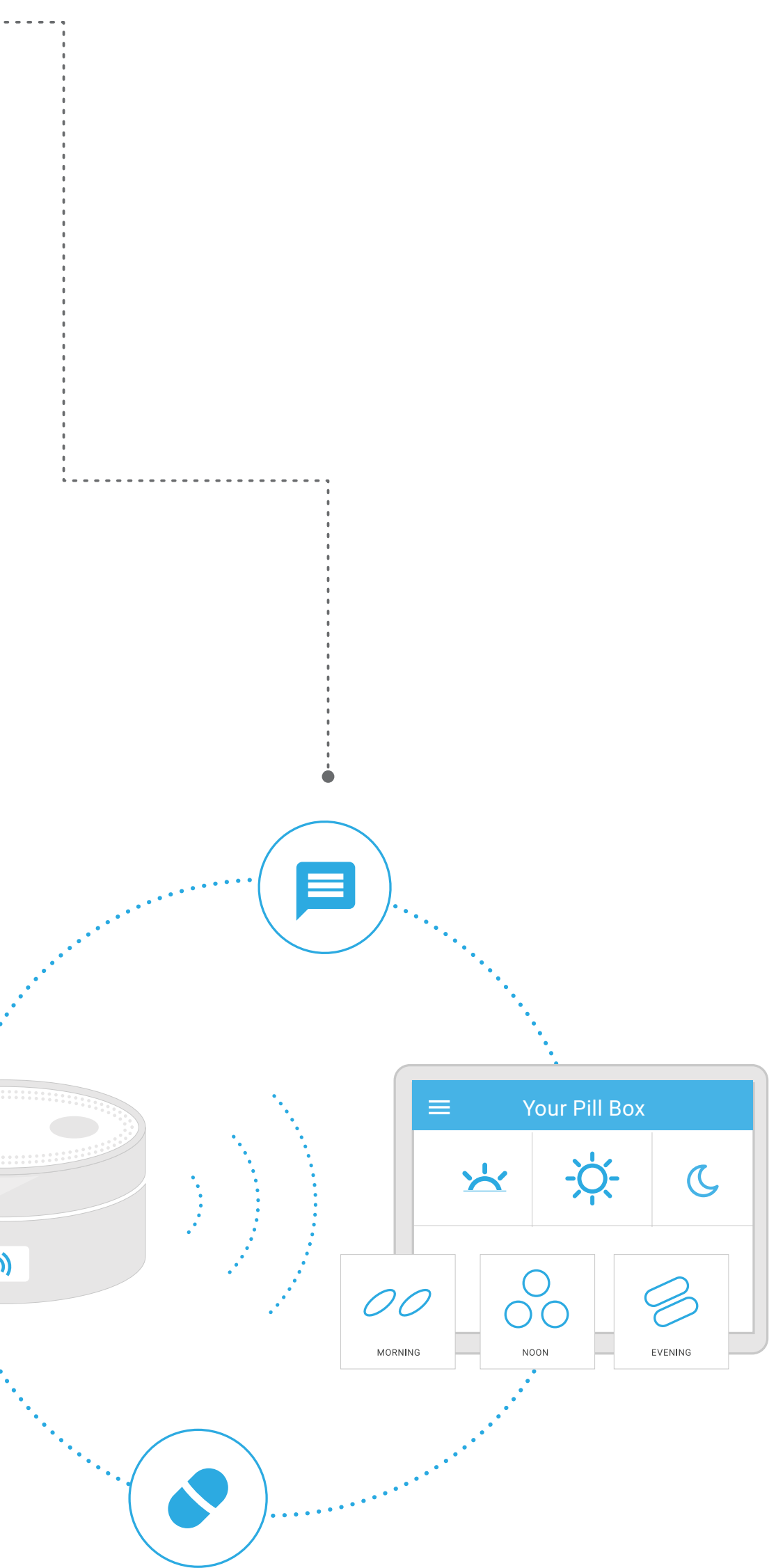
In short, voice is fast, accessible and the most natural way for humans to interface. The only factor necessary to make voice a usable tool was the evolution of the technology to support it. Luckily, those changes have arrived – two in particular;

1. **Improved microphones to detect voice**, even with a great deal of background noise. Amazon Alexa devices, for example, employ seven microphones to single-out voice among the range of noises it hears.
2. **The ability of a computer to properly transcribe what it has heard.** Understanding what is spoken requires significant computer power, and cloud computing has made this available. With this power, the word error rate, or the percentage of spoken words misheard, has reduced dramatically. 30 years ago, with the technologies available, transcriptions resulted in an error rate of nearly 50%. By 2012, technology had improved, but the word error rate was still about 23%. Today, the error rate is about 5%, which is on par with humans.

## CONSUMER DEMAND AND USAGE IS GROWING

Made possible by the improvements in technology, the use of voice assistants is rising rapidly, with no signs of slowing. In 2016, Amazon sold seven million Alexa devices. In 2017, the number was 10 million. Currently, 50% of homes that have broadband access have voice assistants, but only 7% of American homes overall have broadband access. As broadband access increases, the number of voice assistants in the home will likely increase as well.

However, the impact of voice assistants will not be limited to just homes. Both BMW and Ford will be integrating voice into their cars. It wouldn't be a stretch to say that in time voice devices will be more ubiquitous than devices requiring other means of interfaces. Perhaps this is why The Gartner Group thinks that by 2020, 30% of all web searches will be done using voice.



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